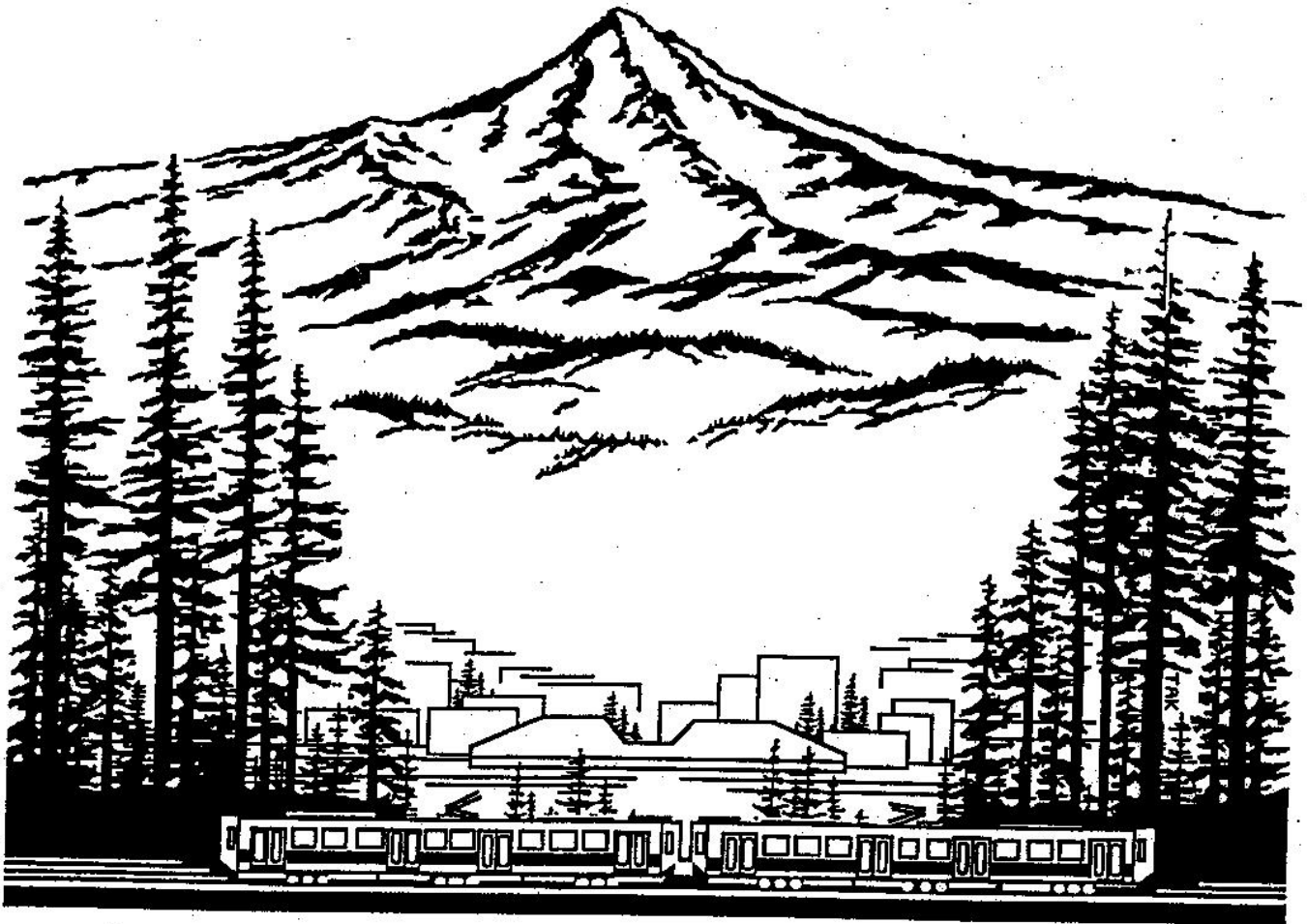


VOLUME 1

FINDINGS



GRESHAM COMMUNITY DEVELOPMENT PLAN

*City of Gresham
Community Development Division
1333 NW Eastman Parkway
Gresham, Oregon 97030*

**VOLUME 1
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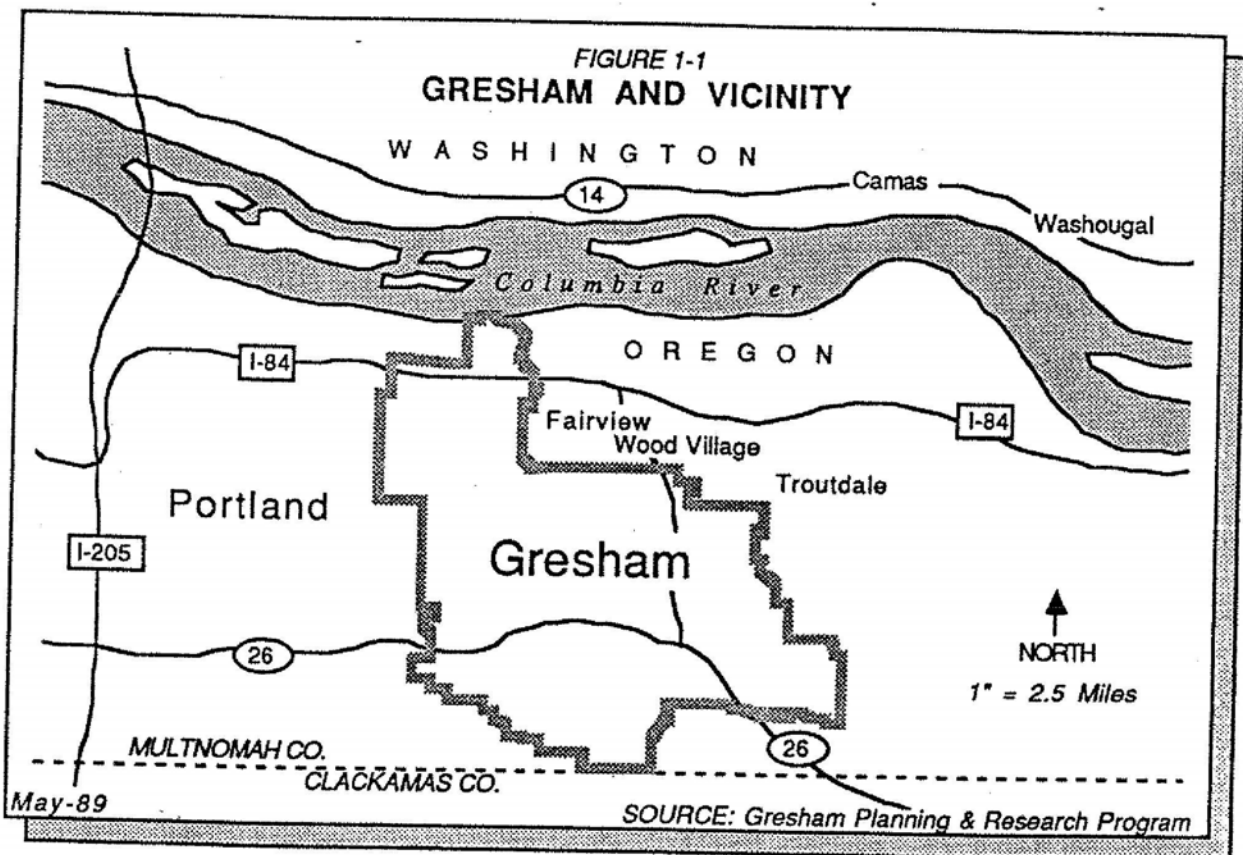
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1.000 COMMUNITY OVERVIEW

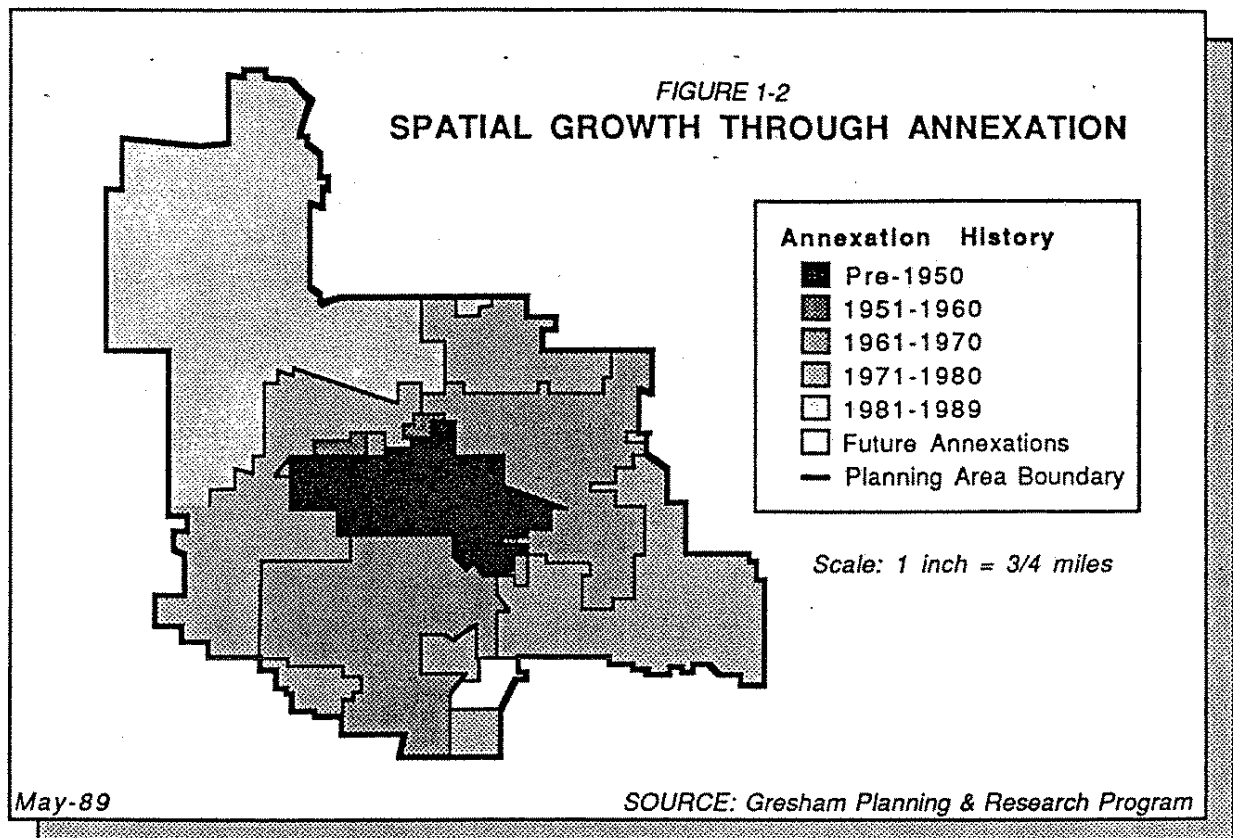
1.100 LOCATION

The City of Gresham, located east of Portland, in Multnomah County, is the second largest city within the Portland metropolitan area, and the fourth largest city in Oregon. Gresham stretches from the Columbia River to the southern edge of Multnomah County, where a range of forested hills form its southern boundary. A series of major transportation links, including several arterial streets, Highway 26, Interstate 84, and the Metropolitan Area Express (MAX) light rail line, connect Gresham with Portland as well as nearby recreation areas such as Mount Hood and the Columbia River Gorge. Because of its transportation network, booming population, and location along the eastern edge of the Regional Urban Growth Boundary, Gresham serves as the focal point of east Multnomah County.

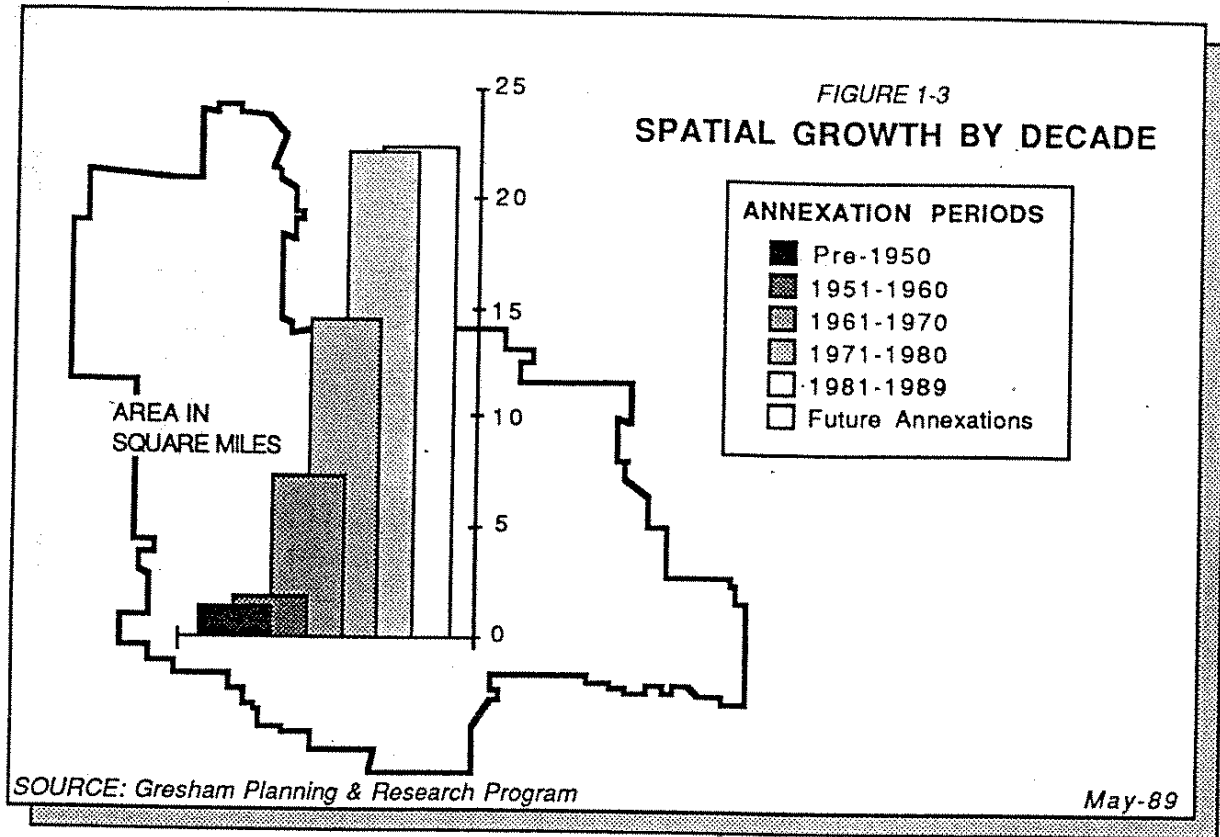


1.200 SPATIAL AREA

The spatial growth of the city has accompanied its population growth. During the 1950s, few annexations occurred, and the two square mile area of the city remained virtually unchanged; however, annexations during the 1960s expanded the city south to include Walters Hill and the Butler Creek area, and northeast, to the Mount Hood Community College site. By 1970, the city had expanded to cover nearly eight square miles. During the 1970s, annexations continued, adding areas to the southeast, along the Mount Hood Highway, and to the west, from Grant Butte to the aggregate quarries at Vance Pit. By 1980, the McGill property, north of Stark Street, had also been annexed, and the city covered almost 15 square miles.

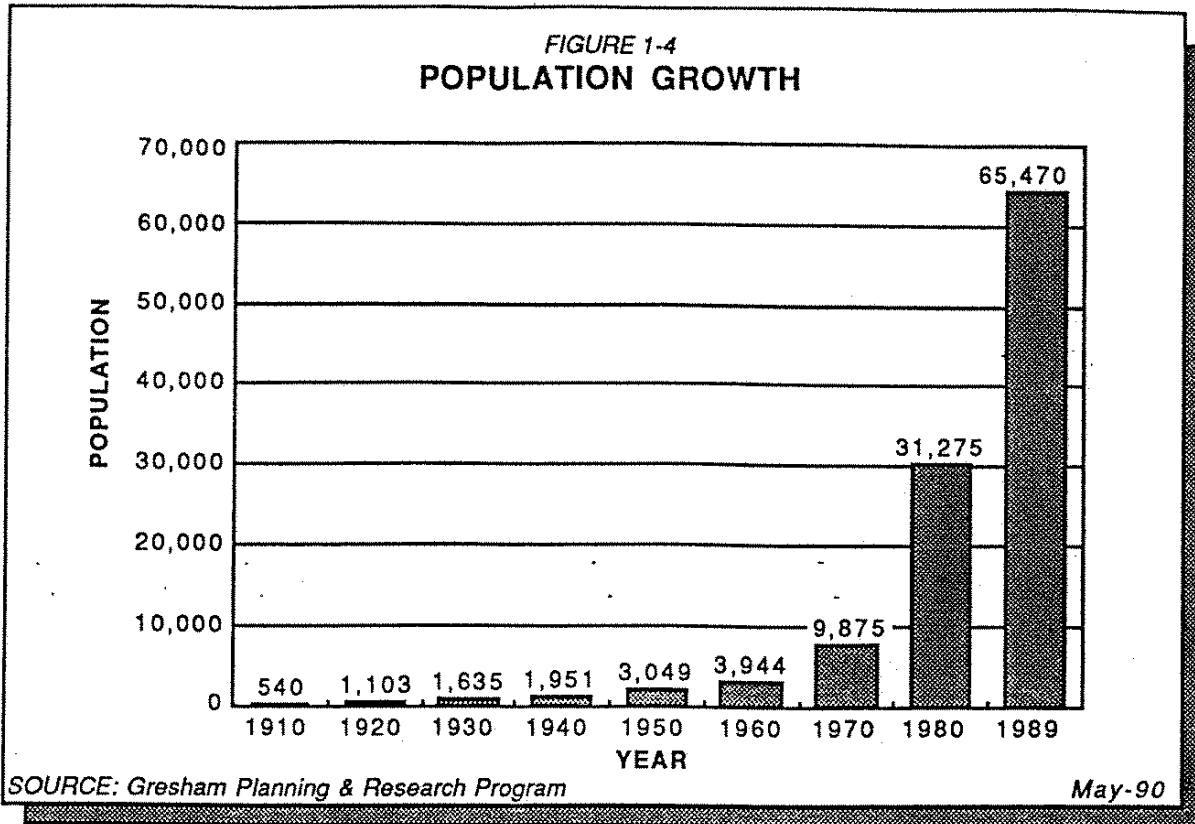


Since the establishment of the Regional Urban Growth Boundary (UGB) in 1979, annexations have occurred in the northwest portion of the city, extending west to 174th and 162nd avenues, and north to the Columbia River. These annexations were in response to a Department of Environmental Quality order that all urban areas between Portland and Gresham be serviced with sanitary sewers. The new boundaries to the north and west reflect an inter-governmental agreement for urban services with Multnomah County and the City of Portland. Annexations since 1980 have increased the city's land area to nearly 22 square miles. Future growth to the south and east will require an amendment to the UGB.



1.300 POPULATION GROWTH

Population growth during the last three decades in Gresham has been dramatic. The present population of nearly 60,000 is 20 times that of 1960. During the 1970s, Gresham was the fastest growing city in the state, and that growth rate has been accompanied by commercial expansion, particularly in the retail and service sectors, and the development of a community infrastructure to meet the demands of the burgeoning population.



Though the economic recession of the early 1980s slowed new housing construction, population growth continued because of the ambitious annexation program that added eight square miles of urban east Multnomah County to the city. Today, population growth continues with new attached housing developments occurring throughout the city, and new detached housing construction focused in the southwest and southeast areas.

1.400 HISTORY

Gresham was named after Walter Quintin Gresham, the Postmaster General of the United States during President Arthur's term in 1884. Walter Gresham was a Civil War Division Commander, federal judge, Postmaster General, Secretary of the Treasury and Secretary of State.

Gresham's early history is notable for its similarity to that of other small towns. Typical of other small towns, Gresham possessed a community spirit and cohesiveness. As recently as 1960, Gresham's population numbered 3,944, a size that easily fostered community identity and togetherness. The city functioned as a retail service center for much of rural east Multnomah County. Farm implements and supplies, auto manufacturing, logging industry services, banking, and general commercial services served a surrounding regional rural population. Gresham still continues to service outlying areas, but its resident population constitutes the primary source of community identity and resources. Gresham has grown into a service oriented city, catering to a largely residential community. There are few opportunities for industrial and office employment compared to other areas of the Portland region. Recent announcement

of plans to build a large electronics firm, employing 500 persons, will diversify the economic base and offer a wider range of employment opportunities. Plans to locate a one million square foot shopping center in the city's core area will stabilize the downtown area and will provide the opportunity to establish a city center to which residents can more easily identify as a community focal point.

1.500 NATURAL FEATURES

An abundance of relatively flat to gentle rolling terrain is the dominant local land form. The flat areas, formed by geologically recent unconsolidated deposits, pose few limits upon urban development. Relief from the level landscape is provided by forested hillsides. The hillsides, the city's most conspicuous natural feature, are a valued community asset. The hillsides create wildlife habitat, provide scenic vantage points and are the major source of natural aesthetic amenities. Small creeks flow through Gresham, emptying eventually to either the Columbia, Sandy, or Willamette Rivers. Water quality of the streams is generally good, although continued urbanization may degrade existing water quality. Aggregate resources underlie portions of the city and three mining operations are located within Gresham. The rolling fields, forested hillsides, and small creeks were natural features which attracted people to Gresham. The same features which made Gresham a desirable place to live are being threatened by rapid urbanization.

1.600 GENERAL LAND USE CHARACTERISTICS

Approximately 90 percent of the developed land in Gresham is zoned for residential uses. Single family detached homes comprise the bulk of housing. Presently, only 18 percent of the city's population resides in multi-family housing. Industrial uses occupy a very small portion of the total land area. Commercial uses are located in the relatively small downtown area and along the major arterial streets catering to traffic moving through the city to Mount Hood and Portland. Commercial strip development is the image of Gresham that is conveyed to people travelling through the city. Non-residents of the city are usually surprised to discover the existence of a downtown area which, despite its small size, remains healthy.

The recent rapid population growth is manifest in the proliferation of residential subdivisions. Although the Grant Butte forested hillside area and environs in the northwest contain some vacant land, the majority of undeveloped land lies in the south central and southeast portions of Gresham.

1.700 PLANNING CONTEXT

Gresham is a council-manager form of government with a mayor, six at-large city council members and an appointed city manager. The elected representatives constitute the policy making body of the city. City administration is conducted by the city manager. Two planning commissions have been appointed to serve Gresham. Current planning, or land development, is the responsibility of the permanent planning commission, while long-range, or comprehensive planning, is the current responsibility of the second planning commission. Gresham currently operates under a comprehensive plan which was adopted in 1969. The plan was embodied in a plan map, and a few defined policies and objectives. The current comprehensive, planning effort represents the first re-evaluation since the 1969 plan.

The passage of S.B. 100 and subsequent establishment of statewide planning goals by the Land Conservation and Development Commission have defined the planning framework for local government in Oregon. The salient features of Oregon planning law concern the statewide planning goals, coordination with other levels and units of government and the need for consistency between the comprehensive plan and implementing laws and regulations. Insofar as the statewide planning goals are concerned, task forces of Gresham citizens have addressed each goal and developed policies to meet the local requirements based on inventories developed by the city planning staff. Coordination with other levels of government has occurred throughout the planning period. The Metropolitan Service District is the regional body charged with assuring the coordination of local plans and has authority to review plans for adequacy, The Land Conservation and Development Commission is the body which will ultimately review the Gresham plan.

Rules and regulations are required by law, in order to implement the plan. Consistency between the comprehensive plan and city rules and regulations is required by law. The proposed Community Development Plan includes a Community Development Code which is designed to implement the plan as well as improve existing city procedures in regulating land development. The development of the plan has been guided by proposed policies submitted by local citizen task forces which focused upon all relevant State Planning Goals.

1.800 REGIONAL FRAMEWORK PLAN

On December 14, 1995, Metro adopted the Regional Urban Growth Goals and Objectives (RUGGO5) including the Metro 2040 Growth Concept Map. The text of the RUGGOs and the 2040 Growth Concept are a conceptual description of the preferred urban form of the region, including Gresham, in 2040. The RUGGOs and the 2040 Growth Concept Map identify areas and settlement patterns of development including:

- **Regional Centers.** Regional centers are a mix of compact employment and housing redevelopment served by high-quality transit. Two-to-four story buildings are typical and density allowed will go from 24 people per acre to 60 people per acre. Persons per acre combines the number of residents per net acre and employees per net acre. The - central Gresham area has been designated by Metro as a Regional Center.
- **Town Centers.** Town centers are areas of fluxed residential and commercial use that provide localized services to residents. They have a strong sense of community identity and are well served by transit. Persons per acre allowed will go from 23 to 40. Central Rockwood has been designated by Metro as a Town Center.
- **Corridors.** Corridors are major streets that are used intensively and serve as key transportation routes for people and goods. They have high quality pedestrian environments, good connections to adjacent neighborhoods and good transit service. Persons per acre allowed would go from 19 to 25. A number of corridors are designated along arterial streets in Gresham.
- **Main Streets.** Main Streets have a traditional commercial identity, provide neighborhood shopping areas along a main street or at an intersection and have a strong sense of neighborhood community. Persons per acre allowed would go from 36 to 39. Several street segments in central Gresham and in Rockwood have been designated as Main Streets.
- **Inner Neighborhoods.** Inner neighborhoods are primarily residential and are close to employment and shopping centers. Most existing neighborhoods will remain largely the same. New neighborhoods would be different with a new emphasis on smaller single-family lots and innovative housing types, such as row houses, that use relatively little land. Existing neighborhoods could see some redevelopment so that vacant land or underutilized land or buildings could be put to a better use. Inner neighborhoods trade smaller lot sizes for better access to jobs and shopping. Overall, the density of inner neighborhoods, in terms of persons per acre, would go from 11 to 14.

Most of the low density residential areas of Gresham are Inner Neighborhoods. The person per acre figure is a combination of new and existing development so that new development would need to occur at a higher density. Assuming an average household size of 2.3 persons, new single family development will need to occur at about 8.2 dwelling units per net acre or an average lot size of 5,300 square feet in Inner Neighborhoods (Source: Metro).

The RUGGOs and the 2040 Concept Map provide a general outline of a Regional Framework Plan. Metro is required to adopt a Regional Framework Plan by December 30, 1997

and the City will be required to ensure that the Gresham Development Plan is consistent with the Regional Framework Plan within two years of its adoption. Metro has drafted an Urban Growth Management Functional Plan which is scheduled for adoption in October, 1996. This Plan provides a mechanism for key provisions of the Regional Framework Plan. Once adopted by Metro, the City will have 24 months to make necessary changes to its comprehensive plan and plan map.

On October 3, 1995, City Council passed resolution No. 1970 supporting early implementation of the Region 2040 Plan. The Metro Policy Advisory Committee (MPAC) and the Metro Executive recommended a draft Urban Growth Management Functional Plan. On August 6, 1996, the City Council passed resolution No. 2045 supporting local implementation of the Urban Growth Management (UGM) Functional Plan. The UGM Functional Plan will require local plan accommodation of fair share capacity housing. Minimum residential density standards will be applied so that the target density is achieved and shall be set at no less than 80% of the maximum residential density.

(Added by Ordinance 1407 passed 11/19/96; effective 12/19/96)

2.000 NATURAL ENVIRONMENT

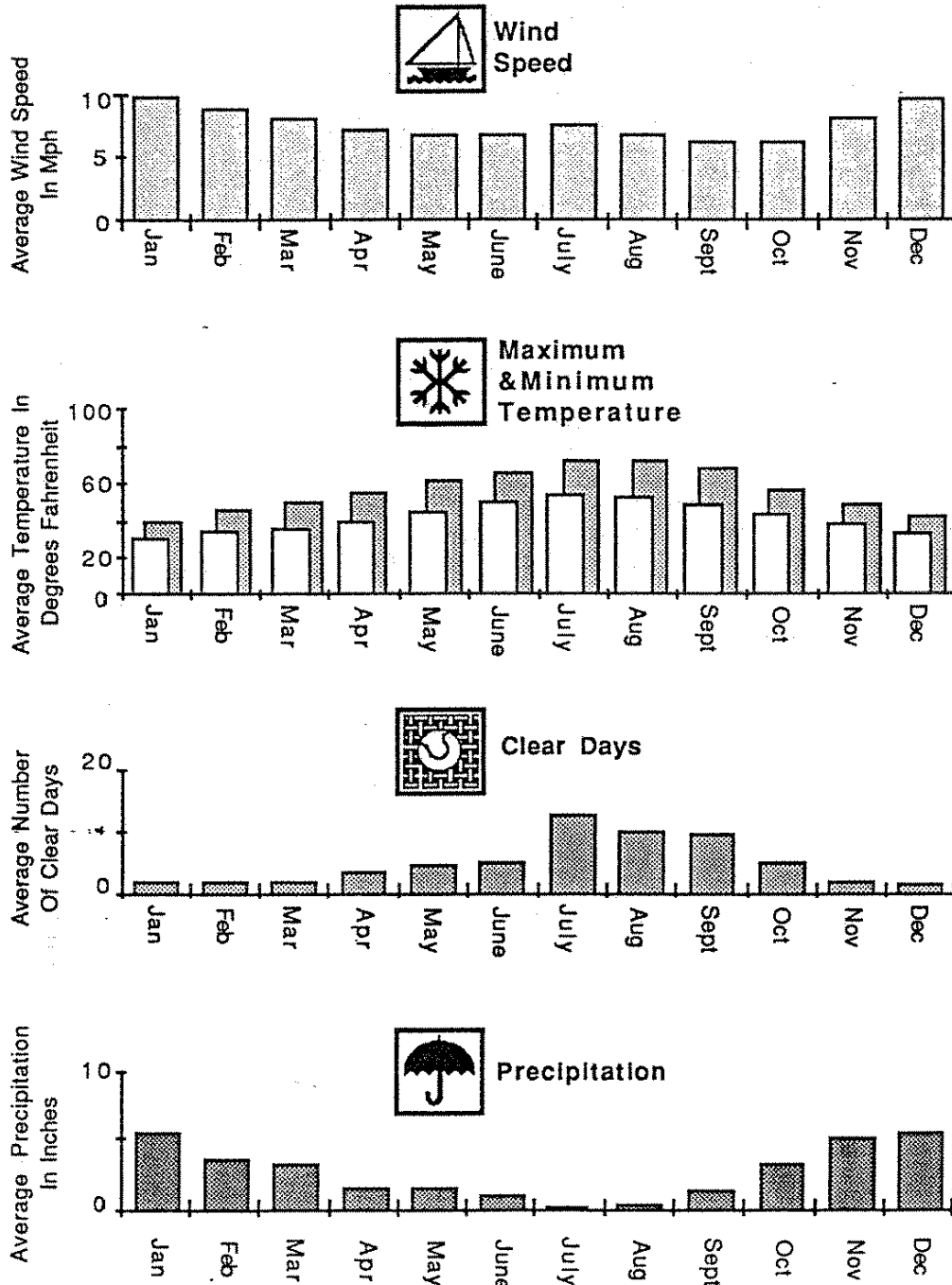
2.100 CLIMATE

Gresham is located about 65 miles inland from the Pacific Ocean and midway between the low Coast Range on the west and higher Cascade Range to the east. Each mountain range is about 30 miles distant. The Coast Range provides some shielding from Pacific Ocean weather while the Cascades steep slopes lift moisture-laden westerly winds with consequent moderate rainfall. The cascades form a barrier from continental air moving infrequently through the Cascade passes. Airflow is usually northwesterly during spring and summer and southeasterly in fall and winter. The winter months are mild with cloudy skies and most of the annual rainfall. About 88% of the annual rainfall occurs from October through May. Mild summer temperatures are accompanied by very little precipitation. Destructive storms are infrequent as surface winds rarely exceed gale force. Thunderstorms occur monthly during spring and summer.

Climatic factors combine to produce the most inclement weather during the winter months (see Figure 2-1). Normal wind speeds are high, sunny days are few, and precipitation is greatest during winter. While the absence of extremely low temperatures enables a characterization of the winter as mild”, there are normally each year 44 days which fall below freezing during the months of October through April. January is the coldest month, averaging 13 days a year of minimum temperatures below 32 degrees F. Outbreaks of dry continental air move frequently through the Columbia River gorge at all times of the year, resulting in either extremely cold or hot temperatures. The combination of high precipitation and below freezing temperatures in the winter months produces icy conditions, frequently the region’s major destructive climatic condition.

Climatic implications for urban design suggest that windbreaks or buffers be aligned so as to protect from the prevailing winter winds from the east southeast. Structures and people should also be buffered from cold continental air from the east. Windscreens, whether artificial or- naturally occurring, which protect dwellings from cold winter winds, could aid in conserving energy expenditures for home heating. Bus shelters should also be aligned to protect passengers from prevailing winter winds and westward moving continental air.

FIGURE 2-1
GRESHAM'S CLIMATE



Source: National Oceanic & Atmospheric Administration

2.200 PHYSICAL CONSTRAINTS

2.210 GEOLOGIC CONSTRAINTS

2.211 Valley Fill Deposits

The Gresham landscape consists of nearly level to gently rolling terrain occasionally interrupted by prominent low elevation hills. The level terrain was formed by geologically recent valley fill deposits through the actions of rivers, lakes, glacial flooding and wind. Valley fill deposits are unconsolidated and semi-consolidated materials in distinct contrast to well-consolidated bedrock formations.

Unconsolidated valley fill is composed of sand, silt, gravel and clay. Lacustrine deposits and Loess (known locally as Portland Hills Silt) are composed of very recent unconsolidated material. The major constraint of unconsolidated material in flat terrain is that reinforced building foundations are required to prevent differential settling of very large urban structures.

A silt mantle of unconsolidated loess overlies much of southern Gresham. The material is identical to the Portland Hills Silt which is associated with many small earthflows in the region. These minor slumps occur on steep slopes during the rainy season when the soil and silt mantle becomes water saturated. Small earthflows, typically confined to a depth of twenty feet are common in the region under these conditions.

Semi-consolidated valley fill covers most of the City, occurring in flat terrain as well as on the low elevation hills. Semi-consolidated material consists of sandstone, siltstone, claystone, mudstone and conglomerate. Semi-consolidated material represents older valley fill deposits over bedrock. Few building constraints are associated with semi-consolidated formations which occur in flat terrain. Some areas may be unsuited for septic tanks depending upon the hydrologic features of the soil and silt mantle.

Localized landslide hazards are associated with semi-consolidated formations, in certain instances. South of Gresham and along the Clackamas River, major landslides involving both bedrock and mantle material have occurred where the semi-consolidated Troutdale formation underlies Boring lava. This association, when combined with erosion of the underlying semi-consolidated formation results in oversteepening of the conglomerate, causing severe landslides. Conglomerate, bedrock and mantle material are involved in major slides. Although no major landslides appear to have occurred in Gresham within the recent geologic past, the association of Boring lava capping the Troutdale formation exists in the City. Where the association occurs on steep slopes subject to erosion, the potential for major landslides exists.

Older valley fill deposits during the middle Pliocene time, were laid down, (about five to seven million years ago), and overlie the City. Before the end of the Pliocene time, volcanism began in the region and continued into the early Pleistocene, (about one to five million years ago). The volcanic products in the form of lava thus overlie semi-consolidated valley fill creating a potential for major landslides under the conditions described above.

The volcanic products are named Boring lava which is found locally around a single vent or complex of volcanic vents. The Gresham hills were formed by Boring lava flows. In most areas, the Boring lava was subsequently overlain by more recent valley fill such as the Walters Hill and Springwater formations.

The stratigraphic picture of the Gresham hills consists of a middle layer of Boring lava sandwiched between valley fill deposits. In some areas, the Boring lava lies directly under the very recent loess depositions. The nearness of the bedrock to the surface may mean high costs for construction which requires deep excavation. Where loess overlies Boring lava on steep slopes the potential for earthflow is high.

2.212 Seismic Activity

Earthquake damage has been slight in the region despite the fact that the metropolitan region experiences an earthquake averaging 4.2 magnitude each year (see Appendix 1). The strongest tremor was the November 5, 1962, shock (5.4 magnitude) which was felt over a 20,000 square mile area of Oregon and Washington. The shock caused damage at the Veterans Hospital on Marquam Hill. It has been calculated that the region will experience one earthquake of this magnitude about every 100 to 130 years. Although 54 earthquakes with epicenters within 30 miles of downtown Portland have occurred between 1877 and 1970, landslides represent the greatest geologic hazard to the City residents.

2.213 Earth Movements — Case Studies

A minor slumping occurred on the lower slopes of Walters Hill during the 1978-79 winter season. In preparation for the construction of a residential subdivision, a large tract of land was cleared of vegetation and graded in late fall. Construction was delayed by the rainy winter season during which the runoff was not controlled by vegetation, diversion ditches or other methods. Severe erosion gullies developed, large amounts of silt were deposited into waterways, and a portion of the development became water saturated and was weakened enough to give way.

A steep slope earth movement occurred on the north face of Powell Butte, just west of Gresham in December of 1976. The first slide poured mud and debris into several residential lots. One home was severely damaged with walls broken in and the basement filled with mud. The second slide occurred minutes later, crashing through fences and trees near the site of the first slide.

The apparent cause of the Powell Butte slides was traced to an old road above the hillside homes. The natural drainageway was obstructed with debris by lack of maintenance of the road.

Water flowed along the road to a location where it crossed the road and broke over the steep hillside. The additional burden of excess water weakened the strength of the soil to the point where it gave way and triggered a mud and rock flow.

Powell Butte is similar to many of Gresham's hills in structure, slope and soil character. The apparent cause of the 1976 slide indicated how easily the delicate balance of slope, soils and vegetation can be disrupted with hazardous consequences resulting. Visible signs of slumping can be seen on Grant Butte, and homeowners on the lower slopes have had problems with earth movement damaging laws.

The winter storm in January 1980 created extensive damage as well. With an unusual 20 inches of snowfall followed by heavy rains, a number of slides occurred, most notable along Towel Road and Miller Court. An undetermined amount of top soil was lost as well, due to poor construction practices of removing vegetation prior to the winter rainy months.

2.220 SOIL CONSTRAINTS

The suitability of soil type for urban uses is a result of the combination of several factors. Steepness of slope, underlying surficial deposit, hydrologic characteristics and particle size.

Gresham soils are moderately deep to deep, usually poorly drained with high silt and clay content. Soil characteristics which pose constraints upon urban uses in Gresham include high water tables, slow percolation, low bearing strength, rapid runoff and erosion. One or more of these features may cause constraints upon development. When combined with steep slopes, limiting factors are increased in severity, creating potential hazards to life and property. Steep slopes may also be considered as a limiting factor separate from other soil features. The occurrence of steep slopes alone is a severely limiting factor regardless of soil type.

Soils with severe limitations have features such as steep slopes, bedrock near surface, flood hazards, a seasonal high water table or low bearing strength. Major soil reclamation or special construction design are required to overcome the limitations. It is difficult and costly to overcome the limiting factors.

Soils in Gresham pose severe constraints for urban uses in two distinct ways. Intrinsic soil characteristics unrelated to steepness of slope; and soils which pose constraints only because of steepness of slope (over 15 percent slope).

2.221 Inherently Poor Urban Use Soils

Cascade silt loam and Powell silt loam pose inherently severe constraints for urban uses. Perched high water tables, 18” to 24” from the surface during the rainy season, slow permeability, and wetness are the limiting factors. Differential settling potential exists and special drainage is required to prevent property damage. Even homes without basements require foundation drains. Site drainage must be planned for all developments. Construction practices should minimize vegetation removal and occur during the dry season. At slopes over 15 percent, these soils have runoff and erosion problems with potential for mudslides and other earth movement during the rainy season when soils become saturated. Cascade silt loam and Powell silt loam occur throughout the entire southern half of Gresham.

Aloha silt loam severely constrains development because of slow permeability and wetness. The soil is unsuitable for septic tanks, and excavating for basements and utilities is difficult during the rainy season. Aloha silt loam does not occur on slopes above 8% and presents few erosion or runoff problems. Proper drainage and rainy season construction practices are required. Aloha soils generally occur in the northeast portion of the City.

Wapato and Wollent soils occur on slopes of zero to three percent are located in or near the floodplain, and are unsuited for all urban uses. The soils are poorly drained, the high water table exists above or very near the surface during the rainy season. The soils are extremely wet and subject to flooding.

A small area of Terrace Escarpment occurs in the extreme northeast edge of Gresham. This soil is found on slopes of 20 to 60 percent and is associated with rapid runoff and erosion. Escarpment soils are located along small streams that have cut deeply into valley terraces. Severe constraints exist for all urban uses.

2.222 Soils with Severe Constraints Only on Slopes Over 15%

Latourell loam and Multnomah silt loam are good for urban development on slopes from zero to 15 percent. The soils are deep, well-drained, and suitable for septic tanks. Severe constraints occur only when they are found on steep slopes. These soils extend south from the northern City limits to Johnson Creek in the west and to Burlingame Creek in the east.

The Quatama loam soils occur in minor amounts near the northeastern edge of Gresham. The single constraint at slopes under 15% is suitable for septic tanks.

2.223 Case Study

Intrinsically poor urban use soils on slopes below 15% severely constrain development. When these soils are located on slopes over 15%, the degree of severity for urban uses is increased. The classification of soils by severity according to the degree of slope does not take into account the interrelationship of different slopes which grade into one another. Property lines are not arranged along contour lines but encompass several slope angles. Conventional development practice, however, which typically employs a slope “averaging” technique, may not accurately reflect true soil and slope relationships. Averaging often produces a slope angle for a tract of land which appears less severe than it may actually be due to the poor soil conditions.

The Binford Farms subdivision, located in southeast Gresham near Johnson Creek is an example of a relatively moderate slope area which has nevertheless experienced substantial problems because of the intrinsically poor suitability of the soils. The soil in the Binford Farms area is Cascade silt loam. The slopes range from eight to eighteen percent.

Homeowners had lived in their new homes six months to a year in Binford Farms by the arrival of the 1978-1979 rainy season. Nearby grading and excavation had removed vegetation and the topsoil leaving the perched high water table very near the surface. The exposed soil was not revegetated, mulched, or otherwise prepared for the rainy season. With the rains, severe surface runoff and subsurface saturation occurred, causing a variety of problems. Sheets and streams of runoff flowed against buildings. Erosion occurred in yards and around foundations. Basements developed cracks and seepage, banks eroded, gullies formed, sediment was deposited in driveways. Vegetation such as grass and shrubs was impossible to establish due to subsurface saturation and ponding. Sidewalks cracked, silt and debris were deposited everywhere. When temperatures fell below freezing, ice buildup in streets and driveways was extreme, making access, mail delivery and emergency services very difficult for residents. Sediment was deposited into the storm sewer system and silt pollution was caused in Johnson Creek.

The Binford Farms problems are directly related to the characteristics of the Cascade silt loam soil in the subdivision. The soil percs slowly and has a seasonal perched water table starting at about 18” to 30” below the undisturbed surface. When the topsoil and vegetation are removed during the winter season the soil is quickly saturated so that rainwater flows across the surface causing erosion and deposition. Simple preventive measures such as mulching/reseeding, installation of diversions, installation of silt traps, minimizing soil disturbances prior to the rainy season and drainage grading around foundations greatly minimize the problems.

2.230 TOPOGRAPHICAL CONSTRAINTS

The majority of the land in Gresham consists of relatively flat terrain. Areas of relief occur in two types of locations; the Gresham hills (Grant Butte Walters Hill and unnamed hills in the southeast portion of the City); and in localized areas along Gresham's creeks.

Extremely steep slopes (over 60%) are displayed on the north and east faces of Grant Butte and the north face of the southeast hills along Johnson Creek. Slopes over 35 percent occur on portions of all the hills as well as at localized areas along Johnson Creek and its tributaries. Slopes between 15 and 35 percent are generally found on the gentler southern flanks of the hills and along the City's creeks.

Steepness of slope is the greatest contributing factor in causing earthflow. Slopes over 35 percent have high to extreme susceptibility to landslides. Moderate susceptibility to earthflow exists between 15 and 35 percent slopes as a general rule, although areas of especially wet or unsuitable soil may have higher landslide potential.

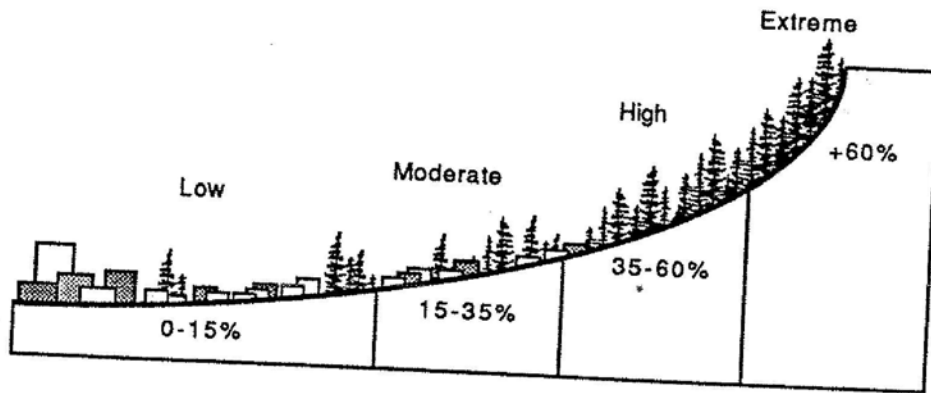
Earthflow occurs as a part of the natural geologic and geomorphic process. Human activity, however, greatly affects the process. The friction which holds a hillside in place is altered by increasing the bearing load of the hillside (additional structures, roads or soil saturation); by reducing friction with water, by removing support from below (excavation); or by an earthquake tremor.

The two most frequent causes of disturbances are decreasing stability and increasing groundwater loads. Vegetation contributes to slope stability via strong root systems and reduces soil saturation by consumption of large quantities of water. Removal of vegetation forces the soil to accommodate larger amounts of water without the aid of roots to stabilize the slope. Areas of high water tables also affect absorption capacity and cause more rapid saturation.

Landslides involving the soil/silt mantle are common in the region and are "generally due to the slope, low strength of the material, and to high groundwater conditions. Many local failures have been directly related to development, logging or road construction." (Shannon and Wilson, 1978). Alteration of the bearing load through improvements and excavation or increasing saturation by vegetation removal may easily upset the stability of slopes over 35 percent, resulting in landslides. Development on slopes between 15 and 35 percent which upsets the slope, soil and vegetation balance also has potential for causing earth movement. Careful construction practices and development design are required on slopes of moderate landslide potential to minimize hazardous consequences. Based upon potential for landslides, slopes in Gresham may be classified into one of three types of zones: zero to 15 percent slopes, little landslide potential; 15 to 35 percent slopes, moderate landslide potential; and 35 percent and over slopes, high to extreme susceptibility for landslides.

The vast majority of Gresham land occurs at less than 15 percent slope. Topographical constraints, absent in most of the city, are confined to a few distinct locations. Physical constraints imposed upon land below 15 percent relate to soil characteristics and flood hazards.

FIGURE 2-2
SUSCEPTIBILITY OF STEEP SLOPES
TO LANDSLIDE

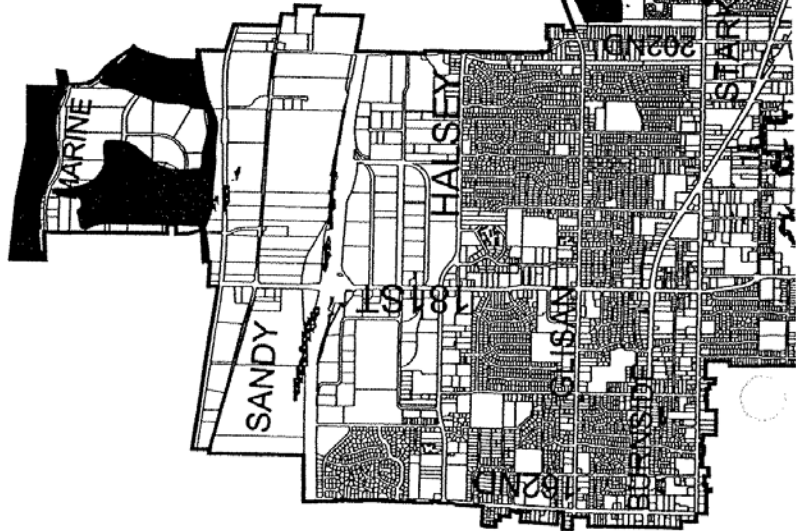


SOURCE: Hammond, Paul E., et al; A Preliminary Geological Investigation of the Ground Effects of Earthquakes in the Portland Metropolitan Area, Oregon. 1974

MAP 1

GRESHAM COMMUNITY DEVELOPMENT PLAN

NATURAL HAZARDS



Areas Within the 100 Year Flood Plain
Steep slope areas (15% or more)

This map is for illustrative purposes.

SOURCE: City of Gresham, FEMA (1988)



MAP 1

0.25 0 0.25 0.5 0.75 1 1.25 Miles

2.240 HYDROLOGIC CONSTRAINTS

Within Gresham there are well—defined areas in which development potential is limited due to the periodic presence of surface water as a result of flooding. These areas lie adjacent to streams which drain the land surface within Gresham and carry flows originating in upland areas outside the city. Streams in Gresham which are subject to periodic flooding are Johnson Creek, Kelly Creek, Butler Creek, Fairview Creek, Burlingame Creek, Beaver Creek, and the Columbia Slough. Johnson Creek, a tributary of the Willamette River, flows east to west through the southerly portion of the community, skirting the bases of Walters Bill and Jenne Butte. Beaver, Kelly, and Burlingame Creeks flow into the Sandy River to the east, draining the eastern portion of the city. Fairview Creek flows northerly toward the Columbia River and drains much of the central and northern parts of Gresham. The Columbia River has been diked to prevent floodwaters from encroaching directly into adjacent areas. The Columbia Slough drains lowlands lying behind the dike. This slough is part of a large system which drains the Columbia south shore area between the Sandy River on the east and the Willamette River to the west. While the Columbia River dike protects a large area to the south from floodwaters, this area is subject to flooding when the capacity of the slough is exceeded.

Through studies carried out by the Federal Emergency Management Agency (FEMA), approximately 560 acres of land adjacent to these streams have been identified as areas of special flood hazard. These are lands which are subject to a one percent or greater chance of flooding in any given year, also known as the 100-year flood plain. In addition to designated flood plain areas, there are wetlands and riparian areas where moist soils and high water tables present constraints to development. Many of these areas, and a large portion of flood plain areas, have high natural resource values and serve as valuable wildlife habitats.

Past floods in Gresham have been, caused by bank overflow from Johnson and Burlingame Creeks and shallow flooding from Fairview Creek. Property damage from overflow of Johnson Creek has occurred from 190th Ave. upstream to: Regner Rd. The worst flood of record on Johnson Creek occurred in December, 1964. Overbank flows occurred at Regner Rd. and continued downstream along the Portland Traction Co. railroad. This flood had a discharge of 2,620 cubic feet per second. According to FEMA studies, flows in Johnson Creek have exceeded the major flood stage ten or more times since 1940. Floods from Burlingame Creek have occurred frequently in the past and have been characterized by shallow overflows near the intersection of Hogan Dr. and Burnside St.

In June, 1949, flooding from the Columbia River seeped through a portion of the dike on which Marine Drive is built, inundating portions of Multnomah County Drainage District No. 1, including the Columbia Slough area. Flood depths in the drainage district ranged from ten to twenty feet. According to the FEMA Flood Insurance Study, the existing dike is expected to withstand a 500—year flood of the Columbia River, although major rainstorms could cause extensive interior ponding in low areas if runoff exceeds the capacity of dewatering-drainage pumps which now serve property adjacent to the slough.

With respect to potential development in flood plain areas there are two important issues. First, the degree of hazard to life and property must be considered; second, preservation of natural functions of stream corridors as drainageways must also be taken into account, in designating flood plain areas, FEMA has conducted studies which delineate land areas needed to hold anticipated water volumes resulting from 1 00-year flood conditions. These delineations have also been made with the stipulation that development activity and alterations to the landform may be possible within floodplain areas without significant increases in the base flood elevation. The implication is that such activity could occur without reducing the flood carrying capacity of the designated flood plain area. Thus, there is reason to believe that development may be appropriate within certain flood plain areas without posing substantial hazards to life or property, provided it is designed and constructed consistent with standards which minimize the potential for damage and preclude adverse impacts to adjacent properties.

At the same time, however, flood plains also function as natural systems having their own intrinsic values which could be adversely affected by development, even if such development can theoretically be accommodated without substantially increasing flood elevations. Flood plains are riparian corridors which frequently contain wetlands having high value as natural resource areas. These wetlands and riparian corridors serve as temporary storage areas for flood waters, reducing flood peaks and the frequency of flooding downstream. Riparian and wetland vegetation works to improve water quality by reducing sedimentation nutrients (e.g. sediments, metals), and reducing water temperatures. These areas frequently have scenic, educational, and recreational value and, when relatively undisturbed, they support a wide variety of wildlife. To the extent that flood plain development and alterations occur, especially in areas which have retained their natural character or which serve open space and greenway functions, these functions may be adversely affected.

The findings of recent master storm drain plans for Fairview, Kelly, and Burlingame Creeks have underscored the importance of flood plain areas for conveying and storing runoff even during flood episodes which do not approach the volumes of 1 00-year flood conditions. In some cases, these master plans have included specific recommendations concerning the nature of development and needed improvements adjacent to these streams in order to maintain and enhance their drainage characteristics: The master storm drain plans for these creeks make up an important part of a comprehensive program to minimize flood hazards. Their findings and recommendations should be taken into account in undertaking any development activity in flood plain areas where development may be appropriate.

Traditional Federal flood management programs are now being re-evaluated as a result of the disastrous 1993 Midwest flooding along the Mississippi River. Today there is a growing understanding that government can neither solve all flooding problems, nor can it financially cover the cost of flood damage. New approaches to flood management and prevention are being proposed by the Federal agencies involved in floodplain management and flood disaster relief

In a 1996 publication by the National Parks Service entitled Flood, Floodplains and Folks, the NPS profiles communities across the nation that are pioneering new approaches to managing floodplains and addressing the threats of flood damage. These approaches involve communities forming innovative public-private partnerships and implementing multi-objective programs that use a variety of non-structural, regulatory and incentive approaches to address serious flooding problems. Solutions to these problems vary in each community, but often

include one or more of the following: flood loss reduction, flow control, streambank stabilization, restoration, fisheries improvement, recreation, natural hazard mitigation, wetland enhancement, habitat improvement, cultural resource enhancement, economic revitalization and environmental education.

In view of the varied purposes being served by Gresham's stream corridors and flood plains, the potential development constraints which may exist in these areas, and the differing character of the community's streams, it may be appropriate to permit development activity in some flood plain areas, and to restrict it in others. Specifically, policies and standards are called for which would limit development and landform alterations in flood plains where natural resource or open space values are high, while permitting such activities in flood plains where natural features have already been altered or removed and the principal function of the stream and adjacent land is conveyance of surface water.

(Sec. 2.240 amended by Ord. No. 1464 passed 12/1/98; effective 1/1/99)

2.250 SUMMARY

2.251 Physical Constraints in Gresham

Geologic foundations, soil types, slopes, and hydrologic features combine to create constraints on urban uses. In some cases, constraints may be overcome through design, engineering, and construction practices. In other instances, the risks involved, and the consequences to adjacent land of mitigating the limitations require that land use designations be applied to minimize hazardous conditions.

Within Gresham, the hillsides are the critical element to which most physical constraints are related. Concerning geologic hazards, slopes over 35 percent are high in potential for landslides and earthquake damage. While it is technically possible to install improvements by engineering for these extremely steep slopes, very steep hillside development involves severe risks. Alteration of hillsides over 35 percent by vegetation removal, surfacing with impervious material and increasing the bearing load may easily trigger landslides, endangering downslope improvements as well as the steep slope areas. Development of steep hillsides greatly increases the amount and rate of surface runoff, increasing the severity of flooding. Costs and difficulties of installing sewer and water lines in steep hillsides are very high. Septic tanks are completely unsuited for steep hillsides. Ice build-up during freezing temperatures makes access, maintenance, and emergency services delivery virtually impossible.

Improper construction practices, site design and drainage on hillsides over 15% slope results in erosion and deposition, triggers earthflows and increases flood severity by contributing to surface runoff. Construction or development on slopes over 15% involves severe constraints for urban uses regardless of soil type, and must be appropriately designed and constructed to minimize adverse effects.

Physical constraints not associated with hillsides involve the suitability of soils generally for urban uses and the potential for damage due to flooding. Areas of moderate slope but having

intrinsically poor soils require construction practices and site design techniques which work to minimize the unfavorable characteristics of poor soils.

Floodplains in Gresham are well-defined and encompass a relatively small area of the city. Non-structural solutions to flood damage prevention include minimizing surface runoff through proper development practices and design so that flooding severity is not increased. Stormwater drainage systems to accommodate increased runoff from impervious surfaces should be designed to enable control of both the rate and volume of discharge. Where they have high natural resource values and are relatively undisturbed, floodplains are inappropriate locations for most types of urban development.

Heavy rainfall is the distinguishing element of the local climate, and is directly related to the city's physical constraints. Construction periods and practices arranged to minimize activity during the rainy winter season will reduce potential erosion, deposition of silt, earthflow, and flooding.

2.300 NATURAL RESOURCES

Gresham contains a wide variety of natural resource types. These include wetlands, riparian areas, forested uplands, and mineral and aggregate deposits. In addition to their intrinsic value as relatively undisturbed lands in an otherwise urban environment, many of these resource areas comprise significant wildlife habitats and noteworthy scenic features. They also perform a variety of useful functions in maintaining environmental stability, including retention of soils, control of pollutants, groundwater recharge, and flood control.

In the fall of 1987 a comprehensive survey of Gresham's fish and wildlife areas and habitats, wetlands, and ecologically and scientifically significant areas was carried out by a team of consultants and by faculty and students from Mt. Hood Community College. This survey was oriented primarily toward wildlife habitat values of lowland and upland natural areas. Sites which rate highly as wildlife habitats are typically found to have high values for other natural functions as well. The results of this survey are contained in the inventory of Significant Natural Resources and Open Spaces, adopted as Appendix 2 to the Community Development Plan. In the Inventory, 45 natural resource sites were identified. These were classified generally as wetlands, riparian areas, and upland sites.

2.310 Wetlands

Wetlands are defined as follows: "Areas that are inundated and saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Among the useful functions served by wetlands are the following:

- Wetlands provide important habitat for warm water fishes, numerous waterfowl, non-game birds, beaver, muskrat, nutria, otter, mink and raccoon. Other important non-game species such as mammals, reptiles, and amphibians are also found in wetland areas.

- Wetlands serve as temporary storage areas for flood waters, reducing floodpeaks and the frequency of flooding in downstream areas.
- Wetlands function to improve water quality by reducing sedimentation and removing nutrients.
- Wetlands rank as one of the world's most productive ecosystems. The biomass produced within wetlands provides food and cover to a multitude of animals.
- Wetlands provide scenic, educational and recreational opportunities and values.

One of the most significant wetlands described in the Inventory is an area of 30 to 50 acres located east of Grant Butte, between Division St. and West Powell Blvd. This is an emergent wetland with small pockets of wetland forest and scrub shrub scattered along the edge. The emergent areas are vegetated with cattail, rush, sedge, reed canarygrass, polygonum and nightshade. The scrub shrub and forest areas are composed of black cottonwood, willow, spirea, and elderberry. Among wildlife species observed at this wetland are the great blue heron, green-backed heron, belted kingfisher, American kestrel, red-tailed hawks, and red-winged blackbirds. The structural diversity, plant species variety, large size, adjacency to a large upland area (Grant Butte), and rarity of habitat all add to the value of this site. A railroad track which runs north-south through this wetland provides good access to this site without direct impact on the wetland.

Another significant wetland lies on the east edge of the Mt. Hood Community College campus, south of Stark St. This area is a mosaic of riparian corridor (Douglas fir, big leaf maple, western red cedar), emergent wetland (sedge, cattail, polygonum, reed canarygrass), wetland scrub shrub (several types of willow, spirea, elderberry), wetland forest (ash, sedge, black cottonwood), upland mixed coniferous/deciduous forest (Douglas fir, alder, big leaf maple), and open grassland. The high structural diversity and species diversity provide habitat for a variety of wildlife species including deer, coyote, beaver, small mammals, owls, hawks, songbirds, and reptiles. The large size and diversity of habitats within one area in addition to the ash/sedge forest combine to make this a rare habitat in Gresham.

Five other wetlands of varying degrees of significance were also identified in the Inventory.

2.320 Riparian Areas

Riparian areas are defined as lands which are adjacent to rivers, streams, lakes, ponds, and other water bodies. They are transitional between aquatic and upland zones and contain elements of both aquatic and terrestrial ecosystems. They have high water tables because of their close proximity to aquatic systems, soils are usually largely of water-carried sediments, and some vegetation that requires free water or conditions that are more moist than normal. In Gresham, riparian zones occur along rivers, streams, and lakes. Riparian areas have a number of attributes and serve several useful functions:

- Riparian zones generally contain water, food, and cover - three important habitat components.
- Riparian areas provide important habitat for songbirds, raptors, raccoon, mink, beaver, deer, and muskrat. Various small mammals, reptiles, and amphibians are also found.

- Riparian zones serve as natural migration routes and travel corridors for many wildlife species.
- Riparian forests stabilize stream banks and adjacent slopes, promoting better water quality in the adjacent waterways.

Twenty-three of the 45 natural resource sites identified in the Inventory of Significant Natural Resources and Open Spaces are listed as riparian areas.

The highest-scoring riparian area identified in the Inventory is the Johnson Creek corridor from the southeast city limits near Hogan Rd. downstream to Highland Ave. Most of this portion of the creek is relatively natural in character, largely due to the fact that none of it has been altered by rip-rap along the banks. There are numerous residences along Johnson Creek but they have not intruded into the stream or reduced the riparian habitat in most areas. There is a wide variety of riparian vegetation that provides both wildlife habitat and shading. The dominant streamside plant species are western red cedar (including Hogan cedars), red alder, willow, Douglas fir, black cottonwood, big leaf maple, and a limited amount of Oregon ash. Understory species include Himalayan blackberry, creek dogwood, spirea (hardhack), buttercup, reed canarygrass rushes, sedges, cattails, horsetail, and hazelnut.

The complex of structurally diverse riparian vegetation, emergent wetland, and open grass fields along Johnson Creek provides habitat for deer, belted kingfisher, great blue heron, green-backed heron, mallards, common bushtits, evening grosbeaks, tree frogs, and beavers.

Other significant riparian areas identified are the small, narrow tributaries which flow down wooded drainages through greenways into Johnson Creek from the south. Kelly Creek, from the southeast corner of the city to its confluence with Beaver Creek, has many of the same riparian characteristics as Johnson Creek between Salquist Rd. and Powell Valley Rd. To the north, a portion of the Columbia slough flows westerly from Fairview Lake to 185th Ave. Although the slough has limited wildlife habitat value, it is part of a regional waterway and could be enhanced by contouring the banks and planting a diverse selection of native vegetation.

2.330 UPLAND AREAS

Seven upland areas were investigated in preparation of the Inventory of Significant Natural Resources and Open Spaces. The most significant of these are Jenne Butte in southwest Gresham, Grant Butte, and portions of Walters Hill and adjacent hillsides to the south. Upland resource areas enrich the urban environment by providing visual relief and a sense of orientation. They also serve a number of important natural functions:

- Uplands provide valuable habitat for mammals, birds, and some reptiles.
- Mammals include deer, coyote, fox, rabbits, squirrels, and mountain beaver. Birds include songbirds, woodpeckers, quail, and hawks.
- Uplands serve as important nesting habitat, roosting sites; hiding cover, escape cover, thermal cover, and feeding sites for some species.
- Uplands provide routes of travel for wildlife.

- Uplands provide both seasonal and year—round feeding sites for many species of birds, mammals, and reptiles.

Jenne Butte was found to be one of the most significant of Gresham's upland areas. On the north and west facing slopes there are western red cedar/bigleaf maple forests. The understory is dogwood, alder, and vine maple. In places the canopy cover is nearly 100%. Near the top of Jenne Butte are numerous snags interspersed within the cedar/maple forest, giving this area high structural diversity and enhancing its, habitat value. Evidence of deer, coyotes, and other small mammals was noted.

Grant Butte is a prominent upland feature in Gresham. Like nearly all portions of steep-slope uplands in the area, Grant Butte has been logged in the past, removing most of the old, large coniferous trees. The resulting successional patterns have produced wildlife habitats that are structurally diverse, with an abundance of maple, alder, and other deciduous trees. Much of Grant Butte's significance as a natural resource area and wildlife habitat is derived from its proximity to the large wetland lying to the east of the base of the butte. Direct access to water is available for wildlife and the linear pattern of the wetland provides a corridor for passage to habitat areas to the south.

Much of Walters Hill and the complex of hills to the south of Walters Hill have been highly developed or affected by human activity. The lower slopes on the north and west sides have been developed in residential subdivisions, and the top areas have been cleared and cultivated, in addition to serving as large-lot homesites. Nevertheless, Walters Hill gives the appearance from lower elevations of a largely undisturbed hillside with a mix of deciduous and coniferous trees. The complex of hills adjacent to the north and south sides of Butler Rd. has a diverse mix of conifers and hardwoods and provides habitat for deer, raccoon, coyotes and other, smaller mammals.

2.340 ECOLOGICALLY AND SCIENTIFICALLY SIGNIFICANT NATURAL AREAS

While all of the natural resource sites identified in the Inventory of Significant Natural Resources and Open Spaces might be considered representative of ecologically and scientifically important resources in Gresham, one particular site stands out in this regard. In southeast Gresham, in the vicinity of Hogan Rd. and Johnson Creek, is found the Hogan's Cedar (*Thuja plicata pastigiata* – see Appendix 3). This is a prime example of a rare and spectacular life form which has adapted to human presence while maintaining its ecological integrity. It is a beautiful and striking tree, and this grove maintains itself through seed production.

FIGURE 2-3

**INVENTORY OF
SIGNIFICANT NATURAL RESOURCES
SUMMARY**

Site No.	Site Name	Score	Resource	Primary District	Secondary District	Open Space	Flood Plain	Slopes 15-35%	Slopes >35%	Overlay	Protected
45	Jenne Butte – Northwest Slope	78	U	LDR-7		N	N	Y	Y	SS	Y
44	Jenne Butte – Top	76	U	LDR-7		N	N	N	N	NR	Y
13	Mt. Hood Community College	75	W	LDR-7		Y	Y	Y	N	NR	Y
27	Johnson Creek–SE Hogan–182 nd Ave.	75	R	LDR-7	MDR-24	Y	Y	Y	N	NR	Y
5	Division – Powell Wetland	70	W	LI		N	Y	N	N	NR	Y
6	Fujitsu Forest and Wetland	63	W	LI		N	N	N	N	None	N
16	Kelly Creek – Powell-Salquist	63	R	LDR-7		Y	N	N	N	NR	Y
21	Johnson Creek Tributary – Kelly Ave.	62	R	LDR-7		Y	N	Y	Y	NR	Y
30	Johnson Creek Tributary – Thom Park	62	R	LDR-7		Y	N	N	N	NR	Y
38	Grant Butte – West Slope	59	U	LDR-7		N	N	N	Y	NR	Y
39	Grant Butte – East Slope	59	U	LDR-7		N	N	N	Y	NR	Y
41	Walters Hill Complex – South Facing	59	U	LDR-7		N	N	Y	Y	SS	Y
19	Johnson Creek Tributary – Regner Rd.	58	R	LDR-7		N	N	Y	N	NR	Y
40	Walters Hill – Top and North Slope	58	U	LDR-7		Y	N	Y	Y	SS	Y
8	Wetland Forest–Marine Dr.-Interlachen	55	W	LI		N	N	N	N	None	N
42	Walters Hill Complex – North Facing	54	U	LDR-7		N	N	Y	Y	SS	Y
43	Jenne Butte – South Slope	51	U	LDR-7		N	N	Y	Y	SS	Y
7	Fujitsu Lakes	50	R	LI		N	N	N	N	NR	Y
22	Johnson Creek Tributary – Helney Rd.	49	R	LDR-7		Y	N	Y	N	OS/SS	Y
1	Log Ponds & Riparian Area – City Hall	48	W	TDD		N	N	N	N	None	N
37	Grant Butte – South Slope	48	U	LDR-7		N	N	N	Y	NR	Y
17	Kelly Creek – South of Salquist	46	R	LDR-7		Y	N	N	N	OS	Y
36	Grant Butte – Northwest Slope	46	U	LDR-7		N	N	N	Y	NR	Y
2	Wallula Ave. – East of 13 th St.	44	W	MDR-24		N	N	N	N	NR	Y
9	Cottonwood Forest – Marine Dr.	44	W	HI		N	N	N	N	None	N
15	Kelly Creek–Kane Rd.-Powell Valley Rd	44	R	LDR-7		Y	Y	N	N	OS	Y
35	Grant Butte – Middle	44	U	LDR-7		N	N	N	Y	NR	Y
10	Columbia Slough	42	R	HI	LI	N	Y	N	N	NR	Y
34	Grant Butte – Top	42	U	LDR-7		N	N	Y	N	NR	Y
25	Butler Creek – Upper	41	R	LDR-7		Y	Y	Y	N	OS	Y
33	Grant Butte – North Slope	39	U	LDR-7		Y	N	Y	Y	NR	Y
3	Fairview Creek – Burnside-Birdsdale	38	R	BP	LDR-7	N	Y	N	N	FP	N
23	Butler Creek – Lower	37	R	LDR-7		Y	Y	N	N	OS	Y
4	Fairview Creek – Division-Birdsdale	36	R	HI	LI	N	Y	N	N	FP	Y
20	Johnson Creek Tributary – Meadow Ct.	36	R	LDR-7		N	N	N	Y	SS	Y
11	Kelly Creek – North of Division	35	R	MDR-12	LDR-7	Y	Y	N	N	OS	Y
32	Southeast of Palmquist/Hogan	34	U	HI		N	N	Y	N	SS	Y
26	Johnson Creek Tributary – 190 th Ave.	33	R	LDR-7		N	Y	Y	N	SS	Y
28	Johnson Creek Corridor – 182 nd -174 th	33	R	LDR-7	MDR-24	Y	Y	N	Y	NR	Y
29	Johnson Creek Tributary – Towle Rd.	33	R	LDR-7		Y	N	Y	N	OS	Y
14	Kelly Creek – Kane Rd.-Division	32	R	MDR-24	LDR-7	Y	Y	N	N	OS	Y
24	Binford Lake	29	R	LDR-7		Y	Y	N	N	OS	Y
18	Johnson Creek Trib. – West of Hogan	19	R	LI		N	N	N	N	None	N
12	Burlingame Creek	16	R	LDR-7		Y	Y	N	N	OS	Y
31	McGill Property	6	U	LI	BP	N	N	N	N	None	N

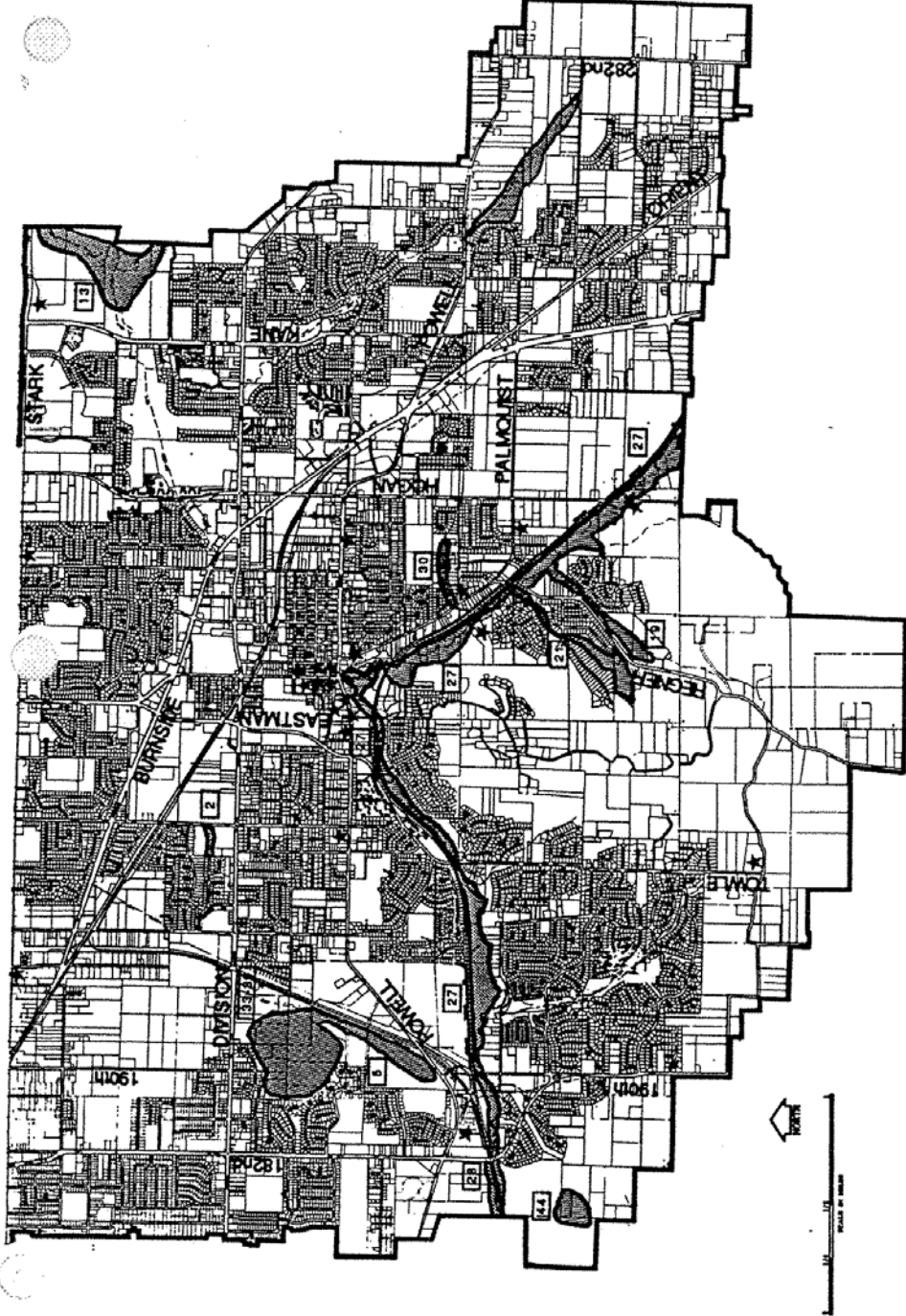
SS: Steep Slopes Area (15%+)
 FP: 100-Year Floodplain
 NR: Natural Resource

U: Upland
 W: Wetland
 R: Riparian

SOURCE: Gresham Natural Resources Inventory (1988)

Oct. '89

MAP 2



The Nature Conservancy describes the Hogan's Cedar as, "...a true breeding mutant columnar form of the western red cedar. This new variety is disease resistant, especially to root rot. It is a particularly beautiful tree, and as far as we know, occurs naturally only at this site."

The site referred to is adjacent to Johnson Creek near SE: Hogan Rd. in an area known as Ambleside. The stand of Hogan's Cedars is in private ownership, scattered over an area of approximately 30 acres and 10 tax lots. Discussions with various property owners indicate that they highly value the trees and that they are considered an irreplaceable element of the Ambleside area. Nevertheless, these trees are subject to potentially conflicting uses in the form of increased residential development and occasional public improvements. (The original right-of-way for the defunct Mt. Hood Freeway would have obliterated this grove.)

2.330 VISUAL RESOURCES

Gresham has a geographic setting which bestows on the city a number of notable visual amenities. The city sits on a rise overlooking the Columbia River, encompassing buttes and hillsides to the south, with Mt. Hood dominating the view to the east. This setting and its visual amenities contribute substantially to the attractiveness of the community as a whole. In addition, features such as the Columbia River, Mt. Hood, Grant Butte, and Walters Hill serve as landmarks which provide a sense of orientation. Views of these features enable residents and visitors alike to know that they are in Gresham.

While prominent visual resources are known to exist and their value in general to the community can be acknowledged, the identification of specific resources can be a highly subjective undertaking which does not lend itself to precise boundary delineation. Nevertheless, it does seem possible to group Gresham's most important scenic and visual resources into two broad categories: view corridors and scenic backdrops. Within these categories, actual resources can be identified and analyzed in terms of conflicting uses and activities which might affect them, and the economic, social, environmental, and energy (ESEE) consequences of either permitting or restricting the conflicting uses.

2.351 Signs and Visual Resources

Gresham is fortunate to have an extraordinary variety of visual resources. Topographic backdrops range from spectacular views of the Cascade Range to the forested volcanoes that form a local backdrop in the south part of the city. On a smaller scale, broad stands of Douglas Fir extend across residential areas from Rockwood to the East Hill neighborhood. In addition, the architecture and landscaping of many buildings and sites in the city complement the natural backdrop, and have significant aesthetic value to Gresham residents.

These visual resources can be seen from most of the city's residential, commercial, and industrial areas, and, though some of the features themselves may be protected, most of the views are not. Citizens involved with the update of the Community Development Plan have reviewed a wide range of potential impacts on visual resources, and identified signs and above-ground utility lines as features with a potentially significant impact; of these, sign controls are

the most important tool for protecting visual resources, since existing above-ground utility lines are: generally located along older county right-of-way, and Gresham development standards require that new utility lines be buried.

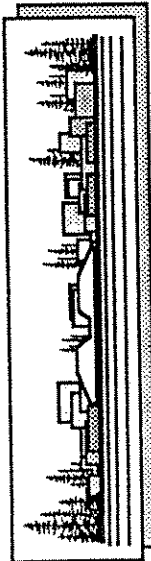
The recurring theme in citizen discussions, as well as recent literature regarding sign control, that signs should serve as a means to identify a site or activity, not distract or confuse motorists, or demand attention. Under this premise, excessive signage that detracts from the aesthetic quality of the landscape, such as large signs that obstruct views and create a cluttered street scene, should be discouraged. These signs have an unnecessary impact on visual resources. However, the cumulative effect of all signs should be considered as well, since close spacing of relatively small signs could have a similar, unsightly impact.

Communities across the nation have identified signs as a source of visual clutter and negative impact on visual resources. During the past two decades, sign codes have become more restrictive in an effort to reduce the visual impact of signs. While in the late 1960's, this effort was characterized by federal highway beautification programs, most recent sign control efforts have occurred at the local level. Sign ordinances range from extremely aggressive campaigns to limit signage, such as the City of Houston, where the Gateway Project includes the removal of billboards, large commercial Signs and above-ground utilities, to the City of Portland, where sign standards are generous, and the billboard industry is guaranteed a minimum number of signs under a "billboard bank" system.

Gresham's sign standards have eroded from a relatively stringent code in 1980, to a more lenient set of sign standards today; to gauge Gresham's standards in comparison to other jurisdictions in Oregon, a sign standards study was conducted in 1987. The study surveyed Oregon's 12 largest cities, and was focused on an analysis of standards for freestanding signs, and general sign code policies (See Figure 2-4).

Of the cities surveyed, Gresham permits the largest sign area for freestanding signs; Gresham's sign height regulations rank fifth at 25 feet, with several cities permitting thirty foot signs. Eight of the cities reported that the current sign code was at least as restrictive as the previous code, and five cities include amortization programs in the sign code.

FIGURE 2-4



Gresham Periodic Review

Comparative Sign Standards Matrix Of Oregon's Twelve Largest Cities

	MAX AREA (SQUARE FEET)		MAX HEIGHT		MAX AREA (SQUARE FEET)		MAX HEIGHT		MAX AREA RANGE (SQ FEET)		HEIGHT RANGE		MAX AREA RANGE (SQ FEET)		HEIGHT RANGE		MORE OR LESS RESTRICTIVE THAN PREVIOUS ORDINANCE	AMORTIZATION PROGRAM	AMENDMENTS INITIATED	
	COMMERCIAL	INDUSTRIAL	INDUSTRIAL	COMMERCIAL	INDUSTRIAL	COMMERCIAL	INDUSTRIAL	COMMERCIAL	INDUSTRIAL	COMMERCIAL	INDUSTRIAL	COMMERCIAL	INDUSTRIAL							
April 1988																				
Albany	160	30'	160	30'	50-160	15-30'	160	30'	15-32	8-15'	15-32	15-32'	15-32	15-32'	15-32	15-32'	more	yes	public	
Beaverton	32	15'	32	8'	15-32	8-15'	32	8'	15-32	8-15'	15-32	15-32'	15-32	15-32'	15-32	15-32'	more	yes	public	
Corvallis	200	30'	200	30'	100-200	20-30'	200	30'	100-200	20-30'	100-200	20-30'	100-200	20-30'	100-200	20-30'	more	yes	public	
Eugene	200	30'	200	30'	100-200	20-30'	200	30'	100-200	20-30'	100-200	20-30'	100-200	20-30'	100-200	20-30'	more	yes	public	
Gresham	400	25'	400	25'	40-400	25'	400	25'	40-400	25'	40-400	25'	40-400	25'	40-400	25'	less	no	private	
Hillsboro	*	*															*	*	*	
Lake Oswego	32	18'	32	18'	32-64	18'	32	18'	32-64	18'	32-64	18'	32-64	18'	32-64	18'	more	no	public	
Medford	150	20'	200	24'	36-150	9-20'	200	24'	36-150	9-20'	200	24'	200	24'	200	24'	less	no	public	
Portland	300	30'	300	30'	50-300	10-30'	300	30'	50-300	10-30'	50-300	10-30'	300	30'	300	30'	same	no	courts	
Salem	350	35'	350	35'	150-350	30-35'	350	35'	150-350	30-35'	150-350	30-35'	150-350	30-35'	150-350	30-35'	same	no	public	
Springfield	200	30'	100	30'	32-200	8-30'	100	30'	32-200	8-30'	32-200	8-30'	100	30'	100	30'	less	no	private	
Tigard	135	22'	135	22'	70-135	20-22'	135	22'	70-135	20-22'	70-135	20-22'	70-135	20-22'	70-135	20-22'	more	yes	public	

NOTES - Some jurisdictions, such as Gresham and Lake Oswego, permit larger signs based on structure or street frontage.

- Several jurisdictions, including Springfield, Albany, and Lake Oswego, permit larger signs for sites with freeway frontage.

- Though not considered in this study, wall sign area limitations were generally within the range of freestanding sign limits.

Though Gresham's sign standards are not particularly stringent, two aspects of the city's sign code are unique, and quite effective in protecting visual resources. First, the city's standards permit signage based on frontage; this approach helps to minimize sign clutter, and in many cases, relates the extent of signage to the scale of a site or activity. Secondly, the concept of a multi-business complex has reduced the visual impact of signage at many new commercial centers; relating collective signage to these sites is a logical extension of the intended function of a shopping center, where other site components, such as parking, landscaping, access, and often architectural features help to create a unique identity.

While these findings generally support limiting signage in the interest of protecting visual resources, there may be situations where a particular sign is of such value to city residents as an aesthetic, cultural or symbolic landmark that is popularly regarded as a unique visual asset to the community. While these exceptional signs are not necessarily significant as Historic or Cultural Resources (Section 3.120 of Volume I contains findings on Historic and Cultural Resources), they are usually old and appear in their original condition, and because of their age and unique visual impact have become a familiar, positive element in the community's identity. Since most signage in Gresham is of recent construction, the number of exceptional signs is very limited. In addition, there are some areas in the city that, because of their unique or special development pattern, may justify exceptions to certain sign standards. For example, A-Board signs may be appropriate in areas such as the Main Street District and large shopping centers, where the patronage is and the development pattern and sign standards make freestanding signs difficult or impossible to construct. Another example is when community service activities are permitted in a residential structure, and signage has the potential to negatively impact the character of the surrounding neighborhood.

As the sign matrix demonstrates, many cities used amortization programs to bring all signs into compliance with their sign code in a timely and fair manner. Some cities use valuation formulas to determine when signs - will be required to comply, with the assumption that some signs reflect a greater investment by the owner, and thus should have a more extended non-conforming status than a sign of lesser value. Other cities simply use an amortization deadline, by which time all signs are required to conform to the code. These deadlines are usually based on a five, seven or ten year "amortization period", during which all signs are encouraged to comply voluntarily.

While enforcement of the valuation approach is rather expensive, the amortization method has proved both effective and easier to enforce. The City of Tigard began to enforce their amortization deadline in 1988, and the City of Beaverton is scheduled to enforce their deadline this year. While non-conforming signs will almost certainly remain at the end of any amortization period, studies suggest that most signs come into compliance voluntarily, or through a change in business. This was the case in Gresham in 1984; although the City did not have adequate staff resources to enforce the amortization deadline, an inventory of non-conforming signs found that a majority had already complied with the sign code. A recent non-conforming sign inventory on a larger scale showed similar results in the City of San Diego. Compliance during the amortization period can be attributed to a number of factors, including the inherent practical life of a sign, the natural turnover of established businesses, the high failure

rate of new businesses and the negative image that an outdated or poorly maintained sign can project for an establishment (see Appendix 35).

(Amended by ordinance No. 1134, passed on June 27, 1989, effective July 27, 1989.)

2.352 View Corridors

View corridors can be thought of as lines of sight which have as their object a prominent and appealing visual element. Various view corridors oriented toward such features as Mt. Hood can be found throughout the city. However, there are three particular view corridors which can be considered significant not only because they naturally direct the eye to a scenic focal point, but also because they are readily apparent and accessible to large numbers of people. These are described below:

Burnside St. Eastbound – Fariss Rd. to Cleveland Ave.

When traveling eastbound on this portion of Burnside St., whether in a vehicle or on foot, Mt. Hood dominates the horizon on clear days or when there is a high cloud ceiling. The appearance of the mountain is made more dramatic by the gentle slope which must be climbed when approaching the Fariss Rd. intersection from the west, and which obstructs the view until the top of the rise is reached. Continuing eastward on Burnside St., Mt. Hood remains prominent until the Cleveland Ave. intersection is reached. At that point, Burnside curves toward the south—southeast and conifers obstruct the view.

The primary land use district along this portion of Burnside St. is General Commercial, with an area of Transit Development District. commercial developments which develop in such a manner as to obscure the view of Mt. Hood along this street segment must be considered conflicting uses... In addition, public improvements, such as utility poles and power and communication lines, may conflict with the preservation of this view corridor.

Stark St. Eastbound – 223rd Ave. to East City Limits

This segment of Stark St. defines a view corridor which is comparable in its orientation to Mt. Hood with the Burnside view corridor described above, when traveling eastbound on this portion of Stark St. the relatively unobstructed view of Mt. Hood comprises a significant scenic resource.

Plan map designations along this segment of Stark St. are primarily residential, with stretches of office/residential and commercial adjacent to the intersections at 223rd Ave., 242nd Ave. and Kane Dr. Again, any of a wide range of development activities permitted in these districts which obstruct the relatively clear view of Mt. Hood in this area could be considered conflicting uses.

North Side of Marine Dr. – 185th Ave. to Interlachen Lane

Northward of this portion of Marine Dr. is an open view of the Columbia River, McGuire Island, and the slopes of the Washington side of the river. The closeness of the river, the elevation of Marine Dr. and the expanse of water both upstream and downstream make this a significant scenic resource in Gresham. Houseboat moorages existing along this portion of the river shoreline contribute an additional element of visual interest to the scene.

The very narrow strip of land lying between Marine Dr. and the river is designated for both Light Industrial and Heavy Industrial uses. Such uses could also conflict with the quality of the view from this location, although there is very little developable land lying between Marine Dr. and the shoreline. At this time, existing vegetation and a few small signs make up the only notable obstructions to an otherwise clear view of the Columbia River in this area.

ESEE Consequences

Economic consequences could result from measures which might be taken to ensure protection of these view corridors. Such measures could include requirements that new buildings be set back that building heights be restricted, and that commercial sign structures and other forms of “street furniture” also be set back from the edge of the Burnside St., Stark St. and Marine Dr. rights-of-way. Likewise, there would be considerable expense involved in a requirement that utility lines be relocated underground in order to preserve or enhance these view corridors. To the extent that such measures add expense to development activity, adverse economic consequences could result. At the same time, however, such measures could yield positive economic consequences if, as a result, these street segments make the general area more attractive for new development because of their aesthetic appeal.

There may be some adverse social consequence resulting from elimination of these view corridors due to new development activity. The sense of place, the spatial orientation, and the visual texture which view corridors bring to residents of the community could be diminished or lost as these resources are replaced by relatively monotonous, urban streetscapes which tend to be indistinguishable from one city to another.

Certain environmental consequences might also be expected from measures to protect these view corridors. Overall, the quality of the visual environment in the immediate area would be enhanced by provisions which prevent the close encroachment of buildings to the street edge, or which preclude large, distracting signs from obstructing a scenic focal point which otherwise would be visible.

It is not expected that any significant energy consequences would result either from taking steps to preserve the quality of these view corridors or from permitting uses and actions which conflict with these scenic resources.

Based on this examination of potentially conflicting uses and ESEE consequences, policies and strategies which restrict development actions along these view corridors would be appropriate. Prohibition of all development actions which might conceivably obscure or degrade existing scenic views along these corridors is not warranted. However, a concern for protecting the outstanding scenic quality of these particular view corridors may be added to the rationale for maintaining limits on the height and placement of structures, signs, and other improvements in these areas and throughout the city.

2.353 Scenic Backdrops

In contrast to view corridors, which generally have a linear alignment and are oriented to distant objects, scenic backdrops provide a more local source of visual relief as well as an immediate sense of orientation. By their nature, prominent topographical features in Gresham present themselves as a visually pleasing backdrop and contrast to the rapidly expanding urban landscape which is developing on adjacent flatlands.

The slopes of Walters Hill, Grant Butte, and Jenne Butte are always visible from virtually any location in Gresham. Each of these features reaches an elevation in excess of 600 ft. whereas most adjacent lands are at an elevation of 250 to 300 feet. Their steep, heavily wooded slopes also provide wildlife habitat. Woodland areas found on these slopes are important in addition for their value in stabilizing hillsides and minimizing erosion and runoff. There are approximately 1,500 acres of woodland in Gresham, and nearly all of this is found on the steep slopes of Walters Hill, Grant Butte, and Jenne Butte. If the large areas of woodlands on these slopes were removed, the visual quality of these features would be seriously diminished, hazards to development would increase, wildlife habitat would be reduced and water quality would suffer in wetlands and streams at the base of these slopes due to increased erosion.

All of Grant Butte, Walters Hill, and Jenne Butte are designated for low-density residential development. Full development of these slopes with dwelling units, and with the streets and utilities which accompany such development, would constitute conflicting uses having a negative impact on these scenic resources. In addition, removal of large areas of woodlands existing on these slopes must be considered to be in conflict with the scenic quality of these visual backdrops.

ESEE Consequences

The most effective means of preserving the scenic quality of these areas might be to prohibit future development activity, including the removal of any trees, on these slopes. Such action could be expected to have negative economic consequences for landowners who have anticipated eventual development of these lands, even at the relatively modest scale which would be dictated by slope-related constraints. On the other hand, negative economic consequences community-wide could result from degradation of the scenic quality of these hillsides. The appearance of these wooded uplands adds to the attractiveness of Gresham for all types of economic development activity taking place on sites other than Walters Hill, Grant Butte, and Jenne Butte.

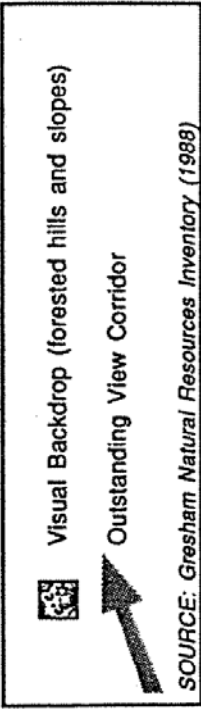
The social consequences of protecting these scenic resources or permitting conflicting uses are difficult to quantify or to identify precisely. However, it seems certain that the sense of place, the spatial orientation, and the rich visual texture which scenic backdrops such as these bring to residents of the community would be diminished or lost if these slopes were cleared of vegetation or developed as residential subdivisions.

The environmental consequences of permitting conflicting uses on the steep slope portions of these areas could, be severe. In addition to diminishing the scenic quality of the community in general, removal of large areas of vegetation on steep slopes would increase the amount and rate of surface water runoff, increasing siltation and the severity of flooding in nearby streams. In such situations, the soils become much less stable and bearing loads from development in the form of buildings and roads may exceed the capacity of the ground to support them. Steep slope areas on these upland resources also serve as wildlife habitat. As noted in the Inventory of Significant Natural Resources and Open Spaces, a wide variety of birds, small and large mammals, and vegetation are found on the slopes of Jenne Butte, Grant Butte, and Walters Hill. Dense residential development or removal of trees for their value as timber would have direct, negative consequences on the wildlife habitat values of these areas.

There are no significant energy consequences from either allowing conflicting uses in these scenic backdrop areas or preserving them from development.

Based on this examination of potentially conflicting uses and ESEE consequences, policies and strategies which restrict development actions on the highly visible, steep slope portions of Grant Butte, Jenne Butte, and Walters. Hill would be appropriate. Prohibition of all development actions which might conceivably affect the scenic quality of these resources is not warranted. However, measures such as a reduction in residential densities on steep slopes and some control over commercial-scale tree harvesting would result in reasonable development potential for these areas while ensuring their continued existence as outstanding scenic resources in the community.

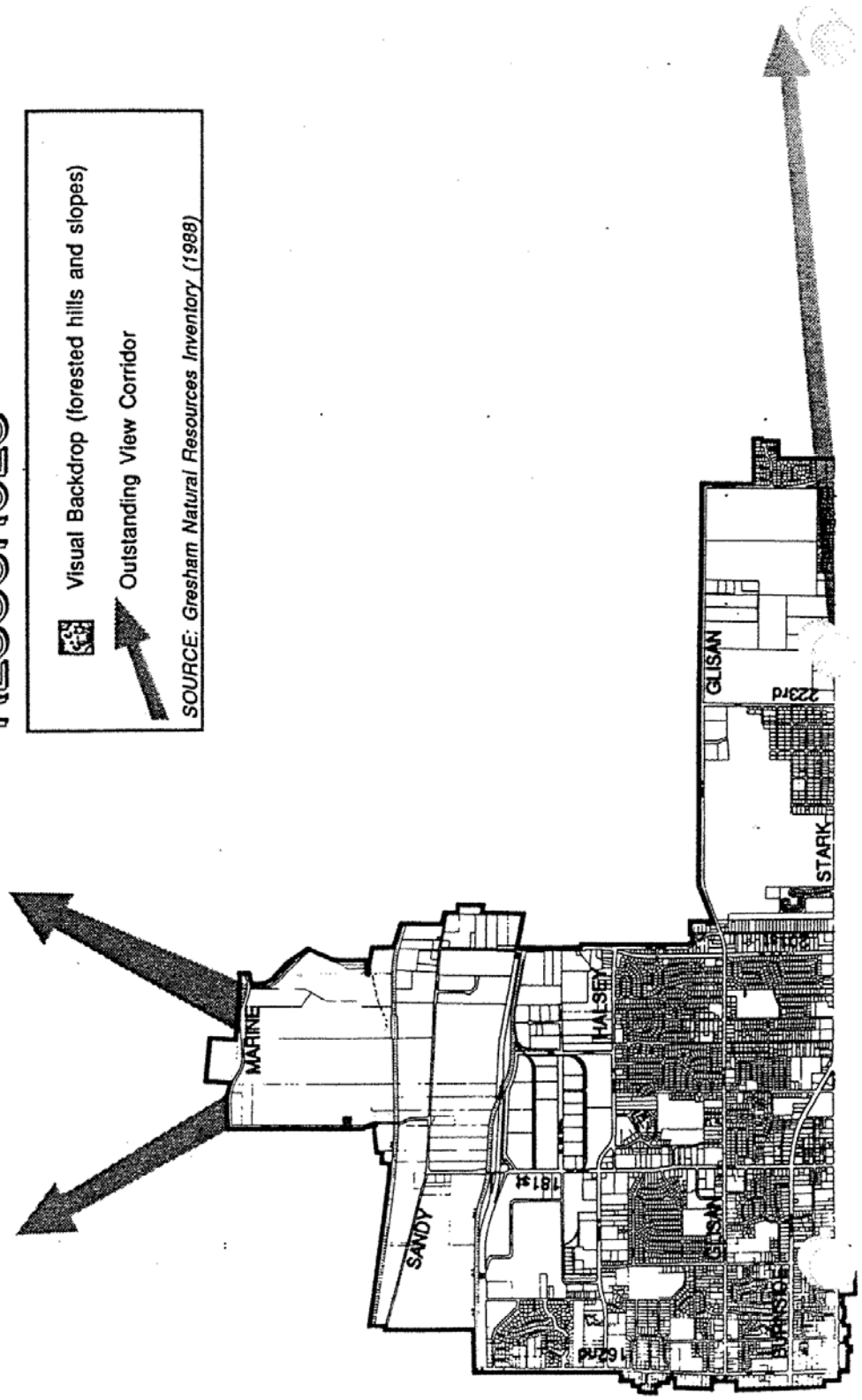
MAP 3
GRESHAM COMMUNITY DEVELOPMENT PLAN
SCENIC & VISUAL
RESOURCES



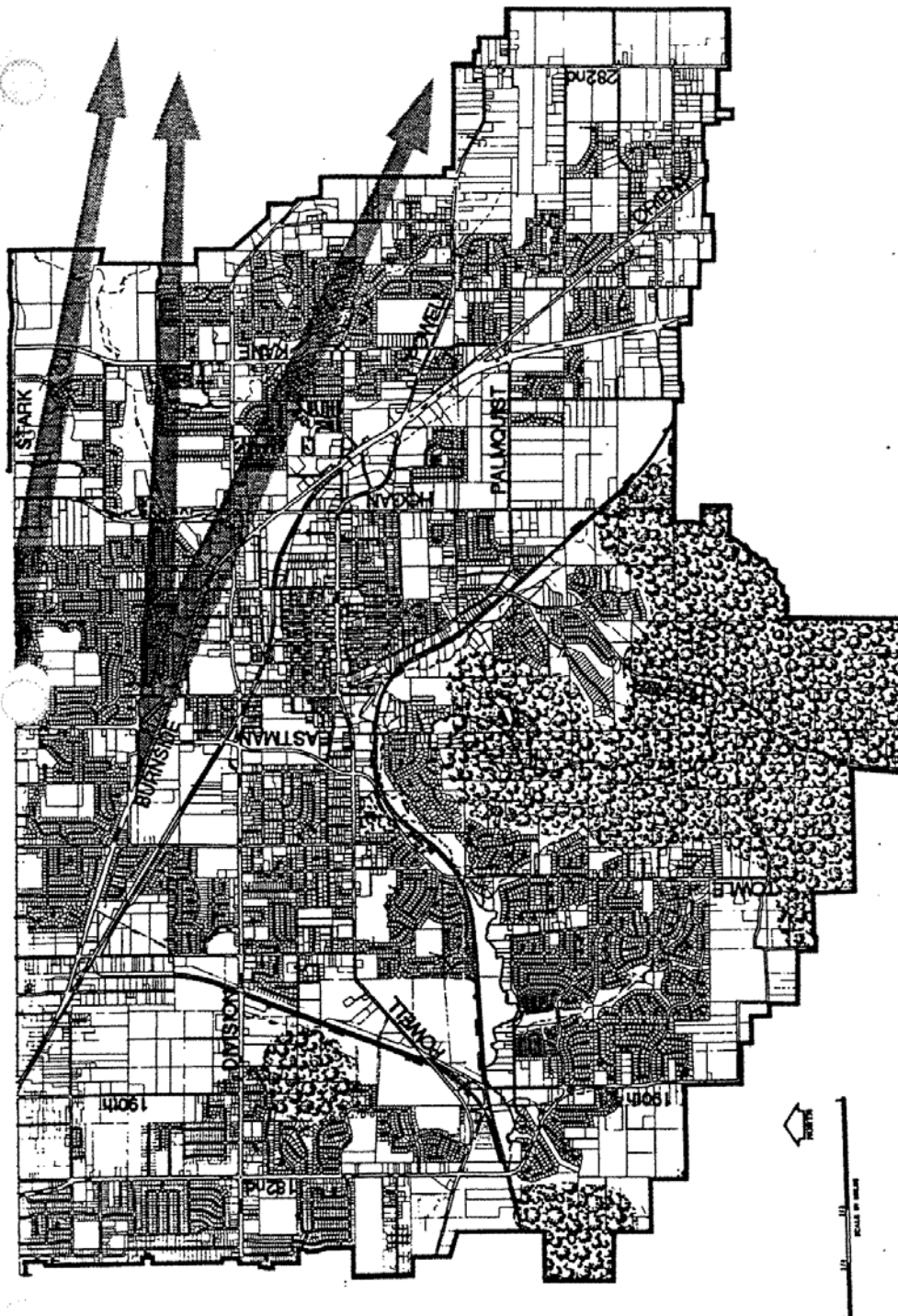
 Visual Backdrop (forested hills and slopes)

 Outstanding View Corridor

 SOURCE: Gresham Natural Resources Inventory (1988)



MAP 3



2.360 MINERAL AND AGGREGATE RESOURCES

Mineral and aggregate resources are natural resources of a non-renewable nature which are crucial to urban development. No metallic mineral resources are known to occur in the Gresham vicinity. Non-metallic mineral resources, however, in the form of clay and aggregate, occur in Gresham. There are two particular areas in which large quantities of aggregate and clay resources have been identified and are being extracted. Along both the east and west sides of 190th Ave. between Stark St. and Division St. is an area of some 170 acres which is in active use as sand and gravel quarries. East of SE Hogan Ave., north of Johnson Creek, there is a pit from which clay is extracted and manufactured into bricks.

The most important planning issues involved with mineral and aggregate resource management are ensuring that in-place and migratory sites are both utilized effectively now and managed to facilitate future use, and ensuring that adverse environmental impacts resulting from mining and processing are minimized.

2.361 Aggregate Resources

Aggregate resources are literally the foundations of urban development. They are required for nearly all public and private building, including roads and sewer lines. So great is our reliance upon aggregate resources that the annual per capita consumption of sand and gravel has been estimated at 25 tons. Aggregate is comprised of sand, gravel, and crushed rock. The value of these three resources greatly exceeds the value of all other minerals produced in the State of Oregon. Aggregate is heavily used in all aspects of the construction industry, from homes to roads to dams, and is a prerequisite for continued economic growth and development.

The Willamette valley produces and consumes two-thirds of the state's total aggregate resources. Rapidly urbanizing areas place a two-fold demand/supply constraint on available aggregate resources. Urbanization places a heavy demand for aggregate products while simultaneously covering over other potential sand and gravel deposits. A prime example of this situation is the urbanized east Multnomah County area, where much of the land area overlays aggregate deposits. As local resources are depleted, it will be possible to import aggregate, but only at increased cost. It has been estimated that the price of sand and gravel doubles for every ten miles hauled.

Per capita aggregate usage, nationwide, has been steadily on the increase. Analysis of the uses of sand and gravel indicates that 80 to 85% of aggregate resources are used for building or paving; some pertinent facts are cited below:

- * A typical housing unit requires approximately 40 cubic yards of concrete.

- * A cubic yard of concrete contains 1 1/4 to 1 1/3 cubic yards crushed aggregate, about 460 pounds of

cement, and 15 to 20 pounds of water, and weighs 4,000 pounds.

* Each housing unit generates a secondary market for aggregate equivalent to more than 100 cubic yards per house.

* A typical subdivision residential collector street (40t paved width) requires 232 tons of aggregate for road base and 47 tons of crushed rock for asphalt paving for every 100 linear feet.

All forms of urban development, public and private, use vast quantities of aggregate. The relatively high consumption rates in the Portland area are expected to continue for the foreseeable future.

Aggregate resources can be categorized generally into migratory resources and in-place resources. Both types can be found in and adjacent to the Gresham planning area. Migratory resources are affected by the flow of water. Both the Willamette River and Columbia River systems carry considerable amounts of sand and gravel. Larger deposits are found in the form of channelbars and point bars. The deposits are exploitable by point bar mining or scalping during low stream flow periods. Considerable volumes of sand are removed from the Columbia River by drag bucket and suction dredging. Migratory deposits are significant sources of aggregate in that they are partially recharged during annual high stream flow periods.

Other than the Columbia River, no migratory aggregate sources are known to exist within the immediate Gresham area. The Columbia does offer potential as a rechargeable source of masonry sand; however, little gravel is available from this source due to upstream dams and controlled river flows. Perhaps the greatest significance of the Columbia River with respect to aggregate resources is its barge traffic from aggregate deposits located above Bonneville Dam. Deposits below the dam contain large amounts of pumice and are not suitable for concrete or asphalt production. Although the Portland metropolitan area currently receives much of its aggregate from Willamette River deposits, when these deposits are depleted, more emphasis will be placed on upstream Columbia River deposits.

Most of east Multnomah County sits atop fluvio-lacustrine sand and gravel deposits of the recent and late Pleistocene epoch. Briefly, these deposits were laid down approximately 13,000 years ago by a lake which covered much of the Columbia River region and Inland Empire. The deposits are stratified to unsorted and size ranges from sand to cobbles to boulders. These formations are the source of Gresham's in—place aggregate resources.

Existing gravel pits within the city are utilizing the gravelly phase of the lacustrine deposits, consisting of coarse gravel with a sandy matrix. The gravelly phase is found throughout the north and west regions of the city. Further westward, the deposits become less gravelly and increasingly sandy. To the east, cobbles and boulders are more predominant, some reaching sizes of seven to eight feet in diameter. The majority of the gravel being mined is basaltic with some

quartzite and granitic rock. The deposits extend down to approximately 150 ft., averaging 30 to 80 ft. in thickness. The material is of good quality for construction purposes. Much of it is used in making concrete.

Consumption rates at sand and gravel operations within Gresham have risen and fallen somewhat in recent years, paralleling the level of building activity and the overall urbanization of east Multnomah County. The location of these sites is such as to serve most of east Multnomah County as well as all of Gresham.

2.362 Clay Resources

Clay is a natural, earthy, fine-grained material composed of rock or mineral fragments less than 0.002 mm in size and a group of crystalline minerals known as clay minerals. It is a commonly occurring commodity in the soil profile of northwestern Oregon. Most clay minerals originate under conditions associated with water. Clay beds are typically deposited by water transport or hydrothermal action. Where clay is found deeply bedded into more or less pure form, a potentially exploitable natural resource is present.

The major use of clay is for common and structural brick and tile production. The economics of brick and tile production are sensitive to factors other than the availability of clay. Transport costs to market and energy costs are significant factors affecting the long-run viability of this activity. Out-of-state producers are able to compete effectively in the Oregon market, offsetting higher transport costs with lower unit production costs.

In 1948 there were 28 brick producers in Oregon. By 1979 only four were remaining, one of which is in Gresham. The reasons for the decline are many: technological obsolescence, fluctuating demand, and land use conflicts are the major sources. Over time, the demand for brick and concrete for structural purposes has fluctuated. Other uses of clay, such as architectural facade and clay tile, are unlikely to be displaced by concrete. It is therefore critical that existing sites and operations be utilized wisely.

In the southeast portion of the city and east toward the Sandy River, bedded clay deposits are found in the form of clayey silt, and in conjunction with Sandy River mudstone. These deposits are relatively high in iron, resulting in fired brick of a red/brown color. The formations may vary in thickness and purity, but are found uniformly close to the surface. One particularly desirable deposit is found near SE Hogan Rd. north of Johnson Creek (SW 1/4, Sec. 14, T15S, R3E). Here, Columbia Brick Works, Inc., maintains a surface mine and brick manufacturing plant.

2.363 Inventory of Aggregate and Clay Resources

While aggregate and clay resources can be found as elements of soil types existing throughout Gresham, there are only two locations where these resources are both undisturbed by urban development and found in sufficient quantities to make commercial extraction feasible. These locations are along both sides of 190th Ave., between Division St. and SE Yamhill St., and at the site of Columbia Brick Works.

Vance Pit

On the west side of 190th Ave. north of Division St. is Vance Pit, a sand and gravel quarry operated by Multnomah County. Vance Pit covers approximately 27.5 acres. In 1987 26,300 cubic yards of crushed rock were mined from Vance Pit. In recent years, the average annual output of the pit has been running at approximately 60,000 cubic yards of rock. In addition to the active quarry area, the county owns approximately 15.75 acres of park land between Vance Pit and 182nd Ave. The county will be preparing a master plan for the Vance Pit and adjacent park area during 1988. At present, it is expected that as the existing pit resources are depleted, the operation will expand into the park site. Through this expansion of the quarry area, the county projects continuing operation of the pit over the next 20 to 30 years, given current rates of extraction.

Rogers Construction Co.

Abutting the east side of 190th Ave. south of Yamhill St. is a sand and gravel quarry owned and operated by Rogers Construction Co. and its subsidiary, Oregon Asphaltic Paving Co. This quarry encompasses approximately 36 acres. It is estimated that this quarry contains a total of some six to seven million cubic yards of aggregate material, most of which remains to be extracted. Based on recent trends, it is estimated that this quarry will continue to be in production for the next 10 to 20 years.

Gresham Sand and Gravel Co.

Directly south of the Rogers quarry, on the east side of 190th Ave., is the Gresham Sand and Gravel quarry. Gresham Sand and Gravel Co. owns approximately 100 acres on this site. Some of this area has been mined in the past and is now occupied by lakes where the water table has submerged these previous quarry pits. During 1987 approximately 300,000 cubic yards of aggregate material were extracted from this quarry. It is estimated by the operators of this quarry that there are sufficient aggregate resources to support its continued operation for the next 20 to 30 years.

Columbia Brick Works, Inc.

This surface mine and brick manufacturing plant have been in operation since 1906. In 1980 the clay pit and plant occupied a 55-acre site. Since that time, the brick works has acquired additional property south of Palmquist Rd. to hold in reserve for future mining. Also in 1980, the plant was consuming 25,000 to 28,000 cubic yards of clay annually, and producing 14,000,000

eight-inch face brick equivalents. In recent years, production has declined somewhat due to economic conditions. The depth and extent of clay deposits at this location are not known precisely, although a deposit life of 95 to 140 years has been estimated. This estimate could be extended as a result of the additional, recently acquired property.

Conflicting Uses

The three aggregate quarries located along 190th Ave. between Stark St. and Division St. have an industrial land use designation. Abutting the Rogers Construction Co. and Gresham Sand and Gravel Co. quarries to the east is additional industrial land. On the south is additional light industrial and commercial land. Adjacent to these quarries on the north and west are areas designated for low-density (LDR-7) and moderate-density (MDR-24) and high density (HR-60) residential uses.

The abutting industrial district permits a wide variety of manufacturing, assembly, and processing uses which are likely to require at least some outdoor storage. In the adjacent residential districts there are existing detached dwellings and attached, multi-family developments at densities ranging from five to 24 units per net acre. The noise, dust, and truck traffic generated by the quarry operations in these areas can result in conflicts with adjacent residential, commercial, and industrial uses, although the potential for conflict is greater with respect to adjacent residential uses.

Land use designations adjacent to the Columbia Brick Works site are residential to the north, east, and south. Across Hogan Rd. to the west is property designated industrial. Potentially conflicting uses for this operation are the same as those identified for the aggregate quarries, although the relatively isolated location of the clay pit and brick plant mitigate somewhat the extent of these conflicts at present.

ESEE Consequences

For reasons discussed above, the economic consequences of prohibiting or restricting activity at these sites could be severe. Aggregate resources and clay products are required for a wide variety of construction and development needs, both public and private. If these resources were not available from these operations, new development projects proposed for the local area would be forced to obtain aggregate materials and clay products from other suppliers more distant from Gresham and at greater cost. Multnomah County uses the output of Vance Pit for maintenance and construction of roads and streets which are vital for the economic development of the community. There would also be adverse economic consequences on these operations themselves, in the form of jobs lost. At the same time, the characteristics of these resource extraction operations have some negative economic consequences for nearby residential neighborhoods. Property values of nearby residential parcels may be adversely affected by the effects of unrestricted noise, dust, and heavy equipment traffic.

To the extent that the peaceful enjoyment of nearby residential properties is disturbed by the operation of these quarries and the clay pit, negative social consequences can be expected. Complaints of loud noises, dust, and unpleasant visual impacts are periodically reported to the

city, by residents living in close proximity to the quarries on 190th Ave. Unrestricted mining activities at these locations could be expected to result in more such complaints and an overall decline in the livability of nearby neighborhoods.







The environmental consequences of aggregate and clay extraction operations can be significant. Existing, natural ground surface features, such as trees, shrubs, and other ground covers, must be removed. This leaves gaping holes which increase in size as extraction activities increase, resulting in adverse visual impacts. If excavation is not carried out carefully, the sides of the pits may de-stabilize adjacent land areas, causing slides. Subsurface water resources may also be affected, sometimes lowering the water table of adjacent properties. As noted, the operation of gravel quarries involves considerable noise, both in the process of extracting the aggregate and in operating rock crushing equipment which turns the aggregate into a marketable resource.

The energy consequences which could result from prohibiting or tightly restricting the mining and processing of aggregate or clay would take the form of increased energy use required to meet local needs by obtaining these resources from more remote suppliers.

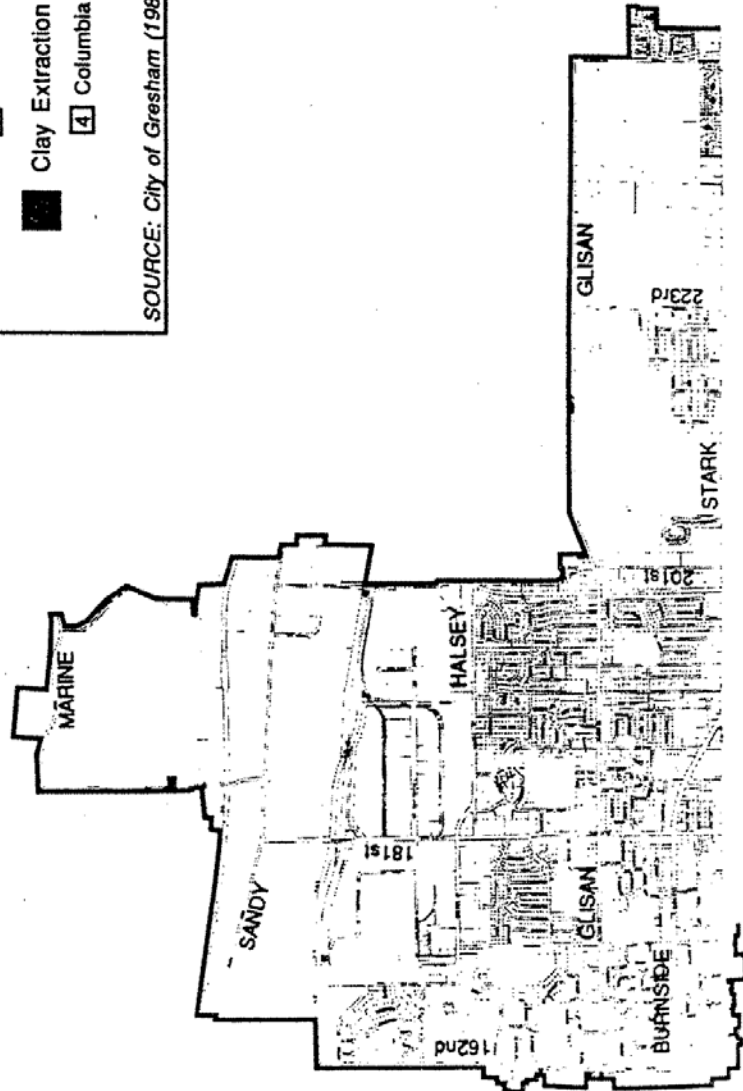
Based on the foregoing analysis of conflicting uses and ESEE consequences, it is clear that the functioning of these mining operations can have significant adverse impacts on adjacent uses, and that measures which might be implemented to prevent these impacts could impose significant adverse impacts on the mining operations. Given these conclusions, a program which would protect mineral and aggregate resources and extraction operations completely is not appropriate. Likewise, measures which would allow fully the conflicting uses identified above are not called for. Instead, policies and implementing measures should be adopted which limit conflicting uses. Specifically, mineral and aggregate resources must continue to be extracted where economically feasible, but such operations should take place in a manner which minimizes negative impacts on the value and enjoyment of nearby properties and on public facilities serving the area.

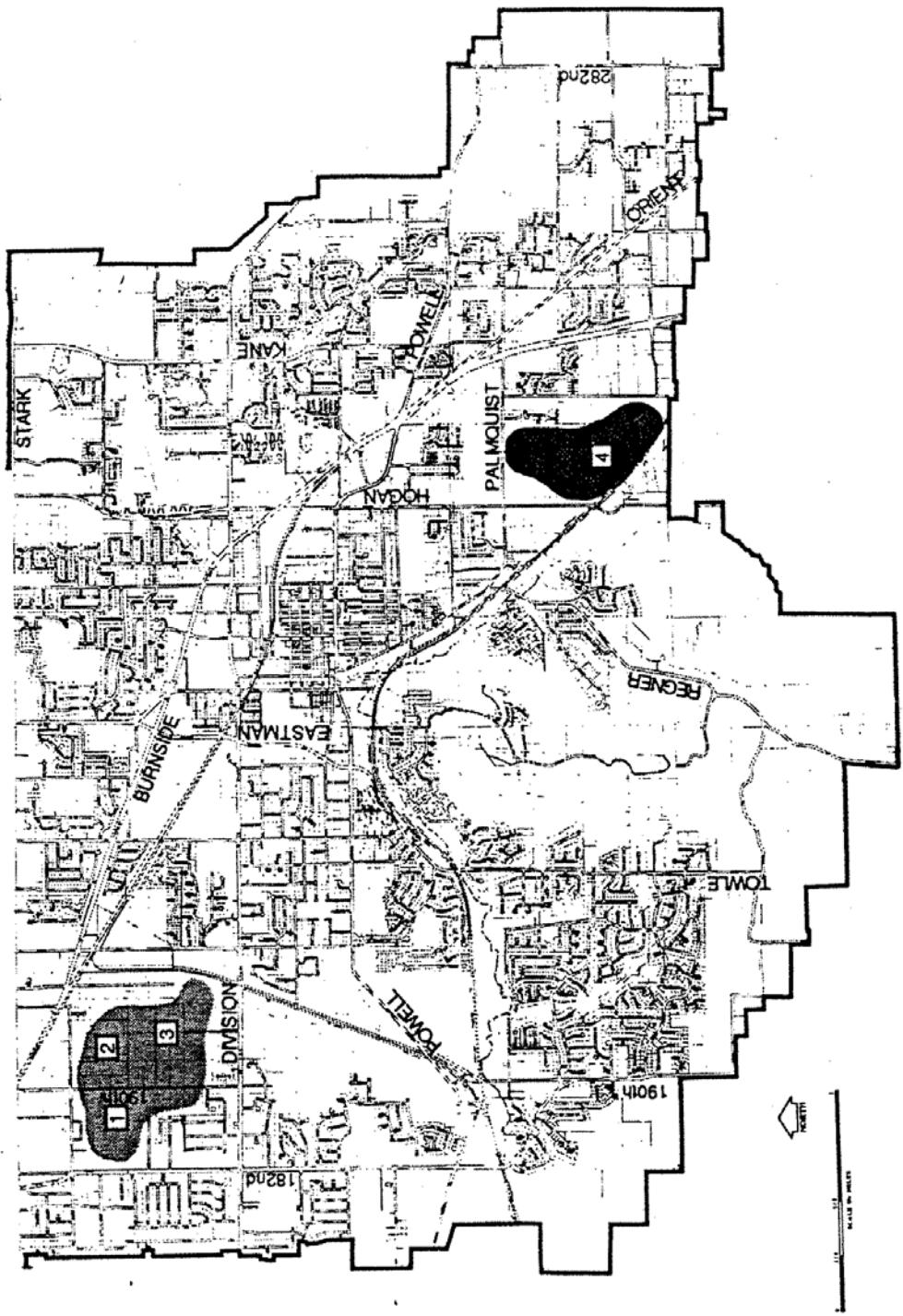
MAP 4
GRESHAM COMMUNITY DEVELOPMENT PLAN

**MINERAL & AGGREGATE
 RESOURCES**

	Rock and Aggregate Quarry Site
	Vance Pit
	Rogers Construction Co.
	Gresham Sand & Gravel
	Clay Extraction Site
	Columbia Brick Works

SOURCE: City of Gresham (1988)





2.370 RESOURCE CONFLICTS

Potential conflicts with preservation of Gresham's significant natural resources have been found and documented in the Inventory of Significant Natural Resources and Open Spaces. Similarly, conflicting uses have been identified for other types of natural resources, including mineral and aggregate resources, and outstanding scenic views and sites. A concern for protecting the most important of the community's natural resources while accommodating urban development leads to programs which limit conflicting uses to the extent necessary to achieve a balance between these conflicts. Uncontrolled urban development, if allowed to proceed without limits in sensitive areas, conflicts with Statewide Land Use Goal 5, "To Conserve Open Space and Protect Natural and Scenic Resources." Uncontrolled development of forested hillsides and sensitive floodplain areas is also in conflict with the intent of Statewide Land Use Goal 7, "To Protect Life and Property from Natural Disasters and Hazards." Regulation of development to minimize the threat of natural hazards therefore results, in many cases, in conservation of Gresham's significant natural resources. Extremely steep slopes (those in excess of 35%) pose severe constraints upon urban uses and should be subject to only minimal alteration or development activity. In addition to benefitting drainage management and preventing hazardous conditions, prohibition of steep slope development projects open space, forested areas, fish and wildlife habitat, and scenic resources. Prohibition of development in sensitive natural areas benefits flood: control efforts, reduces flood hazards, improves drainage management, preserves riparian vegetation, and protects fish and wildlife habitat. Total floodplain acreage in Gresham amounts to approximately 560 acres. Roughly half of this acreage, in areas adjacent to Johnson Creek, Kelly Creek, Beaver Creek, and portions of Fairview Creek and Columbia Slough, have been designated also as significant natural resource areas. Total acreage in excess of 35% slopes has been estimated at 618 acres.

Slopes between 15 and 35 percent, although posing severe constraints upon urban development, are appropriate for low-density uses if planned to overcome the particular constraints and if appropriate construction and site design requirements are followed. Where slopes between 15 and 35 percent coincide with natural resources, such as wildlife habitat, a resource use conflict may occur, as discussed in the Inventory of Significant Natural Resources and Open Spaces, adopted as an appendix to the Community Development Plan. Special regulations and guidelines for development within areas of 15 and 35 percent slopes can minimize resource use conflicts and accommodate urban growth while maintaining important natural resources. Regulations which minimize vegetation removal, preserve open space, and impose erosion and drainage controls are examples of actions which resolve conflicts between development needs and natural resources. In particular, prohibition of large-scale, commercial timber harvesting operations in steep slope areas would conserve soil, stabilize slopes, protect wildlife habitat, and preserve the scenic value of the wooded hillsides in Gresham. The Community Development Code is designed to resolve resource use conflicts in these areas through the establishment of special requirements. for development on slopes between 15 and 35 percent.

As discussed in Section 2.360, mineral arid aggregate resources come into conflict with urban uses as development often covers over underlying depositions. Conflicts also occur when

extractive operations interfere with incompatible adjacent land uses such as residential areas. These Potentially conflicting situations are resolved in Gresham through land use designations as shown on the Community Development Plan Nap. In addition, standards of the Community Development Plan require these operations to maintain adequate buffers from adjacent land uses and to minimize impacts of public facilities. The four existing surface mining operations in the city have been designated as industrial land to protect these resource areas from other competing uses.

Mining operations result in another type of resource use conflict, the rehabilitation and reclamation of depleted sites. State law (ORS 517.750 et seq.) regulates surface mining operations and requires reclamation plans and surety bonds to guarantee that the sites of these operations will be returned to productive use following depletion of mineral and aggregate resources.

2.380 ENERGY RESOURCES

There are no developed energy sources within the City of Gresham. All fossil and wood fuels, and electricity generated by hydro and nuclear power, come from sources outside the city. There are however, unconventional energy sources available within Gresham. These include solar and wind energy. Solar energy, in particular, holds promise as an alternative form of energy which could meet a significant amount of the energy demand for domestic space heating and water heating. The technology exists to take advantage of solar energy and wind energy for these purposes; such use should be encouraged. Such measures as the solar access provisions of Volumes iii and IV of the Community Development Plan call for residential subdivisions to be designed so that they take advantage of solar energy for space heating and water heating. Through these measures, buildings also should be oriented to achieve maximum solar gain with minimal interference from adjacent vegetation and structures.

2.381 Wind Power

Airflow through the Gresham area is usually northwesterly in spring and summer and southeasterly in fall and winter, interrupted infrequently by outbreaks of dry continental air moving westward through the Cascade passes. The average yearly wind speed is about eight miles per hour. In January, the mean wind speed reaches ten miles per hour, and in August and September the average wind speed is about six miles per hour.

The wind at a given site usually varies frequently in direction and its speed may change rapidly under gusting conditions. Its average velocity also usually changes significantly with the season of the year. In Gresham the amplitude of the winds of the winter months is almost twice that of the summer.

Assuming a particular wind machine harnesses 75 percent of the potential wind power, the best a small roto blade system (diameter of 11' 4") can produce is enough power to run two 100 watt light bulbs on an average each year. The best this system can produce is power through four 100 bulbs on an average during the month of January. During the lean months (September and October), the power available would be less than 100 watts of power.

Harnessing a cross sectional area of the wind stream of 1,000 square feet (or a roto blade diameter of 35' 8") a 75 percent efficient wind machine would average 2.37 kilowatts of power each year. This is enough power to run 23 100 watt light bulbs. This system would generate 5.15 kilowatts of power during the peak month of January, enough to run 51 100 watt light bulbs. Accordingly, the lean months would generate enough wattage to power 13 100 watt light bulbs.

Based on the wind speed means taken at the Portland International Airport, the average wind power potential in the windstream is equal to the following for each month (see Figure 2-5).

FIGURE 2-5

Potential Wind Resource			
MONTHS	MEAN WIND SPREAD (2:1)	100 SQ. FT. CROSS SECTIONAL AREA KW OF POWER	1000 SQ. FT. CROSS SECTIONAL AREA KW OF POWER
January	10.1	.515	5.15
February	8.9	.352	3.52
March	8.3	.286	2.86
April	7.2	.187	1.87
May	6.9	.164	1.64
June	6.9	.164	1.64
July	7.4	.203	2.03
August	7.0	.172	1.72
September	6.4	.131	1.31
October	6.4	.131	1.31
November	8.3	.286	2.86
December	9.5	.429	4.29
YEARLY	7.8	.237	2.37

SOURCE: NOAA, Local Climatological Data, Annual Summary

The amount of power available in a freely flowing windstream of a particular cross sectional area is equal to this area times the velocity of the windstream, times the kinetic energy of a unit volume of the windstream. In other words, the power per unit cross sectional area of the windstream is equal to one half the air density times the cube of the wind velocity. The power density is lower. Based on sea level density, a twenty mile per hour windstream with a cross sectional area of one hundred square feet will contain about four kilowatts of power. Gresham is about 350 feet above the sea level (The air density of the City of Gresham is not significantly different than that at sea level. Therefore, in this report the power figures are based on sea level density.)

According to a National Science Foundation's NRSA Workshop report on the economic considerations of utilizing small wind generators "there are numerous applications in remote, isolated sites where wind power generation certainly does provide a practical solution." However, if the object of considering a wind generator is economy, then "we can dispense with any area where commercial power is available." The best example of harnessing wind power on land is in water pumping. If applying wind power for domestic use, i.e., generating electricity for household needs, is the desire, then a severe reduction in energy consumption is mandatory. One must compromise all but a few small light bulbs and appliances in such an application. Appendix 4 details the economics of the domestic application wind generated electrical energy.

In order to understand the wind potential for the Gresham area, more research and development must follow. A variety of criteria should be employed in pinpointing exact sites for harnessing the wind. Appendix 5 outlines a priority listing of research and development requirements for an area considering using the windstream as a power source. (See also Appendices 6 and 7).

2.382 Solar Power

Basically, the amount of solar radiation reaching the surface is dependent on the condition of the sky, the angle of the sun's rays above the horizon, and the duration of the day. Sky conditions refer to the extent of cloud cover, the density of the air, and the components of the air (i.e., pollutants). The altitude of the sun above the equatorward horizon is dependent on the latitude north or south of the equator. The farther the location is from the equator, the less intense are the rays of the sun. Obviously, the length of the day affects the amount of solar radiation reaching the earth's surface. Once the sun is below the horizon the incoming radiation stops. A fifteen hour day will surely allow more incoming radiation at the same latitude than a ten hour day.

The area around Gresham receives an average of about 69 clear days between sunrise and sunset each year. (Obviously, no solar energy arrives at night. As a result, the condition of the night skies has no effect on incoming radiation. Sky conditions at night will, however, influence the outgoing surface radiation as demonstrated by the greenhouse effect). This is equivalent to twenty percent of the days in a year, and over 50 percent of these days occur during the late summer months. Considering even the partly cloudy days, this area averages no more than 140 days of clear and partly cloudy skies each year.

Because of the limited pyranometric readings for the area (Astoria is the closest recording station) interpolated data are used. The average solar radiation received at the ground in the Gresham area is measured in units of langleys per day. (A langley is equal to one calorie per square centimeter. A calorie is the amount of heat required at sea level to raise the temperature of one gram of water one degree centigrade.) During December and January, when the sun is overhead in the Southern Hemisphere, the solar radiation received in the Northern Hemisphere decreases rapidly as latitude increases. The Pacific Northwest is also affected by the extent of cloud cover during these months. As a result, during the lowest sun period for Western Oregon, less than 100 langleys reach the surface each day. This is equivalent to 1.00 calories per square centimeter. (In terms of power, one calorie per minute is equal to 251 watts). If a daylight period in late January is ten hours, then approximately 23 kilowatts of power reaches each Square centimeter of the surface by the end of the day.

During the summer months the solar radiation input exhibits little variation with latitude. The increase in duration of daylight along with the increase in latitude compensates for the lower latitude of the sun above the equatorward horizon.

The variation of solar radiation input between different locations during the summer is caused primarily by differences in the degree of cloudiness of the atmosphere. Consequently, the average amounts of solar radiation reaching the surface around the Gresham area is between 600 and 650 langleys each day. If the daylight hours in late June totaled ten hours, then approximately 156 kilowatts of potential power is available per each square centimeter.

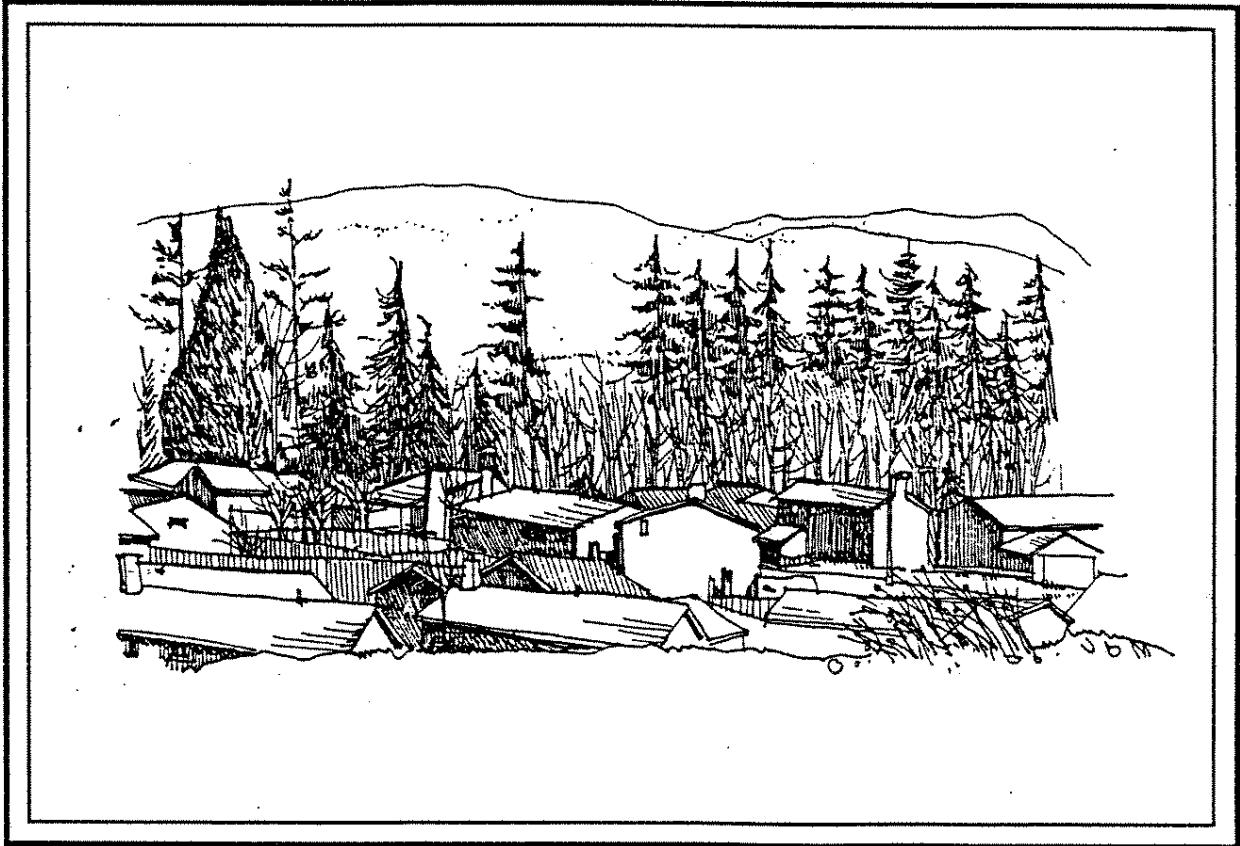
In Oregon, solar energy is now being used on a very limited basis to heat water for homes or to provide heat for growing plants. Individual solar power systems for air and water heating are available. In the Portland area no less than two dozen companies distribute solar energy equipment. It is possible to provide economical home and office solar systems. One simple system for homes that is available commercially in the United States, is the solar water heater.

Solar water heaters, however, are only one of the many various applications of solar power. The literature on solar energy applications is lengthy and expanding.

Portland General Electric Company has at least six solar projects within the State of Oregon. They are finding various system capable of providing up to sixty percent of the heating requires of residential structures during the months of testing. Other utilities (i.e., SPA and Pacific Power) are also involved in research and development on the potential of solar radiation. Many people are beginning to find solar power increasingly attractive in light of rising costs and shortages of energy. Some are also concerned about the environmental cost of using precious resources for low intensity household heating and cooling. This concern as well provides an impetus for considering various applications of solar energy.

The government is also addressing the solar energy issue. The 1977 Legislative Session of the State of Oregon passed two bills (Senate Bill 339 and 447) that offers incentives for alternate energy use in Oregon (solar energy included). Senate Bill 339 authorizes a personal income tax credit and a property tax deferment for persons installing an alternate energy device to their dwellings. Senate Bill 447 permits eligible veterans to obtain loans for purposes of

installing alternative energy devices to his/her home. On the federal level, pending legislation contains provisions for income tax credits for home owners who install solar energy systems.



2.383 Energy Conservation

Introduction

The rapidly changing energy Situation is perhaps the foremost problem of our current time. Energy prices and supplies are directly related to inflation, interest rates, economic growth and environmental quality. Until recently, the Federal, and perhaps State Governments were perceived as the appropriate levels of governmental response to the energy situation. Now, however, hundreds of local government⁵ in the U.S. have established programs to deal with energy impacts upon local citizens.

The City of Portland, for example, instituted a mandatory weatherization program requiring residences to meet insulation standards at the time of resale or within five years.

The role of local government in energy conservation is defined by the nature of the conservation strategy. Energy conservation may be broadly defined to consist of two basic strategies:

1. Reduction of traditional, non-renewable or finite energy sources (reduction in demand) and;
2. Development and greater use of alternate; renewable or infinite energy sources (increase in supply).

The role of local government differs according to which of the broad strategies is considered. Concerning the supply side, or the development of alternate resources, the city's role is primarily a permissive one, which allows and facilitates experimentation and application of alternate systems. Federal and State Governments have a more active role in increasing energy supplies through devices ranging from tax incentives to basic research.

It is also the responsibility of local government to keep abreast of State and Federal Energy Programs and seek assistance where Possible.

Local government is offered an opportunity to play a more affirmative role, under the strategy of reduction in consumption of energy (reduction in demand). Portland's weatherization program is an example of an affirmative action designed to reduce per capita energy demand. The specific strategies available to a city must be designed to explain the local energy picture. Portland's mandatory weatherization program is an effective strategy because of the large priority of older housing stock in the city (67% of all units built before 1950 – as of 1975). Gresham's housing stock, by contrast is very new, so that a mandatory weatherization program would not achieve similar energy savings. Local consumption characteristics must be understood in order to formulate energy conservation strategies.

Energy Consumption

FIGURE 2-6

UNITED STATES ENERGY CONSUMPTION
BY ENERGY TYPE
1976

Crude Oil	47%
Natural Gas	27%
Coal	18%
Nuclear	3%
Hydro Power	4%
TOTAL	100%

SOURCE: R.E.A., Energy in Focus Basic Data, 1977.

In 1976, the U.S. imported an average of 7.3 million barrels of crude oil per day, which amounted to 42% of the daily crude oil demand. OPEC produced over two-thirds (67.2%) of the daily imported requirements. In 1979, U.S. oil imports were estimated at near 9 million barrels per day. Domestic production has remained nearly constant and reliance on the OPEC Cartel has risen proportionately. Local supply conditions depart from the U.S. pattern of energy sources in that the amount of available hydro power has resulted in less use of coal and nuclear energy as sources for electricity. Generally, however, Oregon is more dependent on petroleum, less dependent on natural gas, and similarly dependent on electricity for meeting energy needs, compared to the U.S. as a whole.

FIGURE 2-7

UNITED STATES ENERGY CONSUMPTION
BY ENERGY TYPE
1976

Petroleum	55.8%
Natural Gas	19.1%
Electricity	25.1%
TOTAL	100%

SOURCE: Oregon D.O.E., Energy Consumption & Related Data in Oregon: Some Historical Perspectives, 1977.

Petroleum, as a percentage of Oregon's energy consumption, has fallen, while consumption of electricity as an energy type has risen.

FIGURE 2-8

OREGON ENERGY CONSUMPTION BY ENERGY TYPE 1965 – 1975 (1012 BTU)							
YEAR	TOTAL	PETROLEUM		ELECTRICITY		NATURAL GAS	
		BTU	%	BTU	%	BTU	%
1965	332.7	208.3	62.6	66.6	20.8	57.7	17.4
1970	429.9	249.6	58.3	90.3	21.1	88.1	20.6
1975	454.9	253.9	55.8	114.1	25.1	86.9	19.1
% Change 1965-1975	+36.7%	+21.9%		+71.3%		+50.6%	

SOURCE: Oregon D.O.B. Energy Consumption & Related Data in Oregon: Some Historical Perspectives, 1977.

Oregon has inconsequential supplies of fossil fuels and has little control over supplies of the resources. Oregon is able to influence both the availability and demand of electricity. About 80 to 85 percent of the state's electricity is generated from low-cost federal and now federal hydroelectric projects in the region. The steady rise in the proportion of electricity compared to other energy sources used, underscores the economic advantage of regional electric power. The energy-producing potential of the Northwest Regional Hydrosystem has, however, been almost completely developed. Potential additional hydroelectric sites have been considered unsuitable on economic or environmental grounds. Expansion of regional electric power is likely to result from thermal sources of power.

Prior to 1973, annual energy consumption steadily increased in Oregon and the U.S. In 1974, as a result of the oil embargo and the national economic recession, the total and per capita demand for energy fell. The trend continued through at least 1975 (Data on current per capita energy demand is not available).

FIGURE 2-9

TOTAL AND PER CAPITA ENERGY CONSUMPTION IN OREGON

YEAR	<u>TOTAL</u>		<u>PER CAPITA</u>	
	TRILLION (10 ¹² BTU)	PERCENT RATE OF GROWTH	BILLION (10 ¹² BTU)	PERCENT RATE OF GROWTH
1962	277.0		152.4	
1963	291.2	5.1	157.2	3.1
1964	322.9	10.9	171.0	8.8
1965	332.7	3.0	171.8	0.5
1966	356.5	7.2	181.1	5.4
1967	367.6	3.1	185.8	2.6
1968	398.9	8.5	199.1	7.2
1969	420.2	5.3	203.8	2.4
1970	427.9	1.8	203.6	-0.1
1971	449.0	4.9	209.9	3.1
1972	486.4	8.3	227.2	8.2
1973	500.7	2.9	225.6	-0.7
1974	477.0	-4.7	210.5	-6.7
1975	454.9	-4.9	197.9	-6.6

SOURCE: OREGON D.O.B. Energy Consumption & Related Data in Oregon: Some Historical Perspectives, 1977.

Energy Consumption Pattern

Transportation (not including residential transport) and industrial uses together account for approximately two-thirds of state and regional energy requirements. Comparison between the state as a whole and the region (Portland-Vancouver Standard Metropolitan Statistical Area, or SMSA), indicate the larger share of energy which is consumed by the residential and industrial sectors within the SMSA. Although data is unavailable on energy use by sector in Gresham, it is likely that residential uses consume a larger percentage of local energy needs, due to the largely residential character of Gresham.

FIGURE 2-10

ENERGY USE SUMMARY BY SECTION 1975		
	OREGON	SMSA
Residential	17.9%	21%
Commercial	10.5%	10%
Industrial	27.4%	39%
Transportation	41.5%	27%
Agricultural and Other	2.7%	3%
Total	100.0%	100%

SOURCE: Oregon D.O.E., 1977; Energy Conservation Choices for the City of Portland, (HUD), 1977, vol 1.

Residential Sector

In 1976, 13 billion BTUs of energy was consumed by Gresham residents in their homes. The sources of residential use energy differ markedly from the Portland SMSPS in the high percentage of fuel oil concerned. Residential energy source data is not strictly comparable, however, as SMSR data is from 1970 and Gresham data is as of 1976. The percentage of total energy represented by each type of energy source (fuel oil, natural gas and electricity) reflects the efficiency by which various energy types transform heating potential. Residential electric resistance heaters operate at 95% efficiency, natural gas furnaces at 47% efficiency, and fuel oil boilers at 40% efficiency.

FIGURE 2-11

SOURCES OF RESIDENTIAL END-USE ENERGY		
	PORTLAND SMSA (1970) % of Total Energy	GRESHAM (1976) % of Total Energy
Electric Use	39.2%	27.1%
Fuel Oil	36.6%	70.2%
Natural Gas	24.2%	2.7%
Total	100.0%	100.0%

SOURCE: Energy Conservation Choices for the City of Portland, HUD, 1977, Vo. 1; CRAG Region Energy Analysis, Work in Progress Report 2, 1977.

Figure 2-12, for example, shows that electricity is the dominant residential energy source, used in 45% of homes for heating, 85% of homes for heating water and 96% of all home cooking requirements.

FIGURE 2-12

GRESHAM RESIDENTIAL ENERGY CONSUMPTION PERCENT OF HOUSEHOLDS USING ENERGY FORM BY TASK (1976)			
	ELECTRICITY	NATURAL GAS	FUEL OIL
Space Heating	45%	35%	20%
Hot Water	85%	15%	
Cooking	96%	4%	

SOURCE: CRAG, Region Energy Analysis, Work-in-Progress Report 2, 1977.

While 70% of the total Gresham residential energy requirements are met by fuel oil, oil heat is used in only 20% of Gresham households, reflecting the inefficiencies of oil heat. It is likely that the proportion of homes in Gresham using oil heat has declined substantially, as over 3,000 housing units have been constructed in Gresham since 1976. It is unlikely that more than a few units were constructed to use oil or natural gas heat. The approximately 1,650 households in Gresham which use oil for space heating can expect a high degree of uncertainty in their energy supply. Supply, forecasts are out-of-date as soon as they are published, as fuel oil supplies are subject to the vagaries of world political events and are influenced strongly by national legislation and pricing policies. Probably the single certainty regarding fuel oil supply is that prices will continue to rise, consuming a growing share of family income. Electricity supplies fare similar uncertainties, given the fact that hydro capacity cannot be significantly expanded.

Future electricity generation by oil is faced with supply and price uncertainty, while coal-powered generation must overcome air quality problems. Supplies of natural gas are also expected to decrease over the long term, to about 15 percent less than current consumption by 1997. Two-thirds of Oregon's natural gas is imported from Canada, which will phase out exports to the U.S. after existing contracts expire in 1981 and 1989. Domestic gas production will not fully compensate for Canadian exports. In general, increases in energy supplies face an unpredictable future, with price increases being the only reasonably predictable event.

FIGURE 2-13

GRESHAM - AGE OF HOUSING STOCK

YEAR	DETACHED SINGLE FAMILY		DUPLEX AND MULTI-FAMILY		TOTAL	
	NUMBER OF UNITS	% ALL UNITS	NUMBER OF UNITS	% ALL UNITS	NUMBER OF UNITS	% ALL UNITS
Pre-1950	3,201	26%	1,101	9%	4,302	35%
Post-1950 through 1975	2,667	20%	992	8%	3,442	28%
Post-1975 through 1978	2,667	22%	1,054	9%	3,721	31%
Post-1978	360	3%	420	3%	780	6%
TOTAL	8,678	71%	3,567	29%	12,245	100%

SOURCE: CRAG, Region Energy Analysis, Work-in-Progress Report 2, 1977; City of Gresham Building Permits.

Residential Space Heating

Apart from transportation, space heating consumes the largest share of a family's energy expenditure. Eight percent of non-transportation related residential energy consumption in Gresham is required for space heating.

FIGURE 2-14

GRESHAM
RESIDENTIAL ENERGY USE
(1976)

	SPACE HEAT		HOT WATER		COOKING		OTHER	
	10 ¹² BTU	% TOTAL BTU	10 ¹² BTU	% TOTAL BTU	10 ¹² BTU	% TOTAL BTU	10 ¹² BTU	% TOTAL BTU
Electricity	138.07	10.54%	97.53	7.45%	29.80	2.28%	89.35	6.82%
Natural Gas	26.80	2.05%	6.98	0.53%	1.58	0.12%		
Oil	919.37	70.21%						
TOTAL	1,084.24	80.80%	104.51	7.98%	31.38	2.40%	89.35	6.82%

SOURCE: CRAG, Region Energy Analysis, Work-in-Progress, Report 1, 1977.

FIGURE 2-15

GRESHAM
PERCENT OF ENERGY TYPE BY TASK

	% of Electricity	% of Natural Gas	% of Oil
Space Heat	38.918%	75.772%	100%
Cooking	8.402%	4.480%	
Hot Water	27.492%	19.747%	
Other	25.187%		
TOTAL	99.999%	99.999%	100%

The high percentage of total residential energy consumed for space heating is strongly influenced, however, by the relative inefficiencies of fuel oil heating systems which are used, an estimated 15% of Gresham homes (approximately 1,650 to 1,700 households). Gresham homes heated with fuel oil undoubtedly represent much of the city's older housing stock, generally located in the central business district.

The energy efficiency of dwellings is influenced by a number of factors, including: age of structure, floor area, insulation, amount of exposed surface, and amount of glass.

The significance of the age to housing stock lies in the amount of insulation used in construction. Houses built prior to 1950 have no insulation or have loose filled insulation that has settled to the bottom of the walls, providing little protection. Houses built between 1950 and 1975 are slightly better insulated, with up to 2" of insulation in walls and 4" in ceilings. In April 1975, the Oregon State Building Code was revised to require 3" of insulation in walls and 6" of insulation in ceilings. A family living in a typical house build to 1975 insulation standards uses approximately 34% less energy per square foot than the same family in an identical size house build through 1975. In January of 1979 the State Code was again revised, substantially increasing the insulation standards for walls, floors, ceilings and windows. Dwellings constructed since January 1979 constitute the most energy-efficient housing stock.

Although newer homes are better insulated, use less energy per square foot than older units, the average floor area of typical single-family dwellings has increased over the last fifteen years. Houses build today average between 1,500 to 2,000 square feet, compared to houses built ten to fifteen years earlier which average 1,000 to 1,300 square feet.

The energy-efficiency of homes is strongly related to the type of structure built. One story single-family homes are the most inefficient housing unit, largely because of the amount of exposed surface per square foot of floor area. A typical one-story home has 1.87 square feet of exposed surface per square foot of floor area, and from seven to 12% of the exposure devoted to glass. Multi-story homes including two-story, split entry and daylight basement are more efficient because of a reduced ratio of exposed surface to floor area. Variations such as the split entry and daylight basement substantially reduce the exposed surface ratio because part of the structure is below grade. A typical two-story residence has 1.67 square feet of exposed surface per square foot of floor area. A new two-story home is estimated to use approximately 15% less energy for space heating for the same amount of "livable" floor area. Total floor area of two-story homes must be increased to accommodate stairs. A 1,700 square foot one-story single family home has 4,692 square feet of exposed surface area. The same home, with 200 additional square feet for stairs has 30% less exposed surface if it is a two-story home with one common wall. The same home with two common walls has 45% less exposed surface.

Multi-family structures containing apartments, townhouses and condominiums are energy-efficient not only because of a reduced exposed surface ratio, but also due to the smaller floor area of such units. Reducing the floor area of single-family detached homes is also an energy-efficient strategy.

If the average single-family home size were reduced from 1,700 to 1,300 'square feet, the exposed surface of the house is reduced by 21%, assuming an' unheated basement or crawl space, resulting in a savings of 20% of energy for space heating.

Land use characteristics of residential energy uses which influence design include the cold east winds from the Columbia Gorge, and the desirability of a view of mountains to the east and north. To preserve views while conserving energy, requires careful design. Dwellings should be designed to keep openings on the east to a minimum, with doors located on one of the other sides whenever possible. It may also be possible to install wind buffering vegetation or fencing on the eastern part of sites which do not obstruct views.

Water Heating, Cooking, Appliances and Lighting

Residential energy consumed for other tasks besides space heating may be conserved through a number of actions, most of which are beyond the influence of local government. Water heating conservation programs include wrapping hot water tanks, lowering hot water temperatures, constricting water flows at shower heads, washing clothes in cold water and installation of spigot water heaters. Energy conservation in cooking, lighting and appliance use depends upon voluntary cutbacks by individuals and improved energy efficiency standards for new appliances.

Residential Transportation And Land Use

It has been calculated that 56% of a typical single family household's energy demand is consumed for transportation. Residential transport is an energy use over which local governments can exert a significant influence.

FIGURE 2—16

TYPICAL
SINGLE FAMILY HOUSEHOLD
ENERGY USE

Transportation	56%
Space Heating	26%
Water Heating	8%
Appliances	8%
Lighting	2%
TOTAL	100%

SOURCE: Energy Conservation Choices for the City of Portland, Oregon U.S. Dept. of HUD, vol. 3A, p. 9.

Federal standards requiring improved automobile gas mileage will play a large role in conserving energy used in residential transportation. Local actions to conserve energy include land use planning which intensifies residential development in proximity to mass transit facilities such as bus routes and the proposed light rail transit system which will carry passenger between Portland and downtown Gresham.

Commercial, office, industrial and institutional uses which are labor-intensive or attract large numbers of customers or clients should also be located in proximity to mass transit facilities. Less intensive uses should be located further from mass transit to maximize the advantages of mass transit. Mixed-use development is also highly energy-efficient. Residential,

employment, shopping, institutional and professional services in proximity to each other substantially reduces the consumption of transportation-related energy. When the mixed-use concept is planned in conjunction with high-density development and in proximity to mass transit, the most energy-efficient urban form possible is achieved. Space-heating requirements are substantially reduced by high-density residential structures and transportation-related energy consumption is reduced to the minimum amount.

The Real Estate Research Corporation, in the 1974 study, the Costs of Sprawl, found that the energy used to heat and cool a single-family detached house was nearly twice that for apartments in two-story, 15-unit buildings. The study calculated that a high density planned community uses about half the total energy of the typical low density, spread out suburban community. Dramatic differences in the amount of transportation energy consumed were shown between various urban forms. The difference between the “low density unplanned” communities and the “high density planned” community equaled 100%. People in the planned high-density community were predicted to use only half as much gasoline in travel as those in a typical unplanned low-density spread out development.

The City of Gresham has an opportunity to develop an energy-efficient urban form that is unavailable to most cities in the nation. The planned Light Rail Transit System, originating in Portland and terminating in Gresham’s business district offers the chance to enable economic growth and development in an energy-efficient manner. The Central Business District (CBD) is currently underutilized, contains a large percentage of the city’s deteriorating housing stock, and is at a relatively low development density. Gresham’s growth during a period of cheap energy and automobile dependency has produced a low density, low profile community with employment, shopping and service facilities strung out along auto-oriented arterial streets.

The CBD has not received intensive development pressure and as a result is now capable of sharply increasing development density, to take advantage of the LRT project. The Gresham CBD (See Community Development Plan Map) has a net residential density of 6.47 dwelling units per acre. The Cost of Sprawl energy-efficient model, in contrast, contained 30 dwelling units per net residential acre.

FIGURE 2-17

GRESHAM
CENTRAL BUSINESS DISTRICT*
RESIDENTIAL USES
UNIT NO. UNITS NET ACRES DENSITY

UNIT	NO. OF UNITS	NET ACRES	DENSITY (d.u./acre)
Single Family	310	86.18	3.6
Duplex	74	7.15	10.4
Multi-Family	352	20.4	17.3
TOTAL/AVERAGE	736	113.73	6.47

Development of a mixed-use, high density CEO, which is bisected by the Light Rail Transit System results in the most energy—efficient urban form possible.

The city may also assist in conservation of residential transportation by traffic flow improvements such as computerized traffic signals and traffic engineering designed to minimize stop and go automobile movement. Development of alternate travel modes such as pedestrian paths and bikeways also assists in conservation. Outlying residential development in Gresham is not particularly amenable to spot siting of neighborhood commercial uses or convenience stores. Most Gresham neighborhoods desire protection from intrusion of commercial activities, creating difficult convenience commercial siting decisions. The typical situation exists whereby neighborhoods would like convenient commercial services, but do not wish them next-door. The Community Development Plan should be responsive to the neighborhood commercial issues and strive to develop siting criteria to locate such uses in areas unserved by neighborhood commercial uses. The size of neighborhood commercial facilities should be adequate to serve a neighborhood population, but restricted so that CEO mixed use development is not impaired.

Commercial Industrial Sector

Overview

Detailed data on the energy consumption characteristics of non-residential sectors is generally unavailable. Within the Portland SMSA, the commercial and industrial sectors account for nearly half (49%) of total energy consumption. The relative share of energy consumed by the commercial/industrial sector in Gresham is undoubtedly less than that of the SMSA because of the predominantly residential land use of the city.

FIGURE 2-18

COMMERCIAL AND INDUSTRIAL SECTORS SOURCES OF ENERGY PORTLAND SMSA 1971		
	Commerce	Industry
Electricity	40.6%	28.4%
Steam	5.1%	
Natural Gas	27.4%	43.9%
Fuel Oil	26.9%	17.4%
Wood		10.3%
TOTAL	100.0%	100.0%

SOURCE: Energy Conservation Choices for the City of Portland, vol 1, P. 59.

Industrial activity within the Portland SMSA consumed 39% of total SMSA energy needs? While the commercial sector consumed 10%. Similar to the residential sector, the commercial and industrial sectors are predicted to shift toward electricity for a larger share of energy requirements, away from fuel oil. Demands for wood derived energy are predicted to remain stable. Because the Portland SMSA is a relatively young economy, the commercial sector is expected to continue to grow, as the regional economy moves away from a raw material based economy to a service-oriented economy, typical of large urban areas.

The single most abundant regional energy resource, hydroelectricity, has encouraged growth in the primary metals industry (particularly aluminum refining) which has induced growth in the fabricated metals and machinery industries. The Pacific Northwest region, containing up to 40% of the total economically feasible hydroelectric potential of the U.S., is expected to shift toward greater use of other energy sources. Future electrical, energy supply expansion will be met by use of thermal power plants.

Manufacturing accounts for 67% of the SMSA's commercial and industrial energy consumption. Manufacturing and other commercial and industrial uses have been rated according to their energy intensity related to the amount of value added during one year's production and to annual employment. Those uses with large ratios of energy use to value added generally have large amounts of energy invested in the production process relative to value and employment. Local Dt regional energy becomes embodied in the manufactured item or end product of energy intensive uses so that energy is in effect "exported" from the region. Within the SMSA, seven major commercial/industrial categories display large ratios of energy use to value added or employment (food & kindred products, lumber and wood, paper & allied, chemical and allied, stone and glass, primary metal, and construction).

FIGURE 2-19

ENERGY INTENSITY OF INDUSTRY
WITHIN PORTLAND SMSA BY MAJOR CATEGORY
1971

Ratio of BTU Energy Consumption to Value Added and Employment

	Value Added 10 ³ BTU/\$	Employment 10 ⁵ BTU/ Employee
Manufacturing	44.86	718.76
20 Food & Kindred	26.43	576.23
24 Lumber & Wood	42.90	629.74
25 Furniture & Fixtures	19.63	235.62
26 Paper & Allied	154.12	3,532.03
28 Chemical & Allied	106.36	3,597.58
32 Stone, Glass	123.46	2,279.65
33 Primary Metal	144.37	3,243.39
34 Fabric, Metal	13.01	222.18
35 Non-Electric Equipment	7.80	124.65
36 Electric Equipment	12.00	152.28
37 Transportation Equipment	6.89	104.64
38 Instruments	8.65	190.23
Construction		910.01
Trades	20.00	137.51
Services	16.50	47.27
F.I.R.D.*	9.92	138.24
Communication	9.13	175.09

* Finance, Insurance and Real Estate

SOURCE: Energy Conservation Choices for the City of Portland, Oregon, (HUD) Vol. 1, p. 257

Those commercial and industrial categories with high ratios of energy use to dollar amount of value added or employment are particularly sensitive to changes in the amount of energy supplies. Not all commercial and industrial categories are equally affected by across-the-board reductions in supply, however, depending upon the type of energy source a firm uses, the amount of energy not related to the production process, age and size of the buildings, demand for the product or service and technological reinvestment. Industries such as aluminum production rely upon electrical energy as a major element of the production process because of the electrolytic refining requirements. Paper and allied products, while ranking high in energy consumption, rely primarily on hogged fuels and bark from spent pulping liquor and residual. It is difficult to form precise observations concerning a commercial or industrial categorized energy consumption. Generally, new plants within industries that are normally energy-intensive will display a lower ratio of energy use to value added or employment. Firms which are energy intensive depend upon disproportionately large amounts of energy to generate employment or income. A firm which has an energy ratio double that of another firm, in relation to value added, requires twice as much energy to generate the same amount of income. Firms which display a lower ratio of energy intensity, such as the Food and Kindred Products sector may consume large amounts of energy, but generate more employment or income relative to the energy used. In terms of economic development and energy conservation, the most desirable firms are those that are modest energy consumers but major income generators. For industries in the Pacific Northwest: Paper and Allied Products; Meat, Dairy, Grain Mill and other Foods Products; and Canning, Preserving and Beverage Firms are activities which are relatively modest energy users but major income generators. Firms which are energy intensive with low income generation are the aluminum metals and gas services firms. The majority of industries are both meager in energy consumption and generation of regional income.

FIGURE 2-20

GRESHAM -- COMMERCIAL/INDUSTRIAL
ENERGY USE CHARACTERISTICS
FULL - AND PART - TIME EMPLOYMENT GRESHAM\
(1978)

Name	SIC Codes	No. of Firms	No. of Employees
Agriculture	0-149	16	65
Construction	1500-1799	110	519
Manufacturing	2000-3999	24	351
TCPU*	4000-4900	9	172
Wholesale Trade	5000-5199	9	36
Retail Trade	5200-5999	193	1,822
F.I.R.D.**	6000-6799	32	242
Services	7000-8900	208	1,358
Government	9100-9700	11 ⁺	1,917

* Transportation, Communication & Public Utilities

** Finance, Insurance & Real Estate

+ Estimate

SOURCE: Comprehensive Planning Division, City of Gresham, 1978.

Local employment in Gresham is not energy intensive in nature. Eighty-three percent of total Gresham employment derives from Wholesale and Retail Trades, F.I.R.D., Services and Government. Construction and Manufacturing account for only 13.4% of total local employment. In terms of energy consumption, the economic base of the city compares favorably with the Portland Metropolitan area.

FIGURE 2-21

EMPLOYMENT DISTRIBUTION COMPARISON

Employment Sector	Gresham 1978	Multnomah County (Unincorporated) 1975	Portland SMSA 1976
Agriculture	1.0	86.18	3.6
Construction	8.0	8.6	4.3
Manufacturing	5.4	27.1	20.5
T.C.P.U.	2.7	4.9	6.7
Wholesale Trade	0.6	8.4	8.3
Retail Trade	28.1	18.1	17.2
F.I.R.D.	3.7	4.1	7.3
Services	21.0	24.6	19.6
Government	29.6	2.7	16.2
TOTAL*	100.0%	100.0%	100.0%

* May not equal 100% due to rounding.

SOURCE: CRAG, Employment Survey, published 1977, Multnomah County, The Economy, 1977; City of Gresham, 1978.

Manufacturing, which accounts for only 5.4% of Gresham's employment, is generally composed of firms that are not energy intensive.

FIGURE 2-22

GRESHAM
MANUFACTURING FIRMS
(1978)

<u>Type of Production</u>	<u>SIC Codes</u>	<u>No. of Firms</u>	<u>No. of Employees</u>
Fabricated Metals	3433, 3444, 3496	4	26
Stone & Glass, Clay & Concrete	3251, 3269, 3272, 3273, 3295	5	60
Food & Kindred Products	2011, 2037, 2051	4	72
Printing & Publishing	2711, 2752	3	52
Machinery	3541, 3599	3	9
Electrical Equipment	3679	1	34
Lumber, Wood Products	2429, 2431, 2436	3	42
Transportation Equipment	3751	1	56
TOTAL		24	351

SOURCE: City of Gresham, 1978.

The city, in a desire to expand local employment opportunities and create a broader tax base is seeking additional industrial development. The city has designated industrial land sufficient to enable development. An electronics manufacturing firm is in the process of locating in the city. Gresham, unlike the City of Portland, is in a favorable position concerning the, energy impacts of its industrial sector. The city is not faced with the situation of dependency upon energy intensive industrial employment or an energy inefficient stock of older industrial plants. Industrial employment at present consists of 24 firms employing a mere 351 people.

Employment in the non-manufacturing sector is responsible for 5,547 jobs among 462 firms, which average 12 employees each. Energy conservation measures in the non-manufacturing sector would likely achieve the greatest energy savings in Gresham's Commercial/Industrial sector. Non-manufacturing uses comprise a relatively small proportion of the city's energy expenditures however, due to the predominantly residential development of, Gresham.

FIGURE 2-23

GRESHAM RESIDENTIAL ENERGY CONSUMPTION COMPARISON			
	Net Acreage	Million/BTU	Total Million BTU
Residential (1976)	1,664	786.98	1,309,535

SOURCE: CRAG, Region Energy Analysis, Work-in-Progress, Report No. 2, June 1977.

FIGURE 2-24

GRESHAM COMMERCIAL ENERGY CONSUMPTION			
Commercial and Related	Million BTUs/Job	No. of Jobs	Total BTUs
(1) Retail Wholesale (1975)	115	1,858	213,670
(2) Services (1975)	113	1,358	180,614
TOTAL			405,900

* Average

SOURCE: HUD, Energy Conservation Choices for the City of Portland, Oregon, Vol. 3C, P. 18.

The HUD report on energy conservation in the Portland area concludes:

Each commercial/industrial structure is highly individualistic in its pattern of energy use. It is impossible to establish rules of thumb for quantifying energy use and potential conservation measures based on isolated analysis of factors such as window area, type of fuel or age of building without considering their interaction with one another.

Commercial and industrial energy used in structures is relatively minor compared to residential consumption. Commercial uses exert a strong influence in total energy consumption, however, in their land use configuration. Gresham has developed a pattern of auto-oriented commercial land uses located along the city's major arterial streets. Further auto-oriented commercial development would contribute toward an energy-inefficient urban form.

Recently developing areas of the city, particularly in the southwest area, have been developed exclusively for residential uses. An energy-efficient development pattern should consist of three basic elements:

1. Restriction of continued auto-oriented commercial strip development.
2. Concentration of commercial and related uses near mass transit facilities in a high density fashion, allowing pedestrian movement between commercial and related services, and;
3. Location of convenience commercial services to serve all areas of the city.

Municipal Sector — Energy Consumption Overview

Energy use consumes a growing share of municipal budgets. Four principal categories of use; buildings, street lighting, transportation and services delivery, are responsible for municipal energy expenditure. No detailed information on municipal energy consumption has been compiled, although city budget expenditures for energy provide an indication of the distribution of energy consumption within city government. Budget figures do not necessarily represent an increase in energy consumption by the municipal sector. Energy costs have risen sharply over the last year, population growth has occurred, and the Wastewater Treatment Plant (WWTP) is undergoing substantial expansion. General inflation is also partly responsible for budgeting increases.

Building

In October of 1979, City Government moved to new quarters in the combined Municipal Services and Education Building. The new facility has been designed to enable solar retrofitting and has been built and designed with energy conservation in mind.

Fuel oil space heating requirements are projected to decrease compared to the smaller City Hall, and will show an absolute decrease in consumption. Opportunities for further conservation opportunities are few¹ given the energy efficiency of the new facility. Solar retrofitting in the future will of course present opportunities to achieve significant reductions in energy use.

FIGURE 2-25

GRESHAM
BUDGET EXPENDITURES
FOR ENERGY

Department	<u>Gas & Oil</u>		<u>Electricity</u>		<u>Natural Gas</u>		<u>Street Lights</u>		<u>Heat/Fuel</u>		
	78-79	79-80	78-79	79-80	78-79	79-80	78-79	79-80	78-79	79-80	
Police	\$23,292	\$28,130									
Fire	4,340	6,662									
Planning/Building	2,940	3,400									
Public Works	4,500	4,700									
WWTP	4,600	4,600	\$48,000	\$79,920	\$50,000	\$77,000					
Non-Departmental	100	100	32,350	41,000			\$175,000	\$196,500	\$7,500	\$6,000	
Total	\$39,772	\$47,552	\$80,350	\$120,920	\$50,000	\$77,000	\$175,000	\$196,500	\$7,500	\$6,000	
% of Total	11.3	10.6	22.8	27.0	14.2	17.2	49.6	43.9	2.1	1.3	
Percent	19.6		50.5		+54		+12.3		-20		
									Total Expenditure Increase		\$95,350
									Percent Change		+27%

SOURCE: City of Gresham Budget Document — Fiscal Year 1979-1980

Street Lighting

Street lighting consumes the largest share of city expenditures for energy. Nearly 44% of the city's direct energy purchases are for street lighting requirements. Replacing inefficient incandescent lamps with substantially more efficient mercury and sodium vapor lamps can reduce energy expenditures. The same opportunities do not exist in Gresham as virtually all Street lights are mercury vapor. Sodium vapor lights which emit a yellow light are the most efficient type of light. Although sodium vapor lights are per se more efficient, there is a mismatch between mercury and sodium vapor lights concerning watts and lumens.

Maintenance of the current city standard (which employ 7,000 lumens lights) may require either an extra fixture if the 5,800 lumens sodium vapor lights were used. The city is presently investigating the feasibility of use of sodium vapor light for new developments. Preliminary discussions have been held with the Portland General Electric Company in an effort to determine the costs and benefits of sodium vapor lights.

FIGURE 2-26

Type of Light	Watts	Nominal Lumens
Incandescent	92	1,000
	182	2,500
	300	4,000
	405	6,000
	620	10,000
Mercury Vapor	100	4,000
	175	7,000
	250	10,000
	400	21,000
	1,000	55,000
Sodium Vapor	70	5,800
	100	9,500
	150	16,000
	250	25,500
	400	48,000

SOURCE: Portland General Electric Company, P.U.C., Oregon No. E-11, January 14, 1980.

Transportation

Budget expenditures for gas and oil to power the city's vehicles rose by 19.6% over one year. Vehicle consumption of energy amounts to over 10% of the city's total energy budget. The Police Department uses 59% of the 1979/80 gas and oil expenditures. The city has experimented with using compact and subcompact vehicles in the Planning and Building and Public works Departments. Compact pick-up trucks have been used, with disappointing results. Although the small vehicles are more energy efficient, maintenance and repair costs have been high, so that the city will convert the fleet to full size trucks as replacements become necessary. The improved fuel efficiency of new larger vehicles, combined with their durability, will result in budget savings over the long term.

Apart from the fuel efficiency of individual motor vehicles, reductions in police patrols could conserve some energy consumption. It is felt, however, that the Police Department is operating at an acceptable level of efficiency, and any reduction in energy usage would be more than offset by reductions in service levels.

Services Delivery

The largest component of the energy budget for delivery of city services is operation of the Wastewater Treatment Plan (WWTP). Thirty-five percent of the city's energy budget goes toward operation of the WWTP. Energy is consumed for pumping and sewage treatment. Approximately half of the WWTP energy expenditures are used for sewage treatment in the form of natural gas. Two principal opportunities exist for aiding the energy conservation of the WWTP: Use of methane gas produced in sludge processing for WWTP power; and, a reduction in the per capita volume of water use by city residents. The amount of water used by residents and businesses is directly related to the amount of energy needed for sewer pumping and processing. An average family uses 88,000 gallons of water a year, about 40% of which is used to flush toilets. European families use about half as much water annually. A reduction of water usage by 25%, by requiring shower head water flow restrictions and reducing the number of gallons per flush from 5 to 3—1/2 has been estimated to result in a 13% reduction in TP energy consumption for the City of Portland.

Summary - Energy Conservation

Gresham's development pattern has resulted in an energy efficient urban form, characterized by single-family homes spread over the city. The detached single-family home, predominant in Gresham, is the most energy efficient housing type. The residential sector is the largest energy consumer in the city. Gresham's housing stock is relatively new and energy efficient in terms of insulation but a significant percentage of city homes have little or no insulation.

The industrial sector is a relatively minor consumer of total city energy needs. Gresham has a disproportionately larger share of commercial and services employment, a sector which displays a traditionally low energy intensity ratio. Municipal governments principal opportunity for energy conservation lies in conversion to sodium vapor street lighting, reduction of water usage and use of methane gas as a WWTP fuel source.

The area possessing the greatest potential for long term reductions in energy consumption is land use planning to achieve an energy efficient suburban form. Such an urban form would reduce the need for job commuting, locate high density people-intensive uses adjacent to major streets and mass transit facilities, create high density mixed-use areas which facilitate pedestrian transportation between employment and service centers, and locate neighborhood scale grocery stores to serve all areas of the city.

Energy conservation may also be aided by encouraging energy-efficient residential development such as common wall structures. Residential developments should be required to address energy conservation features of proposed land developments. Such features are diverse and could include incorporating passive solar space heating, construction of two-story homes, construction of dwellings with living space below grade to reduce the exposure to square foot ratio, minimizing openings on the east sides of dwellings, reduction of glass surfaces and planting of deciduous trees on southern exposures. The city may also act permissive to allow experimentation and application of alternate energy sources and should provide the necessary spatial orientation for developments which incorporate solar elements.

The city may also assist in energy conservation by maintaining a staff program to keep abreast of energy conservation programs available at the State and Federal levels of government. City staff should monitor energy conservation developments and develop programs which are responsive to forthcoming changes in the energy situation.

2.400 ENVIRONMENTAL QUALITY

The air, land and water quality of Gresham is generally good; the city's environmental quality is a community asset which pays both social and economic dividends, and many residents have chosen to locate here based on these environmental amenities. It has been well documented over the past three decades that air, land and water pollution can create heavy economic liabilities and impose exorbitant clean up costs on communities. Therefore, though the present level of environmental quality in Gresham is good, it is important to recognize that continued growth and development is accompanied by the potential for environmental degradation.

2.430 NOISE

2.431 Impacts of Noise Pollution

Noise might be simply defined as unwanted sound; just as contaminants in water harm the environment, noise can degrade the livability of a community and damage the physical and mental health of persons living there. Like other kinds of pollution, noise also accompanies urban development.

Noise is measured in terms of its loudness and pitch. The loudness, or magnitude, of sound is usually measured in decibels (~); the pitch, or frequency, of sound is expressed in Hertz (Hz), or cycles per second. For human beings, the audible spectrum ranges from 20 to 20,000 Hz and from zero to more than 140 CIB. Sound pitch and magnitude are often measured together on a weighted decibel scale (Figure 2-28).

FIGURE 2-28

LOUDNESS RANGE OF COMMON SOUNDS		
<i>Loudness Range of Common Sounds Measured at Source or Indicated Distance</i>		
Sound Source	Decibels (dB)	Response Criteria
Jet Operation	150	
	140	Painfully Loud
	130	Limits Amplified Speech
Jet Takeoff (200 feet)	120	Maximum Vocal Effort
Auto Horn (3 feet)	110	
Shout (0.5 feet)	100	Very Annoying
Heavy Truck (50 feet)	90	Hearing Damage (8 hours)
Freight Train (50 feet)	80	Annoying
Freeway Traffic (50 feet)	70	Intrusive
Light Auto Traffic (50 feet)	60	Quiet
Living Room	50	Very Quiet
Library	40	Barely Audible
Soft Whistle (15 feet)	30	
Studio Background Level	20	Threshold of Hearing
	10	
	0	

SOURCE: Council on Environmental Quality (1970)

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Though coping with noise is a fact of urban life, it becomes pollution when its magnitude becomes harmful to our health and well-being. The U.S. Environmental Protection Agency (EPA) has documented many of the detrimental effects of noise. The findings of the EPA regarding the detrimental effects of noise include hearing loss, emotional stress, sleep disruption, and even risk to unborn infants. Even when noise is not a direct source of physical or mental problems, it is a recognized cause of physical and psychological stress which has been directly attributed to numerous health problems. Broad reductions in harmful noises have not occurred, however, probably due to a lack of education as to the negative effects of noise. Still, it is possible to limit further increases in noise that result from urban growth, and this may be a more practical approach to controlling noise levels.

2.432 Noise Sources in Gresham

In Gresham, noise sources fall roughly into two categories; noises that occur intermittently, such as construction projects, and those which occur on a continuous basis, such as traffic.

The first group includes unusual, occasional noises, which often prompt police complaints when they reach a disruptive level. In addition to domestic disturbances, the Gresham Police Department frequently receives complaints about loud vehicles, construction related noises, barking dogs or other animal noises, and home repair or yard projects that involve heavy equipment. These disturbances are particularly noticeable during the night and early morning, when sleep periods are interrupted.

The second group includes noises which are continuous contributors to the ambient noise levels that are present throughout the city. These noises are nearly always present, and specifically include motor vehicle traffic, industrial and commercial noises, and aircraft related noise.

2.433 Motor Vehicle Traffic Noise

Unlike many rapidly growing suburban communities, Gresham has an extensive network of arterial and collector streets that help to distribute traffic flow more evenly across the city. However, some routes continue to carry exceptional traffic loads, including Burnside, Division, Hogan, and 181st. Traffic noise is generated along these streets almost continuously during the day, and impacts all adjacent activities. In most cases, these activities are commercial or moderate and high density residential developments, and street and site design standards help to buffer them from traffic noise. The City's buffering and screening standards specifically require a ten foot landscaped buffer between residential developments and arterial streets. In addition, land use designations for noise sensitive, low intensity developments, such as detached housing, generally do not occur along arterial streets.

A sample of ambient noise levels at three of the city's major intersections was taken in May 1988 to measure the impact of traffic noise on pedestrian activity along arterial streets. The results of this survey show that ambient noise levels at the busiest intersections do not exceed

tolerable levels for humans. At 181st and Halsey, where it is estimated that nearly 36,000 vehicles enter the intersection each day, the noise level measured between 63 and 80 dBA. At the intersection of Stark and Burnside, where just over 33,000 vehicles pass each day, the noise level measured between 60 and 80 dBA. The city's busiest intersection, at Hogan and Burnside, where over 40,000 vehicles pass each day, showed a noise level of 60 to 70 dBA. These levels were recorded at about 3:00 p.m., on a weekday. Traffic counts were also measured on weekdays.

2.434 Commercial and Industrial Noise

Most noise complaints that involve commercial and industrial activities result from the standard equipment and operational practices, rather than unusual, intermittent noises. Thus, the issue is often the proximity of residential uses to industrial and commercial sites, rather than the magnitude of the noise generated. The city can prevent these situations in the future by careful site planning, and by separating incompatible land use districts that promote a transition in development types. In addition to the usual setbacks that most jurisdictions require, city standards also require buffering and screening between conflicting uses, so that regardless of the underlying land use designation, all new uses must consider neighboring developments in their site plan. In addition, limiting night and early morning activities can often resolve noise conflicts that occur.

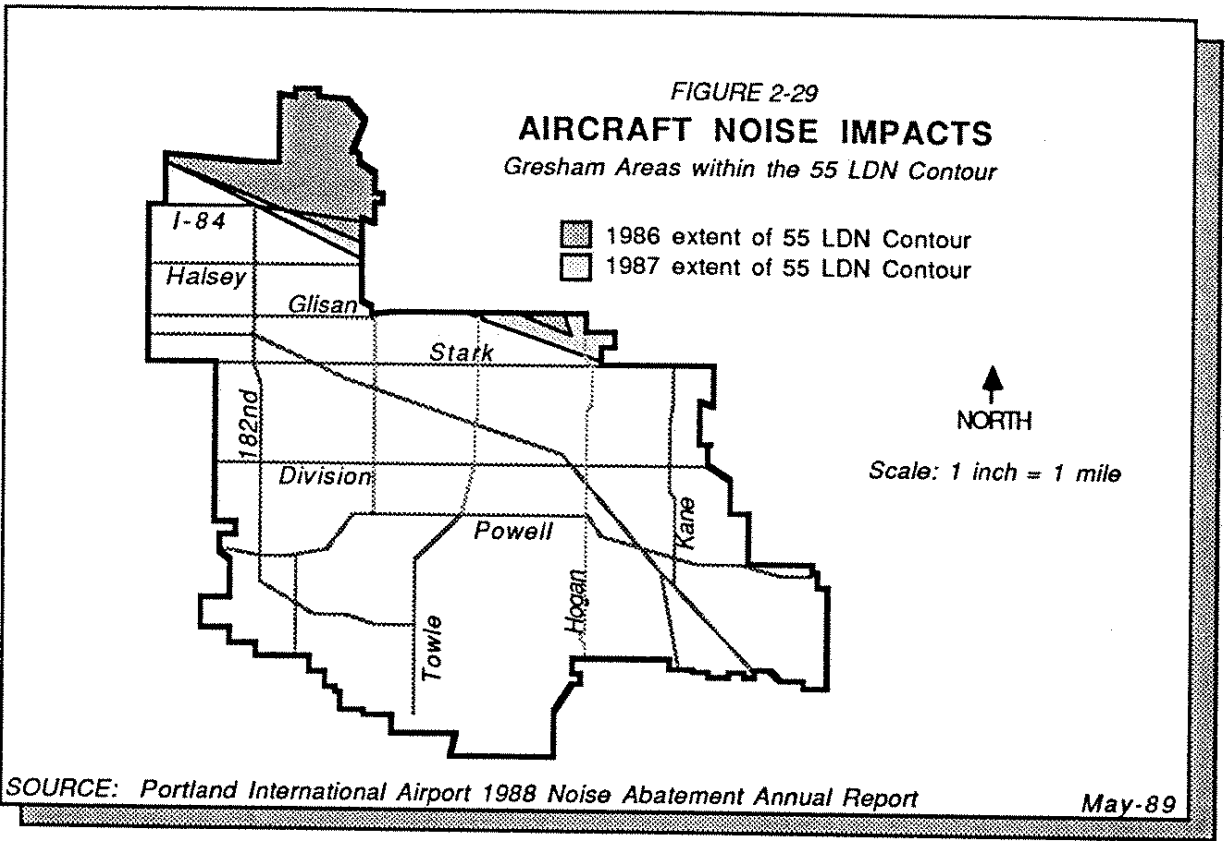
2.435 Aircraft Noise

Noise generated by heavy aircraft is of concern to many East Multnomah County residents, since the departure and arrival patterns for Portland International Airport (PDX) are nearby. The Port of Portland monitors noise levels throughout the metropolitan area, and fields noise complaints related to aircraft. Each year, the Port publishes an updated Noise Abatement Annual Report, which documents the impacts of aircraft noise on the region, noise monitoring activities, and noise complaints.

In the Gresham area, the Port monitored noise for single events near 158th and Marine Drive, 148th and Rose Parkway, and Interlachen Lane; these single event measurements ranged from 73 to 76 dBA. In addition, the Port monitored noise for a 24 hour LDN (Level Day Night; this is a 24 hour average noise level index that gives a 10 decibel penalty to noise events that occur between 10 PM and 7 AM) near Fairview Lake, and recorded an average LDN of 59 CIBA.

The 55 and 60 LDN contours both increased slightly in the Gresham area between 1986 and 1987. The 60 LDN contour increased to include an area east of 185th, north of Sandy Boulevard, and the 55 LDN contour increased to include an area between Stark and Halsey, along 242nd (see Figure 2-29). The 55 LDN contour crosses the city diagonally, from 162nd and Russell to 242nd and Stark; areas north of this contour have 55 LDN or more. No areas in the city are within the 65 LDN contour.

Several aircraft noise complaints occurred in the city in 1987. Single complaints were generated near Eastman and Division, Eastman and Powell, 190th and Division, and 162nd and Russell. Multiple complaints were generated near 201st and Sandy.



2.436 State and Federal Noise Control

The Federal Noise Control Act of 1972 placed a number of noise related programs under the authority of the Environmental Protection Agency (EPA). The EPA's authority extends to aircraft noise (with the Federal Aviation Administration), interstate railroads and motor carriers, and other noise sources of national concern.

The State Noise Control Act of 1971 gives the DEQ authority to adopt standards for motor vehicles, industry and commerce. The standards establish motor vehicle noise emission limits and set ambient noise limits for commercial and industrial operations. The standards vary according to time of day and proximity to 'noise sensitive properties.' The DEQ is normally involved in local noise problems when it receives a citizen complaint and the noise source falls under DEQ authority. The DEQ investigates these complaints and works with the owner or operator to resolve the problem. DEQ's role in noise prevention, because of the absence of permit authority, is confined to technical assistance. The DEQ currently has three unresolved noise complaints in Gresham; all three are industrial uses, and only two relate to noise created by a production process (see Appendix 36 - Noise Source Inventory).

2.437 Local Noise Control

Local noise control is addressed by the city's nuisance ordinance. During 1987, only four noise complaints were investigated through the Code Enforcement program. Only one of these complaints involved commercial and industrial activities. Another twelve complaints to the Police Department are documented in police reports, although many more calls were actually received; of these, most were domestic disturbances, and only two related to commercial or industrial activities. Both the Code Enforcement Officer, and the Police Department have noise metering devices for noise level monitoring (see Appendix 42 - Noise Source Inventory). In addition to the nuisance ordinance, noise conflicts between incompatible land uses are avoided through setback and buffering standards, and appropriate placement of land use districts. The buffering and screening standards are particularly unique, as they recognize issues of compatibility between adjacent land uses. Because of this, noise is not a significant problem in Gresham, since most noise sensitive uses are not located near noise producing activities, and the buffering standards address situations where conflicting activities do occur. During the Periodic Review process, noise compatibility was considered when existing land use designations were reviewed, and new designations considered.

2.440 Land Resources Quality

2.441 Solid Waste Disposal

Metro is the designated solid waste planning authority for the Portland area, including Multnomah, Clackamas and Washington counties. In this capacity, Metro is responsible for the region's solid waste management plan.

The St. Johns Landfill is the only general purpose landfill in the metropolitan area, and is scheduled to close in early 1991. At that time, solid waste will be transported to the newly-sited landfill in Arlington. In addition, Metro is in the process of updating the region's solid waste management plan which addresses disposal options, location of a transfer station, and programs to increase recycling. Also, the State Department of Environmental Quality is continuing to expand recycling requirements and programs that must be implemented by the local governments in cooperation with the solid waste and recycling industry.

The effect of these actions will directly impact Gresham's system of solid waste collection. Solid waste disposal costs are expected to triple as the new landfill begins operation, and the higher cost will probably translate to increased collection rates for customers. In addition, recent annexations and population growth have changed the shape of the city, and the current system of solid waste collection has not been comprehensively reviewed since it was established in 1970. Furthermore, the city will continue to be responsible for the implementation of the state's recycling programs.

In response to the growing concerns about the management of solid waste from the residential and commercial community, the city has initiated a study to evaluate Gresham's existing solid waste collection and recycling system and to explore alternate collection systems,

including municipal, franchise, contract and free market. The City Council is expected to determine the type of solid waste collection and recycling system that is to operate in the city in the Fall of 1988.

2.442 Recycling

In 1983, Oregon's Recycling Opportunity Act ensured that citizens would be given the opportunity to recycle; local jurisdictions, solid waste collection and disposal service providers, recyclers, and citizens were directed to plan and implement a program that meet the needs of each community. Under state guidelines, local governments are given the primary responsibility for solid waste management, and providing the opportunity to recycle.

Solid waste haulers in Gresham are required to provide recycling services to their customers as a condition of their operating license. Curbside collection of recyclables is provided monthly to all residential customers, and as needed for commercial customers. Many of the haulers have chosen to provide weekly collection of recyclable materials. Under the provisions of the Community Development Code, recycling facilities are permitted to locate in areas designated for industrial uses.

Recycling has been actively promoted by the city; programs include 'how-to brochures for recycling, interpretative displays, newsletter articles, workshops, and the annual Spring Clean Up Week, when the city sponsors a free yard debris disposal program.

New recycling requirements are currently being developed by the Department of Environmental Quality and Metro. Gresham will consider the implementation of these new programs during the analysis of its solid waste collection system.

2.443 Sewage Sludge Disposal

Sludge is a product of the city's sewage treatment process, and is presently hauled to the Hood River Wastewater Treatment Plant, where it is stabilized. The stabilized sludge is then applied to agricultural land. The current sewage treatment plant expansion project will enable the city to stabilize the sludge here in the future.

2.450 THERMAL POLLUTION

Thermal pollution occurs when the temperature of a body of water is increased as a result of man's activities. This form of water pollution interferes with the natural process of resident organisms and disrupts the normal concentration and mixing of physical components. Thermal pollution of water resources is commonly regarded as an end result of power plant operations; however, it can also result from increased urban imperviousness and the removal of riparian vegetation and the tree canopy near streams that exposes the streambed to sunlight.

Temperature changes in a water body will alter its fish and plant habitat characteristics. The natural system becomes unbalanced and the resulting new equilibrium may prove

undesirable, especially if popular fish life disappears or if algae and weed growth greatly increases. The Oregon Department of Environmental Quality (DEQ) has developed stream and river temperature standards as part of the Statewide Water Quality Management Plan. The DEQ enforces standards for streams in the Willamette and Sandy River basins, both of which Gresham is a part.

For all salmonid fish producing waters in the Willamette Basin, DEQ requires that no measurable increases shall be allowed when stream temperatures are 58 degrees F. or greater. In addition, no increases of more than 0.5 degrees F. is permitted as a result of a single source discharge when receiving water temperatures are 57.5 degrees F. or less, or more than 2 degrees F. increase due to all sources combined when stream temperatures are 56 degrees F. or less. For all non-salmonid fish producing waters in the Willamette Basin, the DEQ requires that no measurable increases shall be allowed when stream temperatures are 64 degrees F. or greater. In addition, no increases of more than 0.5 degrees F. due to a single-source discharge is permitted when receiving temperatures are 63.5 degrees F. or less, or more than 2 degrees F. increase due to all sources combined when stream temperatures are 62 degrees F. or less.

For other basins, no measurable increases shall be allowed when stream temperatures are 58 degrees F. or greater. In addition, no increase of more than a 0.5 degrees F. due to single-source discharge is permitted when receiving water temperatures are 57.5 degrees F. or less, or more than 2 degrees F. increase due to all sources combined when stream temperatures are 56 degrees F. or less.

Some exceptions to these standards are permitted by the DEQ for activities with specifically limited duration, and where exceeding the standards is unavoidable. Temperature has been identified by the DEQ as a parameter of concern for the Columbia Slough and Johnson Creek water quality-limited streams. As a general rule, new or increased discharges of elevated temperature, however minimal, are prohibited on these listed segments until DEQ establishes the relevant TMDL. Recent listings of Steelhead and Coho Salmon for the Lower Columbia River will require agencies such as Gresham to implement strategies to protect fish habitat, including maintaining ideal instream water temperatures necessary to sustain fish communities.

Temperature records are not maintained for creeks passing through Gresham, with the exception of Johnson Creek. During the early 1970s, temperature and other water quality information was collected at 16 points along the full length of the Creek. During high water periods, temperatures along the portion of the stream within Gresham ranged from 40.1 degrees F. to 62.6 degrees F. Temperatures during low water periods for this section ranged from 40.1 degrees F. to 69.8 degrees F. (see Appendix 29). More recent temperature monitoring conducted in Johnson Creek in 1992 indicated temperatures at or above the critical temperatures for growth and spawning of salmonids.

Thermal pollution is a recognized concern for the Columbia Slough and Johnson Creek in Gresham. Continued erosion control and floodplain management policies, and extensive protection of riparian vegetation through buffer requirements and open space policies will greatly reduce the threat of thermal pollution to Gresham's streams. In addition, DEQ monitoring and enforcement of air quality standards will also limit thermal pollution of the airshed. An

awareness of the causes and effects of thermal pollution of streams and the airshed should be maintained as Gresham develops. Activities which require the removal of riparian vegetation, or the introduction of point and non-point source discharges into the creeks should be identified in terms of their impacts on water quality.

(Amended by Ordinance 1464 passed 12/1/98; effective 1/1/99)

2.460 ADMINISTRATION OF POLLUTION CONTROL MEASURES

The Oregon Department of Environmental Quality (DEQ) has site-specific programs which require coordination with local governments. Following is a list of those programs.

Notice of Construction (NC) - OAR 340-20-200 through OAR 340-20-030. Certain types of air contaminant sources are required to file a Notice of Intent to Construct and Request for Preliminary Certification for Tax Credit.

Air Contaminant Discharge Permit (ACDP) - ORS 468.3 10 to 468.330; OAR 340-20-140 through 340-20-185; OAR 340-14-005 through 340-14-050. Certain types of air contaminant sources are required to obtain an ACDP before operation of that source may occur.

Indirect Source Construction Permit (ISCP) - ORS 468.020, 468.310; OAR 340-20-100 through 340-20-135. Applies to motor vehicle activity which causes concentrations of air pollution by highways, parking facilities, airports, etc. Gresham will notify DEQ of activities which involve 50 or more parking spaces or two level parking structures.

On-Site Sewage Disposal System Approval/Permit - ORS 468.020 through 468.035; ORS 454.615 et seq.; OAR 340-71-015 et seq.; OAR 340-74-010 et seq. DEQ contracts with Multnomah County to operate the program which applies to all on-site sewage disposal systems without discharge to public waters including septic tanks and alternative systems.

Waste Discharge Permit - ORS 468.065, 740; OAR 340.14.005 et seq.; OAR 340.45.005 et seq.; Section 402 of PL 92-500 and related Federal Regulations. DEQ issues permits for construction and operation of new or modified sewage and industrial waste treatment facilities and related disposal of effluent. (NPDES and WPCF permits are involved). NPDES permits apply to discharges to public waters, pursuant to Federal and State requirements. The WPCF permit for disposal by other than stream discharge is issued pursuant to State requirements.

Industrial and Construction Stormwater Discharge Permits - CFR 122.26. DEQ issues I 200-Z National Pollutant Discharge Elimination System NPDES) stormwater permits to industrial facilities having a specified Standard Industrial Code (SIC) with activities exposed to stormwater runoff. DEQ also issues 1200-C NPDES stormwater permits to construction activities of five acres or more. It is anticipated that this will be reduced to 1 acre or more when EPA finalizes amendments to CFR 122.26 (expected 1999).

Solid Waste Disposal Permit - ORS 459.205; OAR 01-020. DEQ issues permits for specific solid waste landfills or other solid waste facilities.

Tax Credit Certification - ORS 468.150; ORS 468.175(3). Tax credit certification is issued by DEQ for pollution control facilities for solid waste and noise.

The DEQ Coordination Program requires that local governments issue a Statement of Compatibility for all proposed activities subject to the above DEQ requirements. The Statement of Compatibility must accompany applications for DEQ permits. The local government determines compatibility of the proposed action with its acknowledged comprehensive plan. For Gresham activities, the applicant and the DEQ must initiate requests for the Statement of Compatibility. The city processes the Statement of Compatibility through its normal procedures for obtaining a Development Permit, and Development Permit approval serves as the Statement of Compatibility. For any activity which requires a Statement of Compatibility, but does not require a Development Permit, the City Manager shall process the Statement of Compatibility as a Type I procedure pursuant to the Community Development Code.

(Amended by Ordinance 1464 passed 12/1/98; effective 1/1/99)

2.461 DEQ Emissions Offset Policy

The DEQ requires that a major new source of air pollution proposed for an area that exceeds a national ambient air quality standard be allowed only if stringent pollution controls are met. One of the conditions for permitting major source polluters is that more than equivalent offsetting emission reductions be achieved from existing sources within the nonattainment area.

In Gresham, a discharger which emits particulates would not be required to participate in the emissions offset policy if emissions do not exceed 50 tons actual emissions. Major ozone dischargers would be required to obtain offsetting emissions. The DEQ administers the policy, and although the emissions offset policy is a site-specific action which would require a Statement of Compatibility to meet other permit requirements, local governments are not directly involved in obtaining emission offsets. A local jurisdiction interested in siting a major source discharger subject to the emissions offset policy could request technical assistance from DEQ.

Comprehensive Plan policies developed by citizen task forces discourage major industrial polluters from locating in the city, and make it unlikely that such activities will locate here. In the event major air polluters apply for a development permit, the city may request technical assistance from DEQ pursuant to the emissions offset policy.

3.000 THE PHYSICAL ENVIRONMENT

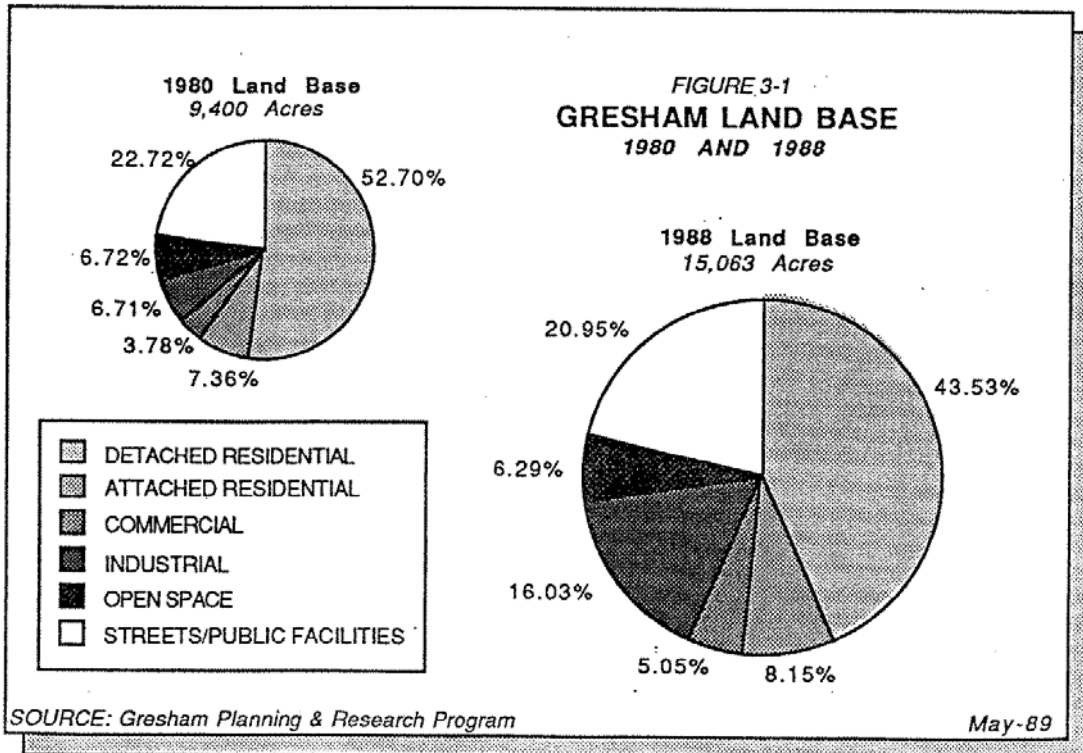
3.100 CURRENT LAND USE CHARACTERISTICS

Annexations since 1980 have brought significant changes to Gresham's land base, both in total area and in the percentage of land designated for different land uses. The total land area has increased from 9,400 acres in 1980, to 15,063 acres in the Planning Area in 1988. Most of the acreage in the Planning Area has been annexed, and the remainder is expected to be annexed by July 1989.

Residential land continues to dominate the city, with 44% of the land base designated for detached (single family) dwellings, and another 9% of the acreage designated for attached (multiple family) units. Although this represents a decrease for residential land as a percentage of the total, actual acreage for all residential land increased from 5,646 acres in 1980, to 7,890 in 1988. This represents a 40% increase since 1980.

Industrial land jumped from less than 7% of the land base in 1980, to over 13% in 1988. This remarkable increase reflects the addition of the Columbia South Shore industrial areas, which helped to increase the industrial land inventory from 631 acres in 1980 to 1,963 acres in 1988.

While the commercial land base more than doubled from 355 acres in 1980 to 801 acres in 1988, the percentage of commercial land as a portion of the total land base increased only slightly from just under 4% in 1980 to just over 5% in 1988.



Open space remained nearly unchanged as a percentage of the land base at 6%, though the acreage increased from 632 acres in 1980, to 948 acres in 1988. Similarly, land committed to streets and public facilities dropped slightly to 21% in 1988 from 23% in 1980, reflecting a change in acreage from 2,136 acres in 1980 to 3,156 in 1988.

3.110 Cumulative Effect of Plan Hap Amendments

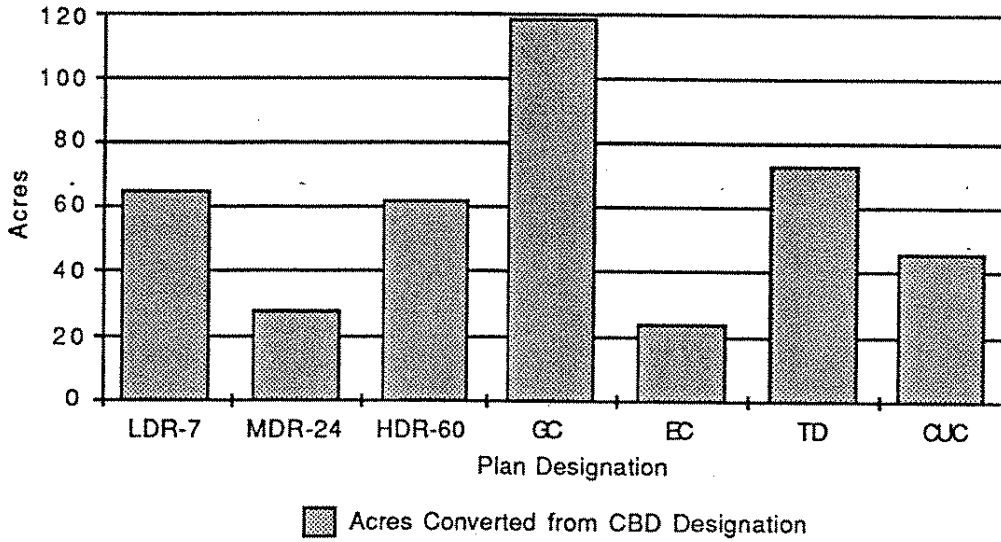
The intent of the plan map amendment process is to provide a means for redesignating the allowed use for a specific parcel. However, plan map amendment proposals are reviewed carefully, since many would allow more intensive land uses, and could thus have substantial impacts on surrounding property, as well as to increase property value. To ensure that potential impacts on neighboring properties are considered, and that increased land value is not the only motive, the decision is based on a demonstrated need for a proposed land used designation, and, a lack of appropriately designated alternative sites within the vicinity. The amendment must be consistent with applicable policies and implementation strategies of the city's Community Development Plan as well as the potential effects on existing and future public facilities are considered.

Over 40 applications for plan map amendments were submitted to the city between 1980 and 1987, with twenty—one of these proposals ultimately adopted. However, the total acreage affected by plan map amendments is somewhat misleading, since two major amendments were responsible for over ninety percent of the total area for all amendments.

The first major amendment was initiated by the city in 1982, when the Central Business District (CBD) was redesignated into eight separate districts, encompassing over 400 acres in the downtown area. This amendment impacted the city's ability to meet minimum requirements for buildable housing land, since the CBD designation allowed housing development of up to forty—two units per acre. Based on the 1986 land use inventory results, about 113 of the 424 acres within the CEO district were vacant or significantly underutilized, with a potential for 4,731 housing units when developed to maximum density. However, since the CEO district also allowed commercial uses, this total is not a reasonable estimate of actual development potential.

When the CBD district was amended, some of the designations for the area were new land use districts, including the Central Urban Core (CUC), High Density Residential (HDR) district, and the Transit Development (TD) district. The CUC and TD districts were unique, as they were the first designations to mix commercial and residential uses.

FIGURE 3-2
DISTRIBUTION OF CBD LANDS
Resulting from the Central Area Plan Amendment

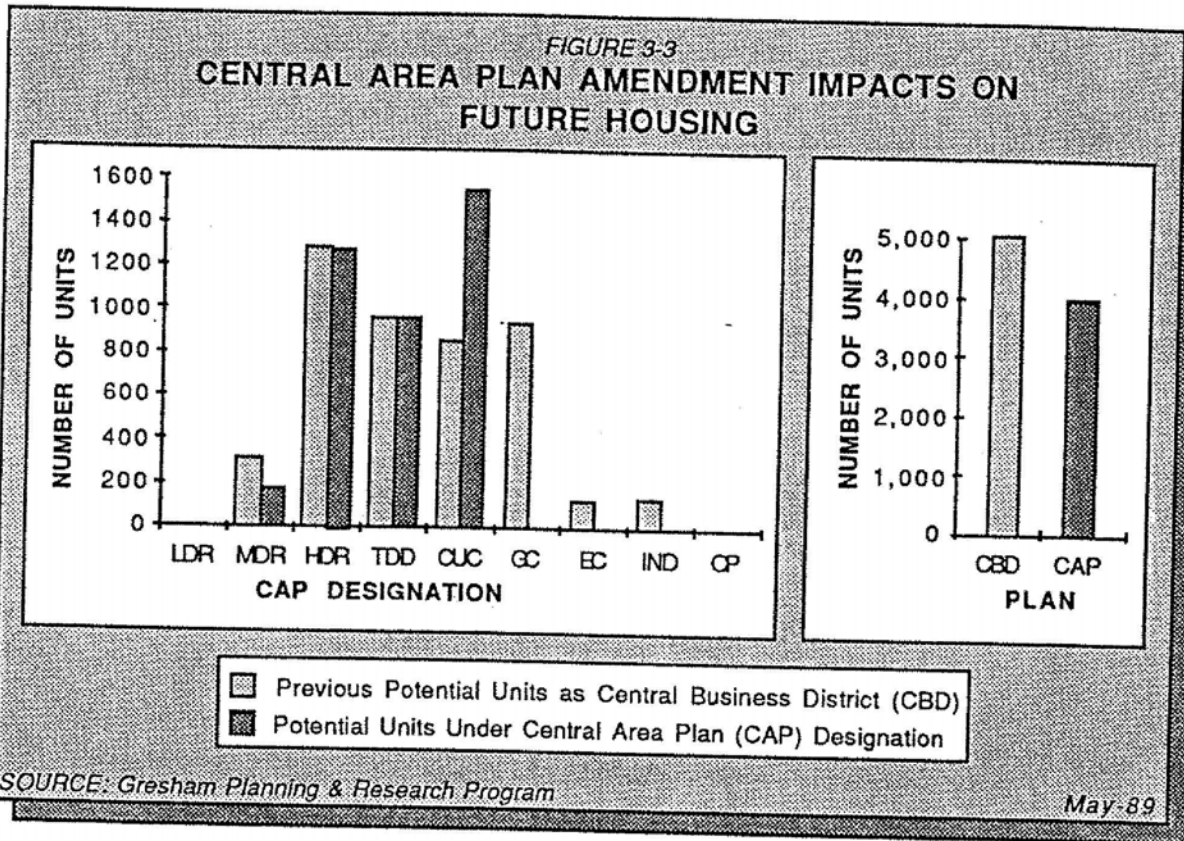


SOURCE: Gresham Planning & Research Program

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The 113 acres of vacant and underutilized land has a potential for 4,025 housing units under the new designations, some 700 units less than the maximum for the CBD district. Of these, 1,627 units could be built on land limited to residential developments, with the remaining 2,398 units on CUC and TD land. Since the Ct3C and ID districts also permit commercial uses, like the BD district, it is not reasonable to assume total development of housing at the maximum density for the CUC and ID districts.

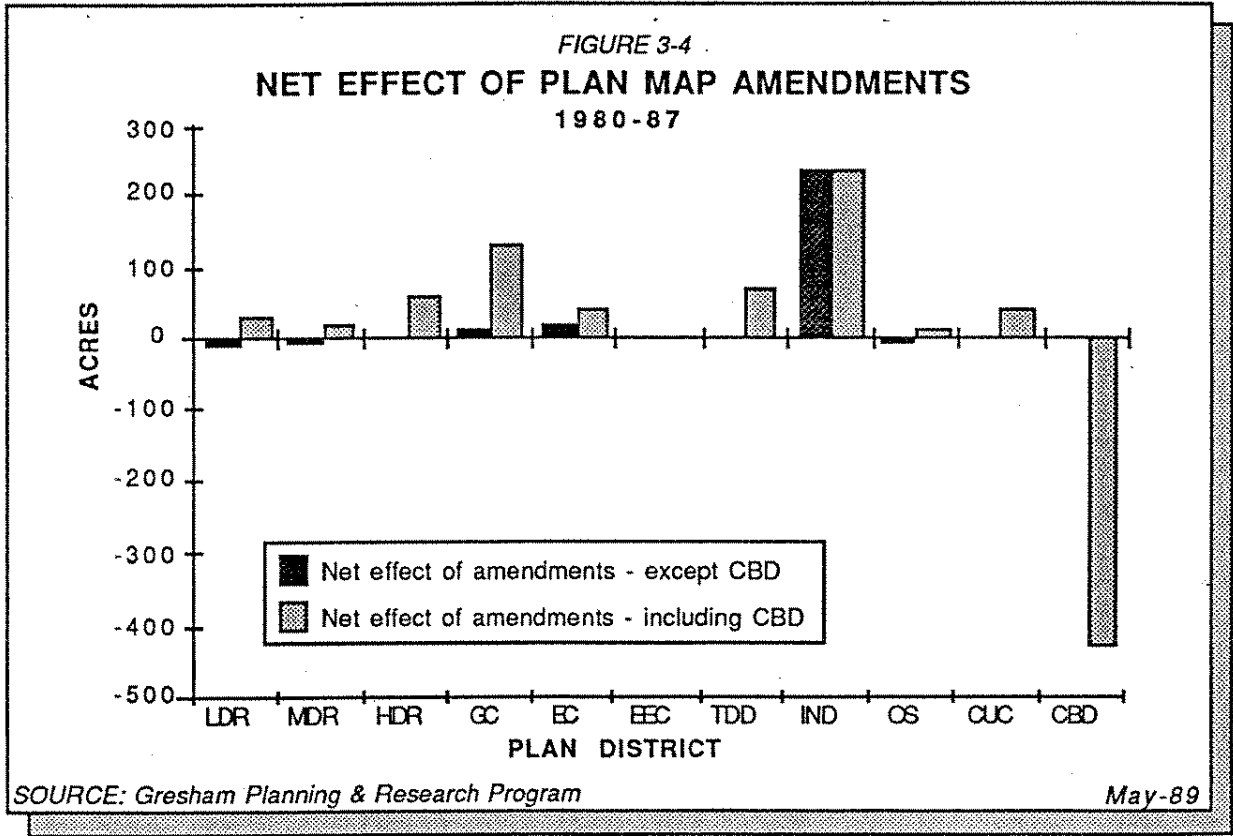
In order to examine the net effect of the CBD amendment on buildable lands in the central area, the following analysis (shown in figure 3—3) assumes a 50/50 mix of commercial and residential development in districts that allow mixed uses, and 100% development in exclusively residential districts.



The second major amendment also occurred in 1982, when approximately 250 acres of land owned by the Fujitsu Corporation was redesignated from county Medium Residential—3 (MR—3) zoning to Industrial (IND). At the time that this property was annexed, there was no indication that the city would soon be annexing huge portions of unincorporated Multnomah County, and the loss of residential land was not a significant concern to the city. Fortunately, even though annexations have dramatically affected the amount of buildable land for housing, the loss of 250 acres of medium density residential land to the Fujitsu development still does not significantly affect the city's ability to meet the housing mix and overall density requirements of the Metropolitan Housing Rule (see section 3.111).

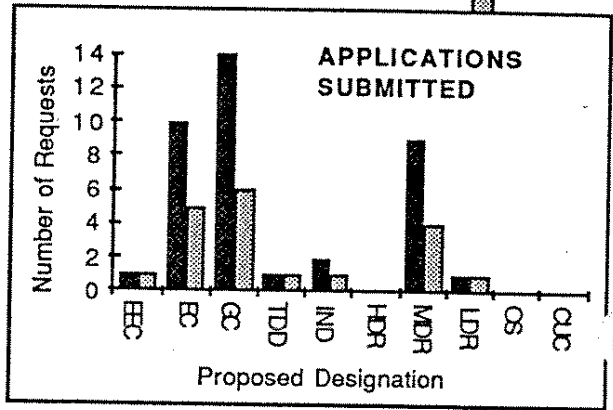
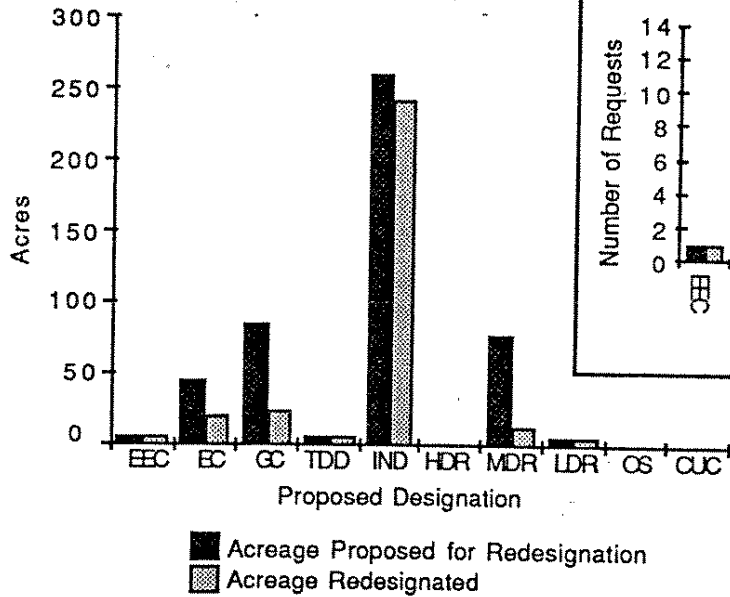
The remaining amendments adopted by 1987 affected a total of 67 acres. In 1988, eight plan map amendment proposals were submitted prior to the completion of the Periodic Review process; of these, four proposals were adopted, affecting a total of 14 acres.

The net effect of plan map amendments adopted through spring 1988 is shown in Figure 3-4. The net changes in acreage did not significantly change the balance of vacant land within any single land use district, and had no significant impact on the city's ability to meet state requirements for buildable land inventories. The net effect on buildable residential lands was a reduction of 2.8 percent for attached housing, and 0.5 percent for detached housing, which does not significantly affect either the housing mix, or overall density requirements of the Metropolitan Housing Rule (see section 3.131).



Though the net acreage within any given district did not change significantly as a result of plan amendments, there was a clear desire to designate additional commercial and industrial lands on behalf of the applicant. Figure 3-5 shows privately initiated plan amendment proposals, including denied and withdrawn applications. This demonstrates not only the desire for designations such as Extensive Commercial (EC), and General Commercial (GC), but also the lack of interest in other designations, such as Low and Moderate Density Residential (WE, MOE).

FIGURE 3-5
PRIVATELY INITIATED PLAN MAP AMENDMENTS

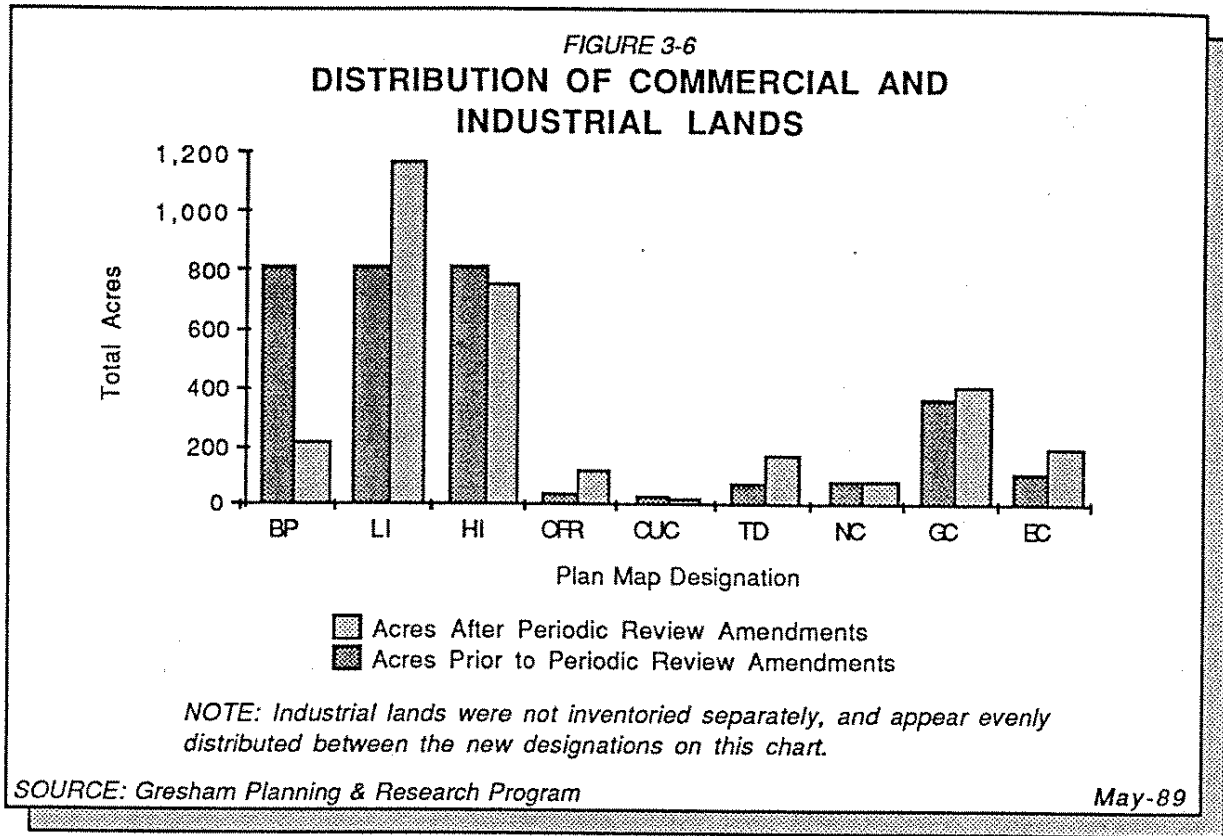


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SOURCE: Gresham Planning & Research Program

Many of the amendments that were adopted led to economic development for the city. The Fujitsu property added a huge amount of serviceable industrial land to the city's inventory, and several of the commercial amendments were directly related to new developments, such as new shopping centers or other retail activities. Only the Fujitsu amendment substantially enhanced the city's ability to provide services, since it enabled public grants to fund extensions of sewer mains along Glisan and 202nd, serving properties in that area.

As a part of the Periodic Review process, the city redesignated a large number of parcels as the areas annexed since 1980 were incorporated into the updated Comprehensive Plan. While most of the redesignations had little effect on allowed uses or development standards, several were determined to be of significant impact, and required more detailed review and justification. The effect of these amendments is shown in Figure 3-6.



3.120 COMMUNITY SERVICE USES

In addition to the primary development intended for a district, there are community service developments that are appropriate in a particular area because of social or technical need. These uses are permitted under community service guidelines of the Development Code, and include such activities as public utilities, parks, schools, hospitals, care facilities, churches, and cemeteries.

Though community service developments do not represent a change in permitted use, they still impact the buildable land inventory within each district. This impact is most significant in residential areas, where potential housing units are precluded by community service developments such as churches and clinics.

From 1980 to 1987, 39 applications for community service developments were submitted, and all of these have been approved. Of the additional 4 applications that were submitted in 1988 prior to completion of Periodic Review, all were approved. The greatest impact of these developments has been on the Moderate Density Residential district, where 40 acres of buildable land were precluded from development by new community service uses; this in effect displaces as many as 960 potential dwelling units.

The Low Density Residential district was also significantly affected, where community service developments expanded to occupy an additional 32 acres of the buildable land, displacing 159 potential residential units.

Two large developments were responsible for a significant portion of the total area converted to area accessory uses; the Mount Hood Medical Center complex occupies over 20 acres of Moderate Density Residential land, and the various light rail stations and maintenance facilities occupy 23 acres of industrial and commercial land.

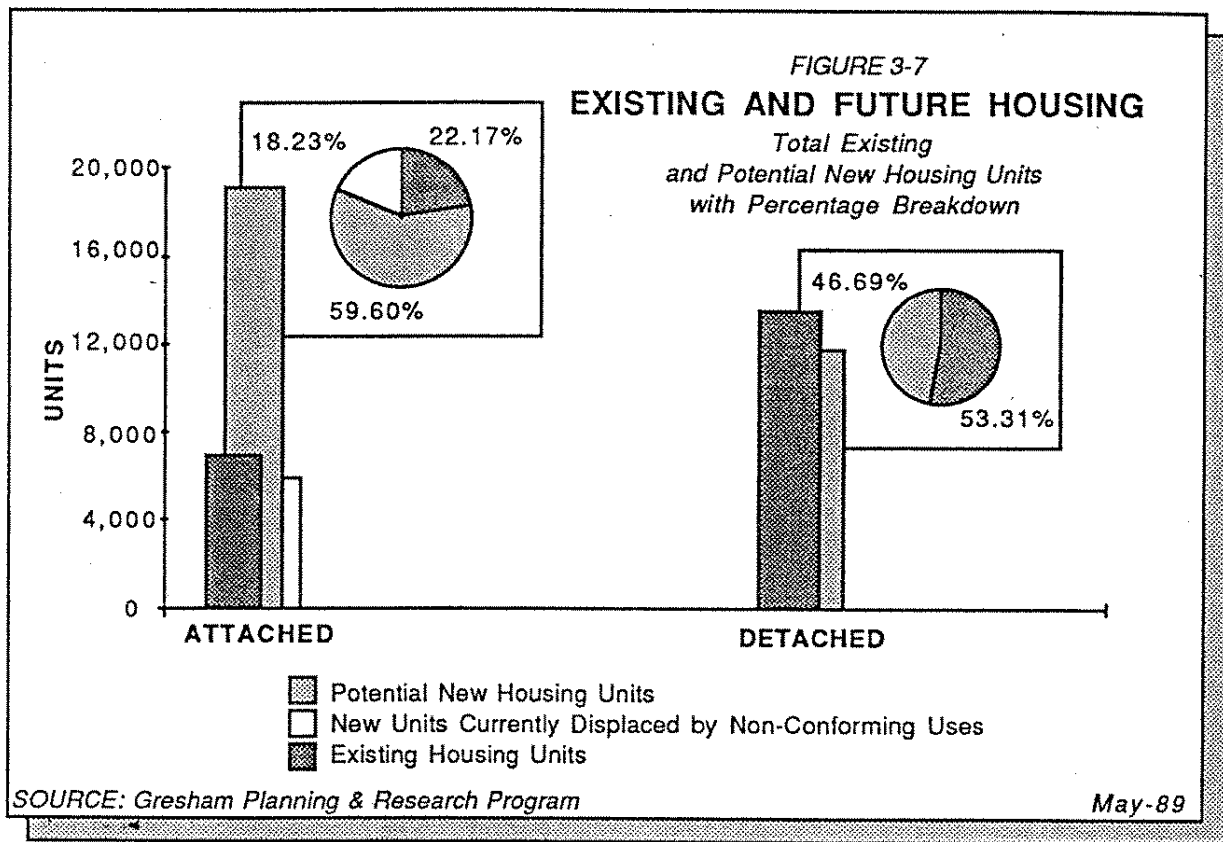
3.130 RESIDENTIAL LAND USE CHARACTERISTICS

With the phenomenal growth that brought nearly 30,000 residents to the city between 1960 and 1980 came thousands of new dwellings. Gresham typified the “bedroom community” image created by suburban growth throughout the nation during this period. During the 1980s, commercial and industrial development have outpaced new housing, but residential growth has continued, nevertheless. Since 1980, the Gresham area has witnessed a net population increase of 8%, with a 11% increase in the housing stock.

3.131 Residential Land Use Inventory

The Gresham Planning Area was inventoried in the fall of 1986 (Appendix 27) to determine the amount of existing housing, as well as buildable lands available for future residential development. Using building permit records, this inventory has been updated through 1987.

The results of the inventory show an existing housing stock of 21,659. Of the total amount, 13,975 dwelling units (65%) is and the remaining 7,684 (35%) is attached housing.



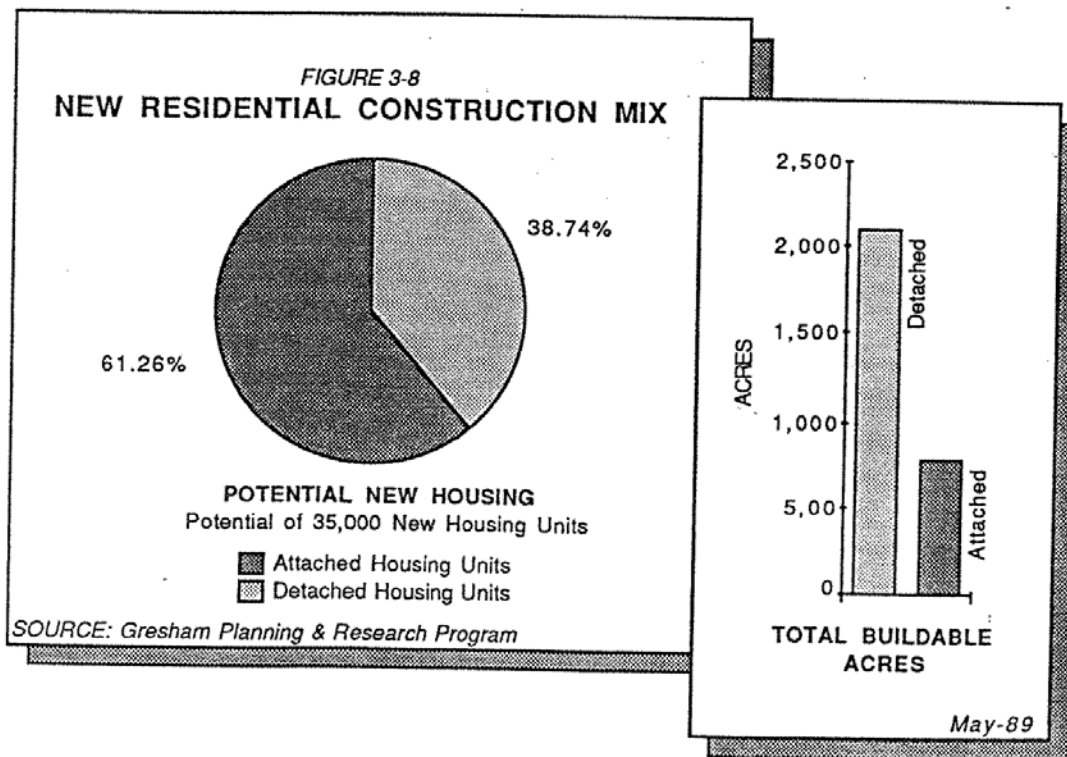
With the restricted development potential for lands that lie within a physical constraint district taken into account, a potential for as many as 28,600 new housing units exists. Of these, over 16,760 could be attached units, and 11,840 detached dwellings. An additional 6,000 potential attached housing units are currently displaced by non-conforming uses in residential districts.

Metropolitan Housing Rule

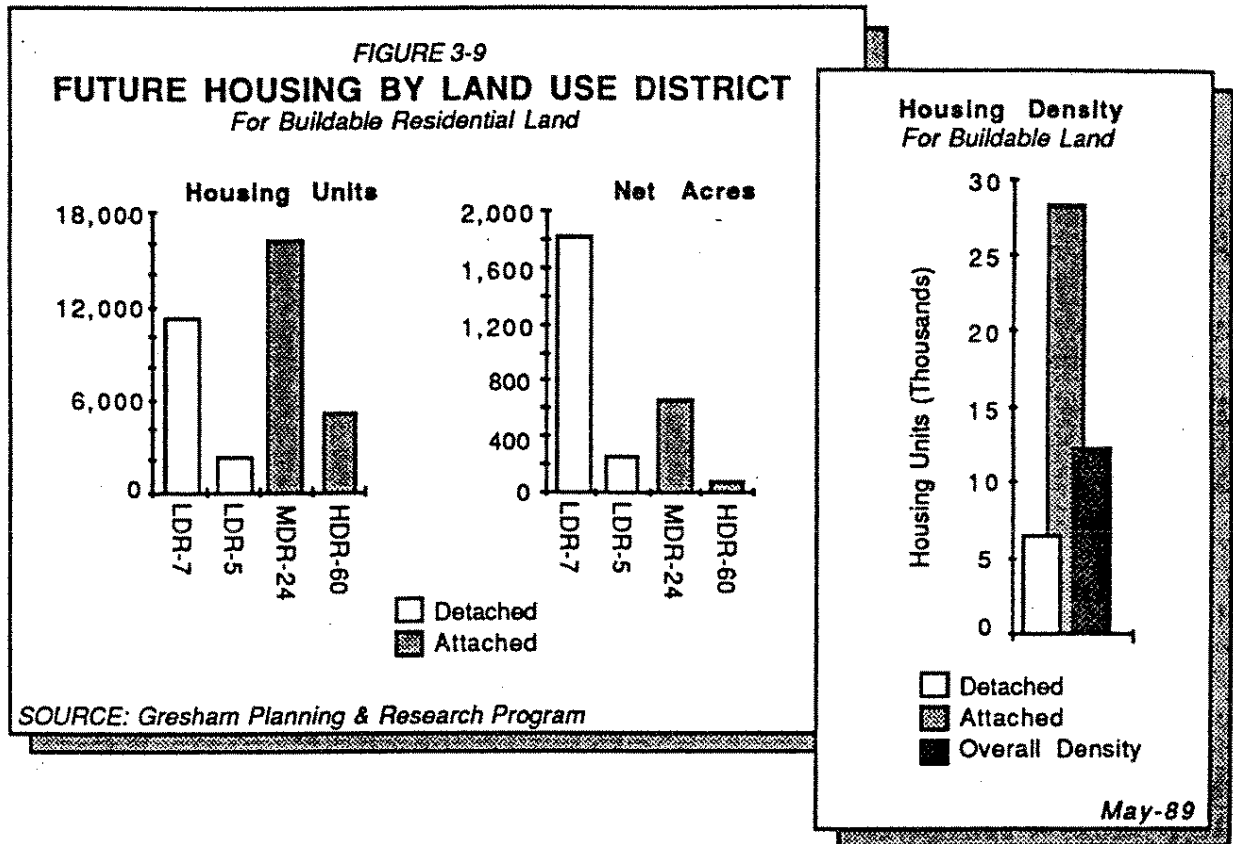
During the periodic review process, extensive field research was required in order to evaluate Gresham's compliance with the requirements of OAR 660.07, the Metropolitan Housing Rule. The purpose of the rule is to "assure opportunity for the provision of adequate numbers of needed housing units and the efficient use of land... [and] to provide greater certainty in the development process and so to reduce housing costs." This objective is achieved through concise definitions of "needed housing" that jurisdictions are required to accommodate, minimum overall development densities for all housing types, and a prescribed new construction mix of attached and detached housing on buildable residential land.

The definition of "needed housing" includes the mix of attached and detached housing specified in the rule, but also specifically mentions manufactured homes, and government assisted housing. Gresham accommodates all of these housing needs in its housing districts and standards.

The new construction mix on buildable residential land must provide the opportunity for at least 50% of new housing to be attached housing. Using a combination of sources, including the 1986 Land Use Inventory, building permit records, and 1988 residential map amendments that resulted from the periodic review process, a new construction mix of 41.4% detached housing, and 58.6% attached housing was determined to be available (Figure 3-8). However, this is a conservative estimate of potential attached housing, since future housing was not included for mixed use districts such as Office Residential (OFR), Transit Development District (TD), Central Urban Core (CUC) and the Moderate Density Residential-12 (MDR-12) district, which permits mobile home developments.



The rule also requires several cities in the Portland area, including Gresham, to meet a minimum overall density of 10 or more units per net buildable acre for new residential construction. Gresham meets the standard, since new construction maximum allowed density for residential districts would achieve an overall density of 11.75 units per net buildable acre (Figure 3-9). The TD, OFR, CUC and MDR-12 districts are excluded from this estimate, as well, making the overall density a conservative estimate.



At each periodic review of the Portland Metro Urban Growth Boundary (UGB), Metro is required to review the findings for the UGB and determine whether a shortage of buildable lands for any land use, including housing, exists. However, Gresham retains a large amount of undeveloped residential land for all housing types, and it is unlikely that the Metro findings would support expansion of the Urban Growth Boundary where it forms the eastern and southern limits of the city.

Legislation adopted in 1993 (118 2835) requires most cities in the state, including Gresham, to amend its comprehensive plan and land use regulations to allow manufactured homes on all lands designed for single-family residential uses. The legislation does not apply to any area designated as a historic district or residential land immediately adjacent to a historic landmark.

(Amended by Ord. 1205 passed 12/18/90; effective 1/17/91.)

(Amended by Ord. 1308 passed 4/5/94; effective 5/5/94.)

3.132 Structural conditions

A review of demolition permits issued from late 1982 through fall 1987 indicates that of the estimated 75 single family demolition permits issued, all but 15 were for structures located along arterial streets, of the 15 units not located on major streets, most were non-conforming uses in industrial or commercial areas. Although the number of housing units that continue to exist despite structural problems is unknown, figures suggest that the total number is a small percentage of the housing stock; because units demolished during this period were not being replaced with similar residential uses, and many structures that have been allowed to deteriorate are either non-conforming or in an undesirable location for residential uses.

3.140 RESTRICTIONS ON RESIDENTIAL DEVELOPMENT

Special purpose districts are overlay district designations shown on the Community Development Special Purpose District Map. Uses permitted in areas with these designations are generally those permitted in the underlying district, subject to special development standards. All of the special purpose districts are related directly to development constraints or to the presence of significant natural or cultural resources, or open space values, and frequently impact the development potential for residential land. Development proposals within these special purpose districts must include data for determining the actual portions of a development site which are within one of the districts and therefore subject to special development standards.

3.141 Natural Resources and Physical Constraints

In early 1988, an inventory of natural resource sites and areas affected by physical hazards was compiled. Information in the inventory reflects extensive field observations by natural resource experts, and published data by state and federal agencies. The following description of the special purpose districts addresses development considerations for sites included in this inventory:

Flood Plain Physical Constraint District – Development within the 100-year flood plain, as determined by the Federal Emergency Management Agency (FEMA) is restricted where documented natural resource or open space values are also present. In other flood plain areas, development may be permitted subject to design standards intended to minimize potential flood damage, and based on findings that the capacity of the flood plain would not be adversely affected. In low-density residential districts, a density transfer credit of two dwelling units for each acre within the flood plain is available.

Hillside Physical Constraint District 15%-35% Slope – This special purpose overlay district is found entirely within low density residential land use districts. Special development standards are applied, and detailed reports concerning soils and engineering techniques are required. Minimum lot sizes range from 14,000 sq. ft. to 29,000 sq. ft., depending on the degree of slope. Clear-cutting of timber within this district is prohibited.

Hillside Physical Constraint District – 35%+ Slopes – This district occurs entirely within low density residential land use districts. Property which is entirely within this district may be improved to the extent of one dwelling unit for each existing lot of record: A density transfer credit of one dwelling unit per acre within this special purpose district is established. Clear-cutting of timber within this district is prohibited.

Natural Resource District – This district encompasses sites of high natural resource value as identified in the Inventory of Significant Natural Resources and Open Spaces. Development within this district is generally limited to uses for which there is a documented public need and where alternative sites are not available. A density transfer credit is available for low density and moderate density residential sites lying partially within this district.

Open Space District – This district encompasses sites identified as having significance for open space characteristics, as identified in the Inventory of Natural Resources and Open Spaces. Public and private open space areas with this special purpose overlay designation include parks, schools, golf courses, and greenways. Development within this district is limited to community service uses serving a public need and various recreational uses. A density transfer credit is available for low density and moderate density residential sites lying partially within this district.

3.142 Historic Resources

In 1987, an Historic Resource Inventory Report (Appendix 9) was compiled for the Gresham Planning Area. The goal of the inventory was to create a product which would serve as the primary historic resource management tool for future land use decisions and establish a guide for future preservation policies of the city. The inventory is based on a visual overview of the planning area, a literature search for historic dates and records, and survey information for each site listed. These sites ranged from historic bridges and cemeteries, to churches, schools, and residences. Of 238 sites inventoried, 191 were residences. The 1987 inventory report served as the data base from which a landmarks inventory, containing the most significant of the city's historic and cultural resources, was prepared. This landmarks inventory is attached as Appendix 9. The following is a description of the special purpose district for-historic and cultural resources:

Historic Landmark District – This special purpose district designation is applied to historic landmark sites which have been identified in the Inventory of Historic and Cultural Landmarks. It also applies to property lying north of Interstate 84, where discovery of archeological resources during the course of development is likely. Some landmarks with this designation require prior review and approval of proposed exterior alterations, and all landmark structures are subject to standards which could delay issuance of demolition permits.

The history of Gresham is reflected both in the city's form and in the buildings and structures erected over time by the citizens. As buildings fall into disuse and deterioration, the city's historic and cultural heritage passes into oblivion. Positive public policy is required in order to draw civic attention to our historic heritage and to provide impetus for continuing activity. Historic resource planning is especially needed in a city like Gresham, where recent extremely high growth rates threaten to blur the past and obliterate its tangible evidence.

Historical resources can play a vital role in establishing a community identity and enhancing educational and aesthetic qualities.

In accordance with Statewide Land Use Goal 5, resources surveyed in the 1987 Historic Resource Inventory Report were evaluated to determine their relative significance in the Gresham area. The most significant of these resources have been designated as landmarks. These landmarks are listed in Figure 3-10 and described in detail in the inventory of Historic and Cultural Landmarks (Appendix 9), adopted as an appendix to the Community Development Plan. Those listed as Class 1 landmarks are considered to be the most significant. Four of the Class I resources are listed on the National Register of Historic Places. These are the Zimmerman House, the Louise Home, the First Bethel Baptist Church, and the Gedamke Residence. The Class 2 resources are somewhat less significant but still of considerable value to the community due to their age or architecture.

As described in the Inventory of Historic and Cultural Landmarks, each of these resources is subject to conflicting uses in the form of periodic alterations or demolition. Additional conflicting uses have been documented for some of the landmarks. In order to protect these historic landmarks against conflicting uses which would result in their being degraded or eliminated, a program has been developed to provide appropriate levels of protection. This program is based not only on an identification of conflicting uses which threaten the landmarks, but also on a recognition of the Economic, Social, Environmental and Energy (ESEE) consequences which protection of the landmark would have on the landmark and on the identified conflicting uses. The inventory contains an analysis of the ESEE consequences. This analysis indicates that none of the landmarks are so significant or so threatened by impending actions that all conflicting uses should be prohibited. At the same time, all of the landmarks warrant some degree of protection against hasty demolition, and those identified as Class 1 landmarks should be protected against major permanent alterations which would adversely affect the character and integrity of their exterior appearance.

FIGURE 3-10

INVENTORY OF HISTORIC AND CULTURAL LANDMARKS

Class 1 Landmarks

No.	Address	Name	Points	Use	District
1	17111 NE Sandy	Zimmerman House	100	Institutional	BP
2	410 N. Main	Carnegie Library	95	institutional	CUC
3	1304 E. Powell	William Gedamke House	90	Commercial	DC-2
4	722 NE 1 62rn1	The Louise Home	90	Institutional	LDR
5	1420 SE Roberts	Witter(Stallard) Residence	85	Residential	LDR
6	3680 SW Towle	Heiney House	85	Residential	LDR
7	101 S. Main	I Bethel Baptist Church	80	Institutional	CUC
8	938 SE Roberts	Bernard Witter Residence	85	Residential	LDR
9	330 W. Powell	W. Gresham Grade School	80	Institutional	CUC
10	140 SE Roberts	Rev. Thompson Residence	80	Residential	LDR
1.1	1325 W. Powell	J, R. Elkhorn Ranch	75	Residential	LDR
12	2415 SE Ambleside	Ambleside House	90	Residential	LDR
13	43 NE Ava	V K. Hamilton Residence	70	Residential	DR- 12
14	307 NE Kelly	Freeman Property	75	Residential	CUC
15	1229 W. Powell	Dr. Hughes Residence	65	Residential	LDR
16	1265 SE Roberts	Judge Stapleton House	80	Residential	LDR
17	3655 SE Powell	Peterson Residence	80	Residential	LDR
18	611 NW Wallula	Fred Honey House	75	Residential	LDR
19	31 NW 11th	Lunceford Residence	80	Residential	LDR
20	53 NW 12th	Walker Residence	80	Residential	LDR
21	54 NW 12''	Aldrich/Bliss House	80	Residential	LDR
22	1801 NE 20 15t	Lowitt Estate	70	Residential	MDR-24
23	2202 SW Pleasant View	Giese House, Workshop & Cellar	50	Residential	LDR

Class 2 Landmarks

No.	Address	Name	Points	Use	District
24	103 W. Powell	US Post Office	85	Institutional	CUC
25	122 N. Main	Duane C. Ely Building	75	Commercial	CUC
26	58 W. Powell	Gresham Lodge #152	75	Institutional	CUC
27	19720 SE Stark	11-Mile Marker	75	Object	GC
28	23500 SE Stark	13-Mile Marker	75	Object	GC
29	25700 SE Stark	14-Mile Marker	75	Object	LDR
30	I-84 & NE 169 th	Pioneer Grave	75	Object	BP
31	18706 E. Burnside	Satellite Restaurant	70	Commercial	TD
32	101-117 N. Main	Congdon Building	60	Commercial	CUC

SOURCE: Gresham Historic and Cultural Resources Inventory (1990), 93-32-CPA, and Gresham Comprehensive Plan Map.

(Amended by Ordinance 1194 passed 10-2-90; effective 11-2-90)
 (Amended by Ordinance 1414 passed 2-4-97; effective 3-6-97)
 (Amended by Ordinance 1456 passed 9-15-98; effective 10-15-98)

To implement this program, measures have been adopted as part of the Community Development Code and Standards volumes. These measures seek to involve interested citizens in protecting landmark resources, promoting the economic and cultural benefits of historic resources, and designating additional landmark resources as new information is presented.

(Amended by Ordinance 1194 adopted 10/2/90; effective 11/2/90.)

3.143 Cultural Resources

There are few precisely identified or documented archaeological sites in Gresham. This, however, does not suggest that such sites are non-existent or that indications of pre-history in the Gresham area are lacking.

The lack of archaeological sites is related to the lifestyles of west coast aboriginal peoples who sustained themselves through hunting and gathering as opposed to large scale agricultural settlements. American Indian settlements in Multnomah County were primarily in the flood plain of the Columbia River. Evidences of man's occupation of the Columbia region dates back to 10,000 B.C. in The Dalles. Evidence of settlements in the Portland area date back to 3,000 B.C. (Kongas, p. 11).

Occupation of most sites was seasonal. Permanent villages were built along the Columbia River. Fishing along the Columbia in the spring, gathering wapato in the ponds and picking berries in the bottomlands in the summer, and hunting in the uplands in fall provided the basis of the Indian seasonal migrations.

Two tribes of Upper Chinook dialect people, the Clackamas and the Cascades, were the most common to the local area. Relatively little is known about the Clackamas peoples. Their hunting range took them through most of present day east Multnomah County and throughout the Mt. Hood National Forest west of the Cascade summit. They were not believed to be a populous people — in 1806 their number was estimated at 1,800.

Lewis and Clark estimated 8,000 people lived between present—day Portland and the Cowlitz River during their visit in 1806. Decimation of the Indian population in the Pacific Northwest began prior to Lewis and Clark's visit and really dates from the first maritime explorations in the sixteenth century. Lewis and Clark reported a smallpox epidemic had occurred about 1780. Four major subsequent epidemics are known: 1829 measles on Sauvie's Island, 1830 malaria in Fort Vancouver, 1847 measles at The Dalles, and 1853 smallpox epidemic. By 1830, between 75% and 90% of the Indian population in the lower Columbia River area had died.

The Cascade Tribe was a name commonly applied by whites to native residents of the Cascade Mountain area of the Columbia River. Their language, the Wathale dialect, is thought to be transitional between the Wishram and the Clackamas dialects.' The tribes were highly transient, primarily living off fishing and trading activities. The majority of Cascade villages were located on the north bank of the Columbia River. The Indian village closest to present-day Gresham was at the western end of what is now Blue Lake Park, although signs of early habitation are found throughout the Columbia South Shore area. The name of this village was

Necha-co-kee, according to Lewis and Clark. Clark used an Indian guide from this village. In his journal, he described in detail a long house in this village. The remains of five other houses stood behind the occupied long house. The father of Clark's guide told Clark that villagers who occupied the other houses had died in a smallpox epidemic thirty years earlier. (Kongas, p. 21). About 100 people were left. These people were related to a tribe in The Dalles. Due to the construction style and materials used, no dwellings have survived.

Due to the isolated nature of campsites and the vast amounts of humus accumulations on the forest floor, archaeological sites are usually found accidentally.

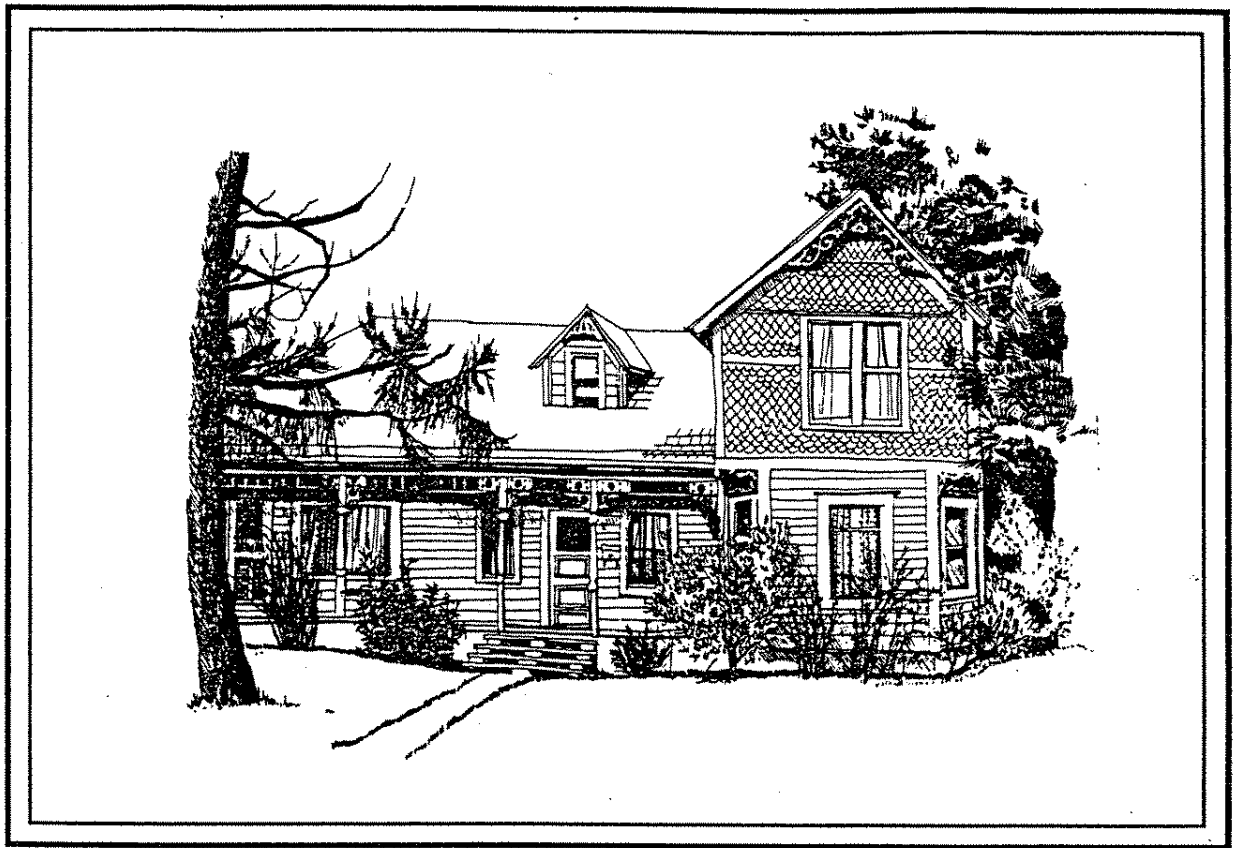


FIGURE 3—11

CITY OF GRESHAM — MARCH, 1987
HISTORIC RESOURCE INVENTORY EVALUATION CRITERIA

TOTAL RATING _____ POINTS

RESOURCE NAME: _____ ADDRESS: _____
EVALUATION FACTORS: _____ EVALUATORS: _____

- A. Resource reflects one or more of the following themes:
- | | |
|--|--|
| <input type="checkbox"/> Prehistory | <input type="checkbox"/> Government |
| <input type="checkbox"/> Exploration | 1. Federal Government |
| 1. Maritime | 2. Local Government |
| 2. Transcontinental | 3. State Government |
| 3. Settlement | <input type="checkbox"/> Military Activities |
| <input type="checkbox"/> Native American | <input type="checkbox"/> Culture |
| <input type="checkbox"/> Agriculture | 1. Art |
| 1. Farming | 2. Religion |
| 2. Horticulture | 3. Education |
| <input type="checkbox"/> Commerce & Industry | 4. Architecture |
| 1. Transportation & Travel | 5. Science & Engineering |
| 2. Manufacturing & Processing | 6. Humanitarian/Social Program |
| 3. Communication | 7. Outdoor Recreation |
| 4. Service & Dist. of Goods | 8. Conservation |
| | 9. Monuments |

HISTORIC CONSIDERATIONS: (30 POINTS) RATING _____

- B. The Resource possesses interpretive potential: _____
- The Resource is associated with past events, trends? or values that may be either cultural? economic, social, or political.
- The Resource is associated with a group or organization relevant to city, county, state or national history.
- The Resource is associated with the life or activities of a person significant in the past.

ARCHITECTURAL CONSIDERATIONS: (40 POINTS)

- C. The Resource is significant under the following criteria: _____
- Resource represents the work of a master or possesses high artistic values.
- Resource embodies the distinctive characteristics of a type, period or method of construction.
- Resource was developed early in the sequence of local history.

- ___ Resource is one of the few remaining resources of its type in the area.
- ___ Resource is the work of a major local architect, builder or engineer.
- ___ Resource represents the work of a nationally famous architect.
- ___ Resource is a rarity of type, style or design.
- ___ Resource retains integrity of the original design. Resource alterations have been compatible with original design.

PHYSICAL & SITE INTEGRITY (20 POINTS)

D. The Resource must possess historic integrity. _____

- ___ Resource is on the original site.
- ___ Resource contains sufficient original workmanship and material to identify period construction.
- ___ Resource contributes to its immediate environment.
- ___ Resource contributes to the character and physical development of the neighborhood or city. Site character contributes to the resource's integrity.

USE CONSIDERATIONS (10 POINTS) _____

- E. ___ The resource is in good condition but may be threatened by public or private action.
- ___ The resource through public interest, sentiment or uniqueness offers educational value to the community.
- ___ The resource can be adapted to new use without damaging significant architectural elements.

TOTAL _____

FINAL RATING

_____ 50—100	ELIGIBLE FOR INCLUSION IN INVENTORY
_____ 0—50	SURVEYED BUT NOT ELIGIBLE FOR INCLUSION IN INVENTORY

SOURCE OF FACTORS:

1. Gresham Development Code
2. Multnomah County Zoning Code
3. National Register of Historic Criteria
4. State of Oregon, Land Use Goal 5

Fire pit lenses and other isolated finds have been recorded and investigated along the Sandy River and along Deep Creek in northwestern Clackamas County.

Eighteen archaeological sites have been inventoried in Gresham by the State Historic Preservation Office. The extent of investigation varies considerably among these sites. However, sufficient data have been gathered in connection with these investigations to determine that archaeological resources do exist in the Gresham area, and that more are likely to be encountered in connection with development activity. Detailed assessments of the significance of archaeological sites disturbed or discovered in this manner should take place at the time of discovery. At that time, the ESEE consequences of protecting the site or allowing development can be considered based on the input of qualified professionals and the State Historic Preservation Office.

Age of Structure

The earliest residential development in the Gresham area occurred in the late 1800s when the great migration along the Oregon Trail brought settlers through the region on their way to the Willamette Valley. Many claimed land along the Barlow Road, and along the network of subsequent roads that crossed what is now east Multnomah County. A few houses and farm buildings from that era still exist.

By the early 1900s, Portland was experiencing enormous growth, largely as a result of the 1905 Lewis and Clark Exposition, which gave the city international exposure, and helped to establish Portland as a major marine port. The booming population, and generally increased affluence prompted owners of large land claims in the east County area to divide their property into large, rectangular “junior acre” lots, providing a rural lifestyle in close proximity to the city, but away from the congestion of Portland’s increasingly urbanized east side.

This pattern of development continued until the 1940s along early county roads such as Barker (now 162nd), Jenne (174th), Stark, Burnside, Division, and Powell. Today, many of these structures still exist, despite the substantial widening of many of the streets on which they are located. The large “junior acre” lot patterns are also evident, and these early land divisions continue to have a significant impact on new development and land divisions.

By the 1950s, demand was increasing for smaller subdivision lots as a result of Federal Housing Authority (FHA) loan programs and suburban growth throughout the metropolitan area. This resulted in new subdivisions that were created from the remaining large tracts, behind existing “junior acre” lots, with local access streets typical of today’s residential development. These homes make up the majority of the 4,500 single family structures that were annexed to the city after 1980, and were built almost entirely during the 1950s and ‘60s.

The 1960s and '70s brought unprecedented growth to the area, with single family development spreading eastward into Gresham. Over 6,000 housing units were built in Gresham during the 1970s, which constituted almost 60% of the city's housing stock at that time. During this period, multiple family developments also occurred, usually along major arterial streets, and in close proximity to commercial districts, such as Rockwood and the Burnside Strip. By 1980, the housing stock for the planning area had grown to an estimated 12,000 single family dwellings, and 7,000 multiple family units, with nearly all of the housing stock less than thirty years old.

Today, continued growth has increased the housing stock of the planning area to 13,500 single family units and 8,000 attached dwellings. Nearly all of the city's housing is still less than 40 years old.

3.700 FIRE AND POLICE PROTECTION

Gresham's Fire Department operates from four existing fire stations. The main station is located at the Gresham City Hall, Station 2 at Kane and Division, Station 3 at SW 23rd and Pleasant View Drive, and Station 4 at 192nd and Halsey. All stations are staffed 24 hours per day. A backup force of volunteer firefighters provide additional service from Stations 2 and 3. A future fifth station may be necessary to meet the needs of southeast Gresham residents.

The City of Gresham has a class 3 fire insurance rating. The rating is based on several factors, including the adequacy and reliability of water supply, staffing levels and the kinds and numbers of firefighting equipment available.

The Gresham Fire Department provides a full range of fire protection services including fire suppression, emergency medical services at an advanced life support level, fire safety inspections, public education, fire investigation, disaster planning and new development plans review and inspection. In addition, Gresham operates a regional hazardous materials emergency response team.

In 1984 a citizens committee reviewed the fire department and its operations and developed a five year Fire Service Master Plan which was adopted by the City Council in November of 1984. The Master Plan identified specific performance standards for the department and identified recommendations for future service levels. The Plan has been updated annually by the committee so that it continues to project five years ahead.

Recent annexations have greatly increased the responses made by the Fire Department. The Department responded to 3,070 calls in 1987 and expects to respond to over 4,500 in 1988. Until early 1987 Gresham required the installation of fire sprinkler systems in buildings with over 10,000 square feet. This ordinance, more restrictive than the State Building Code, was declared invalid by a State Attorney General's Opinion, and consequently has not been enforced since. However, the Fire Department continues to support the installation of these systems whenever possible including the installation in single and multi-family residences.

3.710 POLICE PROTECTION

In order to successfully achieve the City of Gresham's public safety policy, the Gresham Police Department provides a full range of services including patrol, investigation, traffic enforcement, crime prevention, and several specialty units, all of which are operated to enhance the safety and security of Gresham residents.

Requests for police service are prioritized according to their severity, with the most serious calls (life threatening or crimes in progress) dispatched first. In an effort to provide responsible service to our citizens, the Gresham Police Department strives to respond to high priority calls in an average of under five minutes. The average response time goal for low priority calls is set at under nine minutes. Currently, the city is sectioned into six patrol districts to maintain these average response times. As the city's population increases, these geographical

areas will be appropriately realigned to maintain acceptable average response times within each district.

As the city grows through annexation and development, the Police Department plans to expand and reorganize services to meet the increasing police service needs of the fourth largest city in the state. In fiscal year 1 987-88 the per capita ratio for police was 1.29 officers per thousand persons, as compared to a state average of 1.5 officers per thousand for cities with a population of over 50,000. Recommendations to increase the police density will be made as necessary and appropriate.

The Police Department recognizes the advantage to deterring crime through effective review of new building design proposals, The review allows the department to assist in recommending design changes prior to the construction stage to enhance security and emergency access.

As the City of Gresham expands, there will be a concerted effort to bring targeted problem areas up to the same standard of safety that has been expected by established Gresham citizens. This will be accomplished by intense visibility of patrol officers in problem areas; selective traffic enforcement in hazardous traffic areas; tailored educational crime prevention programs for specific problems; and in-depth analysis of crime problems within the various neighborhoods and business centers to provide the most appropriate service.

3.900 ENERGY AND COMMUNICATIONS FACILITIES

Service Providers in Gresham

Electricity – Portland General Electric (PGE).

PGE has offices and shops in Gresham. As of March 1980, PGE served 11,022 residential accounts and 1,148 commercial, industrial and other accounts, for a total of 12,170 accounts.

Telephone – General Telephone Company (GTE).

General Telephone Company has district offices in Gresham. General Telephone does not maintain account records by political jurisdiction, but rather by service area. The Gresham District service area extends west to the general area of 181st Street, north to the Columbia River, east to the Sandy River and south to the Clackamas River. As of 1979, the Gresham District included 45,454 accounts.

Gas – Northwest Natural Gas Company

Northwest Natural Gas Company serves the Gresham area with a total of 4,712 accounts as of March 31, 1980. Northwest Natural Gas accounts consist of 4,245 residential, 463 commercial and 4 industrial customers.

News Media – *Gresham Outlook*

Gresham is served by the *Gresham Outlook* newspaper, published three times weekly, with a paid circulation in excess of 17,000. Two Portland newspapers also are available and include

Gresham news. A local radio station, KRDR, focuses on Gresham news and events. The area is also served by numerous Portland radio stations and five area television stations.

Capacity, Needs and Problems

No specific service delivery problems related to the energy service providers have been identified. The Energy Sources and Conservation Sections (Vol. 1, Sec. 2.371 - 372) identify energy issues affecting Gresham. Plans of service providers to continue or expand service to Gresham will undoubtedly be made in the context of national, regional and metropolitan conditions and policies. Plans for energy service to Gresham will be shaped by energy supply, demand and pricing policies of more than local significance. Sections 2.371-372 of Volume I discuss energy supply demand and conservation factors which describe the energy situation of Gresham.

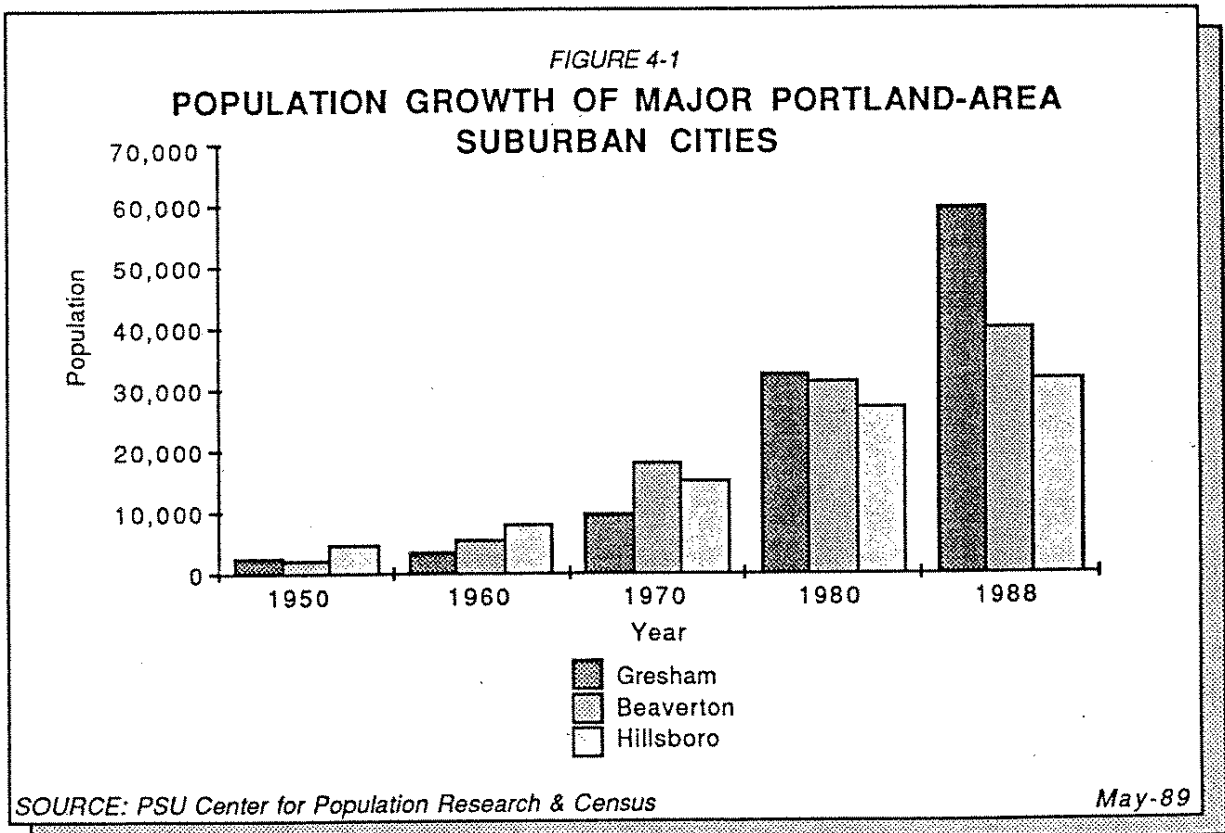
4.000 SOCIAL ENVIRONMENT

4.100 POPULATION CHARACTERISTICS

4.110 POPULATION GROWTH

In recent years, Gresham has experienced dramatic increases in population. The reasons for such phenomenal growth in what was previously an agriculturally-based community are complex, but clearly reflect the same economic, cultural and social forces that have created unprecedented suburban growth throughout the country since the 1950s. Growth in Gresham has primarily been tied to the demand for the amenities and living environment offered by a predominantly residential community.

Between 1950 and 1980, population growth in the planning area was remarkably high; during the 1970s, Gresham's population nearly tripled, with an average yearly increase of 25.2%, making it the fastest growing city in the state. This increase was startling in comparison with that of Multnomah County, the City of Portland, and other suburban communities in the region (Figure 4-1).



The reasons for this phenomenal growth period has been studied extensively across the nation. The post-World War II baby boom was the impetus tot growth, when family formation in the united States reached an all-time high. Young families of that period were eligible to purchase homes with the help of FHA loans, and automobiles through the newly conceived consumer loan. The result was a young, mobile and increasingly affluent segment of the population that created a massive demand for new and larger housing.

While the demand for housing was rapidly increasing during the early 1950s, the Federal Government was actively working on a national defense project that would inadvertently alter the direction of the nation’s cities. During this period, the massive construction of highways as a civil defense measure formed new, more efficient links between existing urban areas, and significantly extended the commuting range around major cities. Housing developers quickly, discovered the desire for new housing in suburban areas, which could offer larger homes, larger lots and an escape from urban problems such as crime, congestion, and poor schools.

However, in addition to the desire to live outside the central city and commute to the work place, young families were increasingly selecting the regions in which they lived. By the 1960s, it was evident that a migration was taking place from the East Coast and Midwest, to the Southwest and West Coast. The natural beauty of Oregon, especially the Willamette Valley, and the perception of a better lifestyle attracted families to the area. The image of Oregon, with the help of Governor Tom McCall (“...you’re welcome to visit, but please don’t stay...”), had evolved into a kind of mystical place, and this perception translated into explosive growth in the late 1960s and early 1970s. The Portland metropolitan area population grew by almost 38% between 1960 and 1977, with employment opportunities growing at a similar rate.

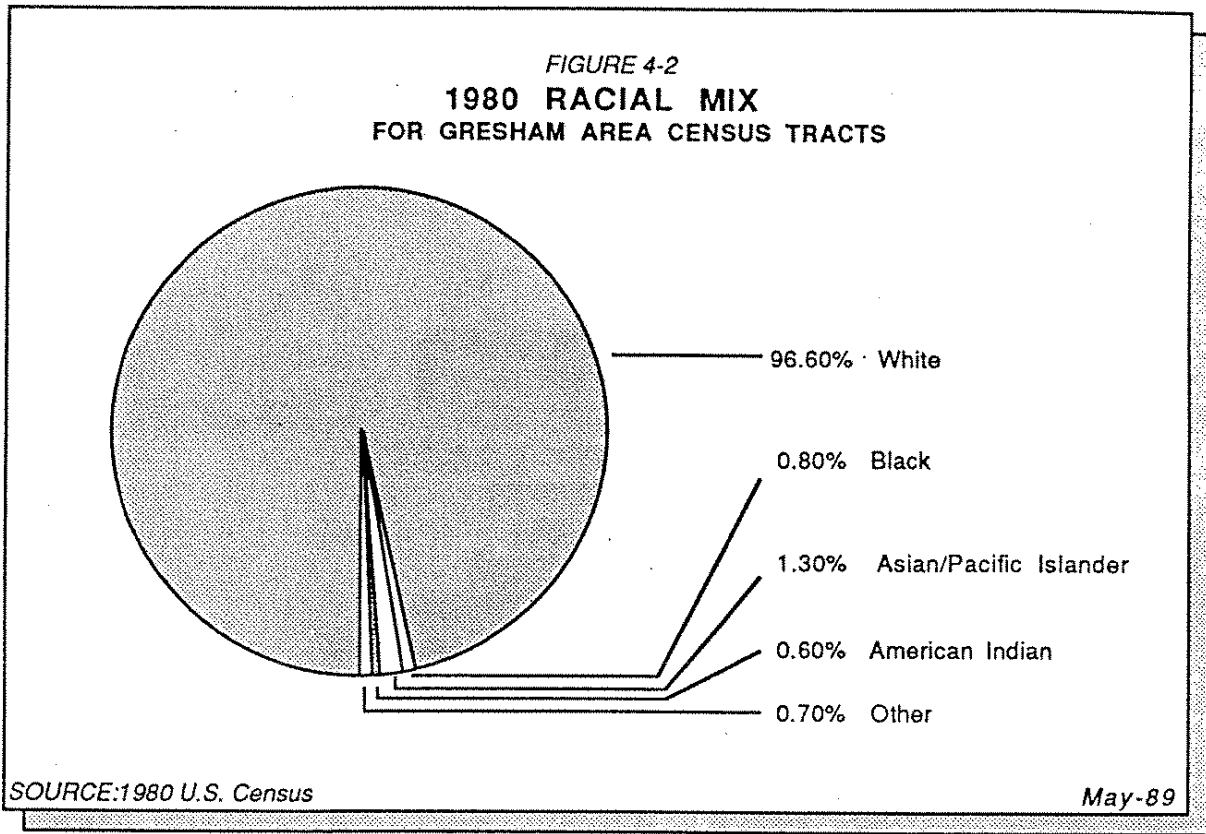
Gresham’s share of the growth was largely due to its proximity to Portland, as well as recreation areas near Mount Hood, the Sandy River and in the Columbia Gorge. In addition, the city has had a social and economic environment conducive to residential growth. This has been reflected in a political history with an active annexation program, service extension policy, and land use and development controls supportive of growth.

Since 1979, the Regional urban Growth Boundary has controlled “leap frog” development and urban service extension into rural agricultural areas, promoting a generally compact urban form. Though the boundary is relentlessly challenged by developers and land speculators, it has remained intact and has focused growth pressures for the east county region to remaining developable land within Gresham and Troutdale.

4.120 MINORITY GROUP POPULATION

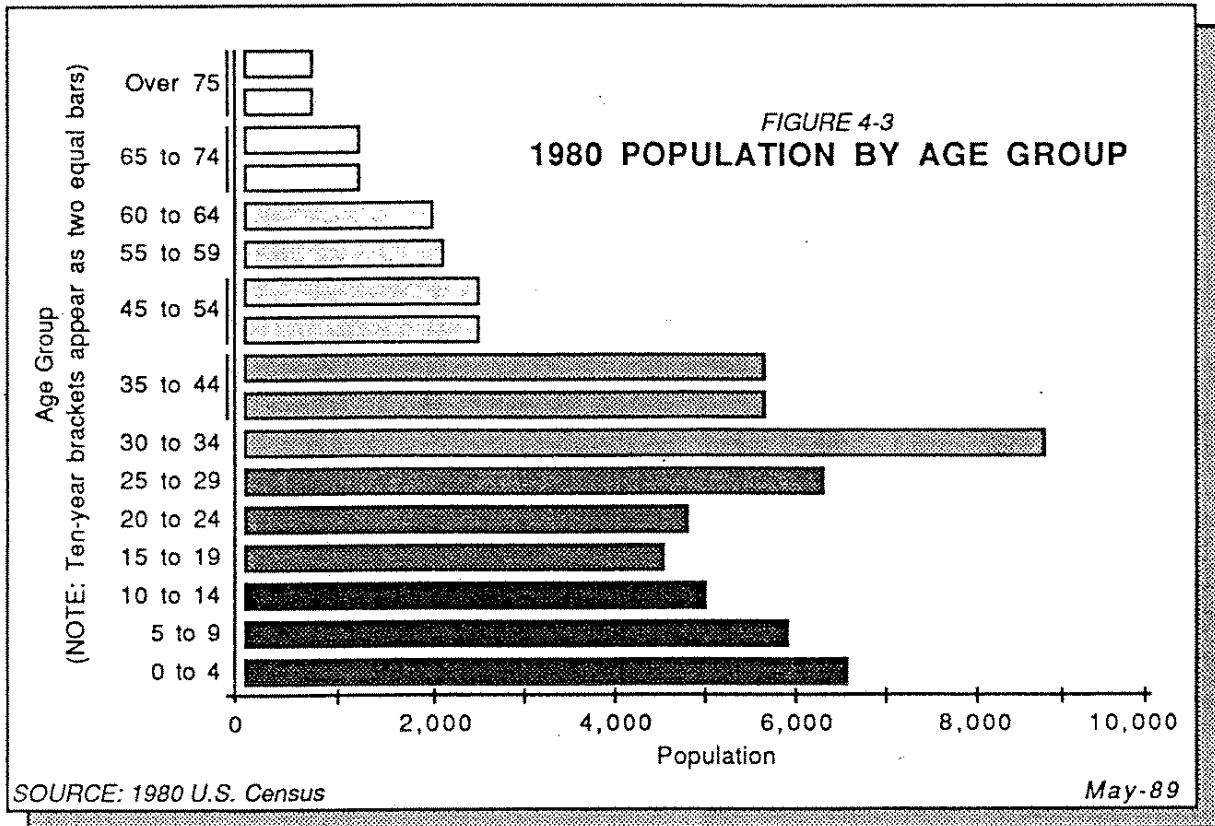
The 1980 Federal Census provides the most current data available on the racial mix of. Gresham area residents. At that time, the white population accounted for 96.6% of the population. The largest minority group was the Asian/Pacific Islander Group with 1.3% of the population. The Black population accounted for 0.8% of the total and the American Indian another 0.6%. The remaining 0.7% consists of other minority groups. Due to the relatively small

percentage of minority groups and the absence of ethnic activities or centers, it is assumed that the minority group population is distributed fairly evenly across the planning area.



4.130 AGE CHARACTERISTICS

According to METRO's 1988 update of census data, nearly 40% of the city's population in 1985 is between 25 and 45 years of age, another 40% is under the age of 25, and only 8% of the population is over age 65. This demonstrates a continuation of the trend observed for 1980 (using 1975 data), when the recent influx of young families lowered the median age group for the city to the 25 to 29 year bracket (13% of the population), below the state average at that time. Ten years later, the 1985 median age was in the 30 to 35 year bracket (also 13% of the population). The fact that the median population only shifted by one five year bracket during a ten year interval may reflect additional young families moving to the city between 1975 and 1980, while the housing boom was still occurring.



Persons under age of 14 accounted for 26% of the population in 1985, indicating no change for that age group since 1975, even though there had been a steady decline in the younger age brackets prior to 1975. This recent trend may indicate a resurgence in childbearing, even though household size continues to decline. The continued high percentage of children suggests that young families are still attracted to the area.

Persons over age 65 dropped from 9% in 1975 to 8% in 1985. While there has been a general increase in longevity, it is likely that the surge of housing construction in the late 1970s, and the accompanying influx of young families simply diluted the percentage of elderly persons.

4.140 EDUCATION

Nearly 80% of planning area population has graduated from high school, with 39% going on to college; of these, 15% have graduated from college. Of college graduates, the largest numbers are located in census tracts that cover the northeast and southwest corners of the planning area. In terms of percentage college graduates per census tract, the highest is in the southwest portion of the planning area, with 22% of the population having a college degree. The lowest occurs in the census tracts bounded by Division and Stark Street, and from 162nd to 202nd Avenue, where less than 10% were college graduates.

4.150 HOUSEHOLD INCOME

Nearly 38% of the planning area households have annual incomes of \$20,000 to \$35,000. Another 15% earn between \$15,000 and \$20,000, with 16% having incomes between \$35,000 and \$50,000. Only 10% earn more than \$50,000 annually, which is surprising when the increasing number of two-income households are considered.

The median household income for all census tracts in the planning area was between \$20,000 and \$30,000 per year, except for the tract bounded by 182nd, 202nd, Stark and Division streets, where the median income was slightly less than \$18,000.

Of the 22% that earn less than \$15,000 per year, over 11% make less than \$10,000 annually. Unfortunately, the number of household incomes in this range is likely to increase with the proliferation of minimum-wage retail and service jobs. A full time position at the current minimum wage of \$3.35 per hour yields a gross annual income of only \$7,000.

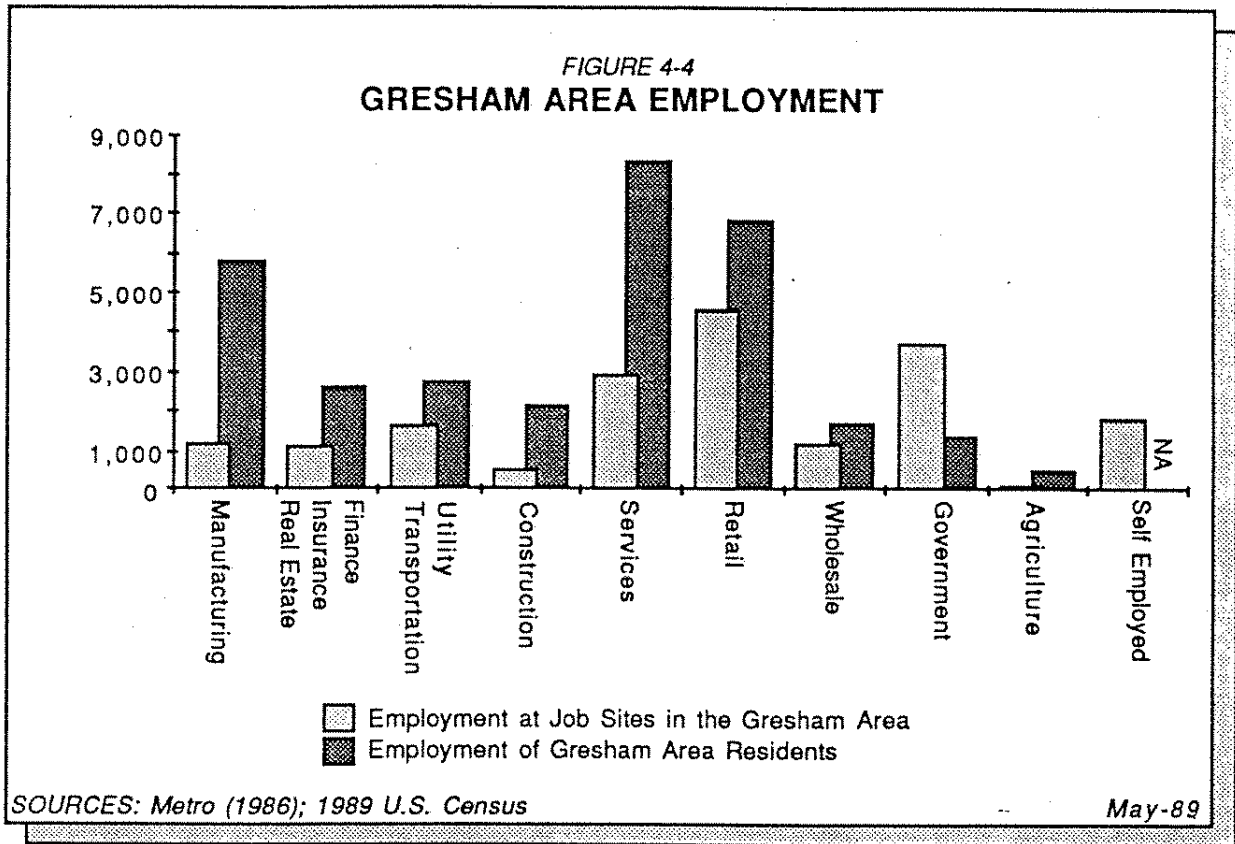
4.160 OCCUPATIONAL STATUS

According to the 1980 Census, some 30,000 persons in the planning area over age 16 were employed, although a 1985 METRO update of census data shows only 20,000 jobs in the area. This discrepancy demonstrates Gresham's continued dependency on the metropolitan job market.

Though the number and variety of job opportunities in the planning area continues to increase with the expansion of existing businesses, and the arrival of major employers like Fujitsu and Albertsons, many residents still commute from Gresham to employment elsewhere. In fact, this number is probably larger than the difference between workers and jobs in the planning area, indicated by the poor correlation between the types of jobs offered in Gresham and types of workers that live here.

For example, nearly 20% of employment in the area is government related, including schools and colleges, yet only 4.2% of the resident work force falls in this sector. This means that while 3,700 public sector jobs are available in the area, only 1,300 residents currently working in this sector.

In contrast, retail and service employment accounts for less than 40% of the jobs in the planning area and over 47% of the working population is employed in this sector. Translated to actual positions, this means that while some 15,200 retail and service workers reside in the area, only 7,500 jobs are available here. Furthermore, while only 6% of the jobs in the planning area are in manufacturing, over 18% of the working population hold manufacturing jobs, which translates to 5,800 local workers, and only 1,200 available positions.



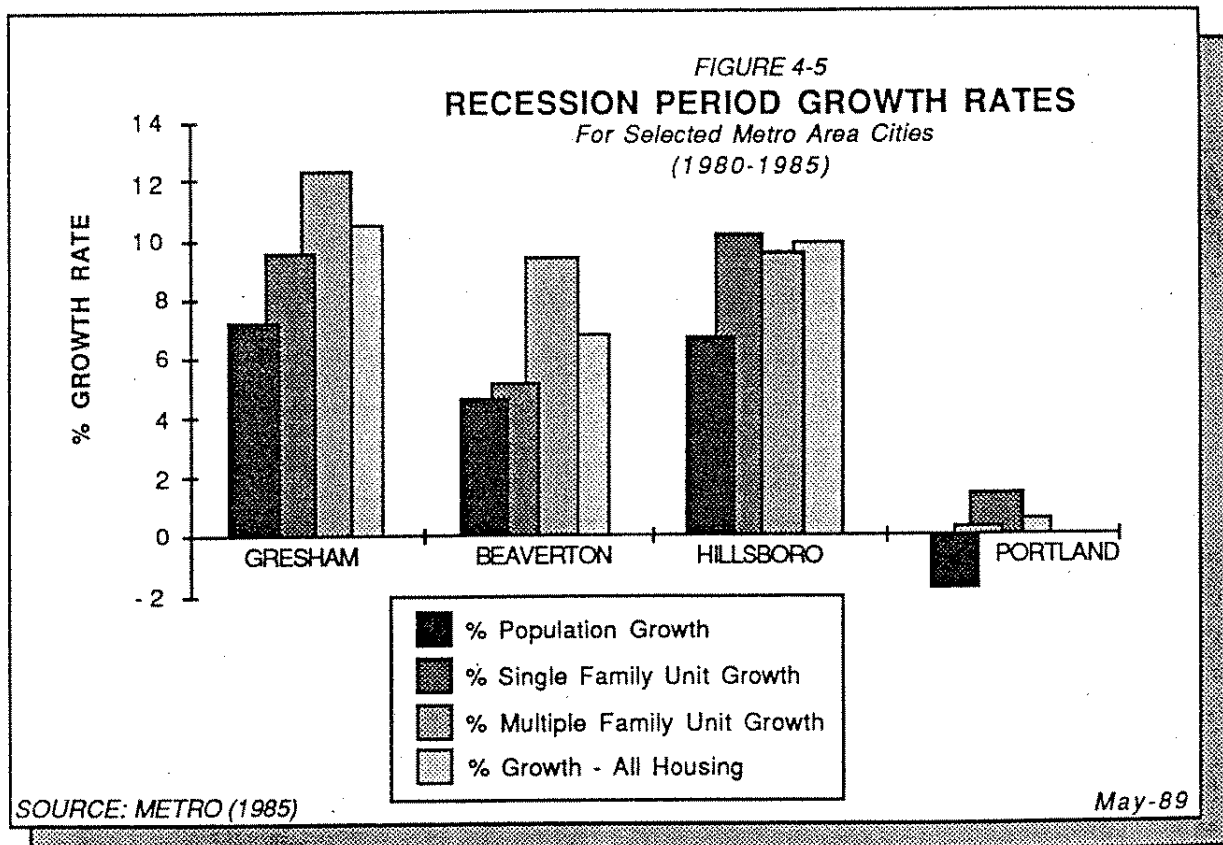
4.170 POPULATION TRENDS

The population of the city more than doubled, from 3,944 to 9,875, between 1960 and 1970. The most significant demographic change in this period was in the zero to 14 age group, which had increased steadily since 1950, marking the “postwar baby boom” and the beginning of the suburban housing boom. The growth patterns of the zero to 14 age group and the 25 to 44 age group are well correlated during this period, reflecting the growing residential nature of the community. The drop in median age from 35.4 years in 1950 to 28.2 years in 1970, and the dramatic decline in the 65 and over bracket from 18.0% in 1960 to 9.4% in 1970, further supports this relationship.

During the 1970s, Gresham experienced its greatest growth, when nearly twenty thousand residents moved to the city. During this period, Gresham established itself as a typical

“bedroom community”, where residents were attracted to the local school system, natural amenities, and suburban lifestyle, but continued to commute elsewhere for employment.

By the 1980s, and the onset of a national recession, Gresham had grown to a population of 31,275, and while the construction of housing slowed from the unprecedented rate of growth in the 70s, it did not stop. Between 1980 and 1985, Gresham continued to exceed other cities in the Portland area, in residential growth (Figure 4-5). In addition, commercial and industrial expansion began to occur. By 1988, the area would see substantial commercial investments ranging from the Albertson’s and Fujitsu industrial facilities, to the Gresham Town Fair retail complex. In addition, the completion of the light rail line has already encouraged additional commercial development, and while this recent infusion of new jobs has been hailed a market response to the residential growth of the 70s, development proposals during the past year suggests that additional housing growth will continue.

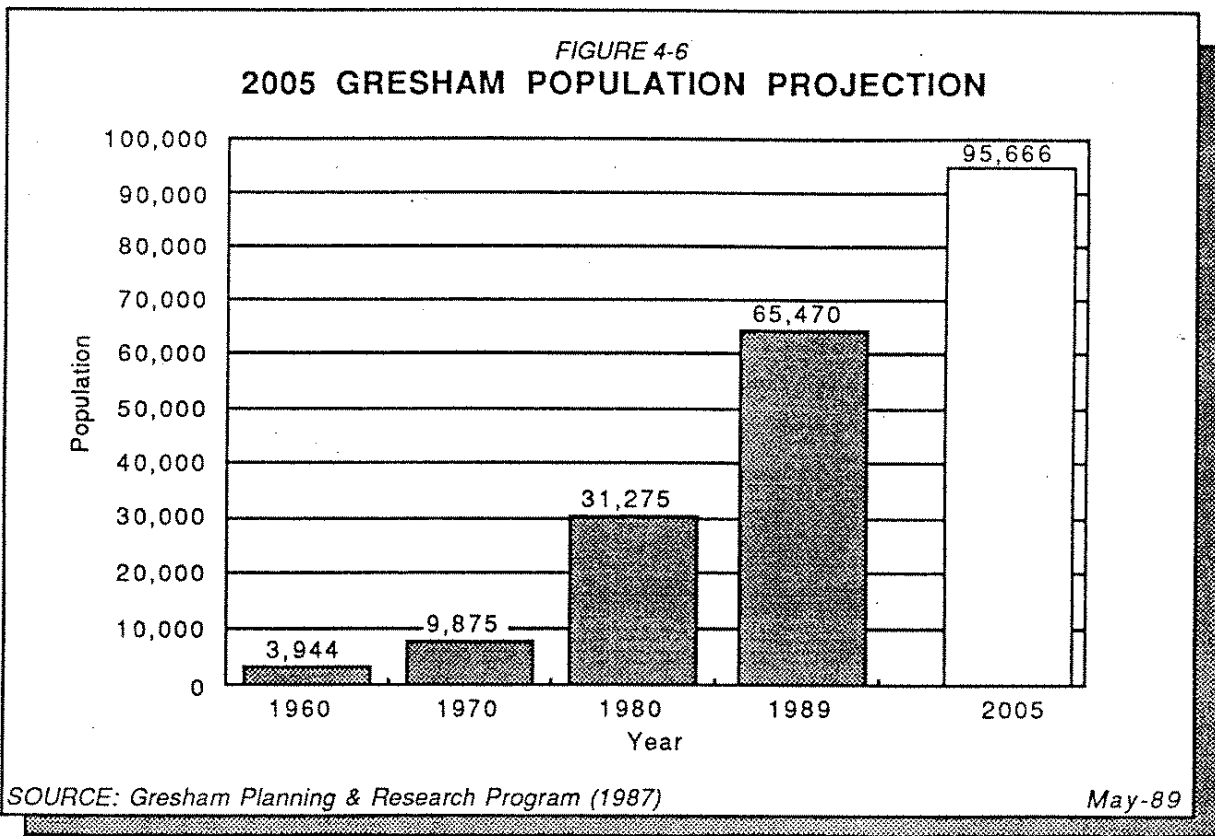


4.180 POPULATION PROJECTION

A population projection for the Gresham planning area was developed using several previous population estimates and projections. Most of these earlier estimates used the 1980 Census for base data, providing additional interpretation and analysis.

To determine a base estimate for the planning area population, two sources were used. First, a July 1, 1987 population estimate of 55,530 for Gresham was obtained from the Center for Population Research and Census at Portland State University. Next, results from the 1986 Gresham Land Use Inventory were used to estimate a population of 6,500 for areas to be annexed (the remainder of the planning area) based on existing households (calculated at 2.5 persons per household, a figure established for the region by Metro). These figures combined produced a July 1, 1987 population estimate of 62,030 for the planning area.

Once the population estimate for the planning area was calculated, a growth constant that projects a 55% population increase for the area was determined from Metro's 1983 Regional Population and Employment Forecast and was used to project the planning area population of 96,146 for the year 2005. Assumptions included in the Metro study are described in detail in their forecast document.



4.200 HOUSING CHARACTERISTICS

The majority of homes in Gresham are owner-occupied, and of these, most are detached units. Because the purchase of a home is often the largest investment that an individual makes, planning issues for residential areas are centered on the protection of neighborhoods from non-residential uses, and long term stability of land use designations. The rapid growth of Gresham during the past thirty years has a direct impact on these issues. The role of planning will be to balance the continued need for additional housing in the area, while protecting existing neighborhoods.

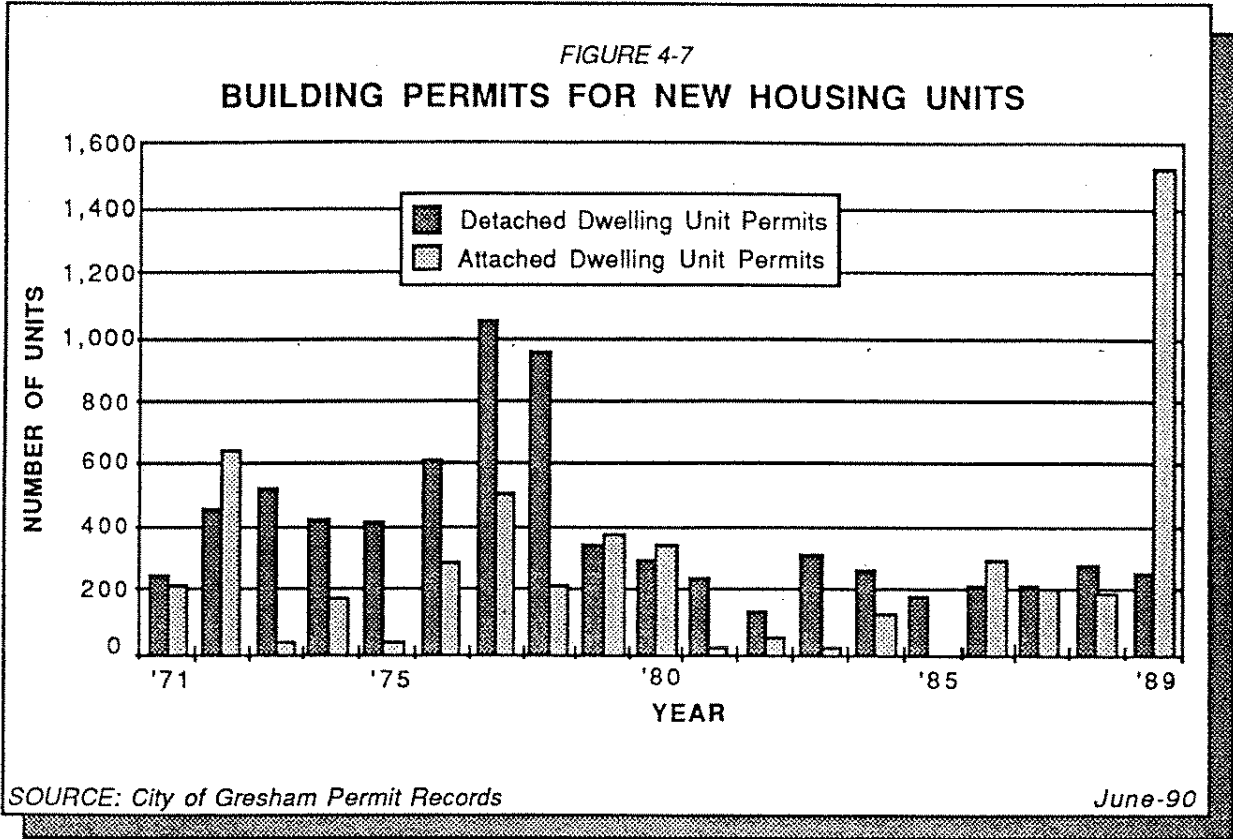
4.210 HOUSING DEMAND

There has been unprecedented demand for housing across the nation during the past several years, as the “baby boom” generation has begun to form households. Just as it spawned immense growth in education through the early 1970s, this bulging segment of the population is now shaping the housing market. Beyond the sheer number of dwelling units in demand, the “baby boom” generation also is investing in housing at a younger age. In addition, these households often consist of only one person, reflecting declining marriage rates and higher divorce rates. In Gresham, the median household size is only 2.6 persons. The decreasing size of households further accelerates the demand for new housing, so that housing prices have increase dramatically during the past fifteen years.

The particularly high demand for housing in the Portland area during the 1970s was largely due to immigration from other states. The massive immigration during this period, combined with a large number of local households investing in homes, created an unprecedented market for housing. The result was a dramatic increase in housing prices. During the 1970s, new housing prices in the Portland area increased by at least 80%. During the same period¹ the cost of established housing increased by at least 160%.

Rising prices would normally lessen the demand for housing, but inflation during the 1970s made home ownership one of the few profitable investments during that period. The housing experience of the 1970s helped to change the reasons for which housing was purchased. The “investment” potential for housing became one of the major considerations in home ownership.

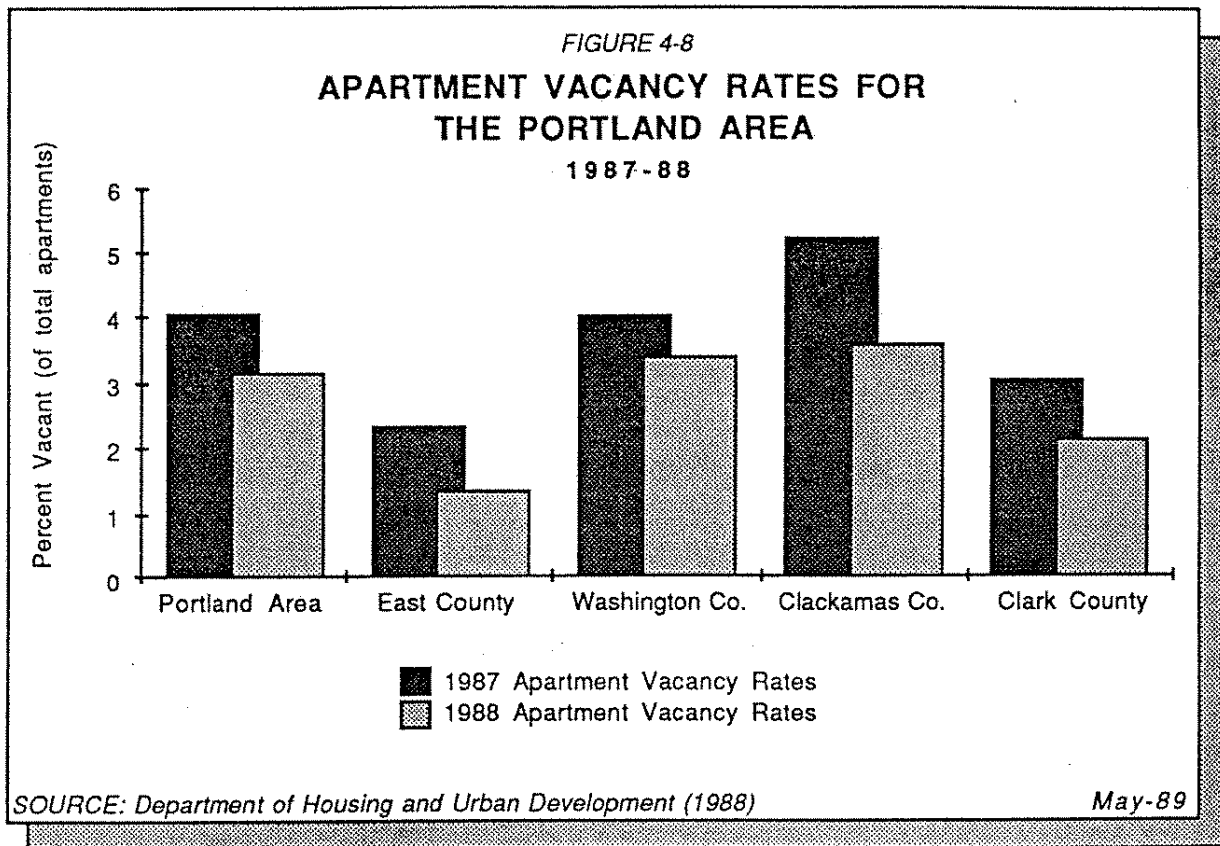
While economists in the 1970s predicted high housing demand through the 1980s based on demographic trends, the national housing market took a serious blow during the recession of the early 1980s. Since that time, lowered interest rates have helped to rebuild housing demand, although the Pacific Northwest was slower to recover. In Gresham, annual building permits for detached dwellings issued between 1977 (the largest year) and 1982 dropped by 86% (Figure 4-7). Since 1982, permits issued have not increased substantially, although it is suspected that many of the permitted units during the recession were not actually built.



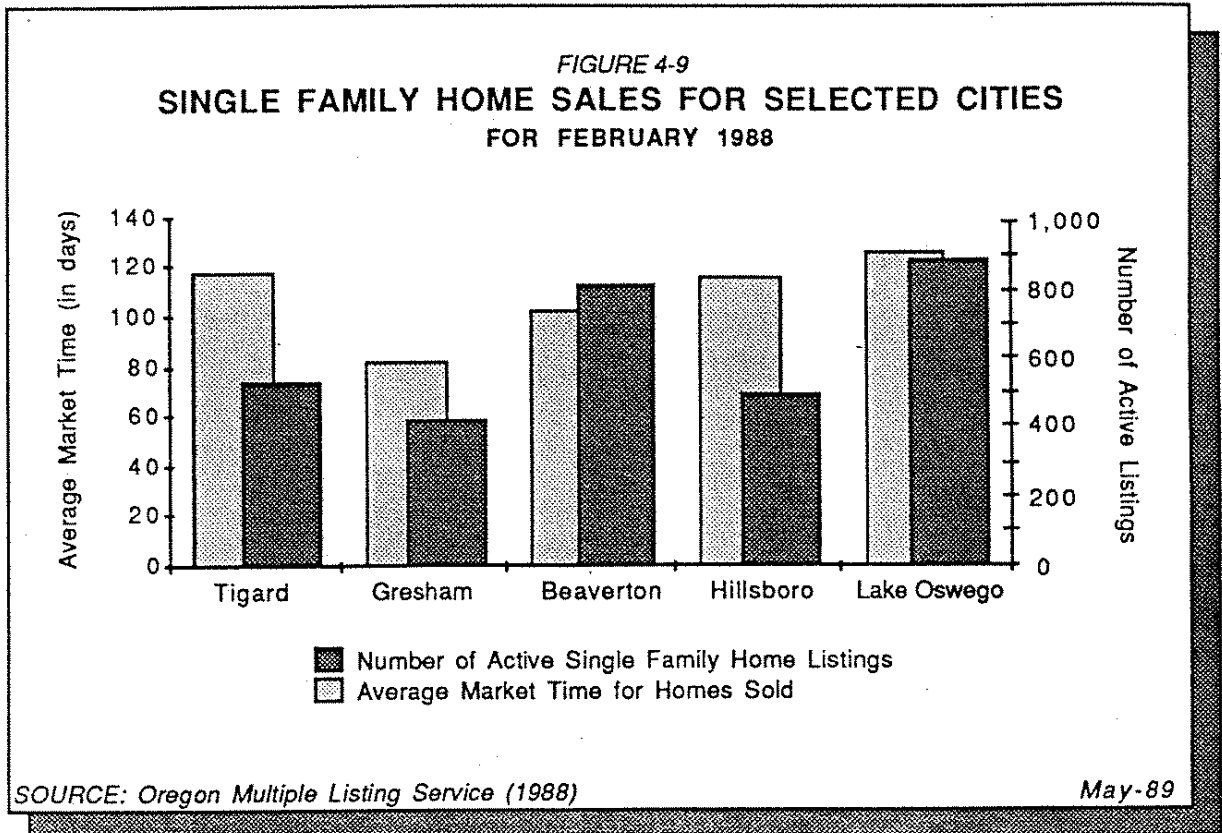
Since 1970, over 7,000 detached dwellings have been constructed in Gresham. During this period an additional 5,000 attached units have also been built. This rate of residential development is partly responsible for the dramatic population increases that have brought Gresham's size ranking from 21st in the state in 1970, to 7th in 1978, and the 4th largest today.

4.220 VACANCY RATES

In March 1987, the Apartment Data Center conducted an apartment rent survey which estimated apartment vacancy rates at 5.2% for the Gresham area. The average vacancy rate for the Portland metro area was 5.7%. Though vacancy rates for west side communities were substantially higher, it is likely that Gresham's rate will increase to or above the metro average, as a result of new apartment developments currently under construction and further housing development related to new job opportunities at Fujitsu and the Albertson's distribution facility (Figure 4-8).



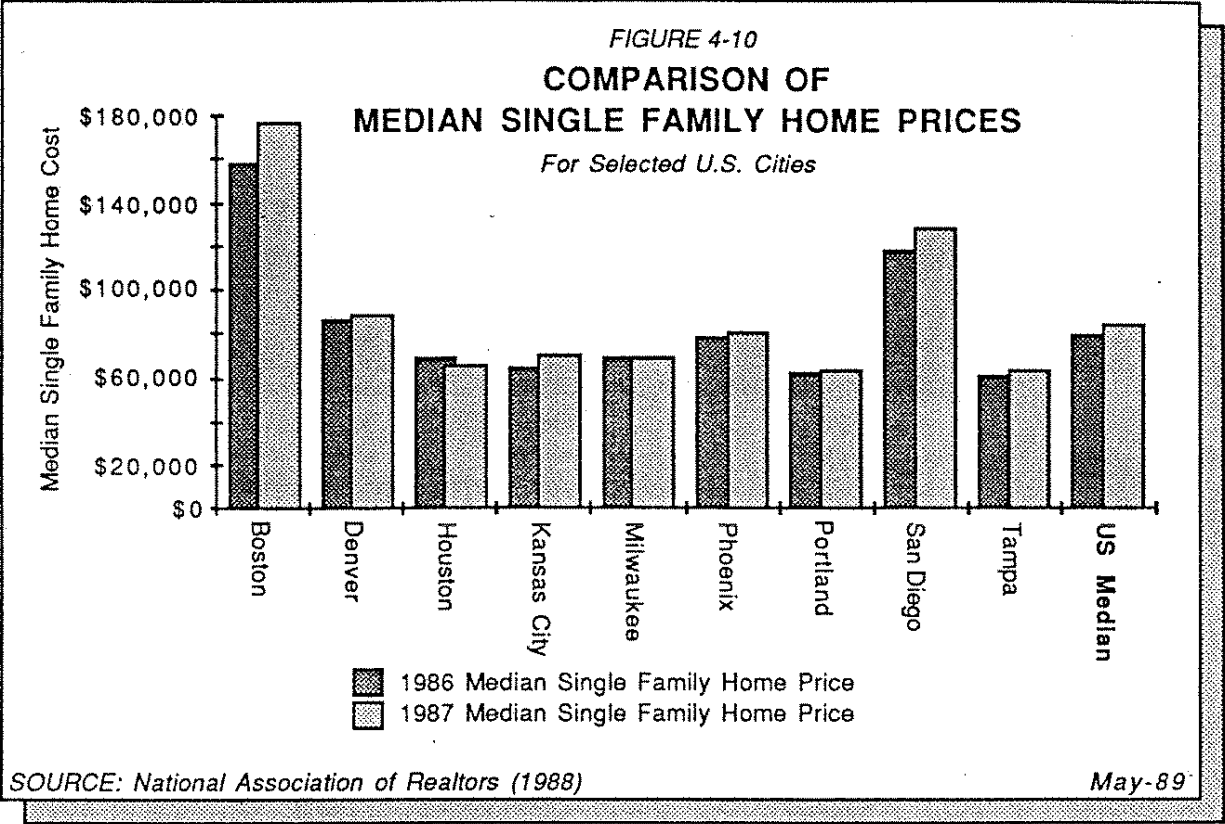
Vacancy rates for single family homes is estimated by Oregon Multiple Listing Service records, which indicate 468 homes listed for Gresham and Troutdale in February, 1988. Similarly, 559 homes were listed in February 5, 1987. Figures suggest that at least 3.4% of single family dwellings are potentially vacant since not all homes for sale are listed, and rental housing is not included. The average market time for Gresham homes listed in February 1988 was 83 days, compared to the metro average of 110 days (Figure 4-9).



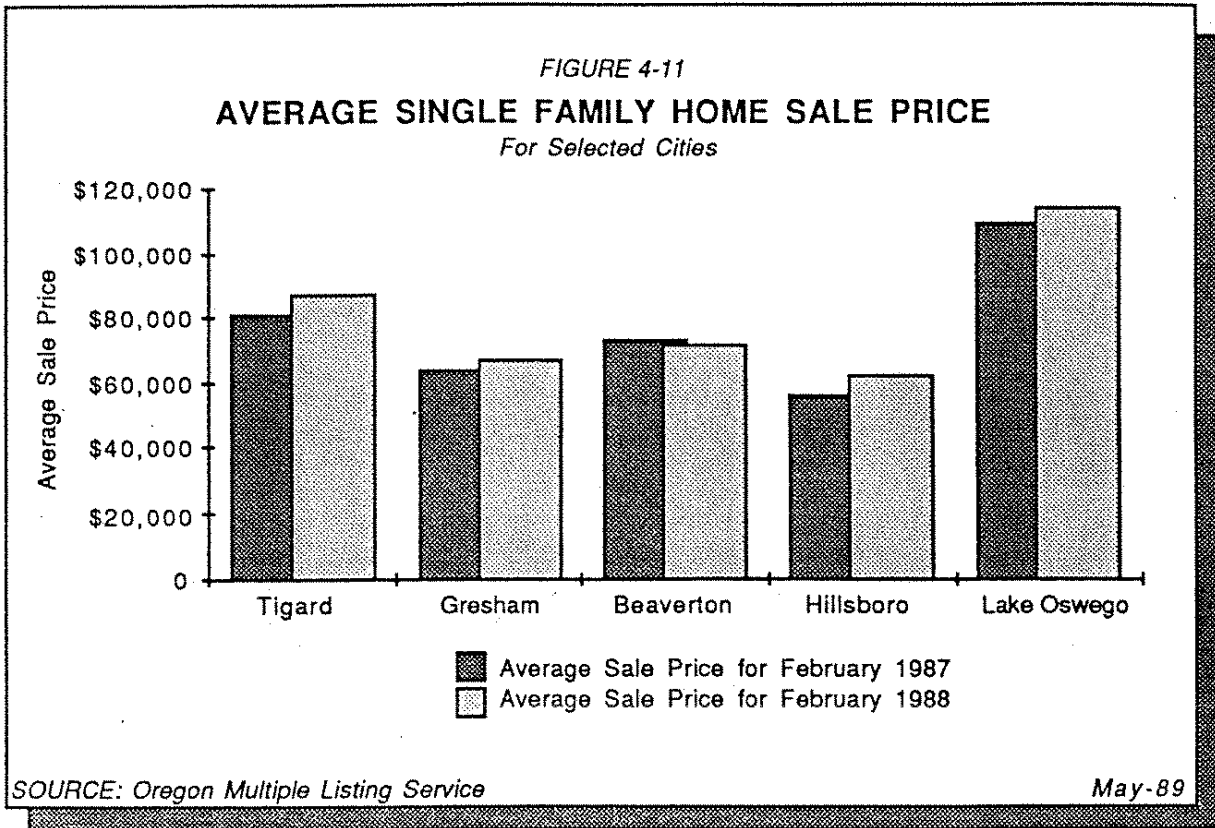
4.230 AFFORDABILITY OF HOUSING

4.231 Cost of Housing

The median cost of a home in the Portland area in 1987 was 24.4% below the national median for the same year. In addition, the Portland area median housing cost increase of 2.6% over 1986 is less than half the 5.7% average increase for the nation during the same period. Furthermore, the Portland area median cost is even lower relative to other cities in the western United States (Figure 4-10). Coupled with the growing economy of the Portland metropolitan area, and the natural and cultural amenities of the region, the relatively low cost of housing is an especially attractive value.



The average sales price of homes sold within the Gresham area was \$73,594 during the last half of 1987. In comparison, the average sales price of a home sold in Lake Oswego during the same period was \$133,893, and the average for the Portland metro area was \$83,374. The cost of purchasing a home in Gresham is about eleven percent lower than the regional average (Figure 4-11).

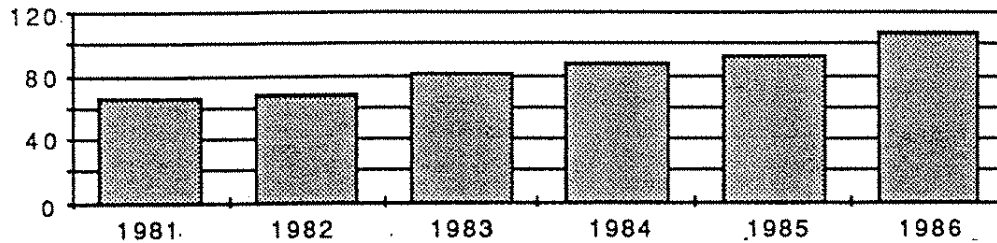


4.232 Housing Affordability

Housing in Gresham, both rented and owned, is very affordable in comparison to other cities within the region, and other metropolitan areas in the nation. In addition to the relatively low purchase price for homes, rents are also very affordable in the Gresham area.

Home ownership in Gresham has become increasingly more affordable with the drop in mortgage interest rates that has occurred since the 1982 recession. While average mortgage interest rates for the nation have dropped from 15.38% in 1982 to 9.22% by October 1987, median family income has increased from \$23,433 to \$30,827, lowering the average monthly mortgage payment from 35.9% to 21.7% of family income (Figure 4-12).

FIGURE 4-12
HOUSING AFFORDABILITY 1981-86
Based on U.S. Price and Rate Averages



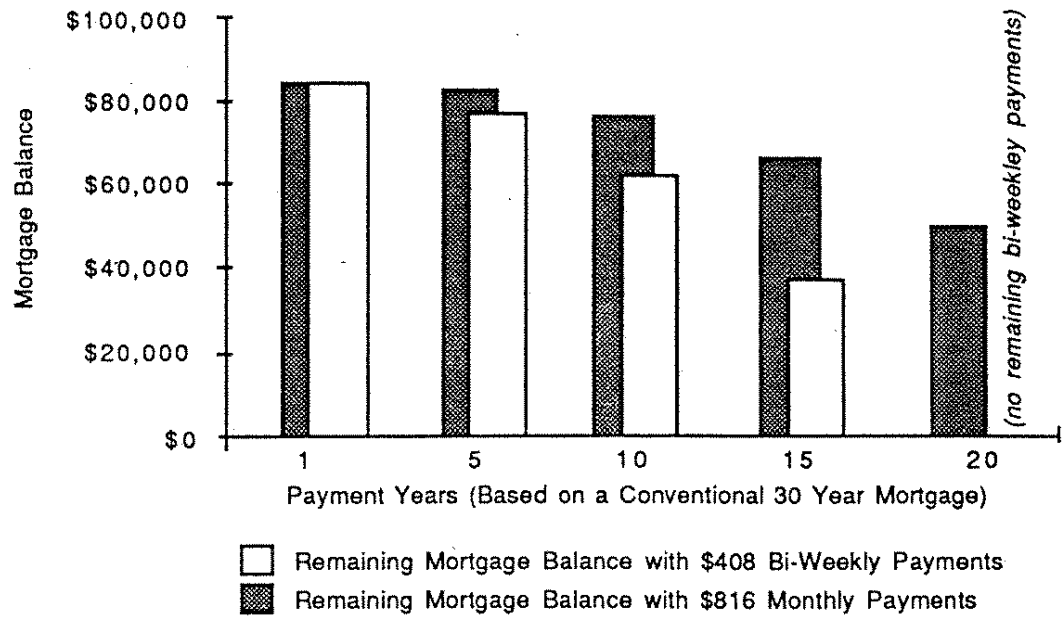
Year	Median Price	Mortgage Rate	Median Income	Qualifying Income	Affordability Index
1981	\$66,400	15.12	\$22,388	\$32,485	68.9%
1982	\$67,800	15.38	\$23,433	\$33,713	69.5%
1983	\$70,300	12.85	\$24,580	\$29,546	83.2%
1984	\$72,400	12.49	\$26,433	\$29,650	89.1%
1985	\$75,500	11.74	\$27,735	\$29,243	94.8%
1986	\$80,300	10.25	\$29,200	\$27,631	108.9%

SOURCE: National Association of Realtors

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Home ownership is usually a two-part process; having enough cash reserves for the initial investment, and also a qualifying income that will allow the buyer to pay off the remaining balance. Increasingly, however, the affordability, of home ownership varies according to the financial arrangement selected by the buyer. Innovations in home financing, such as adjustable interest rates, discounted interest rates in exchange for an additional payment, and bi-weekly payments that establish equity more quickly (Figure 4-13), have broadened the range of households capable of purchasing a home.

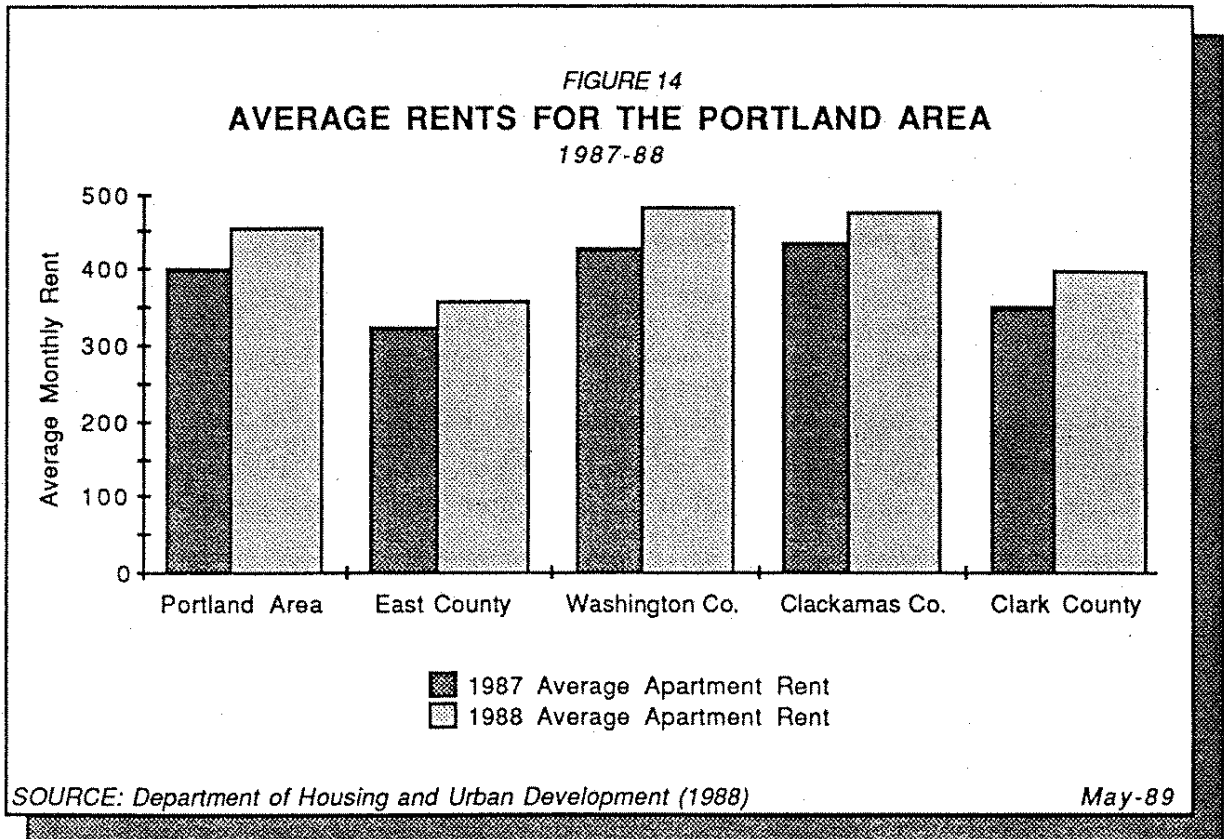
**FIGURE 4-13
BI-WEEKLY VS. MONTHLY MORTGAGE PAYMENTS**



SOURCE: Computerized Electronic Withdrawl Corporation (1988)

May-89

Most rental housing in Gresham is in the form of attached dwellings, such as apartments, duplexes, multiplexes and condominiums. A March, 1987 survey by the Apartment Data Center documented rent levels throughout the Portland metro area and concluded that rents in the Gresham area were generally lower than the regional average (Figure 4-14). While a one bedroom apartment in the Gresham area averaged \$277 monthly, the regional average was \$310. A two bedroom apartment in the Gresham area averaged \$321 per month, compared to the regional average of \$350; and for a three bedroom apartment, the Gresham area averaged \$340 per month, more than 10% less the regional average of \$380 for the same unit.



4.233 Housing Assistance

Several local, state, and federal agencies are currently providing housing assistance in Gresham (see Appendix 18). Assistance ranges from voucher programs that provide households in need with rent or mortgage payment subsidies, to so-called “brick and mortar” projects that provide actual housing units.

The Federal Housing and Urban Development Department (HOD) currently provides housing in six public housing projects, offering a total of 304 living units in Gresham. Of these, 297 units are available for the elderly through Section 8, Low and Moderate Income, Elderly Disabled or Handicapped subsidy programs. The remaining seven units are available only to the elderly disabled or handicapped. Currently, 36 additional units for elderly residents are under construction near the Mount Hood Medical Center, with funding support from HUD.

The State Housing Authority (SHA) provides loans for assisted housing projects through bond sales. In this way they financed the construction of Gresham Manor, a 104 unit facility for the elderly which is available through Section 8, and Elderly Disabled or Handicapped assistance (see Appendix 19).

Multnomah County is involved in a variety of housing assistance programs, including administration of Community Development Block Grant funds, and sewer hook-up loans for areas affected by the Mid-County Sewer Project. The county also maintains a 3-year Housing

Assistance Plan that estimates housing assistance needs and documents housing assistance programs currently meeting those needs in Multnomah County.

As a part of its housing assistance program, the county also sponsors. The Multnomah County Community Action Agency (MCCAA) which implements assistance programs such as home weatherization, housing counseling, emergency shelters and emergency assistance, tent assistance, mortgage counseling, and aging services. MCCAA is active in Gresham and it is estimated that 10,000 persons in Gresham are directly served by this agency. MCCAA is supported through federal, state, and local funds, although the City of Gresham makes no contributions to the program.

The Portland Housing Authority (PHA) provides housing in three public housing projects, for a total of 90 housing units. All three developments are offered to families through the Low Rent Public Housing subsidy program.

The State Department of Veteran Affairs has offered low interest home loans to veterans since 1944. Since that time thousands of loans have been issued, with the peak occurring between 1976 and 1980, when more than 100,000 loans were issued. Because of financial problems with the agency, and the negative effect of the loan debt on the state's bond rating, loan issues have dropped sharply since 1980. However, the department still estimates at least 1,131 active loans and contracts in Gresham. Veterans are eligible for loans for 30 years following their last day of active duty and loan amounts are limited to \$63,000 for a home and \$185,000 for a farm, with a maximum 30-year mortgage term.

The City of Portland (along with several private service agencies) has taken the lead in providing emergency shelter for the homeless. The problem of caring for the homeless has grown alarmingly during the 1980s, when severe cuts in federal assistance programs, and the early release of individuals from crowded mental institutions and prisons has added families, convicted criminals, and the mentally impaired to the ranks of the once predominantly male homeless population. Portland has responded by creating several new shelters, and coordinating the provision of private shelters.

In Gresham, the private agency SnowCap, located near Eastman and Powell, provides both emergency food supplies and daily prepared meals at the Zarephath Kitchen. During the first three months of 1988, is estimated that 1,851 families, or 5,271 individuals, were assisted with emergency food supplies. An additional 125 persons visit the soup kitchen facility each day. SnowCap is funded almost entirely by the community through private contributions. Zarephath kitchen is funded entirely by local churches. Covenant Presbyterian Church, located at 186th and Division, is the only homeless shelter in Gresham, and provides six bed spaces through the Church Shelter Program for the Homeless.

Currently, the City of Gresham provides no housing assistance, meal programs, or shelter for the homeless. Officials from SnowCap and MCCPA point out a much greater need in the area, particularly for emergency shelters to house the homeless and battered women. Their

observations indicate that the need has increased substantially since annexations have occurred, and both agencies feel that the city does not fulfill its responsibility as a provider.

4.234 Manufactured Homes as a Component of Gresham's Housing

Manufactured homes comprise an option for housing which has served a segment of Gresham's population for a number of years and which will continue to fulfill a portion of the community's housing needs in the future. In 1980 there were 380 manufactured homes being occupied as permanent residences in Gresham. Within the city's recently expanded Urban Services Boundary there are in 1988, 954 manufactured home units located in 16 manufactured home parks. Together, these parks contain 1,017 spaces, resulting in an overall occupancy rate of 94%. Manufactured homes make up 7.4% of Gresham's detached dwelling units. Figure 4—15 lists the characteristics of existing manufactured home parks in Gresham's planning area. These parks are mapped in Map 21. All of the existing manufactured home parks except two are located in residential districts.

FIGURE 4-15

MANUFACTURED HOME PARK INVENTORY					
NO.	NAME	ACRES	SPACES	DENSITY	DISTRICT
1	Suburban Mobile Estates	10.67	72	6.75	MDR-12
2	Green Tee Mobile Park	13.26	90	6.79	MDR-12
3	Bell Acres	9.01	65	7.21	MDR-24
4	Gresham Mobile Court	3.48	48	13.79	MDR-12
5	Palmquist Terrace	9.38	64	6.82	MDR-12
6	Palmquist Mobile Estates	12.84	86	6.79	MDR-12
7	Terrand Mobile Terrace	21.83	281	12.87	MDR-12
8	Fir Haven	1.30	39	30.00	LDR-7
9	Glisan Terrace	0.73	9	12.33	MDR-12
10	Rockwood Mobile Court	5.73	81	14.14	MDR-12
11	Mobile Park Plaza – North	1.93	12	6.22	MDR-24
12	Mobile Park Plaza – East	1.45	13	8.97	MDR-12
13	Mobile Park Plaza	7.42	76	10.24	MDR-12
14	Rains Mobile Manor	0.85	16	18.82	HR-60
15	Eastman	3.60	28	7.78	TD
16	Rolling Hills	4.00	37	9.25	LI
	TOTAL	107.48	1,017		
	AVERAGE	6.72	64	11.17	

SOURCE: 1986 Land Use Inventory

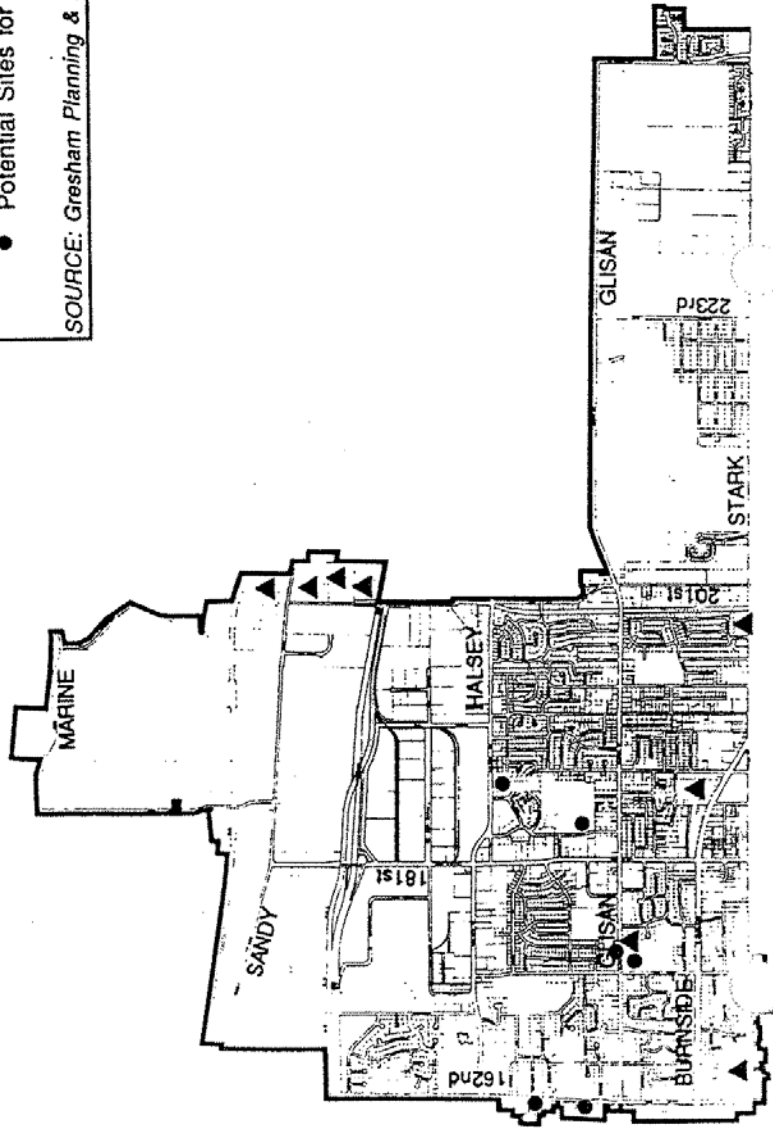
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MAP 20
GRESHAM COMMUNITY DEVELOPMENT PLAN

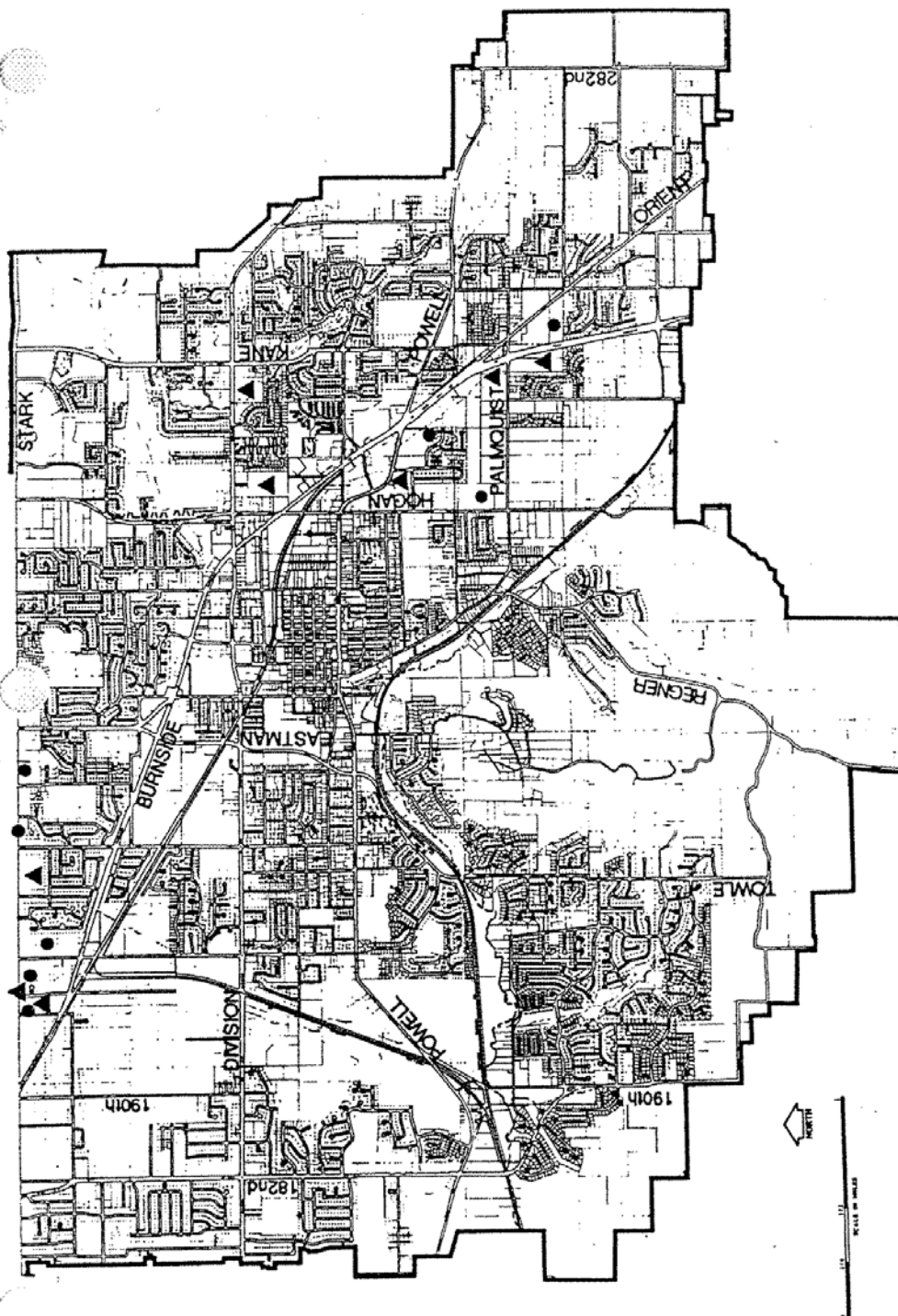
**MANUFACTURED HOME
PARKS**

▲ Existing Manufactured Home Parks
● Potential Sites for Manufactured Home Parks

SOURCE: Gresham Planning & Research Program (1988)



MAP 20



Between 1987 and 2005 the population of Gresham's planning area is expected to grow from 61,720 to 95,666. With a projected average household size of 2.5, some 13,578 additional dwelling units will be needed to house this growth. In 1987 the ratio of existing detached units to attached units was 66 34. Metro has estimated that for the Gresham area the future ratio to the year 2005 will be 56% detached units to 44% attached units. Thus, of the 13,578 new housing units projected for this area, approximately 7,600 are expected to be detached units, including manufactured homes.

Manufactured homes have traditionally been seen as less expensive alternatives to conventional, site-built, detached dwellings. For those seeking detached housing, a manufactured home can indeed offer substantial cost savings when compared to a site-built house, depending on where the manufactured home is placed, how large it is, and how it is financed. However, in the Gresham area, occupancy of a manufactured home is not necessarily a means of obtaining low cost housing. While manufactured homes will always comprise an element of the community's total housing stock, they are not alone the complete answer to the housing needs of low and moderate income households. Table 4-16 below illustrates comparative costs for occupancy of a site-built, detached unit in a traditional neighborhood and a typical, newer manufactured home in a manufactured home park.

FIGURE 4-16

COST COMPARISON			
Item	Existing Site-Built	New Manufactured Home	Single-Section Manufactured Home
Unit Cost	\$62,500	\$30,800	\$17,800
Down Payment (25%)	12,500	7,700	4,450
Loan Amount	50,000	23,100	13,350
Loan Period	30 years	20 years	20 years
Interest Rate	10%	13%	13%
Monthly Loan Payment	\$439	\$272	\$156
Taxes and Insurance	150	85	50
Space Rent		180	180
Total Monthly Cost	\$589	\$537	\$386
Annual Income Needed	\$25,242	\$23,014	\$16,543

The comparison contained in Figure 4-16 shows that a typical new manufactured home in a manufactured home park might be expected to save nine to 10% in monthly costs. In this example, \$62,500 was used as the unit cost for site-built housing since that is the median price for all detached dwellings in the Portland metropolitan area. The \$30,800 figure for the new manufactured home is based on an average cost for a new multi-section (i.e. double-wide or larger) unit with an average size of 1,395 sq. ft. A new multi-section manufactured home may be considered comparable to an existing site-built dwelling in terms of floor area and features. As shown in Figure 4-16, the average price of a new single-section manufactured home is \$17,800. These units have an average size of 945 sq. ft. Using this price figure, the monthly cost for a new single-section manufactured home drops to \$386, a savings of 35% as compared to a median-value site-built house.

It should be noted that used manufactured homes are also available for sale at prices substantially below the median for a site-built unit. However, financing is more difficult to obtain for used manufactured homes and is generally more expensive.

Gresham has an abundance of existing, detached, site-built units -and a large inventory of vacant residential lots. This has led to a relatively low cost for detached, site-built housing — \$63,396 on average in December 1987, as compared with a Portland metropolitan area average of \$72,674. At the same time, median household income in the Gresham area is nearly equal to that for the metropolitan region as a whole, and 11% higher than for Multnomah County. In 1985 the median household income for the region was \$24,635 and the median household income for Multnomah County was \$21,704. For the Gresham area, the 1985 median household income was \$24,021. These factors might result in somewhat less demand for manufactured homes as a low-cost, alternative form of housing than would be expected if overall housing costs were higher and median household income were lower.

As noted, Gresham is a community where the detached dwelling is the dominant form of housing. This is not surprising, given Gresham's status as a suburban community. This situation is expected to continue, although the proportion of attached dwelling units will increase by the year 2005. Excluding the recently annexed areas, no new manufactured home developments have occurred in Gresham since adoption of the Community Development Plan in 1980. (The Community Development Plan has permitted manufactured home subdivisions, although none have been developed; the Plan has not permitted new manufactured home parks since 1980.) In the mid-county areas which have been recently annexed to the City of Gresham, only one new manufactured home park, containing nine spaces, has been developed since 1980.

In recent years, manufactured homes have accounted for about 10% of all new, detached dwelling units in Multnomah County. This compares with manufactured homes as 21% of new, detached dwellings in Washington County and 28% of all new, detached dwellings in Clackamas County during 1987. The extent to which manufactured homes will make up a portion of the detached dwelling stock in the future depends on a large number of highly volatile factors, including the cost of credit, technological advances in the building industry, consumer preferences, and general economic conditions in the region. For purposes of projecting the demand for manufactured homes, it is assumed that the existing, 10% share of manufactured homes as a portion of new, detached dwellings in Multnomah County will continue. It seems

possible that manufactured homes will make up a proportionately smaller share of new housing units in the Gresham area than in the county as a whole due to two factors. First, as noted, site-built housing costs are lower in Gresham than in the metropolitan region as a whole and median household income in Gresham is roughly equal to that for the region and substantially higher than for the rest of Multnomah County; second, there is evidence that a relationship exists between the popularity of manufactured homes as a form of housing and the extent to which an area is urbanized. In more rural areas, manufactured homes tend to comprise a greater share of new detached dwelling units than in urban areas. (In recent years, for example, Multnomah County, the most highly urbanized county in the state, has been one of the counties with the smallest proportion of manufactured homes as a segment of all new, detached dwellings. On the other hand, there are several rural, Eastern Oregon counties in which manufactured homes have made up 100% of new detached dwellings in 1985, 1986, and 1987). Given these factors, and the relatively urbanized state of the Gresham area, the demand for manufactured homes as a proportion of Gresham's total new, detached dwellings to the year 2005 seems unlikely, to exceed 10%. This would result in approximately 760 new manufactured home dwelling units between 1988 and the year 2005.

The median density of the existing manufactured home parks in Gresham is 9.11 units per acre. This is reflective of the tendency for manufactured home parks to locate in areas where moderate densities are permitted. In general, manufactured home developments may not be economically feasible where densities are restricted to 6 or fewer units per acre. At the same time, land costs where allowable densities are greater than 12 units per acre are likely to be so high as to preclude manufactured home developments which cannot achieve high densities. For future manufactured home developments in Gresham, the average, projected density is 10 units per acre. Given a projected demand of 760 manufactured homes and an average density of 10 units per acre, there would be a demand for approximately 76 acres to accommodate new manufactured homes in manufactured home parks and subdivisions. Because two of the existing manufactured home parks are non-conforming uses (one in an industrial district and one in the Transit Development District), it is possible that these properties will be redeveloped, displacing 65 manufactured homes. In addition, one park is located in a high-density residential district (HDR-60). Redevelopment of this park would displace 16 additional units, resulting in a potential demand for some 8 acres just to accommodate displaced units. When added to the projected demand for new units, the total projected land area needed to accommodate manufactured homes to the year 2005 increases to some 84 acres. This much acreage at least should be available to accommodate new manufactured home parks and new manufactured home subdivisions.

Finally, it should be noted that because only one new manufactured home park has developed in Gresham during the past eight years, there may be a backlog of demand for manufactured home developments which is unquantifiable. In view of this possibility, it might be estimated that up to 16% of total new, detached units needed to the year 2005 could be manufactured homes. This would result in a demand for approximately 122 acres of vacant land to accommodate new manufactured home developments.

Thus, the projection of land area needed for new manufactured home developments of all types ranges between 84 acres and 122 acres. In any case, the rate of development of new

manufactured home projects should be carefully monitored in coming years. If available acreage is consumed at a more rapid rate than expected, it may be necessary to designate additional land area for manufactured home parks and subdivisions.

4.240 HOUSEHOLD SIZE

In 1985 METRO published an update of the 1980 census figures- for household size and predicted a drop from the regional average of 2.56 in 1980, to 2.45 in 2005; the average for the Portland area has been in decline since 1960, when households averaged 2.99 members. The decrease is explained by changing lifestyles during the 1960s and 70s.

According to a 1988 revision of the METRO census updates, household size in the Gresham area dropped from 2.65 persons in 1980, to 2.58 in 1986. The fact that the average for the Gresham area is higher than the regional average is not surprising because Gresham's population includes a relatively higher percentage of households with children living at home.

4.300 SCHOOL FACILITIES

The planning for adequate school facilities is a vital step towards a meaningful land use planning program. School facilities have an added dimension on difficulty associated with meeting future needs and that is one of timing. Social trends vary the timing of household formation in the rearing of children for 'various alternative goals which would in turn delay an expected student enrollment figure. Also, market conditions could swiftly change to accelerating growth at a rate beyond what is normally encountered. The ability to have in place needed faculty and facilities at the exact moment of demand is very difficult due to the scale of a project to construct a public school.

Another important factor that must be considered when planning for future school facilities is the balancing of short-term immediate needs versus the long-term demand for facilities. Innovative administration of the educational program can alleviate the need to invest excessively in capital projects if these projects are found to be unnecessary in the terms of the long-term needs.

4.310 GRESHAM GRADE SCHOOL #4

Gresham Grade School t4 covers a major portion of the City of Gresham including areas located to the north, south and east of Gresham. The grade school district is currently responsible for the education of nearly 4,700 students in grades one through eight, including special educational students. District t4 owns and operates four elementary schools inside the city: East, West, Highland, and Powell Valley schools. A fifth elementary school lies just north of the corporate boundaries of the City of Gresham, North School. This district also runs two middle schools, Dexter McCarthy and Gordon Russell. Both of these schools are located inside Gresham city limits. The district is currently constructing two additional elementary schools, Hall and Hollybrook, which are to be on line by 1980.

The school has three additional properties; eleven acres near the southwest corner of Stark and Hogan, thirteen acres near the southeast corner of Palmquist Road and Hogan Road, and a third ten-acre parcel outside the 'city limits on the east side of- Troutdale Road north of Division Street. These parcels of land in actuality may not be used for school purposes but will in the event of final site selection prove as excellent bargaining tools. For example, the 13-acre Palmquist-Hogan site has recently been redesignated for industrial uses. The changing climates of the neighborhood resulted in a need to relocate the site to a more central location to the projected residential neighborhoods.

Gresham has operated on a 4545 year round school program since July, 1972. The initial consideration of the system was to realize an immediate savings of \$3.5 million in capital construction costs. The continuance of this system assists the school district in absorbing the impact of additional students without getting involved in an overbuild situation for the long-term needs of the city. The school district expects that its enrollment will increase by nearly 30% over the next five years. Administrators estimate that additional classroom space will be needed sometime near the 1982-83 school year. Figure 4-17 defines the projected ability for the school facilities to meet future demands.

FIGURE 4-17

**GRESHAM GRADE SCHOOLS
PROJECTED ENROLLMENT V. CLASSROOM CAPACITY**

SCHOOL YEAR	PROJECTED ENROLLMENT (Grades 1-8)	CLASSROOM CAPACITY
1978-79: Russell Middle School Opens	4,695	4,600
1979-80: Hall & Hollybrook Schools Open	5,000	5,800
1980-81	5,290	5,800
1981-82	5,550	5,800
1982-83: Added Space Needed	6,100	5,800

4.320 GRESHAM HIGH SCHOOL DISTRICT #20 JT

The high school district has a larger boundary than the Gresham Grade #4. The high school district operates two schools, Gresham High located east of Main and south of Burnside, and Sam Barlow High, located on 302nd Avenue just east of the city limits. Together these schools serve approximately 3,100 students in grades nine through twelve on a 9-month curriculum basis.

In view of the recent enrollment projection, District 20 will need additional classroom space sometime around the 1982-83 school year. Presently the school district does not own any vacant school sites. The 13.4 acres site that was set aside in southwest Gresham was transferred to Centennial High School District in 1977.

4.330 CENTENNIAL SCHOOL DISTRICT #28 JT

The Centennial District was formed in 1977 through consolidation of the Lynch and the Pleasant Valley Elementary School Districts plus some territory from the Gresham School District. Although it serves some 5,200 students, the district has only one facility inside Gresham's boundary, the 1,600 pupil Centennial High School. Centennial also owns a 38.2 acre parcel in southwest Gresham and has been offered an eleven acre site in conjunction with the Hunter's Highland project in the far west area of Gresham.







Preliminary enrollment projections show a decline in student population throughout the entire district in the early 1980's, thus prompting the consideration of alternative to school construction as a means of alleviating the short-term overcrowding in some of its elementary schools.

FIGURE 4-18

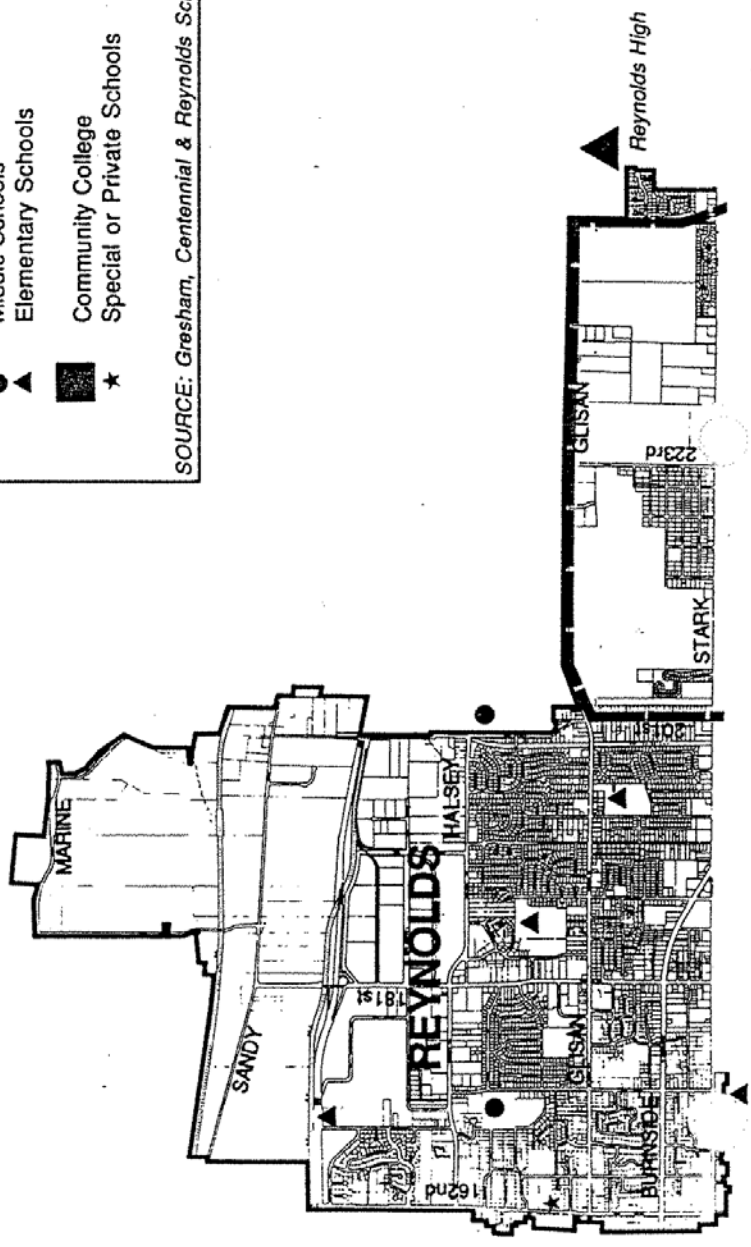
CENTENNIAL SCHOOL DISTRICT NO. 28 JT					
ENROLLMENT PROJECTIONS					
GRADE LEVEL	1978	1979	1980	1981	1982
1-5	1,933	1,838	1,750	1,673	1,643
6-8	1,127	1,094	1,125	1,164	1,155
9-12	1,695	1,583	1,451	1,374	1,307
1-12	4,755	4,515	4,326	4,211	4,105

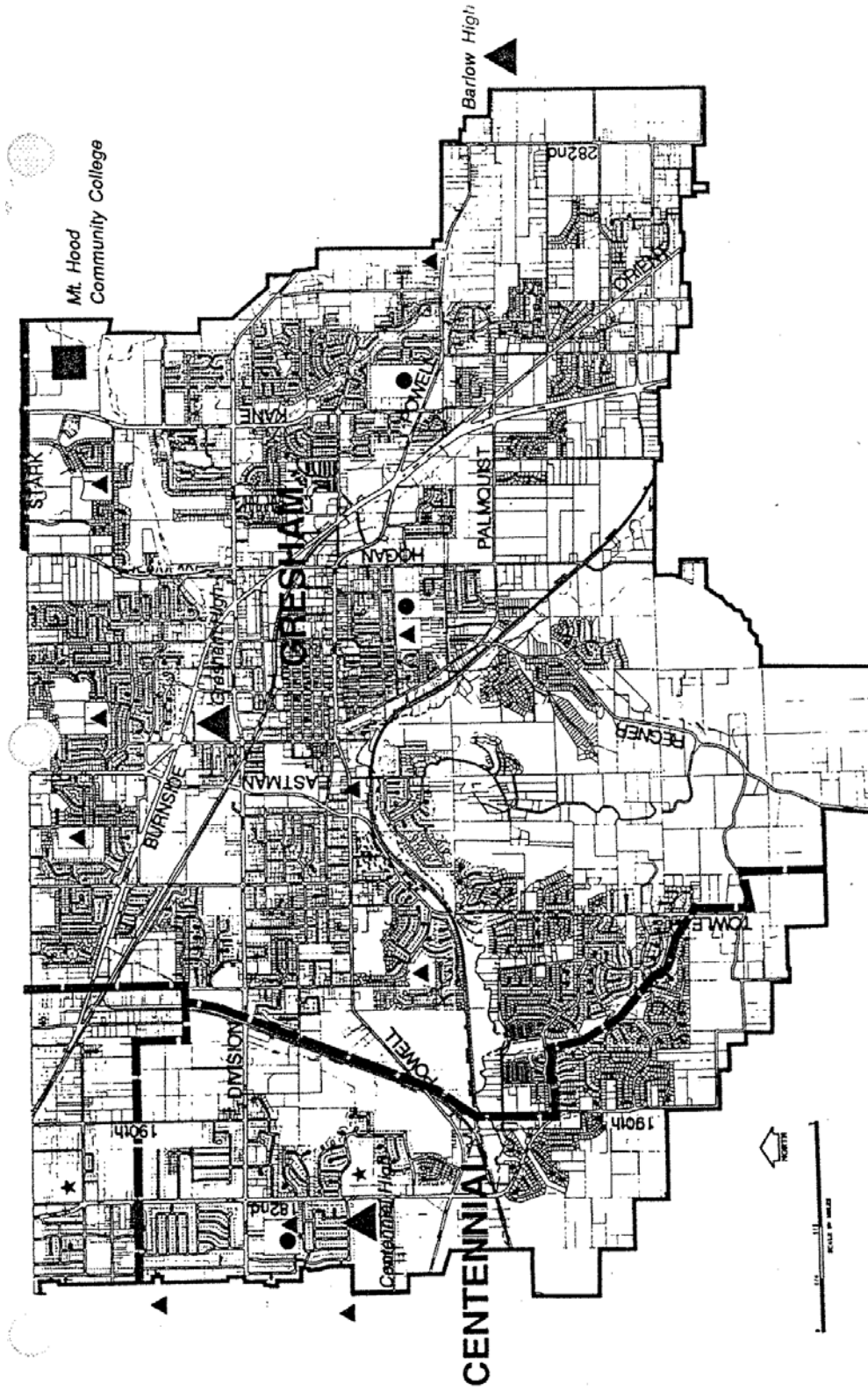
MAP 21
GRESHAM COMMUNITY DEVELOPMENT PLAN

GRESHAM AREA
SCHOOLS

	School District Boundaries
	High Schools
	Middle Schools
	Elementary Schools
	Community College
	Special or Private Schools

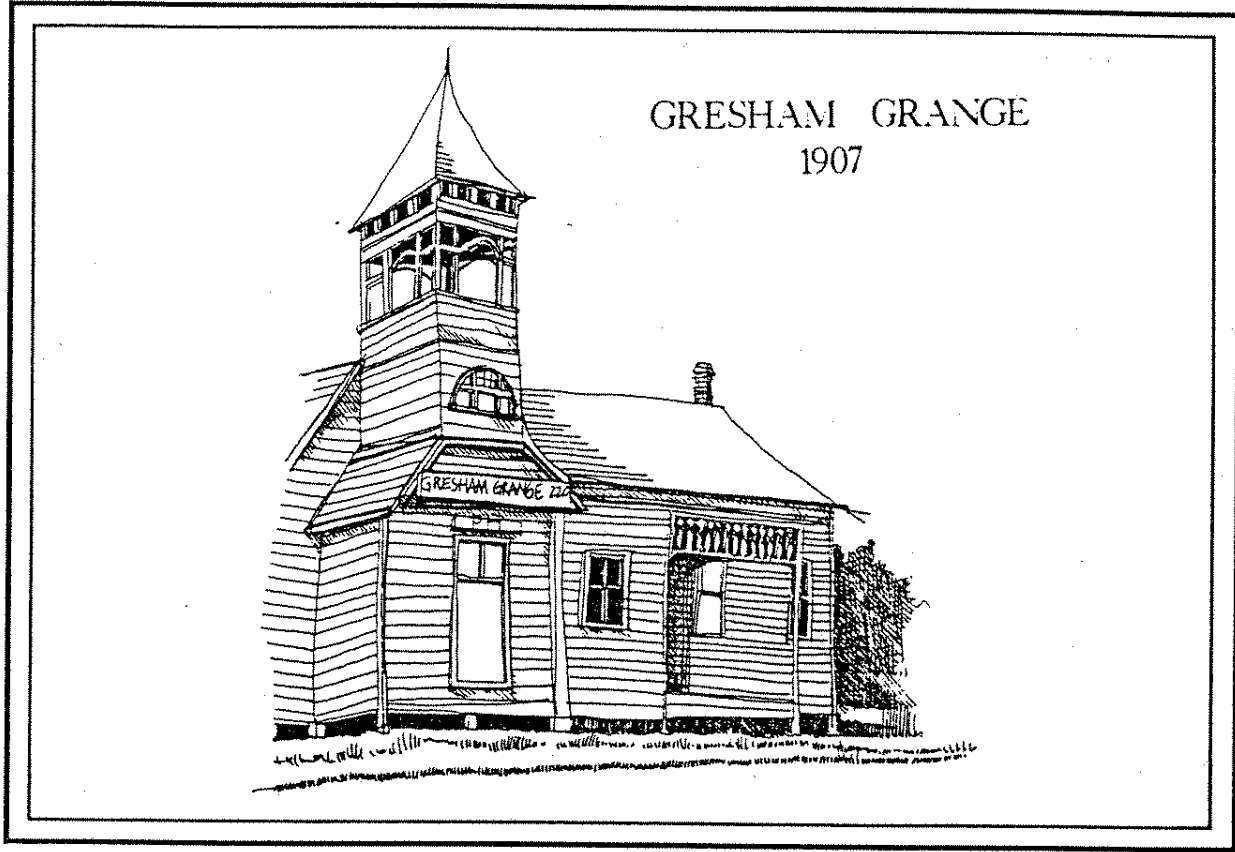
SOURCE: Gresham, Centennial & Reynolds School Districts (1988)





4.340 ORIENT SCHOOL DISTRICT 6J

West Orient School (grades 1-3) and East Orient School (grades 4-8) serve approximately 185 acres of Gresham in the far southeast portion of the city. The current enrollment for the two schools is 725 students. Orient District Administrators do not anticipate any problems meeting projected demands. Major portions of the district lie outside the urban growth boundary.



4.400 RECREATIONAL OPPORTUNITIES

The City of Gresham currently does not have a formal municipal recreational program. The City Parks Committee, a seven person board appointed by the City Council, serves as an advisory group concerning land acquisitions and improvements for the city park system. (See Section 3.152 for an inventory of the parks available for public use.) There does exist a varied selection of organized recreational programs, augmented by private recreation and support establishments.

4.410 ORGANIZED RECREATION PROGRAMS

Organized recreation programs can provide supervised activities for any age group at various skill or experience levels. The present selection of recreation programs in Gresham includes Greater East Multnomah County Softball Association, Adult Metro Soccer, Mt. Hood Classic Soccer & Gresham Little Leagues; Gresham Youth Soccer, Mt. Hood Classic Soccer, Rockwood Reynolds Soccer, Rockwood Summer Boys Baseball, Rockwood Girls Summer Softball, Centennial/Lynch Summer Boys Baseball, Centennial/Lynch Summer Girls Softball and the Mt. Hood YMCA.

4.411 Softball/Baseball

There are several softball and baseball associations that provide the opportunity for boys and girls to play ball in the Gresham area. Programs are active from April through August with teams scheduling fields at local schools, parks, and area churches. Maintenance and improvements to the fields are often the responsibility of the teams and associations. Their programs are funded by sponsors, concessions and fund raising activities.

The Greater East Multnomah County Softball Association organizes women's, men's and co-ed adult softball for East Multnomah County.

4.412 Little League

Little League (Gresham, Rockwood and Centennial) provides baseball and softball for boys and girls from ages 6 to 15. The program is active from March through July, with tournament play in early August. The teams schedule baseball fields at local schools through the three school districts and area churches and make use of the baseball diamond in Main City and North Gresham Parks. Maintenance and improvements to the fields are supported by the teams. The program is funded by sponsors, concessions, and fund raising activities coordinated by parent volunteers.

4.113 Youth Soccer

The Youth Soccer (Gresham, Rockwood/Reynolds, Lynch) Clubs supervise soccer teams for boys and girls ages 8 to 18. The clubs have about 650 participants in Gresham, and are active from late August through November. They take advantage of soccer fields at local school grounds, in city parks and on private property. In many cases they take an active role in maintaining fields. The clubs are funded by registration fees, sponsors, and yearly fund-raising events. Coordination is provided by parent volunteers.

4.114 Gresham Senior Center

The Gresham Senior Center provides scheduled activities for men and women 55 years and older. The center schedules daily activities and classes ranging from painting and lip reading to swimming and bowling. Pool, cards and table games are open all day and square dancing frequently takes place in the evenings. Frequent day trips and tours are implemented by extended vacation packages. The center also provides information on housing, transportation, and legal questions. The center is funded by the Area Agency on Aging, the Community Services Administration and Multnomah County. Operation is supplemented by volunteers.

4.115 Mt. Hood Community College

Mt. Hood Community College opens many of its facilities to the public at selected times during the week and weekend. Anyone can utilize tennis courts, handball and racquetball courts and the gymnasium (for volleyball and basketball). Also, a running track and weight room are available at no charge. A swimming center is also available to the public for a small fee. Senior citizens qualify for Golden Age Services. By obtaining an identification card from the college activities office, a senior citizen has all the rights that a student has to the college's facilities and programs.

Boys and girls from 5 to 14 years of age may participate in a wide range of athletic activities in the Saturday morning youth recreation program. The program is sponsored by the athletic department and requires a small registration fee. During the summer the program is expanded to include daily sessions. Additional youth sports camps are available for a small fee during the summer.

4.116 Mt. Hood YMCA

The YMCA offers a limited sports program at selected area schools and provides summer sports clinics and day camps.

In summary, these recreation programs provide some varied recreation opportunities for certain age groups and a small offering for other age groups. Athletic-minded children have a small selection of activities in which they can participate, depending on the time of year. Senior citizens have some regular organized activities available to them. Young and middle-aged adults seem to have the fewest opportunities of this nature. Non-athletic recreation for children is also

lacking. There are no duplications of recreation service in the Gresham area, but there are many areas where no one is providing services or facilities.

However, the opportunities for all age groups, especially the lower income groups, are constrained by the user and registration fees that are sometimes charged. While user fees are a viable means of supporting these kinds of services, and are necessary for maintenance and supervision staff, the groups most affected are those who have the fewest activities.

4.420 PRIVATE RECREATION AND SUPPORT ESTABLISHMENTS

Because the City of Gresham has provided very little recreation service, private clubs, service organizations and commercial operations have had to fill the need. The Greater East Multnomah County Softball Association was founded to schedule and manage the softball program. There are also sports clubs for soccer, little league and other sports. Private and commercial recreation organizations are also found in Gresham to offer specialized services for a fee. They include golf clubs, racquet and health clubs.

In addition to the limited recreation facilities provided by the public sector, private interests also provide recreation facilities and related services. Although there are many entertainment and leisure-time activities that have traditionally been supplied by the private sector (such as movie theaters and game rooms), the trend toward private athletic and “fee for service” recreation clubs is increasing.

This trend is viewed as a significant development in the evolution of our society. In an economic sense, recreation is big business. It is expected that in the future recreational spending will capture an increasingly larger share of the consumer dollar. Increasing leisure time, earlier retirement age, and a higher level of disposable income contribute significantly to the indulgence in recreational endeavors.

4.421 Private Recreation Facilities and Services

Types. The first category of private recreation establishments inventoried here are those that directly provide the facility or entertainment. The following table (Figure 4-19) details the type of establishment and the number of each.

FIGURE 4-19

PRIVATE RECREATION ESTABLISHMENTS

Type	Number
Indoor racquet sports	2
Golf course	1
Movie theater	2
Roller skating rink	1
Health spa	3
Bowling	2

Entertainment and leisure providing establishments are dependent upon a sufficient market demand for their services. The rapidly increasing population of Gresham has resulted in a response by the recreation industry to the potential market.

In addition to increasing market size, the relatively high incomes found in Gresham may contribute to the rapid growth of these market-oriented recreation facilities. Given that Gresham is continuing to grow at a rapid rate, and maintaining its attraction as a relatively affluent community, it is likely that more private recreation services will locate in the city. Recreation and amusement businesses are located in commercial districts. In Gresham, such zones occur within or near the core area. The primary means of regulating these establishments is through land use and land development control measures.

4.500 COMMUNITY HEALTH SERVICES

Hospital and emergency services are provided to Gresham residents by the Gresham Community Hospital located at Northeast 5th Street and Beech Avenue. Other health services are provided by Multnomah County Project Health, Multnomah County Public Health, nursing, private health care professionals and clinics, and nursing and convalescent homes.

Gresham Community Hospital has a current 96-bed capacity. These facilities are owned by Metropolitan Hospitals, Inc. of Portland. Gresham Community has the third busiest emergency room in the metropolitan area; nearly 23,000 persons were served in 1978. This large figure is due to the large service area lying easterly and southerly of the city. The Gresham Fire Department and private ambulance services provide additional emergency services and transport capabilities.

Gresham Community is presently seeking a 20-acre site on which to build a new hospital. The present site has inadequate parking, poor accessibility for emergency vehicles, and lacks space for location of additional healthcare facilities. The development of a new hospital facility will hinge in part upon obtaining a “certificate of need” from the Northwest Oregon Health

Systems Agency. Gresham Community will be seeking community support to aid in obtaining a certificate and finding a desirable location for an operational date for the proposed facility by the mid-1980s.

4.600 IMAGE OF THE CITY

Because of its recent growth from a small rural town to a large suburban city, and its location along the primary access to nearby recreation areas, commercial development in Gresham has been viewed with mixed emotions by Portland area residents. The Burnside commercial strip has stirred resentment because of its rapid growth and apparent lack of planning; even though it is arguably as attractive as most other recent developments in the Portland area, the congestion resulting from growth has created a perception of Gresham as an ugly obstacle that must simply be endured on the way to Mt. Hood. Signs play an important role in this image, since there is an inherent perception of clutter and congestion to passing motorists. Citizens involved in the update of the Community Development Plan identified this issue as a significant one in the overall health of the local economy; until the street environment, including traffic flow, landscaping and signage, is improved, a negative image of the city could impact the economic health of commercial activities here.

(Amended by Ordinance No. 1134, passed June 27, 1989, effective July 27, 1989.)

4.700 ECONOMIC DEVELOPMENT

4.710 INTRODUCTION

A strong and diversified local economy is important both for a community's identity and its tax base. Gresham is currently a "bedroom" community largely due to its close proximity to the City of Portland job market. However, there is a desire to improve the economic base of the community. The comprehensive land use plan represents one tool the City has to provide opportunities for a variety of economic activities. To create these opportunities there has to be a clear understanding of the following factors:

- The economic trends at the national, state and local level;
- The site requirements of business and industry;
- The availability of industrial and commercial land;
- The community's economic development potential;
- The economic objectives of the City;
- The ability to provide industrial and commercial areas with public facilities;
- The amount of land needed to fulfill the economic objectives of the city.

The balance of this section will look at these factors.

4.720 ECONOMIC OPPORTUNITIES ANALYSIS

The Economic Opportunities Analysis includes four elements: a review of national, state, and local trends; a discussion of the types of sites that will be needed by industrial and commercial uses; an inventory of the industrial and commercial lands; and, an assessment of the city's economic development potential.

4.721 Trends

National Trends

The national economy has been in a state of change over the past 15 years. The structure of the economy is moving away from what has been coined the "mass economy." This "mass economy" is characterized by industries which are either resource-based and/or energy-based, and which also require a large blue collar work force. The Oregon Economic Development Department Growth Industries Survey found that only 21% of those firms surveyed say access to raw materials is critical to their operation. Auto production is a classic "mass economy" industry. Now the "mass economy" is losing ground to the "information economy." This emerging economy is dominated by the generation, processing, and storage of information. Because of the improvements in telecommunications the transmission of information is very inexpensive so that the different components of the production process do not need to be located all in one place. This makes the informational industries more "foot-loose" than traditional manufacturing industries.

The four major components of an informational firm's production process and their locational requirement are identified below;

- Research: This activity generally will locate near major technical universities.
- Fabrication: This activity requires a skilled work force and tends- to locate near large pools of skilled labor as traditional manufacturing industries have done in the past.
- Assembly: This activity requires low cost labor and tends to locate away from high wage areas.
- Administration: This activity has moved in two directions at the same time, first toward decentralization into suburban locations and centralization into large metropolitan areas.

Another national trend is the growth of the service economy.. Services are rising in importance as a source of employment. In 1984 service sector businesses represented 57.3% of the national employment.

FIGURE 4-20

SERVICE ECONOMY AS A PERCENTAGE OF NATIONAL EMPLOYMENT

<u>Type of Employment</u>	<u>% of Total</u>
Distribution services	22.5%
Producer services	12.6%
Social services	12.3%
Personal services	9.9%
Non-service employment	42.7%
Total of U.S. Employment	100.0%

SOURCE: OEDD State and National Trends Report

Service businesses can be broken down into four categories:

- Distributive Services such as transportation, wholesale and retail. These services have declined slightly in their proportion of the national employment over the past 25 years.
- Producer Services such as finance, real estate and business services. These services have been the most rapidly growing type over the past 25 years.
- Social Services such as medical, educational and non-profit organizations. These services have experienced some growth over the past 25 years.
- Personal Services such as eating and drinking establishments, auto repair and entertainment services. These services have shown a slight amount of growth over the past 25 years.

State Trends

The State of Oregon's economy experienced rapid growth through the period of 1972-79. The sectors with the strongest job growth included services, retail trade, government, and manufacturing. Oregon's manufacturing firms experienced employment growth in wood products, primary metals, fabricated metals, machinery, electrical equipment, transportation equipment, instruments, and non-durable manufacturing.

The Oregon economy went into a major decline in 1980. The sectors which exhibited significant declines included construction, manufacturing, distribution, government, wood products, transportation equipment, and fabricated metals. In the same period there was growth in electrical equipment, health services, semi-conductors and computer manufacturing.

Looking to the future, there are several available state-wide employment forecasts which can be used to consider Gresham's economic future. One is from the Oregon Eriployment Division and two from the Bonneville Power Administration are shown in the following figure:

FIGURE 4-21

STATE-WIDE EMPLOYMENT FORECASTS			
<u>Employment Sector</u>	<u>OED</u> <u>1985-1990</u>	<u>BPA</u> <u>1985-1990</u>	<u>BPA</u> <u>1990-2005</u>
Construction/Mining	5.5%	1.4%	1.7%
Manufacturing:	-0.1%	-0.4%	0.0%
Lumber/wood products	5.9%	1.6%	1.1%
Transportation equipment	0.0%	1.2%	1.1%
Food products	4.1%	2.1%	1.9%
Electronics	2.5%	0.4%	0.2%
Other manufacturing			
Total Manufacturing	1.9%	0.7%	0.8%
Transportation/Communications/Public Utilities	2.0%	0.3%	0.4%
Trade	2.3%	2.7%	2.7%
Finance/Insurance/Real Estate	3.9%	3.5%	2.6%
Services	3.0%	3.5%	2.3%
Government	0.4%	2.3%	2.3%
Total Non-Agricultural Employment	2.5%	2.3%	2.1%
Total Employment (including Agriculture)	2.4%		

SOURCE: Oregon Employment Division and Bonneville Power Administration.

The BPA forecast indicates modest growth through the remainder of this decade followed by lower growth after 1990 through 2005. Electronics and transportation equipment are anticipated to experience the strongest growth of all manufacturing industries. Growth in manufacturing is expected to be below increases in other sectors of the economy.

The service sector, including retail trade, finance/insurance, real estate, and services, are anticipated to continue as the most rapidly expanding sources of new jobs.

Local Trends

Statistical Trends

Multnomah County suffered many of the same industry employment trends as the state experienced in the early 1980s, with some notable exceptions. First, Multnomah County lost 18% of its manufacturing employment compared to only 6% for the entire Pacific Northwest. Second, there was a significant 13% loss in employment in wholesale trade while in the entire Metro area there was no wholesale trade employment change.

Multnomah County did experience an increase of almost 10% in electrical manufacturing in the period between 1980-85, which indicates some potential to draw high tech electronics manufacturing. The \$70 million Fujitsu electronics plant represents a positive step toward enhancement of this trend. In addition, the Albertson's food distribution center (valued at \$50 million), the Gresham Town Fair shopping center (valued at \$30 million), and the Gresham Community Hospital (valued at \$15 million), all represent significant local investment trends which are strengthening and diversifying the Gresham economy.

Two approaches have been applied to forecast growth locally. The "Shift/Share" Analysis by Metro and the "Location Quotient" Analysis by the Oregon Employment Division. The latest Metropolitan Service District (METRO) employment forecasts used "shift/share" analysis to assign future employment prospects to various parts of the region. The "shares" represent the businesses which dominate in the area when compared to another area. For example, over 85% of the employment in textile mill products exists in the Tri-County area in relationship to the amount of employment in this business activity statewide. The "shift/share" represents growth or decline in employment in a business when compared at two specific points in time. The industries which the metropolitan area provides a predominant share of Oregon's business activity includes:

- Traditional industries such as metals, textiles, and apparel;
- High tech industries;
- Transportation related services, from air transportation to wholesaling; and
- Office-related specialty services such as stock brokers.

The Oregon Employment Division found that the following five employment categories with the largest gain in Tri-County employment shares between 1979 and 1985 were:

- Air transportation
- Legal services
- Primary metals
- Home furnishing stores
- Holding/Inv./Comb. Office

Another method used to identify local economic trends is the "location quotient" which measures the relative concentration of an industry in a one geographic area versus another location. According to OED statistics the Metro area as a whole in the period between 1979 and

1985 experienced growth in service sector employment in the areas of insurance agents/brokers, educational services, and in traditional manufacturing activities such as fabricated metal products and petroleum refining. Multnomah County on the other hand saw severe erosion in its share of industries such as non-electrical machinery and transportation services during the same period.

Forecasted Industries

Three recent studies reviewed both the potential for expansion of existing industries and the metropolitan area's specific potential for supporting new kinds of industrial development. The "Pacific Power Target Industry Study" Metropolitan Portland, 1986, looked at:

- Industries whose production input are available in the area.
- Industries that exist in the area and are expected to grow.
- Industries whose products are imported into area.

Results of the project included lists of industries for which this area may be suitable or attractive. The top 20 priority target manufacturing industries are listed below:

- Special dies, tools and accessories
- Electronic components, NEC
- Aircraft engines and engine parts
- Radio and TV communication equipment
- Plating and polishing
- Industrial controls
- Measuring and control instruments
- Toys and sporting goods
- Miscellaneous plastic products
- Conveyers and conveying equipment
- Wiring devices
- Semiconductors
- Electronic computing equipment
- Aluminum castings
- Telephone and telegraph equipment
- Metal coating and allied services
- Surgical appliances and supplies
- Drugs
- Fabricated metal products, NEC
- Welding apparatus

SOURCE: Pacific Power Target Industry Study: Metropolitan Portland, 1986.

Second, the Oregon Economic Development Department (OEDD) also conducted a study on growth industries. Their findings are presented in the Growth Industry Report. The 25 highest ranked statewide growth industry categories are:

- Non-ferrous rolling and drawing
- Paper coating and glazing
- Electronic coils and transformers
- Electronic components, NEC
- Printing trades machinery
- X-ray apparatus and tubes
- Book publishing
- Electronic computing equipment
- Industrial controls
- Plastic materials and resins
- Telephone and telegraph equipment
- Aluminum castings
- Dehydrated food
- Measuring and control instruments
- Metal coating and allied services
- Radio and IV communication equipment
- Semiconductors
- Surgical appliances and supplies
- Transportation equipment, NEC
- Engraving and plate printing
- Drugs
- Machine tools, metal cutting
- Upholstered household furniture

SOURCE: Oregon Economic Development Department, Growth Industry Report, 1986.

There were 14 industries which appeared in both studies:

- Aluminum castings
- Drugs
- Electronic coils and transformers
- Electronic components, NEC
- Electronic computing equipment
- Industrial controls
- Measuring and control industries
- Metal coating and allied services
- Miscellaneous plastic products
- Printing trades machinery
- Radio and TV communication equipment
- Semiconductors
- Surgical appliances and supplies
- Telephone and telegraph equipment

Finally, the 1984 Industrial Market Study and Market Plan identified target industries specifically for Gresham and the entire East Multnomah County area. The target industries were identified based on these criteria:

- Prospects for growth in the industry.
- East Multnomah County's track record as an attractive location for the industry.
- East Multnomah County's business attraction strengths, including labor force, transportation system, business climate and other resources.

Three industrial groups were recommended:

Primary Target Industry Group

Fabricated metal products, except machinery and transportation equipment
Machinery, except electrical
Transportation equipment

Secondary Target Industry Groups

Chemicals and allied products
Electrical and electronic machinery, equipment and supplies
Measuring and related instruments

Tertiary Target Industry Groups*

Motor vehicles and automotive parts
Electrical goods
Hardware/plumbing/heating equipment and supplies
Machinery equipment and supplies
Drugs and related supplies
Chemicals and allied products

* Note: All of the tertiary targets are wholesale trade categories.

SOURCE: Karen Myers and Associates/Whitman Advertising and Public Relations, Industrial Market Study and Market Plan, prepared for East Multnomah County Economic Development Commission, October, 1984.

Locational Attributes

Gresham exhibits a number of locational attributes which make it attractive to both industrial and commercial development.

Industrial development will be attracted to Gresham for a number of reasons. First, firms may relocate from Portland as they expand their operations or seek to modernize their plants. Gresham has a large supply of vacant industrial land available for such purposes (refer to findings on the inventory of buildable lands). Second, Gresham is an attractive area for export manufacturers because the city is located near the Port of Portland's marine and international airport facilities. The Port's five marine terminals represent the largest volume export port on the west coast. Air cargo service is provided at Portland International Airport by 16 all-cargo carriers, as well as on many of the 18 major, national, regional, and scheduled charter airlines also serving the airport. The 1987 East County Business Survey found that 35% of industrial and 23% of general business firms regards airport proximity important.

Third, manufacturing industries should also be attracted to the Gresham area because of the large and diverse labor force. The 1987 East County Business Survey found that 70% of industrial and 62% of general business firms regard access to a skilled labor force as important. East Multnomah County lies within easy commuting distance of over a quarter of a million people within the four-county region which makes up the Portland metropolitan area. There is a diversified labor pool here as the following table documents:

FIGURE 4-22

EMPLOYMENT IN FOUR COUNTY PORTLAND METROPOLITAN AREA,
BY MAJOR OCCUPATIONAL GROUP

<u>Occupation</u>	<u>Employees</u>	<u>% of Total</u>
Total Employment, persons 16 and older	582,140	100.0%
Executive and Managerial	70,730	12.1%
Professional Specialty	72,297	12.4%
Technical Support	16,969	2.9%
Sales	67,032	11.5%
Administrative Support	106,578	18.3%
Service: Private Household	2,300	0.4%
Service: Protective	6,394	1.1%
Service: Other	62,318	10.7%
Farming, Forestry & Fishing	9,627	1.7%
Precision Production & Craft	73,072	12.6%
Machine Operator	45,634	7.8%
Transportation & Material Moving	25,654	4.4%
Laborers	23,535	4.0%

SOURCE: Metropolitan Service District Data Resource Center.

The Gresham area is in a good position to attract industries that require workers with some technical training and experience. According to the 1980 U.S. Census, the East Multnomah County area has a higher percentage of its population with some post-secondary technical or other training than the state or the nation as a whole, as shown below:

FIGURE 4-23

EDUCATIONAL TRAINING					
<u>Completed</u>	<u>U.S.</u>	<u>Oregon</u>	<u>Metro</u>	<u>Multnomah Co.</u>	<u>Gresham Area</u>
High School	66%	76%	79%	76%	79%
1-3 Yrs College	16%	21%	22%	22%	24%
4+ Yrs College	16%	18%	20%	20%	16%

SOURCE: 1980 U.S. Census of Population.

Fourth, Gresham should be seen as attractive to moderate and heavy industries because of the abundant supply of flat, large, and reasonably priced properties that are isolated from urban residential development.

Fifth, large scale firms which require a technically trained labor force may find Gresham attractive due to the presence of Mt. Hood Community College. The college has many vocational-technical training programs and has been responsive in the development of training programs to meet the specific needs of local industries. The OEDD Growth Industries Survey found that a two-year community college degree was required by 22% of the business firms, The 1987 East County Business Survey also found that 49% of industrial and 56% of eneral business firms regard access to training programs for employees important.

Sixth, Gresham is situated in the state’s largest metropolitan area. This puts businesses in close proximity to suppliers of goods and services. This is especially important for small, locally owned firms. The 1987 East County Business Survey found that having a supplier nearby was regarded as “important” by 69% of industrial and 71% of general business firms. This is much higher than the percentage that was identified in the OEDD Growth Industries Survey, which found that only 33% of firms surveyed said access to suppliers was critical to their operation.

Seventh, downtown Gresham has the potential to fill a market niche as a specialty retail location especially since light rail transit serves the area. A recent MAX rider survey found that a significant percentage, 19% of the daily and 47% of weekend ridership, is for recreation, sight-seeing, or entertainment (MAX Rider Survey, 1987). Specialty retailers could take advantage of this opportunity.

Eighth, the market for neighborhood and commercial shopping centers ranging in size from 20,000 to 300,000 square feet is expected to continue to be strong city-wide. These retail businesses require highly visible sites on busy arterial streets. The City of Gresham has many high traffic volume arterial streets which make attractive locations for retailers. The city has identified tracts of land for the future expansion of commercial centers on several of the city’s

major streets Commercial office development in Gresham has been oriented toward the local market and is dominated by smaller independent firms. However, this may change in the future. Commercial office is expected to be drawn to locations adjacent to the light rail transit stations. Finally, the east county area could be an attractive location for a regional shopping center with added population growth and existence of large tracts of undeveloped land which could accommodate a regional shopping center. The 1981 City of Gresham Market Plan and Implementation Study indicated that there would be a market for a regional shopping center by 1995. In addition, the 1986 Central Area Market Plan Report identified five possible locations for a regional shopping center. The 1987 economic study by Economic Development Services recommended that at least two sites should be designated for a possible regional shopping center.

The preceding information leads to some basic conclusions on the potential growth of the city's economy. First, traditional industries may play a role in the local economy. While these industries are decreasing in importance nationally, Gresham's proximity to the port facilities and blue collar work force could work to the city's advantage. Second, growth in service sector activities is expected to dominate employment growth in the years to come at the national as well as the local level. While service sector growth is not a driving force in support of the local economic base, growth in basic industries throughout the metropolitan area will ensure growth in the local service sector businesses.

4.722 Site Requirements

This section, covers the types of sites needed for anticipated industrial and commercial development. The section has been divided into industrial and commercial development. Four sub-categories are also identified. The four include heavy to moderate industrial, light industrial, commercial office/service, and commercial retail. The heavy to moderate industrial uses are land intensive uses which often generate noise and air pollution. Uses which would fall under this category include fertilizer, gas, and paper product plants. The light industrial uses include manufacturing, assembly and distribution firms. Examples of light industrial uses include communication equipment, drugs, and motor freight terminals. Commercial office/services sector includes a diverse group of uses which range from general office developments to restaurants and banks. The final category, commercial retail, includes uses which are engaged in selling goods for personal or household consumption such as clothing, computer or appliance stores. The section ends with a description on the importance of highway accessibility to east county businesses.

Industrial Development Sector

The industrial sector in east county is growing slowly but plays an important role since it represents the driving force behind a local area's economic growth. In general terms, industrial development is attracted to sites which are flat and have good access to major transportation facilities. Because of the land annexed to the city since 1980, there is an excellent supply of sites for a wide variety of industrial development.

Land Requirements of Existing Firms

The land requirements of east county industrial firms was studied in the 1987 East County Business Survey. The survey found that there was a wide range in the size of facilities needed by industrial firms and that most preferred to locate in "single user" buildings:

FIGURE 4-24

<u>Size of Building</u>	<u>Industrial Building Type (%)</u>	
	<u>Single</u>	<u>Multi-Tenant</u>
Under 1,000 Sq. Ft.	5	0
1,001 to 2,000 Sq. Ft.	10	1
2,001 to 5,000 Sq. Ft.	16	2
5,001 to 10,000 Sq. Ft.	13	4
10,001 to 25,000 Sq. Ft.	12	8
25,001 to 50,000 Sq. Ft.	5	9
Over 50,000 Sq. Ft.	5	2
No response/Don't know	4	4
Total	70%	30%

The preceding chart indicates that east county industrial firms tend to be small requiring buildings of 2,000 sq. ft. to 25,000 sq. ft. The survey also found the majority of the firms that intend to expand operations in the next 12 months plan to move to another east county location (44%) or plan to expand at their current location (36%). Only 12% plan to relocate in some other location within the metropolitan area. These results indicate that existing firms are satisfied with their east Multnomah County locations and there is ample room to expand their operations in the area.

Heavy to Moderate Industrial Development

In general terms, the site size requirements of heavy to moderate industries are varied. The average east county firm contains 32 employees. This size of firm would require a site of almost one acre. While small firms are the general rule, it would be advisable to ensure that there are large industrially designated sites to accommodate major industrial firms since there are not an abundant supply of large vacant parcels in the Portland metropolitan region.

The transportation requirements of heavy to moderate industries include interstate freeway access with arterial street connections. Rail access is often not a critical factor. The OEDD "Growth Industries Survey," 1986, date found that only 6% of firms surveyed require on-site rail service. Port and airport access can be important depending upon the particular nature of the firm. Gresham's close proximity to the Port of Portland port and airport facilities is an advantage for many industries. Other requirements of heavy and moderate industries also vary depending upon the particular firm's need. All firms must have access to sewer, water, streets and drainage facilities.

Light Industrial Development

The land requirements of light industrial firms are varied. "Low tech" uses such as machinery or furniture manufacturers need sites in the one to five acre range. "High tech" manufacturers usually look for sites between 20 and 100 acres, and sites of 10 to 50 acres are required for wholesale distribution firms.

Transportation requirements of light industries include interstate freeway access with arterial street connections. Airport access can be critical for freight shipments as well as executive travel. Gresham satisfies this need with its close proximity to both Portland International Airport and Troutdale's general aviation airport. Rail and marine services are infrequently needed. Some larger firms are relatively high users of water, electrical and natural gas.

Commercial Development Sector

Commercial development is the most rapidly growing sector of the city's economy. Commercial development requires a diversity of sites depending upon the type of service they provide. For those businesses which need high customer visibility, there is a need to designate sites for commercial centers in areas adjacent to major streets. Strip commercial development patterns along major streets can be avoided by the designation of sites for commercial centers. The Urban Land Institute has developed standards regarding the type, size, and trade area of commercial centers. These standards can be utilized to guide the location of centers. There should also be opportunities for services in business parks and industrial area settings. Many of the service firms are appropriate for a downtown location where development densities are maximized and access to the light rail transit system represents an attractive area for office development.

Land Requirements of Existing Firms

The land requirements of existing East County commercial firms were studied in the 1987 East County Business Survey. The survey found that most commercial firms require less than 5,000 sq. ft. of floor area. The following table presents information on existing floor area occupied by surveyed firms:

FIGURE 4-25

<u>Size of Building</u>	<u>General Business Building Type (%)</u>	
	<u>Single</u>	<u>Multi-Tenant</u>
Under 1,000 Sq. Ft.	6	11
1,001 to 2,000 Sq. Ft.	13	10
2,001 to 5,000 Sq. Ft.	16	11
5,001 to 10,000 Sq. Ft.	3	3
10,001 to 25,000 Sq. Ft.	3	1
25,001 to 50,000 Sq. Ft.	2	
Over 50,000 Sq. Ft.	2	
No response/Don't know	11	8
Total	56%	44%

The table indicates that the smaller the business the more likely it is located in a building with other businesses. The data leads to the conclusion that there is a need to provide sites for commercial centers which contain multiple tenants.

Commercial Office/Service

The 1982 “Census of Selected Services” shows that the typical firm in Gresham has six employees. This is 13 employees less than the average service firm in Multnomah County. Service firms in Gresham require about 1,350 sq. ft. By adding parking, landscaping and setback requirements, the estimated site size needed for the average firm is 4,000 sq. ft.

The demand for space by commercial services uses is varied. There are four distinct markets for sites needed by commercial office/service users. The first market is for the smaller office. These businesses often locate in former residences. This category has historically been the largest office space sector in the east county area.

The second market is for large multi-tenant office buildings which would locate downtown and in non-downtown areas around major activity centers, such as the hospital and community college. A third market is office/service development along commercial strips and in commercial centers. These users are seeking a high level of customer visibility. The final market group targets services needed in business park settings. These uses can range from executive office space to research and development activities.

The transportation requirements of commercial office/services are quite varied. Office services can be located in a wider range of sites than the service firms that need more direct customer contact. Current office/service businesses in Gresham are oriented to the local area’s consumers and businesses therefore, access to regional highways and airport facilities is not important at this time.

Commercial Retail

The site requirements of retail firms vary according to the size of the store, whether it is located within a center or free standing structure, and the scale of the center (i.e. neighborhood, community, or regional center).

Free-standing retail firms can be grouped into three categories. The free-standing retail business in a downtown location has a high building coverage ratio and needs a site of 5,000+ sq. ft. The small franchise operations which locate on arterials require sites of 10,000 to 30,000 sq. ft. The third type of free-standing retail business is the large general merchandise operation which requires a site of 20,000 sq. ft. or more.

There are three categories of shopping centers which are relevant to Gresham. The neighborhood scale center requires 2 to 7 acres. The community scale center requires 7 to 30 acres and a regional center requires 25 to 65 acres or more.

Access is the number one priority for retail businesses. Most regional centers are located near a freeway. Community and neighborhood centers require access to arterials or major collector streets. Downtown businesses require adequate on-street or public parking areas or on-site parking. Light rail stations in the city provide unique retail opportunities when located within walking distance of the stations.

All retail operations require utilities to be immediately available to the site.

Highway Accessibility

Highway accessibility is the major locational factor for both industrial and commercial development. The 1987 East County Business Survey found that good streets and roads were important for 94% of industrial and 95% of general businesses. Gresham's arterial streets system is well developed in most parts of the city. Commercial areas are better served than the industrial areas.

Access to the interstate highway system was found to be important for 76% of industrial and 78% of general business firms in the business survey. The OEDD "Growth Industries Survey" found that 40% of site location decision makers say that their operation requires immediate access to an interstate highway for shipping of products. Interstate 84 runs through the city in the north, but interchange access to the system is only marginal. Programmed improvements to several of the interchanges will greatly improve access from Gresham locations to the interstate system.

4.723 Inventory of Industrial and Commercial Land

In 1986 an inventory of industrial and commercial lands was conducted to establish the supply of vacant and significant underutilized lands within the city. This inventory was updated in 1989. The methodology for the inventory is found in Appendix '20'. This section summarizes the Industrial and Commercial Inventory including information about: the total supply of land, the supply of vacant and significantly underutilized land, the breakdown of the supply into the three industrial and six commercial districts, and the amount of serviceable vacant and significantly underutilized land.

The inventory indicates that currently there is a total of 2,221 acres of industrial land and 1,114 acres of commercial land.

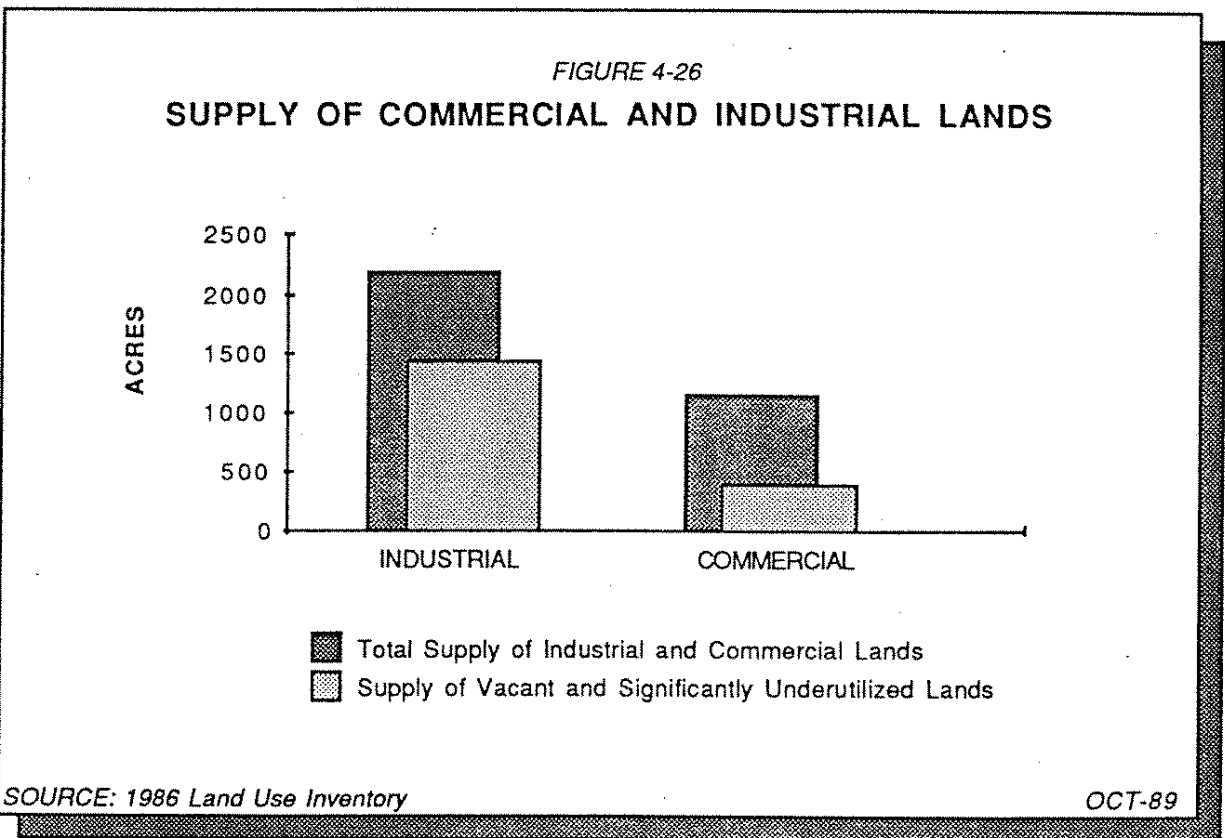
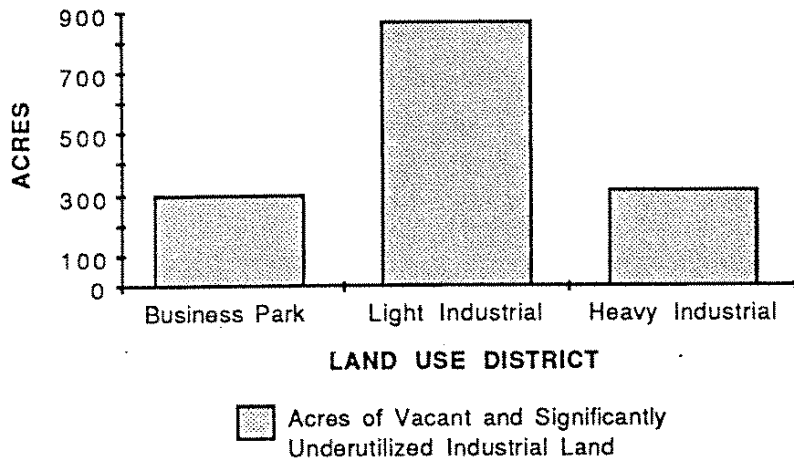


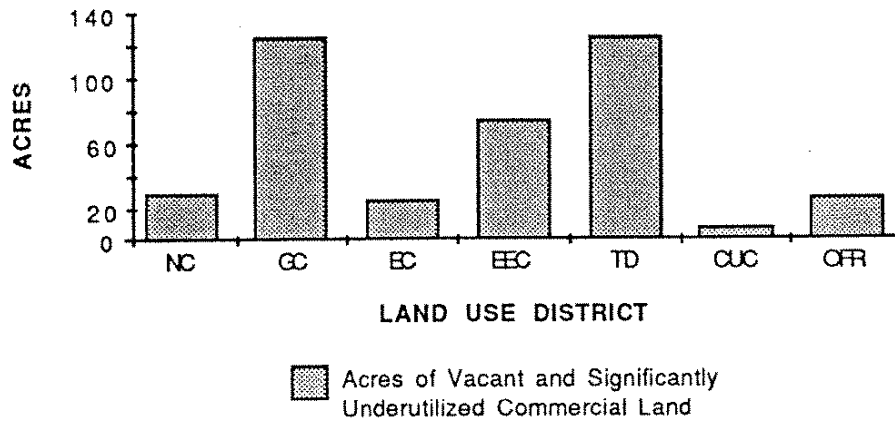
FIGURE 4-27
VACANT AND UNDERUTILIZED INDUSTRIAL LAND
BY DISTRICT



SOURCE: 1986 Land Use Inventory

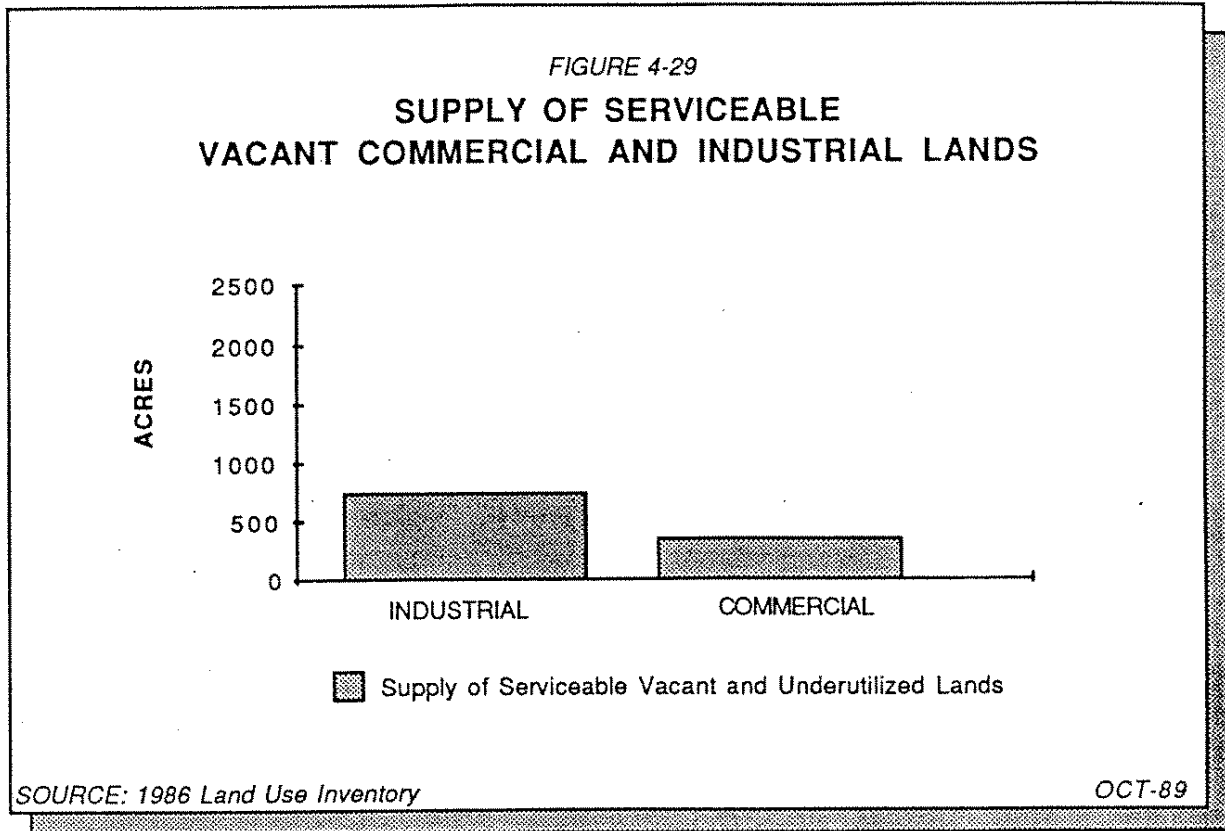
OCT-89

FIGURE 4-28
VACANT AND UNDERUTILIZED COMMERCIAL LAND
BY DISTRICT



SOURCE: 1986 Gresham Land Use Inventory

OCT-89



The State's Industrial/Commercial Development Rule requires a comprehensive inventory of commercial and industrial land. The inventory of these sites is presented in Appendix 21 and a map showing their location is found in Appendix 28.

(Amended by Ordinance No. 1139, passed on July 18, 1989, effective August 17, 1989.)

4.724 Assessment of Community's Economic Development Potential

This section estimates the type and amount of industrial and commercial development likely to occur in Gresham. The findings are based upon development trends information, the inventory of available industrial and commercial lands, and the area's economic advantages and disadvantages which affects the ability to attract new businesses and accommodate the expansion of existing firms.

Development Trends

The estimate of the types and amount of industrial and commercial development forecasted for the city was prepared by the consulting firm of Economic Development Services. Two forecasts were prepared because the recession of the early 1980s and ensuing slow recovery has made job forecasting more difficult. The first forecast is the baseline (or trend) forecast which is the most likely scenario. The second forecast is the high growth forecast which reflects success at recruiting target industries as identified by Pacific Power, the OEDD and Karen Myers and Associates. The methodology for the forecasts is described in Appendix 22.

The study area upon which the estimates are based include the cities of Gresham, Wood Village, Fairview and Troutdale and a small section of unincorporated Multnomah County (refer to map on following page).

Gresham is anticipated to capture 70% of the study area's employment growth (refer to methodology described in Appendix 5).

Employment Growth

Baseline Employment Forecast. Employment in the east county area is projected to increase by 50% from 1985 to 2005, adding 11,250 new jobs. Retail trade is expected to be the number one growth category. Retail trade, self-employment, service and finance/insurance/real estate are expected to increase by 88% from 1985 to 2005.

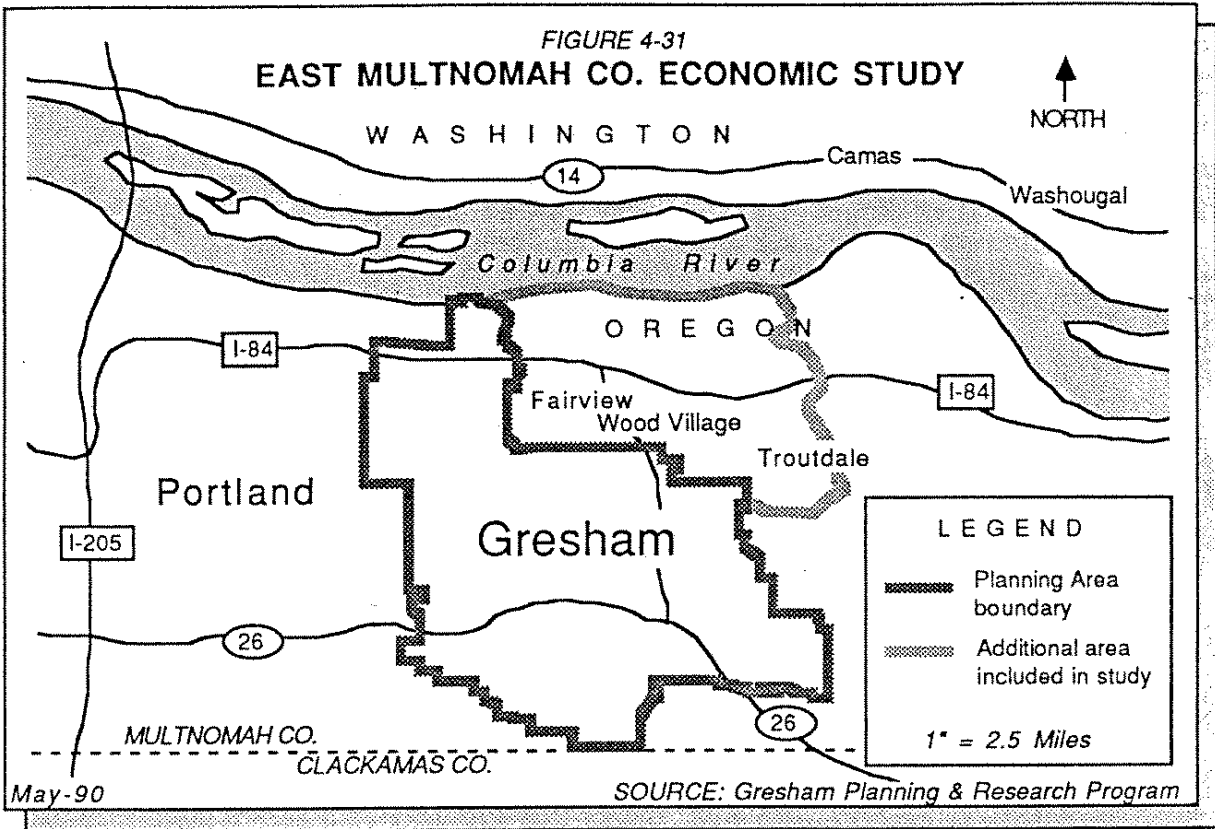
FIGURE 4-30

DISTRIBUTION OF FORECAST EMPLOYMENT GIU4TR BY CATEGORY

<u>Industry</u>	<u>Jobs in 1985</u>	East Multnomah County Employment	
		<u>1985-90</u>	<u>1985-2005</u>
		---- Baseline Forecast ----	
		Employment Growth Added Jobs	
Retail Trade	4,990	2,450	6,060
Self-Employed	1,930	560	1,360
Services	3,070	130	1,300
Finance/Insurance/Real Estate	1,220	260	840
Manufacturing excluding Electrical	3,690	250	560
Wholesale Trade	1,370	-230	380
Electrical Manufacturing	110	260	350
Government	3,800	-210	330
Construction and Mining	560	80	280
Transportation/Commercial/Utilities	1,760	-60	-70
Agriculture	180	-80	-150
Total	22,670	3,410	11,250

Note: Totals may not add true due to rounding.

SOURCE: Estimated totals by Economic Development Services from METRO and OED data, 1987.



The City of Gresham is expected to capture 70% of the study area's forecasted employment growth of the preceding industry categories as described next:

FIGURE 4-32

DISTRIBUTION OF FORECASTED GROWTH BY CATEGORY

<u>Industry</u>	<u>Jobs in 1985</u>	Gresham Employment	
		<u>1985-90</u>	<u>1985-2005</u>
Retail Trade	3,490	1,720	4,240
Self-Employed	1,350	390	950
Services	2,150	90	910
Finance/Insurance/Real Estate	850	180	590
Manufacturing excluding Electrical	2,580	180	390
Wholesale Trade	960	-160	270
Electrical Manufacturing	80	180*	260*
Government	2,660	-150	230
Construction and Mining	390	60	200
Transportation/Commercial/Utilities	1,230	-40	-50
Agriculture	130	60	110
Total	15,870	2,510	8,490

Note: Totals were rounded.

* Forecast did not include added employment as a result of Fujitsu development which will employ 350 when first phase is completed in 1989 and potentially 1,200 when all phases are developed.

SOURCE: Estimated totals by City of Gresham from Economic Development Services, METRO and OED data, 1988.

The City of Gresham is forecasted to see 2,510 new jobs between 1985 to 1990 and almost 8,500 new jobs by the year 2005. In the short term, employment, decreases are expected in wholesale trade, government and transportation/comm./util. In the long term, retail trade is forecasted to generate one-half of the forecasted employment growth.

The top ten types of industrial development forecasted for the 1985 to 2005 time period are listed below:

FIGURE 4-33

EMPLOYMENT CATEGORIES REQUIRING INDUSTRIALLY DESIGNATED LAND			
<u>Industry</u>	<u>Jobs in 1985</u>	East Multnomah County Industrial Job Growth	
		<u>1985-90</u>	<u>1985-2005</u>
Transportation Equipment	960	240	540
Wholesale Trade	1,370	-230	380
Electrical Manufacturing	110	260*	350*
Special Trades Contractors	120	50	140
Construction/Mining except Special Trades Contractors	440	30	140
Fabricated Metal Products	400	20	110
Primary Metal Industries	810	130	90
Air Transportation	100	20	60
Printing and Publishing	220	10	50
Electric/Gas/Sanitary	340	20	50
Balance of Industrial Gainers**	480	30	60
Industrial Decliners***	<u>1,920</u>	<u>-240</u>	<u>-240</u>
Total	7,270	340	1,480

* Forecast did not include added employment as a result of Fujitsu development.

** Gainers = Other industrial uses which represent a small portion of the job market.

*** Industrial decliners = Other industrial uses which represent portions of the job market which are anticipated to decline in employment.

SOURCE: Estimated totals by Economic Development Services from METRO and OED data, 1987.

The growth in Gresham's employment categories requiring an industrially designated land is described below:

FIGURE 4-34

EMPLOYMENT CATEGORIES REQUIRING INDUSTRIALLY DESIGNATED LAND			
<u>Industry</u>	<u>Jobs in 1985</u>	Gresham Industrial Job Growth ----- Baseline Forecast ----- Employment Growth Added Jobs	
		<u>1985-90</u>	<u>1985-2005</u>
Transportation Equipment	670	170	380
Wholesale Trade	960	-160	270
Electrical Manufacturing	80	180*	250*
Special Trades Contractors	80	40	100
Construction/Mining except Special Trades Contractors	310	20	100
Fabricated Metal Products	280	20	80
Primary Metal Industries	570	90	60
Air Transportation	80	20	40
Printing and Publishing	130	10	40
Electric/Gas/Sanitary	240	20	40
Balance of Industrial Gainers**	280	20	40
Industrial Decliners***	<u>1,110</u>	<u>-140</u>	<u>-290</u>
Total	4,790	290	1,110

Note: Totals were rounded.

* Forecast did not include added employment as a result of Fujitsu development.

** Gainers = Other industrial uses which represent a small portion of the job market.

*** Industrial Decliners = Other Industrial uses which represent portions of the job market which are anticipated to decline in employment.

SOURCE: City of Gresham from Economic Development Services, METRO & OED data, 1988.

The 1985 Economic Development Study for the Urbanized East Multnomah County Area prepared by Economic Development Services assigned employment categories by Standard Industrial Codes to land use types (refer to Appendix 24 for the assignment methodology).

The four categories of land use included: heavy/moderate industrial, light industrial, commercial office/service; and commercial retail.

The following table provides a detailed forecast of East Multnomah County employment forecasts allocated to the four land use categories plus a fifth category for “self-employed” businesses.

FIGURE 4-35

BASELINE EMPLOYMENT BY LAND USE TYPE TO 1990 AND 2005			
<u>Land Use Category</u>	<u>Actual Jobs</u>	East Multnomah County Forecasted Job Growth*	
		<u>1985-90</u>	<u>1985-2005</u>
Heavy/Moderate Industrial	4,300	400	800
Light Industrial	2,900	0	800
Commercial Office/Service	8,300	200	2,500
Commercial Retail	5,000	2,400	6,000
Self-Employed**	1,900	600	1,400
Total***	22,400	3,600	11,500

* All employment figures rounded to nearest 100.

** Before allocation to other categories. Self-employed workers are allocated later to land-use categories as part of the land requirements forecast, according to a methodology used by METRO in an industrial land demand estimate dated September 18, 1986. The METRO estimate assumes approximately 50% of self-employed work at home, therefore these self-employed are not included in the land requirements forecast.

*** Excludes agriculture.

SOURCE: Economic Development Services, 1987.

According to Economic Development Services, employment growth is forecasted to be evenly split between light and heavy/medium industrial development. Regionally, there is expected to be higher growth in light industrial uses. The east county area received very little growth allocated to electronics employment, which is classified as a light industrial use; however, the growth allocation was based on actual 1979-85 trends which exclude the Fujitsu electronics plant. With the 350 initial employees and the total 1,200 potential employees when all phases of the Fujitsu plant are completed, this one firm will swing the actual light industrial growth substantially ahead of employment growth in heavy/moderate industries.

The employment forecast by land use type for Gresham is described below:

FIGURE 4-36

<u>Land Use Category</u>	Gresham		
	Actual Jobs*	Forecasted Job Growth*	
	<u>1985</u>	<u>1985-90</u>	<u>1985-2005</u>
Heavy/Moderate Industrial	3,010	280	560
Light Industrial	2,030	0	560
Commercial Office/Service	5,810	140	1,750
Commercial Retail	3,500	1,680	4,200
Self-Employed**	1,330	420	980
Total***	15,680	2,520	8,050

* All employment figures rounded to nearest 10.

** Before allocation to other categories. Self-employed workers are allocated later to land-use categories as part of the land requirements forecast, according to a methodology used by METRO in an industrial land demand estimate dated September 18, 1986. The METRO estimate assumes approximately 50% of self-employed work at home, therefore these self-employed are not included in the land requirements forecast.

*** Excludes agriculture.

SOURCE: City of Gresham from Economic Development Services data, 1988.

High Growth Forecast

A high growth forecast was prepared in conjunction with the baseline or most likely job forecast. This forecast was prepared by Economic Development Service in their 1987 Economic Development Study for the Urbanized East Multnomah County Area. The high growth scenario assumes that the area will attract more development than what current economic trends indicate. While it is not the most likely scenario, the city should be prepared to respond to this trend in the event economic development in the next five years demonstrates job creation above the baseline forecast.

The high growth scenario assumes success at recruiting the target industries identified by Pacific Power, the Oregon Economic Development Department and the 1984 Industrial Market Study and Market Plan. The greatest weight was given to high priority targets that appeared on all three lists. The high growth scenario estimates employment at 125% of the baseline forecast. The individual land use categories table below illustrates employment gains by

FIGURE 4-37

EAST MULTNOMAH COUNTY HIGH GROWTH EMPLOYMENT SCENARIO			
<u>Land Use Category</u>	<u>Actual Jobs</u> 1985	East Multnomah County <u>Added Jobs</u>	
		<u>1985-1990</u>	<u>1985-2005</u>
Heavy/Moderate Industrial	4,300	1,700	2,400
Light Industrial	2,900	2,600	4,400
Commercial Office/Service	8,300	1,200	4,200
Commercial Retail	5,000	3,400	7,400
Self-Employed	1,900	800	1,700
Total	22,400	9,700	20,100

SOURCE: Economic Development Services, 1987.

The high growth job forecast for Gresham is described below:

FIGURE 4-38

CITY OF GRESHAM HIGH GROWTH EMPLOYMENT SCENARIO			
<u>Land Use Category</u>	<u>Actual Jobs</u> 1985	Gresham Added Jobs	
		<u>1985-1990</u>	<u>1985-2005</u>
Heavy/Moderate Industrial	3,010	1,190	1,680
Light Industrial	2,030	1,820	3,080
Commercial Office/Service	5,810	840	2,940
Commercial Retail	3,500	2,380	5,180
Self-Employed	1,330	560	1,190
Total	15,680	6,230	14,070

SOURCE: City of Gresham from Economic Development Services data, 1987.

The preceding charts indicate that commercial retail and commercial office/service will make up approximately 73% of future employment allocated to the four land use categories through the year 2005. The commercial retail sector will increase over 120% between 1985 and 2005.

Heavy/moderate industrial and light industrial will have only a 7% share of the total job growth according to the above forecast. However, the new Fujitsu and Albertsons industrial developments will add 700 employees before the end of 1988 or early 1989. These developments indicate that the employment estimates are conservative. It would be appropriate to plan for more growth in the industrial sector. The completion of a full I-84 interchange improvement planned for 181st Avenue should enhance the marketability of the industrial land in close proximity to the new interchange.

The following chart is a comparison of the baseline and high growth scenarios.

FIGURE 4-39

COMPARISON OF BASELINE AND HIGH EMPLOYMENT GROWTH SCENARIOS
FOR EAST MULTNOMAH COUNTY

	Actual	1985-1990		1985-2005	
	1985	Baseline	High	Baseline	High
Heavy/Moderate Industrial	4,300	400	1,700	800	2400
Light Industrial	2,900	0	2,600	800	4,400
Commercial Office/Service	8,300	200	1,200	2,500	4,200
Commercial Retail	5,000	2,400	3,400	6,000	7,400
Self-Employed	1,900	600	800	1,400	1,700
Total	22,400	3,600	9,700	11,500	20,100
% Change from 1985		16%	43%	51%	89%

SOURCE: Economic Development Services, 1987.

A comparison between the baseline and high growth scenarios for the City of Gresham is described below:

FIGURE 4-40

COMPARISON OF BASELINE AND HIGH EMPLOYMENT SCENARIOS FOR CITY OF GRESHAM					
	Actual	1985-1990		1985-2005	
	1985	Baseline	High	Baseline	High
Heavy/Moderate Industrial	3,010	280	1,190	560	1,680
Light Industrial	2,030	0	1,820	560	3,080
Commercial Office/Service	5,810	140	840	1,750	2,940
Commercial Retail	3,500	1,680	2,380	4,200	5,180
Self-Employed	1,330	420	560	980	1,190
Total	15,680	2,520	6,230	8,050	14,070
% Change from 1985		16%	43%	51%	90%

SOURCE: City of Gresham from Economic Development Services data, 1988.

The land-use category likely to experience the greatest employment gain in the next 20 years is commercial retail. Under the baseline forecast employment increases in heavy/moderate industrial category is expected to outpace light industrial job growth but this relationship is reversed under the high growth scenario.

Area Economic Advantages and Disadvantage

The City of Gresham has both advantages and disadvantages for attracting industrial and commercial development. This information was derived in part from Economic Development Services 1987 Economic Study of East Multnomah County and OEDD 1986 Oregon Economic Trends project.

Advantages

- Large, technically skilled labor force. In 1980, East Multnomah County had 5.7% of the Portland metropolitan area's resident labor force. The area can also easily draw from the labor force of most of Multnomah, Clackamas and Clark Counties. A higher percentage of the labor force has some technical post high school training, in comparison with the rest of the region.
- Large, stable employers. Companies such as Boeing of Portland consistently have provided a large number of high paying, blue collar jobs. Even during the recent

downturn this and other employers with a high manufacturing wage base have maintained a strong presence in the area.

- High income levels. Area residents have higher than average incomes than do residents of the four county metropolitan area. Although East Multnomah County as a whole tends to be primarily blue collar, Gresham in particular has a high proportion of white-collar workers in the labor force.
- A diversity of industrial and commercial sites. East Multnomah County has some of the largest remaining vacant industrial sites in the region. In addition, a diversity of large and small commercial sites remain available, both in the Gresham central business district and at strip or commercial center sites within the urbanized area.
- Relatively low land cost. East Multnomah County has some of the least expensive industrial property in the urbanized portion of the metropolitan area. Vacant commercial sites and building space are also available at attractive rates.
- Airport and light rail proximity. Two airports – Portland International Airport (PIA) and Troutdale General Aviation Airport – are convenient to all of East Multnomah County. PIA is within a 10 to 15 minute drive from commercial and industrial sites. The Troutdale airport with general aviation service also is located close to Gresham’s industrial and commercial areas.

Light rail ridership has proven to be successful beyond anyone’s initial expectations. Light rail has spawned growing interest on the part of investors in commercial and industrial development in the area. However, there are no directly quantifiable economic impacts to date.

- Mt. Hood Community College. The college is well regarded for both its technical and liberal arts programs. The “Oregon Economic Trends Project” prepared by OEDD date found that 22% of firms surveyed require; access to a two-year community college. The college has served as a central focus for community activities, such as the highly successful and regionally recognized Mt. Hood Jazz Festival.
- Diverse mix of recreational opportunities. Gresham is located at the gateway to two of the state’s best recreational and scenic areas, Mt. Hood and the Columbia River Gorge.
- A multi-jurisdictional, cooperative economic development effort. The East Multnomah County Economic Development Commission was successful in beginning to break down jurisdictional barriers between the four cities in East Multnomah County, Multnomah County, and the City of Portland. The continuation of this approach is vital to creating a marketable identity for East Multnomah County as a good place to invest.

Disadvantages

- Location. The Oregon Economic Trends Project prepared by OEDD found the Oregon's location away from markets in the eastern U.S. and Europe is an obstacle. However, there is an increasing level of trade with the Pacific Rim countries.
- Loss of industrial employment. Multnomah County was the hardest hit of the four county metropolitan area in terms of job loss resulting from the recession of the early 1980's. The county has yet to recover to its 1979 or 1980 levels of employment. This loss was greatest with industrial jobs. The early 1980s have experienced a shifting of industrial employment from Multnomah County to Washington, Clark and Clackamas Counties. East Multnomah County has yet to share in this shifting of employment out of older industrial sites, especially within Portland.
- Negative development perceptions. Within the Portland real estate and development community, East Multnomah County continues to be perceived as being remote and without prestige. This affects both the level and quality of investments that do take place within the area.
- Limited transportation access. East Multnomah County continues to be affected by somewhat limited regional transportation access and confusing internal circulation. Needs appear to include improved four-way interchanges with Interstate 84 in East Multnomah County, an arterial connection between I-84 and U.S. Highway 26, and improvements to U.S. Highway 26 (Powell Boulevard) west from Gresham to I-205.

Planned upgrading of interchanges on I-84 together with new interchanges from 181st Street east will help to alleviate this deficiency. There needs to be better access from I-84 to industrial and commercial sites throughout East Multnomah County and improved access from I-84 to U.S. Highway 26 – as is currently planned.

- Lack of major investment appeal. Of the top 15 industrial and commercial investments within the Portland metropolitan area since 1982, East Multnomah County has captured two – Fujitsu and Albertsons. Prior to these announcements, East County's share of regional investment was less than its share of regional population. This is indicative of a lack of critical mass of both industries and business services.
- Lack of a major regional commercial center. Downtown Gresham does not serve as a major regional commercial center. No large regional shopping center has developed nor is one likely to develop within the immediate future. As a result, the commercial market has tended to be fragmented among the smaller centers and users. The physical pattern of commercial development is characterized by numerous strip centers. Central business districts have not been strong enough to attract business or serve as a community focal point.

The population of East Multnomah County currently does not appear large enough to support a regional shopping center. However, with forecasted population growth, a regional center may become more viable after 1990, if a suitable site with arterial access is available.

- Funding of public utility and transportation services. This may not be an immediate constraint since there are vacant serviced commercial and industrial sites available. However, for the long-term, a funding program similar to that being developed for the Columbia South Shore urban renewal area needs to be developed for major industrial and commercial sites within the urbanized east Multnomah County area.
- Lack of community consensus for development. This is perhaps best exemplified by the recent and prior efforts to obtain voter approval for urban renewal in Gresham. This lack of consensus creates investment uncertainty, especially for larger companies or developers who are considering facilities within the Portland metropolitan area.
- Unique development regulations and uncertain permitting process. Of those contacted by Economic Development Services for the economic study, some highly praise Gresham's land use process while others express frustration.

Those experiencing frustration in Gresham often do so because the comprehensive plan and development regulations have been developed in Gresham very differently from virtually any other jurisdiction within the Portland metropolitan area. It is suggested that Gresham review its performance oriented land use and regulatory process, to provide more specificity of uses allowed within individual zones and consistency with the planning processes used by other jurisdictions in the metropolitan area.

- Limited economic development marketing. The East Multnomah County Economic Development Commission had achieved some inter-jurisdictional cooperation but there has been limited consideration of marketing industrial and commercial sites. As a result, East Multnomah County is at a significant disadvantage to other jurisdictions which have active publicly-sponsored or private nonprofit economic development organizations who are aggressively marketing their areas.
- Multiple jurisdictions. The presence of four cities within close proximity to each other – Gresham, Troutdale, Fairview, and Wood Village – creates some business and investor confusion. Each jurisdiction has its own set of different land use planning and development regulations. While this fragmentation has been reduced in recent years through Gresham's annexations and the efforts of the Economic Development Commission, it remains a hindrance to overcoming a negative development perception of the area.

4.730 INDUSTRIAL AND COMMERCIAL DEVELOPMENT POLICIES

4.731 Community Development Objectives

The overall objectives for economic development and the categories of industrial and commercial uses desired by the community are described in the Industrial and Commercial Land Use Policies and the Economic Development Policy of Volume II of the Gresham Community Development Plan.

The first industrial land use policy encourages expansion of existing industries and states that the city wishes to attract uses which are labor and capital intensive. The policy goes on to say that it is the city's objective to attract industries which are environmentally desirable. The second policy encourages the creation of opportunities for a wide range of industrial uses.

The first commercial land use policy calls for the development of commercial centers and infill commercial strip development as opposed to the expansion of commercial strips. The second commercial policy states that it is the objective of the city to attract categories of commercial uses which provide increased employment opportunities. This policy also states that the city wants to attract commercial uses which reduce dependency on outside-of-city goods and services in order to reduce its "bedroom" community image. Other commercial land use strategies include focusing intensive commercial and office development in the Central Business District; retail development in Rockwood; promotion of redevelopment plans for existing commercial strips and establishing controls on the parcelization of large commercial sites. The final commercial land use policy calls for the identification of sites for a potential regional shopping center.

The economic development policy supports diversification of the economy by promoting business retention and expansion, business recruitment, and marketing. The strategies implementing this objective include the development of a long-range economic development plan which seeks to create and maintain employment opportunities, diversify the economic base, and aid in the effective utilization of land, energy, and human resources. Other economic development strategies encourage development procedures that do not create barriers to economic development; maintenance of a data base on pertinent socio-economic data; development of marketing material which describes the advantages of the city; initiation of a dialogue with leaders in the industrial and commercial sectors; and, finally to design land use regulations so as to allow home occupations.

4.732 Commitment to Provide Adequate Sites and Facilities

The city has established policies which commit the city to provide an adequate inventory of serviceable industrial and commercial lands to meet the needs of the forecasted demand for industrial and commercial development.

In order to ensure an adequate supply of serviced industrial and commercial land, the city has developed a Public Facilities Plan. The Plan calls for short (1 to 5 year) and long-term (20 years) facility improvements.

In addition, the city has adopted policies to ensure that industrial and commercial areas are served with public facilities.

Both the industrial and commercial land use policies were amended to require maintenance of a three-year supply of serviced industrial and commercial land for each year of the Capital Improvements Program. In the event the city is unable to maintain this supply, then the city is committed to take one of the following actions:

- Change the Capital Improvements Program to add or reschedule projects which make more land serviceable;
- Amend the land use map to redesignate more serviceable land for industrial development; or
- Reconsider the economic development objectives and amendment of plan policies based on public facility limitations.

The second economic development policy also establishes the city's commitment to provide necessary public facilities through the Capital Improvements Program. The Policy provides that, "It is the city's policy to assure that public facilities are extended in a timely, and economic fashion to areas having the greatest economic development potential." In order to achieve this policy objective, the ranking criteria for evaluating which Capital Improvement Program projects will be developed in any given year provide that public facility improvement projects which show a direct link to economic development are considered top priority projects.

The need to provide industrial and commercial sites which are of suitable size and location represent an area in which added emphasis has been directed. It is possible to have an adequate supply of industrial and commercial land that may meet forecasted demand but the land could be located in an inappropriate area or the parcels may be too large or too small to meet the demands of the marketplace. Therefore, it is important to evaluate the supply of industrial and commercial land on a periodic basis to ensure it is desirable from a marketplace perspective. In order to achieve this objective a new policy has been integrated into both the industrial and commercial land use policies to require a periodic analysis of the inventory's marketability (refer to fourth Industrial Land Use Policy and third Commercial Land Use Policy, Vol. 2, Gresham Community Development Plan).

4.733 Characteristics of a Regional Shopping Center

The Gresham area today remains the only significant suburban community in the Portland region that is not well served by a regional shopping center with full—line department stores. In the past three decades, City of Gresham plans and policies have declared that a major regional commercial center was desirable in the center of Gresham, close to or tied to the old downtown core. This goal has remained elusive. In that same period, significant commercial expansion in Gresham occurred outside of the old downtown core in linear commercial districts and in several “community” scale shopping centers (150,000 to 300,000 sq. ft.), to create a larger but unfocused central area. Prime examples of this trend are the Burnside strip, the Gresham Fred Meyer, Oregon Trail Center, and the Gresham Town Fair.

The city identified a key potential site (the county fairgrounds) for a regional shopping center in the 1965 Central Area Plan. This site was divided in the 1970’s and reduced to a size which proved to be economically unworkable for a regional scale shopping center. Because of land needs (50 acres and up), many suburban regional shopping centers have located outside of suburban city cores; such regional shopping centers tend to become new city centers (e.g. Clackamas Town Center, Washington Square). Other growing communities have successfully combined new regional shopping centers within expanded city centers (e.g. Burnaby, B.C.; Redmond, Washington), leading to the enhancement of a community’s social and economic center.

A regional shopping center has unique characteristics, functions, anchor tenants, and tenant composition (versus smaller-sized “community” or “neighborhood” shopping centers). Many traditional city central business districts, when they are anchored by full-line department stores and include a full range of small retailers with regional market attraction can serve the same function as a regional shopping center. A regional shopping center is a major retail commercial center ranging in size from 500,000 sq. ft. of gross leasable area and up. A regional shopping center is anchored by one or more full-line department stores, and provides comparison shopping goods, general merchandise, apparel, furniture, and home furnishings in full depth and variety. Such centers normally contain a full complement of specialty and convenience goods suppliers, and a variety of entertainment facilities and food vendors. A regional shopping center will attract customers from its widest potential retail market area (primary and secondary), as modified by factors of travel time and competing regional facilities. Regional shopping center sites typically develop in phases as a single unified district, and often include complementary mixed uses such as hotels, entertainment complexes, offices, or senior citizen housing.

The anchor stores for a regional shopping center are its major stores that exert the prime attractive force to draw customers to a shopping center from its full regional market area. Full-line department stores are the prime anchor tenant; a high-quality major clothing store, as distinguished from a junior or discount department store (see Urban Land Institute Tenant Classifications A-01, A-02, and A-04) is a store unit which typically offers a complete selection of soft goods, housewares, domestics, shoes, sporting goods, furniture, toys, and appliances in full depth and variety, at a typical gross floor area of 100,000 sq. ft. and up. Junior or discount department stores (ULI Tenant Classifications A-02, A-04) will normally have less floor area, will attract customers from a smaller, less-than-regional market area, contain less depth and

variety of goods lines, and in the case of discount stores, emphasize off—price marketing and lines of goods.

A market area is the geographic area which provides most of the continuing patronage necessary to support a shopping center or commercial district. The “primary” market area for a regional shopping center, as modified by competing centers and driving times, normally will be within a 10 to 15 minute off-peak driving time of a site. Regional centers tend to locate centrally within their market areas, with respect to the primary market area population distribution and major street system access.

Information sources:

- The Practice of Local Government Planning, International City Management Assn., 1979
- Shopping Center Development Handbook, Urban Land Institute, 1985;
- Dollars and Cents of Shopping Centers, Urban Land Institute, 1984, et. seq.

4.740 DESIGNATION OF LANDS FOR INDUSTRIAL AND COMMERCIAL USES

4.741 Identification of Needed Sites

In the Assessment of Community’s Economic Development Potential section 4.723, employment forecasts identified the anticipated amount of employment growth through the planning period. In order to forecast the number and acreage of sites needed to accommodate the growth, employment density factors were employed. The employment density calculations for the metropolitan area and East County were prepared by Economic Development Services. Their methodology is identified in Appendix 25.

The baseline land demand for industrial and commercial lands for Gresham, east county, and the Portland metropolitan area is illustrated below:

FIGURE 4-41

BASELINE LAND DEMAND COMPARISON (in acres)					
1985 — 2005					
	Additional Acres Required				Total
	Heavy/Moderate Industrial	Light Industrial	Commercial Office/Services	Commercial Retail	
East County	75	58	34	310	478
Metro Area	2,068	5,477	1,334	2,953	11,832
Gresham	53	41	24	217	335

Notes: East county forecast based on land needed for Gresham, Troutdale, Wood village, Fairview, and small portion of unincorporated Multnomah County. Gresham's share of the land demand was disaggregated from the east county totals based upon Gresham's anticipated 70% of the amount of employment growth through the planning period.

SOURCE: Economic Development Services and City of Gresham

The major category of land demand for east county and the City of Gresham is commercial retail, which makes up 65% of the long-term demand for commercial and industrial lands. This is followed by heavy/moderate industrial development at 16%, light industrial development at 12%, and office/services development at 7%.

The Periodic Review Committee felt the baseline forecast significantly underestimates the amount of industrial land which will be developed over the twenty year planning period. They reached this conclusion based upon recent trends which suggest a higher rate of industrial land absorption. The Albertson's distribution facility now under construction occupies a 55 acre site, the new McCabe Foods is on a 5 acre site. These two developments alone represent 64% of the baseline land demand forecast and this suggests that even with modest growth the demand for land will most likely exceed the baseline forecast.

Another factor which could stimulate demand for industrial land is the construction of the freeway interchange at NE 181st Avenue. This full cloverleaf interchange will improve the marketability of large numbers of vacant industrial sites in Northern Gresham.

The high growth forecast which estimates the need for 353 acres of industrial land is felt to be a more accurate representation of industrial growth potential of the city.

The high growth demand for industrial and commercial lands for Gresham and east county are detailed below:

FIGURE 4-42

HIGH GROWTH LAND REQUIREMENTS (in acres) 1985 — 2005					
Additional Acres Required					
	Heavy/Moderate Industrial	Light Industrial	Commercial Office/Services	Commercial Retail	Total
East County	226	278	56	381	941
Gresham	158	195	39	267	659

SOURCE: Economic Development Services and City of Gresham

Under the high growth scenario Gresham would need almost two times the current amount of industrial and commercial land. The industrial categories would demand over three times the amount as the demand forecasted under the baseline forecast.

The overall growth over the planning period is dominated by service oriented businesses rather than basic industrial activities.

The approximate number of sites needed to accommodate the forecasted industrial and commercial development was derived by analyzing the average size of industrial and commercial firms in east county, the amount of land area needed for parking and landscaping. The analysis found a need for approximately 118 sites for industrial development and 1,721 sites for commercial development (refer to Appendix 26) or estimation methodology).

4.742 Long Term Supply of Land

The City of Gresham has designated a sufficient supply of both industrial and commercial lands to meet the long term demand for land under both baseline and high growth scenarios.

FIGURE 4-43

GRESHAM LAND SUPPLY/DEMAND (in acres)			
	<u>Industrial</u>	<u>Commercial</u>	<u>Total</u>
Land Supply:			
Vacant/Significantly Underutilized Acreage	1,448	382	1,830
Land Demand:			
1985-2005 Baseline	94	241	335
1985-2005 High	353	306	659

SOURCE: Economic Development Services and City of Gresham, 1988.

There will be a large excess supply of industrial land throughout the planning period. Under the baseline land forecast, only 6% of the vacant or significantly underutilized industrially designated land will be in demand to the year 2005. Under the high growth forecast, 24% of the vacant and significantly underutilized industrially designated land will be in demand. The supply of commercial land under the baseline forecast would be much closer to the demand for commercial land. Under the baseline land forecast, 63% of the commercial land inventory will be required and 80% under the high growth forecast.

(Amended by Ordinance No. 1139, passed July 18, 1989, effective August 17, 1989.)

4.743 Short Term Supply of Serviceable Sites

The city has a sufficient supply of serviceable industrial and commercial land to maintain a three-year supply of serviceable sites in each scheduled year of the five-year Capital Improvements Program.

The City's methodology for defining serviceable land is found in Appendix 20.

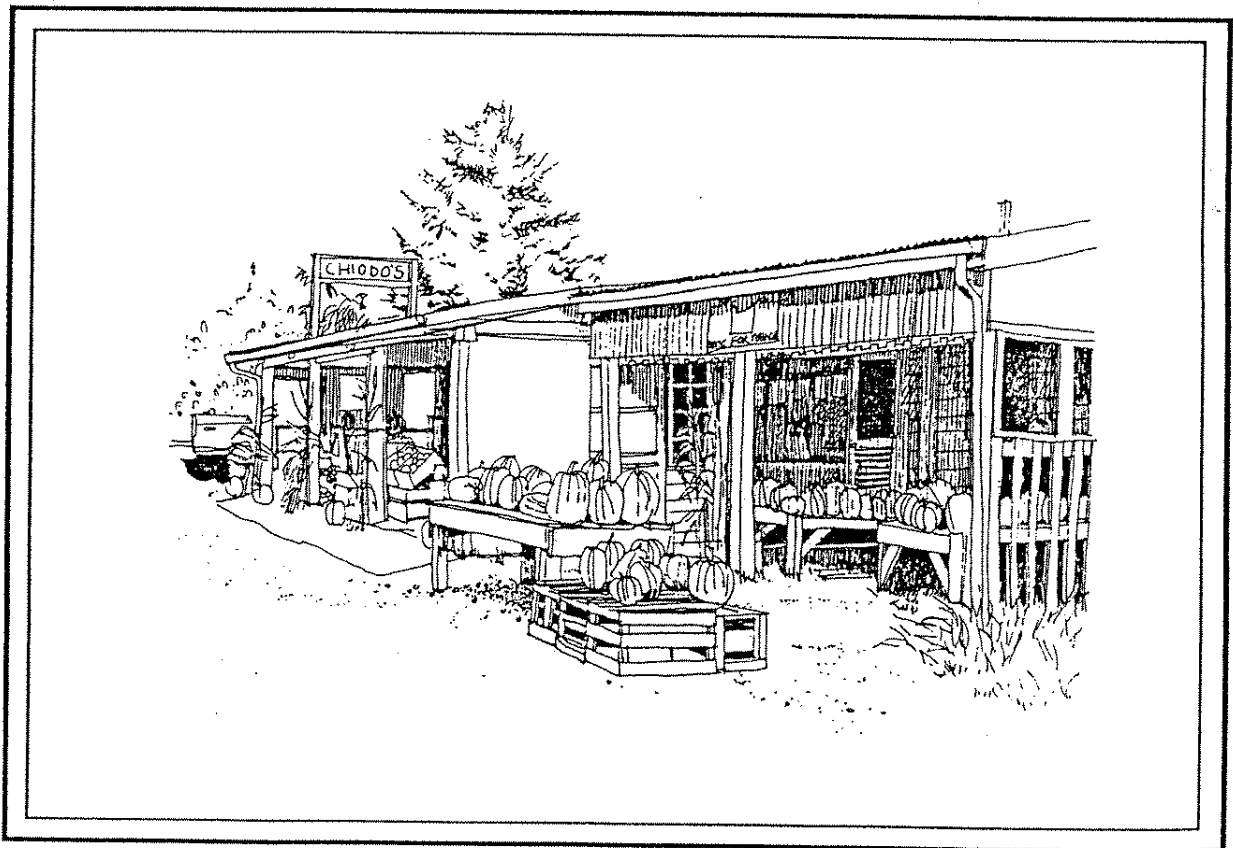
The Industrial and Commercial Development Rule requires that a three-year supply of serviceable sites be maintained for each year of the five-year Capital Improvement Program. The city's objective is to provide a sufficient supply of serviceable land that meets the high growth forecast for industrial land and the baseline growth forecast for commercial land. To estimate the annual land needs a proportionate share of the anticipated 20-year high growth demand for industrial land and the baseline growth demand for commercial land was used. Industrial land

demand is forecasted to be 353 acres and the commercial land demand is forecasted to be 241 acres.

In order for the city to maintain a three-year supply of serviceable industrial land for each year of the five-year capital improvements program the city will need to provide 17.65 acres per year or a cumulative total of 123.55 acres for the five-year period. Since the city currently has 756 acres of serviceable industrial land, the State's requirement has been fulfilled. To maintain a three-year supply of serviceable commercial land for each year of the five-year Capital Improvements Program, the city will need to provide 12.05 acres per year or a cumulative total of 84.35 acres. Since the city currently has 357 acres of serviceable commercial land-the State's requirement has been fulfilled.

In order to ensure maintenance of a three-year supply of serviceable sites for industrial and commercial development the city has adopted new strategies. These strategies are detailed in the "Commitment to Provide Adequate Sites and Facilities" section.

(Amended by Ordinance No. 1139, passed on July 18, 1989, effective August 17, 1989.)



4.800 HOUSING POLICY

Rapidly rising housing costs combined with relatively flat income levels have resulted in increasing housing affordability problems in the Portland Metropolitan Region. As property values increase and vacant land inside the urban growth boundary is reduced, there is more concern about the ability to develop or maintain an adequate supply of housing that is affordable for all low and moderate income households. Economic trends indicate households earning below 60% of the Median Family Income (MFI) are having difficulty paying for rental housing. At the same time, these trends indicate that it is becoming increasingly difficult for middle income households (80%-110% MFI) to own their own homes. Federal housing programs, which traditionally have funded affordable housing programs, are being reduced. This combination of factors and trends create the need for well articulated policies to guide the development of housing to ensure an adequate number of housing units for all Gresham residents.

The Housing Policy provides a policy framework, including implementation strategies, to encourage development of adequate numbers of housing units at price ranges and rent levels that are commensurate with projected demand.

The Housing Policy is divided into six major sections: General, Affordable/Assisted Housing; Home Ownership; Rehabilitation of Existing Housing Stock; Maintenance of Existing Units; and Geographic Mix of Housing Choices.

(Added by Ordinance No, 1442 passed 5/5/98; effective 6/4/98)

4.810 GENERAL POLICY

Oregon State Goal 10: Housing stated purpose is:

To provide for the housing needs of citizens of the state. Buildable lands for residential use shall be inventoried and plans shall encourage the availability of adequate numbers of needed housing units at price ranges and rent levels which are commensurate with the financial capabilities of Oregon households and allow for flexibility of housing location, type and density.

The State of Oregon's Housing Goal 10 requires jurisdictions, including Gresham, to do a number of activities concerning housing.

The Housing Policies assist in meeting Goal 10 by addressing several of its implementation items. These include:

- General Policy 1, to have programs that promote an adequate supply of housing and an ongoing review of housing needs.
- The rehabilitation policy and the maintenance policy address the state goal to stimulate rehabilitation of substandard housing and to bring substandard housing up to code.
- General Policy 3 addresses the state goal to have expedited decisions on housing proposals by improving the development standards, review procedure, and by promoting measures that will reduce costs while balancing quality of life concerns.

- The home ownership policies address goal issues of increased population density balanced with community stability.
- The geographic mix policy addresses state goal issues of increased population density by promoting city-wide diversity of housing choice at appropriate scales.
- A Management Program addresses a state implementation guideline as a detailed management program that spells out actions, roles and responsibilities to carry out the Housing Policy.

The cost of housing is controlled by many factors – cost of land, cost of construction, financing costs, development fees, and operating costs (i.e., maintenance and taxes). Most of the cost of housing is controlled by regional or national economic trends. As part of a larger metropolitan region, the cost of housing in Gresham is often impacted by factors that are beyond the City’s control. The City has control over only a few factors. However, these factors can influence the affordability of housing, especially for those households earning less than the median family income (MFI). The federal Department of Housing and Urban Development calculates the MFI for the Portland metropolitan area. In 1996, the MF1 for a family of four was 44,400.

There are other factors that should be considered in creating a Housing Policy. An adequate supply of housing that is affordable to workers employed in Gresham is a critical component of any economic development strategy. Community support is important in creating and maintaining affordable and safe housing. As young adults, as elderly adults, or by economic necessity or by choice, most families will need affordable rental housing at some point during their lifetime. Affordable rental housing allows young families to save money to purchase their own home.

In the Portland metropolitan area, housing prices have increased faster than wages over the past two decades, thus creating an affordability problem. Households earning less than 60% of MFI have difficulty finding housing that is affordable. Persons with special needs (the frail elderly, the homeless, farmworkers, persons with physical and mental disabilities, persons recovering from drug/alcohol abuse, or victims of domestic violence) also have a difficult time finding affordable housing.

The City of Gresham, with other local, state and federal agencies, can work with for-profit and nonprofit developers to provide an adequate supply of affordable housing. Mandates can be considered but incentives will produce more results. Use of city, state, regional, federal and private incentives can be targeted to achieve particular results. Mandates may be used in conjunction with incentives.

Persons with special needs include the frail elderly, persons with developmental, physical and mental disabilities, victims of domestic violence, farmworkers, persons with HIV, or homeless persons. Large numbers of persons with special needs also are very low-income households (at or less than 30% MFI). Their affordable housing needs are compounded by requirements for special support services.

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

4.811 Consolidated Plan

Countywide housing policies affecting Gresham are described in the Consolidated Plan. This plan is a federally-mandated, locally-created housing plan for cities and counties receiving funds from the U. S. Department of Housing and Urban Development (HUD). It guides spending for the Community Development Block Grant (CDBG) program and other federal housing programs such as the Home Investment Partnership (HOME). The cities of Gresham and Portland and Multnomah County jointly prepared the Consolidated Plan based on the Comprehensive Housing Affordability Strategy (CHAS) and other supporting policies. CHAS provides policies that guide the development of affordable housing and services to low and moderate income residents of Multnomah County. These policies are prepared under the direction of the countywide Housing and Community Development Commission (HCDC), which is composed of representatives appointed by the three jurisdictions.

A summary of the current CHAS Priorities included in the Consolidated Plan is listed Table 1. Affordable housing also is addressed in Metro adopted Urban Growth Management Functional Plan, as well as the Statewide Planning Goal 10 on Housing.

<p>TABLE 1</p> <p>COMPREHENSIVE HOUSING AFFORDABILITY STRATEGY</p> <p>1997 Priorities</p>
<p>Priority One</p> <ol style="list-style-type: none">1. Programs to provide affordable rental housing for homeless individuals or families, and very low-income households (earning less than 50% of MFI) who pay more than 50% of their income for housing.2. Programs to provide assistance to very low-income existing homeowners, particularly the elderly and persons with special needs, to maintain their homes.3. Programs to provide support facilities and services, such as job training, child care, education, and health services, to assist the homeless, very low-income households and persons with special needs to transition to self-sufficiency and independent living.4. Programs to provide affordable rental housing (3+ bedroom units) for large families with very low incomes.5. Programs to provide affordable rental housing for migrant farm workers in East County.
<p>Priority Two</p> <ol style="list-style-type: none">1. Programs to provide affordable rental housing, through rental rehabilitation and new construction, for low-income (earning 50-80% of MFI) households.2. Programs to assist existing homeowners earning below 80% of MFI. Programs should emphasize emergency and basic repairs, and neighborhood stabilization.3. Programs to provide support facilities and services (i.e., case management, job training, child care, etc.) for low-income households.
<p>Priority Three</p> <ol style="list-style-type: none">1. Programs to assist first-time home buyers. These programs should be focused on those populations that have traditionally not been able to access the private market, including minorities.

(Added by Ordinance No. 1442 passed 5/5/98: effective 6/4/98)

4.812 Housing Definitions

The term “affordable housing” means different things to different people. In general, affordable housing is defined as housing for which the occupant pays no more than 30% of gross income for gross housing costs (rent/mortgage plus utilities and property taxes). This national definition has been used in federal housing programs since the 1930s.

For home ownership, another common standard is a household can afford a home valued at 2.5 or three times the household annual income.

Affordability is dependent on household income and household size, It is usually defined as a percentage of the median family income for the Portland metropolitan region. In 1996, the median family income, or MFI, for a family of four was \$44,400.

Other important definitions and descriptions:

Public housing is government assisted housing that is regulated (by federal law) to serve households earning below 30% MFI and where tenants pay no more than 30% of their income for housing. Units are typically owned and managed by a housing authority and have received financial subsidies for construction and operations by the federal government.

Subsidized housing is regulated (by federal law) to serve households earning below 80% MFI (usually below 65% MFI) and where tenants pay 30% of their income for housing. Units are owned by both for-profit and nonprofit interests. To ensure the housing remains affordable, government subsidies are provided to property owners and developers for construction and in some cases operations from a variety of local, state, and federal sources. Subsidies also may be provided directly to tenants, permitting them to pay no more than 30% of their income for rent.

Private affordable housing is not regulated and receives no direct subsidies. Units are typically older, cost less to maintain, and rents are lower because of competition in the private market. Owners of rental housing may take tenants with federal Section 8 certificates which subsidize rents at the 30% of income level. Otherwise there are no limits on percent of income paid for housing.

Special needs housing is for persons with special needs earning below 80% MFI (usually below 30% MFI). Special needs populations include the frail elderly, persons with developmental, physical, and psychiatric disabilities, victims of domestic violence, farmworkers, persons with HIV, or homeless persons. Large numbers of persons with special needs also are very low income households (at or less than 30% MFI). Their affordable housing needs are compounded by requirements for special support services. Public subsidies are usually needed to construct, operate and maintain special needs housing.

(Added by Ordinance No. 1442 passed 5/5/98: effective 6/4/98)

4.813 Housing Affordability and Jobs

Affordability is dependent on household income and household size. It is usually defined as a percentage of the median family income for the Portland metropolitan region. Income levels are defined in terms of a percentage of median family income. One national standard is that no more than 30% of income is devoted to housing costs including rent/mortgage, utilities, and property taxes. Table 2 includes estimates of affordable rents and home values correlated to median family income for a four person family in 1996. The median family income values shown would change for families of different sizes.

Table 3 shows average rents for the Portland metropolitan area over a ten year period! There was an increase of over 20% in average rent from 1990 to 1996.

Table 4 shows average rent and vacancy rates for different age and size of apartment units in the Gresham-Troutdale area for 1996! Table 2 indicates that, in 1996, a family of four with 60% of the MFI could devote \$666 per month for housing (30% of income). Table 4 shows an average rent of \$573 for a newer two-bedroom/one-bath apartment unit. This would leave \$93 per month for utilities such as water, electricity and phone payments. Older, larger three-bedroom/two- bath unit has an average rent of \$642 per month leaving only \$24 per month for utilities. These statistics indicate that as a family's income drops below 60% of median family income it is difficult to be able to afford an average rent unit at a reasonable size and pay no more than 30% of their income towards housing.

According to the 1996 American Community Survey (US. Census Bureau) the median value of a owner-occupied home was \$130,000. Table 2 shows that, using a guideline that a typical household can purchase a home valued at three times their income, a family of 4 making 100% of the median family income could afford a \$133,200 home. This suggests that as income becomes less than 100% MFI a median valued home becomes less affordable.

Section 4.830 below is more detailed analysis of home ownership and housing policy. It notes that particularly applicable to first time home buyers is a more conservative affordable guideline- of 2.5 times the family income. In this case a family of four earning 100% of MFI in 1996 could have afforded a \$1111000 which is substantially less than the \$130,000 median home value in Gresham 1996. By either guidelines home ownership affordability becomes an issues when family income is below 100% median family income.

Housing affordability and jobs-housing balance is complicated by more dual income families and dispersed regional jobs. This imposes extra household transportation costs for Gresham households who work in and outside the city. Gresham's jobs-housing balance is among the most dispersed regionally. The regional job market, like the City's, often produces new jobs in places not well served by transit. While the City works to improve the mix of housing and jobs in Gresham, high quality transportation job access via many modes has to occur also. Otherwise, dispersed jobs impose household costs that substantially impair a family's ability to purchase or rent better housing.

TABLE 2

ESTIMATED AFFORDABLE RENTS AND HOME VALUES BASED ON MEDIAN FAMILY INCOME - Multnomah County Including Gresham			
Income Level	Annual Household Income (Family of 4)	Monthly Amount Available for Housing Costs (30% of Income)	Affordable Home Value (3 times MFI)
0-30% MFI	\$0-13,900	\$0-347	\$0-42,000
30-50% MFI	\$13,900 – 23,150	\$347-579	\$42,000-69,500
60% MFI	\$26,640	\$666	\$79,920
50-80% MFI	\$23,150-37,050	\$579-926	\$69,500-111,000
100% MFI	\$44,400	\$1,110	\$133,200
80-110% MFI	\$37,050-50,950	\$926-1,274	\$111,000-153,000

SOURCE: U.S. Department of Housing Urban Development, 1996.

TABLE 3

AVERAGE APARTMENT RENTS, PORTLAND METROPOLITAN REGION, 1996	
Year	Rent per Month
1987	\$395
1988	\$425
1989	\$456
1990	\$489
1991	\$520
1992	\$523
1993	\$539
1994	\$563
1995	\$591
1996	\$617

SOURCE: *The McGregor Millete Report*, Fall/Winter 1996

TABLE 4

AVERAGE APARTMENT RENTS, GRESHAM/TROUTDALE, 1996

When Built	Average Rent	Average Vacancy Rate	2BDR/1BA Rent	2BDR/1BA Vacancy Rate	3BDR/2BA Rent	3BDR/2BA Vacancy Rate
1979 and Earlier	\$573	2.7%	\$581	3.1%	\$642	2.1%
1980-1990	\$590	2.3%	\$574	2.6%	\$764	2.3%
1990 and Newer	\$603	2.2%	\$573	2.1%	\$751	2.2%

SOURCE: *The McGregor Millete Report*, Fall/Winter 1996

It is important to understand that housing affordability affects more than the homeless, the disabled, people on welfare, or poor people who are unable or unwilling to work. Obtaining affordable housing has the most impact on the working poor, i.e., families With low paying jobs that are having difficulty making ends meet.

Table 5 shows what different household sizes (1, 2, 3 and 4 persons) would need to make if they were to have an income equal to different percentages (30%, 50%, 80% and 100%) of the median family in 1997. It shows what that annual and hourly income would be. It also shows what would be available for housing using the 30% of income guideline. In then shows different common professions that would typically earn around the income for each of the categories (household size/percentage of MFI). Professions were matched with a median family income level by comparing job orders wages listed in 1997 with the State Employment office for the hourly wage figure for the particular median family income. Wages levels used were somewhat higher than entry level. The purpose of the table is to have a feel for how working people fair in terms of income and housing affordability.

As an example, the entry level wage reported for an elementary school teacher was \$14.04 an hour. if an elementary school teacher earned \$15.58 an hour, the teacher would be at 100% of the median family income of a one person household.

As another example the entry level wage for full time bus driver was reported at \$8.32. At \$10.02 an hour the bus driver with two children would be at 50% of the median family income for a three person household. At this income the bus driver would have \$521 available for housing (30% of income). Looking at Table 4 this means they could not afford the average 1996 rent for a 2 bedroom/I bath unit of \$573 to \$581 without paying more than 30% of their income.

Table 5 points out that many working families having incomes at levels that would not allow them to pay 30% or less of their income towards housing thus presenting a housing affordability problem.

TABLE 5. Median Family Income by Household Size, Job Type: 1997

Single Person Households

	30% MFI	50% MFI	80% MFI	100% MFI
Typical Jobs	Three-quarter time fast food worker or gas station attendant	Full-time data enterer, home health aide, hairdresser, or receptionist	Full-time computer operator, emergency medical technician, or truck driver	Full-time computer programmer, corrections officer, or elementary school teacher
Annual Income	\$9,720	\$16,200	\$25,950	\$32,400
Hourly Wage	\$6.23	\$7.79	\$12.48	\$15.58
available for Housing	\$243 monthly	\$405 monthly	\$649 monthly	\$810 monthly

Two Person Households

	30% MFI	50% MFI	80% MFI	100% MFI
Typical Jobs	Two elderly adults on Social Security	Full-time teacher's aide, bank teller, cook, or waiter with a child	Full-time postal carrier, secondary teacher, or real estate appraiser with a child	Full-time accountant, auto mechanic, librarian, or police officer with a child
Annual Income	\$11,115	\$18,500	\$29,650	\$37,050
Hourly Wage	\$5.34	\$8.89	\$14.25	\$17.81
Available for Housing	\$278 monthly	\$462 monthly	\$741 monthly	\$926 monthly

Three Person Households

	30% MFI	50% MFI	80% MFI	100% MFI
Typical Jobs	Full-time parking attendant, housekeeper or child care worker with two children	Full-time medical assistant, bus driver, carpenter, or bookkeeper with two children	Teacher's aide and janitor with one child or registered nurse with two children	Full-time firefighter with two children or elementary school teacher and cook with one child
Annual Income	\$12,510	\$20,850	\$33,350	\$41,700
Hourly Wage	\$6.01	\$10.02	\$16.03	\$20.05
Available for Housing	\$313 monthly	\$521 monthly	\$834 monthly	\$1,043 monthly

Four Person Households

	30% MFI	50% MFI	80% MFI	100% MFI
Typical Jobs	Full-time preschool teacher or janitor or laborer with three children	Full-time dental assistant with three children or a fast-food worker and gas station attendant with two children	Full-time registered nurse or social worker with three children or a teacher's aide and bank teller with two children	Full-time electrical engineer or health services manager with three children or lineman and electronics assembler with two children
Annual Income	\$13,890	\$23,150	\$37,050	\$46,300
Hourly Wage	\$6.68	\$11.13	\$17.81	\$22.25
Available for Housing	\$347 monthly	\$579 monthly	\$926 monthly	\$1,157 monthly

SOURCE: Median Family Income based on U.S. Dept. of Housing and Urban Development Notice; Salary: Oregon Labor Market Information System Database

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

4.814 General Demographics Indicators

Gresham’s population in 1990 was 68,235. It more than doubled between 1980 and 1990 (for an average increase of about 7.5 percent per year), due in part to a significant expansion of the City’s boundaries. Between 1990 and 1997, the population increased by an additional estimated 11,115 residents to 79,350 (a total increase of just over 16 percent). In 1997 the estimated population was 81,865 (Portland State Population Center).

Table 6 shows that in 1996 Gresham had a relatively high number of persons per household (2.57) as compared to Portland (2.26). Gresham had fewer minority (8.9% in 1996) than Portland (18.1% in 1996). In Gresham from 1990 to 1997 the percentage of families below poverty level increased from 6.5% to 8.2%, but was still less than in Portland (10.4% in 1996). Single person households also increased in Gresham, from 8.3% to 10.3% and in 1996 exceeded the percentage in Portland (9.4%).

Table 7 shows in 1996 there were more persons per household in owner units than in renter units in Gresham and, in both cases, more than in Portland. Median house values and median rents were slightly higher in Gresham than in Portland.

TABLE 6

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS - GRESHAM & PORTLAND ¹				
	<u>Gresham</u>		<u>Portland</u>	
	1990	1996	1990	1996
Population	68,235	78,777	437,319	445,014
Percent non-white	8.0%	8.9%	15.3%	18.10%
Households	25,705	30,590	187,262	197,082
Average persons per household	2.65	2.57	2.34	2.26
Single parent households	8.3%	10.30%	6.0%	9.40%
Percent families below poverty level	6.5%	8.20%	9.7%	10.40%

¹NOTE: All 1990 Data based on 1990 US Census. All 1996 Data from US Census, American Community Survey, US Census Bureau.

NOTE: These data come with a disclaimer from the U.S. Census Bureau: “These data are preliminary and should not be used for official purposes.” Final data will be released in early 1998. The 1996 data do not include group homes.

TABLE 7. Comparison of Household Characteristics - 1996¹

	<u>Gresham</u>	<u>Portland</u>
Persons per owner household	2.73	2.43
Persons per Renter household	2.38	2.05
Families	20,683	103,536
Owner Occupied households	55.70%	54.60%
Renter Occupied households	44.30%	45.40%
Median Value	\$132,000	\$125,000
Median Rent	\$550	\$500

¹NOTE: All 1990 Data based on 1990 US Census. All 1996 Data from US Census, American Community Survey, US Census Bureau.

NOTE: These data come with a disclaimer from the U.S. Census Bureau: “These data are preliminary and should not be used for official purposes.” Final data will be released in early 1998. The 1996 data do not include group homes.

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

4.815 Income Distribution

Incomes for Gresham families are similar to those families in the City of Portland (Table 8). However, in 1996, Gresham had a lower percentage of 0-30 MFI and 120+ MFI than Portland (Table 9).

TABLE 8. Income Distribution¹

Income	<u>Gresham</u>		<u>Portland</u>	
	1990	1996	1990	1996
\$0 to \$9,999	5.8%	9.4%	1.4%	13.53%
\$10,000 to \$19,999	13.3%	14.14%	22.7%	17.11%
\$20,000 to \$29,999	17.6%	16.86%	26.5%	16.64%
\$30,000 to \$39,999	19.4%	14.92%	24.7%	14.07%
\$40,000 to \$49,999	17.5%	12.18%	18.3%	11.10%
\$50,000 to \$59,999	11.4%	10.81%	2.8%	8.10%
\$60,000 to \$74,999	8.3%	10.36%	2.0%	7.45%
\$75,000 to \$99,999	4.4%	7.51%	1.1%	6.18%
\$100,000 or more	2.3%	3.82%	0.6%	5.83%
	100%	100%	100%	100%

¹NOTE: All 1990 Data based on 1990 US Census. All 1996 Data from US Census, American Community Survey, US Census Bureau.

NOTE: These data come with a disclaimer from the U.S. Census Bureau: “These data are preliminary and should not be used for official purposes.” Final data will be released in early 1998. The 1996 data do not include group homes.

TABLE 9

INCOME DISTRIBUTION BY PERCENT OF MEDIAN FAMILY INCOME (MFI)¹

Income	<u>Gresham</u>		<u>Portland</u>	
	1990	1996	1990	1996
0-30% MFI	6.9%	9.4%	5.8%	13.5%
30-50% MFI	9.7%	14.1%	14.1%	8.7%
50-80% MFI	19.2%	16.9%	19.1%	17.7%
80-100% MFI	14.3%	11.7%	13.0%	11.8%
100-120% MFI	13.8%	9.9%	11.5%	6.6%
120+ MFI	36.2%	38.0%	36.6%	41.6%
	100.0%	100.0%	100.0%	100.0%

¹NOTE: All 1990 Data based on 1990 US Census. All 1996 Data from US Census, American Community Survey, US Census Bureau.

NOTE: These data come with a disclaimer from the U.S. Census Bureau: “These data are preliminary and should not be used for official purposes.” Final data will be released in early 1998. The 1996 data do not include group homes.

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

4.816 Housing Characteristics

Affordable housing typically is defined as housing for which the occupant pays no more than 30 percent of income for housing costs, including property taxes, insurance and utilities. By this measure, nearly 40 percent of renter households in Gresham did not have affordable housing in 1990, compared to just over 40 percent in Portland (Table 10). Households who own their homes fare better, With just over 20 percent paying more than 30 percent or more of their income for housing, compared to just under 19 percent in Portland (Table 10). Those percentages show an increase in 1996 with 46 percent of renters and 23.3 percent of owners paying 30 percent or more of their income for housing.

From 1985 to 1995 there has been a sharp increase in home values and a small increase in family incomes (Table 11). This would tend to increase the percentage of income that must be devoted to housing. Households with low incomes tend to spend more of their income on housing while those with higher incomes tend to spend a lower proportion.

TABLE 10: Percent Income Spent on Housing, Gresham and Portland Owners and Renters¹

Percent of Income	Percent of Households							
	Renters				Owners			
	Gresham		Portland		Gresham		Portland	
	1990	1996	1990	1996	1990	1996	1990	1996
Less than 20 %	30.7%	25.6%	32.8%	23.9%	51.8%	44.7%	56.8%	47.8%
20 - 24 %	16.4%	14.7%	15.4%	14.7%	18.2%	17.8%	15.2%	15.4%
25 - 29 %	13.3%	13.8%	11.7%	13.9%	11.0%	14.1%	9.2%	10.9%
30 - 34 %	9.7%	8.8%	8.4%	9.4%	7.3%	7.9%	5.9%	7.5%
35 % or more	29.8%	37.2%	31.7%	38.1%	11.8%	15.4%	12.9%	18.4%
50% or more	--	23.2%	--	23.1%	--	5.2%	--	8.6%

¹NOTE: All 1990 data based on 1990 US Census. All 1996 Data from US Census, American Community Survey, US Census Bureau.

NOTE: THESE DATA COME WITH A DISCLAIMER FROM THE U.S. CENSUS BUREAU: "THESE DATA ARE PRELIMINARY AND SHOULD NOT BE USED FOR OFFICIAL PURPOSES." FINAL DATA WILL BE RELEASED IN EARLY 1998. The 1996 data do not include group homes.

TABLE 11. Median Family Income and Home Values 1985-1996 (Portland Area)

Year	Median Family Income (Family of Four)	Median Home Value
1985	28,800	61,500
1986	31,150	62,900
1987	32,900	63,000
1988	35,100	64,000
1989	36,200	70,000
1990	37,100	79,700
1991	39,000	91,750
1992	39,400	97,000
1993	40,700	107,000
1994	42,300	117,000
1995	42,700	128,000
1996	44,400	139,900

SOURCE: U.S. Department of Housing and Urban Development and Hobson Johnson & Associates

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

4.830 HOME OWNERSHIP

Home ownership is an important part of building a Sense of community. A home may be the only "wealth" or asset that the majority of Americans ever accumulate. When a family owns

their home, they have a greater feeling of belonging in the neighborhood and a greater stake in making that community a better place.

Home ownership is an important part of building a sense of community. In 1996, the median price of a single-family home in Gresham was \$130,000. A family of four earning 100% Median Family Income had an annual income of \$44,400 in 1996. Using a guideline of 15 times the annual income for first time home buyers they would be able to afford the mortgage payments, property taxes and utilities on the \$111,000 priced home. This is less than the \$130,000 median value home. There is a declining ability of low- and moderate-income households to purchase a home in the Gresham region. A combination of two factors is primarily responsible for the reduced buying power. The first factor is the rising sales price of homes. The second factor is that income growth has not kept pace with the rise in housing costs.

One factor is the rising sales price of homes in the Portland Metropolitan area since 1990. The average price of a home in 1996 was \$135,250, beyond reach for the average household at 100% Median Family Income. Table 12 demonstrates what is affordable for low and moderate income households (as defined by the U.S. Department of Housing and Urban Development).

Table 12 demonstrates the concept of showing what a family of different sizes (1 to 6 persons) and different percentages of the median family income (30%, 50%, 60%, 80% and 100%) can afford in buying a home. It utilizes 1997 median family income data showing both annual income, affordable mortgage and monthly housing income available. The affordable mortgage and income available uses the guidelines of the Portland Housing Center (which counsels first time home buyers): that a safe guideline for an affordable mortgage is 2.5 times the annual household income and that lenders typically consider 28% of gross monthly income as income needed to cover housing costs include principal, interest, mortgage insurance and property taxes. (As has been noted elsewhere the U. S. Department of Housing and Urban Development considers 30% of gross monthly income as affordable monthly housing costs).

Table 12 shows, for example, that a family earning 100% of the median family income could afford a \$125,000 house mortgage and that a family at 80% of the median family income could afford a \$100,000 house mortgage (1997 numbers). However, as shown in Table 13, the average price of a home in 1996 in the Portland area was \$135,250 (the median value shown in Table 12 was \$139,900). While at 100% MFI an average priced home is somewhat affordable it becomes clearly less affordable when the average drops to 80% MFI.

Portland regional trends of the last several years have been that house prices are increasing at a rate greater than incomes. Table 13 indicates that from 1990 to 1996 there was a 49.5% increase in average house prices while incomes only increased by 19.7%. This demonstrates the second factor that income growth has not kept pace with the rise in housing costs.

TABLE 12

PORTLAND AREA MEDIAN FAMILY INCOME
(1997 Department of Housing and Urban Development)

Household Size						
MFI	1	2	3	4	5	6
100%	\$32,400	\$37,000	\$41,700	\$46,300	\$50,000	\$53,700
80%	\$25,920	\$29,600	\$33,360	\$37,040	\$40,000	\$42,960
60%	\$19,440	\$22,200	\$25,020	\$27,780	\$30,000	\$32,220
50%	\$16,200	\$18,500	\$20,850	\$23,150	\$25,000	\$26,850
30%	\$9,720	\$11,100	\$12,510	\$13,890	\$15,000	\$16,110

Affordable Mortgage (Income x 2.5)

Household Size						
MFI	1	2	3	4	5	6
100%	\$81,000	\$92,500	\$104,250	\$115,750	\$125,000	\$134,250
80%	\$64,800	\$74,000	\$83,400	\$92,600	\$100,000	\$107,400
60%	\$48,600	\$55,500	\$62,550	\$69,450	\$75,000	\$80,550
50%	\$40,500	\$46,250	\$52,125	\$57,875	\$62,500	\$67,125
30%	\$24,300	\$27,750	\$31,275	\$34,725	\$37,500	\$40,275

Income Available to Cover Monthly Housing Costs (Income x 28% ÷ 12 months)

Household Size						
MFI	1	2	3	4	5	6
100%	\$756	\$863	\$973	\$1,080	\$1,167	\$1,253
80%	\$605	\$691	\$778	\$864	\$933	\$1,002
60%	\$454	\$518	\$584	\$648	\$700	\$752
50%	\$378	\$432	\$487	\$540	\$583	\$627
30%	\$227	\$259	\$292	\$324	\$350	\$376

TABLE 13

INCOME GROWTH VS. HOUSING COST INCREASE - PORTLAND AREA

	1990	1996	% Change
Portland Average House Price	\$90,460	\$135,250	49.5%
Median Family Income	\$37,100	\$44,400	19.7%

SOURCE: The Changing Marketplace, Robert Bole & Associates, 1996.

Tables 14, 15 and 16 show Portland/Vancouver housing affordability as compared to other markets. The data is 1997 data and the study was done by the National Association of Home Builders and Hobson Johnson & Associates; According the report only 28.1% of the homes sold in the Portland/Vancouver area were affordable to households earning the median income at the prevailing mortgage interest rate. The Portland/Vancouver area ranked second behind San Francisco at the least affordable in key West Coast markets and third in a list of 25 least affordable housing markets in the United States. Although there are many factors that result in these rankings they point out how rising house prices in the Portland area result in less home ownership affordability.

TABLE 14. Housing Affordability Key West Coast Market – 2nd Quarter 1997

Metropolitan Area	Median Household Income (family of 4)	Median Home Price	Affordable Share of Housing for Median Income ¹	Home Price Change (96-97)
Las Vegas	\$46,100	\$122,000	70.5%	0.8%
Los Angeles	\$47,800	\$164,000	45.5%	2.5%
Oakland/East Bay	\$60,100	\$216,000	42.2%	5.4%
Orange County	\$63,200	\$199,000	53.7%	2.1%
Portland	\$46,300	\$150,000	28.1%	7.9%
Riverside	\$44,800	\$111,000	71.3%	-2.6%
Sacramento	\$48,400	\$138,000	61.3%	1.5%
Salt Lake City	\$47,700	\$150,000	46.3%	7.9%
San Diego	\$48,600	\$170,000	42.5%	3.0%
San Francisco	\$64,400	\$305,000	20.2%	8.9%
San Jose	\$70,200	\$272,000	34.6%	10.1%
Seattle	\$55,100	\$166,000	54.2%	8.5%
U.S. Average	\$43,500	\$123,000	64.3%	2.5%

¹The Affordability Share is the percentage of homes sold that were affordable to households earning the median income at the prevailing mortgage rates.

SOURCE: National Association of Home Builders and Hobson Johnson & Associates.

TABLE 15. Twenty Five Least Affordable Housing Markets in the USA (2nd Quarter, 1997)

Rank	City	1997 Median Income (family of 4)	Median Sales Price	Affordability Share ¹	Rank	City	1997 Median Income (family of 4)	Median Sales Prices	Affordability Share ¹
1	San Francisco, CA	\$64,400	\$305,000	20.2%	14	Pueblo, CO	\$34,800	\$107,000	44.3%
2	Santa Cruz, CA	\$55,200	\$238,000	24.1%	15	Jersey City, NJ	\$44,700	\$134,000	45.0%
3	Portland-Vancouver, OR-WA	\$46,300	\$150,000	28.1%	16	New York, NY	\$47,300	\$158,000	45.3%
4	Salinas, CA	\$45,600	\$185,000	29.0%	17	Los Angeles, CA	\$47,800	\$164,000	45.5%
5	Santa Rosa, CA	\$51,300	\$196,000	33.1%	18	Salt Lake City, UT	\$47,700	\$150,000	46.3%
6	San Jose, CA	\$70,200	\$272,000	34.6%	19	Greeley, CO	\$41,300	\$124,000	46.5%
7	Laredo, TX	\$27,300	\$ 88,000	34.8%	20	Lowell, MA	\$59,100	\$186,000	48.0%
8	San Luis Obispo, CA	\$43,800	\$161,000	36.7%	21	Flagstaff, AZ	\$40,800	\$127,000	49.3%
9	Salem, OR	\$40,000	\$114,000	39.6%	22	Danbury, CT	\$74,800	\$229,000	50.0%
10	Provo-Orem, UT	\$41,800	\$143,000	39.8%	23	Ventura, CA	\$61,100	\$199,000	50.9%
11	Oakland, CA	\$60,100	\$216,000	42.2%	24	Honolulu, HI	\$57,900	\$191,000	51.1%
12	San Diego, CA	\$48,600	\$170,000	42.5%	25	New Bedford, MA	\$40,900	\$125,000	51.2%
13	Santa Barbara, CA	\$49,300	\$175,000	43.3%		National Average	\$43,500	\$123,000	64.3%

¹The Affordability Share is the percentage of homes sold that were affordable to households earning the median income at the prevailing mortgage rates.

SOURCE: National Association of Home Builders and Hobson Johnson & Associates.

TABLE 16. Ten Least Affordable Housing Markets in the USA Major Metropolitan Areas (over 1,000,000 in Population) 2nd Quarter, 1997

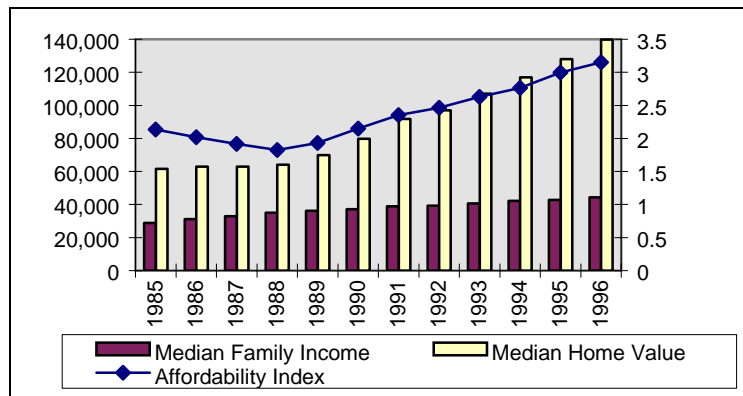
Rank	City	1997 Median		
		Income (Family of 4)	Median Sales Price	Affordability Share ¹
1	Portland-Vancouver, OR-WA	\$46,300	\$150,000	28.1%
2	SF/Oakland/San Jose, CA	\$64,900	\$224,000	32.3%
3	San Diego, Ca	\$48,600	\$170,000	42.5%
4	New York, NY	\$47,300	\$158,000	45.3%
5	Los Angeles-Long Beach, CA	\$47,800	\$164,000	45.5%
6	Salt Lake City, UT	\$47,700	\$150,000	46.3%
7	Orange Co., CA	\$63,200	\$199,000	53.7%
8	Seattle/Bellevue/Everett, WA	\$55,100	\$166,000	54.2%
9	Philadelphia, PA-NJ	\$51,300	\$135,000	57.7%
10	Charlotte-Gastonia-Rock Hill, NC	\$47,300	\$130,000	58.0%

¹The Affordability Share is the percentage of homes sold that were affordable to households earning the median income at the prevailing mortgage rates.

SOURCE: National Association of Home Builders and Hobson Johnson & Associates.

The affordability index is a measure of housing affordability. It is a comparison of the median home value to the median family income. The higher the index number the greater the house price is compared to income, Table 17 shows how, in the Portland area, there has been a dramatic increase in housing prices as compared to income since 1988.

TABLE 17. Affordability Index (Portland Area)



SOURCE: U.S. Department of Housing and Urban Development and Hobson Johnson & Associates

This increasing gap between income and housing cost is requiring more and more subsidy in various forms. to make a unit “affordable” to low-and moderate-income households. In the past, all that was required was a reduced interest mortgage to get low-and moderate-

income families into a home of their own. As homes started to increase in price, low-and moderate-income households began to need down payment assistance, whether in the form of a grant or loan. Home prices climbed higher and a second mortgage became necessary to bring the primary mortgage down to an affordable level. Today, in the Portland area, a combination of several or all of the above tools is required to get low-and moderate-income families into a home of their own. Table 18 demonstrates how these tools can come together to make a home affordable. In brief, it is costly to assist low- and moderate households with home ownership.

TABLE 18

RECIPE FOR AN AFFORDABLE UNIT

This illustrates how a family of 4 earning 80% MFI could purchase a home worth \$126,000 (in 1997). It takes a variety of tools and resources to develop a unit that can be sold at a price affordable to a household at 80% MFI. Here is an example of how it often works. A family of 4 earning \$37,040 (80% MFI - Table 12) can afford a **\$92,600** mortgage.

Total price of home/Market value	\$126,000
Subsidy (reduces price to buyer)	
Site donated by County Foreclosure Program	-\$15,000
Construction materials donated	-\$1,000
Grant (soft second mortgage)	-\$10,000
Government reduction of SDC's/Offsite fees	-\$5,000
Price to buyer	\$95,000
Closing costs (3%)	\$2,850
3% Down payment (\$2,850)	
Paid by buyer	-\$2,640
Down payment assistance and closing cost assistance (loan)	-\$3,060
Mortgage Amount	\$92,150

Now let's look at the monthly payment, according to the guidelines this family can afford \$864 monthly in housing costs (principal, interest, mortgage insurance and property taxes). This family financed their mortgage through the State's Residential Loan Program, which gives them an interest rate of 6.62%. The total payment of **\$795** allows the family to pay utility bills or to put away \$69 per month for future maintenance costs from the \$864 available to pay housing costs. Financing this mortgage without the reduced interest rate would result in a total payment of \$841 (based on 7.5% interest).

Principle + Interest	\$599
Mortgage Insurance	\$50
Hazard Insurance	\$30
Property Taxes	\$116
Total Housing Costs	\$795

Many cities and counties in this region facilitate home ownership opportunities for low-and moderate income households through a variety of tools. Non-profit housing organizations, government agencies and private lenders use a number of tools to facilitate home ownership for low- and moderate-income households. These local approaches to affordable home ownership

typically fall into one of three categories home buyer education, development of affordable units for sale and down payment assistance/mortgage products.

- Home buyer education has become more prevalent locally and nationally and has been linked to lower foreclosure rates among low-income home buyers. A range of topics related to home ownership are covered including budgeting, credit issues, home purchase process¹ and foreclosure assistance. Home buyers are also informed about mortgages and other programs such as down payment assistance that can help them buy a home.
- Development of affordable homes for sale approaches used to develop affordable homes for sale varies among organizations. Organizations may receive subsidies. They may receive private donations of materials or labor. Subsidies include free or reduced price property, grants for construction and administration costs, soft second mortgages and equity grants. Home buyers can assist in development of affordable homes by investing “sweat equity” hours into construction of their home.
- Down payment assistance and mortgage products for individuals covers a variety of programs and mortgage products that financially assist low- and moderate-income home buyers by decreasing monthly mortgage payments. This is achieved through a reduced interest rate or by increasing the down payment or by obtaining a second mortgage which decreases the total first mortgage.
- In 1997-98 Gresham initiated a Community Development Block Grant (CDBG) / Home Investment Partnership (HOME) funded Rockwood home ownership program. The program leverages production or rehabilitation of first-time home owner units in the Central Rockwood area of west Gresham. Owner occupied units in Central Rockwood in 1996 constituted 1/3 of the total units in the area. This is the lowest level of all areas of Gresham.

(Added by Ordinance No, 1442 passed 5/5/98; effective 6/4/98)

4.840 REHABILITATION OF EXISTING HOUSING STOCK

The acquisition and rehabilitation of existing units into affordable housing is less expensive than building new units. In most cases, relatively newer apartments (built since 1985) only require cosmetic improvements (paint and carpet). They are typically larger than newly constructed subsidized units.

Gresham currently has a stock of existing multi-family and single-family housing units that represents an opportunity to acquire and rehabilitate these units as affordable housing. The 1996 American Community Survey (U.S. Census Bureau) indicates that 21,624 housing units were built prior to 1980 (Table 19). This is 67.1 of all units reported in the 1996 data. In 1990 the median year a housing unit was built was 1974 (Table 19).

Oregon’s State Goal 10: HOUSING suggests (as a guideline) having an inventory of sound housing in urban areas including units capable of being rehabilitated. Such an inventory

would best indicate how effective a rehabilitation program in Gresham would be. However, the large number of older housing units suggest significant opportunities.

Some of these units are affordable under long term contracts through federal programs that are about to expire and are at risk for turnover to market rate units. Acquisition and rehabilitation presents a good opportunity for great return on public investment.

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

4.850 MAINTENANCE OF EXISTING HOUSING

Maintaining existing housing units is less expensive than constructing new units. Preventing deferred maintenance is a way to avoid major rehabilitation costs that may result in a housing unit becoming unaffordable or demolished.

Property maintenance is a basic foundation of neighborhood revitalization. Proper maintenance enhances neighborhood livability and property values. Concerns over the continuing maintenance of all types of housing and particularly multi-family developments are a major source of neighborhood opposition to new multi-family developments.

The City does not have a reliable field inventory of housing conditions. Table 19 shows in 1996 that 67.1 percent of Gresham housing was built prior to 1980.

TABLE 19: Decade Housing Units Built in Gresham, 1996¹

Decade Built	Total Units	% Total
1990 or Later	4,484	14.2%
1980 to 1989	5,925	18.7%
1970 to 1979	11,491	36.4%
1960 to 1969	5,297	16.8%
1950 to 1959	2,495	7.9%
1940 to 1949	800	2.5%
1939 or earlier	1,091	3.5%
Total	31,583	100.0%
Median year built: 1974 (As of 1990)		

¹NOTE: All 1990 data based on 1990 US Census. All 1996 Data from US Census, American Community Survey, US Census Bureau.

NOTE: These data come with a disclaimer from the U.S. Census Bureau: “These data are preliminary and should not be used for official purposes.” Final data will be released in early 1998. The 1996 data do not include group homes.

The purpose of a housing maintenance code is to protect the health, safety and welfare of Gresham citizens. It establishes and enforces minimum standards for the maintenance of

residential structures and adjacent outdoors areas. It abates dangerous buildings. Currently, the City lacks an adequate enforcement mechanism to require housing units to be maintained at a basic life and safety level. The City's current nuisance code primarily addresses outdoor site maintenance issues such as garbage, debris, and overgrown weeds. It does not address the maintenance of the actual structure itself. Also, City Fire Marshall inspections focus on common areas of multi-family residential buildings and look at issues such as exits, escapes, alarm and sprinkler systems.

There are concerns that tenants will be reluctant to complain about maintenance code violations because repairs will lead to an increase in rents. This may be true in some cases, but rents tend to be driven more by the market. If they are high to begin with for the particular market they serve, it will be difficult to raise them higher. Also, deferred maintenance can lead to greater damage to the structure that can lead to more expensive repairs and even higher rents.

Portland and Salem have housing maintenance programs that serve as good examples for how such a program might work in Gresham. Housing enforcement is closely coordinated with public safety agencies, so that criminal activity and housing violations are addressed jointly. Commons aspects of each program are a nuisance code, a housing maintenance code and a dangerous building code. Programs can apply to all housing units or multi-family (3+) housing units. Programs can be complaint-based and can have regular inspections. Fines and license fees as well as the general fund can fund all or part of a housing maintenance program.

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

4.860 GEOGRAPHIC MIX OF HOUSING CHOICES

Over the past decades (1980 to 1996) there has been a shift toward more rental housing and away from owner occupied housing. In 1990 the owner/renter split was 58.4% /41.6%. In 1996 the owner percentage has gone down to 55.7% (Table 20).

Some census tracts show a greater percentage of renter occupied units than other census tracts. The Central Rockwood Plan area was estimated to have a 1/3 owner occupancy in 1996, which was the lowest of any comparable area of the city. For example in 1996 Census Tract 96.01 (in west Gresham) had 60.2% and Census Tract 98.01 (in west Gresham) 73.8% renter occupied (Table 20). Census tracts are shown in Figure 1.

Recent building permits records (Tables 22 & 23) show a trend towards some census tracts having more new construction of multi-family housing units than other census tracts. For example Census Tract 98.02 (in west Gresham) in 1996 - 1997 had 17% of the total number of multi-family housing units built city-wide.

These trends raise a concern that some areas of the City may reach a threshold concentration of renter occupied housing which results in unstable neighborhoods without a diversity of occupants and tenure. The City's assisted affordable Housing Policy provides further analysis of assisted housing distribution city-wide.

TABLE 20

TENURE BY CENSUS TRACT

The number and percentage of owner-occupied and renter-occupied units from 1980 to 1996

Area of City	Census Tract	1980*				1990**				1996***			
		owner occupied units	renter occupied units	% owner occupied	% renter occupied	owner occupied units	renter occupied units	% owner occupied	% renter occupied	owner occupied units	renter occupied units	% owner occupied	% renter occupied
West	96.01	1107	1228	47.4%	52.6%	1284	1701	43.0%	57.0%	1289	1947	39.8%	60.2%
West	96.02	1340	1149	53.8%	46.2%	1364	1427	48.9%	51.1%	1509	1473	50.6%	49.4%
West	97.02	1587	795	66.6%	33.4%	1590	849	65.2%	34.8%	1676	819	67.2%	32.8%
West	98.01	386	658	37.0%	63.0%	342	682	33.4%	66.6%	348	980	26.2%	73.8%
West	98.02	1582	688	69.7%	30.3%	1672	934	64.2%	35.8%	1714	1224	58.3%	41.7%
West	102	684	100	87.2%	12.8%	829	106	88.7%	11.3%	1060	230	82.2%	17.8%
	Area Total	6686	4618	59.1%	40.9%	7081	5699	55.4%	44.6%	7596	6673	53.2%	46.8%
Central	99.01	NA	NA	NA	NA	1249	442	73.9%	26.1%	1467	861	63.0%	37.0%
Central	99.02	NA	NA	NA	NA	1536	530	74.3%	25.7%	1757	713	71.1%	28.9%
Central	99.03	NA	NA	NA	NA	1003	51	95.2%	4.8%	1417	86	94.3%	5.7%
Central	99	2747	888	75.6%	24.4%	3788	1023	78.7%	21.3%	4641	1660	73.7%	26.3%
Central	100	1180	738	61.5%	38.5%	1263	935	57.5%	42.5%	1324	1503	46.8%	53.2%
Central	101	1056	673	61.1%	38.9%	1188	726	62.1%	37.9%	1187	861	58.0%	42.0%
	Area Total	4983	2299	68.4%	31.6%	6239	2684	69.9%	30.1%	7152	4024	64.0%	36.0%
East	103.01(BG4)****	NA	NA	NA	NA	429	161	72.7%	27.3%	547	124	81.5%	18.5%
East	104.04	1048	376	73.6%	26.4%	1461	573	71.8%	28.2%	2031	687	74.7%	25.3%
East	104.05	NA	NA	NA	NA	992	650	60.4%	39.6%	1107	953	53.7%	46.3%
East	104.06	NA	NA	NA	NA	1145	1394	45.1%	54.9%	1331	1679	44.2%	55.8%
East	104.07	NA	NA	NA	NA	875	635	57.9%	42.1%	884	749	54.1%	45.9%
East	104.03	2642	1999	56.9%	43.1%	3012	2679	52.9%	47.1%	3322	3381	49.6%	50.4%
	Area Total	3690	2375	60.8%	39.2%	6023	3671	62.1%	37.9%	7155	4543	61.2%	38.8%
	All tracts	16420	9523	63.3%	36.7%	19343	12054	61.6%	38.4%	21903	15240	59.0%	41.0%
	City of Gresham*****	7536	4129	64.6%	35.4%	15000	10705	58.4%	41.6%	17042	13548	55.7%	44.3%

*Source: 1980 U.S. Census. Note that two census tracts were divided after the 1980 census: 99 and 104.03 (shaded dark gray). These two tracts were divided into tracts 99.01, 99.02 & 99.03, and 104.05, 104.06 & 104.07 (shaded light gray).

**Source: 1990 U.S. Census. The numbers for tracts 99 and 104.03 are actually the total for the census tracts shaded light gray above each.

***Source: 1996 American Community Survey, U.S. Census Bureau. NOTE: These data come with a disclaimer from the U.S. Census Bureau: "These data are preliminary and should not be used for official purposes." Final data will be released in early 1998. The 1996 data do not include group homes.

****Only block group 4 of census tract 103.01 is included, since most of the tract includes Wood Village and Fairview.

*****Gresham city boundary has changed since 1980 so that city totals cannot be directly compared from 1980 to 1996.

TABLE 21

TENURE BY UNITS IN STRUCTURE BY CENSUS TRACT: 1996¹

	Gresham Total	96.01	96.02	97.02	98.01	98.02	102	99.01	99.02	99.03	100	101	103.01 (BG4) ²	104.04	104.05	104.06	104.07
Owner occupied:																	
1, detached	14,697	1,208	1,300	1,339	243	1,672	322	1,218	1,694	1,390	1,289	1,062	517	1,623	1,099	709	832
1, attached	513	20	31	0	0	35	0	108	20	7	21	20	22	28	0	212	38
2	176	7	35	7	0	7	0	14	0	0	8	15	8	16	8	52	14
3 or 4	96	0	27	0	0	0	0	15	13	0	0	0	0	0	0	41	0
5 to 9	89	0	8	0	0	0	0	7	16	0	0	0	0	0	0	58	0
10 to 19	70	0	8	0	0	0	0	48	0	0	0	0	0	0	0	14	0
20 or 49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 or more	96	0	0	0	0	0	0	57	0	0	0	0	0	0	0	39	0
Mobile home or trailer	1,232	54	100	330	105	0	672	0	14	20	6	90	0	364	0	199	0
Boat, RV, van, etc.	73	0	0	0	0	0	66	0	0	0	0	0	0	0	0	7	0
Renter Occupied:																	
1, detached	1,731	180	236	191	111	220	26	163	117	86	140	169	12	208	181	78	120
1, attached	702	80	44	26	51	27	0	40	69	0	42	79	43	68	13	70	99
2	1,305	203	171	36	94	64	44	7	111	0	139	130	62	141	13	102	107
3 or 4	2,066	388	267	144	263	418	29	14	90	0	172	159	0	103	43	202	94
5 to 9	2,066	228	256	163	117	150	96	83	76	0	291	122	0	71	216	267	116
10 to 19	2,071	368	160	94	163	108	0	173	52	0	304	73	7	16	252	217	87
20 to 49	1,308	206	194	70	91	55	0	132	67	0	100	90	0	33	35	239	58
50 or more	2,165	235	130	74	90	182	21	279	131	0	315	32	0	7	200	498	68
Mobile home or trailer	134	59	15	21	0	0	14	0	0	0	0	7	0	40	0	6	0
Boat, RV, van, etc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

¹Source: 1996 American Community Survey, U.S. Census Bureau. NOTE: THESE DATA COME WITH A DISCLAIMER FROM THE U.S. CENSUS BUREAU: "THESE DATA ARE PRELIMINARY AND SHOULD NOT BE USED FOR OFFICIAL PURPOSES." FINAL DATA WILL BE RELEASED IN EARLY 1998. The 1996 data do not include group homes.

²Only block group 4 of census tract 103.01 is included, since most of the tract includes Wood Village and Fairview. See the attached map.

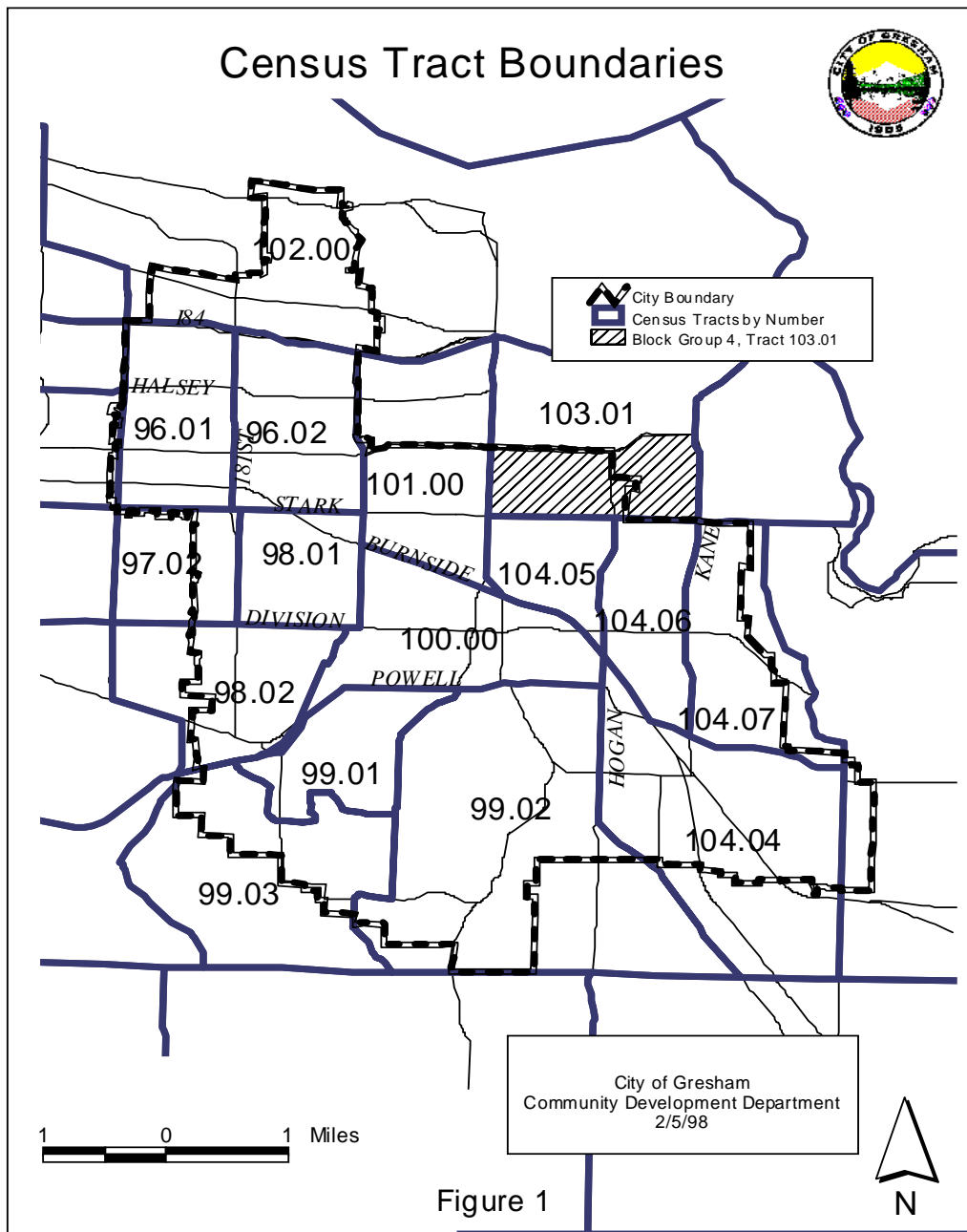


Figure 1

TABLE 22

NUMBER OF PERMITS ISSUED SINGLE AND MULTI-FAMILY UNITS 1988 TO 1997

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	Total
Single family units	285	270	275	298	303	315	381	289	315	316	3,047
Multi-family units	206	421	702	30	401	190	558	325	574	842	4,249

SOURCE: City of Gresham Permits Center

TABLE 23

Building Permits Issued During 1996 & 1997 Citywide
By Census Tract

Area of City	Census	Multi-family	% of M-F permits	Single	% of S-F permits	Total
Central	99.01	234	14.9%	4	0.6%	238
Central	99.02	28	1.8%	148	23.3%	176
Central	99.03	0	0.0%	100	15.7%	100
Central	100	314	20.0%	15	2.4%	329
Central	101	120	7.6%	13	2.0%	133
East	104.04	424	27.0%	194	30.5%	618
East	104.05	45	2.9%	15	2.4%	60
East	104.06	12	0.8%	1	0.2%	13
East	104.07	2	0.1%	83	13.1%	85
East	103.01-BG4	8	0.5%	0	0.0%	8
West	96.01	57	3.6%	39	6.1%	96
West	96.02	25	1.6%	8	1.3%	33
West	97.02	0	0.0%	2	0.3%	2
West	98.01	36	2.3%	0	0.0%	36
West	98.02	267	17.0%	12	1.9%	279
West	102	0	0.0%	2	0.3%	2
City Total		1,572		636		2,208

SOURCE: City Permit Tracking System

(Added by Ordinance No. 1442 passed 5/5/98; effective 6/4/98)

5.000 POLITICAL ENVIRONMENT

5.100 LOCAL GOVERNMENT

The City of Gresham operates as a council-manager system under a Home Rule charter, adopted by the voters May 2, 1978. The city council, which meets twice monthly, consists of a mayor and six councilors who are elected at large and serve four year terms. The mayor is the chairperson of the council and has a vote on all matters before the council. The mayor, with the consent of the council, appoints all committees and commissions, signs all records of proceedings, and signs all ordinances, but does not have the power of the veto.

The city manager is the administrative head of the city government and is appointed by the city council. The city manager enforces all ordinances, appoints and removes city officers and employees, prepares the annual budget, makes all purchases, and acts as business agent for the city. The City of Gresham is a full service city providing water, sewer, storm sewer, police and fire protection. Every ordinance directing city activities is published and noticed properly for public review, and prior to passage is read in full in an open council meeting. Ordinance approval takes effect thirty days after passage, subject to referendum if legislative in nature. Emergency ordinances take effect immediately upon their passage.

Street, sewer, sidewalks, water, storm drainage and such other public improvements as the council deems necessary may be undertaken on the motion of a majority of council or on petition of the owners of two-thirds of the property to benefit from the improvements. The procedure for levying, collecting and enforcing the payment of special assessments for public improvements or other services to be charged against real property are governed by general ordinance plans and specifications approved by the council. Indebtedness of the city may not exceed the limits on city indebtedness under state laws.

5.200 LOCAL PLANNING PROCESS

The City of Gresham is currently operating under a traditional planning process utilizing two land use policy documents. The Comprehensive Plan, adopted in 1969, (amended), is the overriding policy document directing development within the city. The Comprehensive Plan consists of a text of general policies and objectives along with a “policy, plan map describing generally the location of various land uses in the city. The second document, Zoning Ordinance 461, is the major implementing device used to achieve the objective and goals of the Comprehensive Plan. The Zoning Ordinance consists of a specific list of permitted and conditional uses within certain planning districts and then, through the use of a lot specific map, assigns those explicitly described use districts to specific parcels of land. If conflicts exist between the Comprehensive Plan and the Zoning Ordinance concerning the use of a parcel of land, the Comprehensive Plan is the overriding document to be followed.

Along with the Comprehensive Plan and Zoning Ordinance, the city utilizes various other ordinances regulating the use and development of land. These ordinances include: Subdivision

and Partition Regulations 744, Sign Ordinance 547, Housing Code 407, State Building Code, Trailers and Mobile Home Parks 548, and Gresham Flood Plain Ordinance 854. This number of free-standing ordinances along with administrative procedures and guidelines have resulted in a cumbersome system of land use regulations.

The City of Gresham planning process is headed by a nine person planning commission. The planning commission is a group of lay citizens appointed by the mayor, who are responsible for reviewing and acting in accord with use regulations in the City of Gresham. The nine member board has been divided into two committees, each having varying responsibilities. The current planning committee is responsible for reviewing specific land development requests as to their compliance with applicable city ordinances and policies, as well as to the statutes of the State of Oregon. The Comprehensive Planning Committee is directed to update the current Comprehensive Plan to conform with the state mandated goals and guidelines of the Land Conservation and Development Commission. Upon the completion of the comprehensive planning compliance process the two committees will combine to form a seven person planning commission responsible for overseeing plan implementation as well as directing updates and supplemental planning efforts to the comprehensive plan.

5.210 STATE PLANNING GOALS AND/OR GUIDELINES NOT APPLICABLE TO THE CITY OF GRESHAM

GOAL 3: AGRICULTURAL LANDS

In accordance with the statewide land use goals and guidelines:

“land within lawfully established city boundaries shall be considered to be urban or urbanized lands, as defined in the Land Conservation and Development Commission Goals, OP2 660-ICJ--060. The requirements of Goal Three (Agricultural Lands) and those of Goal Fourteen (Urbanization) 660-10-060 regarding conversion of agricultural or rural lands to urbanizable lands do not apply within city boundaries.”

Department of Land Conservation and Development Commission,
Administrative Role: City Annexations – and Application of Goals within
Cities.

Adopted: February 9, 1978.

Filed – Secretary of State: February 16, 1978

GOAL 4: FOREST LANDS

Concerning applicability of the goal to Gresham:

“We agree with non-applicable designation with understanding that wooded areas are addressed and dealt with under other goals (suggest Goals Five, Eight and Fourteen).”

Letter from James B. Knight, Field Representative of Land Conservation and Development Commission, August 6, 1976, to James Keller, City of Gresham, Key Goal Requirements Not Addressed.

Forest lands, as open space, are dealt with under the various goal items. Gresham is entirely within the adopted regional Urban Growth Boundary, thus preservation of commercial forest lands is not applicable.

GOAL 5: OPEN SPACES, SCENIC AND HISTORIC AREAS, AND NATURAL RESOURCES

h. Wilderness Areas. None are present with the city.

i. Wild and Scenic Waterways. None exist within the city.

GOAL 8: RECREATIONAL NEEDS

Recreation Areas, Facilities and Opportunities which are not addressed in the Comprehensive Plan include:

Scenic Roads and Travelways: None exist in Gresham. U.S. Highway 26 from Sandy to the Mt. Hood vicinity has been designated as a “scenic area” under the Oregon State Scenic Areas Act.

The CRAG Document, The Urban Outdoors, adopted June 30, 1971, also proposed an east-west landscaped parkway to be called Burnside Parkway, as a major urban parkway, the entire length of Burnside east from 33rd Avenue.

Angling and Winter Sports: Opportunities do not exist within the city. Such opportunities are available in proximity to Gresham. Mt. Hood offers winter sports and several rivers east, north and south of Gresham provide angling opportunities.

Mineral Resources: None are known to exist in the city which offer recreational opportunity.

5.220 LIST OF SUPPORTING DOCUMENTS

The Comprehensive Plan has been partially based upon other studies of city needs. Information contained in these other documents has proved useful in assembling inventory data. For the most part, however, these other studies were completed before creation of the Statewide Land Use Planning Goals and establishment of the Regional Urban Growth Boundary (UGB). Insofar as these other documents are inconsistent with the Goals or the regional UGB, those portions of the documents are not to be considered as supportive of the Comprehensive Plan. In some cases, the documents were based upon Plan designations which are not consistent with the Gresham Comprehensive Plan. Inclusion of these studies as “supporting documents” does not constitute adoption of the documents. It is intended that the supporting documents be used in two ways. First, as information sources which contain engineering and other data which discuss specific problems in greater detail than the Comprehensive Plan.

Second, the documents will be used to assist in development of the Capital Improvements Program (CIP). A major element of the CIP will be to evaluate the various supporting documents in terms of their consistency to the Comprehensive Plan as it is adopted. Following is a list of the supporting documents and a brief description of the contents.

Bikeways for Gresham, City of Gresham, Park Commission – Citizen’s Advisory Committee, 1974.

Phase I bikeway proposals of this document were approved by the city in 1974, as an amendment to the Comprehensive Plan. Phase II bike routes involved long-range acquisition of routes and was not approved. Inclusion of this document does not imply adoption of Phase II routes. The document serves as a guide for locating bikeways, however, as funding permits.

Budget Document, City of Gresham FY 1979 – 1980

Reporting of revenues and expenditures for operating costs and capital improvements of recent years and anticipated for Fiscal Year 1979-1980.

Citizen Involvement Report, City of Gresham, June, 1978.

A report on the activities of the Citizen Involvement Program as of June 1978. The CIP structure is explained and community survey results are summarized.

Drainage Study for the City of Gresham, Oregon, Stevens, Thompson and Runyan, Inc. February 1-20, 1973.

A master drainage plan for 485 acres in and near the city’s Central Business District. The study concluded that the existing storm drainage system was adequate to serve existing development, but redevelopment within the area would require replacement of the system with larger diameter storm sewers. The study recommended several improvements, however, totaling \$635,630.00 and noted that increased density in the area could have impacts on Johnson Creek downstream.

Fire Protection Study, City of Gresham, Oregon, Gresham Fire Department.

Analysis of the city's fire services needs, including manpower, fire stations, equipment and financial considerations.

Gresham Domestic Water Source Study, Lee Engineering Enterprises, June, 1976.

An examination of alternatives to using the City of Portland's Bull Run water supply. Conclusions included: contract limitations on the amount of annual increased connections to the Bull Run System could become a growth-limiting factor; future water supplies are economically available front groundwater, the Columbia and Clackamas Rivers; groundwater is not likely to meet all of Gresham's needs; the long-term regional water needs could best be met through formation of a regional water authority.

Sewerage Facilities Plan, Linneman Project, Final Report, Stevens, Thompson and Runyan, Inc., June 1978.

Sewerage Facilities Plan, Linneman. Project, Preliminary Report, March 1978.

The documents describe sewerage system problems in the western portion of the city and recommend alternatives to correct the situation. The city has recently let bids on its approved solution, construction of a force main between the Johnson Creek Interceptor and the West Trunk Line.

Sewerage Study for the City of Gresham, Oregon, Stevens, Thompson and Runyan, Inc., February 20, 1973.

A Master Plan outlining a \$8.9 million program of sewerage system improvements and extensions. The Plan, although now out of date because of changes in projected population growth rates, establishment of the Regional Urban Growth Boundary and other factors, has been used as a guide for recent sewerage system improvements and provides information on needed system improvements.

Sewerage System Rate Study, City of Gresham, Oregon, Stevens, Thompson and Runyan, Inc., June 1973.

The study evaluated the income generated by sewer service charges in relation to required operating revenues and proposed revised rate schedules for in-city and out-city users. The study's proposed connection rates were adopted and are currently in effect.

Water Rate Study Review for the City of Gresham, Oregon, Stevens, Thompson and Runyan, Inc., January 1978.

The study projected operating expenses against system revenues and forecast annual operating deficits. The city adopted a revised water rate schedule in July, 1978.

Water System Study for the City of Gresham, Oregon, Stevens, Thompson and Runyan, Inc., February 20, 1973.

A master plan for proposed water system improvements, based upon predicted water use in the year 2003. The study concluded that existing supply facilities did not meet maximum daily demand, that the city continue to utilize the City of Portland's Bull Run conduits as the primary supply and proposed a phased system improvement program to supply unserved areas. Portions of the study are out of date due to the establishment of the regional 13GB and revised population projections.

Water System Study Review, City of Gresham, Oregon, Stevens, Thompson and Runyan, Inc., January 1978.

The study was an update of the 1973 water system study. Three phases of projects were proposed, and assigned priorities, classified according to immediate core-area needs, growth demands and long-range construction needs. The 1973 plan was generally followed, but with more specific project information. A five year construction program of Phase I and II projects was proposed.

5.230 URBANIZATION

The Gresham Comprehensive Plan is a plan for land within the city limits. The city plan is wholly within the regional Urban Growth Boundary. In terms of the Department of Land Conservation and Development's Memorandum of April 24, 1979 (revised May 7, 1979) Item 4.10, the Plan is described as a "Complementary" plan. The city has entered into an Urban Planning Area Agreement with Multnomah County consistent with the city's plan for land within the city limits. The city's Urban Growth Boundary, in effect is the same as its corporate boundaries.

The boundaries of the regional 13GB and the city limits are coterminous over much of their eastern and southern boundaries. City annexations are precluded in areas which would involve land outside of the regional 13GB, unless the 13GB is amended. The Metropolitan Service District (MSD), established the regional 13GB which includes sufficient land to accommodate urban needs for twenty years amendments to the regional UGB require authorization of the MSD. City annexations within the regional 13GB (primarily to the north and west of the city limits) does not involve 13GB issues.

MI lands within the city limits have been designated as urban. The city is committed to providing urban level services to all areas within its boundaries. Development will not be permitted to occur unless urban services are available or will be made available. Decisions regarding public appropriations for capital facilities will be based upon the Policies and Implementation Strategies of the Comprehensive Plan and the forthcoming Capital Improvements Plan.

FIGURE 5-1
PLANNING AREA & METRO URBAN GROWTH BOUNDARY

- Gresham Planning Area Boundary
- ▬ Portland Metropolitan Urban Growth Boundary



May-90

SOURCE: Gresham Planning & Research Program

5.240 CITIZEN INVOLVEMENT

5.241 Periodic Review Citizen Involvement

A citizen involvement program was put in place in 1987 to update the Gresham Community Development Plan. The plan was updated in response to two factors. The City of Gresham received its Periodic Review Notice from the Department of Land Conservation and Development (DLCD). This notice required a major update of the Gresham Community Development Plan to reflect changes in the community, the statewide planning goals and other laws and programs affecting land use. In addition, the city had been involved in a major annexation program which had increased the city's area from 14.53 square miles in 1980, the year the comprehensive plan was acknowledged, to just over 22 square miles in 1988. The city's population had increased from 31,275 to 58,251 people during this same time period. In the plan update, it was the city's objective to blend together the land use regulations of the annexed areas, which were regulated by Multnomah County's land use plan, with the land use regulations of the city. The update requirements identified in the Periodic Review Notice and the annexations necessitated a complete revision of the Gresham Community Development Plan. In order to ensure that the citizens participated in the plan update process, a new citizen involvement program was created.

A citizen involvement coordinator was hired by the city in September 1987 to spearhead the public involvement program for the plan update process. The city council also approved the establishment of five task forces and a periodic review committee. The five task forces were:

Economic Development Task Force

The primary charges of this group were to recommend updates of the industrial, commercial and economic development sections of the comprehensive plan; update the land use regulations to enhance the opportunities for a variety of, economic activities within Gresham; and review the city and county industrial and commercial districts and determine a set of updated industrial and commercial districts for the city.

Sign Task Force

The primary charge of this task force was to develop one set of sign standards for the city by review of the existing county and city codes.

Natural & Cultural Resources Task Force

This group was to suggest revisions to the plan to respond to the state's environmental resource protection goal which covers 12 types of resources ranging from historical and cultural resources to fish and wildlife habitat areas.

Public Facilities Task Force

The primary charge of this group was to review or recommend: the inventory and assessment of the condition of all significant public facility systems; the public facility improvements needed to support the land uses identified in the comprehensive plan; the general estimate of when and where the facility projects will be developed; and cost estimates for the projects and a description of the funding mechanisms to construct the scheduled improvements.

Housing Task Force

The housing group was asked to perform several tasks: to assure the city had maintained an adequate number of needed housing units and how to provide greater certainty in the development process; evaluate city compliance with the Metro Housing Rule; consider alternative housing types for inclusion in the Plan; and review the city and county housing districts and determine a set of updated residential districts for the city.

The five task forces prepared recommendations which were then reviewed by the periodic review committee. The five task forces and periodic review committee held 57 meetings which involved 131 hours of citizen involvement meetings over a period of seven months. The update of the Gresham Community Development Plan included an extensive public notice program to inform the public about the periodic review update of the plan. Three public notices were initiated in order to inform the public about the updated plan policies and the proposed land use designations which would be applied to land throughout the city.

The first notice involved individual notice to property owners of the significant plan map change proposals. For all the residential plan map amendments the abutting property owners were also notified. The notice was given prior to the planning commission hearings on the proposed map amendments.

The second notice involved individual notice to property owners whose property was given a natural resource designation (except properties with an existing flood plain or hillside constraint district designation); open space sites which were not already designated as open space; and properties with a historic designation. This notice was sent prior to the commission hearings on the proposed designations.

The third notice involved the mailing of an informational document which included the proposed plan map land use designations; the natural resource designations and historical map designations; and, the amended comprehensive plan land use policies. The informational document was mailed to over 25,200 households. In addition, an individual notice was sent to the property owners of all significant plan map changes as well as people who reside within 300' of the subject sites. Property owners and abutting property owners of natural resource, historical or open space sites, as outlined above, were also notified.

The two individual notices went out to over 5,000 households. The individual notices and informational mailings were all distributed prior to the city council hearings on the updated plan.

The periodic review committee's recommendations were passed on to the planning commission. The commission held 15 public hearings which involved discussion on the plan update. The plan update process concluded with five public hearings on the plan text and map amendments with the city council. The public was given the opportunity to comment on these proposed amendments at these public hearings.

5.242 Post-Periodic Review Citizen Involvement

The structure of the city's citizen involvement process was one topic which was discussed by the periodic review committee in the periodic review update of the comprehensive plan. It was the consensus of the committee to form a group to analyze the city's current citizen involvement structure and present a recommendation to the council for a new citizen involvement program. The committee found that open recruitment for citizen involvement committees should be continued; the public has an opportunity to review inventory data, formulation of plan policies, and review of implementation strategies; that planning information should be made available for the general public; that the city should be responsive to citizen group recommendations; that various methods should be used to inform the public; and that workshops should be conducted to review proposed changes to the plan prior to public hearings.

5.300 INTERGOVERNMENTAL RELATIONS

Gresham, being within the major urban center of the State of Oregon, finds itself dealing with many special service providers throughout various levels of government. The existence of special service districts compounds the number of officials that are involved in order to assure adequate levels of needed services. Various agencies such as the Department of Environmental Quality, Soils Conservation Service, the Metropolitan Service District and the Tri-County Metropolitan Transportation District, are just a few among many responsible for a specific range of service with such a wide range of agencies providing services to Gresham residents, a need exists to coordinate their efforts. The City of Gresham recognizes its role as that coordinating body.

The city will continue to rely upon the expertise of the various agencies, when considering development proposals. For example, the East Multnomah County Soils Conservation District, the Army Corps of Engineers along with the MSD would be requested to comment on any development proposal anticipated to have direct runoff effect on Johnson Creek.

Administrative Procedures Summary

The administrative procedures outline is intended to be an informal document indicating subject topics to be worked out at the staff level to insure compliance with the provisions of the agreements. It is also to serve as a graphic example of agreement Number 9, which requires development of administrative agreements. Actual execution of the procedures will be different for each city, depending on the level of staff support available and the nature of the conflicts identified.

Items IV, V, VI and VII are designed to implement the identified objectives of the agreements. The following is an expansion of how they may be used:

- IV. Identification of Planning Areas. This is the description of specific land covered by the agreements within the urban growth boundary. It need not be a service area or an annexation area. It is merely an identification of unincorporated lands, within which land use decisions made by the county may significantly affect the cities' present or future delivery systems.
1. Legal Description and Map. The land included in the planning area is required to be legally definable (LCDC).
 2. Plan Designations. The county has adopted land use designations for this area that legally control allowable land uses. The city may also have informally identified a land use preference in their adopted plan. Both should be identified.
 3. Conflicts and Issues Identified. A conflict is essentially a discrepancy between plan designations that either or both parties consider potentially damaging to the realization of their Comprehensive Plan. An issue on the other hand, is any other related or unrelated problem that either party feels must be resolved to effect complete plan coordination. Both should be identified and separated.
 4. Alternative Solutions. Each conflict and issue will involve unique circumstances that require different actions. A "shopping list" of various alternative solutions should be developed by both administrative staffs.
 5. Proposed Reconciliation. Administrative staffs or other appointed individuals should develop a proposed method of resolving the identified issues or conflicts for presentation to. their respective governing body.
- V. Information Exchanges. This is an identification of what city and county actions should be reviewed and how the review should be handled.
1. Actions Covered: This identifies specific actions. It would include comprehensive plan changes, zone changes, subdivisions and other actions of mutual agreement.

2. Method of Reporting: Some items can be adequately handled through a phone call, while major items will require submission of completed forms with substantial information. The appropriate process should be articulated.
 3. Time Lines for Review: Since some cities may prefer to deliver their response in the course of a public hearing, while others may be satisfied to have it presented as part of the staff report on the action proposed.
 4. Handling of Responses: Some cities may prefer to deliver their response in the course of a public hearing, while others may be satisfied to have it presented as part of the staff report on the action proposed.
 5. Appeal Process: If the initial administrative or quasi-judicial decision is unacceptable to either party, appropriate appeal to the governing body should be determined.
- VI. Reconciliation of Differences: The purpose of this process is to determine the method of resolving conflicts that have remained unresolved. Decisions may be by city, county, regional or state agency.
- VII. Annexations and Extraterritorial Service Extensions: This issue cannot be resolved within the UPAR Agreements, but are a logical determination of the entire process as the issues emerge.

Many of the identified problems will become annexation or service extension issues. Limitations or annexations by statute may become major obstacles to final resolution of the problems. A coordinated position between all parties on needed legislative changes should be developed for presentation to the legislative assembly in 1979.

5.320 SPECIAL DISTRICTS AND AGENCY INVOLVEMENT

5.321 Agency Involvement

The Land Conservation and Development Commission (LCDC) Goals I and 2, Citizen Involvement and Land Use Planning, require all planning efforts of cities to be coordinated with affected governing bodies.

LDC GOAL 1 – Citizen Involvement

To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process. Federal, State and Regional Agencies and Special Purpose Districts shall coordinate their planning efforts with the affected governing bodies and make use of existing local citizen involvement programs established by counties and cities.

LDC GOAL 2 — Land Use Planning

City, county, state and federal agencies and special district plans and actions shall be consistent with the comprehensive plans of cities and counties and regional plans adopted under ORS 197.705 through 197.795. State, federal and regional agencies and special purpose districts should have the opportunity for review and comment at each stage of the planning process. Alternatives, suggestions and other forms of input should occur at the research, alternatives, adoption and implementation stages.

Research Stage

During the research stage of the Gresham Comprehensive Plan, affected local and regional agencies and special districts were contacted for technical assistance.

Information found in the Natural Environment, Natural Resources and Environmental Quality Sections of the Findings Report was obtained from the following agencies:

United States Geological Survey (USGS)
USGS Soil Conservation Service Soil Bulletin
United States Department of Housing and Urban Development (HUD)
Oregon Department of Energy
Oregon Department of Fish and Wildlife
Department of Environmental Quality
Oregon Department of Transportation
CRAG – Columbia Region Association of Governments
Public Utilities Commission

In addition, during the preparation of the Physical Environment and Social Environment Section of the Findings Report, the following agencies and associations made known their specific needs and contributed technical information.

Metropolitan Service District (formerly CRAG)
Tri-Met
Oregon State Employment Division
Oregon Department of Economic Development
NW Emergency Services Division
U.S. Department of Housing and Urban Development
Oregon Department of Economic Development
Portland State University Population Research and Census Center
U.S. Department of Veteran Affairs
U.S. Department of Commerce
Bureau of Governmental Research and Service
U.S. Bureau of Census
Multnomah County
City of Gresham Building Department
City of Portland

U.S. National Bank of Oregon
Sherwood and Roberts, Inc.

During the development of planning alternatives, agencies and special districts were given the opportunity to review the plan findings, policies, procedure and standard.

On February 12 and 13, 1980, the following agencies and special districts were contacted about a meeting at the Gresham Municipal and Educational Services Center Planning Conference Room, to preview the proposed Comprehensive Plan. They were notified of the half-day workshops by registered mail a week prior to the meetings:

Cities: Portland, Wood Village, Troutdale, Fairview
Counties: Clackamas, Multnomah
Tri-Met
Metropolitan Service District
East Multnomah Soil and Water Conservation District
State Agencies
 Land Conservation and Development Commission
 Oregon Department of Transportation
 Oregon Department of Parks and Recreation
 Department of Environmental Quality
 Department of Economic Development
 Oregon Department of Fish and Wildlife
 Oregon Department of Energy
 Boundary Commission
Federal Agencies:
 U.S. Army Corps of Engineers
 U.S. Geological Survey
 U.S. Forest Service Survey
 U.S. Forest Service Department of Fish & Wildlife
 U.S. Department of Housing & Urban Development
Port of Portland
Special Districts:
 Gresham Grade and High School District
 Centennial High School District
 Mt. Hood Community Council
 Fire District 10
 Lusted Water District
 Powell Valley Water District
 Rockwood Water District

During these two workshops the agencies and special districts had the opportunity to make known their specific concerns and pointed out specific problems with the Plan. At the same time they also made suggestions as to how to solve the problems in order to bring the Plan into compliance. Each of the representatives had copies of the draft plan with them in order to study it in more detail. Some of them sent written comments to staff at a later time. For example, the

MSD sent staff a written plan review discussing in detail weaknesses of the Plan and suggestions as to overcome these weaknesses.

Adoptions Stage

At the February 12 and 13 workshops, the Comprehensive Plan Work Program was distributed. Each agency and special purpose district was made aware of the hearings schedule for both the Comprehensive Planning Commission and City Council.

Implementation Stage

It is important to foster the relationship between planning decisions and future regulatory decisions. Governmental agencies such as the City of Gresham, serve the public. Policies made by that jurisdiction must reflect the preferences of those governed. The planning process is not a decision making process but rather is a prelude to informed decision making. Following adoption of the Comprehensive Plan, affected agencies and special districts shall be given the opportunity for comment and suggestions to make the implementation of the Plan more efficient. It is the policy of the city to maintain effective coordination with local general purpose governments, special districts, state and federal agencies, the Metropolitan Service District and other governmental units:

Affected Governmental Agencies

A. Special Service District:

Schools

1. Gresham Elementary School District
2. Gresham High School District
3. Centennial School District
4. Orient School District
5. Reynolds School District
6. Mt. Hood Community College

Public utilities and Services

7. Lusted Water District
8. Rockwood Water District
9. Powell Valley Water District
10. Tri-Met (Transportation)
11. Fire District 10

B. State and Federal Agencies

1. L.C.D.C.
2. Oregon Department of Transportation

3. Oregon State Highway Parks and Recreation Division
4. Department of Environmental Quality
5. Oregon Department of Economic Development
6. Oregon Department of Fish and Wildlife
7. U.S. Corps of Engineers
8. U.S. Soil Conservation Service
9. Department of Energy
10. U.S. Forest Service
11. U.S. Department of Commerce
12. U.S. Department of Housing and urban Development

C. City and County Agencies

1. Multnomah County Department of Environmental Service
2. City of Portland
3. City of Troutdale
4. City of Fairview
5. City of Wood Village

D. Regional Agencies

1. Metropolitan Service District
2. Port of Portland
3. Portland Boundary Commission

Several agencies, such as the Portland Boundary Commission, and the Tri-Met Board of Directors, have the ability to make final decisions concerning the provision of services to the City of Gresham residents. It is the city's responsibility to work directly with and to monitor the actions of these agencies.

The Metropolitan Service District is responsible for reviewing the Gresham Plan as it addresses regional growth needs and integration with other planning efforts. L.C.D.C. will review the Gresham Plan as to its compliance with the Goals and Objectives of Senate Bill 100. The Portland Boundary Commission will take final action concerning the annexation of lands to the City of Gresham. These three agencies, more than any other, must be kept abreast of the needs, policies, and objectives of the city's planning effort.

To help facilitate the coordination of inter-governmental services the city of Gresham has entered into a formal agreement with Multnomah County concerning land use decisions being made in the county that are of a concern to the City of Gresham and vice versa. The following are the elements of the final agreement:

1. Multnomah County will provide notification to the City of Gresham of any proposed legislative revision of the County's Comprehensive Plan or implementation ordinances, and any quasi-judicial or administrative decision made pursuant to the Comprehensive Plan

which may substantially affect the city. The county will provide for a reasonable response time and include any responses by the city within the county's record of the decision on the proposal.

2. The city will provide full notification to the county of any proposed annexations, capital improvements plans, or major extraterritorial service extensions into the county. The city will provide reasonable response time and include any responses within the record of the action.

3. The provisions of this agreement apply to those unincorporated lands described on Map 24.

4. The city has identified no specific conflicts with the Multnomah County Comprehensive Framework Plan, adopted September 6, 1977, for the designated urban planning area of this agreement. For those areas designated "Urban" by the Comprehensive Framework Plan, Multnomah County is in the process of preparing and adopting community plans. Portions of the Columbia, Wilkes, Rockwood and Centennial communities lie within the designated urban planning area for the City of Gresham. The city has reviewed draft copies of these communities' plans and has identified no specific conflicts with the proposed land use designations. In the event that the land use designations for these specific communities are modified or changed during the adoption process, the City shall accept those land use designations as adopted by the Multnomah County Board of Commissioners, subject to review and amendment of this Urban Planning Area Agreement by the official action of the Common Council of the City of Gresham. Upon annexation the city will adopt the same land use designations as shown on the county comprehensive plan unless and until the city changes said land use designation pursuant to law (ORS 215.130(2)(a)).

5. Multnomah County and the City of Gresham will extend good faith efforts to reconcile any differences which may emerge from the information exchange made under this agreement.

6. Where any differences involve alleged non-compliance with LCDC or MSD goals, objectives or plan, the city and the county will seek resolution of said differences through the appropriate agency.

7. Lack of response to any proposal submitted for review by either party will be considered "no objection" to the proposal.

8. The county and the city agree to determine the boundaries of service areas suitable and appropriate for future annexation to the City.

9. The city and the county will develop administrative procedures and provide adequate administrative staff to carry out the provisions of this agreement and will review its effectiveness on an ongoing basis with a formal report prepared annually by MSD and submitted to LCDC.

APPENDIX I

PORTLAND EARTHQUAKES 1877 – 1970

DATE	INTENSITY ¹	MAGNITUDE ²	EPICENTER LOCATION
2 Oct 1877	III(?) ³		Portland Area
30 Nov 1877	III		Portland
? 1879	IV		Portland
1 May 1882	XII		Portland
28 Sep 1883	?		Portland
3 Jan 1884	IV		Portland
10 Oct 1885	III		Portland
3 Feb 1892	VI		Portland
21 Feb 1898	IV		Portland
22 Feb 1898	III		Portland
16 Jun 1904	IV		Portland
16 Jun 1904	?		Portland
27 May 1907	III		Portland
30 Dec 1909	IV		Portland
7 Feb 1910	7		Portland
15 Feb 1910	IV		Portland
22 Mar 1914	IV		Portland
5 Sep 1914	III		Portland
18 May 1915	V		Portland
12 Feb 1918	III		Portland
9 Nov 1920	III		Portland
4 Mar 1921	III		Portland
22 Sep 1921	IV		Portland
26 Sep 1922	IV		Portland
15 May 1922	IV		Portland
14 Jan 1932	IV		Portland
23 Nov 1933	III		Portland
23 Apr 1939	III		Portland
15 Nov 1939	III		Portland
16 Feb 1941	III		Portland
26 Jul 1941	IV		Tigard
29 Dec 1941	VI		Portland
1 Nov 1942	V		Portland
25 Mar 1951	II		Portland
1 Feb 1954	?		Canby
23 Apr 1954	IV		45.1.N. 122.9.W near Woodburn
28 Nov 1957	III		Portland
12 Mar 1958	II		Portland
18 Nov 1958	III		Gresham
4 Aug 1959	III		Portland
3 Jan 1961	IV		18 km NW of CC (city center)

DATE	INTENSITY ¹	MAGNITUDE ²	EPICENTER LOCATION
6 Nov 1961	VI		45.3.N 122.9.W
7 Nov 1961	V		Portland
29 Nov 1961	IV		Portland
15 Dec 1961	III		Scappoose, 32 km NNW of CC
17 Oct 1962	II		West Linn
6 Nov 1962	VII	5.0 ⁴	45.6.N, 122.6.W; 12 km NE of CC
2 Mar 1963	IV		Portland
27 Dec 1963	VI	4.5 ⁴	45.7.N, 122.8.W; 22 km NW of CC ²⁷
1 Oct 1964	V		45.7.N, 122.8 W; 22 km NW of CC ²⁷
? Jan 1968	IV	3.7 ⁴	45.6.N, 122.6.W; 11 km NE of CC
13 May 1968	IV	3.8 ⁴	45.6.N, 122.6.W; 14 km NE of CC
5 Mar 1969	III	3.5 ⁴	45.6.N, 122.8.W; 16 km NE of CC
25 Jun 1970	IV	3.6 ⁴	West Portland

¹ Modified Mercalli Scale of 1931

² Unified magnitude (m)

³ Although Berg and Baker (1963) report the intensity as III, Schlicker, et al. (1964) give the intensity as VIII. In a list compiled by Treasher, (1938, unpublished data) he mentions “overthrown” chimneys and surmises the intensity to be about VIII.

⁴ From Couch and Lowell (1971)

SOURCE: Reprinted from: Hammond, Paul E., et al., A Preliminary Geological Investigation of the Ground Effects of Earthquakes in the Portland Metropolitan Area, Oregon. U.S. Geological Survey

APPENDIX 2

INVENTORY OF SIGNIFICANT NATURAL RESOURCES AND OPEN SPACES

The Inventory of Significant Natural Resources and Open Spaces is published as a separate document. The Inventory contains detailed descriptions and evaluations of significant natural resource and open space sites within Gresham's urban services boundary. It is the purpose of the Inventory to present data relating to the location, quality, and quantity of fish and wildlife areas and habitats, ecologically and scientifically significant areas, water areas, and wetlands. The Inventory also contains brief analyses of the environmental, social, economic and energy consequences of potentially conflicting uses which might affect each of the identified natural resource and open space sites.

APPENDIX 3

THE HOGM CEDAR: FROM AN ARTICLE BY LEONARD WILEY

An article by Leonard Wiley in Northwest Magazine (February 9, 1969) offers an explanation of the origin of the Hogan Cedar.

“What is the origin of the name Hogan Cedar? The answer is a bit obscure, like so many other things about this tree. The Hogans were early settlers in the area. Where they have gone and where they settled in this area is lost in the mists of time. But it was a common thing for roads to be named for the residents who used them. Palmquist 43 Road is another. I knew a couple of the Palmquists and there are other names of roads east of Gresham that honor some of the pioneer families. It is likely that the tree was named for the Hogans simply because they lived in the vicinity and it is a good name too.

“How did it get there? Probably it was not indigenous to the area. One theory – and you can take your choice of others – is that a Chinese nurseryman in the vicinity brought them in. His nursery was, allegedly, near the present brickyard factory. This is only a rumor, unsubstantiated in any way.

“Another is that Dant and Russell, or one of their offices, lumber merchants, established Ambleside Corporation there. They, according to the story, bought some land and created what was considered a showplace of the Pacific Northwest. Their holdings were near the brickyard and adjacent to Johnson Creek. It was established for the entertainment of business guests and employees and their families. This is a story as pretty as the land, stream and forest that still exist there and it may well be true. However, officers of this well known company, have no knowledge of such an enterprise and one of them said that Mr. Dan, Senior, was not likely to have been interested in such an undertaking. But the officers I talked with have not been with the company long enough to know to be sure of these events of long ago. The story also is that the people of the Ambleside Corporation brought in what were eventually known as the Hogan Cedars. I am inclined to give some consideration to this story although proof is lacking. At any rate the area, including seven homes at the present time, still is known as Ambleside.”

APPENDIX 4

DOMESTIC APPLICATION OF WIND GENERATED ELECTRICAL ENERGY

It is, of course, technically possible to provide sufficient wind generated energy to power a home, but unless there are unusual circumstances which prohibit the use of commercially-generated power, it is simply not economically practical.

The average homeowner in the United States consumes some 8-12,000 KWHRS of electrical energy per year. For example, a typical homeowner might use 960 KWHRS per month. For this energy, he probably pays a monthly electrical bill of about \$20.00-\$25.00. This is a rate of \$300.00 per year, so any investment in generating equipment should not exceed this cost per year. If one assumes a depreciation rate of 10 per cent per year and an interest rate of six per cent of the total investment, the total investment should not exceed \$1,875. Therefore, if you intend to generate your own power, the initial total installed cost should be less than \$1,875.

To accommodate the needs of the average homeowner requires the generation of 960 KWHRS per month. Now let us assume that he is situated on a clear windy hill and is fortunate enough to have an adequate average wind velocity in excess of ten miles per hours; for example, as in Dallas, Texas.

To produce the 960 KWHRS of energy will require a wind generator with a blade diameter of 30 feet. Such a machine would weigh three-quarters of a ton and would produce a thrust on the tower in strong winds of almost the same amount.

Obviously, the tower would have to be at least 25 to 30 feet high, very sturdily constructed, and set in a rugged foundation.

To account for periods when the wind velocity is not sufficient to provide the required energy, a battery storage system is necessary. To be effective, such a battery should provide up to five days of reserve energy. This means a battery with 160 KWHRS of stored energy. A 120 volt, 60 cell lead battery of this size would be rated at 1300 Ah. Such a battery would occupy most of the basement, would weigh seven tons and would cost over \$14,000.

Obviously, to practically apply a wind generator for domestic use would mean many compromises, the first and foremost being a severe reduction in energy consumption. If one is ready to give up all but a few small light bulbs and a radio, then the problem is easily solved. If you are not prepared to either give up your electrical comforts or to waste your money, then you should determine accurately your KWHR requirements and before you purchase and erect a wind plant, be certain that the supplier will guarantee to meet your energy needs at your site.

APPENDIX 5

PREREQUISITE IN HARNESSING THE WIND S'IREAM AS A POWER SOURCE

1. Basic wind information, existing data:

A search should be made for all existing wind data for the area. These data should be assembled, their relevance assessed, and then analyzed if the data appear to be relevant and reliable. A summary of existing relevant wind information can then be prepared.

2. Basic wind information, new data:

There are hourly averages of wind speed and direction at two heights, 10 meters and 30 meters, along with peak gust speeds at both heights with the frequency of occurrence of gusts in the high range specified.

A minimum of 12 months of data at each site is required, overlapping the long term record at a nearby station to determine if the winds for the twelve month period are reasonably representative of climatic normals.

Devices for recording directly the standard deviation of wind speed are commercially available *arid* are recommended for the thirty meter height.

Standardization of units and of methods of making and analyzing measurement should be adopted.

3. Basic wind information, turbulence structure:

A detailed study of turbulence structure in the lower levels should be undertaken, using existing wind data from one of the Great Plains' instrument TV towers. Such a structure may be taken as reasonably representative, except over very rough terrain.

The extensive literature on the dynamic wind loading of structures should be examined as being highly relevant. Discussions should be held with the leading authorities in this area for the purpose of determining the extent to which recent research may be applicable to the design of equipment for generating power from the wind.

4. Weather modification:

The possibility of significant weather modifications being caused by single or clustered wind turbines should be examined.

5. Public policy:

The content of environmental impact statements should be set forth for the guidance of those who are to prepare and those who are to evaluate such statements. Possible legal restraints should be analyzed in detail. Sites should be selected so as to minimize both audible and visual pollution.

6. Dissemination of information:

A comprehensive, annotated bibliography should be prepared, kept up to date, and widely distributed. Translations of significant results of research in other languages should be made and distributed. Some appropriate agency should be encouraged to collect and reproduce the documents that are fundamental to wind power studies. Many of these are generally unobtainable at the present time.

Explorations should be commenced with the Solar Energy Society and its Journal concerning the possibility of changing names to the Solar and Wind Energy Society and Journal. Sponsoring agencies should support such publications by authorizing substantial page changes.

7. Size of proof-of-concept units:

Since ten 100-kilowatt wind turbine units appear to have substantial advantages over one 1000-kilowatt unit at this time, sites chosen for proof-of-concept units should be suitable for accommodating ten such units even if all are not installed at one time.

APPENDIX 6

ELECTRICAL ENERGY REQUIREMENTS FOR A 1500 SQ. FT. RESIDENCE
EXCLUDING AIR CONDITIONING AND HEATING

	Watts	Hr/Month	KWHRS/Month
<u>Appliances</u>			
Broiler	1,440	6	9
Coffee Maker	900	10	9
Dishwasher	1,200	25	30
Food Mixer	125	8	3
Disposer	450	7	3
Toaster	1,150	13	17
<u>Food Preservation</u>			
15 Cu. Ft. Freezer			120
14 Cu. Ft. Frost-Free Refrigerator			160
<u>Entertainment</u>			
Radio	70	100	7
Television (color)	330	180	59
<u>Comfort</u>			
Blower (forced air furnace)	450	300	135
Washing Machine	500	20	10
Lighting and Small Appliances			400
	TOTAL		960

APPENDIX 7

INCENTIVES FOR ALTERNATE ENERGY USE IN OREGON 1977 LEGISLATIVE SESSION

SENATE BILL 339 – INCOME AND PROPERTY TAX INCENTIVES

This bill authorizes a personal income tax credit of 25 per cent of the cost of a system up to a maximum credit of \$1,000 for the installation of an alternative energy device. Such a device may be a system or mechanism which uses solar radiation, wind, or geothermal resources as a source for space heating, water heating, cooling, electrical energy, or a combination of these. The system must provide at least ten per cent of the total energy requirements for the dwelling.

Procedure

Any person may apply to the Department of Energy for certification if he intends to install an alternate energy device in his dwelling. The DOE will develop a form which will require, among other things, a description of the device and the actual cost of it. To qualify for the credit, the taxpayer must obtain this certificate; he must be the owner or contract purchaser of the dwelling; he must claim the credit in the tax year during which device is placed in service; and he is entitled to only one credit in any one taxable year. The credit must be claimed in tax years beginning on or after January 1, 1978, but before January 1, 1985.

This bill also grants a property tax exemption for solar devices which allows taxation of the property as if it were not equipped with the solar device. This property tax exemption will be in effect until January 1, 1998.

SENATE BILL 447b – VETERANS LOANS FOR ALTERNATE ENERGY EQUIPMENT

This bill permits an eligible veteran to obtain an additional loan of up to \$3,000 from the Oregon War Veterans fund for the purpose of installing an alternative energy device to his home. The alternative energy device is, again, defined as any system or mechanism which uses solar radiation, wind or geothermal resources as source of heating, cooling or electrical energy which meets or exceeds ten per cent of the total energy requirements of the home. This bill also requires the Director of Veterans Affairs with the advice of the Department of Energy, to establish performance criteria for such devices.

APPENDIX 8

AIR QUALITY

AIR POLLUTANT DESCRIPTIONS AND EFFECTS

Suspended Particulate

What It Is: Solid and liquid particles of soot, dust, aerosols and fumes ranging from 0.1 to 100 microns and averaging about 2 microns in size (1 micron = 1/2540”).

What It Is From: Combustion sources, cars, industry process losses, fugitive dust, field and slash burning and natural sources, such as ocean spray and wind raised dust.

Sulfur Dioxide

What It Is: A colorless, pungent, irritating gas.

What It Is From: Oil and coal combustion and industry process losses.

What Damage It Causes: Aggravates asthma, heart and lung disease in the elderly, irritates lungs, is corrosive to metals and marble, and causes plant damage.

Carbon Monoxide

What It Is: A colorless, odorless gas that is highly toxic.

What It Is From: Incomplete combustion sources, mostly cars.

What Damage It Causes: Interferes with the blood's ability to carry oxygen, causing heart difficulties in those with chronic diseases, reduces lung capacity and impairs mental abilities.

Photochemical Oxidants

What It Is: Mostly consists of ozone which is an odorless, toxic gas.

What It Is From: Photochemical processes in the atmosphere by reaction between oxides of nitrogen and hydrocarbons in the presence of sunlight.

What Damage It Causes: Eye irritation, damage to lung tissue and lung functions; material damage and plant damage.

Nitrogen Dioxide

What It Is: A reddish-brown gas, toxic in high concentrations.

What It Is From: Formed by conversion of nitric oxide (from autos and combustion sources) and from industrial sources.

What Damage It Causes: Increases chronic bronchitis and irritates lungs.

Hydrocarbons

What It Is: A large family of compounds consisting of hydrogen and carbon.

What It Is From: Autos, evaporative fuel losses, industry and combustion processes.

What Damage It Causes: Hydrocarbons actively participate in oxidant formation and cause plant damage. Methane is produced naturally by decay of organic matter and is not significant in oxidant formation.

SOURCE: Department of Environmental Quality – Air Quality control Division, Oregon Air Quality Report, 1976.

APPENDIX 9

INVENTORY OF HISTORIC AND CULTURAL LANDMARKS

The Inventory of Historic and cultural Landmarks is published as a separate document. The Inventory contains detailed information concerning thirty-two landmarks which have been identified as having particular value to the history and culture of Gresham. In addition to documenting the history and other characteristics of these landmarks, the Inventory includes brief analyses of the environmental, social, economic and energy consequences of potentially conflicting uses which might affect each of the landmarks. The information and analysis contained in the Inventory serves as the basis for policies and specific development standards of the Community Development Plan relating to historic and cultural resources.

(Amended by Ordinance 1414 passed 2-4-97; effective 3-6-97)

(Amended by Ordinance 1456 passed 9-15-98; effective 10-15-98)

VOLUME I – Appendices 10 through 17

The following Volume 1 Appendices are repealed by Ordinance No. *1551*, adopting the Gresham Transportation System Plan (as Volume 4 of the Community Development Plan) effective 8-21-02.

Appendix 10
Major Transportation System Improvements 1980-88

Appendix 11
Functional Classification System Description

Appendix 12
Weekday Traffic Volume Growth 1975-88

Appendix 13
PM Peak Hour Traffic Volume Cutline Comparison

Appendix 14
Level of Service Descriptions

Appendix 15
Road Segments — Projected Level of Service

Appendix 16
Worst Accident Intersections

Appendix 17
MAX Boardings and Destinations

APPENDIX 18

DESCRIPTIONS OF MAJOR FEDERAL PUBLIC ASSISTANCE PROGRAMS

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT PROGRAMS

Conventional Low Rent Public Housing

Federal aid to local public agencies to provide decent shelter for low income residents at rents they can afford.

Local public housing agencies develop, own and operate low income housing projects, financing them through the sale of tax-exempt obligations. HUD furnishes technical and professional assistance in planning, developing and managing the projects and gives two kinds of financial assistance: preliminary loans for planning; and annual contributions to pay the debt service of PHA obligations, assure low rents and maintain adequate services and reserve funds. Rents that are based on the residents' ability to pay contribute to the costs of managing and operating the housing.

Several different methods are used to provide housing. under the "Turnkey" program, the PHA invites private developers to submit proposals, selects the best proposal and agrees to purchase the project on completion. Under conventional-bid construction, the PHA acts as its own developer, acquiring the site(s), preparing its own architectural plans and advertising for competitive bids for construction. The PHA may also acquire existing housing, with or without rehabilitation, from the private market under the acquisition program.

Lower Income Rental Assistance (Section 8)

A rent subsidy for lower income families to help them afford decent housing in the private market.

HUD makes up the difference between what a lower income household can afford and the fair market rent for an adequate housing unit. No eligible tenant need pay more than 25 per cent of adjusted income toward rent. Housing thus subsidized by HUD must meet certain standards of safety and sanitation, and rents for these units must fall within the range of fair market rents as determined by HUD. This rental assistance may be used in existing housing or in new construction or, substantially rehabilitated units. Different procedures apply in each case.

Local public housing agencies administer the existing housing program, certifying eligible tenants, inspecting the units proposed for subsidy, and contracting with approved landlords for payment. (Tenants execute separate leases with landlords to pay their share of rent.)

Nonprofit and profit-motivated developers, alone or together with public housing agencies, submit proposals of substantial rehabilitation or new construction in response to invitations from HUD; or they may apply to their state housing finance agency. On approval of the proposals, HUD contracts to subsidize the units to be occupied by eligible families.

Low Income Leased Public Housing (Section 23)

Private housing leased for low income use.

HUD pays basic annual contributions which permit local public agencies to lease decent private housing for low income families at rents they can afford. The annual contributions make up the difference between the rents paid to private owners (plus local public agency operating expenses) and what low income tenants can afford. That amount is based upon the tenant income but may not exceed 25 per cent of adjusted income. The annual contributions cannot exceed the amount that would be paid by the local public agency for a newly constructed project designed to accommodate comparable numbers, sizes and kinds of families. The basic contribution may be adjusted for higher operating costs due to tax or utility increases.

Direct Loans for Housing for the Elderly or Handicapped (Section 202)

To provide housing and related facilities for the elderly or handicapped.

Long term direct loans to eligible, private, nonprofit sponsors finance rental or cooperative housing facilities for elderly or handicapped persons. The current interest rate is based on the average rate paid on federal obligations during the preceding fiscal year. (Until the program was revised in 1974, the statutory rate was three per cent). Participation in the Section 8 rental housing program is required for a minimum of 20 per cent of the Section 202 units.

Homeownership Assistance for Low and Moderate Income Families (Revised Section 235)

Mortgage insurance and interest subsidy for low and moderate income home buyers.

To enable eligible families to afford new homes that meet HUD standards, HUD insures mortgages and make monthly payments to lenders to reduce interest to as low as 4 per cent. The homeowner must contribute 20 per cent of adjusted income to monthly mortgage payments and must make a down payment of three per cent of the cost of acquisition. There are dollar limits on loans and sales prices. Mortgage limits are \$32,000 (\$38,000 for homes for five or more people), and in high cost areas \$38,000 (\$44,000 for homes for five or more persons). The income limit for initial occupancy is 95 per cent of the area median income.

Prior to 1976, this program provided larger subsidies to lower income households and required a substantially smaller investment from them.

Rental and Cooperative Housing Assistance for Lower Income Families (Section 236)

Mortgage insurance and interest reduction and operating subsidies to reduce rents for lower income households.

Originally HUD insured multi-family mortgages and paid interest subsidies to lenders which allowed the mortgage to be paid off by the project owner at an interest rate as low as one per cent. The reduction this made possible in monthly rents was designed to produce new or substantially rehabilitated rental or cooperative units for lower income households. Tenants contribute 25 percent of adjusted income or the basic rent, whichever is the greater. Beginning in 1974, HUD paid additional subsidies to cover the difference between the tenant's contribution and the actual costs of operating the project.

Rent Supplements

Federal payments to reduce rents for certain disadvantaged low income persons.

HUD may pay rent supplements on behalf of eligible tenants to certain private owners of multi-family housing insured by the Federal Housing Administration. The payment makes up the difference between 25 per cent of tenant's adjusted income and the fair market rent determined by HUD). However, the subsidy may not exceed 70 per cent of the HUD approved rent for the specific unit. HUD) may pay the supplements for a maximum term of 40 years.

Rehabilitation Programs (HCD)

Loans to assist rehabilitation in federally aided Community Development Block Grant, Urban Homesteading (Section 810), Urban Renewal and Code Enforcement areas.

Direct federal loans finance rehabilitation of residential, mixed use, and nonresidential properties in the above areas certified by the local government. By financing rehabilitation to bring the property up to applicable code, project or plan standards, the loans prevent unnecessary demolition of basically sound structures. A loan may provide for insulation and installing of weatherization items. Loans may not exceed \$27,000 per dwelling unit or \$50,000 for nonresidential properties and the actual amount of a loan may be less, depending on certain factors.

SOURCE: Programs of HUD, U.S. Department of Housing and Urban Development, pp. 17, 31-33, 35-36; May, 1978.

U. S. DEPARTMENT OF AGRICULTURE – FARMERS' HOME ADMINISTRATION PROGRAMS

The Farmers Home Administration is authorized to make loans only in rural areas. Rural areas include open country and communities with population of not more than 10,000 which are rural in character and not closely associated with urban areas. Under certain conditions, FMHA is permitted to make housing loans in places of up to 20,000 in population which are not

contained within a standard metropolitan statistical area. Following is a brief description of FMHA housing loan and grant programs:

Section 502 Rural Housing Loans

The FMHA makes home ownership loans to eligible low and moderate income applicants including the elderly to purchase, build or repair homes located in rural areas. These loans are made to families who are without decent, safe and sanitary housing of their own. The amount of loan varies due to the families' needs and location; however, the home must be modest in size, cost and design. The current income limits that applicants must meet in order to qualify for a Rural Housing loan is an adjusted annual income of \$15,600*. Families with adjusted annual incomes of less than \$11,200* may qualify for an interest subsidy which we can interest credit. However, in no case can FMHA reduce the borrower's loan payment to less than that required if the loan were amortized at one per cent interest rate. The current interest rate is 8-1/2 per cent* with terms up to 33 years. A family must have sufficient income to pay necessary family living expenses, payments on the proposed loan (including insurance and real estate taxes) payments on other debts, and home maintenance expenses.

* subject to change

Section 504 Rural Housing Loan and Grant

This program is designed to assist very low income owner-occupants in rural areas who do not qualify for Section 502 loans to repair or improve their dwellings to make such dwellings safe and sanitary and remove hazards to the health of the occupants. A grant may be made only to an applicant that is 62 years of age or older and has an income so low that he/she cannot repay any part of a Section 504 loan. The interest rate for loans under this program is one per cent. The loan, loan and grant, or grant may not exceed \$5,000. The loan will be scheduled for repayment in accordance with the applicant's ability to pay but not to exceed 20 years.

Section 515 Rural Rental Housing Loans

FMHA also has a Rural Rental Housing loan program for the financing of multi-family housing projects in rural areas. The current interest rate is 8-1/2 per cent (subject to change), but it may be reduced to as low as one per cent if tenants of the project are of low income and the borrower is a nonprofit type organization or one that agrees to operate on a limited profit basis. Rental Assistance can further reduce rental rates to 25 per cent of a tenant's adjusted monthly income. (For tenants with annual adjusted incomes of \$11,200 or less – subject to change.) The maximum repayment period is 50 years. In order for a tenant to occupy a rental unit financed under the Rural Rental Housing program, non-senior citizens must have an annual adjusted family income not to exceed \$15,600 (subject to change). There is no maximum income limit for senior citizens aged 62 years or older.

SOURCE: U.S. Dept. of Agriculture, Farmers' Home Administration "Rural Housing Programs"

EXPLANATION OF DATA

HUD Programs

Conventional Low Rent Public Housing – The number of conventional housing units owned by the area’s public housing authorities.

Section 8 – The number of renter households receiving Section 8 rent certificates as a result of activities of the area’s public housing authorities, the State of Oregon Housing Division, HOD, the MUD Section 236 program and private developers.

Section 23 – The number of renter households residing in Section 23 units, operated by the area’s public housing authorities.

Section 202 – The number of Section 202 units built (and committed to be built) with long term subsidized direct loans.

Section 235 – The number of owner households with Section 235 mortgage assistance subsidies.

Section 236 – The number of Section 236 units which were built with mortgage insurance, interest reduction and operating subsidies less the Section 8 units in the program. The Section 2365 units have a certain number of households receiving Section 8 rent certificates in them, but these households have been subtracted from the Section 236 total and added to the Section 8 figure. Only those Section 236 units without Section 8 households in them are tabulated here.

Rent Supplements – The number of renter households receiving rent supplements.

Rehabilitation Programs – The number of units receiving rehabilitation loans through the HUD Block Grant program since July of 1975.

APPENDIX 19

SUMMARY OF ASSISTED HOUSING IN GRESHAM

No.	Project	Address	Agency	Eligible	Units	Subsidy Program
1	Aldercrest	21900 S.E. Alder Dr.	HUD	Elderly	68	Section 8, low and moderate income
2	East County Project	17527 S.E. Pine St.	HUD	Handicapped	7	Section 8, elderly (disabled, handicapped)
3	East Fair Terrace	438 N.W. Division St.	HUD	Elderly	100	Section 8, elderly (disabled, handicapped)
4	Eastwood Court	18268 S.E. Yamhill St.	PHA	Family	30	Low rent public housing
5	Fir Acres	19411 S.E. Yamhill St.	PHA	Family	30	Low rent public housing
6	Gresham Manor	2895 E. Powell Valley Rd.	SHA	Elderly	104	Section 8, elderly (disabled, handicapped)
7	Pinewood Apartments	18503 E. Burnside St.	HUD	Elderly	26	Section 8
8	Powell Vista Manor	4125 S.E. 182 nd Ave.	HUD	Elderly	71	Section 8, elderly (disabled, handicapped)
9	Stark Manor	628 S.E. 217 th Ave.	PHA	Family	30	Low rent public housing
10	Villa North	4501 W. Powell Blvd.	HUD	Elderly	32	Section 8, low and moderate income

APPENDIX 20

INDUSTRIAL/COMMERCIAL LANDS INVENTORY METHODOLOGY

Introduction

Industrial, commercial and residential land use data was collected from October 1986 through January 1987 for the Gresham Planning area. The data was used to address both the Goal 9 and Metropolitan Housing Rule requirements for Periodic Review. The majority of information was obtained through field observations. Field information was recorded on a set of Multnomah County Assessor's quarter section maps, which are archived in the Community Development Division at Gresham City Hall. Statistical calculations are, in part, recorded on these maps, as well as in the Periodic Review data files.

Additional information for the inventories was obtained from the County Assessor's Parcel System, and a set of 1" = 400' aerial photographs taken in June 1986. Information on residential lot development was also obtained from city records maintained on subdivision plats. Raw data from these sources is included in the Periodic Review data files.

Acreage measurements were calculated manually, using geometric formulas and assessor's area figures to estimate acreage or square footage for all parcels. Areas affected by slope constraints were estimated from contour spacing on 1:24,000 USGS quadrangles; this information was overlaid on the quarter section maps in order to factor the development constraints in the calculations. Flood plain information was transferred to the quarter sections from existing City Code Maps. A combination of Gresham land use districts and Multnomah County zoning was used until the new designations were determined during Periodic Review.

Industrial and Commercial Lands

The following is a summary of the process used in compiling an inventory of vacant and underutilized industrial and commercial lands in the planning area.

All parcels within commercial or industrial land use districts were field checked to determine existing land use. Existing land uses were recorded directly on assessor's quarter section maps, using SIC categories and codes. Area calculations were then derived for each quarter section map according to land use type and location. From these figures, non-conforming uses and vacant lands were identified and summarized for the Goal 9 inventory requirement.

Once the Goal 9 lands were identified, the quarter section field maps were used in conjunction with natural and cultural resource inventories, flood plain and hillside constraint information, public facilities maps and CIP proposals to tabulate additional information required in the buildable lands inventory.

In addition, each site is evaluated in terms of serviceability. Serviceability includes streets, sanitary sewers, water, and access to storm sewers. Sites are considered serviceable when the service is extended to or adjacent to the site, and has the capacity to serve a development (for example, adequately size trunk lines, or adequate treatment facilities).

The inventory was updated to January 1, 1989, using design review records, and will be updated annually until the next Periodic Review.

Detached Residential Lands

The following is a summary of the methodology used in calculating the amount of developed and buildable detached housing lands within, the planning area.

A manual count of developed and vacant lots from subdivision plats was correlated to information from the county parcel system describing vacant subdivision parcels. Discrepancies between the two counts were then resolved using June 1986 aerial photography. Areas not included in the parcel system or subdivision plats were inventoried using aerial photography. This included all lands remaining designated for detached housing in city of county plans.

All parcels were inventoried on quarter section maps, and those greater than 14,000 square feet were noted. When parcels of this size were vacant or contained only one dwelling unit, they were considered to be underutilized, and capable of future development at one unit per 7,000 square feet.

To incorporate the impact of necessary road development on total developable acreage, a standard area of twenty percent was deducted from each buildable parcel's acreage before determining the potential future units. When converting the net acreage to potential units, the unit calculation is rounded down to the next whole number.

Special calculations were made for buildable lands in slope areas, flood plain, and within 275 feet of arterial streets as well as property with an Open Space designation. Under Gresham's 1980 Comprehensive Plan, lands with 15 to 35% slope are developable at one dwelling unit per 14,000 to 29,000 square feet; lands with 35% slope or greater may only be developed with a single unit per lot of record.

ATTACHED RESIDENTIAL LANDS

The following is a summary of the methods used to inventory developed and buildable moderate and high density residential lands in the Planning Area.

Field checks were made of all lands designated for attached housing, with observations recorded on quarter section maps. Developed parcels were identified, and the number of existing units was inventoried. Vacant or underdeveloped lands were evaluated according to development potential calculations. In most cases, the gross acreage of a site was divided by the maximum allowed density to determine development potential. Since slope constraints and flood plain only affect a few sites, these areas were simply deleted from the buildable lands inventory as was land with an Open Space designation. For areas in the MDR24 designation, the total parcel area is thus divided by 1,815 square feet to determine potential units. For areas in the HDR-60 district, the total parcel area is divided by 726 square feet. Because the OFR, MDR-12, TD and CUC districts allow mixed uses, they were not included in the buildable attached housing lands for the Metropolitan Housing Rule.

APPENDIX 21

COMMERCIAL ND INDUSTRIAL LAND USE INVENTORY

GRESHAM PERIODIC REVIEW

Data Sources

The land use inventory was created using information from extensive field research, aerial photography, design review applications and building permit records. Beginning in 1989 a monitoring system will be used to maintain the inventory.

Industrial and Commercial Lands

The 1986 Land use Inventory has been updated to address economic development factors required for periodic review; two summary products have been created:

- Economic Development Opportunities map showing individual sites
- Index to Individual Sites by number showing acreage, plan designation, public facilities deficiencies, arid natural and cultural site constraints.

The index evaluates commercial and industrial sites larger than one acre according to the availability of public facilities and the presence of development constraints.

Acreage is rounded to the nearest whole acre. Contiguous parcels of land that form a logical site for development and have the same plan designation have been inventoried together. Public Facility deficiencies are noted when adequate streets, sewers, water and storm drainage are not provided to or adjacent to the site. When applicable, the percentage of the site affected by flood plain is included, as well as the percentage of the site estimated to have slopes greater than 5% (although no site exceeds 15%). The presence of historic resources, natural resources or soil constraints is also noted, although the extent of natural resource arid soil constraints will not be determined until development is proposed for a site. The index also includes specific footnotes to facility and site constraint comments.

The index to sites is followed by a listing of legal descriptions for each site.

Site#	Location (& Legals)	Designation	Acreage	Public Facilities						Constraints			
				Street	Sewer	Water	Drain	%FP	%Slope	NR	H	SLS	UW
113	SW corner Roberts/Hogan	GC	1										
114	West Hogan/South Roberts	LI	16		P	P							W
115	SW corner Anderson/Orient	NC	2										
116	SE corner Anderson/Orient	NC	1										
117	SW corner Powell/282 nd	NC	1										
118	SE corner Hogan/Palmquist	HI	57		P	P							W
119	NW corner Orient/Kane	GC	1										
120	NW corner Palmquist/Kane	GC	1										
121	SW corner Orient/Palmquist	GC	4										
122	SE corner Lusted/282 nd	NC	1		N								
123													
124													
125													

Index to Comments

- P: Facility to Site is Proposed in 5-Year CIP.
- N: Facility Not Available at Site.
- N1: These properties are close to the Columbia and can pump stormwater directly into river.
- N2: These properties will be served by a major on-site wastewater line that is not in the 5-Year CIP.
- N3: Water lines on 212th are inadequate.
- F: Significant storm drainage issues are identified in the Fairview Creek Basin.
- R1: Columbia Slough NR site.
- R2: Fujitsu Lakes NR site.
- R3: Fairview Creek Wetland NR site.
- R4: Johnson Creek Riparian Strip NR site.
- H1: A Class I historic site is located on this parcel.
- S1: These sites are severely to very severely limited by existence of poorly drained Rafton and Sauvie soils.
- W: May contain wetlands that are affected by state or federal wetland regulations.

LEGAL DESCRIPTIONS OF COMMERCIAL/INDUSTRIAL INVENTORY

- SITE 1 Section 20, 1N-3E
Tax Lots 17, 58, 59, 52, 38, 41, 24, 6

Section 29, 1N-3E
Tax Lot 6
- SITE 2 Section 20, 1N-3E
Tax Lots 15, 60, 8

Section 29, 1N-3E
Tax Lot 89
- SITE 3 Section 19, 1N-3E
Tax Lots 26, 47
- SITE 4 Section 29, 1N-3E
Tax Lots 7, 22, 6, 89
- SITE 5 Section 30, 1N-3E
Tax Lots 31, 88
- SITE 6 Section 29, 1N-3E
Tax Lots 183, 87, 29, 50, 83, 55, 8, 125, 79
- SITE 7 Section 20, 1N-3E
Tax Lot 53

Section 29, 1N-3E
Tax Lot 51
- SITE 8 Section 30, 1N-3E
Tax Lots 32, 3

Section 29, 1N-3E
Tax Lots 51, 9
- SITE 9 Section 30, 1N-3^E
Tax Lot 44
- SITE 10 Section 30, 1N-3^E
Tax Lots 69, 81, 164, 83, 169
- SITE 11 Section 29, 1N-3E
Tax Lot 61
- SITE 12 Section 29, 1N-3E
Tax Lot 49

SITE 13 Section 29, 1N-3E
Boyd Industrial Plaza, Block 1, Lot 1, 2, 3, 4
Block 2, Lot 1, 2

SITE 14 Section 29, 1N-3E
Tax Lot 1

SITE 15 Section 29, 1N-3E
Tax Lot 53
Section 28, 1N-3E
Tax Lots 124, 48, 58, 17, 18, 19

SITE 16 Section 29, 1N-3E
Tax Lots 15, 62, 106, 77
Section 29, 1N-3E
NE corner of Tax Lot 1

SITE 17 Section 30, 1N-3E
Tax Lot 187
Banfield Corporate Park Tract "F"

SITE 18 Section 30, 1N-3E
Banfield Corporate Park Block 13, Lots 1, 2, 3, 4

SITE 19 Section 30, 1N-3E
Banfield Corporate Park Block 12, Lot 17

SITE 20 Section 30, 1N-3E
Banfield Corporate Park Block 10, Lot 1
Banfield Corporate Park Block 9

SITE 21 Section 30, 1N-3E
Tax Lot 151

SITE 22 Section 30, 1N-3E
Tax Lot 19

SITE 23 Section 30, 1N-3E
Multhauf Acres Blocks 9, 10, 11

SITE 24 Section 29, 1N-3E
Tax Lot 100

SITE 25	Section 29, 1N-3E Tax Lot 72, 122
SITE 26	Section 29, 1N-3E Tax Lot 114
SITE 27	Section 29, 1N-3E San Rafael Industrial Park Blocks 1, 2
SITE 28	Section 29, 1N-3E Tax Lot 43, 39, 41, 27
SITE 29	Section 29, 1N-3E Tax Lots 47, 45, 44
SITE 30	Section 29, 1N-3E Tax Lots 35, 81, 23, 108
SITE 31	Section 31, 1N-3E Tax Lot 285, 267 Sommerwood Block 1, Lot 1
SITE 32	Sommerwood Block 4, Lot 2
SITE 33	Section 31, 1N-3E Tax Lots 17, 18
SITE 34	Section 31, 1N-3E Tax Lots 135, 14, 118, 117
SITE 35	Section 32, 1N-3E Talbot Block 5, Lots 3, 4
SITE 36	Talbot Block 3, Lots 3, 4, 5, 8, 9, 10
SITE 37	Talbot Block 2, Lots 2, 3, 4, 5, 6, 7, 8, 9, 10
SITE 38	Section 33, 1N-3E Tax Lot 45
SITE 39	Section 33, 1N-3E Tax Lot 13 Newell Park Block 17, Lots 1, 2, 3, 4, 5 Clear Creek Business Park Block 1, Lots 1, 2

SITE 40 Section 33, 1N-3E
Clear Creek Business Park Block 2, Lot 1

SITE 41 Section 34, 1N-3E
Tax Lot 7

SITE 42 Section 34, 1N-3E
Tax Lots 6, 5, 36, 10, 76, 28, 59, 13, 14, 18

SITE 43 Section 34, 1N-3E
Tax Lot 16

SITE 44 Section 34, 1N-3E
Tax Lots 41, 128, 54, 11, 71, 12, 17
Southern portion of Tax Lots 42, 43

SITE 45 Western portions of Eastwood Block 12

SITE 46 Section 34, 1N-3E
Tax Lot 2

SITE 47 Section 5, 1N-3E
Tax Lot 4, 3, 11
Eastwood, east ½ of Block 1

SITE 48 Eastwood, south ½ of Block 24

SITE 49 West Ruby Junction Blocks 27, 28, 29

SITE 50 Section 5, 1N-3E
Tax Lots 67, 32, 66, 53, 29

SITE 51 Section 4, 1S-3E
Tax Lots 16, 101, 217

SITE 52 Section 5, 1S-3E
Vance, easterly ½ of block 15

SITE 53 Section 4, 1S-3E
Tax Lots 99, 1, 155, 71, 78

SITE 54 Section 4, 1S-3E
Tax Lot 65

SITE 55 Section 3, 1S-3E
Tax Lots 104, 110, 109

SITE 56 Section 3, 1S-3E
Tax Lot 47

SITE 57 Section 2, 1S-3E
Eastern ½ of Tax Lot 72

SITE 58 Section 6, 1S-3E
Tax Lot 67

SITE 59 Section 5, 1S-3E
Tax Lot 1

SITE 61 Section 5, 1S-3E
Block 23, Tax Lot 7
Section 5, 1S-3E
Block 24, Tax Lot 8
West Ruby Junction Blocks 19, 20, 21, 22

SITE 62 West Ruby Junction Blocks 14, 15, 16, 17, 18
Tax Lot 1 of Block 15
Tax Lot 5 of Block 14

SITE 63 Section 5, 1S-3E
Tax Lot 76

SITE 64 Section 5, 1S-3E
Tax Lots 8, 18, 87
Ruby Junction Blocks 1, 2, 3, 4, 5, 6

SITE 65 Section 5, 1S-3E
Tax Lots 89, 97 10

SITE 66 Section 4, 1S-3E
Tax Lots 29, 144, 145, 146, 147, 148

SITE 67 Section 4, 1S-3E
Western Portion of Tax Lots 23, 24

SITE 68 Section 4, 1S-3E
Tax Lots 34, 130, 237, 30, 118, 38, 39, 40, 41, 42, 47, 48, 49, 53, 54, 55, 156

SITE 69 Section 4, 1S-3E
Tax Lots 45, 87, 75, 81, 85

SITE 70 Section 3, 1S-3E
Tax Lots 18, 79

SITE 71 Section 3, 1S-3E
Tax Lot 16

SITE 72 Section 3, 1S-3E
Cleveland Addition, Block 17 and Tax Lot 7 of Block 18

SITE 73 Section , 1S-3E
Tax Lot 18 and portion of 63

SITE 74 Section 2, 1S-3E
Tax Lot 98

SITE 75 Section 7, 1S-3E
Tax Lots 175, 74, 183, 349, 248, 502

SITE 76 Section 8, 1S-3E
Tax Lots 51, 98, 2, 130

SITE 77 Section 5, 1S-3E
Southeast corner of Vance Block 15

SITE 78 Section 8, 1S-3E
Tax Lots 11, 115, 24
Bryan Block 8, easterly portion of Tax Lot 1

SITE 79 Section 9, 1S-3E
Tax Lot 241
Section 10, 1S-3E
Tax Lot 471

SITE 80 Section 9, 1S-3E
Tax Lot 7

SITE 81 Section 10, 1S-3E
Tax Lots 189, 195, 198, 190, 178

SITE 82 Section 10, 1S-3E
Tax Lots 180, 185, 252, 186, 187, 181, 188
Clanahans Addition Block 3, Lots 3, 4, 5, 6, 7, 8, 9

SITE 83 Clanahans Addition Block 2, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

SITE 84 Clanahans Addition Block 1, Lots 1, 5, 6, 7, 8, 9

SITE 85 Section 10, 1S-3E
Tax Lots 52, 51, 620, 618, 205, 212

SITE 86 Section 10, 1S-3E
Tax Lots, 244, 35, 34, 33, 32, 248, 249, 231, 30, 264, 197, 243, 28, 27, 305, 26

SITE 87 Section 10, 1S-3E
Tax Lots 599, 22

SITE 88 Section 10, 1S-3E
Mt. Hood Addition Block 3, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

SITE 89 Section 10, 1S-3E
Mt. Hood Addition Block 2, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

SITE 90 Section 10, 1S-3E
Tax Lot 227

Zenith Addition Block 1, Lots 1, 2, 3, 4, 5, 6, 7
Zenith Addition Block 2, Lots 1, 2, 3, 4, 5, 6, 7

SITE 91 Section 10, 1S-3E
Tax Lots 1, 2 of Cleveland Addition

Block 4, Lots 1, 2, 3, 4, 5, 6, 7
Block 5, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

SITE 92 Section 10, 1S-3E
Tax Lots 332, 473, 182

SITE 93 Bristol Block 3, Lots 7, 8, 9, 30, 31, 32

SITE 94 Section 10, 1S-3E
Tax Lots 284, 428

SITE 95 Section 10, 1S-3E
Tax Lot 18

Carlson's Addition Block 1, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
Mildred's Addition Block 1, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

SITE 96 Zenith Addition Blocks A, B, C, D

SITE 97 Section 10, 1S-3E
Tax Lots 589, 194, 632, 554

SITE 98 Section 10, 1S-3E
Tax Lot 1

SITE 99 Section 11, 1S-3E
Tax Lot 2 of Daniel Acres, Blocks 1, 2
Tax Lots 1, 3, 4, 5, 10, 11, 12, 19 of Daniel Acres, Blocks 3, 4, 5, 6, 7, 8

SITE 100 Section 11, 1S-3E
Tax Lots 15, 16, 17 of Daniel Acres, Blocks 19, 22

SITE 101 Section 7, 1S-3E
Tax Lots 443, 444

SITE 102 Section 8, 1S-3E
Tax Lot 33

SITE 103 Section 8, 1S-3E
Tax Lots 21, 117, 39, 90

SITE 104 Section 10, 1S-3E
Tax Lot 1, 289, 324

SITE 105 Shoemakers Addition
Tax Lot 5 of Block 5
Tax Lot 1 of Block 6
Tax Lot 1 of Block 7

SITE 106 Section 11, 1S-3E
Tax Lot 179

SITE 107 Section 11, 1S-3E
Tax Lots 55, 70

SITE 108 Section 11, 1S-3E
Southerly portion of Tax Lot 51

SITE 109 Section 18, 1S-3E
Tax Lots 2, 62, 73

SITE 110 Section 18, 1S-3E
Tax Lot 57

SITE 111 Section 17, 1S-3E
Tax Lots 162, 89, 91
Cedarville Block 5, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Cedarville Block 6, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
Cedarville Block 7, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Cedarville Block 8

SITE 112 Section 17, 1S-3E
Tax Lot 74
Section 8, 1S-3E
Southern Portion of Tax Lot 24
Cedarville Block 2, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16...19, 20
Cedarville Block 1, Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

SITE 113 Section 15, 1S-3E
Tax Lot 113

SITE 114 Section 15, 1S-3E
Tax Lots 86, 22, 132

SITE 115 Section 13, 1S-3E
Tax Lot 160

SITE 116 Section 13, 1S-3E
Tax Lot 72

SITE 117 Section 13, 1S-3E
Tax Lot 4

SITE 118 Section 14, 1S-3E
Tax Lots 24, 75, 76, 82, 78, 26, 65, 199

SITE 119 Section 14, 1S-3E
TAX Lots 154, 7

SITE 120 Section 14, 1S-3E
Tax Lots 172, 137, 83, 63

SITE 121 Section 14, 1S-3E
Tax Lots 164, 106
Northern portion of Tax Lot 12

SITE 122 Section 18, 1S-3E
Tax Lots 40, 57

APPENDIX 22

BASELINE AND HIGH GROWTH EMPLOYMENT FORECAST METHODOLOGY

Baseline Employment Forecast Methodology

Employment forecasts for the Portland metropolitan area and Multnomah County were derived from Metropolitan Service District (METRO) forecasts using the following methodology:

1. Forecasts to the years 1990 and 2005 for Multnomah County and the census tracts within the urbanized East Multnomah County study area were provided by METRO for the categories retail and non-retail. METRO forecasts for the entire metro area were provided for categories similar to SIC divisions. For some manufacturing categories forecasts were provided in a form disaggregated to 2-digit groups. (Note: The Portland metropolitan area is defined as the four counties of Multnomah, Clackamas and Washington in Oregon and Clark in Washington).
2. For the baseline scenario these forecasts were further disaggregated as necessary to allocate projected employment among the four land use codes of heavy/moderate industrial, light industrial, commercial office/service and commerce retail.

A shift/share technique was applied to OED employment data for the Tri-County and Multnomah County to disaggregate the METRO forecasts for the years 1990 and 2005. This technique involves:

- a) Determination of Multnomah County's share of Tri-County employment in 1979 and 1985 using Oregon Employment Division (OED) employment files.
- b) Calculation of the "shift" in Multnomah County's shares between 1979 and 1985.
- c) Forecasting future shifts to 1990 and 2005 in Multnomah County's employment shares, based on historical experience.

It is noted that 1979 was used as a base year in this shift/share analysis, since this was a year of high employment for Multnomah County prior to the beginning of the last recession.

3. Forecasts of Multnomah County shares of Tri-County derived from OED data (resulting from step 2 above) were applied to the 1990 and 2005 Metropolitan Service District forecasts for the Portland metropolitan area (adjusted for Clark County employment). This step results in a disaggregation of the 1990 and 2005 METRO employment forecast for Multnomah County to more detailed categories necessary for allocation to four land use types.
4. For the urbanized East Multnomah County area census tract data was allocated for tracts not completely within the study area based on a review of existing businesses in the split tracts. Shifts in East Multnomah County employment as a share of Multnomah County

from 1980 and 1985 (using METRO data) were used to forecast 1990 and 2005 employment as a share of Multnomah County in the disaggregated categories.

5. The 1990 and 2005 category forecasts (resulting from step 3 and 4 above) for both Multnomah County and East Multnomah County were then adjusted to assure consistency with the METRO forecast totals.

High Employment Forecast Methodology

The high growth scenario reflecting success at recruiting industries as targeted by Pacific Power, the Oregon Economic Development Department and Karen Myers and Associates. This scenario also applies the direct, results of OED data shift/share analysis between 1979 and 1985 when these result in forecast employment levels above the METRO control totals.

The high growth scenario puts urbanized East Multnomah County's employment at 125% of the baseline situation by 2005.

Under the high growth scenario, the influence of pursuing a target industry strategy would be felt. Over a twenty year period the light industry category would experience additional growth more than 5 times that of the baseline case due to recruitment of target or growth industries. Heavy/moderate industries could increase a factor of 3, and commercial office/services could gain an additional 68% above the baseline case.

In short term through 1990, the difference between high growth and baseline conditions for light industry is even greater. Under baseline conditions, virtually no net employment gains are expected. With high growth, up to 2,600 additional jobs could be added. Achieving this level of new activity would probably require, among other things, reactivation of both the delayed Tektronix and Fujitsu projects.

For light industrial, the high scenario additionally assumes that Multnomah County will be able to capture 25% of metropolitan area electrical manufacturing employment and that urbanized East Multnomah County can achieve a 50% share of Multnomah County. This compares to current 1985 employment shares for Multnomah County of 12% of METRO and for urbanized East Multnomah County of 4% of Multnomah County.

The high retail employment forecast is based on a correlation of retail employment to all other employment. There was a 99% correlation between changes in retail employment per population and changes in all other employment per population. In the 1985-2005 period, high growth could mean that retail jobs account for 37% of total employment growth.

For self-employed the high forecast was based on the forecast high growth scenario for the other employment categories weighted by the self employment proportion in that category.

APPENDIX 23

GRESHAM' S SHARE OF STUDY AREA' S EMPLOYMENT GROWTH

The City of Gresham's share of the study area's employment growth was disaggregated from employment forecast data contained in METRO's 1985 Regional Population and Employment Forecast to 1990 and 2005. The METRO forecast contains employment forecasts on a census tract basis. The estimate of Gresham's employment share was based on a comparison between employment totals for all census tracts within the study area and the census tracts which are located within the City of Gresham jurisdictional boundaries. The census tracts which lie within the Gresham city limits contain 70% of the forecasted study area's employment growth through the year 2005.

APPENDIX 24

ASSIGNMENT OF EMPLOYMENT CATEGORIES BY STANDARD INDUSTRIAL CODES
TO LAND USE TYPES

<u>SIC CODE</u>	<u>DESCRIPTION</u>	<u>LAND USE CATEGORY</u>
1-9	Agriculture/Forest/Fishing	N/A
10-14	Mining	HMI
	CONSTRUCTION	
15	Building Construction	HMI
16	Other Construction	HMI
17	Special Tract Contractors	LI
	MANUFACTURING	
20	Food/Kindred Products	LI
22	Textile Mill Products	HMI
23	Apparel/Fabric Products	HMI
24	Lumber/Wood Products	HMI
25	Furniture and Fixtures	LI
26	Paper and Allied Products	HMI
27	Printing and Publishing	LI
28	Chemical Products	HMI
29	Petroleum Refining	HMI
30	Rubber/Plastics	HMI
31	Leather Products	LI
32	Stone/Clay/Glass/Concrete	HMI
33	Primary Metal Products	HMI
34	Fabricated Metal Products	HMI
35	Machinery, not electrical	HMI
36	Electrical/Electronic	LI
37	Transportation Equipment	HMI
38	Measuring Equipment	LI
39	Miscellaneous Products	LI
	TRANSPORTATION/COMM /UTIL.	
40	Railroad Transportation	HMI
41	Highway Transportation	HMI
42	Motor Freight Transport	HMI
43	U.S. Postal Service	OS
44	Water Transportation	HMI
45	Air Transportation	HMI
46	Pipe lines, not gas	LI
47	Transportation Services	LI
48 pt.	Communication, except 4811	OS
49	Electric/Gas/Sanitary	LI
50-51	Wholesale Trade	LI
52-59	Retail Trade	R
60-67	Finance/Insurance/Real Estate	OS

70-89 pt.	Services, ex part of 76, 88	OS
7623	Refrig/Air Cond Serv/Repair	LI
7692	Welding repair	LI
7694	Armature rewinding shops	LI
7699	Repair shops/services, NEC	LI
88	Private households	N/A
91-97	Public Administration	OS

HMI – Heavy/Moderate Industrial

LI – Light Industrial

OS – Commercial Office/Service

R – Commercial Retail

N/A – Not Applicable

Prepared by: Economic Development Services, May, 1987

SOURCE: The White Company

APPENDIX 25

EMPLOYMENT DENSITY CALCULATIONS

Economic Development Services reviewed a variety of sources for employment density data. With the exception of the heavy/moderate industrial and light industrial subcategories of manufacturing, those shown in Table A are directly from METRO.

For the industrial subcategories, the primary sources for employment densities besides METRO were the Oregon Economic Development Department, Growth Industries Survey, completed in December 1986, and a review of recent Portland metropolitan area investments by Economic Development Services in June 1987.

Heavy/moderate industrial firms sampled had an average of five employees per acre. Eight employees per acre resulted from a weighted average of firms, in the growth industries survey. The figure of eight was more consistent with our review of other sources.

For the light industrial category, our review of recent developments showed that the average was seventeen employees per acre. In this sample the range was from two to 55.

For comparison, light industrial employers targeted as growth industries and surveyed nationwide by the Oregon Economic Development Department had an average of ten employees per acre (weighted by average acres). Given the current turndown in the electronics industry, it is likely that many of these targeted firms will be less bullish in their land acre as being more indicative of realistic conditions for future development.

The employment density figures attempt to exclude land which is acquired for future potential expansion but not yet developed. Consequently, our estimates of future absorption are less than what the pattern of industrial land purchases in the early 1980s would indicate.

<u>SIC CODE</u>	<u>DESCRIPTION</u>	<u>LAND USE</u>	<u>EMPLOYEES/ACRE</u>
36, 38	Electrical Manu.	LI	25
20-39	Manufacturing, except electrical		13
		HMI	8
		LI	15
10-17	Construction & Mining	HMI/LI	35
50-51	Wholesale Trade	LI	10
40-49	Transportation/Comm./Utilities	HMI/LI/OS	141
70-89	Services	OS	101
52-59	Retail Trade	R	20
60-67	Finance/Insurance/Real Estate	OS	48
91-97	Government	OS	85

NOTES: The manufacturing, except electrical category was assigned 13 employees per acre by METRO. Economic Development Services subcategorized by land uses to eight employees per acre for heavy/moderate industrial and 15 employees per acre for light industrial based on review

of a sample of 1983 to early 1987 Portland metropolitan area investments and on the Oregon Economic Development Department, Growth Industries Survey, December, 1986.

PREPARED BY: Economic Development Services, June 1987.

SOURCE: Metropolitan Service District.

APPENDIX 26

METHOD FOR CALCULATION OF NEEDED NUMBER OF INDUSTRIAL AND COMMERCIAL SITES

To calculate the number of sites needed to accommodate the anticipated amount of industrial and commercial development the following methodology was used:

- The most frequent size for an industrial and commercial firm was derived from the 1987 East County Business Survey. The range of sizes of industrial firms are between 10,001 and 25,000 square feet and an average size of 17,500 square feet. The range of sizes of commercial firms is between 2,001 and 5,000 square feet or an average size of 3,500 square feet.
- In order to calculate the size of site to accommodate the average size industrial and commercial firms the parking and circulation standards and the required landscaping standards from the Gresham Community Development Plan were applied.
- The forecasted amount of industrial and commercial lands was then divided by average size commercial and industrial firm.

APPENDIX 27

HOUSING LAND USE INVENTORY

GRESHAM PERIODIC REVIEW

Data Sources

The housing land use inventory was created using information from extensive field research, aerial photography, design review applications and building permit records. Beginning in 1989 a monitoring system will be used to maintain the inventory.

Buildable Lands Inventory for Housing

According to legislative changes to the Plan Map made in 1988, the following factors of the Metropolitan Housing rule have been addressed with the land use inventory:

Housing Mix: The inventory is the basis for demonstrating the city's compliance with the required mix of buildable attached and detached residential land.

Housing Density: The inventory provides a summary of buildable residential land that demonstrates compliance with the required overall density for new housing.

The inventory shows the amount of buildable housing land per quarter section expressed in housing units. These unit totals can be converted to acreages by dividing them by the permitted housing density for each district. In addition, statistics for existing housing units and mobile homes are included.

Statistics showing the number of buildable acres eligible for mobile home development are included, as well as changes in the number of potential low density residential units resulting from the legislative amendments.

RESIDENTIAL LAND USE INVENTORY – DECEMBER 1988

MAP #	MDR-12	MDR-24	HDR-60	OFR	TD	EXISTING ATT.	EXISTING M.H.
2747						250	
2750							281
2847		550		120		186	
2848		70		28		134	
2850		90				114	
2946	50					54	
2947	12					52	
2948	29	280		31		444	
2949	218					334	
2950						20	
2951		84					
3046			302			212	
3047		207				289	26
3048	53	222	533		107	536	9
3049			785		444	312	80
3050	83	207			78	126	14
3051		393				28	
3055		24					
3147		47				76	
3148		46		9		139	
3149		496	1,043			373	
3150	56		513	42	68	111	95
3151	255					98	75
3152	101	172				217	
3153		103					
3154		351				236	
3155		193				155	
3156		370				215	
3248		20					
3249		142				14	
3251		408					
3252		47			3,124		
3253		35	539	22		14	
3254		379	53			176	
3255		31				317	
3256		150				494	
3348		42				113	
3350		130				27	
3351		28					
3352		58				100	
3353			317		455		
3354			374		703	71	

MAP #	MDR-12	MDR-24	HDR-60	OFR	TD	EXISTING ATT.	EXISTING M.H.
3355				12		343	90
3356		71				122	
3448		314				224	
3450		1,461					
3451		114				96	
3455	14	831		30		147	48
3456		267				133	
3549		457					
3554		163				25	
Sec. 13		694					
Sec. 14	568	1,074					
Sec. 23		147					
Sec. 18		853					
3548		487					
3053				99			
3054				88			
3452						377	
3454						47	
TOTALS	1,439	12,308	4,459	481	4,979	7,684	793
		16,767					

MAP #	LDR-7		LDR-5		MOBILE HOME ACRES	
	+	-	+	-	MAP #	ACREAGE
2847	63				2946	4.2
3047		15	22		2947	1.0
3148			41		2948	2.4
3350		110			3949	18.0
3450		149			3050	7.0
3549		76			3150	4.7
3649		352	492		3151	21.2
Sec. 14		308	432		3152	8.4
Sec. 18		178	249		3455	1.2
					Sec. 14	47.3
Subtotal	63	1,188	1,236	0		
Net Gain/Loss		1.125	1.236		TOTAL	119.8
LDR Gain			111			

APPENDIX 28

ECONOMIC DEVELOPMENT OPPORTUNITIES MAP

The Economic Development Opportunities Map is reproduced as a separate document. The map is a comprehensive inventory of commercial and industrial land.

APPENDIX 29

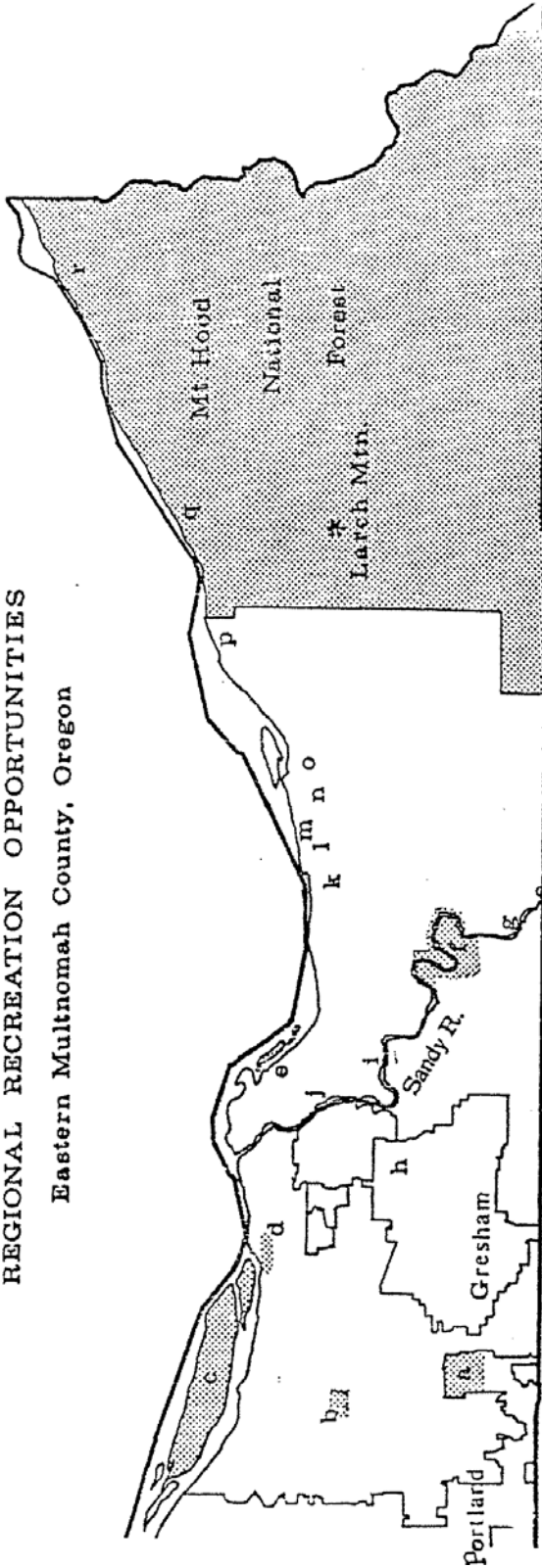
THERMAL POLLUTION

Summarized Temperatures in Johnson Creek 1970 – 1975*

<u>Sampling Location</u>	<u>Flow</u>	<u>Degrees Centigrade</u>	<u>Degrees Fahrenheit</u>
Mouth	High	5.5-16.0	41.9-60.8
	Low	11.5-15.0	52.7-59.0
Ochoco Avenue	H	5.5-11.0	41.9-51.8
	L	12.0-19.0	53.6-66.2
Crystal Spgs. Cr.	H	7.5-10.0	45.5-50.0
	L	12.0-15.0	53.6-59.0
Johnson Park	H	5.0-16.0	41.0-60.8
	L	11.5-15.0	52.7-59.0
S.E. 45 th	H	5.0-16.0	41.0-60.8
	L	11.5-14.0	52.7-57.2
Stanley Avenue	H	5.0-17.0	41.0-62.6
	L	11.5-14.0	52.7-57.2
Luther Road	H	4.5-18.0	40.1-64.4
	L	11.0-19.0	51.8-66.2
S.E. 92 nd	H	4.0-20.0	39.2-68.0
	L	12.0-16.0	53.6-60.8
S.E. 100 th	H	4.5-17.0	40.1-62.6
	L	16.5-27.0	61.7-80.6
S.E. 110 th	H	4.5-17.0	40.1-62.6
	L	11.5-21.0	52.7-69.8
S.E. 122 nd	H	4.5-17.0	40.1-62.6
	L	10.5-18.0	50.9-64.4
Foster Road	H	4.5-17.0	40.1-62.6
	L	10.0-17.0	50.0-62.6
S.E. 190 th	H	4.5-17.0	40.1-62.6
	L	11.5-16.5	52.7-61.7
Main St., Gresham	H	4.5-17.0	40.1-62.6
	L	15.5-21.0	59.9-69.8
Regner Road	H	4.5-17.0	40.1-62.6
	L	11.5-18.0	52.7-64.4
Hogan Road	H	9.5-16.0	49.1-60.8
	L	4.5-17.0	40.1-62.6

* Table is derived from “Summarized Water Quality Data – Johnson Creek” Table P.22 in Water Quality in Johnson Creek 1970-1975; State of Oregon Department of Environmental Quality; December 1975.

REGIONAL RECREATION OPPORTUNITIES
 Eastern Multnomah County, Oregon



- | | |
|---|--------------------------|
| City and County Recreation Areas | State Parks |
| a Powell Butte (Portland) | i Dabney |
| b Glendoveer Golf | j Lewis and Clark |
| c Government Island | k Portland Women's Forum |
| d Blue Lake Park | l Crown Point |
| e Flag and Gary Islands | m Rooster Rock |
| f Oxbow Park | n Talbot |
| g Indian John Island | o Shepperd's Dell |
| h Gresham Golf | p Benson |
| | q Almsworth |
| | r John Ycon |



APPENDIX 31

CITY PARK SYSTEM
JULY 15, 1988

NAME	SIZE (ACRES)	STATUS
Mini-Parks		
Hollybrook Park	2.4	Partially developed
Davis Park	2.6	Undeveloped
Total Mini-Parks	5.0	
Neighborhood Parks		
Aspen Highlands Park	4.0	Developed
Bella Vista	8.3	Developed
Butler Creek Park	3.5	Developed
Columbia View Park	8.2	Undeveloped
Hall Park	3.9	Developed
Kane Road Park	9.5	Developed
Kirk Park	5.7	Partially developed
North Gresham Park	12.5	Partially developed
Pat Pfeifer Barrier Free Park	4.8	Partially developed
Rockwood Central Park	9.4	Partially developed
South Rockwood Park	4.2	Partially developed
Thom Park	4.0	Developed
Total Neighborhood Parks	78.0	
Community Parks		
Main City Park	16.8	Developed
Red Sunset Park	15.3	Undeveloped
Total Community Parks	32.1	
Greenbelts/Open Space		
Kelly Creek Open Space	8.9	Undeveloped
Regner Road Open Space	8.7	Undeveloped
Walters Hill Open Space	27.0	Undeveloped
Johnson Creek Open Space	28.9	Undeveloped
Butler Creek Open Space	23.6	Partially developed
Hunters Highland Open Space	11.8	Undeveloped
Miscellaneous Areas	2.5	Undeveloped
Total Greenbelts/Open Space	111.4	
Total City Parks/Open Space	226.5	

APPENDIX 32

PARK, OPEN SPACE AND RECREATION LAND ACREAGE

	<u>Acreage</u>
City Park System	115.1
Dedicated Open Areas & Greenways	111.4
Private Common Areas (not including condominiums	15.9
Golf Courses (Private)	105.98
Reservoir Sites	25.82
Cemeteries	20.22
TOTAL*	<hr/> 394.42

* Does not include school sites or facilities

VOLUME 1 – Appendices 33 and 34

The following Volume I Appendices are repealed by Ordinance No. 1551, adopting the Gresham Transportation System Plan (as Volume 4 of the Community Development Plan) effective 8-21-02.

Appendix 33
Existing Gresham Area Bus Service (1986-1988)

Appendix 34
Weekday Bus Service

APPENDIX 35

SIGN BIBLIOGRAPHY

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American Planning Association, The Mechanics of Sign Control, PAS Report 354, October 1980.

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Nasar, Jack L., The effect of Sign Complexity and Coherence on the Perceived Quality of Retail Scenes, APA Journal, Autumn 1987.

Reed, Charles, AICP, A Complete Checklist for Writing a Signs Chapter in Your Zoning Ordinance, The Zoning Report for Planning and Zoning Professionals, ISSN 0748-0083, 2/85.

Also Referenced:

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Rohse, Mitch, Land-Use Planning in Oregon, Oregon State University Press.

Sign Industry Documents:

Electronic Display Systems, Promotional Brochure on Electronic Message Centers.

Institute of Signage Research, San Diego Study, Signage Quarterly, Volume 1, Number 1, 1978.

National Electric Sign Association, Guideline Sign Code.

National Electric Sign Association, Electric Awning Signs, Guideline Code.

Neon Products, Ltd., Uniform Sign Code.

The following sign ordinances are available for review:

City of Beaverton	3/86
City of Beaverton (old)	3/71
City of Eugene	7/86
City of Lake Oswego	7/85
City of Portland (Rewrite Project)	2/86
City of Portland (old)	1/83
City of Salem	1/85
City of San Diego	6/86
City of Sandy	8/82
City of Seattle	7/86
City of Tigard	1/83
City of Tualatin	12/82
Washington County	5/85

Also see sign studies The Mechanics of Sign Control and MIS Report – Sign Ordinances for additional sample ordinances.

APPENDIX 36

NOISE SOURCE INVENIORY

UNRESOLVED NOISE COMPLIANTS
RECEIVED BY THE DEQ FOR GRESHAM SINCE 1987

Technical Fabricators
620-A N.E. Cleveland Street
Gresham, Oregon

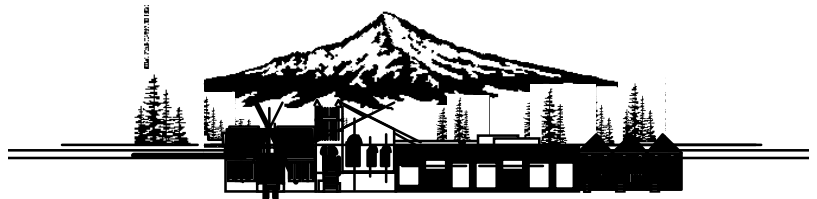
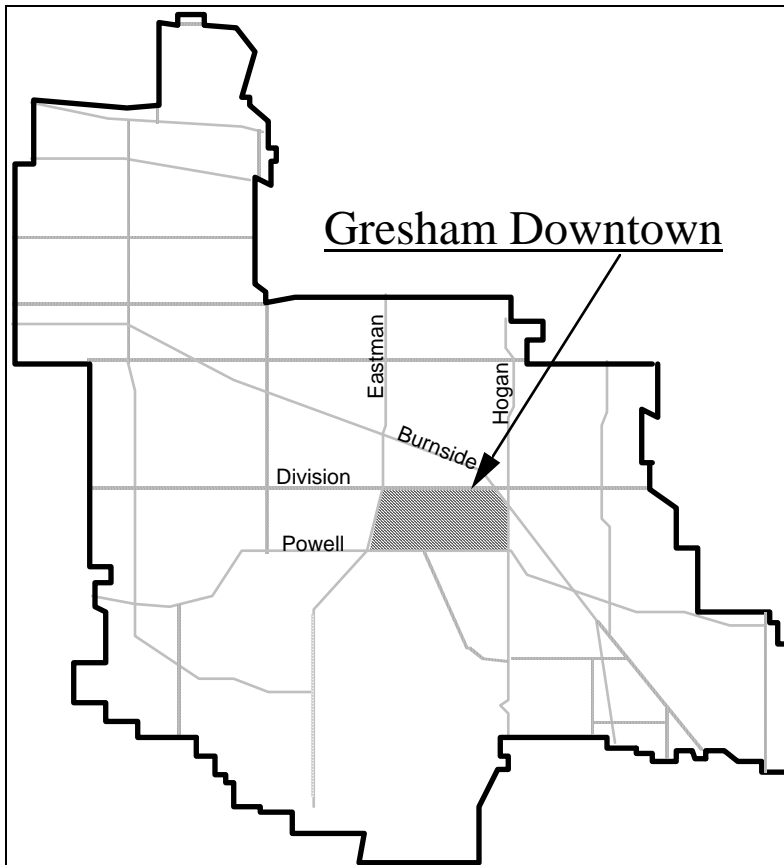
Portland Traction Company
Southeast 188th and Southeast Powell
Portland, Oregon

Rogers Construction Quarry
Southeast 195th and Yamhill Street
Gresham, Oregon

APPENDIX 37

(Added by Ord. 1354 adopted April 4, 1995; effective April 4, 1995)

Gresham Downtown Plan



City of Gresham
Community Development Department
April 1995

Gresham Downtown Plan

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Gresham Downtown Plan

Introduction

In 1993 the Gresham City Council directed staff of the city's Community Development Department to prepare a plan for the Gresham downtown area. The primary purpose of this plan was to carry out tasks contained in the Final Gresham 2020 Action Plan concerning the downtown area. Among the objectives of the 2020 Action Plan for downtown were the following:

- Provide for mixed-use zoning promoting residential use within commercial buildings;
- Plan for a light rail loop around the historic downtown core;
- Continue street improvements in the downtown core, incorporating undergrounding of utility lines, decorative lamp posts, wider sidewalks, and “bubbles” (curb extensions) at intersections;
- Provide for gateways at significant entrances to the downtown area;
- Acquire land and build parking structures to serve the downtown core;
- Establish architectural design guidelines and a design review committee for the downtown core;
- Improve pedestrian circulation throughout the downtown area, and connecting the core area with Main City Park;

Overall, the purpose of the 2020 Action Plan for the central Gresham area was to restore this area's role as the heart and focus of activity for the entire community, visualized as follows:

By 2020 Gresham will have strengthened the downtown core by encouraging multi-story office buildings and off-street parking. Increased densities in the downtown area create a compact commercial core that supports expanded transit services, utilizes the area's land base and services more efficiently, reduces the environmental impacts of development, and protects the surrounding neighborhoods from sprawl and conflicting uses. The area attracts shoppers and visitors from throughout the region, many of whom arrive and leave by convenient public transit.

In considering the directives of the Final Gresham 2020 Action Plan, and existing provisions of the city's Community Development Plan for central Gresham, it became clear that an integrated, long-term land use plan would need to be prepared for downtown. This plan would deal primarily with issues raised in the 2020 Action Plan, but would also address related matters with the objective of laying the groundwork for the successful conversion of the area from a district of outstanding potential to the vibrant, prosperous heart of the city envisioned in the 2020 Action Plan. Accordingly, the Gresham Downtown Plan includes proposals for new land use districts, new development standards, and a variety of new or upgraded public facilities. This plan also seeks to remove obstacles which may have discouraged or prevented the kind of growth which builds on the recent revival of the downtown core and takes advantage of the many unique attributes of this area. Implementation of the plan over the next 25 - 30 years will require the continuing involvement of the city, downtown-area property owners and residents, developers, interest groups such as the Gresham Downtown Development Association, other public agencies, and the entire citizenry of Gresham. This plan serves as evidence that the necessary involvement and commitment of these parties

exist to bring about a lively, multi-faceted downtown which will be a valuable asset not only to Gresham, but will also serve as center of economic and cultural activity for the east side of the metropolitan region.

Process and Public Involvement

The Gresham Downtown Plan evolved over an 18-month period beginning in the fall of 1993. Throughout that period, public involvement and comment on the plan was solicited through workshops, open houses, mailers, task force meetings, and periodic updates with the Planning Commission and the City Council.

This project began with a Downtown Design Charrette on August 31, 1993. This event was attended by downtown business owners, representatives of the City Council and the Planning Commission, several interested citizens, staff from Tri-Met, and representatives of the Gresham Downtown Development Association (GDDA). This charrette produced three alternative visions for the future of the downtown area which served as the basis for the initial phase of the project.

During the rest of that year city staff met monthly with the Planning Commission to discuss existing conditions within the downtown area and approaches for developing the plan. In late 1993 Metro began work on a Regional Design Images project, in which Peter Calthorpe Assoc. prepared prospective designs for mixed-use, transit-oriented districts in several locations around the region. One of these locations was central Gresham. City staff worked with Calthorpe Assoc. on this project, and adapted a number of elements from the Regional Design Images project for the Gresham Downtown Plan.

By January 1994 staff had prepared two alternative concept plans for the downtown area which were discussed and evaluated during a workshop meeting of the Planning Commission. These alternative concept plans were refined, and then presented to the public during an open house held in the Gresham Branch Library in February 1994. Approximately 700 downtown property owners were invited to this open house through a mass mailing. Input received from citizens at that open house resulted in development of a preferred concept plan the following month. The preferred plan was also accompanied by a draft set of development standards to be applied within the various sub-districts of the downtown area. These were initially discussed with the Planning Commission in April 1994. In order to ensure that the preferred concept plan and the draft development standards would be appropriate and workable, the Planning Commission appointed a task force to discuss and shape the details needed to prepare a final draft plan which would achieve the objectives set out at the beginning of this project. The Downtown Task Force included two Planning Commissioners and four representatives of GDDA. The task force met weekly with city staff through the summer of 1994. Meetings frequently included developers and real estate professionals from Gresham and around the region who discussed their own upcoming downtown projects, and offered suggestions for refining the preferred plan and standards.

By the end of August 1994 a final draft concept plan for the downtown was complete. It was presented to the public at another open house event in the Gresham Branch Library on September 1, 1994. As with the previous open house, this event was preceded by the mailing of some 700 notices to affected property owners within the downtown area. Both the draft plan and input received from the September 1 open house were presented and discussed with the Planning Commission and the City Council during a joint workshop held later that month. At the conclusion of that workshop the Council and the Commission directed staff to prepare the necessary language amending the Community Development Plan to adopt and implement the Gresham Downtown Plan. Prior to its adoption, the complete, draft Gresham Downtown Plan was considered formally by the Planning Commission and the City Council in public hearings.

Guiding Principles

Early in the downtown planning process, the objectives and purposes of the 2020 Action Plan were supplemented by additional principles to guide the design of mixed-use, neo-traditional neighborhoods and transit-oriented developments. These additional guiding principles were refined as drafts of the Downtown Plan were prepared, circulated for review, and revised. They are summarized below:

1. Mix residential and employment use with shopping and public facilities.
2. Encourage the most intensive uses close to transit stations:
 - High-density housing (up to 60 dwelling units per acre)
 - Moderate-density housing (e. g. 30 dwelling units per acre)
 - Retail Commercial
 - Office/Employment
3. Provide multiple, direct street connections to transit stops and shopping.
4. Design for pedestrians, without excluding the car.
5. Develop design guidelines for important streets and buildings.
6. Permit and encourage the mixing of residential and commercial uses in all areas.
7. Intensify development within walking distance (one-quarter mile) of MAX stations, especially around Central Station and a proposed new station on Main. Allow for reduced densities in areas more remote from MAX stations.
8. Encourage a wide variety of moderate- and high-density housing types, including row houses, garden apartments, condominiums, carriage houses, and podium apartments.
9. Seek an average density of at least 15 dwelling units per acre in new residential developments to support economic transit usage.
10. Where possible, encourage similar land use types and building scales to face each other across streets.
11. Preserve and promote the existing historic core, its notable design characteristics, and its commercial mix, dominated by small-scale, specialty retail and offices. Allow for enlargement of this traditional store-front environment throughout the central core area.
12. Except for auto-oriented commercial uses around the perimeter of the downtown area, seek a general inward orientation for the remainder of the downtown, with the following sub-areas maintaining distinctive, complementary characteristics:
 - The historic downtown core.
 - The Central Station area.
 - The Cleveland Station area.
 - A new MAX station at N. Main

- The Ava Avenue neighborhood
13. Acknowledge existing development patterns around the perimeter of the downtown area. Existing auto-oriented commercial uses on the perimeter will continue to serve passing traffic on adjacent arterials. Through re-development, encourage existing and new businesses on the perimeter to move closer to streets, and to also open to adjacent residential neighborhoods.
 14. Encourage re-development for more intensive commercial, residential, and mixed-use development throughout the downtown area, while preserving the traditional store-front character of the historic core.
 15. Create a "pedestrian-friendly" environment throughout the downtown by:
 - Encouraging all new buildings to be placed close to abutting sidewalks and streets, with parking placed behind, under, or to the side of buildings. The primary orientation of buildings should be to the street, rather than to parking lots.
 - Prohibiting blank walls where buildings abut public streets, and requiring door and window openings or other features to enhance attractiveness and pedestrian interest at ground level.
 - Regulating the size, placement, and appearance of parking lots.
 16. Extend key streets to enhance pedestrian and vehicular circulation, to break up over-sized blocks, to increase street frontage, and to extend the existing small-block grid beyond the historic core area.
 17. Include a "town square" public space to serve as a focal point for the downtown area. Design this space to be suitable for community-scale and regional events, such as a farmers market, and outdoor performances, promotional events, and displays. The town square should be convenient to MAX and close to the historic core.
 18. Provide for gateway treatments at various entrances to the downtown area to define the boundaries of downtown and to provide a greater sense of identity.
 19. Provide for neighborhood or pocket parks to serve downtown residents. These parks should be roughly .5-1 acre in size, and be located within easy walking distance of all residential units.

Downtown Plan Area

The boundaries of the Gresham Downtown Plan area are shown in Figure 1. This area encompasses all of the Historic Downtown and the “High-Density Core,” as identified in the 2020 Action Plan. It also includes additional territory to the east, taking in a total of 333 acres.

Among the factors which led to this delineation of the downtown area, two were paramount. First, there are four major and principal arterial streets which border this area: Eastman Parkway on the west, Division St. on the north, Hogan Rd. on the east, and Powell Blvd. on the south. These are all five-lane arterials, with widths of 80 - 90 feet, carrying high volumes of traffic. Overall, they form effective visual and functional barriers between the downtown area and adjacent neighborhoods. They also define an area within which pedestrian movement is convenient and safe, with the possibility of being further enhanced in the future. Properties along the south side of Powell Blvd. have been included in the plan area boundaries because of Powell’s strong relationship to the historic downtown core, and because of the existing pattern of mostly small to medium-scale commercial uses already in place on both sides of Powell Blvd. between Eastman Parkway and Hogan Rd.

The second factor which led to this delineation of the downtown plan area is the presence of the two existing, central area light rail transit stations - Central Station and Cleveland Station. There is also the potential for a future third station, on the MAX line adjacent to N. Main Ave. These stations present very important opportunities for future development which is more oriented to transit than to streets and the automobile. Access to transit is a crucial element of any attempt to create a thriving mixed-use district where pedestrian movement is encouraged as an alternative to reliance on the automobile. Virtually all of the downtown plan area lies within convenient walking distance (one-quarter mile) of these light rail stations and the City Hall Station, which lies just outside the boundaries of this area.

Given these boundaries, there is adequate space to encourage the enlargement of assets such as the downtown core, and abundant opportunity for the conversion of vacant and under-utilized properties near the light rail stations into more intensive uses which more fully fulfill the potential of the district.

Context of Downtown

This Gresham Downtown Plan is the latest in a series of planning efforts for this area, going back many years. Each plan has started with conditions as they existed at that time, and attempted to build on strengths to assure the future of this unique district within the city. Previous plans have focused on the downtown core, where the oldest and most dense concentrations of retail have been found.

A 1966 plan prepared for the city envisioned the Gresham Town Fair shopping center (built in 1987) in its actual location, and proposed the extension of a number of downtown streets to improve both pedestrian and vehicular circulation. Reflecting the times, this plan also placed a heavy emphasis on abundant off-street parking and other improvements assuming the continued dominance of the automobile as a means of arriving at, and traveling within, the downtown. Residential uses were to be segregated from commercial uses, although higher residential densities were proposed to the east and north of the historic core.



The Gresham Downtown Plan

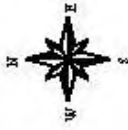
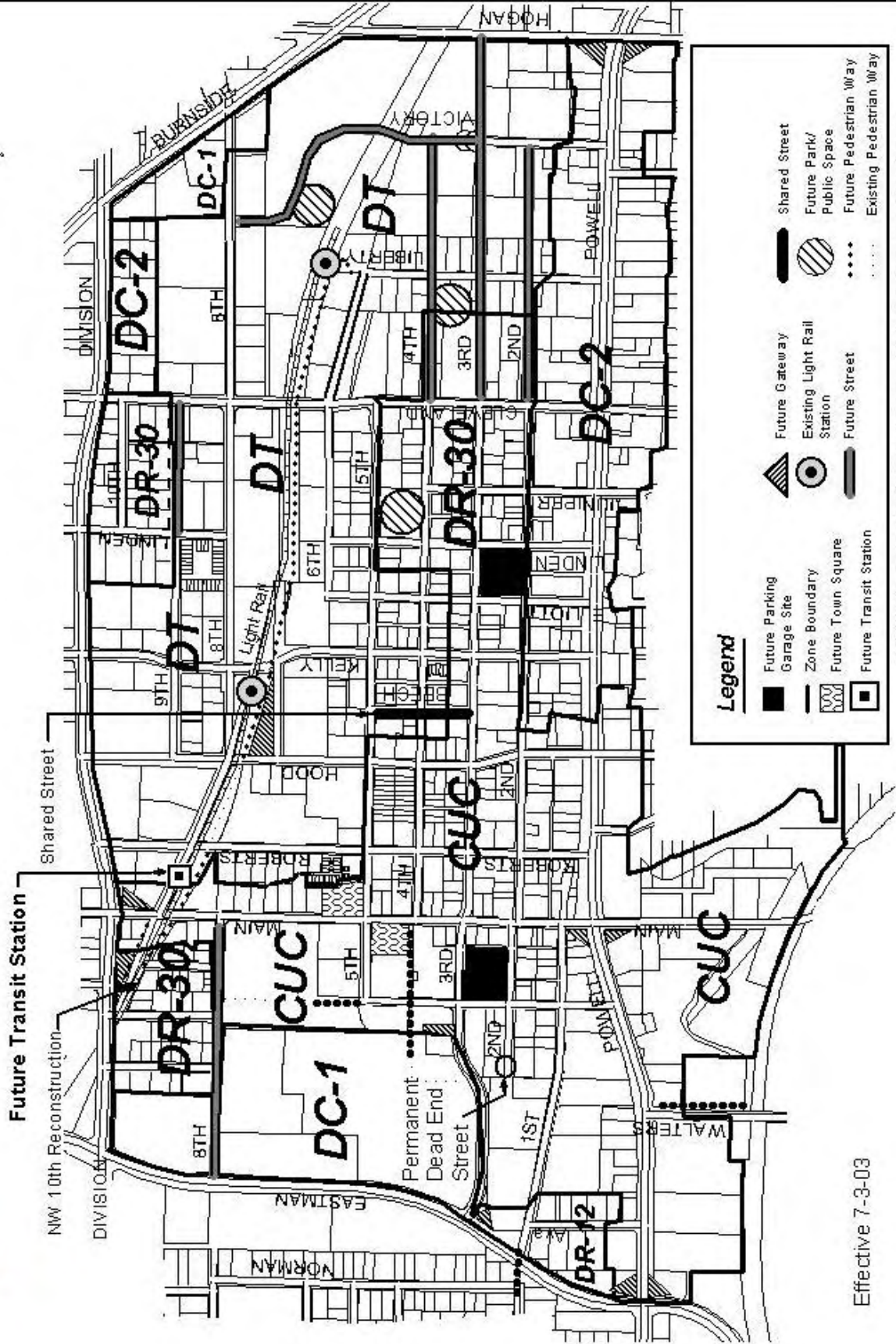


Figure 1



Legend

- Future Parking Garage Site
- Zone Boundary
- Future Town Square
- Future Transit Station
- Future Gateway
- Existing Light Rail Station
- Future Street
- Future Transit Station
- Shared Street
- Future Park/Public Space
- Future Pedestrian Way
- Existing Pedestrian Way

Effective 7-3-03

City of Gresham Community and Economic Development Department

More recently, an Urban Renewal Plan was prepared for the downtown area in 1987. This was primarily an economic development plan which would have provided a detailed program, with funding sources, to carry out the plan. The boundaries of this plan area extended eastward beyond the historic core to include land adjacent to the light rail tracks all the way to Hogan Rd. It did not include Powell Blvd. frontage east of NE Kelly Ave. or the largely residential blocks to the north of Powell in that area. The 1987 Urban Renewal Plan did take into account the new light rail transit stations. It also included among its objectives providing for a mix of uses and more intense land utilization, with better pedestrian linkages and street amenities, such as street trees, wider sidewalks, and benches. Because it would have created an urban renewal district, designating certain property tax revenues to fund downtown improvements, this plan was referred to the voters of Gresham before being enacted. It was defeated in an election held during the spring of 1987.

The comprehensive plan for the entire city was updated through the periodic review process in 1988. Although this planning project brought about significant changes in zoning and future development planning elsewhere in the city, it included very few changes to the pattern of districts and permitted uses already existing in the downtown area. This pattern included commercial zoning in the core area, in the Gresham Town Fair area, and along Powell Blvd. It also called for transit-oriented development along the light rail line, and maintained the low-density zoning of several residential neighborhoods in the downtown area. Except for the Central Urban Core (CUC) and Transit Development (TD) districts, the 1988 update of the comprehensive plan preserved in the downtown area the traditional segregation of commercial, high-density residential, and low-density residential uses. Mixed-use developments (residential and commercial) have been permitted in the CUC and TD districts, but in the other zones of the downtown area these types of developments have not been permitted, or have been permitted only at a very modest scale.

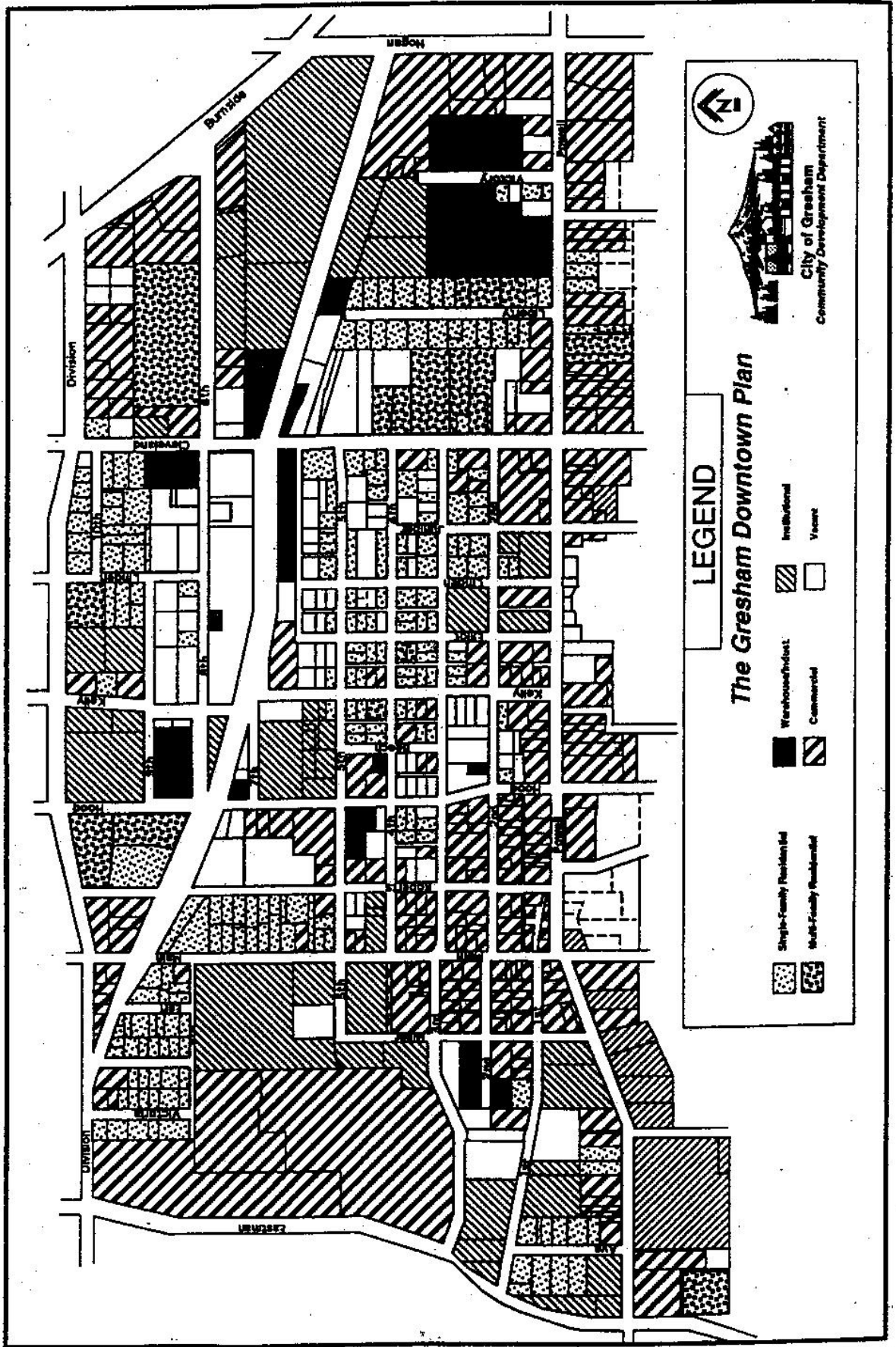
Although the 1987 Urban Renewal Plan for the downtown was never implemented, it did lead to several significant improvements which have helped to revitalize the core area and brought about increased interest both in the downtown area and in preparing a new plan for the area. In 1990, the city carried out a \$1 million project to reconstruct N. Main Ave. from Powell Blvd. to 5th St. Among other features, this project included undergrounding of overhead utility lines, construction of wider sidewalks, with curb extensions at the intersections, and placement of street trees, benches, and pedestrian-scale street lamps. This project was followed in 1993-94 with reconstruction of N. Roberts Ave. from Powell Blvd. to NE 5th St., as well as NE 3rd, 4th, and 5th Streets between Main Ave. and Roberts Ave. These improvements have reinforced the image of the downtown core as an urban village, making it a more attractive area for business and shoppers, and increasing pedestrian comfort in the area.

Existing Land Uses

The area encompassed by the Gresham Downtown Plan comprises a total of 333 acres. The net acreage, i. e. the amount of land available for development, amounts to 273 acres. The difference between these two figures consists of public right-of-way for streets and the light rail line. As a proportion of total city acreage, the downtown plan area accounts for 2.3%. It is located very near the geographic center of Gresham.

Figure 2

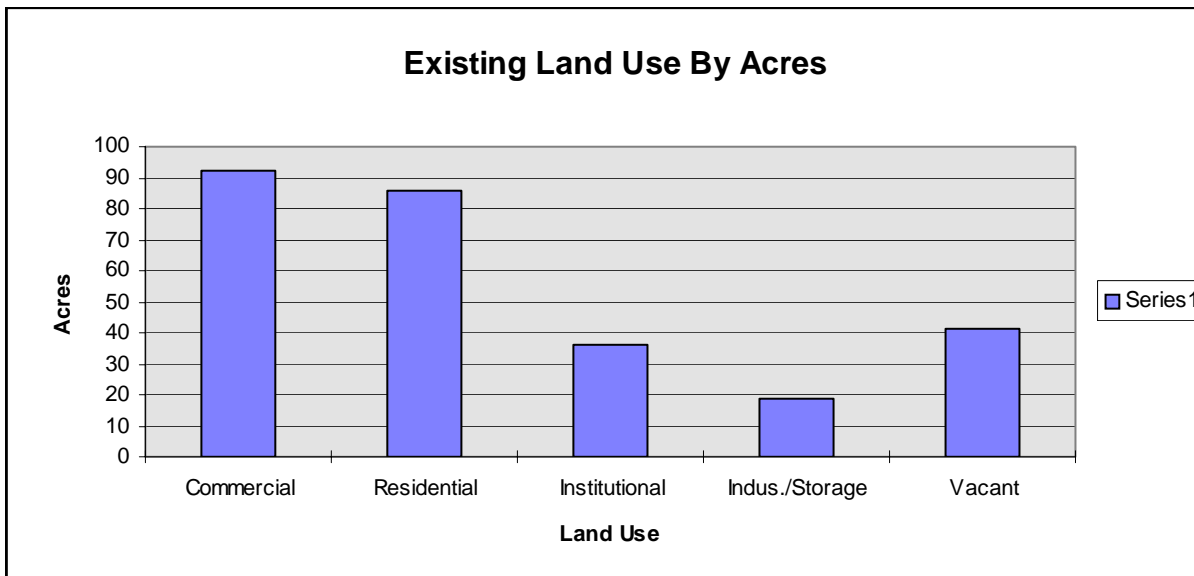
CURRENT LAND USE



There is a wide variety of land uses existing within the plan area, including, retail and service commercial, multi-family residential, single-family residential, warehousing, light industry, and public/institutional uses. (See Figure 2.) About 40 acres (15%) of the area are considered vacant. There are additional properties which can be considered under-utilized, i. e. a structure is present, but one-half acre or more of the site is undeveloped. Land area in commercial use is approximately 95 acres, or 35% of the total. Most of this acreage is concentrated in the core area, centered on N. Main Ave., and on downtown perimeter sites, such as the Gresham Town Fair on Eastman Parkway, and much of the Powell Blvd. frontage from Miller Ave. to Hogan Rd. Residential land use makes up about 90 acres, or 33% of the total. Most of the existing residential inventory in the downtown area is made up of attached moderate-density units, in the range of 12 - 18 units per acre. There is also a significant element of low-density, single-family detached housing. The current ratio of single-family dwellings to multi-family dwellings in the downtown area is 33:67, which is very nearly the reverse of the city-wide ratio of single-family to multi-family dwellings. Of the nearly 600 existing, downtown-area dwelling units, about 200 are single-family units.

A mixture of institutional and light industrial/storage uses make up the remaining 17% of existing land uses in the downtown area. Major institutional uses include East Hill Church, the Gresham Branch Library, St. Henry Catholic Church, the Cleveland Station park and ride lot, and the PGE maintenance yard and substation at the north end of NE Victory Ave. Some of the remaining industrial/storage uses are remnants of the food processing and packing plants which occupied the now mostly-vacant properties along NE 8th St. and the light rail line through the 1960s. More recently, a mini-storage development was built on a 2.8-acre site on the north side of Powell Blvd., near NE Liberty Ave.

Figure 3



Several prominent patterns begin to emerge when the distribution of these land use types is considered. Perhaps most apparent is the position of the historic downtown core. The origins of this traditional commercial core go back to the 1880s, when a log store was built at the intersection of what is now the intersection of Main Ave. and Powell Blvd. Other businesses and a post office appeared in subsequent years. By the 1930s the string of commercial buildings (intermingled with houses) which now runs along Main Ave. from Powell Blvd. to 5th St. was in place. By the 1950s, when Gresham's population was still

only 3,500, the core had enlarged to nearly its current size, extending from NW Miller Ave. to NE Hood Ave., and from Powell Blvd. to 5th St. There also were commercial uses lining both sides of Powell, from NW Miller Ave. to NE Cleveland Ave. Many of these businesses on the south side of Powell Blvd. were removed when the state widened Powell to its current size in the early 1970s.

Due to its long history, the core is distinctive in its appearance and function. It is still characterized by traditional “storefront” buildings placed close to the sidewalk. These buildings are occupied by a wide variety of small retail shops, restaurants, and service businesses. A number of the more recent buildings in the core, such as the First Interstate Bank Building, at NE 2nd St. and Roberts Ave., and the Bank of America building at E. Powell Blvd. and NE Roberts Ave., have reinforced the village downtown appearance of the core. The scale and placement of these buildings, along with street furniture, wide sidewalks, and relatively narrow streets, combine to create an environment which is attractive, interesting, safe, and pedestrian-friendly. These attributes have contributed significantly to the recent revival of the historic downtown core.

Contrasting with the compact pedestrian-orientation of the core, a pattern of auto-oriented commercial uses can be found along much of the perimeter of the downtown area. These uses are especially dominant along the Eastman Parkway frontage (Gresham Town Fair), along much of Powell Blvd. between Hood Ave. and Hogan Rd., and along Hogan Rd. and Burnside Rd. from Powell Blvd. to Division St.. Most businesses in these parts of the downtown perimeter rely heavily on direct, convenient access by car from the abutting arterial street. Each of these businesses has its own parking lot, often located in front of the building, which may be placed far back from the edge of the street. There is relatively little interaction between these auto-oriented commercial uses and other segments of the downtown area, such as the historic core.

Along much of the light rail line, which cuts diagonally through the downtown area, the dominant pattern is one of storage buildings, light industrial uses, vacant property, and utility yards (for example, GTE and PGE maintenance yards). Much of this part of the downtown area was developed originally in food processing and cold storage plants, which took in berries from the countryside and shipped them out by the rail corridor which now accommodates MAX. Over the last thirty years these uses have declined, and many of the buildings have been torn down or converted to other storage or low-intensity uses. The presence of light rail transit, and the existing Central and Cleveland stations, have recently sparked interest in redevelopment of these under-utilized properties.

Much of the interior of the downtown area is developed for residential use. The blocks bounded by NE Kelly Ave., NE Cleveland Ave., NE 2nd St. and NE 6th St. were platted for single-family residential use, as was the neighborhood west of Main Ave. and north of NE 8th St. This area also includes a large number of vacant lots ranging in size from 5,000 to roughly one-half acre. Other pockets of low-density residential uses are found on NE 10th St. between NE Linden Ave. and NE Cleveland Ave., along NE Liberty St. north of Powell Blvd., and on NW Ava Ave. north of Powell. Many of the lots in these areas are still occupied by single-family dwellings, ranging in age from 50 - 80 years. In the last 25 years, however some apartment and duplex dwellings have infiltrated most of these neighborhoods.

Current Land Use Districts and Development Standards

Existing land use district designations applying within the boundaries of the Gresham Downtown Plan include the following:

CUC -Central Urban Core

TD	-Transit Development
HDR-60	-High-Density Residential
MDR-24	-Moderate-Density Residential
GC	-General Commercial
EC	-Extensive Commercial
OFR	-Office/Residential
LDR-7	-Low-Density Residential

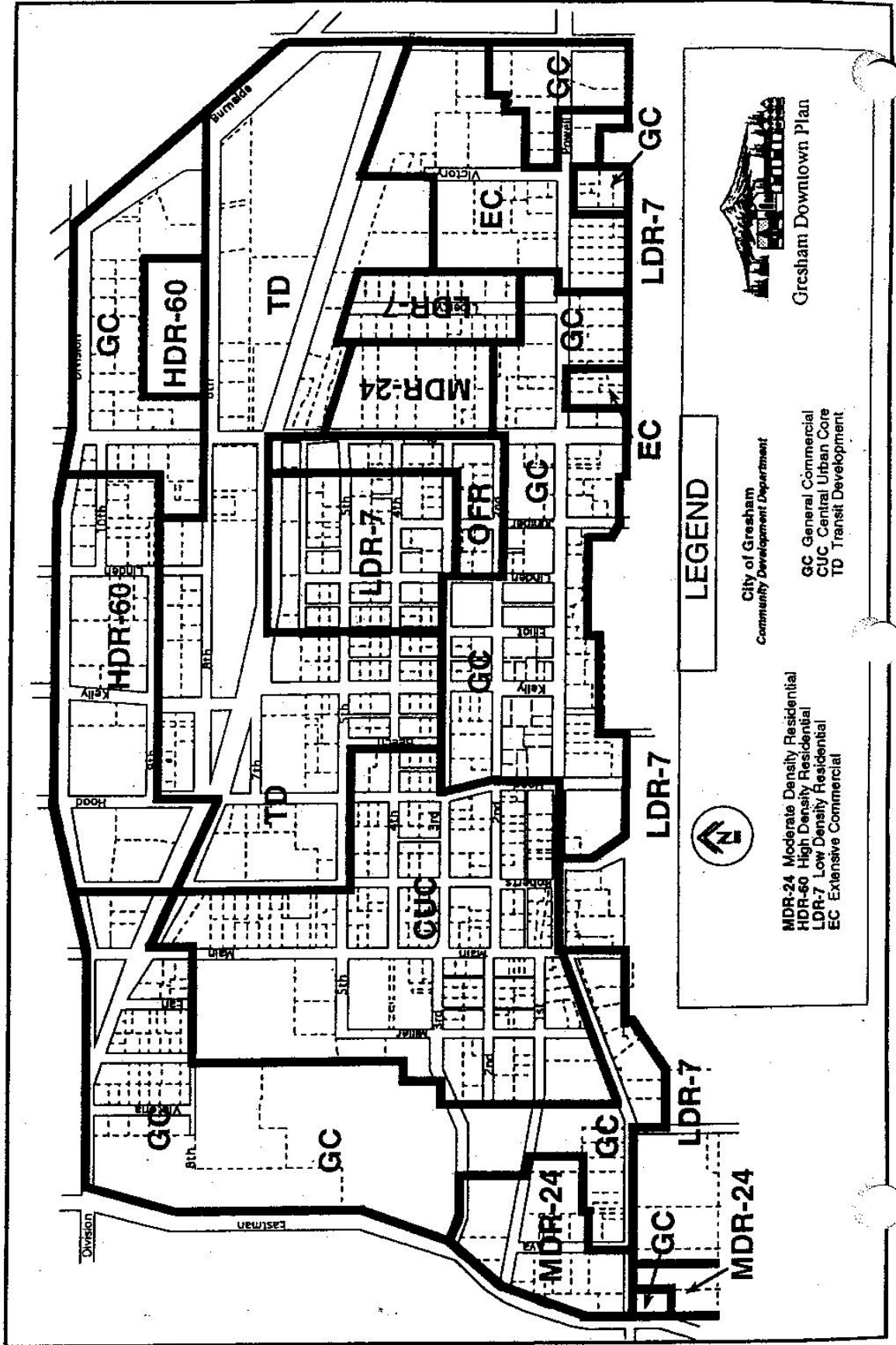
The locations of these land use districts are shown on Figure 4. Of these existing districts, only the CUC and TD districts are considered mixed-use districts. The HDR-60 and OFR districts allow for very limited combinations of residential and commercial uses. The other districts permit either residential or commercial uses, but not both. These limitations conflict with the objective of converting the entire downtown area into a mixed-use district. In addition, several of the existing districts permit and encourage uses which are incompatible with pedestrian-friendly, transit-supportive areas. The LDR-7 district, for example, permits detached single-family dwellings at a maximum density of less than 5 units per acre. Residential neighborhoods with densities of less than 15 units per acre are generally not considered transit-supportive, since transit service becomes economically infeasible at very low densities. Similarly, the EC district permits storage and warehousing uses, plus a wide variety of land-extensive commercial uses where unlimited site areas may be dedicated to outdoor storage or display of merchandise. These are uses which detract from the creation of pedestrian-friendly and transit-supportive neighborhoods; they are typically auto-oriented and result in large site areas which neither stimulate pedestrian interest nor generate pedestrian activity.

Although the existing CUC and TD districts do permit mixed-use developments, as proposed in the Gresham Downtown Plan, there are standards applying within these districts which may work to discourage mixed-use projects and a greater variety of commercial uses. Examples of such standards are a minimum lot size requirement of 5,000 sq. ft. in TD, and a minimum lot size requirement of 1,600 sq. ft. in the CUC district. Minimum lot size requirements restrict flexibility in designing and developing uses which may be suitable in the downtown area. In addition, both the CUC and TD districts set a nominal maximum floor area ratio of 1 to 1. The intensive scale of development envisioned in the Gresham Downtown Plan will require that floor area ratios greater than 1 to 1 be permitted, with or without particular site amenities.

On the basis of these findings, existing land use districts and development standards applying in the downtown area are considered to be inadequate to achieve the goals and strategies of the Gresham Downtown Plan.

Figure 4

Current Land Use Districts-1994



Downtown Historic Landmarks

A 1987 survey of potentially significant historic sites in Gresham found 45 such buildings within the downtown area. In 1988, the City Council adopted the Gresham Inventory of Historic and Cultural Landmarks, which included ten of the most significant of these downtown-area buildings. They are:

<u>Site Name</u>	<u>Address</u>
Old Library/Museum	410 N. Main
Post Office	103 W. Powell
Ashley's	436 N. Main
Franz Bakery	331 N. Main
Freeman House	307 NE Kelly
Ely Building	112 N. Main
Trufflehunter	225 W. Powell
Gresham Lodge Building	58 W. Powell
Shattuck House	417 NE Hood
Darnielle (Congdon) Bldg.	101-117 N. Main

These buildings, and other older buildings which are not listed in the Inventory, contribute greatly to the appealing character of the downtown area. In addition to providing an important sense of history, they also combine to establish the dominant design themes for the core area in particular. The scale, proportions, materials, ornamentation, and placement on the site of these historic buildings provide the basis for the design of new buildings which seek to be in harmony with the visual character of downtown.

The ten buildings listed above have some protection under the Gresham City Code against inappropriate alteration and untimely demolition, due to their status as designated landmarks. The history and characteristics of other downtown buildings which have potential historic value are also being investigated as a basis for possible nomination as landmarks. Beyond the designation of individual landmarks, portions of the downtown area have potential for designation as a historic district or districts. This action could be useful in drawing greater attention to the heritage of the downtown, and in strengthening the degree of protection available to designated landmark buildings.

Future Land Use Patterns

An understanding of the existing context of the downtown area and its land use patterns provides the basis for a land use plan which is consistent with the guiding principles for the Gresham Downtown Plan.

Two of the primary guiding principles for this plan call for encouraging mixed-use development and placing the most intensive developments adjacent to the light rail. The intensity of land uses would diminish as distance from the stations increases, so that beyond roughly one-quarter mile from a station the dominant pattern might be one of low-density residential and open space uses. This typical approach to designing a transit-oriented district must be modified to account for the existing pattern of land uses in the downtown area, and to address other guiding principles. These modifications lead to the following observations which begin to articulate the desired future for the various parts of the downtown plan area.

The historic core area and the existing pattern of arterial-oriented commercial uses along Eastman Parkway, E. Powell Blvd., Hogan Rd., and Burnside Rd. are the most firmly established of the downtown

sub-areas. The characteristics of the historic core make it an easily identifiable entity which contributes greatly to the image of the downtown area. Likewise, the more auto-oriented uses along much of the perimeter of the plan area are likely to remain and be supplemented by additional businesses for as long as the abutting arterial streets continue to provide easy access and high volumes of passing traffic. Much of the rest of the downtown area, however, is comprised of lower-intensity uses and substantial amounts of vacant property. As interest in the central Gresham area mounts, these parts of the downtown will become more attractive candidates for redevelopment. These areas have the greatest potential for intensive new commercial and residential uses which can complement the historic core and perimeter commercial strips, while also having convenient pedestrian access to light rail transit. Therefore, a long-range land use plan for the downtown area should direct larger-scale and more intensive uses to properties adjacent to the light rail line. Smaller-scale developments which are compatible with a traditional storefront commercial environment should be encouraged to locate in and adjacent to the historic core. And, those portions of the downtown perimeter which are already strongly committed to auto-oriented development should continue to accommodate uses of this type, in ways which do not detract from the interior of the downtown area.

Where properties fronting arterial streets have not already become commercial strip zones, there are opportunities to establish uses which are more oriented toward the interior of the downtown area and less dependent on arterial access. These opportunities exist along most of the south side of Division St. between NE Roberts Ave. and Burnside Rd. There are several residential blocks lying between the commercial frontage along E. Powell Blvd. and the light rail line. This area should be encouraged to convert gradually from its low-density residential character into a neighborhood of moderate-density housing and small commercial uses. As such, it would serve as a buffer between the auto-oriented commercial uses fronting Powell Blvd. and the more intensive transit-oriented projects closer to light rail. Such a neighborhood could also accommodate more innovative forms of housing, such as row houses, tuck-under apartments, and garden apartments. Finally, the Ava Ave. neighborhood north of W. Powell Blvd. has historic value, not only to the downtown area but for the community as a whole. This small area includes a number of well-preserved bungalows dating from the 1920s and 1930s, resulting in a consistent design theme which is unusual in Gresham for this period. Future land uses in this neighborhood should respect its existing character. Developments and conversions of existing houses which are consistent with this character should be permitted, but significant non-residential uses should be discouraged.

Although future land use patterns will create distinctive sub-areas within the downtown area, it will be important for these sub-areas to relate well to each other, in terms of their visual, functional, and economic characteristics. Therefore, while intensive development should be encouraged along the light rail line, the scale of buildings should be limited to three or four stories in order to avoid overwhelming the historic core. Similarly, perimeter commercial uses along the arterial streets, which may be primarily auto-oriented, should also be of a size which relates well to the pedestrian, and invites increased access by non-auto transportation modes.

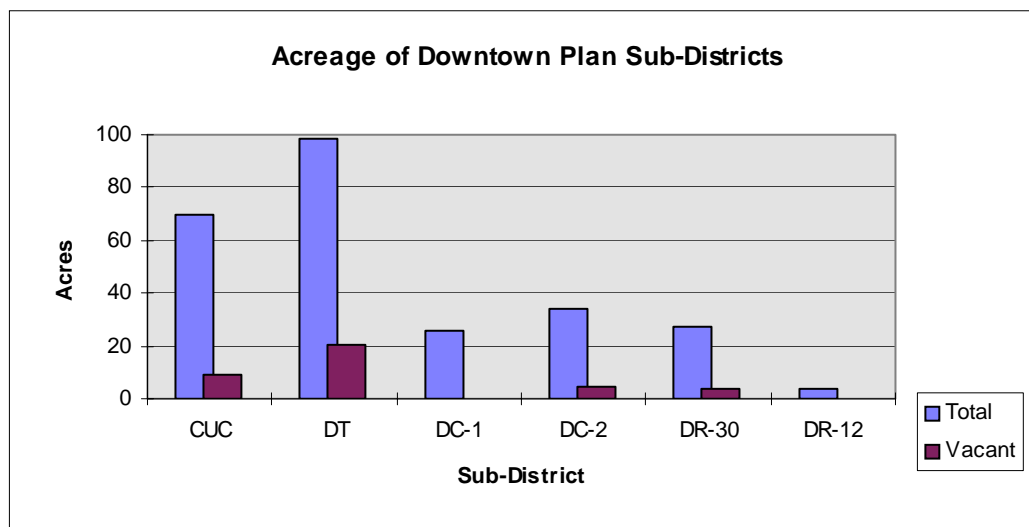
In order for the downtown area to develop in a manner which is truly transit-supportive and pedestrian-friendly, several site design characteristics must be present. These characteristics should be present throughout the downtown area, whether the dominant land use type is residential, commercial, or mixed-use. One of the most important of these characteristics calls for new buildings to be placed close to abutting streets and public spaces. Related to building placement, on-site parking should be placed behind or under buildings, wherever possible. Where parking must be placed adjacent to a street, it should be located to the sides of buildings, and should be designed with a "street edge." A street edge consists of a vertical feature, such as a hedge or wall, which separates the parking area from an abutting

street and sidewalk. This feature helps to minimize the disruption to the visual continuity of the streetscape where large gaps (e. g. parking lots) are present between buildings placed close to the street. Those building facades which abut a street or public space should also include openings, such as doors, windows, and display areas at the ground floor to prevent the appearance of blank walls. These openings improve the overall appearance of the building and are important to create an increased sense of visual interest, involvement, and safety for pedestrians.

Downtown Plan Sub-Districts

In order to bring about the future pattern of land uses outlined above for the downtown area, new plan sub-district designations are proposed, as shown on Figure 1. These sub-districts have characteristics which differ significantly from land use districts already designated throughout other areas of Gresham, in order to respond to the unique conditions of the downtown area. All downtown sub-districts, for example, should permit commercial, residential, and mixed-use developments as a means of supporting a pedestrian environment in which shopping, housing, and employment are in convenient proximity to one another. Likewise, downtown sub-districts should all provide for future development at a scale which facilitates pedestrian comfort and safety, as well as being aesthetically pleasing. Since the intermingling of commercial and residential uses is to be encouraged throughout the downtown area, sub-district boundaries should be thought of as transition areas rather than the more rigid conventional zoning boundaries. Thus, the primary function of a sub-district is to emphasize a certain land use type, but not to the exclusion of all other types. To take maximum advantage of the ongoing public investment in light rail transit, minimum intensities of development should be established in all downtown sub-districts. As discussed above, the intensity of future development should be highest near the light rail tracks. New single-family dwellings should not be permitted. However, parcels with existing single-family houses should be permitted and encouraged to add an ancillary dwelling, where feasible, as a short-term means of increasing density for as long as these existing houses remain.

Figure 5



Central Urban Core (CUC)

The CUC sub-district encompasses the existing historic core, centered on N. Main Ave. This sub-district has also been drawn to take in additional land to the southwest and to the north and east, in order to allow for expansion of this traditional, village downtown environment. Overall, 69.6 net acres of the downtown area lie within the CUC sub-district. By extending the CUC northward along Main Ave. to Division St., the opportunity is created for continuing this primary commercial corridor from Powell Blvd. to Division St. This continuity would enhance the position of N. Main Ave. between these two arterials, and would eventually enable the entrance to downtown from Division St. to have a prominence matching that of the Powell Blvd. entrance to downtown. The CUC should continue to accommodate a broad mix of smaller-scale retail and service businesses. Institutional uses, such as the Gresham Branch Library, the Gresham Historical Society Museum, and a number of churches, are also important to the CUC, bringing people and increased activity to the core. Housing should also be encouraged to be combined with commercial uses. In general, ground floor space in the CUC should be occupied by commercial uses, although row houses at a density of at least 17 units per acre should be permitted. On-site parking for commercial uses should be minimized in order to achieve greater activity and efficiency of land use. For this same reason, a minimum floor area ratio of .35 should be maintained in the CUC.

The history and visual character of the CUC make it very important that the design of future improvements in this area be carefully and sensitively carried out. New commercial and residential buildings should be at least two stories in height, and placed close to the street in order to frame the streetscape from the perspective of the pedestrian. Contemporary designs for new buildings should not be discouraged, but compatibility with the scale, fenestration, and proportions of existing nearby buildings is important. For these reasons, proposals for new construction or for major alterations in the CUC should be reviewed not only for site design and building code compliance, but also for architectural compatibility.

Downtown Transit (DT)

This sub-district designation occupies more land area than any other in the Gresham Downtown Plan, encompassing nearly 100 net acres. The DT sub-district also includes over half of the currently vacant and under-utilized land in the downtown area (20 acres), with additional properties where the land value equals or exceeds the value of existing improvements. As such, there is great potential for intensive new development and redevelopment in this area. Also, as discussed above, the close proximity of this central portion of the downtown area to light rail transit suggests that this area is suitable for high residential densities and floor area ratios. To encourage this intensive level of development, a minimum floor area ratio of .6 should apply generally to new development in the DT sub-district. New residential developments should range between 24 - 60 units per acre. Larger-scale employment centers are encouraged in the DT sub-district. The convenient access to light rail transit allows for office developments where employees might arrive from various parts of the metropolitan region. As in the CUC, on-site parking requirements should be reduced or eliminated in this sub-district to encourage alternative travel modes and greater efficiencies of land use.

Downtown Moderate-Density Residential (DR-30)

Three separate neighborhoods within the downtown area are designated DR-30. These total 27 net acres, of which about 4 acres are vacant or under-utilized. In general, the DR-30 sub-districts are more remote from the existing light rail stations, and occupy properties where the dominant use is residential on relatively small parcels. However, these areas are still well within the quarter-mile walking radius of light rail transit. Opportunities exist in these areas to retain the existing residential emphasis, but at higher densities than at present. While the DT sub-district might accommodate multi-family residential projects containing a hundred dwelling units or more, the DR-30 neighborhoods are programmed for residential developments of between 17 - 30 units per acre. This is a density range within which rowhouses could

easily be built, along with such housing types as tuck-under or podium apartments and more conventional garden apartments. Thus, the DR-30 sub-districts serve as small transition areas, between the higher-intensity uses of the Downtown Transit sub-district, and the less-intensive CUC and downtown perimeter properties. The DR-30 neighborhoods will offer future residents the opportunity to live in more innovative, moderate-density housing types, as an alternative to the high-density projects expected to develop in the DT sub-district. As with all of the downtown area, commercial and mixed-use developments should be permitted in the DR-30 sub-district. Small-scale commercial uses which provide primarily neighborhood-oriented goods and services should be encouraged. However, in order to emphasize the residential character of these areas, those commercial uses which are not part of a mixed-use project should be limited in size. New single-family detached housing should not be permitted, since low-density residential uses are not supportive of the substantial investments which have been made in nearby light rail transit. However, existing single-family houses in the downtown area will continue to provide relatively inexpensive housing for some time, and ancillary dwellings should be permitted on lots occupied by single-family dwellings in order to maximize land use efficiency for as long as those dwellings exist.

Downtown General Commercial (DC-1)

This sub-district designation applies to those perimeter properties which are already firmly committed to auto-oriented commercial uses. While developments on these properties might be modified over time to relate more effectively to the interior of the downtown area (including the CUC and DT sub-districts), they are unlikely to redevelop substantially in the foreseeable future, or to reduce their dependence on easy access by automobile from abutting arterials. Nevertheless, there is some potential for housing in these areas, most likely in the form of mixed-use developments as existing commercial buildings are retro-fitted over time. In addition, although the developed DC-1 properties lack many of the elements needed for a pedestrian-friendly environment, they do effectively attract large numbers of people from throughout Gresham and beyond. Over time, as pedestrian and visual linkages between the perimeter and the interior of the downtown area improve, these people may also be drawn to, and contribute to, the vitality of the CUC and DT portions of the downtown.

Downtown Moderate Commercial (DC-2)

The DC-2 sub-district is intended to accommodate commercial uses which rely to some extent on easy auto access provided by abutting arterial streets, but which are moderately sized and also accessible by residents of adjacent neighborhoods. The fact that most DC-2 properties have frontage on either E. Powell Blvd. or NE Division St., and are already mostly developed with businesses, suggests that continued commercial use should be prevalent in these areas. However, mixed-use developments with housing above or behind commercial buildings would also be appropriate. New commercial buildings should be limited in size to be compatible with the scale of existing buildings in the DC-2 sub-district. These areas would also be appropriate for the operation of limited outdoor commercial uses, where a substantial portion of site area is used for storage or display of merchandise. Some outdoor commercial uses, such as retail nurseries and moderately-sized home improvement centers, could provide needed goods to future residents of the downtown area, as well as drawing customers from elsewhere. Those types of outdoor commercial uses which draw from very large market areas, and which allocate all, or nearly all, of the site for storage and display of merchandise, would not be appropriate in the DC-2 sub-district.

The Hogan Rd. alignment for the proposed Mt. Hood Parkway would run north-south along the existing alignment of Hogan, at the east edge of the downtown area. Northbound traffic on the parkway would be able to exit at E. Powell Blvd. and head west into the downtown. Likewise, traffic bound for the parkway at Hogan Rd. would travel east on Powell Blvd., through the DC-2 sub-district, to reach the parkway and

travel south and east. In addition, a draft Street Tree Master Plan prepared for the city in 1994 proposes a boulevard treatment for Powell Blvd. eastward from Eastman Parkway, in which street trees and a landscaped median would be provided, along with widened sidewalks. If carried out, the Mt. Hood Parkway and the boulevard treatment of Powell Blvd. would cause it to function as an important gateway to the downtown area, while also becoming more attractive for pedestrians. For these reasons, in the DC-2 sub-district new buildings should be placed up close to the street, with most parking placed to the side or behind the buildings. These measures, in addition to controls on building size and the extent of outdoor commercial uses, will allow E. Powell Blvd. to gradually take on the attributes of a strong, attractive corridor entrance to downtown, extending the pedestrian environment from the CUC and the downtown interior neighborhoods to Hogan Rd.

Downtown Low-Density Residential (DR-12)

The DR-12 designation applies only to a small neighborhood (four acres) centered on NW Ava Ave., in the southwest corner of the downtown area. As noted above, this neighborhood is distinctive because of the presence of eight single-family houses which were all built during the 1920s and 1930s, and which have largely retained the integrity of their original design. Due to topographical constraints and the remoteness of this neighborhood from other commercially developed districts of the downtown and from light rail transit, there are very limited prospects for new commercial activity in this DR-12 sub-district. For this reason, as well as to encourage preservation of the existing character of the neighborhood, this district should permit only modestly-scaled new residential development and very small commercial uses. Mixed-use developments and attached housing at up to 12 units per acre would be appropriate. In addition, existing houses in this area should be permitted to convert to professional offices and small-scale commercial businesses which are compatible with the neighborhood's existing character.

Downtown Area Growth Potential

The current population of the downtown area is estimated at 1,440. Current employment in the downtown area is estimated at 3,500. Taken together, the total number of persons per acre is roughly 18.

In its Region 2040 planning program, Metro has designated the downtown area as one of nine "regional centers." Central Gresham is the only regional center designated for East Multnomah County. Metro envisions each of the regional centers in the year 2040 as follows:

These regional centers would become the focus of compact development, redevelopment, and transit and highway improvements. The recommended alternative accommodates three percent of new household growth and eleven percent of new employment growth [region-wide] in these regional centers. From the current 24 people per acre, the recommended alternative would accommodate about 60 people per acre.

Transit improvements for regional centers would include light-rail connecting all regional centers to the central city. Highway improvements also would focus on ensuring that these centers are accessible as places to conduct business. Eventually, these centers would grow to the density of downtown Vancouver, Wash. - about one-third of downtown Portland's density, but three times denser than these areas today.

Although the horizon year for the Gresham Downtown Plan is 2020 rather than 2040, the downtown area appears to have adequate vacant and redevelopable land to achieve an overall density of 60 persons per acre. Table 1, attached to this document, contains estimates of potential new residents and employees in the downtown area. These estimates are based on the land use designations of the Gresham Downtown Plan and estimates of the amount of acreage in each sub-district expected to become available for redevelopment over the plan period. The data in Table 1 indicate that with development of existing vacant acreage, and redevelopment of an additional 57 acres, at average floor area ratios ranging from .4 in the DR-12 sub-district to 1.5 in the DT sub-district, the total new gross floor area in the downtown would be nearly 4.9 million square feet. Given further assumptions about the proportions of this floor area which would be occupied by residential uses and that which would be leased for commercial/employment uses, 2,111 new residential units and 6,736 new jobs could result in the downtown area at full build-out. These estimates can be converted into a combined total of new employees and residents amounting to over 11,400. This figure results in an estimate of 44 new persons per acre. When combined with the existing 18 persons per acre in the downtown area the total of 62 persons per acre exceeds Metro's Region 2040 target density for a regional center such as downtown Gresham.

The validity of the estimates contained in Table 1 depends heavily on assumptions as to how much acreage in each downtown sub-district can be considered a candidate for redevelopment over the next 25 - 45 years. The redevelopment estimates of Table 1 (ranging from 10% of total DC-1 acreage to 50% of total DR-30 and DT acreage) appear reasonable, given the availability of vacant land and the existing ratios of building value to land value in the downtown area.

Market and Economic Conditions

As part of the Gresham Downtown Plan, E. D. Hovee & Co. was engaged to analyze recent and current economic conditions in the downtown area, and to prepare an outlook for future growth and development activity. The result was the Economic and Market Report for Downtown Gresham (July 1994).

The report found that population growth in Gresham as a whole, and in the downtown area, has been strong in recent years, and that continued growth can be expected through the year 2015 and beyond. Likewise, both retail and non-retail employment were projected to increase in the downtown area at an average annual rate of nearly 2%. This is a faster rate of employment growth than is projected for Multnomah County, and matches the projected growth rate for the Portland region as a whole. Even so, this forecast may be considered conservative, due to Metro's more recent designation of central Gresham as one of nine "regional centers" in its recently adopted Region 2040 Concept Plan. As a regional center, much of the energy for future growth in the eastern portion of the region will be directed to downtown Gresham. The result could be growth rates, in population and employment, well beyond the previously forecast rate of 2% per year.

After finding that the downtown area would continue to experience healthy growth for the foreseeable future, the economic and market report considered prospects for the specific types of development which are expected to drive that growth -- residential, office, retail, and mixed-use. Following are summaries of the report's findings regarding the economic feasibility for each of these development types in the downtown area.

Residential

Within the Portland region, there is growing consensus that housing rather than office or retail is becoming the economic driver of the next twenty years. This is for several reasons:

- Slowing of labor force growth (as the baby boom generation is now of work age and the baby bust generation coming behind is much smaller in number).
- Aging of baby boomers. The number of persons age 46-64 in the Portland metro area will virtually double from 1990-2010, while the number of 25-44 year olds remains essentially flat. This generates potential demand for different housing types as more boomers become empty-nesters.
- Combined with an increase in non-traditional (and smaller) households, it is increasingly apparent that housing needs of major segments of the population are entering a period of transition.
- The challenge of the mid to late 1990s is to develop and test new housing prototypes for this aging boomer market -- including urban living that is consistent with values of urban containment, environmental sensitivity, a high level of on-site and area amenities, and transit accessibility.
- If emerging prototypes achieve market acceptance, much greater potential will exist after the turn of the century to market urban living to an even larger market. However, if this market window is missed and boomers do not buy into a more urban lifestyle en masse (rather than as a small niche), it is unlikely they will do so later after retirement.
- Due to existing equity build-up of boomers and appreciation of tax advantages, it is important to emphasize ownership products (both condominium and fee simple). It is quite possible that the primary market for higher density urban living in the next 15-20 years will shift from a traditional renter market to home ownership.
- To stimulate downtown retail and office, housing should be developed to appeal to a diversity of incomes and lifestyle preferences. The majority of housing development should be market-rate -- with enough upscale units to create the image that downtown is the place to be -- to see and be seen.
- ...A perception of public safety is absolutely essential -- both in the home and on the street.
- Housing needs to be developed with high amenity value -- both in the unit and the surrounding area. Because downtown Gresham does not offer views or water proximity, the chief external amenity becomes the ambiance of the entire downtown experience. -- pedestrian-friendly, close to shops and services, close to transit, with access to recreation such as bike trails, parks, fitness centers, etc.
- For at least the immediate future, residential development is most financially feasible if developed at densities that do not require elevators, steel-frame construction, or platform/underground parking -- all of which can increase cost per square foot substantially without a corresponding increase in achievable rents or values. This places greater emphasis on rowhouse/townhouse and garden apartment concepts as being more financially feasible for at least the near term.
- As the market matures (and if metro area UGB boundaries are not expanded significantly), a stronger market for mid and high rise units may yet materialize.

Currently, virtually all of the mid-high rise units developed in Portland's Central City area, for example, have involved public subsidy of roughly \$10,000 - \$20,000 per unit.

- Parking should be encouraged to be placed behind or to the side of housing so that streetside frontage retains an urban, pedestrian character.

Office

Our view remains that Gresham will continue to attract smaller office users, primarily service businesses oriented to the local market for at least the immediate future. However, it may be important to also create incentives for more significant development -- making Gresham a stronger contender in the region's office market for corporate and business service firms. Some perspectives of note:

- Encourage small scale, fine-grained infill development of owner-occupant office spaces that are compatible with the character, located in proximity to the Main Street retail core; for developments in high traffic areas that have future potential for conversion to ground floor retail, provide design standards consistent with future retail use.
- Continue to attract local professional and service firms to locate in downtown Gresham; consider expanding marketing to draw footloose small offices that could be located anywhere in the region and need some but not constant interaction with other businesses in downtown Portland (via MAX).
- Consider a more aggressive program to target large corporate users (e. g. back office) as build-to-suits that draw heavily on an eastside labor force and can be sold (in cooperation with Tri-Met) on benefits of MAX/transit accessibility.

Retail

The re-emergence of downtown Gresham as a specialty retail district is perhaps the most visible and exciting development that has transpired since 1986. The chief obstacle to further expansion may be a lack of additional leasable space; reportedly, Main Street is virtually full and retail activity is spilling over to Roberts Ave., Hood Ave., and nearby side streets.

Opportunities and challenges for the future are severalfold:

- While some downtown retailers (e. g. Glass Butterfly, Main Street Grocery) are clearly well established, other smaller retail tenants in Gresham as well as other communities have a tendency to come and go. Some are not in business for purely financial reasons; they bring diversity but benefit from smaller and lower cost space. Part of the charm of this type of district depends on the ability to continuously pursue an eclectic specialty mix while also increasing the base of profitable, well recognized anchors.
- Smaller businesses typically cannot afford to buy and develop; so development of additional multi-tenant space for small retail tenants should be a priority. Buildings should be flexible (to accommodate tenants of as little as less than 1,000 square feet), with entrances oriented to the street; often these spaces can be developed as shell space with the option for in-store improvements to be made either by the tenant or negotiated with the owner.
- Attracting patient investors willing to tie their financial success to that of their tenants and the entire district (rather than an immediate return) should be a top priority.

Incentives targeted specifically to encourage such development should be considered for implementation of the plan.

- Entrances to the downtown retail core (i. e. Main Ave. and Roberts Ave.) from Powell Blvd. and Division St. need to be more prominent and identifiable. This could be accomplished with a combination of signage, entry features, banners, etc.
- Signage and display standards to deter exterior signage that is auto rather than pedestrian oriented and to discourage window clutter might also be considered -- perhaps as a subsequent implementation measure, if the need arises.
- To date MAX has achieved unexpectedly high weekend patronage, from individuals and families on recreational or shopping outings. As momentum in downtown Gresham builds towards a specialty retail district, more attention could be paid to drawing customers via MAX -- especially from the east county MAX corridor.

Mixed Use

The [Gresham Downtown Plan] ... implicitly and explicitly encourages mixed use development. Mixed use could be defined on the basis of two uses in one building, or encouraging different uses side-by-side on adjoining properties. The concept plan appears to emphasize mixing uses in a single building, e. g. retail on ground floor, residential above.

- Several comments on the economic viability of obtaining mixed use development in each building are noted;
- To date, concepts of retail down and residential or even office up in a two or three story building have been difficult to accomplish in a manner that both achieves market acceptance and is financially feasible -- at least in the Portland metro area. ...
- Condominium ownership may support higher cost of developing second floor housing, but market acceptance remains unproven. One issue is noise generated from commercial activity penetrating to the residents above.
- Providing parking adequate for both commercial and residential components of a mixed use project can be particularly challenging. ...
- Need for elevator access is of increased importance, particularly for office users due to ADA requirements. However, elevators add significant cost to the development of a smaller two-story building
- Perhaps the most viable approach for Gresham is to encourage mixed use retail residential for smaller (e. g. less than 4,000 square foot) buildings... This approach also reinforces the existing fine-grained building character of downtown Gresham.

Conclusions of Market and Economic Report

The analysis of both current and forecast market and economic conditions in the downtown area suggests that the overall approach of the Gresham Downtown Plan is consistent with these realities. The report concludes with these observations:

The downtown is currently showing signs of economic revitalization which appear to be due to a combination of public and private initiatives over the past 10 - 15 years.

Future prospects for continued revitalization appear strong, albeit with a more prominent role for urban housing as a new driving force for development. Small scale independent retailers are carving a niche for downtown as a specialty retail district -- distinct from the planned shopping centers and strip developments prevalent throughout most of east Multnomah County. Developing additional retail space represents both a major challenge and opportunity for the next few years.

Office activity will continue to be dominated by small service firms catering to the local market for at least the near term. Longer term opportunities exist for footloose small firms and large back office users serving more regional and national markets -- driven by proximity to MAX and local transit.

We believe the Draft Concept Plan is supportive of these market trends and opportunities.

Public Facilities

The primary objective of creating a successful mixed-use, pedestrian-oriented downtown district will be achieved mainly through the actions of developers and business owners over the next 25 years. However, the Gresham Downtown Plan also proposes a number of public facilities improvements which will be needed to support new private development projects, and to stimulate greater interest and activity in the downtown. It is anticipated that most of these improvements will be provided by the city as funding sources are identified and allocated through the capital improvements program. These proposed public facilities are described below.

Streets

A central characteristic of successful pedestrian districts is a network of streets and pedestrian ways which provide numerous, direct connections between the various sub-areas of the district. Whether going to a workplace, a business, or a transit station, pedestrians face a strong disincentive when they are forced to walk long distances around large blocks to reach their destination. If convenient connections are not available, pedestrians quickly resort to the automobile, even when traveling relatively short distances. Likewise, large numbers of visitors to the downtown area will continue to arrive by car for many years; these visitors and others will require a circulation system which not only facilitates easy pedestrian movement, but which also enables the drivers of automobiles to reach destinations conveniently. For these reasons, the Gresham Downtown Plan proposes the construction or extension of streets in a future street plan, as shown on the plan map (Figure 1). All of the proposed streets would be dedicated and improved to local street standards, with rights-of-way of 50 - 60 ft. in width.

Much of the central portion of the downtown area, south of 5th St., is made up of blocks which are roughly 200 feet square. This pattern results from the platting of Gresham's first subdivisions one hundred years ago. These dimensions are ideal for easy pedestrian movement, as well as offering drivers of cars multiple route options. Beyond this central area, however, the downtown area is made up of much larger, irregularly shaped blocks with numerous ownerships, and ranging in size up to more than 25 acres. Extension of the grid pattern based on 200 foot blocks into these large tracts would not be feasible, since many of them are extensively developed. However, the gradual extension of key streets as shown on the plan map would greatly enhance both pedestrian and vehicular circulation. An additional advantage of these proposed street extensions is the creation of new street frontage for parcels which are deep and have little street frontage at present. Improved street access would make these parcels more attractive for new development.

Dedication and construction of the proposed street extensions will be complicated by the fact that buildings and other improvements are located within and near many of these future rights-of-way. As larger-scale development projects take place, it may be necessary to require some future streets to be provided in connection with those projects, in order to provide adequate access to the development, and to minimize traffic impacts to existing streets. Apart from occasional, development-related dedications of future streets, it will be necessary for the city to develop a program to identify funding sources, prioritize future street extensions, acquire the necessary rights-of-way, and construct these streets.

Parks, Gateways and Town Square

Three types of public spaces are shown on the Gresham Downtown Plan map: parks, gateways, and a "town square." Each of these public spaces would serve a different function in making the downtown attractive for intensive, mixed-use development.

Four new parks are proposed to the east of the historic core area. Each of these is proposed to function as a small neighborhood or "pocket" park, ranging in size from roughly .5 to 1.5 acres. These parks should be sited to serve an area with a radius of 500 - 600 ft. The emphasis in each of these parks should be on providing for the day-to-day recreational needs of nearby residents and workers. Proposed locations for these parks as indicated on the Downtown Plan map, are conceptual. However, preferred locations for these parks are in those sub-districts (DT and DR-30) where the greatest concentrations of new housing and mixed-use developments are expected to occur. The availability of these parks is especially critical to balance the intensive levels of development which will be encouraged in the downtown area. To maximize development potential, new housing and commercial uses are expected to provide only minimal on-site open space. The needs of downtown residents for larger-scale recreational facilities, such as community parks, can be met conveniently by Main City Park, located adjacent to the downtown area,

south of Powell Blvd. Main City Park also serves as a link between the downtown and the Springwater Trail.

In addition to the four neighborhood parks, a park/plaza is proposed adjacent to the south side of the MAX Central Station Platform. This plaza is envisioned as a “hard surface” open space which would serve as an attractive destination point for light rail passengers arriving at downtown Gresham, and could begin to draw them toward the downtown core. A coffee shop or similar small-scale retail or service business would also be appropriate in this space.

Gateway entrances to the downtown are proposed at five locations, as shown on the Downtown Plan map. In each case, an intersection serves as the focal point for the gateway. Gateway entrances were proposed by the Envision Downtown Task Force for the historic core area as part of the Envision Gresham 2020 process in 1992. Their function would be to provide a strong sense of identity, as well as invitation and direction to those arriving in the downtown area. Typical features at each gateway could include a thematic sign structure and landscaping.

The gateway shown at the intersection of Main Ave. and Powell Blvd. is proposed to be combined with pedestrian improvements to strengthen the connection between the downtown core and Main City Park. This connection is also important to bicyclists, as it links the downtown area and the park with the Springwater Trail corridor. At present, pedestrians moving between the downtown core and Main City Park at this location cross five lanes of traffic on Powell Blvd. at a signalized intersection. The distance of this crossing is approximately 75 ft. By eliminating on-street parking on Powell at this intersection, curb extensions could be constructed which would reduce the crossing distance significantly. These and similar measures which could increase pedestrian safety and comfort at this intersection should be pursued with the Oregon Department of Transportation.

A “town square” public space is proposed in the vicinity of the intersection of N. Main Ave. and 5th St. The function of this town square would be to provide a focal point for community events in the downtown area. The proposed size of the square would be roughly one acre. This size would enable it to accommodate mid-size to large-scale events such as a farmers market, outdoor concerts, festivals, exhibits, and promotional events. The conceptual siting of the town square shown on the Downtown Plan map allows it to serve as a link between the historic core and the light rail stations. In this general area, the square would be within convenient walking distance of Central Station and a future light rail station at N. Main Ave.

Parking Garages

Three future parking garages are proposed in the Gresham Downtown Plan. Two of these flank the core area, on the east and west sides. The third is a park-and-ride garage to be constructed on NE 8th St. and NE Kelly Ave., near Central Station. As with the downtown transit loop, these facilities also were first proposed as part of the Envision Gresham 2020 Action Plan. The Central Station park-and-ride garage is now being designed, and will be complete by the end of 1996. Locations for the other two garages are conceptual. The sizes and actual sites for these garages will need to be determined on the basis of parking demand studies as the core area continues to grow. Structured parking will be important to the downtown as an efficient alternative to surface parking lots. Surface lots are an inefficient use of land, they frequently conflict with the movements of pedestrians, and a number of large parking lots in close proximity create “dead zones” in what should be an area of strong pedestrian interest and activity. Parking garages become an even more valuable component of a pedestrian-friendly downtown area when they contain commercial space in their ground floor street frontage.

Transit Improvements

The Gresham Downtown Plan proposes two major transit improvements: A new light rail station on the MAX line at N. Main Ave., and a transit loop through the core area.

The N. Main transit station would provide the clearest, most direct connection between light rail and the core. In this location, such a station could also be instrumental in stimulating new commercial development along Main Ave. between 5th St. and Division St. Riders arriving at the N. Main Station would also have easy access to a future town square and the events which that facility would host. This proposed station would most likely function as a "kiss and ride" station, with no adjacent parking. It would be located roughly mid-way between City Hall Station and Central Station, separated from either of these stations by only about 1,500 ft. This spacing is not consistent with Tri-Met's current service standards, although spacing may be less of a factor as the surrounding downtown area becomes more urban in coming years. Design of this station would also have to take into account complex traffic and pedestrian movements on N. Main Ave. and Division St. Nevertheless, placement of a station in this location would bring a number of clear advantages to the downtown area. Further study of this facility is warranted, recognizing that actual financing and construction are not likely over the short term, and that the project would ultimately would have to be authorized and carried out by Tri-Met.

The suggestion of a transit loop through the core area originated in the Final Gresham 2020 Action Plan. This was envisioned as a light rail facility, with MAX cars traveling this circuit from the main transit line. While this facility would also have clear benefits for the core area, its expense and the lack of right-of-way make it unlikely through the turn of the century. However, this proposal, like the N. Main transit station, deserves additional study. Over the short term, a rubber-tired trolley or similar vehicle running on streets between the light rail line and the core may be feasible, and could provide a level of support to the core which would approximate that of a light rail loop.

Nonconformities Within the Downtown Area

The Gresham Downtown Plan affects properties which are both developed and undeveloped. Many of the developed parcels are occupied by uses and features which do not conform with the overall objectives of the downtown plan or with the sub-districts described herein. Among the nonconforming uses are several light manufacturing and assembly businesses, storage warehouses, auto-dependent uses, and approximately 180 single-family detached dwellings. In addition, there are numerous properties occupied by buildings, parking lots, and other forms of development which do not conform with the site and building design objectives contained in this plan. Because the Gresham Downtown Plan is based on a vision of the downtown area in 2020, these nonconformities will exist for years. This plan anticipates the gradual conversion of nonconforming uses and developments over the 25-year planning period. While these uses exist, they are expected to continue in use and operation for as long as their owners find it economically feasible to do so. It is also anticipated that existing nonconforming uses may undergo alterations and even modest expansions in ways which do not result in a substantially greater degree of nonconformity.

Conclusion

In order to implement the Gresham Downtown Plan, new land use districts and development standards are required. The most effective means of accomplishing the objectives of the plan is the establishment of a Plan District encompassing the downtown area as shown in Figure 1. Within the Gresham Downtown Plan District, sub-districts should be designated, also as indicated in Figure 1. The uses permitted and the development standards to be applied in these sub-districts should be as described in this plan, and consistent with revised policies and implementation standards of Volume 2 of the Community Development Plan for Downtown Area Development.

Table 1

Downtown Population and Employment Potential

Sub-District	Total Acres	Acres Available for Redevelopment	Average FAR*	Total New GFA**	New Commercial GFA	New Residential GFA	New Employment	New Residential Units	Total New Persons
CUC	69.6	20.88 ¹	1.00	909,533 ⁵	682,150 ¹¹	227,383	1,364	253	1,926
DT	98.8	49.40 ²	1.50	3,227,796 ⁶	1,936,378 ¹²	1,291,118	4,842	1,435	8,031
DC-2	34.0	10.20 ¹	0.50	222,156 ⁷	177,725 ¹³	44,431	296	49	406
DC-1	25.9	2.59 ³	0.40	45,128 ⁸	45,128 ¹⁴	0	90	0	90
DR-30	27.0	13.50 ²	0.80	470,448 ⁹	70,567 ¹⁵	399,881	141	364	949
DR-12	4.1	0.62 ⁴	0.40	10,716 ¹⁰	1,072 ¹⁶	9,644	2	11	26
TOTALS	259.4	97.19		4,885,777	2,913,020	1,972,457	6,735	2,112	11,428

* FAR = Floor Area Ratio

** GFA = Gross Floor Area

¹ 30% of total acreage

² 50% of total acreage

³ 10% of total acreage

⁴ 15% of total acreage

⁵ 75% of GFA

⁶ 60% of GFA

⁷ 80% of GFA

⁸ 100% of GFA

⁹ 15% of GFA

¹⁰ 10% of GFA

¹¹ 25% of GFA

¹² 40% of GFA

¹³ 20% of GFA

¹⁴ 0% of GFA

¹⁵ 85% of GFA

¹⁶ 90% of GFA

APPENDIX 38
(Added by Ord. 1366 adopted July 11, 1995; effective July 11, 1995)

GRESHAM CIVIC NEIGHBORHOOD - TRANSIT CENTERED DEVELOPMENT

GRESHAM CIVIC NEIGHBORHOOD

Purpose and Process:

Gresham Civic Neighborhood describes a partly developed super-block of 130 acres close to the core of the City. Bounded by Burnside, Eastman Parkway, Division and Wallula (212th), the block is bisected by light rail. This land is made up of several different ownerships and uses, among them City Hall. The term 'Civic Neighborhood' connotes an urban neighborhood which includes uses and features associated with the center of a city; an area which embodies civic qualities and is likely to inspire a sense of civic pride in those who use it.

Until recently, a regional shopping center was planned for much of the undeveloped western half of the site. It is now evident that such a use is unlikely, and a principal property owner has formally requested that the City remove the Regional Shopping Center [RSC] planning overlay from the property. The City recognized that removal of that potential use may create an opportunity for mixed use development at the higher than usual densities cited in Metro's 2040 studies and implied by the State's recent Transportation Planning Rule. The City of Gresham therefore sought participants with whom to develop a plan for the entire 130 acre super-block, recognizing that City Hall would contribute to the interaction between employment, retail, residential and other uses which could be developed together.

The City was joined by Metro, Tri-Met, Winmar and PGE in sponsoring design of a mixed use plan for the super-block which became known as the Gresham Civic Neighborhood. An important purpose of the plan is to demonstrate that development of mixed uses at relatively high densities is not only feasible in Gresham, but can offer advantages not found in conventional suburban development. This is to be a transit oriented neighborhood with good connections to adjacent neighborhoods - on foot as well as by car and bicycle. Those who live and work in the Civic Neighborhood will generate fewer automobile trips than their counterparts elsewhere; not only because of the proximity of light rail, but also because it would be more convenient to walk to a nearby shop or restaurant to buy lunch, for example.

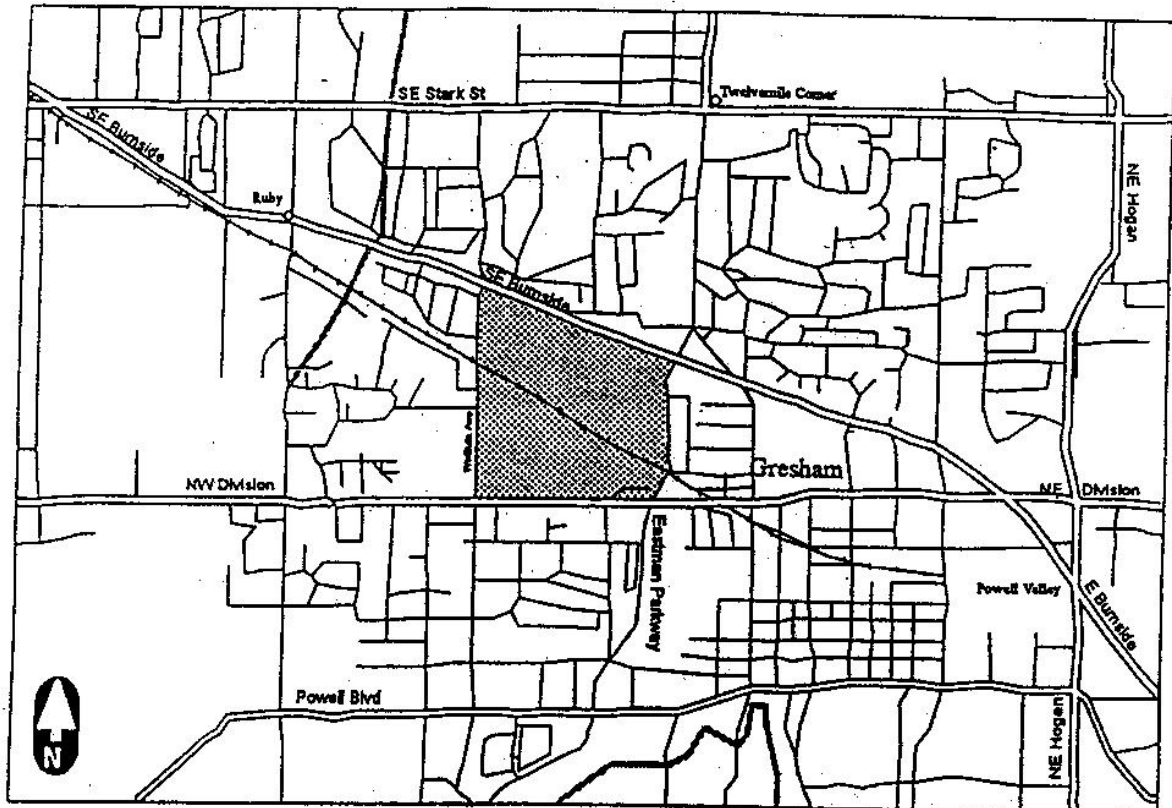
The *Transportation Impact Analysis* [Table 3] provides a quantification of the resulting reductions in automobile trip generation, taking account of reduced trips internal to the neighborhood as well as reductions in trips to destinations elsewhere. Total trip reductions over typical rates are as follows:

- Residential automobile trips reduced by 10%
- Office automobile trips reduced by 30%
- Retail automobile trips reduced by 35%

By guiding development towards a mix of uses at relatively high densities, Gresham will demonstrate the advantages of sustainable development and set an important precedent for the region.

Planning Process:

During the spring of 1994, the City of Gresham and the other project sponsors invited representatives of the neighborhoods and the business community to assist them in selecting a consultant team which would prepare a plan for the Civic Neighborhood. Two committees were established to direct the work of the consultants and evaluate the outcome. The Management Committee is an executive group comprising representatives of the project sponsors together with the consultant hired as project manager for the City. The Steering Committee included principles from each of the project sponsors, together with community representatives and interested parties.



Gresham Civic Neighborhood Vicinity Map

A comprehensive public consultation process was designed and put into effect early, so that the concerns and priorities of those affected would influence the planning process from the outset. Key individuals were interviewed and opinions were sought from numerous organizations with interests in central Gresham. Results were analyzed and relayed to the consultant team and the governing committees. Consultation continued, particularly through public meetings of the Steering Committee, through eight months of plan design and refinement.

Periodically, recommendations were referred by the Steering Committee to Gresham Planning Commission and to the City Council, so that they would be kept informed and so that the team could benefit from useful feed-back to the planning process. On March 20, 1995, the Steering Committee and the consultant team completed the draft Civic Neighborhood Plan and recommended adoption of a package comprising land use plan, transportation impact analysis, financial analysis and implementation strategy to the Planning Commission and the City Council.. Following this action, City Planning staff carried out a refinement of draft code language developed by the consultant team, and prepared specific proposals to adopt the Civic Neighborhood Plan in the form of a Plan District, as part of the Gresham Community Development Plan.

Regional Goals :

The project sponsors share a strong commitment to state and regional planning and transportation goals, and to their implementation at the local level. Consequently, when members expressed their priorities for the project at the first Steering Committee meeting, it was no surprise that many reflected principles addressed in the State Transportation Planning Rule and Metro's 2040 Study emerged. These included:

- Reduce automobile trips by capitalizing on transit opportunities, and by creation of an environment which encourages people to walk.
- Create a circulation system which favors safe and efficient access by and between all modes.
- Respond to the central location of the project within the City of Gresham by including a wide range of uses and activities developed to urban densities. Uses should complement those already established nearby.
- Investigate and implement cost effective measures to reduce automobile travel.
- Provide effective connections to adjacent neighborhoods with bike routes and footpaths.
- Maximize potential transit ridership through an appropriate mix and density of uses developed in the Civic Neighborhood, and by providing easy access to transit.
- Set a precedent for sustainable development in regional centers.

Project Objectives:

Gresham's Transportation 2000 and Vision 2020 initiatives had created clear directions for the city which are in keeping with state and regional planning and transportation directives. Participants in both programs were represented on the Steering Committee as specific objectives of the project were developed. The Steering Committee provided specific direction to the team through a set of general and specific project objectives. The general project objectives were as follows:

- To identify the best uses for the super-block; uses which will complement facilities already existing downtown, and uses which will take full advantage of access by transit, on foot and by bicycle.
- To build consensus for a development master plan for the site.
- To develop a strategy for economic development of the property leading to full build-out within the next ten years.

- To advise the City on appropriate plan district overlay provisions for the super-block.
- To reflect the intentions of the 2040 regional strategy for Gresham as a regional center.
- To create an urban environment which those who live or work in Gresham are proud to claim as their own.

These general objectives were elaborated in a series of more detailed objectives which were grouped under five topics: land use, open space and pedestrian circulation, transportation, character and implementation. Since these detailed objectives were fundamental to all that followed on the project, they are given in full.

1 Land Use Objectives:

- 1.1 Provide a compatible mix of land uses which support and complement nearby uses.
- 1.2 Provide uses of a density and configuration that will capitalize fully on the presence of light rail and bus services.
- 1.3 Encourage uses which are consistent with the urban character of a civic central neighborhood.
- 1.4 Encourage a mix of commercial development which will
 - create new jobs
 - generate direct and indirect tax revenue
 - attract new downtown residents
 - provide new amenities
- 1.5 Accommodate an appropriate mix of uses to satisfy both the economic needs of landowners and community needs including:
 - substantial near-term development
 - economically feasible uses
 - support regional goals for increased densities
 - provision of new housing options in Gresham
 - reduced dependence on automobiles
 - public open space and other public facilities
 - optimum utilization of public infrastructure

2 Open Space & Pedestrian Circulation Objectives:

- 2.1 Create a comprehensive pedestrian network, linking the Civic Neighborhood with adjacent areas and developments.
- 2.2 Integrate public open spaces and landscaped areas as a cohesive system.
- 2.3 To the extent that it is practical to do so, integrate the pedestrian system and the open space system.
- 2.4 Use open space and pedestrian circulation to reinforce desired land use patterns.
- 2.5 Encourage access to public and commercial facilities by those who live or work in adjacent areas, without use of automobiles.
- 2.6 Provide safe and convenient access for all to transit stations.
- 2.7 Capitalize on the near and distant views which distinguish this location.
- 2.8 Integrate flood control measures with components of public and private landscape.
- 2.9 Capitalize on flood control measures to enhance the qualities and attractions of the superblock to appropriate land uses and development types.
- 2.10 Maintain the special character of the Wallula corridor and its natural features.

3 Transportation Objectives:

- 3.1 Design the Civic Neighborhood as a model multi-modal access community, accommodating the needs of all modes in a balanced and non-exclusionary manner.
- 3.2 Capitalize on the presence of light rail at the site.
- 3.3 Locate and configure parking in ways which will not dilute urban densities nor interrupt street frontages or public open spaces.
- 3.4 Parking should be convenient yet not dominant; adequate but not over-provided for normal, day to day needs.
- 3.5 Provide a hierarchy of local access streets within the superblock which will provide flexibility in circulation options and will be effective in serving a changing range of land uses over time.
- 3.6 Respect the established character and functions of existing streets in the vicinity.
- 3.7 Dimension streets for their local access functions, using no more land than is necessary.
- 3.8 Improve accessibility to the rest of central Gresham, with which this superblock is intended to function as an integral part.
- 3.9 Accommodate an effective link between historic downtown Gresham and the civic neighborhood.
- 3.10 Actively encourage walking and use of bicycles and transit.

4 Character:

- 4.1 Foster a character for the Civic Neighborhood which is appropriate to its central location and complementary to its residential and commercial neighbors, including West Gresham.
- 4.2 Project an image of a welcoming environment
- 4.3 Encourage architectural diversity within defined parameters of building scale and density
- 4.4 Design the street system as the framework for a walkable scaled and densely developed central city district; streets that feel safe to walk on by day and after dark.
- 4.5 Set a precedent for the quality of public and private development with the design, materials and workmanship evident in all public infrastructure improvements.
- 4.6 Establish design guidelines to be used uniformly throughout the superblock to ensure consistency in adherence to these objectives.
- 4.7 Phase development so that it appears to be fully integrated with other components of the neighborhood. Avoid leaving unfinished edges between phases.
- 4.8 Respect the integrity of nearby neighborhoods.

5 Implementation

- 5.1 Maintain economic feasibility as an important value in evaluating alternatives.
- 5.2 Select a development plan which may be supported by market factors.
- 5.3 Clearly identify the roles and responsibilities of both public and private participants in meeting plan objectives.
- 5.4 Provide a planning and development approval process which is clear, fair and timely, and assures that the Committees' objectives will be met.
- 5.5 Dimension and configure parcels according to the housing, retail or office uses which they are to accommodate.

The Plan:

The size and configuration of the Civic Neighborhood site invited a fresh approach to planning it. Perimeter streets provide good local and regional access, yet access to those streets from the site is limited by local traffic conditions. Much of the property is undeveloped, with splendid views, varied topography and some stands of trees. The light rail line which bisects the undeveloped

half of the property was in the process of being upgraded to double track, providing an opportunity for introduction of an additional station.

Many suburban developments are laid out to meet the specific needs of the 'build-out' plan - of single family housing, for example. In this case, a more dynamic approach was necessary, since the ultimate mix of uses at build-out would remain dynamic. Although early phases of development might be clearly defined, the essence of a mixed use urban neighborhood is its ability to evolve; to change with the times so that it keeps up with the changing needs of the people who live and work there. The most significant consequence of this aspect of the Civic Neighborhood is perhaps the design of the street network.

The first phases of development have been identified as development which is projected to occur in the first ten years. Transportation and financial analyses have been based on these same projections, which are:

<i>Phase I, by year 2000:</i>	332,000 GSF Shopping and Other Retail Uses 97,000 GSF Office Uses 662 Residential Units
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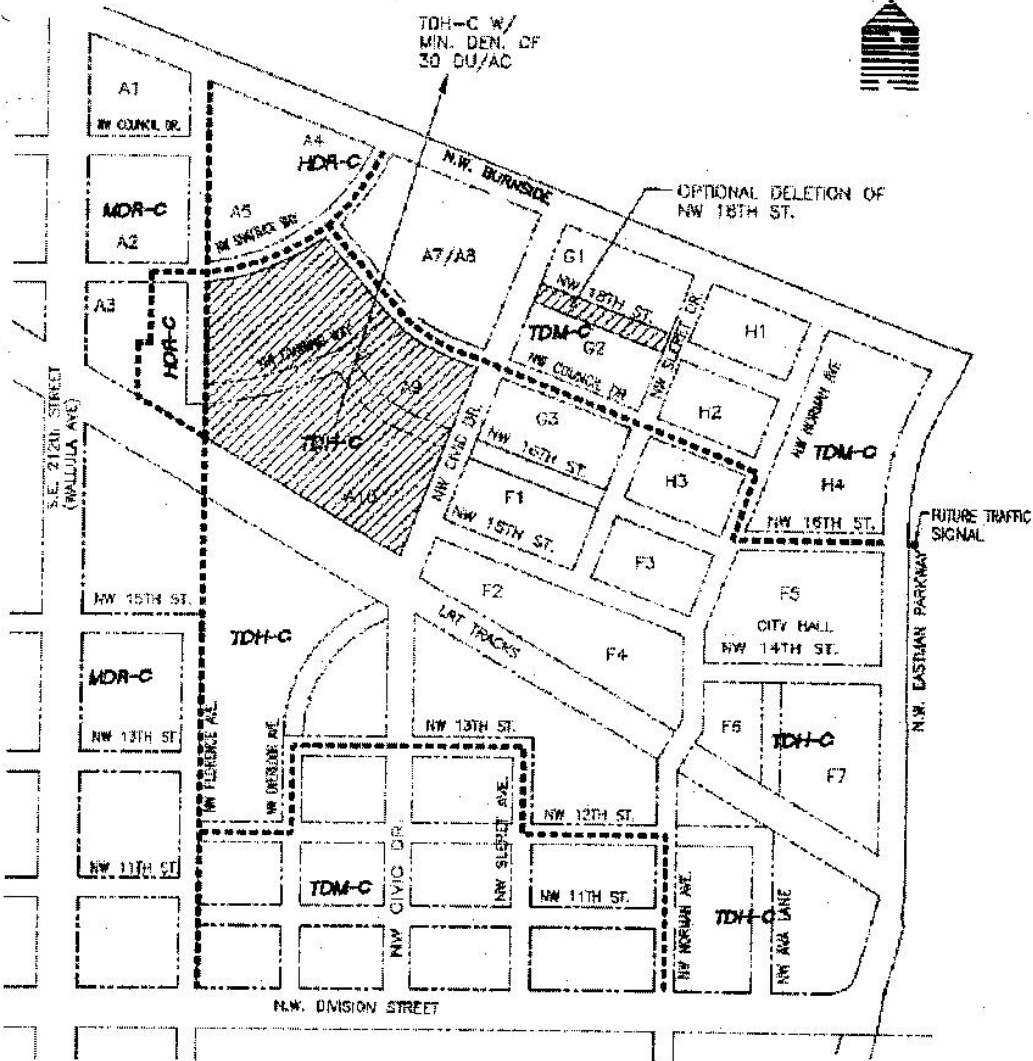
<i>Phase II, By Year 2005:</i>	332,000 GSF Shopping and Other Retail Uses 309,300 GSF Office Uses 885 Residential Units
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Densities at the completion of Phases I & II will be substantially greater than might be expected through conventional development. If one assumed MDR-24 zoning as a likely alternative, then a minimum density of 12 dwelling units per acre [du/a] would be required, with equivalent FAR of about 0.25. Projected development under the proposed Civic Neighborhood zoning would provide minimum densities of 17, 24 and 30 du/a depending on location, with minimum FAR of 0.4 in the TDM-C zone and 1.1 in the TDH-C zone. The street network must serve the first phase of development on the western part of the site efficiently, but it must be extendible into properties to the east which are currently devoted to independent uses. A wide range of building types and uses would be permissible, and the street system must be amenable to all of them, and to subsequent changes of use. The planned density of development is markedly higher than has been customary in this and other suburban areas, so the street network must also provide greater permeability of the site: making it possible to develop a greater number of lots independent of one another, each capable of accommodating a wide range of building types and access needs. The solution was a street grid which was shaped to the peculiar needs and characteristics of the site.

The street grid was to satisfy all the needs listed above, but it should also reconcile the points of access into adjacent neighborhoods. This is important for two reasons. One, it makes connections between neighborhoods which are currently separated by discontinuities in the urban fabric. Two, it makes transit and other facilities in the Civic Neighborhood convenient and accessible to neighbors who are currently obliged to use their cars for almost every trip.

Although uses will be mixed throughout the Civic Neighborhood, areas can be distinguished for more or less public activity, and for likely locations for certain uses - areas close to the station clearly having different potential uses than areas close to Wallula, for example. Block sizes defined by the street grid were therefore adjusted to take account of these differences, giving greater accessibility to the most populous areas, providing for vital and varied urban streetscapes.

Map 4.1200 A
 Gresham Civic Neighborhood
 Existing Land Use Plan Sub-District



STREET NAMES ARE TENTATIVE AND SUBJECT TO CHANGE

The streets themselves were designed to carry local traffic efficiently but not necessarily speedily to destinations throughout and beyond the neighborhood. Care was taken, however, to avoid creation of short-cuts that could compromise the safety or quality of the urban environment within the neighborhood. Street sections have sidewalks comparable in width to those in downtown Gresham; designed to encourage use rather than merely satisfy a need. Street trees and curbside parking are generally included, since they add to the sense of safety and amenity for pedestrians. In short, the street system is designed to provide equitable use by all modes.

Streets in the Civic Neighborhood, as elsewhere, are arranged in a hierarchy of importance. The biggest and busiest street will be a collector street which joins Burnside and Division via the new light rail station. This will be the principal street towards which retail establishments will be oriented. It will be the main entry to the neighborhood for most people. Views into the neighborhood along this street will terminate at the station plaza, which provides a focus for the western part of the site at the new MAX station.

The new station will be only a quarter mile west of the existing City Hall station. This creates a special opportunity to link the stations by a special street, divided by the light rail tracks - like a miniature version of Burnside west of Rockwood. A one-way access street on each side of the tracks will serve the principal entrances of future buildings which face one-another across the tracks. The significance of this arrangement is that light rail is acknowledged as a component of the Civic Neighborhood, and a generator of the vitality which makes it a desirable place to live and work.

Opportunities for circulation on foot extend beyond the street system. Some natural areas will be conserved as public or private parks, and footpaths through these will extend the pedestrian network. Green spaces and circulation routes will be parts of an integrated system giving comprehensive access to destinations within and beyond the Civic Neighborhood. The principal focus of neighborhood activity will be the plaza built at the crossing of the north-south collector street and the light rail line.

The plaza will be a paved area covering almost an acre. Through it will run the light rail tracks, signifying the inseparable nature of transit and this neighborhood. The west part of the plaza will include platforms for the new station while the east part will include a grade crossing of the north-south collector street. Enclosure of the plaza space to the northwest will be effected by a mixed use building with storefronts opening onto the plaza with housing above. To the northeast and east, offices with street level retail will be built. South of the tracks, seniors' multi-story housing is planned, with a mixed use complex across the street to the east including retail, athletic club and offices.

The greatest concentration of activity in the first phase of development will be housed in the buildings which surround the plaza, including street level uses which will tend to encourage outdoor activities. Being the natural focus for activity at this level will make the plaza the natural attractor for other community activities, both programmed and unscheduled. The Steering Committee heard numerous comments from the community about the lack of a venue for such activities, so the plaza can satisfy a wider need - contributing to its function as the Civic Neighborhood.



View of the Station Plaza Looking North Across the Light Rail Tracks

Land Uses:

The entire Civic Neighborhood will be zoned for mixed uses, but different use categories reflect the different aptitudes of various parts of the site for certain predominant uses. Phase One development, comprising the undeveloped western half of the neighborhood, is divided by the cutting through which the LRT tracks run. Much of the land to the north of the tracks enjoys views of the Cascade peaks and a wooded frontage to Wallula. There are opportunities for a variety of housing types here, with some commercial opportunities where Burnside provides high visibility. South of the tracks, the topography is more varied. Development will require extensive grading. Access and visibility from Division, the busiest adjacent street, make this a suitable location for community retail uses, with housing forming a buffer along the sensitive Wallula frontage.

Opportunities for the greatest densities are close to the light rail station, which will maximize potential transit ridership. Housing and office users are the strongest transit supporters, so these uses surround the station plaza.

Two minor portions of the site are occupied by the Dean Company, a specialist wood veneer plant south of the tracks, and K-Mart, which occupies the northeast corner. Both of these users may remain in the Civic Neighborhood for an indefinite period, and no assumptions have been made about their moving. However, the plan for the neighborhood plans for their eventual removal and anticipates how the street network will then be extended.

The market analysis recognized a number of uses which as yet have limited prospect of development in central Gresham, but might be expected to play a major role in future. Offices, hotel and related retail uses are envisaged for late developing portions of the Civic Neighborhood. These would consolidate and support the employment center established by the City Hall. Some additional housing would complete the balance of living, working and recreational opportunities provided within the neighborhood.

City Hall currently occupies a 50,000 SF building and is in the process of developing an additional 90,000 SF in a multi-story office building on the Eastman Parkway frontage. That building will be ready for occupancy in 1996. The City's master plan envisages additional buildings to the south and west of City Hall in the future, so a substantial commitment has been made to this location; one which will certainly contribute to the Civic Neighborhood's emergence.

Thus, phased development of a mixed neighborhood is planned, with development of the undeveloped western portion of the site expected to be completed within a decade, the remaining phases to follow as opportunities arise.

Implementation:

The feasibility of the plan was verified through four complementary but separate studies: the *Market Research and Development Program* [Leland Consulting Group]; the *Financial Analysis Report* [SKMG]; the *Transportation Impact Analysis* [KJS Associates]; and the *Implementation Strategy* [Spencer & Kupper]. However, implementation of the plan depends upon physical, regulatory, and market considerations. Throughout the plan development process, both the Steering Committee and the Management Committee pressed on every aspect of the plan which might call into question its financial feasibility. Early implementation of phase one of the plan remained a high priority with all concerned.

The *Market Research and Development Program* surveyed recent market data and outlined the types and intensities of uses which an aggressive plan might consider, giving some indication of the readiness of the market for each product type. This work provided the basis for the development program for the plan, drawing also on the knowledge and experience of Committee members and other sources with knowledge of the Gresham market.

When the plan had reached a stage of substantial resolution and preliminary civil engineering work had been completed, a preliminary financial analysis was prepared and the transportation impact analysis was begun. Carried through several iterations as the plan was refined, these two studies confirmed the considerable advantages of dense, mixed use development at a transit station, and demonstrated the financial feasibility of the first phase of development.

Implementation of the plan from the point of view of the City of Gresham as planning authority posed some special problems, and required a clear regulatory framework to replace the Regional Shopping Center plan overlay. As the plan was being refined, a draft zoning instrument was developed. This was modeled on the City's recently adopted Downtown Plan ordinance, but differs from it in a number of standards and provisions. The *Civic Neighborhood Plan District* code language defines four zones within the district:

TDM-C Transit Development District, Medium Density. Retail, office and high density housing are all permitted in this zone, though community retail uses are expected to predominate. Housing must achieve a density of at least 24 dwelling units per net acre (du/a)

TDH-C Transit Development District, High Density. Areas adjacent to existing and future light rail stations are also permitted a full range of mixed uses, but a 10,000 SF limitation on freestanding retail will ensure that transit supportive uses predominate. Minimum housing density is 30 du/a.

HDR-C High Density Residential. Predominantly residential areas with good access to transit, these areas may also include neighborhood commercial uses, small offices and local parks. Residential densities of at least 24 du/a must be achieved in addition to commercial uses. The 10,000 SF limitation on freestanding retail includes this zone.

MDR-C Moderate Density Residential. Intended as a lower intensity buffer along Wallula, this residential zone requires a minimum density of 17 du/a. Provided that minimum housing densities are also met, mixed use and neighborhood scale commercial uses may occupy the ground floors of residential buildings.

Public Components of the Civic Neighborhood Transportation Core:

Three transportation related projects impact the ability of the Civic Neighborhood to meet the state and regional planning and transportation goals. These projects are the central north-south collector street, the light rail station and the Civic Neighborhood Station Plaza. The importance of each Civic Neighborhood Transportation Core project may be summarized as follows:

Central north-south collector street:

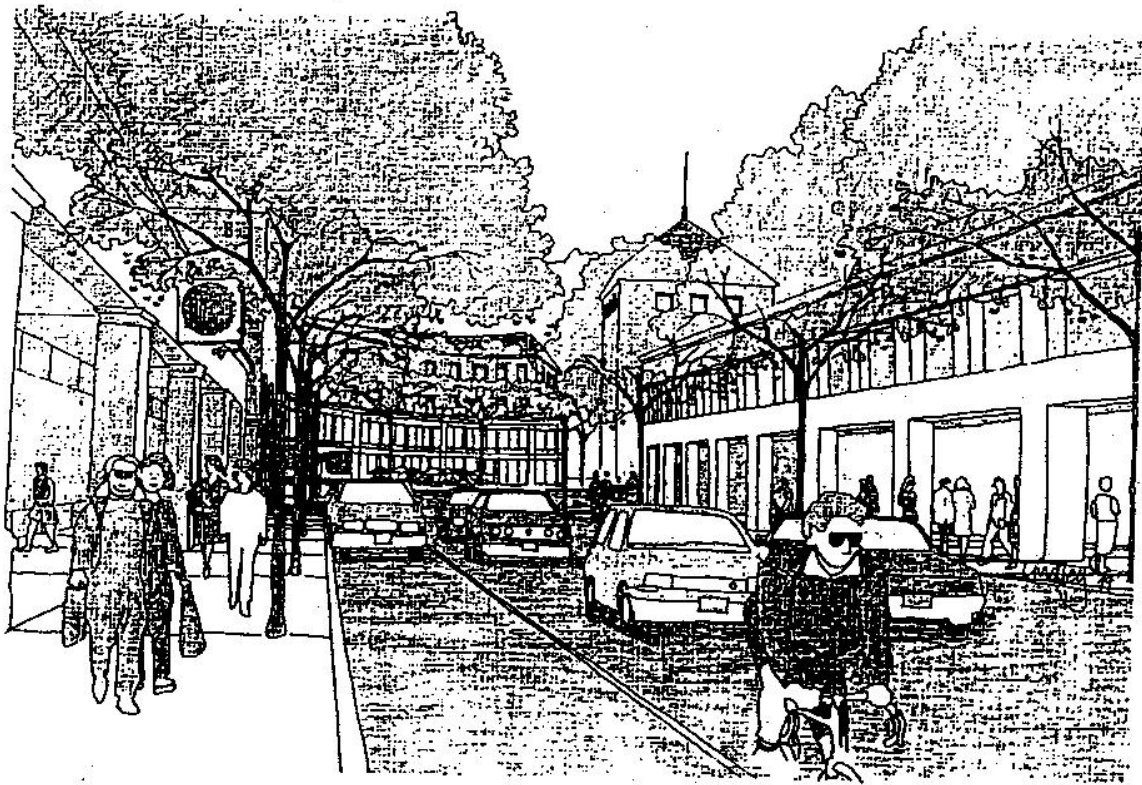
1. *Description and Function* This street provides the main points of access and egress between the Civic Neighborhood and Division and Burnside. Although an important traffic street, it will also function as the main pedestrian street in the western half of the neighborhood. A change in alignment of the street at the light rail tracks ensures that transit and the station plaza will fill views along the street. The collector street will be wider than other streets in the neighborhood, providing 15' wide sidewalks, 8' wide curbside parking lanes, 5' wide bike lanes and two 12' wide travel lanes. Street trees, street lights and other furnishings will complete the amenities of this street, making it an attractive place for people to walk. This treatment complements the requirement contained in applicable zoning codes that buildings on parcels adjacent to the north-south collector shall be built with zero set back, will have active building frontages and restrictions on blank walls. Estimated total construction cost is \$2,049,000 and includes 2,400 linear feet of 80' wide right of way.

2. *Critical Functions* The central north-south collector, as described above, sets an important precedent for the whole neighborhood by emphasizing the concept of equitable access. Vehicular traffic is recognized as necessary to the efficient functioning of the neighborhood, and is properly accommodated. However, access on foot, by bicycle and on transit are given similar emphasis and amenity. Only by a clear commitment to equitable access can the full benefits of high density mixed use development be realized.

3. *Relationship to 2040 Goals:* Stated another way, establishment of an ethic of equitable access is a necessary first step in achieving project objectives which are derived from the State Transportation Planning Rule and Metro 2040 goals:

- Reduce automobile trips by capitalizing on transit opportunities, and by creation of an environment which encourages people to walk.
- Create a circulation system which favors safe and efficient access by and between all modes.
- Respond to the central location of the project within the City of Gresham by including a wide range of uses and activities developed to urban densities. Uses should complement those already established nearby.
- Investigate and implement cost effective measures to reduce automobile travel.
- Provide effective connections to adjacent neighborhoods with bike routes and footpaths.
- Maximize potential transit ridership through an appropriate mix and density of uses developed in the Civic Neighborhood, and by providing easy access to transit.
- Set a precedent for sustainable development in regional centers.

4. *Redevelopment Leverage:* Without a through street from Division to Burnside, transit supportive development near the tracks and to the north would be delayed, perhaps for many years, failing to trigger Tri-Met's investment in the new station. Thus the project is identified as a Transportation Core project: one which is important to early realization of the Civic Neighborhood.



View of the Central North-South Collector Street Looking North from the Community Retail Center

Civic Neighborhood Light Rail Station

1. *Description and Functions:* A new light rail station is proposed, to be located immediately west of the grade track crossing by the central north-south collector street. This location places the station as far west as possible without encroaching into the cutting. This westerly location will improve accessibility for those who reside to the west of Wallula, putting a number of residents within a ten minute walk of the station. It will also put the majority of the Civic Neighborhood within a five minute walk of a MAX station and all within ten minutes, since the existing City Hall station serves the southeastern part of the neighborhood. The Civic Neighborhood station will be similar in design to the City Hall station, but its platforms will be lower, since it will be built for use by the new low floor rail cars. The platforms will be at the west end of a public plaza; a space designed to accommodate the station, the tracks and the collector street crossing. This plaza will be surrounded by populous buildings with active storefronts. It will be the social focus for those who live and work in the Civic Neighborhood. Thus the station will function as an integral part of the community's activity patterns, helping to make transit a normal and willingly accepted part of peoples lives. Estimated total construction cost is \$2,721,000.

2. *Critical Functions* The station will be located at the focus of community activity, but it will also be the principal justification for a concentration of mixed uses around it. Multi-story seniors' housing will be located immediately to the south precisely because of direct access to the station, reducing or eliminating the need to drive. Similarly, an athletics club is planned because commuting workers are a target group, able to access the club more easily by train than if they drove. Concentrations of high density residential development and mixed office uses surround the station because of the direct and convenient transit access provided by the new station.

3. *Relationship to 2040 Goals:* The Civic Neighborhood station is important in achieving the project objectives which rely upon transit access to reduce traffic generation and parking needs. The State Transportation Planning Rule and Metro 2040 goals lead to a number of priorities for the project which relate to construction of the new Civic Neighborhood station:

- Reduce automobile trips by capitalizing on transit opportunities, and by creation of an environment which encourages people to walk.
- Create a circulation system which favors safe and efficient access by and between all modes.
- Respond to the central location of the project within the City of Gresham by including a wide range of uses and activities developed to urban densities. Uses should complement those already established nearby. Transit is necessary to justify the proposed mix and density of uses.

4. *Redevelopment Leverage:* Construction of the Civic Neighborhood light rail station is an important distinguishing factor for this site. The station will concentrate transit supportive and transit dependent uses around the plaza. The types of densities and mixes of uses planned for other parts of the property have some dependence the existence of a station plaza to create an urban neighborhood of this nature. The Civic Neighborhood light rail station is important to the whole concept of sustainable development at this Regional Center.

Civic Neighborhood Station Plaza:

1. *Description and Function:* The Civic Neighborhood Station Plaza provides a physical focus to the community. It is located at the greatest concentration of activity, at the new light rail station, on the collector street and adjacent to busy storefronts. This plaza will include both the light rail tracks and the street within its space, making transit part of the community focus. The entire plaza will measure approximately one acre. Most of the space regularly occupied by people will be north of the tracks and west of the collector street. A terrace outside the storefronts along the northwest perimeter will invite cafe tables and chairs. Below it, amphitheater steps will capitalize on the slope down to track and platform levels; also the level at which the largest public activity area will be located. Much of the plaza will be paved with brick, with concrete at street and track. Street trees, pedestrian scaled street lights, seating, planters and other furnishings will complete the plaza. The quality of materials will not be lavish, but it will be sufficient to fulfill its intended function as an activity attractor and will be built of quality materials to keep maintenance costs down. The cost of construction will be in the order of \$25 per square foot. Estimated total construction cost is \$1,200,000.

2. *Critical Functions* The primary function of the plaza is to assert the station area as the heart of the Civic Neighborhood community. It will provide the attraction to fill the retail units which will front onto it, combining with them to maintain a sense of vitality through the day and into the evening. The plaza is a celebration of what can be achieved with coordination of mixed living, employment and recreation activities with a light rail station. It will symbolize the very reasons why people choose to live and work in the Civic Neighborhood. The plaza will manifest the gregarious qualities of the community, providing it with a place to celebrate and a place with which to identify.

3. *Relationship to 2040 Goals:* A key aspect of the State Transportation Planning Rule and Metro 2040 goals is the willingness of people to oblige by choosing to live and work in an environment which is non-traditional to suburban settings. A demonstration of the virtues of a busier and more varied environment is necessary to the success of the whole enterprise. The plaza provides a platform for residents and visitors to discover some of those virtues and demonstrate them to others. This is the place that people will think of and photograph as the Civic Neighborhood. The goals which the plaza will support are therefore all of the following:

- Reduce automobile trips by capitalizing on transit opportunities, and by creation of an environment which encourages people to walk.
- Create a circulation system which favors safe and efficient access by and between all modes.
- Respond to the central location of the project within the City of Gresham by including a wide range of uses and activities developed to urban densities. Uses should complement those already established nearby.
- Investigate and implement cost effective measures to reduce automobile travel.
- Provide effective connections to adjacent neighborhoods with bike routes and footpaths.
- Maximize potential transit ridership through an appropriate mix and density of uses developed in the Civic Neighborhood, and by providing easy access to transit.
- Set a precedent for sustainable development in regional centers.

4. *Redevelopment Leverage:* The station plaza will be built to enhance the visibility, and therefore the market attractiveness, of the Civic Neighborhood. An important consideration in undertaking a model development such as the Civic Neighborhood is making it both visible and attractive to potential investors - whether they are investors in development or individuals making personal investments in places to live and work. Early construction of the plaza will enhance many of the virtues of the Civic Neighborhood and help to leverage early private investment.

Additional Sources

In addition to the market research, financial analysis, and transportation analysis cited above, the Civic Neighborhood Plan also relied upon a *Wildlife and Wetland Habitat Assessment* and a *Preliminary Environmental Site Assessment*, both prepared by SRI/Shapiro, Inc. in August 1994, and a *Summary of Civil Engineering and Landscape Considerations*, prepared by MNWR, March 1995. The wildlife and environmental analyses provided baseline data on natural resource conditions found on the Civic Neighborhood site, an analysis of the potential suitability of portions of the site as wildlife habitat, and a preliminary assessment of the potential for the presence of hazardous waste and material on portions of the site. The report prepared by MNWR presented information concerning considerations on the site relative to its potential development as a high-density, transit-oriented district.

Central Rockwood Plan

Volume 1 - Community Development Plan

Appendix 39

City of Gresham

Effective June 4, 1998

The logo for the Central Rockwood Plan consists of a solid black square. The words "CENTRAL ROCKWOOD PLAN" are printed in white, uppercase letters inside the square. A horizontal line extends to the left from the bottom-left corner of the square.

CENTRAL
ROCKWOOD
PLAN

Central Rockwood Plan

Purpose and Process

In 1995 the Gresham City Council directed the city's long-range planning staff to begin work on a land use plan to guide growth and development in the Central Rockwood area to the year 2020. The primary purpose of this directive was to implement the Gresham 2020 Vision, completed in 1992, for Central Rockwood. The Vision outlined a long-term, conceptual blueprint for growth in the city to the year 2020. This scheme assigned to the Central Rockwood area the role of "Community Center," surrounded by a mixed-use, "live & work" community centered on the intersection of E. Burnside and 181st Ave.. As such, Rockwood was envisioned as an important sub-center, second only to central and downtown Gresham in terms of significance for housing, employment, and commercial services.

While the Gresham 2020 Vision provided a general sense of Rockwood's future, a detailed land use plan was needed to flesh out the concept and provide details as to the types and character of development to be accommodated and encouraged in the area. This was the purpose of the Central Rockwood Plan.

As work was beginning on the Central Rockwood Plan, Metro was completing its Region 2040 planning program. Under Region 2040, various parts of the Portland metropolitan region were designated as specific design types, to accommodate certain types of development. Downtown Portland is to continue in its role as the hub of the region, and was given the predominant designation of "Central City." Next in regional importance are nine "Regional Centers," of which central Gresham is one. Third in the hierarchy are "Town Centers." Central Rockwood was designated in the adopted Metro 2040 Growth Concept as one of twenty-four Town Centers in the Portland region. For purposes of the Metro 2040 Growth Concept, Town Centers are described as follows:

Smaller than regional centers, and serving tens of thousands of people, town centers are the third type of center with compact development and transit service. They would provide local shopping and employment opportunities to a surrounding market area of about 2.5 miles. Examples include the downtowns of Lake Oswego, Tigard and Oregon City. the 1990 density of an average of 23 people per acre would nearly double - to about the current densities of development along Hawthorne Blvd. and in downtown Hillsboro.

Metro's view of Central Rockwood's future as a Town Center was very much consistent with the Gresham 2020 Vision concept of a community center, and a live/work neighborhood for Rockwood. The intent in both cases was for Central Rockwood to shape growth in such a way that it would become a more urban district over the next twenty years, with housing, shopping and employment in close proximity. This mixing of land uses and activities would be very convenient for residents, employees, and business customers, leading to a desire to make the area more pleasant for people on foot; in essence, to make Central Rockwood more "pedestrian-friendly." The excellent transit service provided by

MAX, and the region's huge investment in light rail were seen as additional reasons to seek transit-supportive land uses and designs in Rockwood's future.

In early 1996 a citizens advisory group, known as the Rockwood Plan Task Force, was appointed to assist city staff in preparation of the plan. The Task Force met some 30 times through 1996 and 1997 and into early 1998. All of the Task Force's meetings were open to the public, and interested citizens were frequently in attendance. During that same period, as work on the plan proceeded, it was presented in draft form to the public at a number of community events to receive additional citizen comment. Two open house events were held at Portland Lutheran School in November 1996 and again in the fall of 1997. Each open house was preceded by the mailing of flyers to over 5,000 property owners and residents of Central Rockwood. Periodic updates were also provided to the Gresham City Council and Planning Commission as the planning proceeded. Each of these outreach efforts yielded valuable insights which helped to shape the Central Rockwood Plan as it was being drafted.

Project Goals

One of the Task Force's first actions was to adopt a set of project goals. These goal statements guided work on the Central Rockwood Plan from start to finish. They are listed below:

1. Create a 25-year land use plan for the future development of Rockwood, which addresses the following elements:
 - Land use
 - Development standards
 - Urban design
 - Public facilities improvements
 - Transportation
 - Re-development and revitalization
2. Propose a detailed, concrete program for re-development of the triangle formed by NE 181st Ave., E. Burnside, and SE Stark.
3. Involve and seek the support of residents, business and property owners, and interested citizens of Gresham and the Rockwood area in the process of creating and adopting the Central Rockwood Plan.
4. Ensure compatibility of the Central Rockwood Plan with the Gresham 2020 Vision, the Metro Region 2040 Plan, the Oregon Transportation Planning Rule, and related City planning projects.
5. Implement the plan through adoption by the City Council and incorporation in the Gresham Community Development Plan.

The Central Rockwood Context

The Rockwood area has a number of unique features which will make it attractive to new development over the next 25 years. Among these are a variety of shopping and employment centers, a good supply of housing, and excellent access to the rest of the region by transit and by automobile. Central Rockwood is well positioned to receive its share of the half-million new residents who will be moving into the Portland area between now and the year 2020. This growth provides an excellent opportunity to build on Central Rockwood's strengths and create a high-quality environment which will upgrade this important part of Gresham. However, Central Rockwood not a "blank slate." Planning efforts here are constrained by a number of factors, most notably the existing conditions.

What exists currently in Rockwood is the result of an incremental process which began some 100 years ago. By 1917, there were three stores, a school, a church, the grange hall, and sixteen houses clustered around the intersection of Baseline Road (SE Stark) and Rockwood Road (NE 181st). This pattern of housing interspersed with a wide variety of commercial uses has persisted in Rockwood up to the present. The explosion of growth which occurred after World War II, and the easy access to Portland via automobile, intensified the scale of development. The result is a scattered, low-profile mix of auto-oriented businesses and garden apartments fronting major arterial streets, with single-family residential neighborhoods occupying interior spaces behind the arterials. Nearly all of the few older buildings and landmarks which had provided a visual link to Rockwood's origins as a rural crossroads community were removed. Although there is little vacant land in Central Rockwood, much of the developed property is inefficiently used.

For these and other reasons, the Central Rockwood area has suffered from a lack of focus and identity. Its role in mid-Multnomah County and, more recently, in Gresham has been poorly defined. This began to change in 1986 with the appearance of MAX light rail transit service, and again in 1992, with completion of the Gresham 2020 Vision. The MAX line had the effect of linking Central Rockwood much more closely to the rest of the region, and in particular to the regional employment center in central Portland. The 2020 Vision acknowledged Rockwood's importance as a part of Gresham, and gave it a specific role to play.

While existing conditions can be changed, and future growth can be guided to improve the livability of Rockwood, desired changes will occur incrementally and will spring from the existing context. A fundamental purpose of the Central Rockwood Plan is to serve as the means by which the anticipated growth is channeled toward making the Rockwood area a strong, lively, and prosperous part of Gresham.

Central Rockwood Location and Characteristics

The Central Rockwood Plan encompasses about 820 acres, shown in Figure 1. Its focus is on the vicinity of the intersection of NE 181st Ave. and E. Burnside, and along the MAX light rail corridor from the west city limits to NE 202nd Ave.

In terms of acreage, the dominant land use type in Central Rockwood is single-family residential. These neighborhoods, comprised of roughly 1,700 single-family houses, take up a total of about 380 acres, or nearly half of the total Central Rockwood Plan area. The next most prevalent land use type is multi-family residential, with about 304 acres, making up 37% of the total area. Commercial development is also prominent in Central Rockwood, taking up about 209 acres (26%). Remaining acreage (about 60 acres) is occupied by a variety of institutional and miscellaneous uses, including light industrial (7 acres) and vacant land. The plan area contains a total of approximately 5,080 dwelling units, of which about 3,350 are multi-family units (duplexes and larger).

Current zoning reflects the disjointed character of the Central Rockwood land use pattern. The Transit Development (TD) District, which is applied to much of the “Triangle” formed by E. Burnside, SE 181st Ave., and SE Stark, is the only true mixed-use district. Other current zoning designations (e.g. MDR-24, GC, EC, and HDR-60) are mostly single-use zones, permitting either residential or commercial development. In order to create a mixed-use, live/work community, with convenient access to transit, shopping, and employment, the zoning pattern should include a more coherent arrangement of districts where both housing and commercial development are encouraged. This is particularly important in and around the Triangle, which has the greatest potential for redevelopment as a true Town Center. It is also important in close proximity to the light rail stations located at 162nd Ave., 172nd Ave., 181st Ave., 188th Ave., and Ruby Junction (197th Ave.). By permitting and encouraging higher densities and a mix of residential and commercial uses in these locations, developments which are directly supportive of light rail transit, as well as meeting local needs, will emerge.

Central Rockwood Plan Districts

As discussed above, both the Gresham 2020 Vision and the Metro 2040 Growth Concept call for land in and around the Triangle to become a transit-oriented, mixed-use “Town Center.” The Town Center is proposed to function as the heart of Rockwood, providing a strong sense of identity to the district. Elsewhere in the plan area, most new development will be directed toward sites near the MAX stations at 162nd Ave., 172nd Ave., and Ruby Junction. Existing single-family residential neighborhoods provide an important source of affordable, owner-occupied housing. This housing resource should be preserved and strengthened as the area grows. Outside the Town Center Triangle, property abutting the major arterial streets of Central Rockwood provides opportunities for new multi-family housing. Although much new commercial development could be accommodated within and around the Town Center Triangle, additional commercial services will be needed in nodes at key intersections, such as NE 181st/Glisan and along 162nd Ave. at Glisan and Stark.

At the same time as the plan proposes new development district designations, it also seeks to upgrade the Central Rockwood area into a high-quality pedestrian district. This can be done by building more and wider sidewalks, and installing amenities such as street trees, benches, and traditional street lighting along public streets. Another key ingredient of pedestrian districts is convenient access by foot to shopping, jobs, and housing. To provide for this, the plan is proposing to allow the mixing of housing and commercial businesses within most of the Central Rockwood area. Mixed-use developments, where housing is located in upper floors, with retail businesses or offices on the ground floor, will be encouraged. The plan also proposes additional neighborhood parks and new streets in

key locations. These new street connections will make travel easier in Central Rockwood, both for cars and for pedestrians.

These considerations have led to creation of seven new land use districts for Central Rockwood. Existing zoning would be removed and replaced by these new districts. They are described below.

Rockwood Town Center (RTC): This district encompasses the “Triangle” which will be the focal point of Central Rockwood. Primary uses to be permitted in the Town Center are retail commercial, services, and office uses. Mixed-use developments, multi-family housing, condominiums, rowhouses, and various institutional uses (e.g., library, public meeting halls, churches, government facilities) could also be permitted. The Triangle itself is proposed to be the subject of a detailed redevelopment plan, which will include a variety of public facilities to support the uses permitted in the Town Center. An initial concept for a redevelopment program (outlined below) calls for a central plaza, new streets, and other improvements. New development will be oriented to these improvements, as well as to the 181st and 188th light rail stations. The scale of development would consist generally of buildings at least two stories high, placed close to public sidewalks, with parking lots behind or to the sides of buildings. Some of the highest densities of development in the Rockwood area would occur within the Rockwood Town Center. Minimum residential densities are proposed to be 20 units per acre for new multi-family developments, and 18 units per acre for new rowhouses. Within the triangle no maximum density is set. Elsewhere in the Town Center, the maximum residential density is 40 units per acre. Minimum floor area ratio (FAR) for commercial uses is .5 : 1.

Station Center (SC): This designation is applied to property which is adjacent to, or within easy walking distance of light rail stations, outside of the Town Center. Areas designated Station Center are intended to accommodate uses which are directly supportive of MAX transit. Along with the Town Center district, Station Centers will be home to some of the more intensive forms of development in the Central Rockwood area. Expected development types include retail and service businesses, offices, mixed-use projects, higher-density housing, and rowhouses. In order to prevent creation of a strip commercial pattern along Burnside, new commercial development is restricted to clusters of sites within 500 ft. of existing MAX stations. The residential density range is proposed at 24 - 60 units per acre for new multi-family developments, with a minimum of 18 units per acre for rowhouses. The minimum floor area ratio (FAR) for non-residential uses is proposed to be .6 : 1.

Ruby Jct. Overlay: This overlay designation applies to certain Station Center properties near the Ruby Jct. MAX station, at 197th and Burnside. In this area, the same commercial, mixed-use and residential uses permitted in other Station Center districts are encouraged but, in addition, auto-dependent uses (e.g. body shops, tune-up shops, etc.) and limited light industrial uses also permitted. The numerous, existing auto-dependent businesses operating in this area make its successful conversion to a more transit-supportive pedestrian district unlikely in the short term. In recognition of this factor, it was decided to continue to permit auto-dependent businesses and limited light industrial uses in the Ruby Jct. Overlay area. Minimum and maximum residential densities and FAR's for new commercial uses would be the same as in the Station Centers district.

Transit Low-Density Residential (TLDR): This designation affects most existing single-family neighborhoods within about one-half mile of the 162nd, 172nd, and Ruby Junction light rail stations. Most land within the TLDR district is already developed with low-density housing. These neighborhoods are stable and provide a good quality stock of affordable, single-family housing. As opportunities arise, new detached houses could be built on small lots (4,350 sq. ft. or smaller). Rowhouses, duplexes and accessory dwellings are also permitted, but commercial and mixed-uses are not. Small increases in residential density could occur very gradually, as under-utilized parcels are developed with new housing. The minimum density for new residential development is 10 units per acre, with a maximum permitted density of 20 units per acre.

Corridor Multi-Family (CMF): This designation is applied to properties along arterial streets in Rockwood, between the commercial and mixed-use nodes. The CMF districts provide opportunities for moderate-density residential development. In order to direct higher-density residential uses to the Town Center and the Station Centers, the maximum density permitted in the CMF district is 24 dwelling units per acre. The minimum density for new residential developments would be 12 units per acre. Most existing multi-family projects in the Central Rockwood area have been built within this density range. Free-standing commercial and mixed-use developments would not be permitted. To ensure an enhanced pedestrian environment, new multi-family buildings are required to be placed close to public sidewalks, with parking lots beside or behind buildings. Design standards for new construction will help to ensure that new developments become attractive additions to existing neighborhoods.

Corridor Mixed-Use (CMU): This designation is applied to clusters of parcels along several arterial streets in the Central Rockwood area. The CMU district provides for small-scale commercial uses, moderate-density residential uses and mixed-use developments. The modest commercial uses found in this district will serve primarily the day-to-day needs of residents in adjacent multi-family projects and single-family residential neighborhoods. Goods and services available here may be more convenient for nearby residents than commercial services available in the Town Center and other commercial nodes. In order to ensure that larger commercial uses locate in the Town Center and the General and Community Commercial Districts, the maximum building footprint of a new commercial use in the CMU district is limited to 10,000 sq. ft. Residential densities in the CMU district range from 12 - 24 dwelling units per acre. As in all of the Central Rockwood pedestrian district, new buildings are to be placed close to public sidewalks, with parking lots beside or behind buildings, for an enhanced pedestrian environment. Design standards for new construction will help to ensure that new buildings become attractive additions to existing neighborhoods.

Community Commercial (CC): This designation applies to the mostly developed properties clustered around the intersection of 181st Ave. and Glisan St. This is a commercial node which already functions as a community commercial center, anchored by Albertson's and Payless stores. This scale of commercial uses is expected to continue, as this center serves primarily the retail commercial needs of nearby neighborhoods. Over time, the existing uses could be augmented by additional commercial buildings placed near abutting streets. Housing is also permitted, in conjunction with commercial uses. For new commercial construction, the minimum FAR is .4 : 1.

Moderate Commercial (MC): This district designation applies to existing nodes of commercial activity along 162nd Ave. at its intersections with Glisan, and Stark. These commercial nodes will continue to function at a smaller scale than Community Commercial district, serving smaller trade areas. As in the CC district, mixed residential/commercial uses and offices are also permitted and encouraged in MC areas. To ensure that MC centers maintain their secondary status with respect to other commercial nodes in Rockwood, the size of new commercial buildings is limited to a maximum building footprint of 40,000 sq. ft. New housing in MC centers may take place in conjunction with commercial development meeting a minimum density standard of 12 dwelling units per acre. The minimum FAR for new commercial construction is .4 : 1.

Figure 1 shows the locations of each of the new land use districts in the Central Rockwood Plan area.

Growth Capacity Estimates - Households and Employment

The Central Rockwood Plan area is expected to grow, in terms of both households and employment. As part of the Region 2040 Plan, adopted by Metro in 1996, it has been forecast that between 1995 and 2020 the number of households in the Central Rockwood Plan area will increase from approximately 4,800 households to about 6,200 households. During that same period, total employment is expected to increase from about 4,200 jobs to roughly 6,300, an increase of 2,100 jobs.

As noted above, Central Rockwood is largely built-out. There is not a great deal of vacant land available to accommodate new growth, although much of the existing, developed land area has been under-developed. There is, however, potential for considerable redevelopment on these properties. Specifically, of the 820 total acres in the Central Rockwood Plan area, only about 46 acres can be considered vacant¹. However, about 126 acres are considered to be redevelopable over the next 22 years. Redevelopable properties are typically those where the value of the land exceeds the value of buildings and other improvements on the land.

Given the minimum residential densities and floor area ratios proposed for the new Central Rockwood Plan districts described above, it is estimated that capacity exists for some 2,000 new dwelling units to be built – well beyond the forecast growth in households of 1,400. In addition, given the proposed arrangement and minimum floor area ratios of districts permitting commercial development (see Figure 1), it is estimated that vacant and redevelopable acreage could accommodate approximately 2,200 new commercial jobs¹.

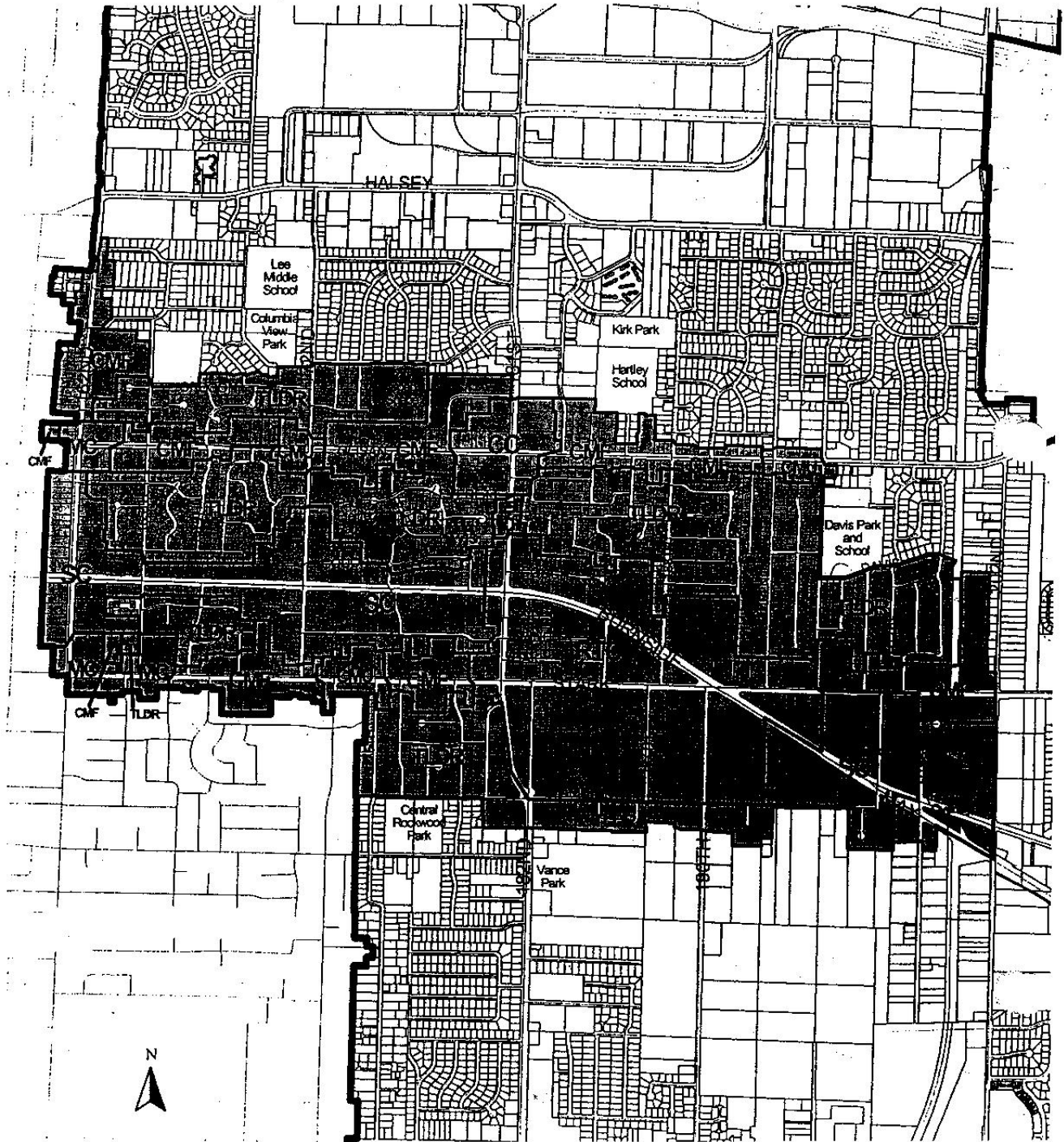
As part of the Urban Growth Management Functional Plan, adopted by Metro in 1996, a number of targets were established for residential and employment densities in various parts of the Portland metropolitan region. For Town Centers, such as the Rockwood Town Center district, the target figure for persons per acre (residents and employees) in the year 2017 is 40. Given the growth capacities estimated above, the anticipated persons per acre at that time in the Rockwood Town Center would be nearly 50.

¹ Growth Capacity Estimates - Central Rockwood Plan, City of Gresham, February 1998.



Figure 1 Central Rockwood Plan Land Use Districts

CENTRAL
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Redevelopment Program for the Town Center “Triangle”

Attached to this appendix is a Proposed Redevelopment Program for the Rockwood Town Center “Triangle.” This program for redevelopment was called for by Goal No. 2 of the goals for the Central Rockwood Plan, adopted by the Rockwood Plan Task Force.

As discussed above, the Triangle plays a key role in the future of Central Rockwood. It is to serve as the focal point of Central Rockwood, in terms of function, activity, and visibility. Its primary role would be to serve as a multi-purpose destination both for Rockwood area residents and for visitors from elsewhere in East Multnomah County and the region. To fulfill this role successfully, much of the Triangle will need to be redeveloped. The Proposed Redevelopment Program for the Rockwood Town Center “Triangle” outlines the need for this redevelopment effort, and suggests a number of features and strategies for carrying out a major redevelopment program. It also recommends formulation of a comprehensive redevelopment plan for the Triangle, and lists several options for proceeding with such a plan. A full-blown redevelopment plan could take many forms, and a decision will have to be made as to the appropriate course to take in pursuing redevelopment. As the proposed redevelopment program concludes,

A key question in this process will be the extent to which the City of Gresham chooses to be active in initiating and supporting the steps which will need to be taken to implement the plan. An option which would call for minimal involvement by the City might consist of simply adopting zoning designations and development standards consistent with the program outlined in this report. At the other end of the scale, the City might choose to formulate and carry out an aggressive redevelopment plan similar to that proposed by the Stastny concept. This option could involve the City in acquiring and clearing land, packaging and marketing development properties, obtaining new street rights-of-way, and constructing a wide range of capital improvements, such as utility lines, a park or plaza, a parking garage/structure, wide sidewalks, and a variety of street furniture. This approach would require a strong funding commitment over a long period. An urban renewal plan, with tax-increment financing, is often used as a tool to support such an extensive redevelopment program. Short of urban renewal, there are many other possible levels of City involvement, consisting of various combinations of public/private partnerships, capital improvements programming, targeted developer incentives, cash grants from state and federal agencies, residential tax abatement, etc.

It is the recommendation of the Rockwood Plan Task Force that the City Council initiate follow-up steps to prepare a detailed redevelopment plan for the Town Center triangle. The Task Force further recommends that the elements listed above in the Task Force “Charrette” Results section of this report be included in the design and implementation of any follow-up plan for redevelopment of the triangle.

Central Rockwood Future Streets Plan

The draft Central Rockwood Plan seeks to upgrade all of the Central Rockwood area into a high-quality pedestrian district. This will be done gradually by encouraging pedestrian-friendly developments, by building more and wider sidewalks, and by installing amenities such as street trees, benches, and traditional street lighting along public streets. Another

important ingredient of pedestrian districts is convenient access by foot to shopping, jobs, and housing. To provide for this, the plan proposes to allow the mixing of housing and commercial businesses within much of Central Rockwood.

A key element in the creation of this pedestrian district will be improving the circulation of cars, pedestrians, and bike riders. A future streets plan (Figure 2) is proposed to provide for this improved circulation. The future streets plan designates a total of nearly two miles of new streets in critical locations. These new street connections will make travel easier in Central Rockwood, for cars as well as for pedestrians and bicyclists. Nineteen separate future street segments have been identified. Some of the proposed future street segments would connect nearby, parallel streets which now dead-end near one another. Other segments will run through large blocks of land, breaking them up and providing better access to MAX stations and to the new commercial and employment uses which will appear over time in Central Rockwood.

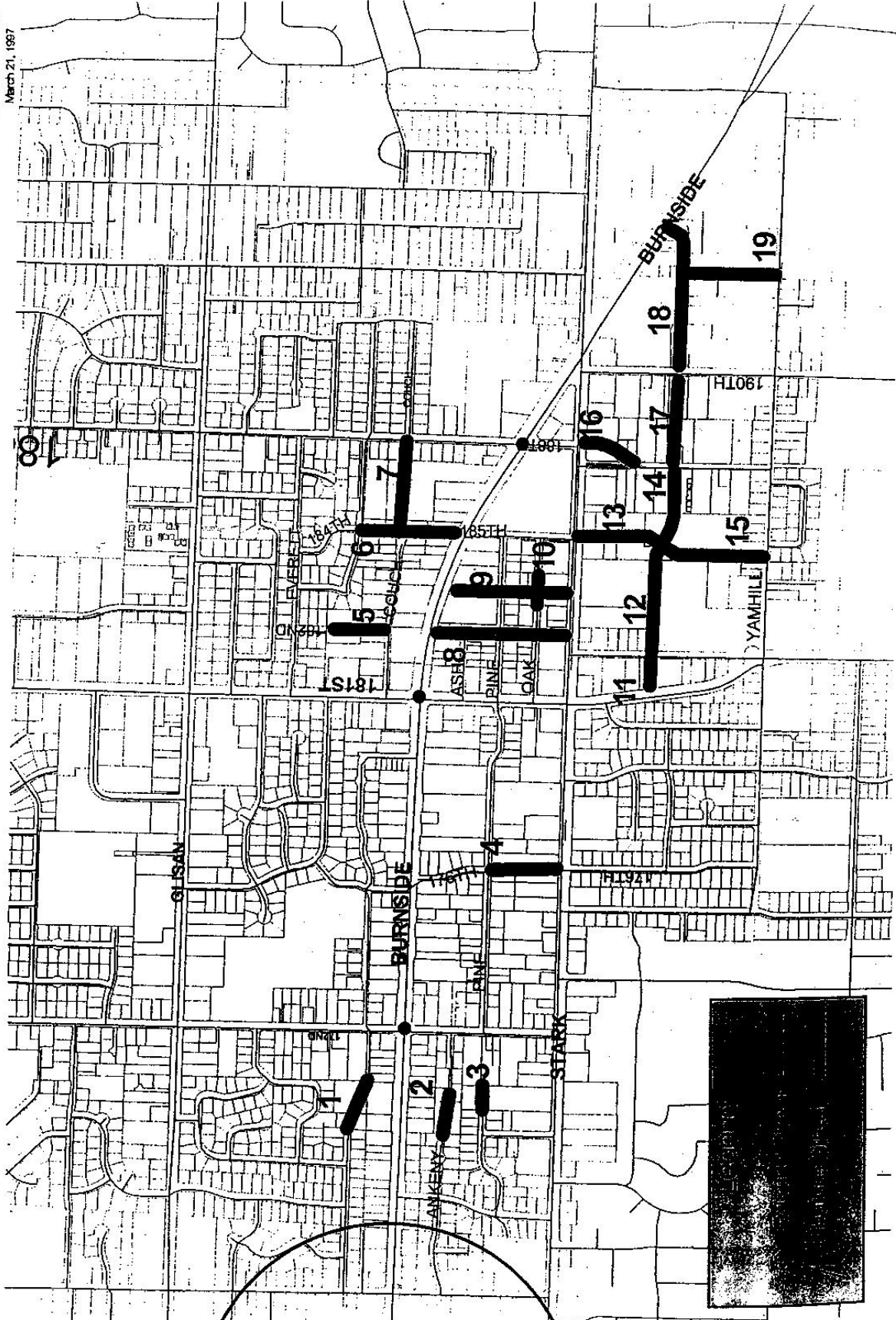
The future streets plan map shows general locations for needed public streets. It is not intended to indicate precise street alignments. In certain locations, it may be more feasible or cost-effective to shift the actual future street alignment slightly. In most cases, the future street segment indicated would consist of a local street, having a paved width of 26' - 32', with sidewalks at least 5' wide, in a right-of-way of 46' - 50' in width. Somewhat wider streets may be needed in some situations.

Actual construction of these proposed future streets will take many years. In some cases, the City will need to acquire land for the street right-of-way. In other cases, individual development projects may be required to dedicate rights-of-way in locations indicated on the future street plan to provide needed access. Some future street segments will involve purchase and demolition of existing buildings. The primary value of the future streets plan is in serving as a blueprint for the long-term provision of new streets which will support the goals of the Central Rockwood Plan in creating a lively, prosperous town center district.



Figure 2
Central Rockwood Plan
Future Street Plan

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March 21, 1997



Future Parks Opportunities

Figure 3 shows areas in Central Rockwood which appear to be deficient in public parks and open space facilities.

Accessible parks and open spaces, located within convenient walking distance of all housing units, are an important element in the creation of a successful, mixed-use pedestrian district, as envisioned for Central Rockwood. Large, community-scale parks are not necessary to serve the day to day needs of residents in a pedestrian district. Safe and convenient access to some type of public open space is more important than the size of a park or school yard. Even “pocket parks,” of less than an acre in size, can do a great deal to enhance the character and livability of a neighborhood if they are just down the street and can be used safely by children and the elderly.

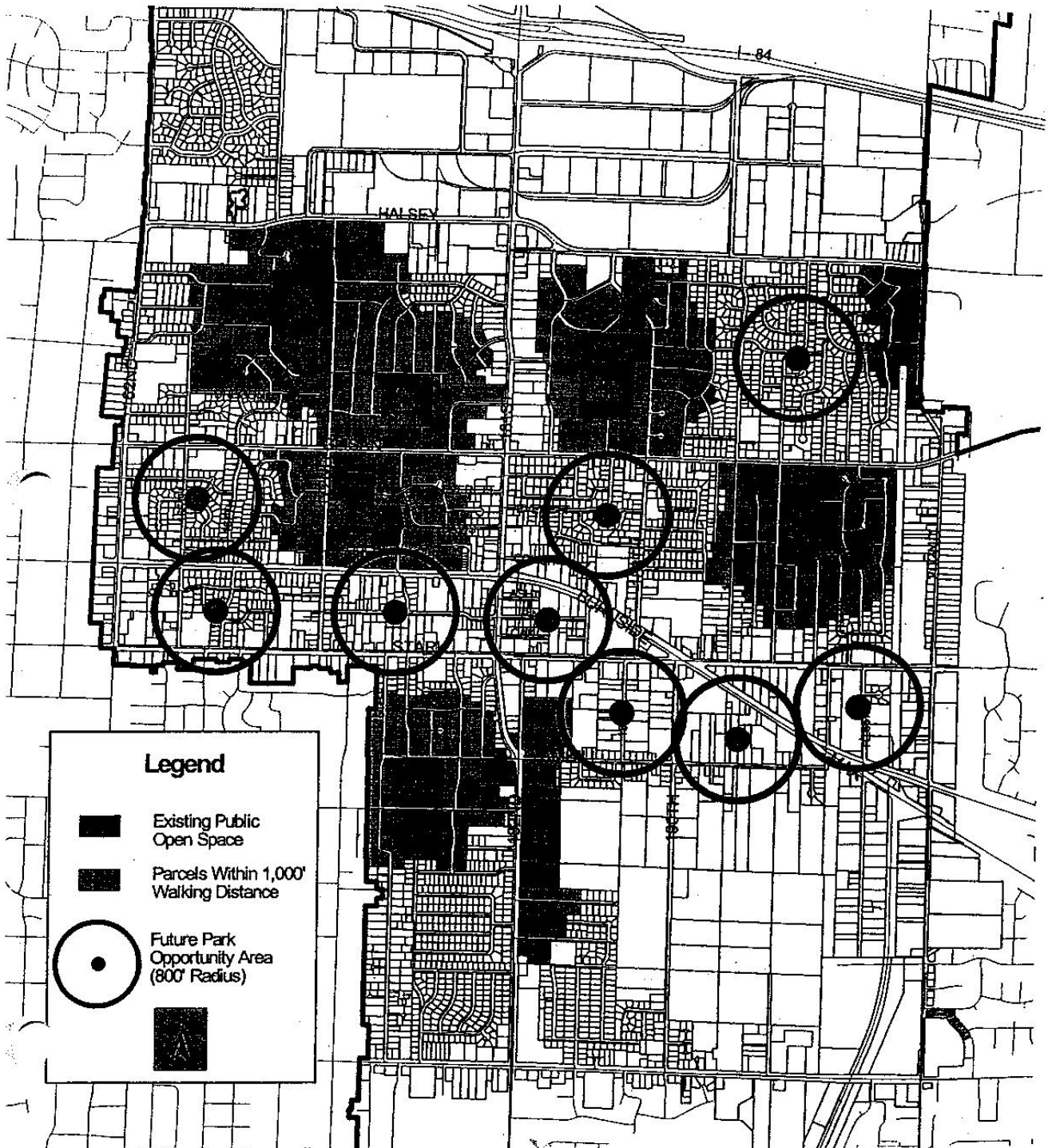
To get a sense of how accessible existing park and public school sites are in Rockwood, as well as where there might be areas in need of additional parks facilities, the locations of existing public parks and public schools were mapped, along with those parcels which have convenient access to them by foot (Figure 3). For purposes of this analysis, convenient access means that the walking distance is no more than about 1,000 ft., and that an arterial street does not have to be crossed in order to get to the park or school. As this map shows, by this criterion many parcels which seem to be relatively close to existing parks and schools do not in fact have safe, convenient access. In addition, there are several large areas where it is impossible to reach a public park or school on foot without taking a circuitous route of more than one-quarter mile and crossing a major arterial street. This suggests that in order to create the mixed-use, pedestrian-friendly environment which is envisioned for Central Rockwood, it will be necessary to provide additional public parks facilities in key locations.

The Gresham Parks, Recreation, and Open Space Master Plan (1995) already proposes development of an “urban plaza” within the Town Center triangle. It also designates the Rockwood area in general as “under-served” by neighborhood parks. The need for additional neighborhood parks could be met by providing “pocket parks,” less than an acre in size, in locations which the attached map shows are lacking in good access to parks now. Ideally, any new park locations would be less than 1,000 ft. walking distance from any site, and would not require crossing an arterial street. Opportunity areas, showing where additional parks facilities might be needed to serve neighborhoods, are indicated on the map.

Needed pocket parks or urban plazas could eventually be located within any of the opportunity areas shown. Following adoption of the Central Rockwood Plan, more work will need to be done to determine which of the identified opportunity areas are in greatest need of additional parks and open spaces. In addition to public acquisition, it may be possible to provide incentives to developers to set aside portions of a development site to help meet a neighborhood's need for local open space. The process of identifying sites, budgeting funds for acquisition, and improving the new parks is likely to be a long-term activity.



Figure 3
Central Rockwood Plan
Future Parks Opportunity Areas



Action Plan Follow-Up

Adoption of the Central Rockwood Plan will put into place critical land use control measures to support the gradual development of a higher-density, mixed-use, transit-supportive and pedestrian-friendly district. However, the process of creating the plan has pointed out that the Rockwood area confronts many issues which are not strictly land use related. Among these are issues of public safety, social service needs of families, children and the elderly, and economic development. In addition, this plan identifies a number of public facilities needs, such as new streets and parks, which will require significant follow-up work. For each of these facilities, actual projects will need to be identified, prioritized, and scheduled, and funding will have to be secured. Finally, preparation of a comprehensive plan for redevelopment of the Town Center Triangle will require a significant, long-term commitment from the City and from a number of other agencies, citizens, and property owners.

For these reasons, the Rockwood Plan Task Force recommends that adoption of the Central Rockwood Plan be followed up by adoption of a Rockwood Action Plan. The Action Plan should be prepared by a team of professional staff, citizens, business people, and agency representatives. It should specify in concrete terms what follow-up actions need to be carried out, who should be responsible for taking the necessary action, when the action should take place, and what resources are available to support the action. The Action Plan will ensure that the initial steps taken in the Central Rockwood Plan to provide for future land use and development will be followed by concrete steps to continue moving Central Rockwood toward becoming a healthy and successful part of the Gresham's future.

Proposed Redevelopment Program for the Rockwood Town Center “Triangle”

City of Gresham
Rockwood Plan Task Force

A black rectangular logo with white text that reads "ROCKWOOD CENTER MIXED-USE PLAN".

ROCKWOOD
CENTER
MIXED-USE
PLAN

Redevelopment Program for the Rockwood Town Center “Triangle”

Background and Purpose

Since completion of the Envision Gresham 2020 project in 1992, that portion of the Rockwood district bounded by NE 181st Ave., NE Burnside St., and Stark St. has been recognized as an area which will play a crucial role in the future of Rockwood. The area forms a triangle whose location and attributes give it great potential to serve as the focus of activity and identity for all of Rockwood.

The 2020 Vision proposed that the vicinity of the triangle become a “Community Center,” surrounded by “Live and Work” neighborhoods, where jobs, shopping, and housing would be integrated and supported by light rail transit. More recently, the Metro 2040 Growth Concept Map, which outlines the shape of future growth for the entire Portland region, designated the triangle and surrounding area as a “Town Center.” As envisioned in the 2040 Growth Concept, a Town Center is an area of mixed residential and commercial use that provides localized services to residents. It has a strong sense of community identity and is well-served by transit. Metro forecasts that by the year 2040, the average density in terms of people per acre (residents and workers) for a typical Town Center would be about 40 persons per acre. Metro’s Town Center designation for Rockwood complements and reinforces the Community Center proposal in Gresham’s 2020 Vision.

With the role of the triangle outlined conceptually in this way, it became the task of the Rockwood Plan Task Force to refine the vision, and begin formulating the details of this future Town Center. The Task Force adopted the following project goal in March 1996:

2. Propose a detailed, concrete program for re-development of the triangle formed by NE 181st Ave., E. Burnside, and SE Stark.

It is the purpose of this document to present that program, as formulated by the Rockwood Plan Task Force. It is not intended that this program serve as a complete redevelopment plan for the triangle. Rather, it is to function as a bridge between the concepts expressed in Envision Gresham 2020 and the Region 2040 Plan, on the one hand, and a formal, comprehensive re-development plan, on the other. It is that more formal, complete redevelopment plan which will be needed to implement the proposals of this program.

Process

The essence of this program for redevelopment of the Rockwood triangle was formulated during a meeting of the Rockwood Plan Task Force in September 1996. However, this session was preceded by several events and products which provided important input to the Task Force.

In 1995, a team of consultants headed by Tashman Associates and Stastny Architects prepared a series of land use prototypes for the Rockwood triangle. These were included in a document entitled, "Central Rockwood Mixed-Use Development Plan," which was prepared as early input toward making the 2020 Vision's concept for Rockwood a reality. This initial plan document was also prepared with input from the Rockwood Plan Task Force. The purpose of the land use prototypes prepared for the triangle by Tashman and Stastny was to illustrate several alternative concepts for redevelopment of this area. These alternative concepts are discussed in greater detail below.

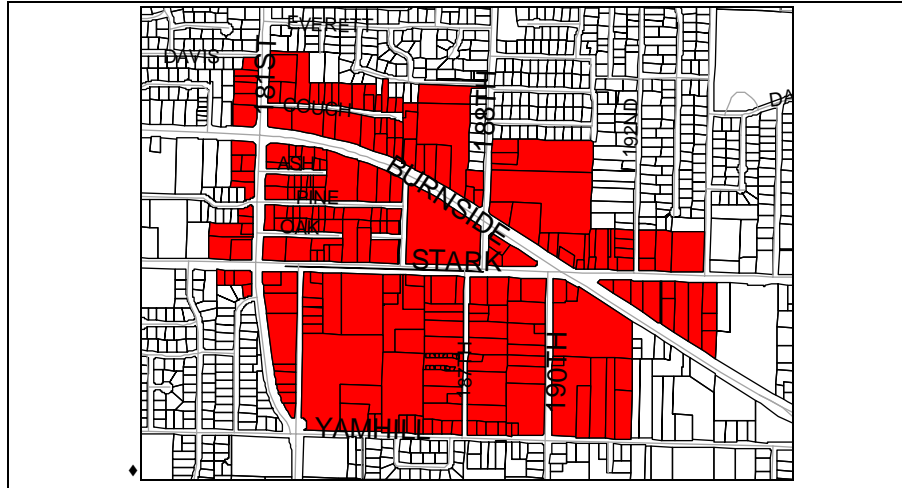
In July 1996 an open house event was scheduled at the new Gresham City Hall. One purpose of the open house was to inform citizens and solicit their input concerning several on-going city planning projects, including the Central Rockwood Plan. As part of this effort, a modified, informal design "charrette," was conducted with interested citizens to obtain a variety of views on how the triangle might be redeveloped over time to become the focal point of the Rockwood Town Center. This charrette was facilitated by outside design professionals and by City planning staff. It resulted in a number of useful concepts, providing additional raw material to be considered for an eventual redevelopment program.

The Role of the Triangle in the Rockwood Town Center

As discussed above, the triangle is the central feature of the future Rockwood Town Center, but the town center is proposed to encompass more than just the triangle. Both Metro, in its 2040 Growth Concept, and the Task Force have proposed that the Town Center designation apply both to the triangle and to adjacent properties located across the arterial streets which form the triangle. As proposed in the Central Rockwood Plan, the Town Center district would encompass a total of about 150 acres, of which the triangle comprises less than one-quarter. Most of the remaining Town Center district lies to the south, between Stark and Yamhill, and north of Burnside. It also encompasses

properties on the west side of 181st Ave., for a distance of about 400 ft. (see Figure 1, below).

Figure 1
Rockwood Town Center



Although the focus for redevelopment will be the land within the triangle itself, this area will need to develop greater cohesiveness with the larger Town Center district. This cohesiveness can be achieved by permitting and encouraging similar types and densities of land uses throughout the entire Town Center district. It can also be enhanced by improved linkages between the triangle and adjacent Town Center properties. Perhaps the most important of these improved linkages would take the form of better pedestrian connections from the triangle across Stark St., 181st Ave., and Burnside.

The Central Rockwood Plan permits and encourages a wide variety of commercial, employment, and residential uses for parcels which front Burnside and Stark in the area of the triangle. One intent of this designation is to encourage a typical “Main Street” combination of commercial and mixed-use developments, with design standards that bring about two- or three-story buildings placed up close to the street. This pattern of development can serve as a unifying force to help link the triangle visually with other parts of the Rockwood Town Center district.

Current Conditions

The triangle contains a total of 26 acres, not including street rights-of-way. This acreage is divided among 64 separate parcels of land. Since the late 1950s, the dominant feature of the triangle has been the Fred Meyer store, which contains approximately 70,000 sq. ft. and occupies a 6.6-acre site just east of NE 185th Ave. This store serves as a very important economic and visual anchor, not only for the triangle, but also for the larger central Rockwood area. Apart from the Fred Meyer store, the land use pattern in the triangle has been characterized for many years by active, auto-oriented retail businesses around the perimeter, with declining and under-utilized properties on the interior.

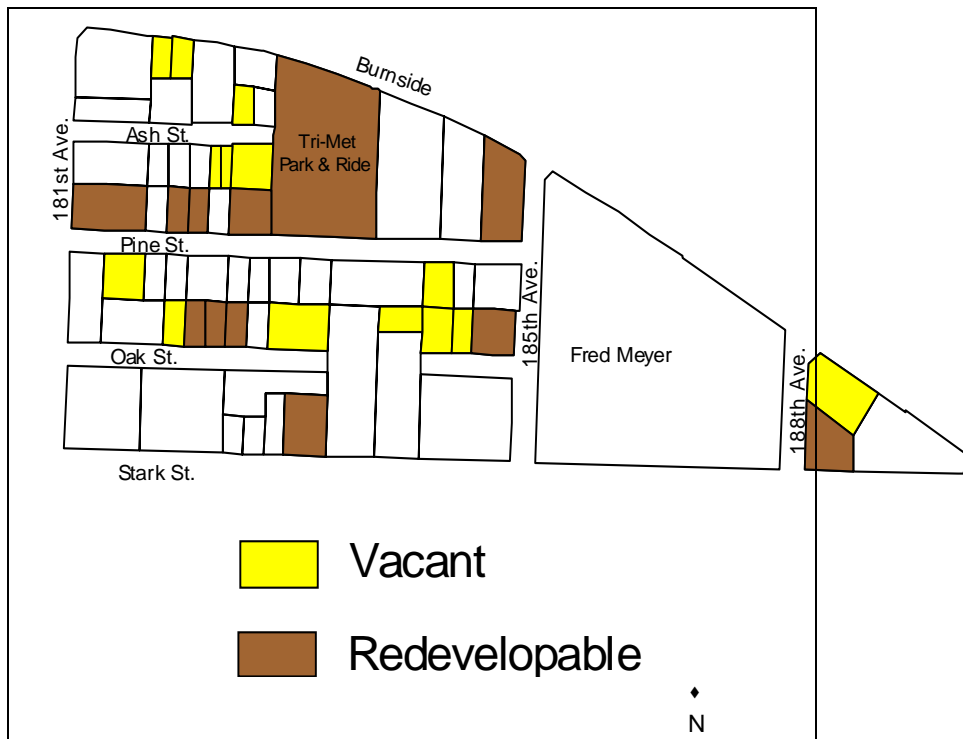
Until recently, a large portion of the triangle's interior was made up of vacant lots. Many of these were properties which had been platted and built-out as small, single-family houses in the 1940s and 1950s, and were eventually torn down as the houses deteriorated. Beginning in 1994, a number of 3- and 4-unit apartment buildings were built on these formerly vacant lots, fronting on Pine, Ash, and Oak Streets. This has reduced the total amount of vacant land to 2.3 acres, making up 9% of the triangle's total acreage (see Table 1, below).

Table 1
Vacant and Redevelopable Acreage

	Vacant Land		Redevelopabl Land e	
	Acres	Parcels	Acres	Parcels
Total Acres	2.3	14	4.63	12

As shown in Figure 2, below, the vacant parcels within the triangle are small and somewhat scattered. The largest vacant parcel makes up less than a half acre.

Figure 2
Vacant and Redevelopable Parcels



Although vacant land is relatively scarce in the triangle, there are still a number of parcels which, although not vacant, may be candidates for redevelopment in the future.

These are parcels, also shown in Figure 2, where the value of the land is currently greater than the value of buildings on the property.

As shown in Table 1, the triangle contains over 4.5 acres of redevelopable land. When combined with vacant acreage, there is a total of nearly 7 acres, made up of 26 parcels, which could be considered as candidate sites for new development, either immediately or in the foreseeable future.

Apart from vacant and redevelopable land, the primary land use in the triangle currently, in terms of acreage, is commercial, as shown in Table 2 below. This is due not only to the presence of the large Fred Meyer store, but also to the pattern of commercial uses fronting the three arterial streets which border the triangle. Total gross floor area in commercial use within the triangle is approximately 180,000 sq. ft. Employment within the triangle is estimated at 350 jobs.

Table 2
Current Land Use Distribution

<u>Land Use Type</u>	<u>Acres</u>
Commercial	18.6
Public/Institutional	2.4
Single-Family Residential	1.5
Multi-Family Residential	1.7

There are two Public/Institutional uses found in the triangle. The largest of these is the Tri-Met park-and-ride lot, which occupies a 2.1-acre site between Burnside and Pine St. The other use in the Public/Institutional category is the Rockwood Grange building, located on the north side of Stark St., mid-way between 181st Ave. and 185th Ave. Both of these properties are also considered redevelopable, since the land value exceeds the value of improvements. The Tri-Met site is an especially strong candidate for redevelopment, since it has historically had a relatively low level of utilization (less than 50%), and it does not support any structures. The Rockwood Grange site may not be as suitable as a redevelopment site, since the building has some historic value (dating from 1938) and contributes character to an area which has been typified by more transient uses.

As to residential uses, there are currently 55 dwelling units within the triangle. Most of these (43) are rental apartments, built as 3-plexes and 4-plexes constructed within the last few years. The multi-family units have been developed at an overall density of 25 units per acre. This is slightly higher than the minimum density requirement of 24 units per acre called for in the current Transit Development (TD) zoning.

Given the estimated employment level of 350 jobs within the triangle, along with 55 dwelling units, the overall estimated density in terms of persons per acre (ppa) is about 18. As discussed above, the target density for the Town Center to the year 2040 is roughly 40 ppa, or more than twice the current density.

The Stastny Concept

For six months, during 1995, the Rockwood Plan Task Force had the services of a team of consultants, headed by Jeff Tashman, of Tashman Associates. The work of this team was made possible by a grant to the City from the Oregon Department of Transportation. One of the tasks of the consultants was to propose a concept for the long-term redevelopment of the triangle. The objective was to take an initial look at how the triangle might be converted from the somewhat depressed, unfocused collection of land uses found there presently into a lively, attractive Town Center which could function as the heart of the Rockwood district.

The task of creating this redevelopment concept was carried out by Don Stastny and Lou Gagnon of Stastny Architects, P.C., members of the consultant team. The concept is presented in three phases. The third phase, illustrating completion of redevelopment, is attached as Figure 5. As proposed, the Stastny concept suggests a “fairly aggressive redevelopment strategy” and an active role for the City. It calls on the City to be responsible for acquiring land and clearing certain key parcels, in addition to constructing a number of public improvements. These improvements would include new streets, a public plaza, public parking facilities, and pedestrian amenities.

In terms of design, the Stastny concept is based on a modified street grid. This grid results in small blocks, improved pedestrian and vehicular circulation, and improved visibility for new businesses and housing in the triangle. The new blocks would average about 1.5 acre in size. This scale helps to bring about a comfortable pedestrian environment, such as exists in downtown Gresham, where block sizes are also in the 1 to 1.5 acre range. The Stastny concept also envisions improved pedestrian links between the triangle and adjacent properties across 181st Ave., Burnside, and Stark St.

The first phase of the Stastny concept encourages the gradual redevelopment of parcels on the west side of the triangle, fronting 181st Ave. In this area, new zoning and design standards would encourage more intensive commercial and mixed-use developments which are pedestrian-oriented. Incentives might be provided by the City to ensure that new developments in this area are built to the desired densities and include design features which are supportive of a pedestrian district. Also in the first phase, the acquisition of right-of-way for future streets would begin, and pedestrian circulation corridors would start to link new developments to one another.

In Phase 2, the development of additional public facilities would continue. These include further extension of the street grid, development of a one-acre public plaza in the west-central portion of the triangle, and public parking facilities. This phase also envisions the possibility of the Fred Meyer store creating additional entrances for customers. Any additional entrances on the west, south, or north sides of the store could help to spur interest in redevelopment of the interior of the triangle, strengthening the functional link between Fred Meyer and the new housing and businesses which will occupy the new town center. At the same time, as Fred Meyer sees new and more intensive development taking place within the triangle, it may have a substantive reason to consider creating additional customer entrances. For the store’s management, such an opening would involve fundamental changes in interior layout, and the system for truck access and unloading freight.

The final phase of the Stastny concept (Figure 5) would see the completion of redevelopment activity in the interior of the triangle. Public improvements would also be completed in this phase.

Task Force “Charrette” Results

In July and September of 1996 the Rockwood Plan Task Force took time to reconsider the Stastny concept, and conducted its own mini-charrette to outline scenarios which could help guide formulation of a comprehensive redevelopment plan. The Task Force was divided into two teams which worked independently to develop their own concepts. Each team then presented its concept to the full Task Force, and the elements of a preferred concept began to emerge. The concepts proposed by the two teams are attached as Figures 3 and 4.

There are a number of key features which are common to the concepts of each team. These are features which are considered to be important to the success of any program to redevelop the triangle into a Town Center which would fulfill the 2020 Vision and be consistent with the intent of the Metro 2040 Growth Concept. Many of these are variations on ideas contained within the Stastny concept for redevelopment. They are summarized below.

- **Improved Circulation Through Modified Street Grid** Much of the interior of the triangle, west of 185th Ave., remains under-utilized because both pedestrian and vehicular circulation are inadequate. Of the three streets which penetrate this portion of the triangle, only Pine St. is continuous from 181st Ave. to 185th Ave. Both Ash St. and Oak St. are interrupted or terminate in dead-ends. There is no north-south circulation between 181st Ave. and 185th Ave. In addition to improving the movement of cars and pedestrians, a grid street pattern and relatively small blocks are key components of successful pedestrian districts. This can be seen in downtown Portland, where typical block sizes are 200 ft. square, and in downtown Gresham where similar block sizes predominate. Small blocks and a street grid provide multiple direct connections for people traveling to any destination within the triangle. They would also serve to enhance movement into and through the triangle from adjacent areas to the north, west, and south of the triangle. For these reasons, any redevelopment scheme should provide for improved circulation by means of new and extended streets running both east-west and north-south through the central triangle area.

In general, both new and existing streets within the triangle should be local streets, designed and built similar to the streets in the Central Urban Core of the Downtown Plan District. These streets would have wide sidewalks, curb extensions at intersections, street trees, and allow on-street parking. In some cases, it may be desirable to construct commercial alleys. The redevelopment scheme drafted by Team 1 of the Rockwood Plan Task Force, for example, proposed a service alley abutting the west side of the Fred Meyer store, where 185th Ave. is located at present. The concept produced by Team 2 proposed “skinny streets” running parallel to 181st Ave. between Ash and Oak Streets, primarily to provide service access to retail uses fronting 181st Ave.

- **Strong Civic Presence** There is consensus among the Rockwood Plan Task Force that a strong civic presence should be integrated into the redevelopment of the triangle. This civic presence could take any of several forms. Suggestions of the Task Force include a government services center, providing access to both City and County services; a satellite city hall facility; a community policing office; a new branch library building; or a community hall, which could include childcare service, and even an attraction such as an aquatic center. Such a civic presence would serve several useful purposes. First, and most obvious, it would make needed public services conveniently available to Rockwood area citizens. A joint City/County facility, for example, might provide many services currently available only at Gresham City Hall, or at relatively remote county facilities. Equally important, a civic services facility would create an important destination and a reason for people to come to the Town Center triangle on a daily basis. By providing such destinations, the triangle can become a genuine “people place,” which causes the area to become more attractive to businesses and new housing which, in turn, draw more people.
- **Make Pine Street a Strong Pedestrian Street** While a number of new and extended streets are recommended within the triangle, Pine Street has been identified for special treatment as a pedestrian street. This would mean not only that Pine Street would have the wide sidewalks, street furniture, and other amenities to make the street pleasant and safe for pedestrians. It would also mean that preferred uses and developments along this street would be those whose designs and activities are attractive to pedestrians. Such uses could include small-scale retail and service businesses, restaurants and coffee shops, row houses, offices, and mixed-use developments.
- **Maintain Retail Presence on Perimeter** The Task Force recognizes that the relatively high traffic volumes on Burnside, Stark, and 181st have caused a variety of retail uses to locate on parcels which front those streets, taking advantage of the passing traffic. The high traffic volumes are expected to remain into the future, thus continuing the attractiveness of these sites for commercial uses which rely to a great extent on the convenience of their location to the passing traffic. Therefore, commercial uses should continue to be permitted around the perimeter of the triangle, and may be designed in such a way that they provide convenient service to passing traffic. However, commercial uses in these locations should not turn their backs on the interior of the triangle. Buildings housing these uses should provide easy access to pedestrians from both the arterial streets and the interior of the triangle.
- **Improve Pedestrian Movement Along and Across Arterials** The perimeters of the triangle are programmed by Metro’s 2040 Plan to become “Main Street” environments. The purpose of the Main Street designation is to create environments along these arterials which include the elements of the traditional small-town Main Street. These elements consist of pedestrian-oriented buildings of 2 - 3 stories placed close to the sidewalk; a mix of retail, service, and residential uses; a street design which provides for wide sidewalks, on-street parking, curb extensions, and frequent crosswalks.

The Main Street treatment of Burnside, 181st, and Stark will support redevelopment of the Town Center Triangle by making pedestrian movement easier and more pleasant around the perimeter. The Task Force also recommends that safer pedestrian crossings be provided on Stark St. in particular to facilitate movement between the triangle and the remainder of the Town Center to the south. These crossings on Stark St. can be made safer and more convenient by narrowing the crossing distance. This could be accomplished by reconstructing Stark St. to create a landscaped median, or even by eliminating the existing, continuous left-turn lane in the median. A landscaped median could serve as a refuge for pedestrians crossing the street, much as the MAX stations in the middle of Burnside act as a pedestrian refuge on the north side of the triangle. This would leave four travel lanes, with the opportunity for curb-side parking on each side. If the median were eliminated entirely, with curb-side parking permitted, the result would be a street cross-section similar to that which exists for SE Hawthorne Blvd. between SE 32nd St. and SE 39th St. in Portland.

The pedestrian crossing distance on Stark could be further reduced by constructing curb extensions at 181st Ave., at 185th Ave., and at 190th Ave. Improved crossings at these locations are critical to making businesses and activities in the triangle more accessible by residents of the multi-family developments lying south of Stark St.

- **Public Open Space** A town square feature, or similar “hardscape” open space, could function as a central gathering point and venue for a wide variety of public events. These events might range from outdoor concerts to art exhibits, farmers markets, or seasonal festivals. As such, they would serve as lively destinations, a feature which helps to provide the sense of place which will be important to the success of the triangle as the heart of the Town Center. The Stastny concept proposes a public plaza of about one acre in size, located in the west central portion of the triangle. New development would be arranged around this plaza, providing some enclosure and definition for the space. The charrette teams of the Rockwood Plan Task Force proposed one large plaza and a second, smaller open space, which could serve as a courtyard adjacent to a government services center.

There are a number of locations which should be considered for the siting of a town square open space. If located near the center of the triangle it could serve as an important organizing feature, around which other uses and activities would be arranged. At the same time, there may be advantages to locating this space on the perimeter of the triangle, such as adjacent to the south side of Burnside. This location would make it more visible and convenient for people arriving by light rail. Whatever its location, the new public square should have a size of about one-half to one acre, with a configuration and design which makes it suitable for a wide variety of informal gatherings as well as organized public events.

- Emphasize Commercial Uses, Mixed-Use Developments, and Housing** To succeed as the focal point of the Town Center, properties within the triangle should be developed and redeveloped with a relatively dense combination of commercial, mixed-use, and housing projects. These uses will support a variety of activities which can make the triangle an active, interesting, 24-hour place for those who reside within it, as well as an attractive destination for those arriving from elsewhere. Any redevelopment plan for the triangle should therefore emphasize a balanced combination of commercial, residential, and mixed-use developments (along with a strong civic presence and public amenities). As called for in the 2040 Growth Concept, these uses should develop at a density which enables the density goal of 40 persons per acre to be achieved at full build-out.
- Pedestrian Amenities Along Streets** All streets within and adjacent to the triangle should be upgraded to include pedestrian amenities, such as wider sidewalks (8 - 12 ft.), street trees, benches, decorative street lamps, and curb extensions at street crossings. Overhead utility lines should also be placed underground as these street reconstruction projects occur. In updating the Regional Transportation Plan, Metro is considering designating Stark, Burnside, and 181st Ave. adjacent to the triangle as “Regional Boulevards.” As proposed, the typical design for a Regional Boulevard would include wide sidewalks with buffering, special lighting, and crossing amenities. These features will be important to increase the sense of safety and comfort for pedestrians.
- Create Gateways at Major Intersections** The triangle’s success as the heart of the Rockwood Town Center will be aided by visual cues which announce to those passing through the area that they have arrived at a specific place. For this reason, it is important that the major intersections around the perimeter of the triangle be given the status of gateways and designed accordingly. Gateway treatments should be applied to all four quadrants of the intersections of Burnside/181st, and Stark/181st, and to the intersection of Stark/Burnside. The Stastny concept includes a proposal that buildings on the quadrants of the two 181st Ave. intersections be arranged so that a space is defined within the intersection. Pedestrian pathways would also lead directly to the interior of the triangle from the corners of the intersection, inviting pedestrians to leave the arterial streets and explore the uses and activities within the triangle.

The gateway effect can be further enhanced by scaling and siting new buildings along Stark east of Burnside and west of 181st to be similar to the appearance of buildings within the Main Street segments of Stark St. Thus, for traffic arriving on Stark or Burnside from the west, the corridor effect would begin just prior to reaching 181st Ave., creating the impression of entering a special place, that is a Town Center.

Finally, monument signs and banners may also be appropriate at these intersections, to explicitly announce arrival at the Rockwood Town Center.

- **Public Parking** As properties within the triangle redevelop, shared parking should be emphasized. It may also be possible to develop uses with little or no need for on-site parking, given the close proximity of light rail service and assuming the availability of on-street parking. Nevertheless, public parking facilities should be included in a redevelopment plan for the triangle. Over the near term, city-owned surface parking lots could satisfy parking demand and serve as an enticement to new commercial uses. Eventually, construction of a parking garage should be considered as the intensity of development increases. It may also be desirable to make a portion of such a parking structure available for MAX park-and-ride use.

Recommended Program

A comprehensive redevelopment plan for the triangle must include not only the elements discussed above. It must also encompass a process through which the concepts expressed by the Rockwood Plan Task Force can become reality. That process, in turn, must ensure that an effective design is prepared, and that the resources necessary to implement the plan are identified and allocated.

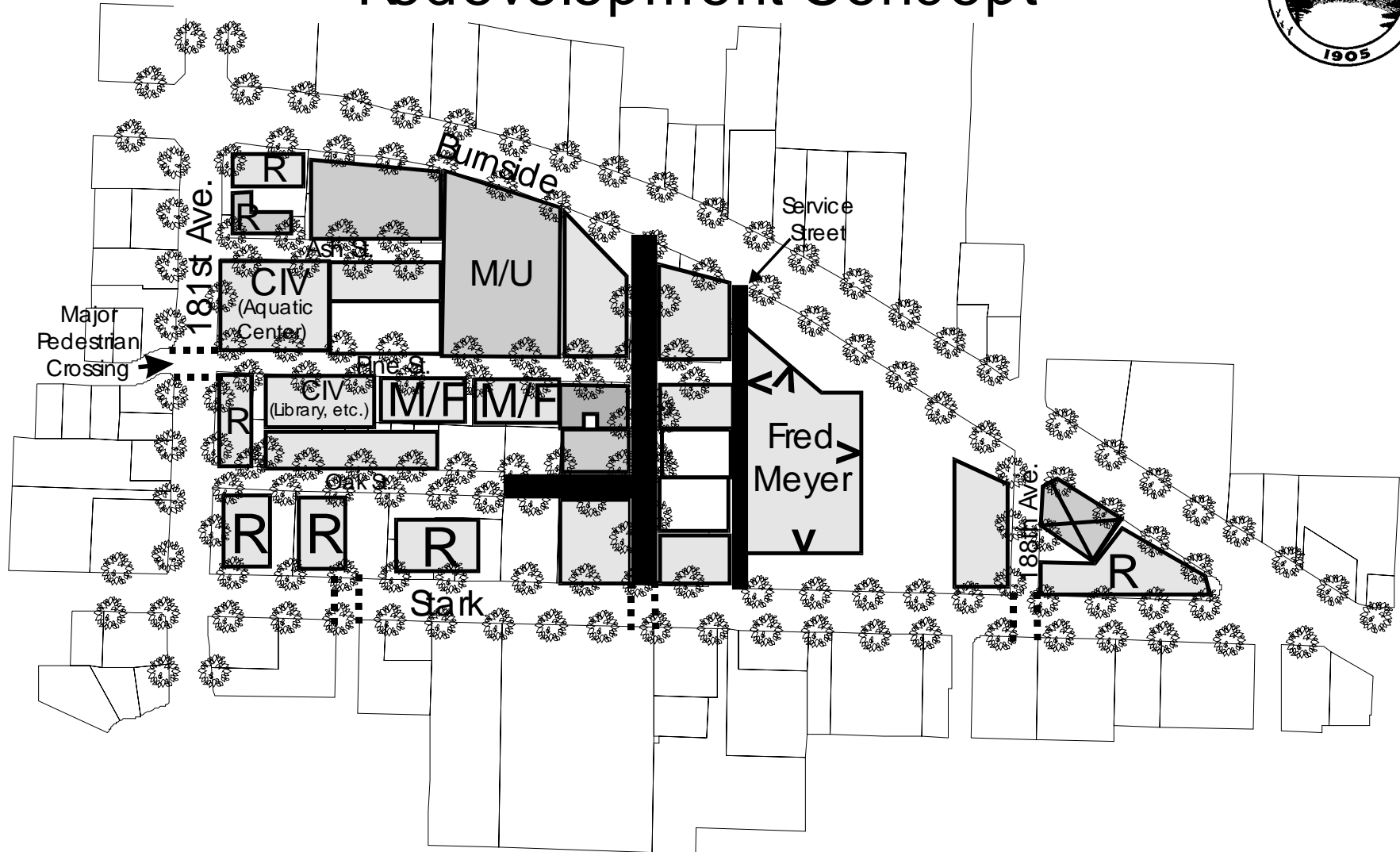
A key question in this process will be the extent to which the City of Gresham chooses to be active in initiating and supporting the steps which will need to be taken to implement the plan. An option which would call for minimal involvement by the City might consist of simply adopting zoning designations and development standards consistent with the program outlined in this report. At the other end of the scale, the City might choose to formulate and carry out an aggressive redevelopment plan similar to that proposed by the Stastny concept. This option could involve the City in acquiring and clearing land, packaging and marketing development properties, obtaining new street rights-of-way, and constructing a wide range of capital improvements, such as utility lines, a park or plaza, a parking garage/structure, wide sidewalks, and a variety of street furniture. This approach would require a strong funding commitment over a long period. An urban renewal plan, with tax-increment financing, is often used as a tool to support such an extensive redevelopment program. Short of urban renewal, there are many other possible levels of City involvement, consisting of various combinations of public/private partnerships, capital improvements programming, targeted developer incentives, cash grants from state and federal agencies, residential tax abatement, etc.

It is the recommendation of the Rockwood Plan Task Force that the City Council initiate follow-up steps to prepare a detailed redevelopment plan for the Town Center triangle. The Task Force further recommends that the elements listed above in the Task Force “Charrette” Results section of this report be included in the design and implementation of any follow-up plan for redevelopment of the triangle.

By initiating a formal, comprehensive redevelopment process for the triangle, an important step would be taken toward supporting the goals of the larger Rockwood area plan. This step would also demonstrate a strong commitment to the future of Rockwood as a part of Gresham which makes an important contribution to the character and success of the entire city.

Figure 3

Rockwood Plan Task Force - Charrette Team 1 Redevelopment Concept



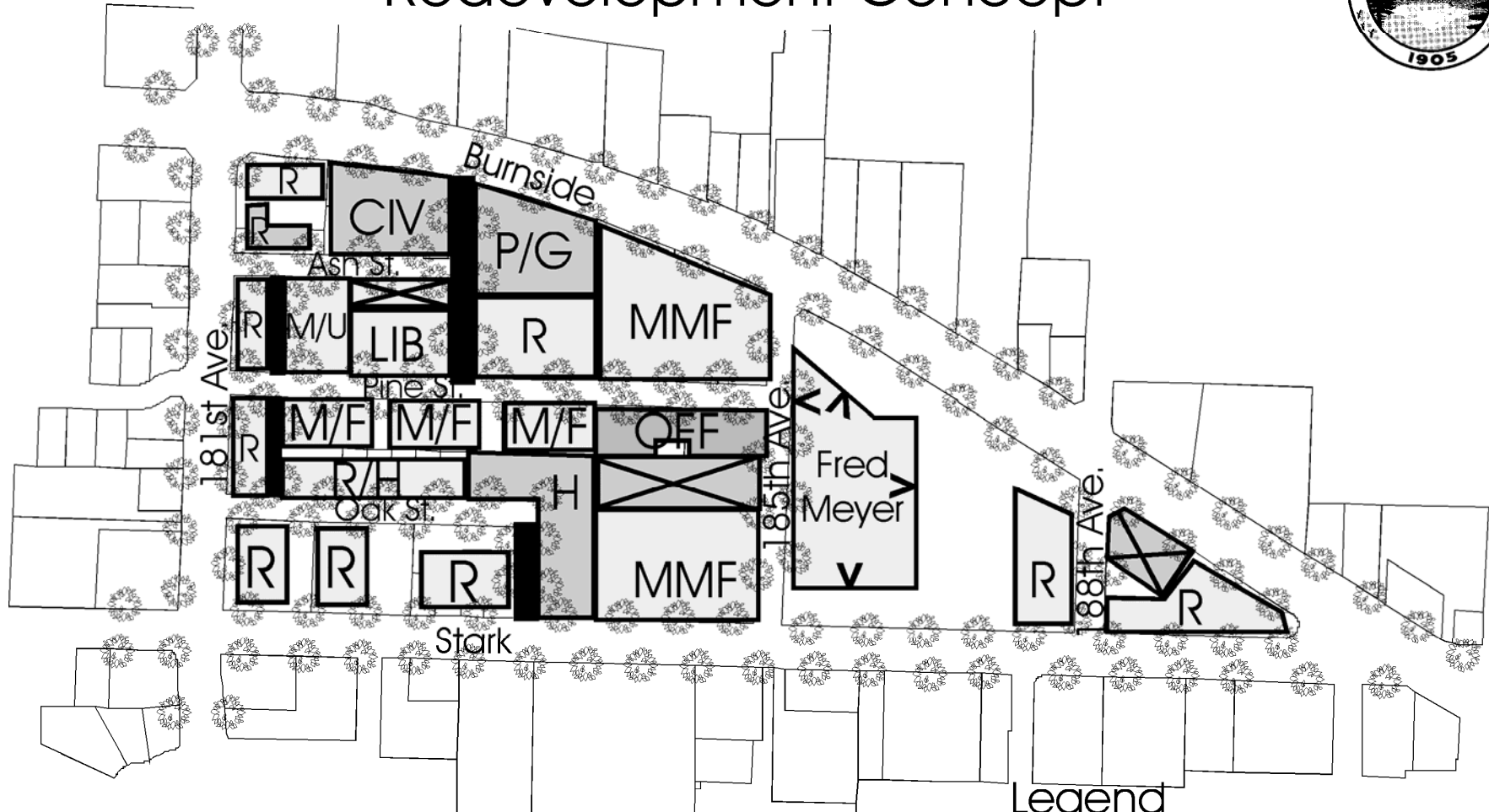
ROCKWOOD
CENTER
MIXED-USE
PLAN

Legend

R = Retail
CIV = Civic Services
M/F = Multi-Fam. Resid.
[Black Box] = New Street



Figure 4 Rockwood Plan Task Force - Charrette Team 2 Redevelopment Concept



ROCKWOOD
CENTER
MIXED-USE
PLAN

Legend



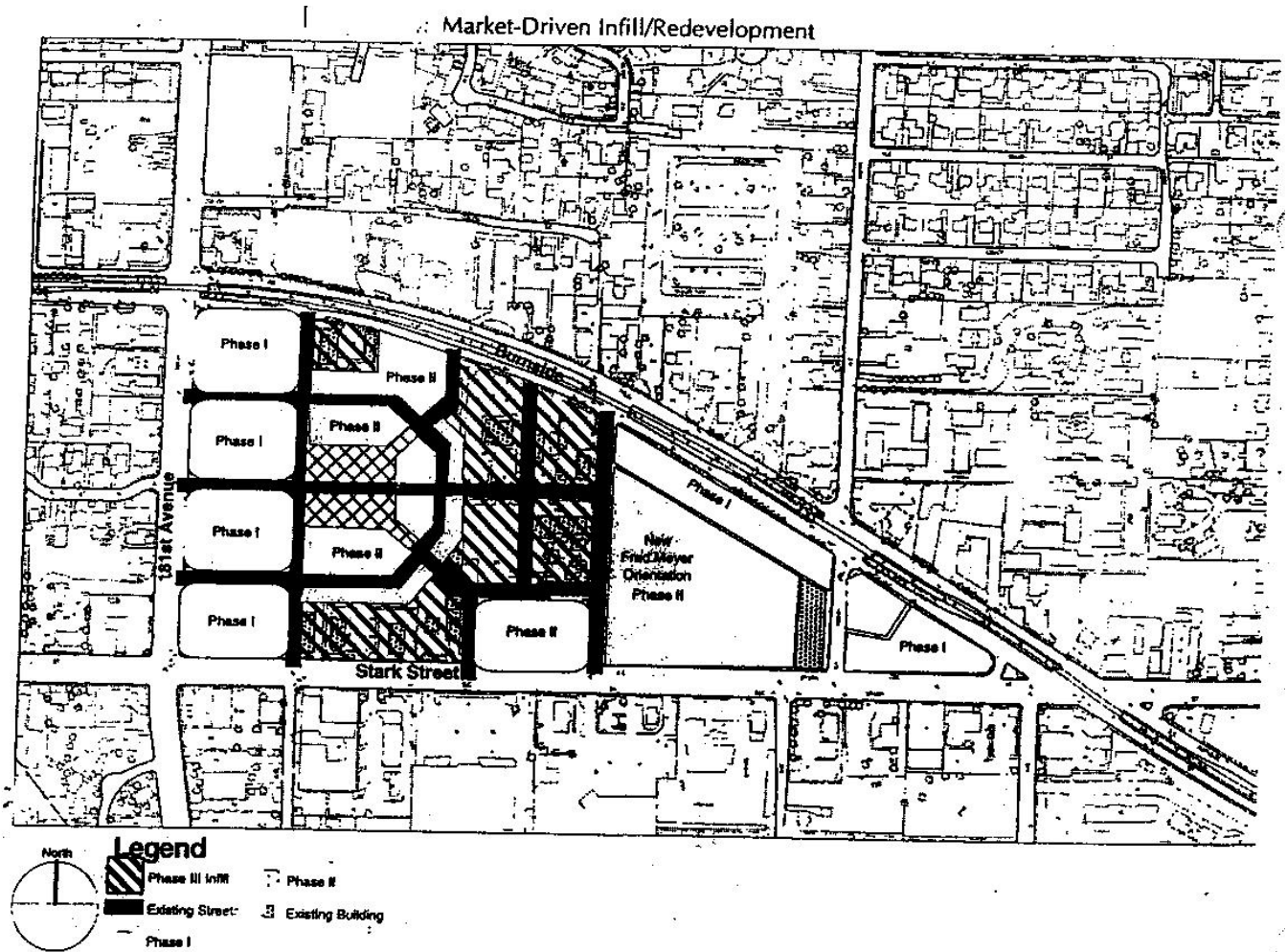
R = Retail	H = Hoffices
M/F = Multi-Fam. Resid.	R/H = Rowhouses
MMF = Multi-Story MF Resid.	LIB = Library
P/G = Parking Garage	OFF = Offices
CIV = Civic Services	 = Park/Plaza
 = New Street	



Figure 5

Phase III: Market-Driven Infill and Redevelopment of Remainder of Site

- Remaining sites develop in conformance with plan, street and utility grid, and pedestrian circulation corridors.



Appendix 40

Transit Corridor Plan

Project Background

In the first quarter of the 1996/97 fiscal year the City Council directed the city's long range planning staff to begin work on a land use plan to guide growth and development along the city's transit streets. As stated in the City of Gresham Management Plan the primary purpose of this directive was "increased opportunities for new housing, duplexes, multi-family, mixed use developments, and higher density commercial development along the designated Metro 2040 Transportation Corridors to provide better access to transit, shopping and jobs."

In union with local jurisdictions, the Metro Council adopted, in December, 1995, Regional Urban Growth Goals and Objectives (RUGGOs) and a 2040 Growth Concept Map. Together they provided a policy basis and concept for a desired urban form of development. Metro is an elected regional government that is responsible for addressing issues of metropolitan concern. In 1992, voters adopted a Metro charter making Metro responsible for regional growth management, transportation and land use planning, and requiring adoption of a Regional Framework Plan to address the growth of residents and workers to the year 2040.

In November, 1996, the Metro Council adopted an Urban Growth Management (UGM) Functional Plan. This is a plan to begin implementing the Metro 2040 Growth Concept Map and the RUGGOs. The 2040 Growth Concept Map shows general locations of the types of land uses and density that would be developed in a given area. Metro worked with local government officials and the public in developing the UGM Functional Plan. It requires cities and counties to make changes to their comprehensive land use plans and the zoning ordinances that implement those plans. These changes are required by February 19, 1999.

In the RUGGOs the Corridors design type was described as:

Corridors are not as dense as centers, but also are located along good quality transit lines. They provide a place for densities that are somewhat higher than today and feature a high-quality pedestrian environment and convenient access to transit. Typical new developments would include rowhouses, duplexes, and one to three story office and retail buildings, and average about 25 persons per acre. While some corridors may be continuous, narrow bands of higher-intensity development along arterial roads, others may be more 'nodal', that is, a series of smaller centers at major intersections or other locations along the arterial that have high-quality pedestrian environments, good connections to adjacent neighborhoods and good transit service. So long as the average target densities and uses are allowed and encouraged along the corridor, many different development patterns--nodal or lineal--may meet the corridor objective.

The UGM Functional Plan summarizes the above description as "Along good quality transit lines, corridors feature a high-quality pedestrian environment, convenient access to transit, and somewhat higher than current densities. Recommended average density is 25 persons per acre." A Metro growth report describes corridors as having a 360 feet deep coverage off streets with good transit service. The corridors have moderate density and mixed uses (combination of residential and commercial on the same site) are allowed. The UGM Functional Plan requires that for each of the 2040 Growth Concept design types that the city's comprehensive plan be amended to include the boundaries of each area, determined by the city consistent with the general locations on the 2040 Growth Concept Map.

Additionally the UGM Functional Plan requires the city to have the capacity to accommodate 16,000+ new dwelling units and 23,000+ new jobs through the year 2017.

In late 1994, the City adopted regulations to require new commercial and industrial developments to be more transit, pedestrian and bicycle friendly. At the same time the City designated some of the major streets as transit streets. In the Community Development Plan a transit street is described as "a street which serves a significant function of carrying high volume transit service. The traffic carrying function is secondary to its transit service function. Ease of pedestrian movement and pedestrian safety and transit-supportive development are primary considerations on this type of street. Transit streets are designated on selected streets which currently or are planned to have a high frequency of weekday transit service and some service seven days a week. On transit streets, special transit design criteria will apply to development, as well as citywide standards for transit and pedestrian supportive environment."

Tri-Met (Tri-County Metropolitan District of Oregon) published a *Planning and Design for Transit Handbook: Guidelines for Implementing Transit Supportive Development* in January, 1996. This handbook sets guidelines for land use and transportation plans as a way of assisting local jurisdictions in implementing the 2040 Growth Concept Plan map (& UGM Functional Plan). It notes that transit supportive development is dense, mixed use development, designed for pedestrians and multiple modes of transportation. Mixed use development combines retail and commercial services, offices, entertainment and residential uses within easy walking distance. This supports transit use, the vitality of business districts and the livability of neighborhoods.

The Handbook provides guidelines for land use along the corridors (as well as the other 2040 Growth Concept map design types). It identifies a number of uses that can be considered transit supportive land uses: single-family residential on lots 5,000 sq. ft. or less, multifamily residential, elderly residential, cultural institutions, day care, government offices, hospitals and medical offices, financial institutions, restaurants and taverns, hotels, business and professional offices, personal services and retail trade and services. Other uses such as clubs and lodges, parks, school and colleges, commercial recreation and entertainment, laboratories, volume discount retail, motels and service stations with convenience retail can be transit supportive with appropriate development standards.

It recommends that concentrating employment and housing on corridors can be achieved by minimum density standards. Within 1/8 mile (660 feet) of a transit corridor (Primary Transit Network or PTN) the recommended average minimum density is 0.5 commercial floor area ratio or 24 dwelling units per acre. Within 1/8 to 1/4 mile the recommended average minimum density is 0.25 commercial floor area ratio or 12 dwelling units per acre.

It also recommends increasing the mix of complementary land uses. People are more likely to walk, take a bus, or ride a bicycle if they are able to accomplish several tasks once they reach their destinations. The

The Transit Corridor Plan project is both to implement corridors as described by the UGM Functional Plan and put into place “transit-supportive development” land use districts as anticipated by the designation of transit streets. In early 1997, the Growth Management Committee (GMC), a citizen advisory committee began working with city staff to develop the Transit Corridor Plan. The GMC is appointed by Mayor and approved by Council. It consists of six at-large citizens, one professional from the development industry and one member each from the Planning Commission, Transportation, Housing and Parks Citizen Committees. Its purpose is: To advise Planning Commission and Council on proposed comprehensive plan amendments to implement the Metro 2040 functional plans and the final Gresham 2020 Vision Plan.

Purpose, Goals and Benefits

One of the GMC’s first actions was to adopt a purpose statement, a set of project goals and a set of project benefits. The purpose statement and set of goals guided work on the Transit Corridor Plan. They are listed below:

Purpose

To create a 20 year land use plan for future development along Gresham’s transit streets that emphasizes “transit supportive” development supporting Gresham’s progress in becoming a unique, attractive and compact community. The plan will recognize the singular nature of different corridor segment. Transit supportive development is relatively dense, mixed use and designed for the safety and convenience of pedestrians. Under this plan corridors will have slightly more people working and living along them than they do currently, have an assortment of complementary land uses within easy walking distance of one another; and increased pedestrian traffic and transit ridership. The plan will add value to the corridor areas by increasing options to allow people to walk or bike or take transit as well as drive. The plan will also promote economic vitality and neighborhood livability.

Goals

- 1 Propose land use districts and standards within the corridors that achieve, at a minimum, the housing and employment targets of the Metro Urban Growth Management (UGM) Functional Plan.
- 2 Consider the viability of and incorporate, as appropriate, the action plans identified in the 1995 *Land Use Alternatives Study*. The purpose of the study was to identify alternative land use patterns that can result in reduced automobile trips and vehicle miles traveled and increased opportunities for alternative modes of transportation.
- 3 Involve and seek the support of residents, business and property owners, and interested citizens of Gresham in the process of creating and adopting a Corridor Plan.
- 4 Identify and amend as needed the applicable Plan Policies and Implementation Strategies of the Gresham Community Development Plan as they relate to the Corridor Plan.
- 5 Ensure compatibility of the Corridor Plan with the Metro UGM Functional Plan, the Gresham 2020 Vision, the Oregon Transportation Rule¹, and related City planning projects.
- 6 Implement the plan through adoption by the City Council and incorporation into the Gresham Community Development Plan.

Benefits

Achievement of the project goals will result in corridors that are more compact with slightly increased density, mixed use areas and pedestrian oriented design. Development under this new plan can help accomplish a number of benefits for Gresham citizens as future development occurs:

- Increases options for different modes of transportation such as walking and transit and increases opportunities for creating commercial and institutional destinations that are within walking distance. Improves mobility of Gresham's elderly, youth and disabled by providing more travel opportunities for non-automobile drivers.
- Reduces need to expand the Urban Growth Boundary (UGB), thus protecting farmland and open space by encouraging slightly more compact and dense new development.
- Expands mixed use housing and employment opportunities for Gresham residents.
- Promotes business and neighborhood revitalization as investment is directed into existing and emerging areas. Existing market bases increase in size and infill development is more feasible.
- A larger customer base supports better transit service.
- New compact development uses existing infrastructure such as existing sewer and water systems, police and fire services. This is a more efficient use of infrastructure that reduces the need to make expensive new public investments.
- Brings together a variety of complementary land uses within easy walking distance of mixed use business districts and neighborhoods. Development supporting safe, convenient and attractive pedestrian ways that connect destinations in mixed use areas allows workers and residents to walk, cycle or use transit instead of a vehicle to run an errand, go to lunch or shop. This reduces the number and length of vehicle trips.
- Facilitates off peak trips because activities in mixed use districts occur throughout the day and into the evening. Increased ridership can result in better transit service.

¹ The City is updating its Transportation System Plan (TSP) to ensure that Gresham's residents have a variety of transportation opportunities. The updated TSP will plan for a safe and convenient pedestrian environment in areas with a mix of uses near transit streets and stops. The plan also includes the regional Primary Transit Network (PTN). The City's transit streets are, or projected to be by 2017, part of the PTN. The update is mandated by the State and should be completed in 1998/99.

- Attracts visitors enhancing the economic vitality of corridor businesses. Mixed use development provides a convenient mix of services for employees during the day and residents during the evening resulting in a steady flow of customers.
- Promotes neighborhood livability by having activities within easy walking distance. Mixed use development means more choices are available so that residents tend to walk more. This increases the neighborhood's safety, friendliness and livability.
- Encourages transit use and business vitality by providing pedestrian oriented, safe and direct connections between transit stops and destinations.
- Increases the capacity of the existing street system when vehicle trips are replaced by walking, cycling and transit trips.
- Changes and enhances the character of development along the city's major streets.

Study Area

Metro's *Urban Growth* report describes transit corridors as "360 feet deep coverage off streets with 10 min. peak headways, moderate density, mixed uses allowed." The Transit Corridor study area are those parcels within (or partially within) 360 feet of the corridors. The Corridors shown on the 2040 Growth Concept Plan map are also designated as transit streets in the Community Development Plan. Some of the 2040 Growth Concept Plan map corridors go through the Downtown Plan District, the Civic Neighborhood Plan District or the Central Rockwood plan area. Those corridors have been part of recent plan map amendments and were not included in the Transit Corridor Plan project. The following is the list of transit streets that were included in the study¹.

- * NE Sandy Blvd. (west City limits to east City limits)
- * NE Halsey St. (west City limits to east City limits)
- * SE Stark St. (east of 202nd Ave. to Kane)
- * E/NW/NE Burnside Ave. (202nd to E. Powell)
- * NE Division St. (west City limits to Kane)
- * W/E Powell Blvd. (west City limits to Burnside)
- * NE 181st Ave. (Sandy to NE Oregon St.)
- * SE 182nd Ave. (south of first lot south of Main St. to Powell)
- * SE/NE 223rd Ave. (Glisan to NW Fariss Road)
- * NW/SW Eastman Pkwy. (Fariss Rd. To Powell)
- * NE Kane Rd. (Stark to Division)

In the study area staff completed an inventory and prepared maps to show current land uses. Sources for the inventory included Multnomah County Assessor parcel data, City building permit records and field checks. Uses were categorized using Standard Industrial Classification categories for mining; construction; manufacturing; transportation/public utilities; wholesale trade; retail trade, finance, insurance and real estate; services; public administration; single-family residential; multi-family residential; vacant; school; church; community uses; parks; miscellaneous open spaces and city-owned public parking. These maps provided information about particular sites which were used to help determine proposed new districts.

Guidelines

The project requires the GMC will recommend a Plan Map Amendment (PMA) to the Planning Commission and City Council. The PMA will change land use designations on some parcels within the Corridor study area.

The GMC decided to use the recently adopted new Corridor districts that were developed as part of the Central Rockwood plan project. The new Corridor districts, which have been applied to transit corridors in Central Rockwood, are consistent with the goals of the project. They accomplish the goals, in part, by establishing minimum residential and commercial densities and by allowing mixed use residential and commercial developments. These corridor districts generally allow the range of uses originally considered in the RUGGOs such as rowhouses, duplexes, and one to three story office and retail buildings, and provide a density that will help corridor average about 25 persons per acre.

¹ A map showing the study area is found on the last page of this appendix.

The GMC decided to adopt guidelines for their decision making. In general the proposed Corridor district is the Corridor district most similar to the existing land use district designation on the parcel. At the end of this section is a matrix of residential and commercial districts which show a summary of existing districts and the Corridor districts that are most similar to the existing district. Below are a number of guidelines that were used in drafting the proposed changes.

1. Metro's *Urban Growth* report describes transit corridors as "360 feet deep coverage off streets with 10 min. peak headways, moderate density, mixed uses allowed." The Transit Corridor study area are those parcels within (or partially within) 360 feet of the corridors. However, recommending a new corridor land use district will be on a parcel by parcel basis and may not always coincide with the 360 feet dimension. For example, single family neighborhoods facing inward away from the corridor will generally remain Low Density Residential (LDR) even when a single family parcel is within 360 feet of the study area. At other sites a parcel, although outside of the 360 feet area, may be land-locked and for consistency should have the same corridor land use district as applied to the adjacent parcel.
2. Although the LDR District is not a transit corridor district, existing stable single family neighborhoods will retain the current LDR District designation. Stable generally means that there is little vacant land for development and that there are few redevelopable opportunities (because the value of the house is greater than the value of the land). Also, single family neighborhoods that are located off the corridor (but still within the 360 foot guideline) are more likely to be kept as LDR.
3. The Transit Low Density Residential (TLDR) District can be used on vacant or redevelopable land where small lot single family development is appropriate. It can be used as a transition or compatible area abutting an existing single family neighborhood. The main criteria in designating parcels as TLDR are: 1) the availability of vacant land; 2) likelihood of redevelopment (generally when building value is less than land value); and 3) proximity to the corridor (parcels located directly on the corridor are more likely to be designated TLDR).

The TLDR would also replace the MDR-12 District by allowing manufactured home parks to be added as an allowed use in the TLDR. The MDR-12 now allows manufactured parks at 3.8 minimum to 8.7 maximum dwelling units per acre. To be transit supportive manufactured parks in the TLDR would have a minimum density of around 7 dwelling units per acre with a maximum density of 14 dwelling units per acre. The TLDR already allows manufactured homes on small lot subdivisions at 10 to 20 dwelling units per acre.

4. The Corridor Multi-Family (CMF) District will generally be used where there is existing Moderate Density Residential-24 (MDR-24) District. In some cases it could also be used for existing Office/Residential (OFR) District designations.
5. The Corridor Mixed Use (CMU) designation can replace Neighborhood Commercial (NC), OFR and MDR-24 Districts and well as some smaller GC sites. CMU designations will generally be for small nodes to infill between larger commercial nodes in order to serve the commercial needs of nearby residential areas.
6. The Moderate Commercial (MC) District which allows mixed use and has minimum commercial floor area requirements will generally replace General Commercial (GC) and Extensive Commercial (EC) smaller shopping areas. The current GC and EC do not allow mixed residential and commercial use. Nor do they have minimum commercial floor area requirements.
7. Similarly to MC above, the Community Commercial (CC) generally replaces GC, Exclusive Extensive Commercial (EEC) and EC larger shopping areas. Both the MC and CC site would allow the outdoor commercial uses that are permitted in the EC and EEC land use districts.
8. There are a few sites that are within the Gresham 2040 Regional center and within a ½ miles of an LRT transit stop that were not designated as either Downtown or Civic Neighborhood. These parcels, currently High Density Residential-60 (HDR-60), Transit Development (TD) or GC Districts, would be designated as Station Center (SC) which has similar residential densities and which allows mixed uses.
9. New designations are applied so as to avoid creating nonconforming uses, but in some cases new designations may create non-conforming developments (such as commercial buildings that have building square footage higher than that allowed.)
10. When possible, new designations have like uses face like uses (for example, having residential across the street from residential, and not residential across the street from commercial).

11. When possible, corridor districts are designated along rear lot lines. This is intended to preserve the character of the (primarily single family residential) neighborhoods that lie beyond the 360 foot depth of the corridors and to avoid split zone parcels.
12. There should be at least a neighborhood scale commercial opportunity node at about each ½ mile of the length of the corridor; these nodes would serve nearby residential areas.
13. In general, industrial parcels will not be affected by new corridor designations. However, small industrial parcels that are developed with non-industrial uses may be considered for compatible corridor districts when they do not have industrial development opportunities by being contiguous to vacant industrial parcels.
14. In addition to being a corridor, there is also a “Main Street” Overlay designation for a section of Division. The Main Street Overlay would include design requirements for that section of the corridor. The recent Land Use Alternatives study (prepared by a consultant for the city) suggests that a segment of Stark also be considered for a Main Street Overlay. Since the Main Street Overlays deal primarily with design standards, they will be considered during the second phase of the corridor project.
15. Campus Site design standards will also be considered during the second phase of the corridor project. In addition to new corridor designations, these design standards would potentially apply to sites such as the Legacy hospital on Stark Street.
16. Before applying new designations, Plan Map Amendments will be reviewed to see if there have been recent changes to land use designations.

RESIDENTIAL DISTRICT MATRIX¹	
Current Land Use Districts	Corridor Land Use Districts
Low Density Residential. Areas deemed appropriate for single family detached and attached dwellings, manufactured homes and two-unit attached dwellings at an average density of 4,000 to 7,000 square feet (6.22 - 10.89 units per acre).	Transit Low Density Residential. Areas in close proximity to transit service and deemed appropriate for single-family detached and attached dwellings, manufactured homes and two-unit attached dwellings at a development density of 10 - 20 units per acre.
Moderate Density Residential - 12. Areas deemed appropriate for multi-family housing at a development density of 8.91 to 12.1 units per acre, or manufactured dwelling parks at a density of 3.79 to 8.71 units per acre.	Transit Low Density Residential. <u>In addition to the uses described above</u> which are currently allowed it is proposed to allow manufactured dwelling parks at 7 - 14 units per acre.
Moderate Density Residential - 24. Areas deemed appropriate for multi-family and single family attached housing at a development density of 12.1 to 24.07 units per acre.	Corridor Multi-Family. Areas in close proximity to transit service and deemed appropriate for multi-family and single family attached housing at a development density of 12 to 24 units per acre.
Office/Residential. Areas deemed appropriate for multi-family housing at a development density of 8.71 to 12.1 units per acre or business offices or professional clinics. Limited retail and commercial services.	Corridor Mixed-Use. Areas in close proximity to transit service and deemed appropriate for multi-family and single family attached housing at a development density of 12 to 24 units per acre; small-scale commercial development; and mixed residential and commercial development.
High Density Residential - 60. Areas deemed appropriate for multi-family housing at a development density of 20.26 to 60.08 units per acre. Retail sales and commercial services are permitted on the first floor.	Station Center. Areas in close proximity to light rail stations in the Central Rockwood area, which are deemed appropriate for higher-density, transit supportive uses including commercial (retail and service), office, housing at 24 to 60 units per acre, and mixed-use developments. Minimum FAR 0.6.
Transit Development. Areas deemed appropriate for intensive transit related retail, office, and service uses at a minimum .4/1 building floor area to site ratio and residential development at a density of 24.2 to 42.29 units per acre.	

¹ Within areas of west Gresham as identified on the map in Section 7.0500 of Volume 4 of the Community Development Plan, attached dwelling rental units are prohibited.

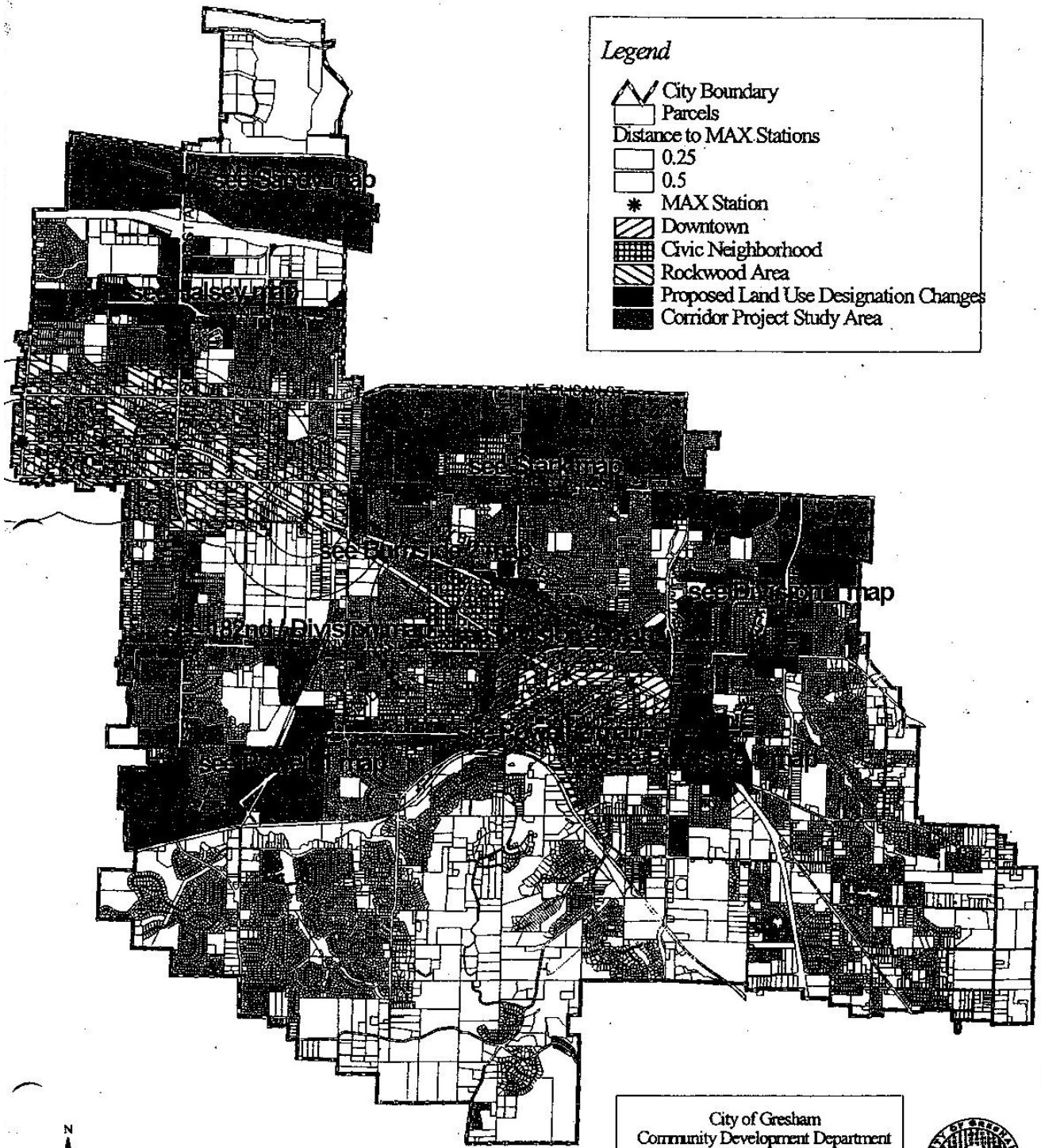
COMMERCIAL DISTRICT MATRIX¹	
Current Land Use Districts	Corridor Land Use Districts
<p>Neighborhood Commercial. Areas deemed appropriate for commercial activities that serve a local area, and have minimal impact on surrounding residential uses, such as small offices, grocery stores, and personal services. Maximum building sizes range from 3,500 sq. ft. for restaurants, 5,000 sq. ft. for offices and personal services, 10,000 sq. ft. for retail and 35,000 sq. ft. for grocery stores.</p>	<p>Corridor Mixed-Use. Areas in close proximity to transit service and deemed appropriate for multi-family and single family attached housing at a development density of 12 to 24 units per acre; small-scale commercial development; and mixed residential and commercial development. Maximum foot print building size is 10,000 sq. ft.</p>
<p>General Commercial. Areas deemed appropriate for commercial activities that serve the community, including retail trade establishments, offices and clinics, and commercial service establishments.</p>	<p>Moderate Commercial. Areas deemed appropriate for general commercial activities that primarily serve a number of nearby neighborhoods rather than the community as a whole or the region. Maximum 40,000 sq. ft. coverage for any building totally commercial. Outdoor commercial allowed as long as the total site area covered by buildings is no less than 25% of site areas used for outdoor commercial display or storage. Attached residential in conjunction with commercial is also permitted at a density of at least 12 units per acre.</p>
<p>Extensive Commercial. Areas deemed appropriate for commercial activities that require outdoor storage of merchandise exceeding 15% of the business floor area, such as retail trade in automobiles, landscape materials, lumber yards, and services such as equipment rental and storage units. General commercial uses are also permitted in this district.</p>	<p>Community Commercial. Areas deemed appropriate for a wide variety of commercial activities, including retail, offices and service businesses, that serve the community and adjacent areas. Minimum Outdoor commercial allowed as long as the total site area covered by buildings is no less than 25% of site areas used for outdoor commercial display or storage. Attached residential development in conjunction with commercial is also permitted at a density of at least 12 units per acre.</p>
<p>Exclusive Extensive Commercial. Areas deemed appropriate for commercial activities that require outdoor storage of merchandise exceeding 15% of the business floor area, such as retail trade in automobiles, landscape materials, lumber yards, and services such as equipment rental and storage units.</p>	

Final Process

The GMC, using Guidelines, did their initial review of maps over three meeting during Fall 1998. During the process they identified particular sites for further discussion based on their knowledge or question and on public testimony. Finally during two October meeting the GMC, with public input, made final recommendations.

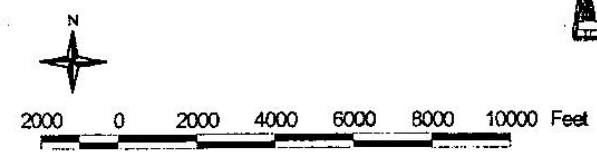
¹ Within areas of west Gresham as identified on the map in Section 7.0500 of Volume 4 of the Community Development Plan, attached dwelling rental units are prohibited.

Transit Corridor Plan Study Area



Legend

- City Boundary
- Parcels
- Distance to MAX Stations
- 0.25
- 0.5
- MAX Station
- Downtown
- Civic Neighborhood
- Rockwood Area
- Proposed Land Use Designation Changes
- Corridor Project Study Area



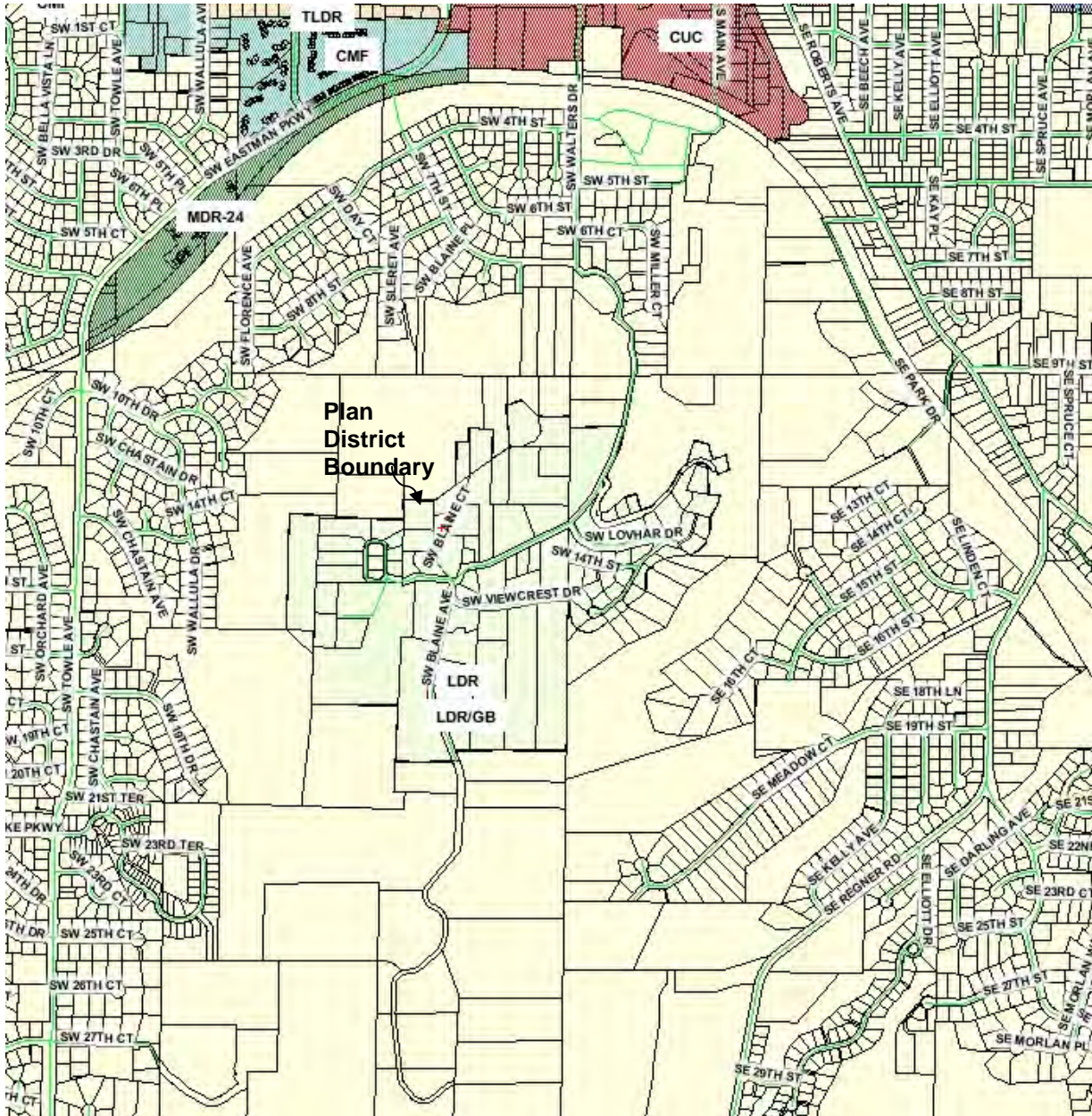
City of Gresham
 Community Development Department
 October 29, 1998

Transit Corridor Plan
 Appendix 40



APPENDIX 41

GRESHAM BUTTE PLAN DISTRICT BOUNDARY MAP



(Added by Ordinance 1465, adopted 12/1/98; effective 1/1/99)

APPENDIX 42
(Added by Ordinance No. 1597 Effective 1/6/05)

PLEASANT VALLEY PLAN DISTRICT PLAN

Pleasant Valley Plan District Plan

CHAPTER 1 - SUMMARY

Pleasant Valley is an area that was added to the region's urban growth boundary in December 1998 to accommodate forecasted population growth in the region. Pleasant Valley is planned as a new, urban community. It is 1,532 acres located south and east of the current city limits for Gresham and Portland. The City of Gresham, in partnership with the City of Portland, has been working with its regional partners and the community since 1998 to create a plan for the future urbanization of this rural area. This extensive planning process has created a vision and a plan for the transition of a rural community of 800 residents into an urban community of approximately 12,000 residents and 5,000 jobs.

Over the last four years the Pleasant Valley Plan District (Plan District) has been drafted. Crafted during the Pleasant Valley Concept Plan (Concept Plan) project and the follow-up Pleasant Valley Implementation Plan (Implementation Plan) project, it was created with the help of public input from open houses and community forums, numerous advisory committees, and staff from both the cities of Gresham and Portland and other agencies. The *Concept Plan* project created maps and text that provide a blueprint for future development of the area located south of Gresham and east of Portland. The *Implementation Plan* project provided a "bridge" document between the *Concept Plan* and these *Comprehensive Plan Amendments*.

On May 14, 2002, the Pleasant Valley Concept Plan Steering Committee endorsed a Concept Plan and set of Implementation Strategies for the valley. The central theme of the plan is to create an urban community through the integration of land use, transportation and natural resource elements. The Concept Plan has been refined into the Plan District. The Plan District consists of a map of proposed comprehensive plan designations, with associated code text, and other maps, diagrams and background findings.

The Plan District will fulfill the goal of the Concept Plan to create a quality living environment, with a sense of place that is unique to Pleasant Valley. To achieve this goal, the Plan District will implement compact mixed-use neighborhoods, a town center, neighborhood edges and centers, a variety of housing options, transportation alternatives, pedestrian friendly urban design and the integration of the natural environment into the design of the community. Critical to the sense of place in Pleasant Valley are the valley's natural resources and extensive network of streams and wetlands. The Plan District will allow the valley to develop in such a way that minimizes impact on these natural features, while allowing these features to enhance the built environment.

The *Pleasant Valley Concept and Implementation Plans* projects addressed the entire 1,532-acre study area to achieve the overall goal of "creating a complete community." The cities of Gresham and Portland have agreed to adopt similar policies and development code to achieve this goal. In addition, the cities reached an agreement on future governance that entails Gresham annexing about 1,004 acres and Portland about 268 acres in Multnomah County. No service or governance agreement exists in Clackamas County. However, the cities did agree upon a boundary if such an agreement was reached that provided for Gresham and Portland governance. If that happened about 197 acres are Gresham annexation areas and about 38 acres are Portland annexation areas. The remaining 25 acres is a separate area in Clackamas County that has an existing mobile home park and that has been partially annexed by the City of Happy Valley.

This Pleasant Valley Plan District CPA 04-1480 report is intended to both document and implement the Pleasant Valley planning process. It will be adopted as the “Findings” document for the Pleasant Valley Plan District. The organization of this findings document is detailed in Chapter 3.

CHAPTER 2 - ORGANIZATION

The Pleasant Valley Plan District contains several components, which are summarized below. This Pleasant Valley Plan District document will be adopted as Appendix 42 to Volume 1 -- Findings Document, *Gresham Community Development Plan*. Individual chapters will include amendments to Volume 2 – Policies, Volume 3 -- Development Code and Volume 4 -- Transportation System Plan.

Chapter 3. Background. This chapter summarizes the planning process, the extensive public involvement process and the goals for the Pleasant Valley area. It also describes the context in which the planning for Pleasant Valley occurred, and it summarizes Pleasant Valley’s current geography, land uses and demographics.

Chapter 4. Goals, Policies and Action Measures. The Goals, Policies and Action Measures are a comprehensive set of land use policies intended as text amendments for adoption into the Gresham *Community Development Plan*. They provide the policy basis for the Pleasant Valley Plan District *Community Development Plan* map and *Development Code*. There are separate goals for the Plan District, Urbanization and Land Use Planning, Town Center, Residential and Neighborhoods, Employment and Other Commercial, Natural Resources, Green Development, Cultural and Natural History, Schools, and Transportation. Goals for Water, Stormwater, Wastewater and Parks are located in Chapter 8 – Public Facility Plan.

Chapter 5. Land Use. This chapter describes how the overall land use vision for Pleasant Valley is implemented through the *Development Plan* map and *Development Code*. It describes the future land use patterns, the Pleasant Valley Plan District Map, and the Pleasant Valley land use districts and development code. The Map amends Volume 2 and the land use districts and development code amends Volume 3. The land use districts and development code sections are arranged to provide commentary on the proposed code.

Chapter 6. Natural Resources. The Natural Resources chapter documents the State Goal 5 process for Pleasant Valley and provides the foundation for protecting natural resources, and conserving scenic areas and open spaces. The chapter is comprised of four major sections: the Natural Resources Inventory; Significance Determination; the Economic, Social, Environmental and Energy (ESEE) analysis and development code that implements Natural Resources regulatory program. A key strategy to meet the natural resource goals of the *Concept Plan* is the implementation of an Environmentally Sensitive Restoration Area (ESRA) subdistrict, which is intended to promote compatibility between development and conservation of stream corridors, wetlands, floodplains and forests. The ESRA proposed land use district and development code would amend Volume 3. The report also includes rough costs estimates and funding strategies for preserving and restoration the ESRA.

Chapter 7. Transportation. This chapter would amend Volume 4 – Transportation System Plan. It includes goals, policies and action measures and a description of how the proposed transportation system was developed. It also includes a proposed transportation system including functional street classifications, street design types, a bicycle and pedestrian plan, a transit plan and connectivity standards that meet regional and local connectivity requirements. This chapter also includes a list and a map of the significant transportation projects which are needed to support the land use designations in Pleasant Valley. There are also rough costs estimates and an estimate of when each of the projects will be needed. The plan is responsive to the Natural Resources strategy, the Foster-Powell Corridor Plan project, and the Regional Transportation Plan.

Chapter 8. Public Facilities Plan. The Public Facilities plan establishes a framework for how parks, water, wastewater and stormwater urban services will be developed and maintained. For each of the facilities there is a general description of existing facilities and a needs assessment to support the future land uses; goals, policies and action measures for each facility; a list and map of significant parks, water, wastewater and stormwater projects; rough costs estimates for each project; and a general estimate of when projects are needed along with a general discussion of funding strategies. The Public Facilities Plan established a CIP for each of the facilities and amends Volume 2.

Chapter 9. UGMFP Title 11 Compliance Report. As a new urban area, the planning for Pleasant Valley is subject to Title 11 of the Metro Urban Growth Management Functional Plan (UGMFP). This Title is to require and guide planning for the conversion from rural to urban use of areas brought into the Urban Growth Boundary. Section 3.07.1130 requires submittal to Metro of the proposed comprehensive plan amendments for Pleasant Valley and an evaluation report. The evaluation report is to show compliance with the UGMFP and the 2040 Growth Concept.

CHAPTER 3 - BACKGROUND

Introduction

The background chapter is divided into five major topics and is intended to provide the basic framework for how the Pleasant Valley Plan District was created.

- Planning Process
- Public Involvement
- Concept Plan Goals
- Context
- Plan Area

Planning Process

Planning for the Pleasant Valley area occurred in four distinct phases: Governance, Concept Plan, Implementation Plan, and Adoption.

Governance	Concept Plan	Draft Implementation Plan	City Adoption (Legislative Process)
1998	2000 - 2002	2003	2004

Governance

In December 1998 Metro Council voted to expand the urban growth boundary to include the Pleasant Valley area, known as Urban Reserve Areas #4 and #5. Previous to this decision a series of facilitated workshops were held at the Pleasant Valley Elementary School for interested parties with Gresham, Portland, Multnomah County and Metro staff. A result of the workshops was the development of preliminary Pleasant Valley Urban Reserve Planning goals.

In December 1998 Gresham and Portland Councils adopted an Intergovernmental Agreement (IGA) including the preliminary goals. The IGA identified those areas generally where Gresham and Portland would provide governance and urban services. At the time, about 65% of the project area was identified as future Gresham and 17% future Portland, all in Multnomah County. The rest of the project area (18%) is in Clackamas County, where final governance and services decisions were not made nor was the area included in the IGA. The cities agreed in the IGA to develop a coordinated urbanization plan with a comprehensive public involvement process for citizens within the affected area and in surrounding areas and with affected jurisdictions. It established a five-year goal to complete the planning effort.

Concept Plan

In the Summer of 2000 the City of Gresham, in partnership with Metro, City of Portland, Clackamas and Multnomah Counties and other parties, embarked on creating the *Pleasant Valley Concept Plan (Concept Plan)*. The *Concept Plan* is a guide to the creation of a new 1,532-acre community neighborhood south of Gresham and east of Portland.

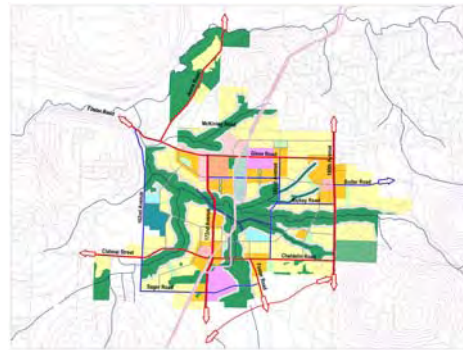
The *Concept Plan* project was partially funded by a grant from the Federal Highway Administration through the Transportation and Community System Preservation pilot program. The purpose of this grant program was to plan and implement strategies that, in part, improve the efficiency of the transportation system, reduce environmental impacts of the transportation system, and ensure efficient access to jobs, services and centers of trade.

The *Concept Plan* was developed by a 23-member Steering Committee representing residents and property owners; Portland, Gresham and Happy Valley planning commissions; Multnomah and Clackamas counties; citizen advisory committees, business and neighborhood associations; Centennial School District, watershed councils, and environmental/livability organizations. The committee met 15 times between November 2000 and May 2002.

The major steps in the process were:

- Inventory of base conditions and projections of land-use, transportation, natural resources and infrastructures needs.
- Establishment of project goals.
- Development of four alternative concept plans.
- Evaluation of alternative concept plans.
- Refinement of the *Concept Plan* and preparation of Implementation Strategies.
- Endorsement of the final *Concept Plan* and Implementation Strategies.

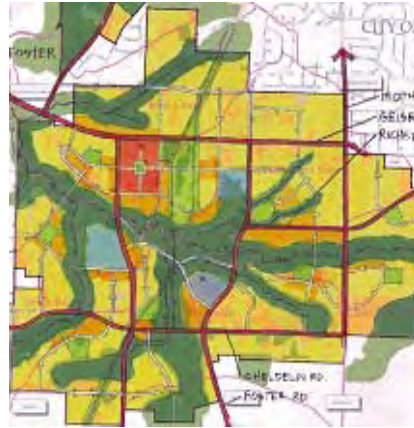
Pleasant Valley Concept Plan



Concept A



Concept B



Concept C



Concept D



On May 14, 2002 the *Concept Plan* Steering Committee approved the award-winning¹ *Pleasant Valley Concept Plan* endorsing a plan summary and recommendations and a set of implementation strategies. For reference see stand-alone documents *Pleasant Valley Concept Plan Summary and Recommendations*, *Implementation Strategies*, and *Technical Appendix* listed in Appendix C.

In the summer of 2002, Gresham (Resolution 2559, July 23, 2002), Portland and Metro Councils, and Multnomah and Clackamas County Commissions all accepted the *Concept Plan* and resolved to use it as the basis for developing implementing regulations and actions.

Implementation Plan

In the Fall of 2002, Gresham and Portland started the Pleasant Valley Implementation Plan (Implementation Plan) project. The purpose of the Implementation Plan project was to draft a report that

¹ Presented a Professional Achievement in Planning award by the Oregon Chapter of the American Planning Association at the 2002 Oregon Planning Institute conference.

would provide a “bridge” document between the 2002 *Concept Plan* and final comprehensive plan amendments ordinances and intergovernmental agreements.

The *Implementation Plan* was partially funded by a State of Oregon Transportation Growth Management (TGM) grant. The purpose of the TGM program is to enhance Oregon’s livability, foster integrated land use and transportation planning and encourage development that results in compact, pedestrian, bicycle and transit friendly communities.

A twelve person Pleasant Valley Advisory Group was formed to advise staff as to the consistency with which the *Implementation Plan* was carrying out the *Concept Plan*. Most members of the Advisory Group had been members of the Steering Committee. The Advisory Group included Gresham and Portland Planning Commissioners, Pleasant Valley residents and property owners, Gresham and Portland neighborhood association and advisory committee representatives, retail business representatives and other stakeholders. They held six meetings and at the last meeting on February 10, 2004 the Pleasant Valley Advisory Group endorsed the *Implementation Plan* report as being consistent with and carrying out the *Concept Plan*.

The *Implementation Plan* report was completed in December 2003. Key steps in creating the *Implementing Plan* report were:

- Creating a *Plan District* map with refined residential land use districts.
- Drafting land use districts and development code.
- Refining the major street functional and design classifications.
- Drafting a street connectivity plan and a bike and trail plan.
- Completing a State Goal 5 natural resources analysis and drafting a regulatory code.
- Drafting a public facility plan for water, wastewater, stormwater, transportation and parks to generally describe projects, costs, timing, and funding options for these facilities.
- Drafting an annexation analysis and strategy report to compare infrastructure costs and revenues, net fiscal positions in sub-areas of Pleasant Valley, and preliminary conclusions regarding strategies for annexation.

In March 2004, Gresham and Portland Councils revised the 1998 IGA by further refining the future boundary between the two cities. The IGA also states that the cities of Gresham and Portland will continue to work cooperatively on planning and plan implementation for the Pleasant Valley area with a target to adopt all the necessary *Comprehensive Plan* amendments in fall 2004.

City Adoption

City adoption is the final phase of planning for Pleasant Valley. The cities of Gresham and Portland must individually adopt the necessary *Comprehensive Plan* and *Zoning/Development Code* amendments to allow for eventual annexation of land into their respective cities. The *Comprehensive Plan Amendments* are processed under the Type IV Legislative procedures. The Planning Commission will hold a public hearing and make a recommendation to the Council. The Council will then hold a hearing and make a final decision. Both Planning Commission and Council encourage public testimony in writing or in person at the hearings. Two hearings are scheduled for both the Planning Commission and Council. The purpose of the first hearing is to hear the staff report and public testimony. The purpose of the second hearing is deliberation with the Planning Commission making their recommendation and the Council making their final decision.

The intent of the legislative process is for each city to adopt plans that are consistent with the Pleasant Valley Concept and Implementation Plans. The cities recognize that the actual development code and

certain policies will be tailored to each city's code structure, but both cities agree to create a "complete community with a unique sense of identity and cohesiveness" regardless of city boundaries.

Public Involvement

The purpose of the Pleasant Valley Public Involvement Plan is to ensure citizens, landowners, businesses, and other interested parties are fully informed of the project; have convenient opportunities to provide input throughout the process of developing, selecting and implementing the plan; and can participate in creating a plan that is new and creative and where special efforts are made to engage and educate affected members of the community and others.

A Public Involvement Plan (PIP) with this purpose statement was created at the beginning of the Concept Plan project. A public involvement work team was formed during the summer of 2000 to develop the Public Involvement Plan. The work team consisted of planning and citizen involvement staff from the Cities of Gresham and Portland, Multnomah County, Metro and Pacific Rim Resources (a consultant) and from citizens representing the Gresham Southwest Neighborhood Association, the Pleasant Valley Neighborhood Association and the Johnson Creek Watershed Council. The work team created the PIP over a series of several meetings and it was endorsed by the Steering Committee in December 2000. It also met periodically over the course of the project to "check in" on the progress of public involvement. The PIP was carried out during the *Concept Plan* project and then re-established during the *Implementation Plan* project.

A number of public involvement elements or key methods were established in the Public Involvement Plan. What follows is a summary record of the key methods that were used.

Key Public Involvement Methods

- ◆ **Stakeholder Interviews.** Stakeholder interviews are done to identify issues related to the project and to address the wants and needs for different levels of opportunities for involvement. Sixteen persons representing a wide range of interests were interviewed. Each person interviewed was asked two categories of questions. In brief the first set of questions asked about issues -- what are the most important issues, how would you address the future look of the community, transportation, natural resources and special places and the second set focused on how to get input -- what is the best way of being kept informed, where are gathering places, what is the best place to hold public meetings; are there organizations that send out newsletters/notices, other ideas, other issues. The results of the interviews were summarized for recurring themes and provided to the project staff and the Steering Committee. The interviews provided early direction on issues to address as well as best public involvement practices.
- ◆ **Steering Committee.** The Steering Committee was created to guide the development of the *Concept Plan*. It led the policy discussions and represented the agencies and constituencies with interests in the project. It served to create partnerships, to exchange information with stakeholders, and to build a consensus on a preferred *Concept Plan*. This 24-member Committee included valley residents and property owners; Portland, Gresham and Happy Valley planning commissioners; Multnomah and Clackamas counties; Metro; area business and neighborhood associations; developer interests; the Gresham Transportation Council Advisory Committee; Portland Bureau of Environmental Services; 1000 Friends of Oregon; Centennial School District; Pleasant Valley PTA; the Johnson Creek Watershed Council; and Friends of Mt. Scott and Kellogg Creek. Most members had alternates who often attended meetings and participated in the discussions. The Steering Committee met 15 times over an 18-month period. These meetings were held in the evenings and were open to the public.

Citizens on an interested persons mailing list were sent agendas of these meetings. This was a decision making group and they made decisions at all key milestones: basic inventory and projections of land-use, transportation, natural resource and infrastructure needs; establishment of goals; development of four alternatives; evaluation of the alternatives and preparation of a hybrid plan; refinement of the concept plan and preparation of implementation strategies; and endorsement of the final Concept Plan and implementation strategies. The final concept plan and implementation strategies were adopted by consensus on May 14, 2002 and the Steering Committee passed their endorsement to the participating jurisdictions.

- ◆ **Advisory Group.** An Advisory Group was formed for the Implementation Plan project as a successor to the Steering Committee. The Advisory Group was made up of Gresham and Portland Planning Commissioners, Neighborhood Association and Citizen Committee representatives, project area citizens and other stakeholders. Almost all were on the Steering Committee during the Concept Plan project. Their main purpose was to ensure consistency of implementing regulations with the Concept Plan. The group met six times with the final meeting to provide input on the completed *Implementation Plan* report. These meetings were held in the evenings and were open to the public. Citizens on an interested persons mailing list were sent agendas of these meetings. The Advisory Group, at their February 10, 2004 meeting, endorsed the final *Pleasant Valley Implementation Plan* report.
- ◆ **Pleasant Valley Mailing List.** A Pleasant Valley Mailing List was created for the purposes of sending out notices of beginning of the project (early notice flyer) and postcards and newsletters providing updates on the project and notices for upcoming community forums and events. The Pleasant Valley mailing list included all project area property owners and residents, those within a 300-foot vicinity and interested parties. That list had over 1,100 addresses.
- ◆ **Community Forum.** The purpose of the Community forums was both to inform and to obtain advice from the general public. It was important to involve the public at each stage of the process and to allow the public to participate in preparation of the recommendations before final action by the Steering Committee. Notice of the forums were sent to the Pleasant Valley Mailing List, distributed at the PV Elementary School and at Gresham City Hall and other venues. The forums were held on Saturday mornings at the Pleasant Valley Elementary School (in the project plan area) and featured an open house display of working maps, presentation and large group discussion, and small group breakouts with exit questionnaires. The forums were professionally facilitated. A total of eight forums were held [five during the Concept Plan and three during the Implementation Plan]. The third forum was a design charrette and included a Tuesday evening forum at the PV Elementary School, two open houses at Gresham City hall as well as the Saturday morning forum. For each forum a Public Comment Report of public comments and background material was compiled and mailed to forum attendees and project participants. Anyone who attended a forum received the mailed Reports. The mailing list included 190 addresses.
- ◆ **Early Notice Flyer.** An early notice flyer was sent in November 2000 to the Pleasant Valley mailing list. It described the project, key dates and opportunities for participation. It was also distributed at the Pleasant Valley Elementary School. An Early Notice Flyer was also sent at the beginning of the Implementation Plan project in November 2002.
- ◆ **Frequently Asked Questions.** An FAQ was created at the beginning of the project and updated as necessary throughout the process. It provides a basic description of the project, the reasons for the project as well as questions concerning future annexations, development, etc. The FAQ was distributed throughout City Hall for initial mail, phone and visit inquiries.

- ◆ **Newsletters.** Newsletters were mailed to the Pleasant Valley Mailing List. They provided status and summary information and notice of upcoming meetings. Four newsletters were mailed during the Concept Plan and three newsletter mailings were made during the Implementation Project.
- ◆ **Press Releases.** Press releases were timed to correspond with events and especially the community forums. They were distributed to a comprehensive media list that included the *Outlook* and *The Oregonian*. A number of articles on the Pleasant Valley project were printed in both newspapers. Additionally, there were articles in the *Oregon Business Journal* and the *Journal of Daily Commerce*. Clippings from local newspapers have been included in the Community Forum Public Comment Reports.
- ◆ **Website.** The Pleasant Valley web page, www.ci.gresham.or.us/pleasantvalley, at the City of Gresham website, was created during the Concept Plan project and has been kept up-to-date. The website can be visited for the latest news on the project, to view or download a copy of the draft documents that will reviewed at the next event, for a schedule of upcoming events and for additional project background information. Links were made with other participating jurisdictions including the City of Portland, Metro and Clackamas County.
- ◆ **PowerPoint Presentation.** A PowerPoint presentation was prepared to explain the project and solicit input from citizens and landowners. This presentation was shown at the various forums and at the outreach presentations to interested organizations. It has been continually updated as progress occurs and tailored for the venue.
- ◆ **Speaking Engagements.** Throughout the Concept and Implementation Plan projects efforts were made to contact affected and interested organizations and offer to make presentations on the project at their regular meetings. These presentations provided opportunities for other citizens to learn and provide input on the project and had the added benefit of being open to the general public. Organization presentations included the following:
 - Centennial School District Board
 - Clackamas River Basin Council
 - Coalition for a Livable Future
 - East County Realtors Association
 - East Multnomah County Transportation Committee
 - Gresham Bicycle-Pedestrian Task Force
 - Gresham Citizen Involvement Committee
 - Gresham Community Development and Housing Committee
 - Gresham Environmental Services Council Advisory Committee
 - Gresham Finance Committee
 - Gresham Historic Resources Advisory Committee
 - Gresham Neighborhood Coalition
 - Gresham Parks & Recreation Council Advisory Committee
 - Gresham Council Transportation Advisory Committee
 - Gresham Tree Preservation Committee
 - Johnson Creek Watershed Council
 - Metro Policy Advisory Committee
 - Metro Technical Advisory Committee

- Pleasant Valley Neighborhood Association
- Pleasant Valley PTA
- Southwest and Centennial Neighborhood Associations

Several of the Gresham Council Advisory Committees reviewed and endorsed Pleasant Valley goals that related to their topic of their committee (CIC, CDHC, ESCAC, HRAC, PRCAC, and CTAC)

- ◆ **Planning Commissions and Elected Officials.** Over the course of the Pleasant Valley project Pleasant Valley updates were provided to the Gresham Planning Commission on an approximately quarterly basis. These generally were made during their monthly growth management sessions. The Portland Planning Commission was also provided periodic updates. Planning Commission meetings are advertised and open to the general public. During the Concept Plan three meetings of an Elected Officials Group (EOG) were held to provide a status report. The EOG consisted of elected officials from the participating jurisdictions. Gresham representatives were Mayor Becker and Councilor Lassen (alternate) and the Portland representative was Mayor Katz. The Gresham Council was also provided periodic updates. Gresham and Portland, along with Metro, Clackamas and Multnomah County, were presented the recommendations of the Steering Committee at public hearings and passed a resolution accepting those recommendations. The Metro Council was also given periodic updates.
- ◆ **Focus Sessions.** Focus sessions bring together industry and user experts on specific topics to provide advice and a “check-in” to project staff and decision makers. Focus sessions were used successfully during the Concept Plan project on topics such as housing, town center, historic preservation, and employment. Two focus sessions were done during the Implementation Plan project on green practices and on annexation strategies.
- ◆ **Tour of Pleasant Valley.** A self-guided tour of Pleasant Valley was developed and put on the website for both the general community and stakeholders. It is also available as a handout. It provides an understanding of the project area and provides opportunity for feedback. It includes a map and two route descriptions (coming from Gresham and from Portland). It marks and describes interesting features and safe places to park.
- ◆ **Portable display.** A portable display was prepared using graphics and text to explain the project. The display was made available at various venues such as Gresham City Hall, the Gresham library, the Gresham Post Office, the Pleasant Valley elementary school and at the Johnson Creek Watershed Summit yearly events as well as displayed at forums and other meetings.
- ◆ **Postings in Community Newsletters and Bulletins.** Notices and project updates were included in various community newsletters and bulletins including the Johnson Creek Watershed newsletter, the Pleasant Valley PTA newsletter, the East Portland Neighborhood News and the City of Gresham Neighborhood News.

Concept Plan Goals

The following goals were endorsed by the Steering Committee on May 2, 2001. They reflect the vision and values underlying the *Concept Plan* and ultimately leading to the Plan District.

A. Create a community. The Plan will create a “place” that has a unique sense of identity and cohesiveness. The sense of community will be fostered, in part, by providing a wide range of transportation choices and living, working, shopping, recreational, civic, educational, worship, open space, and other opportunities. Community refers to the broader Concept Plan area, recognizing that it

has (and will have) unique areas within it. Community also refers to Pleasant Valley’s relationship to the region – relationships with Portland, Gresham, Happy Valley, Multnomah County, Clackamas County, and the unique regional landscape that frames Pleasant Valley.

B. Create a town center as the heart of the community. A mixed-use town center will be the focus of retail, civic, and related uses and services that serve the daily needs of the local community. The town center will be served by a multi-modal transportation system. Housing will be incorporated into mixed-use buildings and/or adjacent apartments and townhomes. A central green or plaza will be included as a community gathering space. Streets and buildings will be designed to emphasize a lively, pedestrian-oriented character for the town center. The town center will have strong connections to adjacent neighborhoods, and commercial services that are centralized and convenient to pedestrian-oriented shopping.

C. Integrate schools and civic uses into the community. The number, type, and location of schools will be coordinated with the Centennial School District. Schools and civic uses will be integrated with adjacent neighborhoods and connected by a system of bicycle and pedestrian routes. The number, type and location of mixed-use centers will be considered as schools and civic uses are integrated into the Plan.

D. Celebrate Pleasant Valley’s cultural and natural history. The Plan will retain the best of the past and incorporate the area’s cultural and natural history, as appropriate, into the new community form. Important cultural and natural names, places and themes will be included in the Plan.

E. Preserve, restore, and enhance natural resources. The Plan will identify, protect, restore, and enhance significant natural resource areas, including stream corridors, forested areas and buttes. These resource areas will provide the basis for identifying buildable and non-buildable areas, and serve as open space amenities for the community. Resource protection will include strategies to protect endangered species, water quality, and the aquifer. Resource protection and enhancement will be a shared responsibility and partnership of property owners, governments and developers.

F. Utilize “green development” practices. The Plan will incorporate community design and infrastructure plans that produce minimal impacts on the environment, including flooding and water quality within Johnson Creek. The Plan will incorporate the guidelines for stormwater quality and quantity and resource management for each subwatershed, and also enhance natural hydrologic systems as a fundamental part of managing drainage and water quality. The plan will incorporate green street designs. The Plan will integrate green infrastructure with land use design and natural resource protection. The plan will incorporate energy-savings measures.

G. Locate and develop parks and open spaces throughout the community. Neighborhood parks, small green spaces, and open spaces will be within a short walk of all homes. A network of bicycle and pedestrian routes, equestrian trails and multi-use paths will connect the parks and open spaces. The park and trail system will be connected to the Springwater Trail, Powell Butte, and other regional trails and greenspaces.

H. Provide transportation choices. Pleasant Valley will be a community where it is safe, convenient, and inviting to walk and ride a bike. The Plan will set the stage for future community level transit service that connects to regional transit service, including street designs, land use types, and densities that support transit. Recommendations will be developed to correct transportation safety issues, address through-traffic, and provide adequate capacity for future growth. The Plan will coordinate with surrounding jurisdictions to create effective regional connections and a balanced regional transportation system. A well-connected street system will be planned, using a variety of street types that reinforce a sense of

community and provide adequate routes for travel. Streets will accommodate walking and biking, with special pedestrian features on major transit streets.

I. Provide housing choices. A variety of housing choices will be provided, with a focus on home ownership options. Housing options will accommodate a variety of demographic and income needs, including appropriate affordable choices and housing for seniors. The plan will provide for an overall average residential density of 10 dwelling units per net residential acre (i.e., including only residential land), based on a mix of densities. Walkable neighborhoods will form the organizing structure for residential land use. Natural features will help define neighborhood form and character.

J. Provide and coordinate opportunities to work in and near Pleasant Valley. The plan will identify opportunities for home-based work and employment areas within Pleasant Valley. A range of employment opportunities will be considered, including retail and other employment. The plan will also consider the relationship of Pleasant Valley to existing employment centers in the East Metro area and potential new employment areas near Damascus.

Context

The Pleasant Valley Plan District is based on the dual premise that Pleasant Valley is 1) part of the Portland metropolitan region, and 2) its own unique place.

Metro Region 2040 Growth Concept

The Region 2040 Growth Concept establishes a general policy direction for managing growth in the region through the year 2040. Adopted in 1995, the 2040 Growth Concept indicates the preferred form of regional growth and development, what densities should characterize different areas, how to protect open spaces and natural resources, and how to maintain air and water quality. Pleasant Valley is almost



equally spaced between the two largest regional centers in this part of the region: the Gresham Civic Neighborhood and the Clackamas Regional Center. The same is true for the two closest town centers: Lents and Damascus. Each of the region's centers is unique and Pleasant Valley's town center will have its own individual scale and character.

The Metro Council, when Pleasant Valley was brought into the UGB in December 1998, generally applied three Region 2040 Growth Concept Map design districts to the Pleasant Valley area: town center, inner neighborhood and transit corridor.

Metro's 2040 Growth Concept Plan showing the Pleasant Valley area in relation to other town centers and regional centers

New town centers are expected to accommodate retail and service needs of a growing population while reducing auto travel by providing localized services to residents within a two to three-mile radius.

Region 2040 town centers can and should be different but do share some general characteristics:

- The density guideline is 40 persons per acre.
- Good transit service and, because their density and pedestrian-oriented design play a key role in promoting public transportation, bicycling and walking as viable alternatives to the automobile.
- Include not only employment and shopping, but also housing.
- Provide citizens with access to a variety of goods and services in a relatively small geographic area, creating an intense business climate.
- Act as social gathering places and community centers, where people find the cultural and recreational activities.
- Overall, town centers function as strong business and civic communities with excellent multi-modal arterial street access and high-quality public transportation with strong connections to regional centers and other major destinations.

Inner Neighborhood is primarily a residential area accessible to jobs and neighborhood businesses.

- The guideline for density is an average of 14 persons per acre.

Transit Corridors are along good quality transit lines featuring a high-quality pedestrian environment.

- Density guidelines are 25 persons per acre.
- Typical new developments would include rowhouses, duplexes and one- to three-story office and retail buildings.
- Corridors may be continuous, narrow bands or may be more nodal, with a series of smaller centers at major intersections or other locations.

As a result of the Concept Plan project an additional design district, employment, was identified as appropriate and has been added to the Region 2040 Growth Concept map. Employment is primarily for various employment uses with some residential development and with limited commercial uses.

- Density guidelines are 40 persons per acre.

Pleasant Valley is connected to its surrounding landscape. Powell Butte, Butler Ridge, and the western ridgeline provide a dramatic framing of the valley. Kelley Creek and its tributaries are key water features that connect the surrounding watershed to Johnson Creek and have influenced historical land use patterns. Kelley Creek also serves as a regional migration route for large and small animals traveling between the buttes. These features underlie a strong sense of place that residents of the valley expressed during the Concept Plan process and in previous interviews.

Plan Area

Pleasant Valley enjoys a unique geographical location within a series of lava domes and wooded buttes in the southeast portion on the Portland metropolitan region. The Pleasant Valley site spans the southeast corner of the City of Portland, portions of unincorporated Multnomah and Clackamas Counties, and areas in the western edge of the City of Gresham. The site's western boundary roughly follows SE 162nd Avenue. Its northern boundary follows the edge of developed portions of the City of Gresham and extends north of Foster Road to include portions of Johnson Creek. The eastern boundary of the site extends past SE 190th Drive to Rodlun Road, and the southern boundary generally parallels Sager and Cheldelin Roads.

The area encompassed by the Pleasant Valley site comprises approximately 1,532 acres. Agricultural and rural residential are the most widespread existing uses within the planning area (see Figure 2). Nursery farms dominate agricultural activity. Other existing uses include the Pleasant Valley Elementary School, two churches, a grange, a small convenience market, and a PGE utility structure. There is a 50-foot wide easement for natural gas and electrical utility lines that runs north to south through project area.

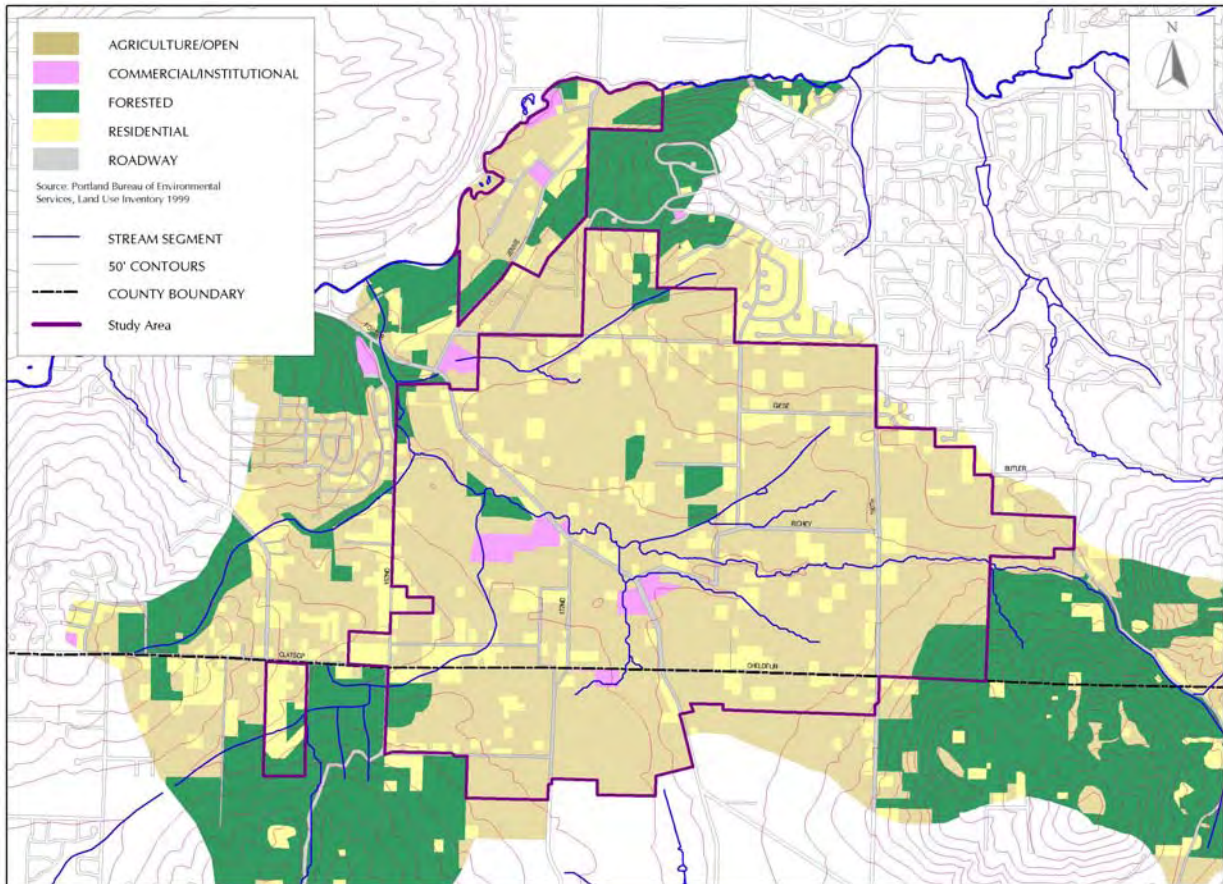


Figure 2. Pleasant Valley Existing Land Uses

Pleasant Valley population calculations are based solely on 2000 Census data using Census Block geography. Most of the Pleasant Valley boundary area fits neatly into Census Blocks with very little data overlap.

Multnomah County contains the largest land area and population share of Pleasant Valley with 689 people. Clackamas County accounts for 146 people. The total population (2000) of Pleasant Valley is 835. The land area of Pleasant Valley incorporates approximately 1,540 acres, of which 1,272 acres are in Multnomah County and 268 are in Clackamas. This gives an overall population density of 1.8 persons per acre. In comparison, the City of Gresham has a population density of 6.4 persons per acre.

There are 285 households in Pleasant Valley and 835 people. This gives an average household size of approximately 2.9 persons per household.

The age structure of Pleasant Valley trends to an older population, especially in comparison to Gresham that trends to a young population. The age breakdown for Pleasant Valley’s population is as follows:

Population by Age Groups	Clackamas	Multnomah	Pleasant Valley Total
Under 5 years	5.5%	4.9%	5.0%
5 to 19	21.9%	25.0%	24.4%
20 to 34	17.8%	13.1%	13.9%
35 to 59	37.7%	38.9%	38.7%
Over 60	17.1%	18.1%	18.0%

The Pleasant Valley site includes most of the Kelley Creek sub-basin and a small area along Johnson Creek. Seven sub-watersheds exist within the valley. These sub-watersheds were the basis for compiling information on natural resources. Those subareas include Jenne Creek, Clatsop Creek, Mitchell Creek, the Saddle, Gresham South Slope, Lower Kelley Creek Headquarters, and Powell-Jenne Valley (Johnson Creek). The sub-basin drains approximately five square miles of a northwest sloping area with land cover including forest, agricultural lands, and rural residential areas. Elevations in the area range from 1,230 feet to the east to 238 feet at junction with Johnson Creek to the west at 159th Avenue. The major drainage feature, Kelley Creek, flows northwesterly for approximately 2 miles where it joins with Johnson Creek. Several major tributaries, including Jenne Creek, Clatsop Creek and Mitchell Creek, are also significant conveyance features in the sub-basin and convey runoff to the main stem of Kelley Creek.

The valley is defined by a series of volcanic buttes surrounding largely agricultural and residential areas. The buttes are typically forested and steep and are divided by perennial and seasonal streams. The buttes were cleared in the early 1900’s, but are now covered mostly by mid-successional forest that is 60-100 years old. The lowlands were originally forested, but were cleared in the late 1800’s and early 1900’s for farming and timber uses. The majority of the lowlands has remained in agricultural and residential uses and has been tilled in many areas for agricultural drainage. The site contains forest types in the Willamette Valley vegetation zone.

The Pleasant Valley area is currently served by a transportation system that was designed to primarily serve the farm-to-market travel needs of the agricultural uses that once occupied the valley. Foster Road, 162nd Avenue, 172nd Avenue, Jenne Road, Clatsop Street and Cheldelin Street, and 190th Drive are the major roadway in the area.

There are five structures, the grange and four single-family houses which are listed by Multnomah County as historical resources. Two other structures, the Pleasant Valley Elementary School and the Pleasant Valley Community Baptist Church, have been suggested as historical resources.

In both Multnomah and Clackamas County the existing zoning districts are all non-urban designations. They implement rural and resources objectives of the Counties’ comprehensive plans and/or serve as holding zones for future annexation and urban zoning by cities.

CHAPTER 4 – GOALS, POLICIES, AND ACTION MEASURES

Introduction

The following Goals, Policies and Action Measures were endorsed as part of the Implementation Strategies for the *Pleasant Valley Concept Plan* and then updated during as part of the *Implementation Plan*. The implementation strategies focused on key concepts and policy direction for implementing code, regulations and actions.

The *Community Development Plan Policy Document* is the general guide for matters relating to land use. Goals, Policies and Action Measures identify the intent of the City to accomplish certain results. A goal is a general statement indicating a desired end or the direction needed to achieve that end. A policy is a statement identifying a position and a definitive course of action. Policies are more specific than goals. Action measures outline specific projects or standards which, if done, would implement goals and policies. Action measures are suggestions of ways to implement goals and policies. The listing of action measures in the *Development Plan* does not obligate the City to accomplish them. Nor do they impose obligations on applicants who request amendments to the *Development Plan*.

In addition to goals, policies and action measures each has a background section. The background piece includes a brief history of Pleasant Valley planning, summarizes key elements or characteristics of each section and summarizes the major issues that resulted in the endorsed Pleasant Valley Concept Plan. Taken together these Goals, Policies and Action Measures sections provide the basis for the Pleasant Valley Plan District map and development code. They amend Volume 2 – Community Development Plan Policies.

The Goals, Policies and Action Measures included in this chapter are:

- 10.700 Pleasant Valley Plan District
- 10.701 Urbanization Strategy and Land Use Planning
- 10.702 Town Center
- 10.703 Residential Land Use/Neighborhoods
- 10.704 Employment and Other Commercial
- 10.705 Natural Resources
- 10.706 Green Development
- 10.707 Cultural and Natural History
- 10.708 Schools
- 10.709 Transportation

The above listed Goals, Policies and Actions Measures are adopted as Sections 10.700 through 10.709 and are located in Volume 2 of the Gresham Community Development Plan.

The *Concept Plan* also resulted in goals for Public Facilities (10.720), Water (10.721), Wastewater (10.722), Stormwater (10.723) and Parks (10.724). Those are located in the Public Facility Plan (Chapter 8). ***These Public Facilities Goals, Policies and Actions Measures are adopted as Sections 10.720 through 10.724 and are located in Volume 2 of the Gresham Community Development Plan.***

CHAPTER 5 – LAND USE

Introduction

The land use chapter begins with a brief description of the Pleasant Valley Plan District by summarizing:

- The overall vision and future land use patterns for Pleasant Valley.
- The major elements of the Pleasant Valley Plan District Map (Plan Map). The Plan Map is included as Figure 1 and will amend Volume 2 – Community Development Plan Policies as map Appendices E.
- Tables that show the assumptions used in calculating housing and job capacity.
- The major elements of the proposed Pleasant Valley Plan District Development Code.

This land use chapter then includes the proposed Pleasant Valley Plan District Development Code. This will amend Volume 3 – Community Development Code. The format of the proposed development code amendments has a left side *commentary* page and an opposite right side proposed code page. The *commentary* provides brief explanation or findings for the proposed code.

Future Land Use Patterns

The Pleasant Valley Plan District provides the basis for a land use plan that is consistent with the goals of the Concept Plan. The central theme of creating an urban community through the integration of land use, transportation, and natural resource protection is reflected by the following key elements of the Plan District:

- A mixed-use town center as the focus of retail, civic, and related uses.
- A variety of housing organized in eight neighborhoods. The variety includes low, medium and high-density housing with standards that guide how variety is planned within neighborhoods.
- Planned housing that is 50 percent attached, 50 percent detached, and has an overall density of 10 dwelling units per net residential acre. The estimated housing capacity is approximately 5,000 dwellings.
- Two 5-acre mixed-use neighborhood centers.
- Employment opportunities as provided in the town center, mixed-use employment district, and general employment districts, and as home-based jobs. Employment capacity is estimated at approximately 5,000 jobs.
- A framework for protection, restoration, and enhancement of the area’s streams, flood plains, wetlands, riparian areas, and major tree groves through the designation of areas as “environmentally sensitive/restoration areas” (ESRAs).
- Designation of a “neighborhood transition design area” adjacent to the ESRA so that neighborhood development is compatible with adjacent green corridors.
- A new elementary school and middle school located adjacent to 162nd Avenue.
- Nine neighborhood parks dispersed throughout and a 29-acre community park centrally located between the utility easements north of Kelley Creek.
- A “green” stormwater management system intended to capture and filter stormwater close to the source through extensive tree planting throughout the valley, “green” street designs, swale conveyance, and filtration of run-off, and strategically placed stormwater management facilities.
- A network of trails including east-west regional trails paralleling Kelley Creek and north-south regional trails following the BPA power line easement.

- A reorganization of the valley’s arterial and collector street system to create a connected network that will serve urban levels of land use and all modes of travel.
- Re-designation of Foster Road from arterial to local street status between Jenne Road and Pleasant Valley Elementary School. The intent is to preserve the two-lane tree-lined character of Foster Road and to support restoration efforts where Mitchell Creek and other tributaries flow into Kelley Creek.
- A network of transit streets that serve three mixed-use centers and seven nodes of attached housing.
- The location of major roads away from important historic resources and “park blocks” that connect the town center to the historic central section of Foster Road.

Pleasant Valley Plan District Map And Code

Plan District Map

The Pleasant Valley Plan District Map (Figure 1) will serve as the key regulatory map for land use in Pleasant Valley. The Plan District Map includes the following land use types: residential, mixed use and employment areas, park-schools-other overlays, and environmentally sensitive/restoration areas. These land use designations are estimated to provide a capacity for approximately 5,000 dwellings and 5,000 jobs. The housing distribution is planned as a 50/50 split of attached and detached dwellings that average 10 dwelling units per net residential acre. Highlights of the Plan District map include the following.

- *Residential Lands.* The Concept Plan classified residential lands into two general types: Attached and Detached Residential. The Plan Map refines this classification to carry it one step closer to zoning by creating *three* types of residential sub-districts: Low Density Residential, Medium Density Residential and High Density Residential.
- *Mixed Use and Employment Areas.* The Town Center Sub-District is intended to primarily serve the needs of the local community and to include a mix of retail, office, civic, and housing opportunities. The Neighborhood Center Sub-District is intended to provide for a mix of local retail, service, office, and live-work uses for adjacent neighborhoods. The Mixed-Use Employment Sub-District is intended to provide support services for the town center as well as local service and is primarily office and retail uses. Housing is allowed in mixed-use buildings. The Employment Center Sub-District is primarily intended to provide for business/office park, medical, and other employment opportunities. Emphasis is placed on business suited to high environmental quality setting.
- *Parks, Schools, and Other Overlays.* The Plan Map includes five “overlay sub-districts”: Elementary School, Middle School, Neighborhood Park, Community Park, and Neighborhood Transition Design Areas (NTDA). These overlays are consistent with the designations of the same names that were endorsed on the Concept Plan.

The use of the term “overlay” means that each area has underlying base zoning which is integrated with the standards in an overlay subdistrict. For schools and parks, the base zoning is Low Density Residential. The effect of the overlay is to indicate where a park or school is intended. The Plan District Map overlay does not bind the property to only a park or school use.

The NTDA is established for the purpose of establishing design guidelines and encouraging (but not requiring) certain uses in the 100-foot wide area adjacent to the Environmentally Sensitive/Restoration Areas.

- *Environmentally Sensitive/Restoration Areas.* The ESRA sub-district follows the ESRA designation as it was endorsed on the Concept Plan. The area shown as ESRA will need to be reconciled with the outcome of the Goal 5 ESEE analysis.
- *How the Sub-district Boundaries Were Established.* Most of the work on the Plan Map focused on the conversion of the Attached and Detached Residential Concept Plan designations into Low, Medium, and High Density Residential Sub-district designations. The following guidelines were used:
 - The plan district boundaries should follow property lines where they are close enough to the Attached-Detached boundaries to be consistent with the overall direction of the Concept Plan.
 - If a property needs to be split-zoned to implement the Concept Plan, the boundary should occur at the midpoint of the parcel, at a point that is an even proportion, or at a logical dimension from one of the sides. Like uses should face each other along streets whenever possible.
 - High-density residential areas should be carefully dimensioned and located so they are nodal, generally not larger than about 5-6 acres (except at the town center), and support transit corners and centers as focal points.
- *Housing and Employment Capacity Estimates.* The Pleasant Valley Plan Map has an estimated housing and employment capacity that is very close to the Concept Plan. It implements the key capacity estimates developed for the Concept Plan of approximately 5,000 dwelling, 5,000 jobs, a 50/50 split of attached to detached housing, and an average of 10 dwelling units per net residential acre. The following tables illustrate assumptions used arriving at the capacity estimates.

Table 1 - Pleasant Valley Buildable Lands Gross Buildable Acres by Classification	
Gross Buildable Acres	Plan Data Estimates
Environmentally Constrained ²	498.2
Committed Lands ³	85.3
Utility Easements ⁴	42.9
Collector and arterial roadway ⁵	73.9
Parks	46.1
Elementary School	19.1
Middle School	17.8
Detached Residential (Low Density)	456.3
Attached Residential (Medium Density)	154.3
High Density Residential	30.6
Town Center	16.9
Employment	45.0
Mixed-Use Employment	34.7
Mixed-Use Neighborhood	8.7
Total	1529.8

² Includes ESRA and Metro Open Space

³ Reflect high-value parcels that are likely to remain as existing use

⁴ BPA and Northwest Gas Utility Easements

⁵ Proposed collector/arterial right-of-way

Table 2 - Pleasant Valley Buildable Lands Analysis				
Gross to Net Adjustment Assumptions				
Uses	Gross Buildable Acres⁶	Local Streets	Deduct for Churches Fraternal⁷	Net Buildable Acres
Low Density (Detached Residential)	456.3	22%	2%	346.8
Medium Density Residential	154.3	22%	4%	114.1
High Density Residential	30.6	22%	2%	23.3
Town Center	16.9	15%	0%	14.4
Employment	45.0	15%	0%	38.3
Mixed-Use Neighborhood	8.7	15%	0%	7.4
Mixed-Use Employment	34.7	15%	0%	29.5
<i>Total</i>	641.2			484.2

⁶ Reflects land net of committed lands

⁷ Assumes 1.4 acres per 1,000 population and 2.3 people per attached dwelling and 2.7 people per attached dwelling.

Table 3 - Pleasant Valley Buildable Lands Analysis

Density Assumptions

<i>Low Density Residential</i> (6.2 DU/Acre)	Range (SF)	Assumed Avg. (SF)	Distribution of Land	Distribution of Acres	Distribution of DUs	New Dwellings	Distribution of All DUs	Goal
Large Lot	7,500-10,000	8,750	37%	128	30%	639	13%	
Standard Lot	5,000-7,500	6,250	63%	218	70%	1,523	31%	
I. Total	--	--	100%	346.8	100%	2,161	44%	50%

II.

<i>Medium Density Residential</i> (18.5 DU/Acre)	Range (DUs/Ac.)	Assumed Avg. DUs/Ac.	Distribution of Land	Distribution of Acres	Distribution of DUs	New Dwellings	Distribution of All DUs	Goal
Small Lot	3,000-5,000	8	30%	34	13%	274	6%	
Rowhouses/Plexes	15-20	18	25%	29	24%	514	11%	
Condos	20-30	22	14%	16	17%	352	7%	
Apartments	20-30	24	24%	27	31%	657	14%	
Senior	20-60	40	7%	8	15%	320	7%	
III. Total	--	--	100%	114.1	100%	2,116	43%	40%

IV.

<i>High Density Residential</i> (10.6 DU/Acre)	Range DUs/Ac.	Assumed Avg. (DUs/Ac.)	Distribution of Land	Distribution of Acres	Distribution of DUs	New Dwellings	Distribution of All DUs	Goal
Rowhouses/Plexes	15-20	18	5%	1	5%	21	0%	
Condos	20-30	22	35%	8	30%	179	4%	
Apartments	20-30	24	45%	10	43%	251	5%	
Senior	20-60	40	15%	3	24%	140	3%	
Total	--	--	100%	23.3	100%	591	12%	10%
						25.4		

Grand Total (All Dwellings)				484	4,869	100%	100%
Mixed-Use Neighborhood – Housing	Floor Area (SF)	Average SF/DU	Dwelling Units	Town Center – Housing	Floor Area (SF)	Average SF/DU	Dwelling Units
Retail Floor Area	29,000	--	--	Retail Floor Area	113,000	--	--
Upper Level Housing	9,570	950	10	Upper Level Housing*	37,290	950	39

*Assumes 33% of commercial retail floor area includes upper level housing

*Assumes 33% of commercial retail floor area includes upper level housing.

<i>Town Center – Jobs</i>	Range (FAR/Ac)	Assumed (FAR/Ac)	Distribution of Land	Distribution of Acres	Floor Area (SF)	Floor Area SF Per Job	New Jobs	Dist. of Jobs
Retail	0.20 – 0.30	0.30	60%	9	113,000	550	205	32%
Office	0.35 – 0.70	0.70	30%	4	131,000	350	375	59%
Civic	0.20 – 0.70	0.70	10%	1	44,000	750	58	9%
V. Total	--	--	100%	14.4	288,000	--	639	100%

VI.

<i>Employment Center – Jobs</i>	Range (FAR/Ac)	Assumed (FAR/Ac)	Distribution of Land	Distribution of Acres	Floor Area (SF)	Floor Area SF Per Job	New Jobs	Dist. of Jobs
Light Industrial	0.20 – 0.30	0.30	50%	19	250,000	500	500	32%
Office	0.35 – 0.50	0.50	40%	15	333,000	350	952	60%
Other	0.20 – 0.40	0.35	10%	4	58,000	450	130	8%
VII. Total	--	--	100%	38.3	641,000	--	1,582	100%

<i>Mixed-Use Neighborhood – Jobs</i>	Range (FAR/Ac)	Assumed (FAR/Ac)	Distribution of Land	Distribution of Acres	Floor Area (SF)	Floor Area SF Per Job	New Jobs	Dist. of Jobs
Retail	0.20 – 0.30	0.30	30%	2	29,000	550	53	17%
Office	0.30 – 0.40	0.40	70%	5	90,000	350	258	83%
VIII. Total	--	--	100%	7.4	119,000	--	310	100%

<i>Mixed-Use Employment</i>	Range (FAR/Ac)	Assumed (FAR/Ac)	Distribution of Land	Distribution of Acres	Floor Area (SF)	Floor Area SF Per Job	New Jobs	Dist. of Jobs
Office	0.45 – 0.55	0.50	90%	27	578,000	350	1,652	94%
Other	0.20 – 0.40	0.35	10%	3	45,000	450	100	6%
IX. Total	--	--	100%	29.5	623,000	--	1,752	100%

<i>Mixed-Use Employment – Housing</i>	Floor Area (SF)	Average SF/DU	Dwelling Units
Office Floor Area	578,000	--	--
Upper Level Housing*	115,600	950	122

*Assumes 20% of commercial retail floor area includes upper level housing

Table 4 - Pleasant Valley Buildable Lands Analysis

Summary of Development Capacity

New Dwelling Capacity		
Low Density Residential (new)		2,161
Medium Density Residential (new)		2,116
High Density Residential (new)		591
Town Center (new)		39
Mixed-use Neighborhood Center (new)		10
Mixed-use Employment (new)		122
	Subtotal	5,040
Less Displaced Dwellings		100
	Total New Dwellings at Buildout	4,940
Plus Existing Dwellings		126
Total Dwellings/HHs at Buildout		5,066
Net New acres of Residential Land		484
New Dwellings Per Net Acre*		10.06
Net New Population Estimate		11,913
Total Population at Buildout		12,217
Avg. Household Size**		2.41
New Job Capacity***		
Retail/Other		487
Office		3,237
Light Industrial		500
Civic		58
Schools		130
Work at Home Jobs****		507
	Subtotal	4,919
Plus Existing Jobs		50
	Total Jobs	4,969

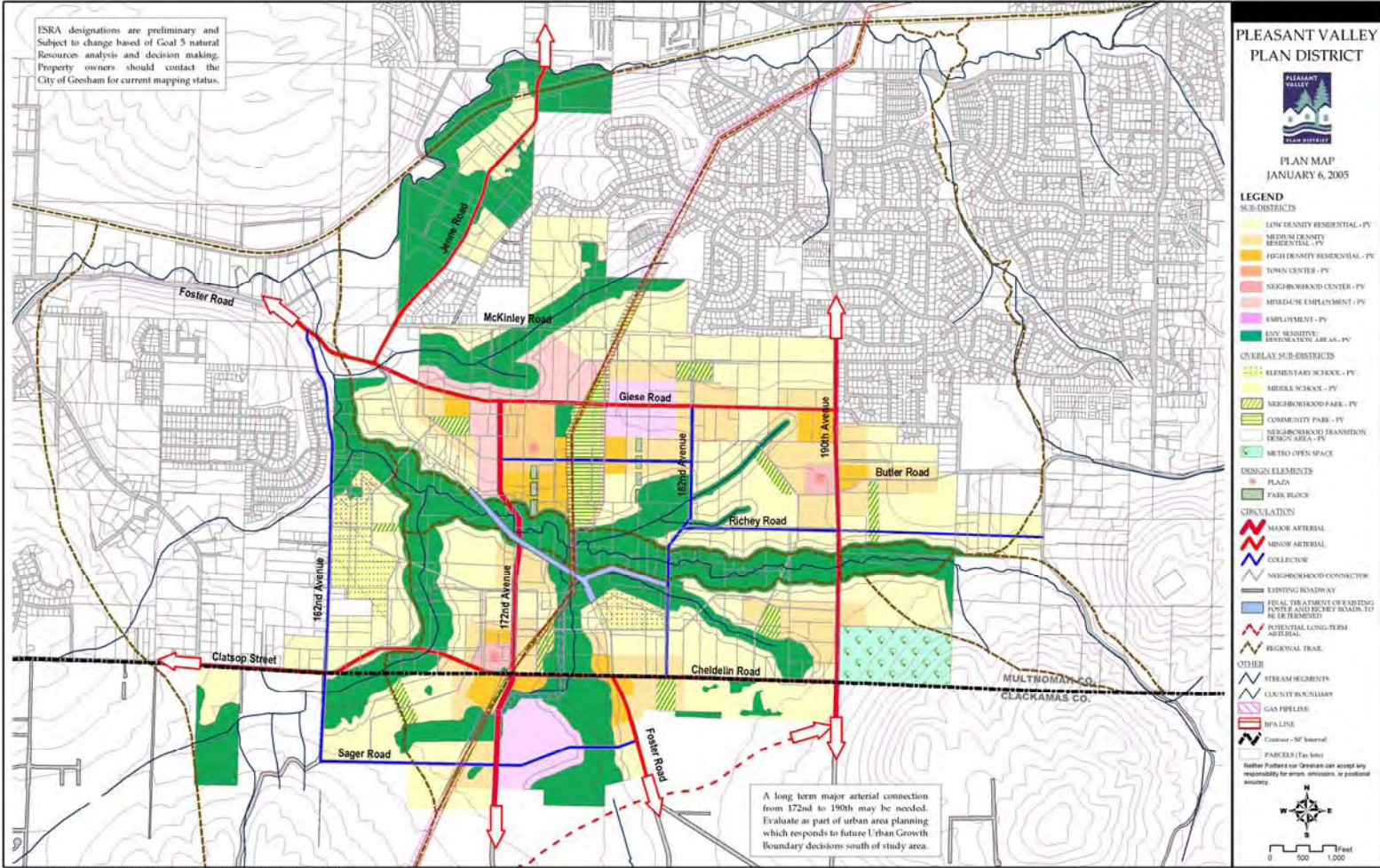
* Does not include dwellings in mixed-use zones.

** Assumes 2.7 people per attached dwelling and 2.3 people per attached dwelling. Derived from 2000 Census for Clackamas County.

*** Assumes 50 staff at elementary school and 80 staff at the middle school.

**** Assumes 10% of total dwellings each have one work-at-home job.

Figure 1 – Pleasant Valley Plan District Plan Map



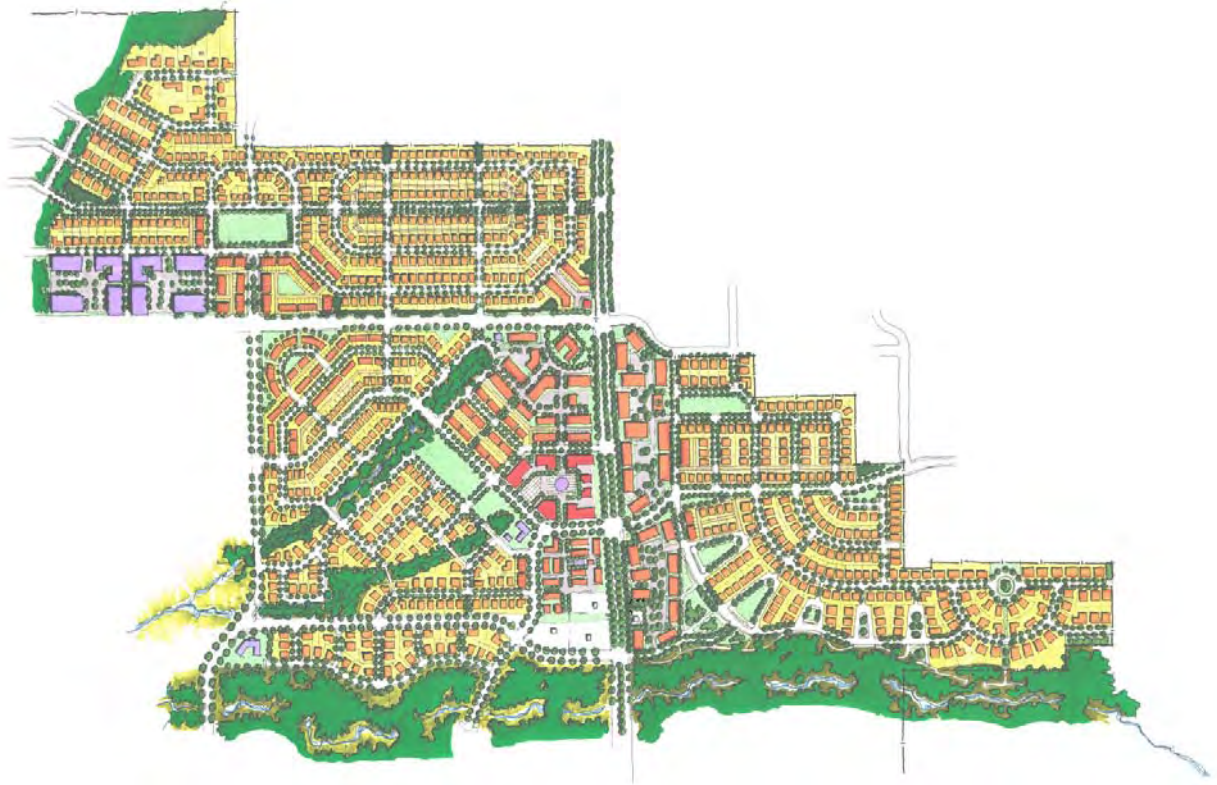
Plan District Code

The draft Pleasant Valley Plan District code implements the Concept Plan map and associated goals, policies, and action measures. The format generally follows that of Gresham's Community Development Code due to the large area that will be under Gresham's jurisdiction as lands are annexed.

- *The Pleasant Valley Plan District is the term used to describe the code chapter and the entire Pleasant Valley area.* It has eight Sub-districts (zones) that correspond to the Plan District Map. Three Sub-districts (LDR-PV, MDR-PV, HDR-PV) are residential districts. Three Sub-districts are commercial and mixed-use (TC-PV, NC-PV and MUE-PV). A seventh Sub-district is employment (EC-PV), and the eighth Sub-district is environmental (ESRA-PV). A detailed report on the ESRA-PV subdistrict is contained in the Natural Resources chapter. Each of the sub-districts includes a purpose and characteristics section. These statements were originally established as part of the Pleasant Valley Concept Plan Implementation Strategies. They establish a direction for future land uses in each sub-district.
- *There are “permitted uses” tables for the residential sub-districts and for the commercial/mixed-use and employment sub-districts.* Land use standards are based on Gresham's existing land use nomenclature, updated to respond to the unique standards needed for Pleasant Valley. Permitted uses (types of housing, densities, types of commercial and mixed-use uses, and employment uses) are intended to reflect uses identified in the Pleasant Valley Concept Plan. Live-work units are proposed in the MDR-PV, HDR-PV, TC-PV, NC-PV, and MUE-PV sub-districts.
- *There are development standards tables for the residential Sub-districts and for the commercial/mixed-use and employment Sub-districts.* Development standards generally are based on Gresham's existing land use nomenclature, updated to respond to the unique development standards needed for Pleasant Valley. The development standards (lot sizes, setbacks, height, design, landscaping, etc.) are intended to reflect development characteristics identified in the Pleasant Valley Concept Plan.
- *There are five overlay Sub-districts covering Schools, Parks, and the Neighborhood Transition Design Areas (NTDA).* The use of the term “overlay” means that each area has underlying base zoning. For schools and parks, the base zoning is Low Density Residential. The effect of the overlay is to indicate where a park or school is intended. This approach does not bind the property to only a park or school use. The NTDA is established for the purpose of establishing design guidelines and encouraging (but not requiring) certain uses in the 100-foot wide area adjacent to the Environmentally Sensitive/Restoration Areas.
- *Green Development Practices.* Green development practices are a toolbox of techniques that mimic and incorporate predevelopment hydrology of a site into future development. The intent is to minimize potential adverse impacts of stormwater run-off to water quality, fish and other wildlife habitat, and flooding. The use of green development practices enhances water quality and controls the stormwater flow utilizing techniques of retention, infiltration, and evapotranspiration to treat runoff and reduce the volume of stormwater.
- *Pleasant Valley Master Plan.* A unique aspect of the Pleasant Valley Plan District is a master plan requirement. Master plans would be required concurrent with applications for annexation and zoning (plan map amendment). A purpose of the master plan requirement is to help ensure that the Pleasant Valley Plan District Map is implemented consistent with the adopted policies, and in a way that allows for cohesive and livable neighborhoods and the provision for public infrastructure and services. A petitioner for annexation would be

required to prepare a master plan for approval prior to the City annexing and zoning the property.

- *Cross-references* to existing code sections and other codes/plans are incorporated where applicable. Examples include standards for the street network plan, green development practices, design review, parking, and signage.
- *A set of illustrations* is included in the draft code and is intended as a guideline for development standards. See example below.



Illustrative plan for three neighborhoods.

The Pleasant Valley Plan District is adopted as Section 4.1400 of Volume 3 of the Gresham Community Development Plan.

CHAPTER 6 – NATURAL RESOURCES

INTRODUCTION

The intent of Oregon Statewide Planning Goal 5 is “To protect natural resources and conserve scenic and historic areas and open spaces. Local governments shall adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. These resources promote a healthy environment and natural landscape that contributes to Oregon's livability.”⁸

This report documents the Goal 5 process for Pleasant Valley that was begun during the *Concept Plan* and completed during the *Implementation Plan* project. The Natural Resources task completes one of the three central elements in the effort to create an urban community through the integration of land use, transportation, and natural resources. It consists of the following:

- ***Natural Resource Inventory*** - The inventory included here was largely based on information collected during the Concept Planning phase. The purpose of the inventory was to document the quantity and quality of the characteristic vegetation, wildlife habitat, streamside areas, sensitive species, and other natural features in the Pleasant Valley study area.
- ***Significance Determination*** – This section evaluates and determines which resources identified in the inventory are significant. A set of mapping criteria was developed and a computer mapping exercise was used to assist in the process. Nine different basic functions were used to provide the foundation for the significance determination.
- ***ESEE Analysis*** - An ESEE analysis describes the different types of land uses that impact streamside areas, wetlands, and upland forest. Specifically, it analyzes the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit certain uses in the significant resource areas (Environmentally Sensitive Restoration Area (ESRA)).
- ***ESRA Funding Strategy*** – This section provides preliminary costs estimates and strategies for acquisition, conservation easements, habitat restoration and maintenance of ESRA lands. It includes a set of potential funding strategies and a list of federal, state, regional and local programs.
- ***ESRA Development Code*** – This is proposed development amendments to Volume 3 – Community Development Code that establishes an environmental land use district for the Pleasant Valley Plan District. This proposed amendment implements the natural resources regulatory protection plan for the identified Goal 5 resources in Pleasant Valley.

Supplementing this report is the Natural Resources Goal (10.705) that is included in Chapter 4. It was adopted by the Pleasant Valley Steering Committee and then refined during the Implementation Plan. It includes a background, a summary of major issues and proposed goals, policies and action measures. ***The Pleasant Valley Natural Resources report is adopted as Appendix 43 of Volume 1 of the Gresham Community Development Plan.***

⁸ OAR 660-015-0000(5)

CHAPTER 7 – TRANSPORTATION SYSTEM PLAN

Introduction

The purpose of the Pleasant Valley Transportation System Plan (TSP) is to establish a framework for addressing the transportation needs for this new urban community as urbanization occurs with the implementation of the Pleasant Valley Plan District. It is important that this TSP works within the framework provided by other related state, regional and local plans.

The Pleasant Valley TSP is not intended to be a “stand-alone” TSP but rather will be used by the Cities of Gresham and Portland to amend their respective Transportation System Plans specific to Pleasant Valley. For the City of Gresham it will amend Volume 4 – Transportation System Plan, Gresham Community Development Plan

Transportation System Plan

- Section 1 -- Planning Framework
- Section 2 -- Policies and Strategies
- Section 3 -- System Inventory and Assessment
- Section 4 -- Forecast and Alternatives
- Section 5 -- System Plans
- Section 6 -- Implementation – Projects and Funding

Plans for new urban areas must follow the requirements and guidelines of Title 11 of Metro’s Urban Growth Management Functional Plan. Title 11 requires the following concerning transportation:

A conceptual transportation plan consistent with the applicable provisions of the Regional Transportation Plan, Tile 6.4 of Regional Transportation Plan [replaced Title 6 of the Urban Growth Management Functional Plan], and that is also consistent with the protection of natural resources either identified in acknowledged comprehensive plan inventories or as required by Title 3 of the Urban Growth Management Functional Plan. The plan shall, consisting with OAR Chapter 660 Division 11, including preliminary cost estimates and funding strategies, including likely financing approaches.

An urban growth diagram ... showing ... general locations of arterial, collector, and essential streets.

A conceptual facilities and services plan for transportation was developed as part of the *Concept Plan* project. Needed transportation facilities for the planned new urban uses were identified, rough cost estimates and likely funding strategies were developed, and a map depicting the general location arterial, collector and connecting local streets was included.

As a follow up to the concept planning, the *Implementation Plan* further defines the transportation system for the area by including the following elements:

- Functional Classification for Streets
- Street Design Types
- Connectivity Plan
- Bike and Trail Plan
- Illustrative Street Plan
- Transit Plan

The *Implementation Plan* project also identified transportation elements for a Public Facility Plan, consistent with Oregon Administrative Rules, specifically OAR 660-011-00. These elements are similar to those required for a Transportation System Plan, consistent with Oregon Administrative Rules, specifically OAR 660-012-00. Key requirements of the Transportation System Planning Rule include:

- A determination of transportation needs
- A road system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections
- A public transportation plan
- A bicycle and pedestrian plan
- A transportation financing program including a list of planned transportation facilities and major improvement; a general estimate of the timing for facilities and improvements; a determination of rough cost estimates; and policies to guide selection of facility and improvement projects.

A key component to the successful implementation of the Transportation System Plan is the coordination of the multiple government agencies involved in Pleasant Valley, most notably the cities of Gresham and Portland. A March 2004 Gresham and Portland IGA provides a map showing future governance and urban services boundary for the two jurisdictions and generally provides the urban services will be provided by Gresham in areas that Gresham annexes (Area A) and by Portland in areas Portland annexes (Area B). Transportation services currently involved agreements with Multnomah County, which currently controls public roads in Pleasant Valley. The future status of roads in Pleasant Valley is part of an on-going discussion between Gresham and Portland. For planning purposes, the TSP assumes all major roads in Area A will belong to Gresham and conform to City of Gresham street design standards.

For the remainder of Pleasant Valley, which is in Clackamas County (Area C), a final decision on who will provide transportation services to most of this area has not yet been determined. The Cities of Portland and Gresham can serve this area, but do not have agreements in place with the county for doing so.

For planning purposes and to demonstrate that the area can urbanize in a manner that complies with Goal 11, the TSP assumes the cities of Portland and Gresham will serve the balance of Area C. The cities have plans in place that demonstrate its capacity to serve Area C. It can be noted that Clackamas County is a potential transportation service provider in Area C.

The proposed Pleasant Valley TSP combines the results of the *Concept Plan* transportation inventory, needs analysis and the goals and policies development that resulted in conceptual transportation plan with the results of the *Implementation Plan* that details street classifications, street designs, connectivity and bike/pedestrian plans along and a public facility plan.

The Pleasant Valley Transportation System Plan is adopted as Chapter 8 of the Gresham Transportation System Plan (TSP), Volume 4 of the Gresham Community Development Plan.

CHAPTER 8 – PUBLIC FACILITIES PLAN

Introduction

The purpose of the Pleasant Valley Public Facilities Plan (PFP) is to establish a framework for how necessary urban services, water, wastewater, stormwater and parks, will be developed and maintained as urbanization occurs with the implementation of the Pleasant Valley Plan District. The PFP for transportation is included as part of a separate Transportation System Plan.

The Pleasant Valley PFP is not intended to be a “stand-alone” PFP but rather will be used by the Cities of Gresham and Portland to amend their respective Public Facilities Plans specific to Pleasant Valley. For the City of Gresham it will amend Volume 2 – Policies, Gresham Community Development Plan. After this introduction following PFP amendments are proposed:

- 10.720 Public Facilities
- 10.721 Water System
- 10.722 Wastewater System
- 10.723 Stormwater Management System
- 10.724 Parks and Recreation System

As required by Title 11 Metro Urban Growth Management Functional Plan a conceptual level services plan for the provision of wastewater, water, stormwater and parks was developed as part of the *Concept Plan* project. Needed facilities for the planned new urban uses were identified, rough cost estimates and likely funding strategies were developed, and maps depicting the general location of public facilities were included.

During the *Implementation Plan* project the PFP, consistent with Oregon Administrative Rules, specifically OAR 660-011-000, was drafted. Addressing relevant administrative rule requirements related to public facilities is appropriate as multiple jurisdictions and service providers share responsibility for delivering public services to Pleasant Valley and, therefore, assuring coordination of service delivery an important part of this plan. Key requirements of the Public Facility Planning Rule (OAR 660-011-010) include:

660-011-0010 The Public Facility Plan

- (1) The public facility plan shall contain the following items:
 - (a) An inventory and general assessment of the condition of all the significant public facility systems which support the land uses designated in the acknowledged comprehensive plan;
 - (b) A list of the significant public facility projects, which are to support the land uses designated in the acknowledged comprehensive plan. Public facility project descriptions or specifications of these projects as necessary;
 - (c) Rough cost estimates of each public facility project;
 - (d) A map or written description of each public facility project's general location or service area;
 - (e) Policy statement(s) or urban growth management agreement identifying the provider of each public facility system. If there is more than one provider with the authority to provide the system within the area covered by the public facility plan, then the provider of each project shall be designated;
 - (f) An estimate of when each facility project will be needed; and

- (g) A discussion of the provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each public facility project or system.

The Public Facility Planning Rule is intended to implement Statewide Land Use Planning Goal 11 "...to plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

Specific goal requirements that are relevant to the Pleasant Valley urban area include:

- Cities or counties shall develop and adopt a public facility plan for areas within an urban growth boundary containing a population greater than 2,500 persons.
- A "timely, orderly and efficient arrangement" refers to a system or plan that coordinates the type, locations and delivery of public facilities and services in a manner that best supports the existing and proposed land uses.

For each of these urban services, the PFP provides an assessment of existing conditions; a summary of future needs, a financial plan discussion, and recommended goals and policies and action measures. A capital improvements list provides a detailed list of the projects necessary in Pleasant Valley to accommodate planned urban development over the next twenty years. Maps showing the locations of the capital improvement projects are also included.

A key component to the successful implementation of the Public Facilities Plan is the coordination of the multiple government agencies involved in Pleasant Valley, most notably the cities of Gresham and Portland. A March 2004 Gresham and Portland IGA provides a map showing future governance and urban services boundary for the two jurisdictions and generally provides the urban services will be provided by Gresham in areas that Gresham annexes (Area A) and by Portland in areas Portland annexes (Area B). The PFP addresses the roles of city and county jurisdictions and other districts in the delivery of urban services to Pleasant Valley.

For the remainder of Pleasant Valley, which is in Clackamas County (Area C), a final decision on who will provide services to most of this area has not yet been determined. The Cities of Portland and Gresham can serve this area, but do not have agreements in place with the county for doing so. The City of Happy Valley annexed a portion of the area south of Clatsop Street and west of 156th Street (Area D). Happy Valley will serve that area and is responsible for public facility planning in that area.

For planning purposes and to demonstrate that the area can urbanize in a manner that complies with Goal 11, the PFP assumes the cities of Portland and Gresham will serve the balance of Area C. The cities have plans in place that demonstrate its capacity to serve Area C. It can be noted that there are other potential service providers in Area C: Clackamas County Sewer District #1 (sewer), Sunrise Water Authority (water) and City of Happy Valley (parks). Servicing options for these providers, however, are not presented in this plan.

Providing services in Pleasant Valley requires developing and implementing capital improvement plans. Future needs are generally divided into short-term and long-term needs. Short-term priorities are established in approved capital improvement plans that usually cover a 5-year horizon. The intent of these plans is to establish the phasing sequence for major projects over a five-year period, so that as year 1 projects are completed, year 2 projects move forward on the priority list.

Long-range capital improvement needs are determined through master plans that generally have a 20-year planning horizon. System master plans are long-range plans that generally include an analysis of existing conditions, including existing service deficiencies, an analysis of capital improvement needs based on forecast growth projections, and a financing strategy. Most of the projects outlined in this public facility plan are not included in the adopted master plans and, therefore, are listed in the PFP as implementation projects. In general, projects listed in a master plan go through several steps before construction begins, including detailed design and engineering. This work is usually scheduled through the CIP process. While short-term CIPs are approved legislatively, they are non-binding. Annually, service providers approve funding for specific capital projects through the budget process.

The resources and methods used to build and operate the systems outlined in this PFP are a function of their finance structure. Water, wastewater, and stormwater systems are enterprise functions, meaning these services need to be self-supporting. Costs and revenues associated with enterprise functions are dedicated to that service and may not be used for other government functions. The enterprise structure employed for these systems provides a relatively stable financial structure on which to plan and finance capital improvements.

Most capital improvements related to utility services (water, wastewater and stormwater) are financed using a combination of SDC fee revenue - especially for growth related improvements - and retained earnings from utility operations (rate revenue). In the past revenue bonds have been issued to build major improvements, such as new water reservoirs or improvements to the sewage treatment plant, and pledged repayment from these sources. Local improvement districts have also been used to capitalize bond issues for utility improvements.

Park and open space services are accounted for in the General Fund. General fund revenues are discretionary and, therefore, not specifically dedicated. System development charges are collected for capital improvement projects.

Property owners and private developers are required to build and dedicate the necessary public infrastructure that serves their property. When development projects are approved, conditions of approval usually include exactions, which may include on-site and off-site improvements. When a developer is required to oversize a public improvement to serve other development, local governments must reimburse the developer for the portion of benefit that accrues to surrounding properties. Sometimes this is done directly, using accumulated SDC funds or retained earnings, or through the formation of a reimbursement district. The U.S. Supreme Court has elevated the need for equity in the exaction process since the Dolan decision. Private contributions will continue to play an important role in extending public infrastructure to developing areas, but they cannot be relied on to subsidize or augment public resources beyond the level of impact associated with the particular development. Their contribution, therefore, is in enabling service extensions earlier than would otherwise be the case if the city were financing service extensions. Other than this “cash flow” and timing benefit, private contributions are not relied on as a source for funding the extension of public services.

The Pleasant Valley Public Facilities Plan is adopted as Sections 10.720 through 10.724 of Volume 2, Gresham Community Development Plan.

CHAPTER 9 – UGMFP TITLE 11

Introduction

This chapter describes how the Pleasant Valley Plan District complies with Title 11 of the Metro Urban Growth Management Functional Plan (UGMFP).

In December 1998, the Metro Council brought the Pleasant Valley area into the Urban Growth Boundary (UGB). Land brought into the UGB is subject to Title 11: Planning for New Urban Areas.

It is the purpose of Title 11 to require and guide planning for conversion from rural to urban use of areas brought into the UGB. It is the intent of Title 11 that development of areas brought into the UGB implement the Regional Framework Plan and 2040 Growth Concept. (3.07.1105 – Purpose and Intent)

All territory added to the Urban Growth Boundary ... shall be subject to adopted comprehensive plan provisions consistent with the requirements of all applicable titles of the Metro Urban Growth Management Functional Plan and, particularly, this Title 11. The comprehensive plan provisions shall be fully coordinated with all other applicable plans. The comprehensive plan provisions shall contain an urban growth plan diagram and policies that demonstrate compliance with the RUGGOs, including the Metro Council adopted 2040 Growth Concept design types. (3.07.1120 – Plan Requirements)

Addressing the planning requirements of Title 11 was recognized as important early in the efforts to create a Pleasant Valley plan. The Pleasant Valley Concept Plan Steering Committee adopted a series of Goals that reflected the vision and values underlying the Concept Plan. The Steering Committee also adopted, with the plan Goals, planning parameters that included: “Section 3.07.1120 of Metro Title 11 will be considered during the preparation and evaluation of the Concept Plan. This section is excerpted below.” It then listed the code sections.

Additionally, Metro staff has had a key partnership role throughout the project. They were on the Concept Plan Steering Committee and the Implementation Plan Advisory Group. They were one of four Concept Plan project managers with Gresham, Portland, and Otak (lead consultant firm). They had key roles in the Land Use and Transportation plan elements. They also were members on the Parks, Natural Resources and Public Involvement work teams. They provided significant support services from the Data Resource Center (GIS mapping and Transportation modeling) and Creative Services (newsletters and forum reports). During the Implementation Plan phase Metro staff (land use and transportation and Powell/Foster project) were on the Technical Advisory Committee and participated in the land use and transportation work teams.

In May 2002 the Steering Committee adopted a Concept Plan that is presented in the Pleasant Valley Concept Plan *Summary and Recommendations* and *Implementation Strategies* documents. Findings that “these recommendations are intended to fulfill Metro Title 11 requirements” are made in the *Summary and Recommendations* document for Section 3.07.1120. In summer 2002, the Metro Council along with Gresham and Portland Councils, and Multnomah and Clackamas County Commissions passed a

resolution to 1) accept the Steering Committee Concept Plan recommendations; 2) use the Concept Plan as the basis for Implementation; and 3) continue the partnership.

Title 11 requires the submittal to Metro of the following:

On or before 60 days prior to the adoption of any comprehensive plan amendment subject to this Title 11, the local government shall transmit to Metro the following:

- 1. A copy of the comprehensive plan amendment proposed for adoption;*
- 2. An evaluation of the comprehensive plan amendment for compliance with the Functional Plan and 2040 Growth Concept design types requirements and any additional conditions of approval of the urban growth boundary amendment. This evaluation shall include an explanation of how the plan implements the 2040 Growth Concept;*
- 3. Copies of all applicable comprehensive plan provisions and implementing ordinances as proposed to be amended. (3.07.1130.A Implementation Requirements)*

The City of Gresham submitted the Planning Commission Draft to Metro on August 13, 2004, and constitutes a copy of the proposed comprehensive plan amendments and applicable plan provisions and implementing ordinance to be amended. This report constitutes the compliance evaluation report. The City of Gresham has scheduled, at the earliest, a December 7, 2004, enactment meeting, so that the 60 days prior provision is met. The City of Gresham, on April 5, 2004, submitted to Metro an earlier draft of the proposed Comprehensive Plan Amendments.

The City of Portland submitted the Staff Proposal to Planning Commission to Metro on April 14, 2004, and constitutes a copy of the proposed comprehensive plan amendments and applicable plan provisions. This report constitutes the compliance evaluation report. The City of Portland anticipates City Council adoption of the Planning Commission recommendation no earlier than September 16, 2004 so that the 60 days prior provision is met. The City of Portland, on July 16, 2004, submitted to Metro a draft of this evaluation report.

Section 3.07.1130.B provides a method of extending timelines for adoption of comprehensive plan amendments required by Title 11. This does not apply, as there was no timeline established for Pleasant Valley by the Metro order.

Organization

The rest of this report is organized to first show the text of a Title 11 or other applicable provision and to second provide brief findings that describe how the proposed Pleasant Valley Plan District comprehensive plan amendments comply with the specific provision and a conclusion.

Section 3.07.1120 Urban Growth Boundary Amendment Urban Reserve Plan Requirements

A – Provision for annexation to a city or any necessary service districts prior to urbanization of the territory or incorporation of a city or necessary service districts to provide all required urban services.

Findings. The Pleasant Valley Plan District area is currently under the jurisdiction of Multnomah County (1,300 acres) and Clackamas County (approximately 230 acres). Both the City of Gresham and the City of Portland have agreements with Multnomah County that provides the authority for the cities to do urban planning and to provide urban services when land is annexed.

The Pleasant Valley Future Governance Map is included in the proposed Pleasant Valley Plan District (Appendix B). This map is included in an Intergovernmental Agreement (IGA) between Gresham and Portland entered into in March 2004. In this IGA the cities agree to future annexation, implementation of the Pleasant Valley Plan District and responsibility for delivery of all urban services to those areas as indicated in the map. The March 2004 IGA is a revision of a December 1998 IGA that had provided future annexation and urban service based on a generalized future boundary between the two. The revision was based on the recommendations of the Steering Committee and additional staff discussions.

The IGA covers these required urban services: general city services; stormwater management; water, sanitary sewer; transportation; fire and emergency services; law enforcement; and parks, open space and recreation. Other urban services such as schools and libraries can continue to be provided by their current service provider.

An *Annexation Analysis and Strategy* was undertaken as part of the *Pleasant Valley Implementation Plan*. The report provides an analysis of the net fiscal position (i.e., surplus or shortfall) of annexation sub-areas of Pleasant Valley, potential revenue sources to close projected funding gaps for capital projects and operations and maintenance, and preliminary conclusions regarding strategies for annexation.

Annexation Goals, Policies and Action Measures are included as part of the proposed Pleasant Valley Plan District. It is included with the City of Portland current submitted materials. It will be included with a separate set of Comprehensive Plan Amendments (CPA 04-1481) for annexations by the City of Gresham. Hearings for CPA 04-1481 are currently scheduled for Planning Commission on September 27, 2004, and for Council on December 7, 2004.

The March 2004 IGA applies only to the Multnomah County portion of the project, although the map does show a recommended boundary between Gresham and Portland if they were to provide governance and urban services in the contiguous Clackamas County portion. There is no current agreement with Clackamas County as to future annexations and urban services in the contiguous Clackamas County portion of the Pleasant Valley Plan District. Clackamas County, the City of Happy Valley and the Sunrise Water Authority participated in the Pleasant Valley planning efforts. The Steering Committee recommended that resolution of this area be included in the Damascus Firehouse Study Group. The Study Group has completed a Memorandum of Understanding (MOU), to which Gresham and Portland are signatory, which addresses this area (identified as Area 'C' in the MOU). It provides for Portland, Gresham, Happy Valley, Damascus (if incorporated) and Clackamas County jointly identifying the municipal governing entity or entities at a meeting in January 2005 with IGAs to be established by June 2006. The participating parties agree in the MOU to use the Pleasant Valley Plan District to guide urbanization of the area.

There is a small, unconnected area in the Pleasant Valley Plan District located south of Clatsop Street and west of 156th Street that includes a mobile home park and which apparently has been annexed or partially annexed by the City of Happy Valley.

Conclusion. Provisions have been made through the Gresham/Portland IGA and the Damascus Firehouse Study Group MOU for future annexations and urban services. The proposed Pleasant Valley Plan District is consistent with this Title 11 section.

B – Provision for average residential densities of at least 10 dwelling units per net developable residential acre.

Findings. The Pleasant Valley Plan District has an overall average density of 10.06 dwelling units per net residential acre, based on 5,066 total dwellings at buildout and 484 net acres of residential land.

The *Concept Plan* provided an overall density of 10 dwelling units per net acre with two broad residential districts: attached and detached residential. Detached housing choices included small lots (3,000-5,000 square feet), standard lots (5,000-7,000 square feet) and large lots (7,500 square feet or larger). The *Plan District* refines residential into three sub-districts: Low, Medium and High Density Residential.

Table 1 summarizes the residential density assumptions for the Pleasant Valley Plan District:

Table 1: Residential Density Assumptions

<i>Low Density Residential</i> (Overall at 6.2 du/acre)	Range	Assumed Average	Acres	New Dwellings
Large Lot	7,500- 10,000SF	8,750SF	128	639
Standard Lot	5,000-7,500	6,250SF	218	1,523
Total	--	--	346.8	2,161
<i>Medium Density Residential</i> (Overall at 18.5 du/acre)	Range	Assumed Average	Acres	New Dwellings
Small Lot	3,000-5,000 SF	8 du/ac	34	274
Rowhouses/Plexes	15-20 du/ac	18 du/ac	29	514
Condos	20-30 du/ac	22 du/ac	16	352
Apartments	20-30 du/ac	24 du/ac	27	657
Senior	20-60 du/ac	40 du/ac	8	320
Total	--	--	114.1	2,116
<i>High Density Residential</i> (Overall at 25.4 du/acre)	Range	Assumed Average.	Acres	New Dwellings
Rowhouses/Plexes	15-20 du/ac	18 du/ac	1	21
Condos	20-30 du/ac	22 du/ac	8	179
Apartments	20-30 du/ac	24 du/ac	10	251
Senior	20-60 du/ac	40 du/ac	3	140
Total	--	--	23.3	591
Total New Dwellings (Overall at 10.06 du/acre)			484	4,869

The three proposed sub-districts are intended to provide the 10 dwellings per net residential acre provision through the application of minimum to maximum density ranges and through master planning. The LDR-PV proposes a density range of 5.3 – 7.4 with a mix of standard (70%) and large (30%) lots. There is also provision for accessory dwellings and for duplexes. The MDR-PV proposes a density range of 12 – 20 with a mix of small lots (15%), attached housing at 15-20

(24%) and 20-30 (48%) and elderly housing 20-62 (15%). The HDR-PV proposes two different densities based on if the HDR is next to the Town Center or not. If not next to the Town Center the density range is 20-30 for attached housing and 20-62 for elderly housing. If next to the Town Center it is 30-40 for attached housing and 30-62 for elderly housing.

These provisions for average residential do not include housing planned in the mixed-use sub-districts.

Conclusion. The proposed Pleasant Valley Plan District has provisions for sufficient residential land area with density provisions for at least 10 dwelling units per net acre of developable residential land. The proposed comprehensive plan amendments are consistent with this Title 11 section.

C – Demonstrable measures that will provide a diversity of housing stock that will fulfill needed housing requirements as defined by ORS 197.303. Measures may include, but are not limited to, implementation of recommendations in Title 7 of the Urban Growth Management Functional Plan.

Findings. Pleasant Valley’s approach to providing a diversity of housing was integrated with the preparation of the overall plan and evaluation of the mix and density of housing. Key issues related to housing choice addressed by the Pleasant Valley Plan District include, creating nodes of medium and high density housing without having too much of one particular type of housing at each node; providing a diversity of housing that would support employment goals for the area; creating neighborhoods as the organizing structure for the location of various types of housing; and locating higher density attached and detached housing to support the future transit system.

ORS 197.303 is a State planning statute that defines “needed housing.” Needed housing in general is the housing types shown to be needed within an urban growth boundary. Additionally, its means, but is not limited to, attached and detached single-family housing and multiple family housing for both owner and renter occupancy, government assisted housing, manufactured dwellings parks, and manufactured dwelling on single lots within single-family dwelling subdivisions.

As part of the Concept Plan project a Residential Focus Group meeting was held. Participants included representatives from Oregon Housing and Community Service; a Realtor; a mixed-use and multi-family developer; a single-family home developer; DLCD; Clackamas County; City of Portland (Planning and PDC); Metro; City of Gresham; and Otak. They discussed what kind of community Pleasant Valley should be; what range of housing types should be provided and what are reasonable ranges for percentages of each type of housing. The result of this focus group was to recommend the housing types and percentages shown in Table 2.

Table 2 – Residential Focus Group Recommendations

Housing Type	Percentage
Large Single Family (7,500+ sq. ft. lots)	10%
Standard Single Family (5,000 sq. ft. lots)	25%
Small Single Family (3,000 – 5,000 sq. ft. Lots)	5%
Rowhouses/Plexes (18-20 dwelling units/acre)	20%
Condos/Cohousing	5%
Apartments (30-35 dwelling units/acre)	25%
Senior Housing	10%

All of the housing types listed in ORS 197.303, except for manufactured home parks, were included in this original recommendation. As can be seen in Table 1 that, although refined, the general direction of housing types and percentages has been carried through to the proposed Pleasant Valley Plan District. In subsequent evaluations, discussions and public events no need was shown for manufactured parks with the plan area.

Demonstrable measures that provide a diversity of housing include:

1) Permitting these housing types in the three proposed residential sub-districts. The proposed LDR-PV will allow single family and manufactured homes on individual lots with a mix of lot sizes. It will also allow duplexes and accessory dwellings. The MDR-PV will allow single family and manufactured homes on small lots; it will allow attached single-family dwellings and attached dwellings. Attached dwellings are not restricted as to tenure and so apartments, condos and co-housing are allowed. The HDR-PV will allow attached single-family dwellings and attached dwellings. Attached dwellings are not restricted as to tenure and so apartments, condos and co-housing are allowed.

2) Housing is allowed in the three mixed-use sub-districts (TC-PV, MUE-PV and NC-PV). Housing opportunities are focused on mixed-use buildings. The density assumptions for housing in the mixed-use sub-districts are shown in Table 3.

Table 3 – Housing Density Assumptions Mixed-Use Subdistricts

Mixed-use Sub-district	Units
Town Center-PV	39
Mixed-Use Employment-PV	122
Mixed-Use Neighborhood Center-PV	10

3) The MDR-PV, HDR-PV, TC-PV, MUE-PV and NC-PV are all transit/pedestrian districts. The sub-districts are all located on planned transit streets. Because they are transit/pedestrian districts the proposed parking requirements are the same parking requirements used by Gresham in comparable (transit corridor and town center) districts. These parking standards were reviewed as part of Gresham’s compliance report for Title 7. Parking standards are less in these districts due to transit and mixed-use development opportunities so that it addresses the parking needs of residents of all types of housing while reducing parking costs.

Conclusion. The Pleasant Valley Plan District has demonstrable measures to provide diversity of needed housing. Those include land use sub-districts that allow identified needed housing with sufficient areas and densities to allow identified percentages of different housing types; provisions for housing in mixed-use districts; and utilizing transit/pedestrian sub-districts and parking standards. The proposed comprehensive plan amendments are consistent with this Title 11 section.

D – Demonstration of how residential developments will include, without public subsidy, housing affordable to households with incomes at or below area median incomes for home ownership and at or below 80% of area median incomes for rental as defined by U.S. Department of Housing and Development for the adjacent urban jurisdictions⁹. Public subsidies shall not be interpreted to mean that following: density bonuses, streamlined

⁹ Statistics for analyzing affordable housing are based on current Gresham homeownership markets since Pleasant Valley is more likely to resemble Gresham than Portland.

permitting processes, extensions to the time at which systems development charges and other fees are collected, and other exercises of the regulatory and zoning powers.

Findings. The housing proposed for Pleasant Valley includes homeownership and rental housing opportunities for households at or below median household income. For households at or below \$43,442, the median household income for Gresham according to the 2000 Census, the proposed medium and high-density housing is considered affordable.

According to HUD guidelines, housing is affordable if annual mortgage payments are no more than 26 percent of the household’s annual income¹⁰. In Gresham, that would equate to \$941 per month. Fannie Mae contends that affordable housing should be dependent on the household’s total debt, not just mortgage debt, and recommends a range of 35% to 41% of monthly gross income to determine the range of housing affordability. Both Fannie Mae and HUD consider the following assumptions to be standard lending practices when determining affordable home prices: 30 year mortgage, 6.75 annual interest rate, 90 percent financed. Based on these assumptions, the Fannie Mae mortgage calculator (<http://www.fmcals.com/tools-tcc/fanniemae/calculator>) was utilized to determine a range of affordable home prices. Homes selling for between \$91,115 and \$156,285 are considered affordable for those at or below median household income. Table 4 below specifies the affordable home selling prices.

Table 4. Affordable Homeownership Prices

% of Mortgage Debt	Actual Dollars of Mortgage Debt	% of Other Debt	Actual Dollars of Other Debt	Affordable Monthly Payment	Home Sales Price
26%	\$941	0%	\$ -	\$1,303	\$156,285
26%	\$941	9%	\$326	\$977	\$117,185
26%	\$941	n/a	N/A	\$941	\$112,865
26%	\$941	15%	\$543	\$760	\$91,155

1. Fannie Mae recommends affordable housing based on household debt ranging from 35% to 41%.
2. Standard lending practices = 30 year mortgage at 6.75% annual interest rate and 90% financing.
3. The Fannie Mae mortgage calculator was utilized to identify the range of affordable housing:

The types of housing that would represent viable development opportunities, based on the local housing market are small lot, townhome and condominium housing¹¹. Each of these housing types is within, or below, the high end (\$156,285) price for affordable housing. The MDR-PV and HDR-PV housing designations for Pleasant Valley reflect these housing types and comprise 50 percent of Pleasant Valley’s projected housing.

Affordable rental housing is defined by Metro as affordable for households at or below 80 percent of the area median household income. For Gresham, this equates to \$34,753 as the affordable rental housing income limit. Assuming affordable rent payments do not exceed 30 percent of monthly income, a family of four could afford a monthly rent of \$870.¹² A review of rental listings for Gresham indicates that apartment units, at rents ranging from \$650 to \$900, would provide affordable renting housing for Pleasant Valley¹³. The MDR-PV and HDR-PV housing designations provided by the Pleasant Valley Plan District would allow apartment dwelling units.

¹⁰ From the Witch Hazel Village Community Plan, June 30, 2003.

¹¹ RMLS listings were reviewed for Gresham homeownership market.

¹² This calculation was extrapolated from 2004 HUD income guidelines.

¹³ www.rent.com rental listings were reviewed for Gresham rental housing market.

Although not specifically quantifiable provisions for mixed-use, work-live, small lot and other housing all on transit corridors provide opportunities to replace transit and/or living near or at where you work for a car payment which then could be applied to mortgage or rent payments thus promoting affordable housing.

Conclusion. The Pleasant Valley Plan District provides affordable rental and homeownership opportunities. It is important to note, however, that the estimates of affordable housing as outlined above are based on a snapshot in time, and generic housing affordability variables. If any of those variables change, like interest rates increasing, the opportunity for affordable housing will also change. The proposed comprehensive plan amendments are consistent with this Title 11 section.

E – Provision for sufficient commercial and industrial development for the needs of the area to be developed consistent with the 2040 Growth Concept design types. Commercial and industrial designations in nearby areas inside the Urban Growth Boundary shall be considered in comprehensive plans to maintain consistency.

Findings. The Pleasant Valley Plan District includes four sub-districts to accommodate commercial and/or industrial development: Town Center, Neighborhood Center, Mixed Use Employment and Employment Center.

The Town Center Sub-District is intended to primarily serve the needs of the local community and to include a mix of retail (anchored by a grocery store), office, and civic and mixed-use housing opportunities. It could be as large as 20 acres. Extensive discussion, analysis and evaluation were done to determine the size, composition and location of the Town Center. Two Town Center Focus Group meetings supported the recommended Pleasant Valley Town Center. A town center was designated for Pleasant Valley as part UGB expansion decision.

The Mixed-Use Employment Sub-District is intended to provide support services for the town center as well as local service and is primarily office and retail uses. The MUE-PV is about 30 net acres and located adjacent to the town center. It is intended to be an extension of the town center and seen as needed to support the town center and to provide additional employment opportunity. The MUE-PV sub-district is part of the designated Pleasant Valley town center.

The Neighborhood Center Sub-District is intended to provide for a mix of local retail, service, office and live-work uses for adjacent neighborhoods. Two 3-5 acre neighborhood centers are planned. They are located on transit streets. Provision for these two neighborhood centers was a response to an evaluation that the opportunity for very local retail/service trips was needed and that additional employment opportunity was needed in the Plan District. The NC-PV sites are located along transit streets. Commercial opportunities were expected along the transit corridors designated for Pleasant Valley as part of UGB expansion decision.

The Employment Center Sub-District is primarily intended to provide office or flex/tech industrial and medical and other employment opportunities. Emphasis is placed on business suited to high environmental quality settings. Two employment centers with a total of about 40 net acres are planned. An employment focus group provided advice on the feasibility and type of employment opportunities in Pleasant Valley. Employment Centers respond to the evaluation that additional employment opportunities were needed in the Plan District, that a medical clinic would be desirable, and that it could provide a business opportunity to live and work in the same community. Although there was no employment areas designated for Pleasant Valley as part of

the UGB expansion decision these are appropriate 2040 design types for Pleasant Valley and they are shown on the November 2002 2040 Growth Concept Plan map.

Table 5 summarizes the new job capacity proposed by the Pleasant Valley Plan District. Overall it provides about one job opportunity for each dwelling planned for the Plan District. In general these new commercial and employment areas are intended to serve the needs of Pleasant Valley.

Table 5. Pleasant Valley Summary of Job Capacity

New Job Capacity	
Retail/Other	487
Office	3,237
Light Industrial	500
Civic	58
Schools	130
Work At Home Jobs	507
<u>Subtotal</u>	<u>4,919</u>
Plus Existing Jobs	50
Total Jobs	4,969

Conclusion. The four commercial and employment sub-districts and land areas provided in the Plan District provides sufficient commercial and employment development for the Pleasant Valley Plan District area. The proposed comprehensive plan amendments are consistent with this Title 11 section.

F – A conceptual transportation plan consistent with the applicable provisions of the Regional Transportation Plan, Sections 6.4.4 through 6.4.7 Regional Transportation Plan¹⁴ and that is also consistent with the protection of natural resources either identified in acknowledged comprehensive plan inventories or as required by Title 3 of the Urban Growth Management Functional Plan. The plan shall, consistent with OAR Chapter 660, Division 11, include preliminary cost estimates and funding strategies, including likely financing approaches.

Findings. The Pleasant Valley Plan District proposes a Pleasant Valley Transportation System Plan that will amend the city’s current Transportation System Plan (TSP). The proposed TSP amendments document the planning framework, policies and strategies, system inventory and assessment, and forecast and alternatives, which have resulted in a conceptual transportation system plan. The conceptual transportation system plan consists of the following:

¹⁴ Although the language of this Title 11 section refers to “Title 6 of the Urban Growth Management Functional Plan” Title 6 no longer concerns Transportation. Instead the elements in Title 6 have been moved to Title 6 of the Regional Transportation Plan and specifically 6.4.4 through 6.4.7 (as stated in section 6.3 -- Demonstration of Compliance with Regional Requirements). Also referenced in Section 6.3 is section 6.6. Section 6.6 deals with amendments to the RTP, which is not an applicable provision for this Title 11 compliance report.

- Functional Classifications for Arterial, Collector, Neighborhood Connector and Local Streets
- Street Design
- Street Connectivity including an Illustrative Plan
- Transit System
- Bike and Trail Plan

Section 6.6.4 (RTP) Transportation System Analysis Required for Local Plan Amendments concerns “city comprehensive plan amendments that would recommend or require an amendment to the Regional Transportation Plan.” The Pleasant Valley Plan District will require amendment to the RTP as it proposes new regional arterials, transit service, and multi-use trails. The Forecasts and Alternatives section of the Pleasant Valley TSP summarizes the modeling analysis that was used and that resulted in the proposed conceptual transportation plan. It is more completely documented in the Pleasant Valley Concept Plan Technical Appendix. Metro staff, assisted by DKS Associates, conducted the transportation system analysis for Pleasant Valley. The Metro regional travel demand model was used. The results of the analysis include identifying regional strategies, local transit, pedestrian and bike improvements, appropriate modal splits; improvements to the street system including connectivity standards, traffic calming methods and the need for significant capacity improvements in the Plan District.

Section 6.4.5 (RTP) Design Standards for Street Connectivity describes that the design of local street systems should be such to keep through trips on arterial streets and provide local trips with alternative routes. In general, the section requires a map, provides guidance to landowners and developers on desired street connections. It also requires street connectivity standards that provide full street connections at no more than 530 feet except where streets cross Title 3 water, in which case the average spacing is 800 to 1,200 feet. In water crossing situations the larger spacing is to be interspersed with pedestrian accessways at no more that 530 feet when feasible.

The proposed transportation system plan is intended to meet these standards. The connectivity plan shows the general location and number of local streets that intersect with the arterial network laid on top of the basic arterial, collector and local connector street system. Connectivity standards are proposed that meet or exceed the 530-foot standard. The Bike and Pedestrian plan shows “foot bridges” to provide the extra connectivity when greater street spacing is required due to water crossings. Pleasant Valley is essentially a “greenfield” setting – the existing network of streets is rural and an entirely new network of connections will be needed to create the Plan District’s vision of a new, urban community. Two drawings, the illustrative plan for three neighborhoods and the Illustrated Plan District Plan, are shown in the TSP as a guideline for Future Street and pedestrian connections.

The proposed street design cross sections are all “green streets.” The guidelines and cross sections of Metro’s *Green Streets* are used for those cross sections.

Section 6.4.6 (RTP) Alternative Mode Analysis. This section deals with improvements in non-SOV mode share. The Pleasant Valley proposed TSP includes a transit plan that shows regional and community bus service and transit streets. The land use types and densities along the proposed transit streets are transit supportive (town center, mixed-use employment, employment center, neighborhood centers and moderate and high density residential). The bike and pedestrian plan will result in a walkable valley that connects neighborhoods, commercial and civic destinations, multi-use trails and transit stops.

As the Pleasant Valley TSP will amend each City's existing TSP, existing strategies found in those TSPs will also apply to Pleasant Valley.

Section 6.4.7 (RTP) Motor Vehicle Congestion Analysis. This section deals with how motor vehicle congestion is modeled and with regional motor vehicle performance measures. This section is not an applicable provision for Title 11 compliance but rather is an applicable provision for the City-wide TSPs.

Consistency with Title 3 – Title 3 deals with protecting beneficial water uses and functions and values of natural resources in water quality and flood management areas. The Pleasant Valley Plan District has identified and mapped water quality and floodplain areas and incorporated them into the Environmental Sensitive and Restoration Areas (ESRAs). In developing the conceptual transportation plan particular attention was given to both minimizing the number of stream crossings and minimizing the length of those stream crossings – this is reflected in the Pleasant Valley Plan District plan map. In addition the street design standards for stream crossings will utilize Metro's *Green Streets: Innovative Solutions for Stormwater and Stream Crossings* handbook.

Preliminary cost estimates and funding strategies consistent with OAR Chapter 660, Division 11. Preliminary cost estimates and funding strategies were developed during the *Concept Plan* project. These preliminary costs estimates and funding strategies were refined during the *Implementation Plan* project by completing a Public Facility Plan consistent with OAR Chapter 660, Division 11. The proposed Pleasant Valley TSP includes:

- Preliminary cost estimates.
- A project and funding plan that includes a list of projects and description, cost, timing, jurisdiction and likely funding sources for each project.
- A discussion of funding strategies including grants, developer exactions and transportation impact fee assessments.

Conclusion. The Pleasant Valley TSP describes a conceptual transportation system including street functional classifications and design, pedestrian and bike plans, transit plans, connectivity and other local street design issues consistent with RTP, Title 3 considerations and preliminary costs and likely funding strategies for needed improvements. The proposed comprehensive plan amendments are consistent with the Title 11 section.

G – Identification, mapping and a funding strategy for protecting areas from development due to fish and wildlife habitat protection, water quality enhancement and mitigation, and natural hazards mitigation. A natural resource protection plan to protect fish and wildlife habitat, water quality enhancement areas and natural hazard areas shall be completed as part of the comprehensive plan and zoning for lands added to the Urban Growth Boundary prior to urban development. The plan shall include a preliminary cost estimate and funding strategy, including likely financing approaches, for options such as mitigation, site acquisition, restoration, enhancement, or easement dedication to ensure that all significant natural resources are protected.

Findings. The proposed Pleasant Valley Plan District includes a natural resource protection plan. The Natural Resources chapter documents the Goal 5 process for Pleasant Valley, and consists of a natural resources inventory (identifying and mapping natural resources areas), a resources significance determination, an Economic, Social, Environmental and Energy (ESEE) analysis of the consequences of resource protection, an ESRA funding strategy and an ESRA draft resource protection standards development code.

To achieve the goal of creating an urban community integrated with the natural environment, Environmentally Sensitive Restoration Areas (ESRAs) were designated for Pleasant Valley's green space system. The ESRAs serve as the framework for the protection, restoration and enhancement of the area's streams, floodplains, wetlands, riparian areas and major tree groves. The Pleasant Valley Plan District established an ESRA sub-district to implement Pleasant Valley's natural resource goals and to resolve conflicts between development and conservation of natural resources. The natural resources planning efforts included mapping each of the nine identified resource functions and creating an ESRA map. The ESRA development standards apply to those lands identified on the ESRA map.

"Neighborhood transition design areas" were designated adjacent to the ESRAs so that neighborhood development is compatible with adjacent green corridors. The Pleasant Valley Plan District includes a Neighborhood Transition Design Area overlay sub-district with the purpose of establishing design guidelines and encouraging certain uses in the 100-foot wide area adjacent to the ESRAs.

Green development practices, which regulate stormwater management techniques, are included in the Plan District development code. Green development practices are a toolbox of techniques that mimic and incorporate predevelopment hydrology of a site into future development. The intent is to minimize potential adverse impacts of stormwater run-off to water quality, fish and other wildlife habitat, and flooding. The use of green development practices enhance water quality and control the stormwater flow utilizing techniques of retention, infiltration and evapotranspiration to treat runoff and reduce the volume of stormwater.

Conclusion. The Pleasant Valley Plan District has extensively identified and mapped natural resources areas; identified through the State Goal 5 process those natural resources areas to be protected and restored; developed a funding and non-regulatory restoration strategy; and developed development code standards to protect and restore the ESRA areas while providing for urban development in the rest of the Pleasant Valley Plan District area. The proposed comprehensive plan amendments are consistent with this Title 11 section.

H – A conceptual public facilities and services plan for provision of sanitary sewer, water, storm drainage, transportation, parks and police and fire protection. The plan shall, consistent with OAR Chapter 660, Division 11, include preliminary cost estimates and funding strategies including likely financing approaches.

Findings. The proposed Pleasant Valley Plan District includes a Public Facilities Plan (PFP) for sanitary sewer (wastewater), water, storm drainage (stormwater management) and parks. This PFP was based on the conceptual planning done during the *Concept Plan* project and then updated during *Implementation Plan* project. It specifically addresses the requirements of OAR Chapter 660, Division 11. The PFP also evaluated the transportation system to be consistent with the State OAR and that work was incorporated into the proposed Transportation System Plan. The Pleasant Valley Public Facilities Plan amends the current citywide Public Facilities Plans.

Interviews with the Police and Fire/Safety agencies did not identify the need for additional police or fire facilities.

Conclusion. The Public Facilities Plan (PFP) establishes a framework for how urban services will be developed and maintained with the implementation of the Pleasant Valley Concept Plan. The PFP includes an inventory and general assessment of the existing public facilities; a list of

the significant public facility projects needed to support the proposed land uses; a rough cost estimate of each project; written descriptions and general location map of the public facilities; goals, policies and future action measures; a statement of who will provide the services; estimates of when the projects would be needed; and a discussion of existing funding mechanism and a likely funding strategy for each facility. The proposed comprehensive plan amendments are consistent with the Title 11 section.

I – A conceptual school plan that provides for the amount of land and improvements needed, if any, for school facilities on new or existing sites that will serve the territory added to the UGB. The estimate of need shall be coordinated with affected local governments and special districts.

Findings. The Pleasant Valley Plan District is within the Centennial School District. Using criteria provided by the district a conceptual plan for two new schools (an elementary and middle school) in addition to the existing elementary school was developed. The school plan is detailed in the proposed School Goal, Policies and Action Measures comprehensive plan amendments. Development of the school plan was done in coordination with the District. The District staff provided criteria and reviewed materials as the plan was developed. The District Board appointed a representative on the Steering Committee. Additionally, a member of the Pleasant Valley Elementary School PTA was on the Steering Committee. The land established for new (and existing) schools was not included for purposes of housing and employment estimates.

Conclusion. A conceptual school plan has been developed in coordination with the Centennial School district and is included in the Pleasant Valley Plan District proposal. The proposed comprehensive plan amendments are consistent with the Title 11 section.

J – An urban growth diagram for the designated planning area showing, at least, the following, when applicable:

- 1. General locations of arterial, collector, and essential local streets and connections and necessary public facilities such as sanitary sewer, storm sewer, and water to demonstrate that the area can be served;***
- 2. Location of steep slopes and unbuildable lands including, but not limited to, wetlands, floodplains and riparian areas;***
- 3. General locations for mixed-use areas, commercial and industrial lands;***
- 4. General locations for single and multi-family housing;***
- 5. General locations for public open space, plazas and neighborhood centers, and***
- 6. General locations or alternative locations for any needed school, park or fire hall sites.***

Findings: The Pleasant Valley Plan District Plan Map (Plan Map) serves as the urban growth diagram and includes all of the applicable elements listed above. The Plan Map does not show water, wastewater or stormwater facilities – those are shown on individual maps in the Public Facilities Plan. It does show arterials, collectors and connecting local streets; environmental lands (slopes and natural resources); mixed-use and employment areas; single and multi-family area, plazas, parks and trails and schools.

Conclusion. The applicable items listed in the section have been mapped and are included in the proposed Pleasant Valley Plan District. The proposed comprehensive plan amendments are consistent with the Title 11 section.

K – The plan amendments shall be coordinated among the city, county, school district and other service districts.

Findings. Development of the Pleasant Valley Plan District during the *Concept Plan* and *Implementation Plan* projects were done as multi-jurisdictional projects. Metro, the City of Gresham and the City of Portland, Multnomah County and Clackamas County passed resolutions accepting the Concept Plan and resolving to use it as the basis for the Plan District. These jurisdictions participated in work teams and advisory groups. Other jurisdictions/districts that participated included City of Happy Valley, Sunrise Water Authority, Centennial School District and Clackamas County Water and Environmental Services (WES).

Conclusion. The plan amendments have been coordinated among the appropriate agencies. The proposed comprehensive plan amendments are consistent with the Title 11 section.

Metro Conditions of Approval

In addition to requiring compliance with the Urban Growth Management Functional Plan, the Metro Council added conditions of approval to Ordinance No 98-781D when the plan area was added to the Urban Growth Boundary in 1998. The following conditions were placed on the site.

- A. The land added to the Urban Growth Boundary by this ordinance shall be planned and zoned for housing uses to the extent and in a manner consistent with the acknowledged 2040 Growth Concept text and the regional design types shown on Exhibit A. This includes provision for the town center indicated on the acknowledged 2040 Growth Concept map with some land planned and zoned for employment, including commercial services for the town center.***

Findings. The Regional Design types shown on Exhibit A of the ordinance that brought Pleasant Valley into the Urban Growth Boundary were town center, corridor and inner neighborhood.

Town Center. Title 1 of the UGMFP describes a town center as “local retail and services will be provided in town centers with compact development and transit service”. The Pleasant Valley Plan District provides for a town center (PV-TC) at the intersection of two arterial streets. It will be served by regional transit and community transit. The PV-TC provides for retail, commercial services and civic with some residential uses. Adjacent to the PV-TC is the Mixed-Use Employment (MUE-PV). The MUE-PV provide for office and commercial services and housing in mixed-use buildings. Adjacent (to the south) is HDR-PV, which allows for higher density housing due to its proximity to the Town Center.

Corridor. Title 1 of the UGMFP describes a corridor as “along good quality transit lines, corridors feature a high-quality pedestrian environment, convenient access to transit, and somewhat higher than current densities.” The Foster/172nd Avenue arterial is planned for regional transit service. The other arterials are planned for community transit service. Two mixed-use neighborhood centers (NC-PV) are located on a corridor and provide very local retail and commercial service uses. The HDR-PV and MDR-PV are primarily multi-family districts (the MDR-PV also allows small lots) that are located along the corridors. The HDR-PV is generally located next to the Town Center or Neighborhood Centers or at the

intersection of two arterials. The MDR-PV is generally located between the HDR-PV or the commercial areas and the lower density residential sub-district.

Inner Neighborhood. Title 1 of the UGMFP describes inner neighborhoods as “residential areas accessible to jobs and neighborhood businesses with smaller lots are inner neighborhoods.” The LDR-PV constitutes the inner neighborhood and provides for a mix of single-family lots of 5,000-7,500 and 7,500-10,000 square foot lots with an assumed average 7,000 square foot lot. The inner neighborhoods are designed to be walkable and have good connections to transit lines and neighborhood businesses.

Employment. Title 1 of the UGMFP describes employment as “various types of employment and some residential development are encouraged in employment areas with limited commercial uses.” The *Concept Plan* project identified the need for additional employment opportunities in Pleasant Valley. Two employment centers (EC-PV) are planned for Pleasant Valley. The EC-PV is intended to generally provide for Office Manufacturing/Flex-Tech and medical clinic opportunities.

Conclusion. The Pleasant Valley Plan District has planned, mapped and provided zoning standards for the town center, corridor, inner neighborhood and employment design types. This condition of approval is met.

- B. Prior to conversion of the new urbanizable land in this ordinance to urban land for development, an urban reserve plan shall be completed for the lands added to the Urban Growth Boundary by this ordinance consistent with Metro Code 3.01.012, as amended by Ordinance No. 98-772B, including Title 11 of the Urban Growth Management Functional Plan.***

Findings. This is a reference to complete a complete a concept plan as provided for in Title 11. The Pleasant Valley Plan District is the implementing comprehensive plan amendments for the Pleasant Valley Concept Plan and is intended to be the “urban reserve plan” stated in the condition of approval.

Conclusion. The proposed Pleasant Valley Plan District constitutes an urban reserve plan and as detailed by this Title 11 compliance report is consistent with Title 11. This condition of approval is met.

- C. Prior to conversion of the new urbanizable land available for development, a stormwater management plan shall address means of assuring that the speed, temperature, sedimentation and chemical composition of stormwater runoff meets state and federal water quality standards as development occurs. This plan shall address on-site stormwater detention plan requirements.***

Findings. The initial approach to this issue in the *Concept Plan* project was a subwatershed approach. Pleasant Valley is at the headwaters of the Johnson Creek watershed. The tributaries to Johnson and Kelley Creeks that flow through Pleasant Valley comprise eight individual “sub” watersheds that were used in the planning process. The subwatersheds were the basis for extensive information gathering and subsequent modeling of runoff under both “green” practices and traditional piped stormwater management.

The stormwater management public facility plan (PFP) is based on a green development practices approach that instead of a traditional piped collection and conveyance system uses a

system of landscaping features that treat and infiltrate water on the site. This includes green streets that incorporate stormwater treatment within its right-of-way. The benefit of green development practices is that it minimizes the production of stormwater runoff and manages it close to the source. This addresses the water quality and quantity issues of the conditions of approval. The stormwater PFP also details generalized regional stormwater facilities locations and sizes. A stated goal of the stormwater management PFP is “The Cities shall manage stormwater to minimize impacts on localized and downstream flooding and to protect water quality and aquatic habitat.”

In March 2004, the cities of Gresham and Portland entered into a revised Pleasant Valley Intergovernmental Agreement (IGA) that establishes Gresham and Portland’s intention to implement the Pleasant Valley Concept Plan and Pleasant Valley Implementation Plan. Contained in the revised IGA is the statement that “Gresham and Portland agree to jointly develop a stormwater master plan for Pleasant Valley.” As already noted, the *Pleasant Valley Concept Plan* and *Pleasant Valley Implementation Plan* planning processes have included extensive work on stormwater management, goals, policies, designation of environmentally sensitive areas, modeling, facility planning and code work on green practices.

Subsequent to the March IGA the cities have started jointly developing a Stormwater Master Plan. This work will provide more precise engineering with tasks related to channel forming flows and facility release rates, quantity modeling, quality modeling and stormwater capital improvement projects. This project is scheduled for completion by September 2004.

Conclusion. The Pleasant Valley Plan District provides a stormwater management public facility plan that addresses the water quality and quantity issues in the condition of approval. Additionally, the cities have initiated a recommendation of the PFP to jointly establish a Stormwater Master Plan that will provide more precise engineering regarding location, sizing and construction along with a CIP list of needed stormwater facilities. This condition of approval is met.

- D. Prior to conversion of the new urbanizable land in this ordinance to urban land available for development, the city shall consider adoption of a requirement that the quantity of stormwater runoff after urban development of each development site is no greater than the stormwater runoff before development.***

Findings. As noted in Condition of Approval ‘C’ above, the proposed PFP addresses stormwater management and the cities have entered into an IGA to jointly establish a Stormwater Master Plan. A proposed stormwater PFP policy is that “The quantity of stormwater after development shall be equal to or less than the quantity of stormwater before development, wherever practicable.”

Conclusion. The consideration stated in the Condition of Approval is proposed as a policy of the Pleasant Valley Plan District and, thus, will be considered as part of the Stormwater Master Plan provisions. The condition of approval is met.

- E. Prior to conversion of the new urbanizable land in this ordinance to urban land available for development, the city shall adopt Urban Growth Management Functional Plan requirements for revegetation and Title 3 building setbacks from streams and wetlands and address federal requirements adopted pursuant to the Endangered Species Act.**

Findings. Title 3 lands were mapped as one of the first inventory efforts in the Concept Plan process. The inventory (which had input from property owners, stakeholders, project teams, Metro staff and state and federal resource agencies) served as the basis for mapping and code work to establish the Environmentally Sensitive Restoration Area (ESRA) sub-district. All Title 3 lands are included in the ESRA sub-district. The ESRA sub-district proposed code is intended to address provisions both for water quality resource area and for natural resource areas. Additionally, both cities have adopted Title 3 so that provisions applicable in the existing city (such as flooding) will also be applied to Pleasant Valley as it urbanizes.

At the time Pleasant Valley was brought into the UGB the Federal Government was establishing the 4d rule concerning the “taking” of listed species. At this time it was unclear as to the federal requirements pursuant to the Endangered Species Act. The development of the ESRA through the *Concept Plan* project and through the State Goal 5 process during the *Implementation Plan* project was shared with Metro, State and Federal natural resource agencies. The proposed development code is anticipated to closely correspond to the outcome of Metro’s current Goal 5 process and it is presumed that the ESRA code and strategies will help address the federal listing.

Conclusion. The Pleasant Valley Plan District has addressed the requirements of Title 3 by including the Title 3 lands in the proposed ESRA and by applying Title 3 compliance regulations. Doing the Goal 5 process and by developing implementing regulations should help address requirements of the Endangered Species Act listing once those of clarified. This condition of approval is met.

APPENDIX 43
(Added by Ordinance No. 1597 Effective 1/6/05)

PLEASANT VALLEY NATURAL RESOURCES

Pleasant Valley Natural Resources

INTRODUCTION

The intent of Oregon Statewide Planning Goal 5 is “To protect natural resources and conserve scenic and historic areas and open spaces. Local governments shall adopt programs that will protect natural resources and conserve scenic, historic, and open space resources for present and future generations. These resources promote a healthy environment and natural landscape that contributes to Oregon's livability.”¹

This report documents the Goal 5 process for Pleasant Valley that was begun during the *Concept Plan* and completed during the *Implementation Plan* project. The Natural Resources task completes one of the three central elements in the effort to create an urban community through the integration of land use, transportation, and natural resources. It consists of the following:

- ***Natural Resource Inventory*** - The inventory included here was largely based on information collected during the Concept Planning phase. The purpose of the inventory was to document the quantity and quality of the characteristic vegetation, wildlife habitat, streamside areas, sensitive species, and other natural features in the Pleasant Valley study area.
- ***Significance Determination*** – This section evaluates and determines which resources identified in the inventory are significant. A set of mapping criteria was developed and a computer mapping exercise was used to assist in the process. Nine different basic functions were used to provide the foundation for the significance determination.
- ***ESEE Analysis*** - An ESEE analysis describes the different types of land uses that impact streamside areas, wetlands, and upland forest. Specifically, it analyzes the economic, social, environmental, and energy (ESEE) consequences that could result from a decision to allow, limit, or prohibit certain uses in the significant resource areas (Environmentally Sensitive Restoration Area (ESRA)).
- ***ESRA Funding Strategy*** – This section provides preliminary costs estimates and strategies for acquisition, conservation easements, habitat restoration and maintenance of ESRA lands. It includes a set of potential funding strategies and a list of federal, state, regional and local programs.
- ***ESRA Development Code*** – This is proposed development amendments to Volume 3 – Community Development Code that establishes an environmental land use district for the Pleasant Valley Plan District. This proposed amendment implements the natural resources regulatory protection plan for the identified Goal 5 resources in Pleasant Valley.

Supplementing this report is the Natural Resources Goal (10.705) that is included in Chapter 4. It was adopted by the Pleasant Valley Steering Committee and then refined during the Implementation Plan. It includes a background, a summary of major issues and proposed goals, policies and action measures.

¹ OAR 660-015-0000(5)

NATURAL RESOURCE INVENTORY

This section describes the Goal 5 inventory and significance determination process for Pleasant Valley. The inventory was conducted by a team of consultants, Metro, cities and counties as part of the Pleasant Valley Planning process (2000-2002). The purpose of the inventory is to identify the location, quality and quantity of significant natural resources within the Pleasant Valley planning area.

SITE LOCATION

The Pleasant Valley resource site (the site) spans the southeast corner of the City of Portland, portions of unincorporated Multnomah and Clackamas Counties, and areas along the western edge of the City of Gresham (See Map 1). The site's western boundary roughly follows SE 162nd Avenue. Its northern boundary follows the edge of developed portions of the City of Gresham and extends north of Foster Road to include portions of Johnson Creek. The eastern boundary of the site extends past SE 190th Drive to Rodlun Road, and the southern boundary generally parallels Sager and Cheldelin Roads.

The Pleasant Valley site is approximately 1,527 acres in size and includes most of the Kelley Creek Basin and a small area along Johnson Creek. To facilitate the inventory and analysis process, seven site subareas were created based on natural subwatershed boundaries.² These subareas include: Jenne Creek, Clatsop Creek, Mitchell Creek, the Saddle, Gresham South Slope, Lower Kelley Creek Headwaters, and Powell-Jenne Valley (Johnson Creek) (See Map 1). Each subarea was named for its primary stream, tributary, or other distinguishing feature. Analysis at the subarea scale allowed a focused assessment of the resources within the site, including the vegetation and wildlife habitat characteristics of individual Kelley Creek tributaries, associated wetlands and riparian corridors, and upland wildlife resources.

NATURAL RESOURCE INFORMATION

The following information (maps, GIS data, reports) was collected to inventory natural resources within the site:

- **Water Areas:**
 - Orthophotos, 1999 (Metro).
 - Stream data (Metro; City of Portland Bureau of Planning).
 - Wetland data (Metro; National Wetland Inventory).
 - Floodplain data (FEMA).
 - 1996 Flood Inundation Area data (Metro).
 - Developed Floodplain data (Metro).
 - Pleasant Valley Subarea Wildlife Habitat Assessments, Dec. 2000 – Jan. 2001 (City of Portland Bureau of Planning).
 - Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2000 (Oregon Department of Fish and Wildlife; City of Portland Bureau of Environmental Services).
 - Subwatershed Planning: Evaluation of Aquatic and Upland Habitat for the Kelley Creek Watershed, May 2002 (City of Portland Bureau of Environmental Services; Pleasant Valley project staff).
 - Kelley Creek Watershed Stream Habitat Assessment, Sept 2002 (City of Portland Bureau of Environmental Services).

² An eighth subarea, Upper Kelley Creek Headwaters, was also surveyed but is located outside of the Planning Area upstream of the Lower Kelley Creek Headwaters subarea.

Johnson Creek Predesign: Wildlife Habitat Assessments, Wetlands Delineation, and Functional Value Assessment, 2002 (City of Portland Bureau of Environmental Services).
Johnson Creek Water Quality Assessment, Feb. 2000 (HARZA Engineering Co.).
“Standard Methods for identifying Channel Migration Zones and Bankfull Channel Features”,
March 2000 (Washington State Forestry Department).
Stream Classification Maps (Oregon Department of Forestry).

- **Fish Habitat:**

Stream data (Metro; City of Portland Bureau of Planning).
Floodplain data (FEMA).
1996 Flood Inundation Area data (Metro)
Pleasant Valley Subarea Wildlife Habitat Assessments, Dec. 2000-Jan 2001 (City of Portland Bureau of Planning).
Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2000 (Oregon Department of Fish and Wildlife and City of Portland Bureau of Environmental Services).
Subwatershed Planning: Evaluation of Aquatic and Upland Habitat for the Kelley Creek Watershed, May 2002 (City of Portland Bureau of Environmental Services, Pleasant Valley project staff)
Kelley Creek Watershed Stream Habitat Assessment, Sept 2002 (City of Portland Bureau of Environmental Services).
Johnson Creek Predesign: Wildlife Habitat Assessments, Wetlands Delineation, and Functional Value Assessment, 2002 (City of Portland Bureau of Environmental Services).
Johnson Creek Water Quality Assessment, Feb. 2000 (HARZA Engineering Co.).
“Standard Methods for identifying Channel Migration Zones and Bankfull Channel Features”,
March 2000 (Washington State Forestry Department).
Stream Classification Maps (Oregon Department of Forestry)

- **Riparian Areas/Riparian Corridors:**

Orthophotos, 1999 (Metro)
10 foot, 5 foot, and 2 foot Elevation Contours
Stream data (Metro; City of Portland Bureau of Planning).
Floodplain data (FEMA).
1996 Flood Inundation Area data (Metro).
Developed Floodplain data (Metro).
Pleasant Valley Subarea Wildlife Habitat Assessments, Dec. 2000-Jan 2001 (City of Portland Bureau of Planning)
Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2000 (Oregon Department of Fish and Wildlife; City of Portland Bureau of Environmental Services)
Subwatershed Planning: Evaluation of Aquatic and Upland Habitat for the Kelley Creek Watershed, May 2002 (City of Portland Bureau of Environmental Services; Pleasant Valley project staff).
Kelley Creek Watershed Stream Habitat Assessment, Sept 2002 (City of Portland Bureau of Environmental Services).
Johnson Creek Predesign: Wildlife Habitat Assessments, Wetlands Delineation, and Functional Value Assessment, 2002 (City of Portland Bureau of Environmental Services).
Johnson Creek Water Quality Assessment, Feb. 2000 (HARZA Engineering Co.).
Stream Classification Maps (Oregon Department of Forestry)

- **Wetlands:**
 Wetland Data (Metro/National Wetland Inventory).
 Orthophotos, 1999 (Metro).
 Pleasant Valley Subarea Wildlife Habitat Assessments, Dec 2000-Jan 2001 (City of Portland Bureau of Planning).
Johnson Creek Predesign: Wildlife Habitat Assessments, Wetlands Delineation, and Functional Value Assessment, 2002 (City of Portland Bureau of Environmental Services)

- **Threatened, Endangered or Sensitive Wildlife Species:**
 Threatened or endangered plants or animals within a 2-mile radius of the site (Oregon Natural Heritage Program).
 Pleasant Valley Subarea Wildlife Habitat Assessments, Dec. 2000-Jan 2001 (City of Portland Bureau of Planning).
Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2000 (Oregon Department of Fish and Wildlife; City of Portland Bureau of Environmental Services).
Subwatershed Planning: Evaluation of Aquatic and Upland Habitat for the Kelley Creek Watershed, May 2002 (City of Portland Bureau of Environmental Services; Pleasant Valley project staff).
Kelley Creek Watershed Stream Habitat Assessment, Sept 2002 (City of Portland Bureau of Environmental Services).
Johnson Creek Predesign: Wildlife Habitat Assessments, Wetlands Delineation, and Functional Value Assessment, 2002 (City of Portland Bureau of Environmental Services).

- **Sensitive Bird Site Inventories**
 Pleasant Valley Subarea Wildlife Habitat Assessments, Dec. 2000-Jan 2001 (City of Portland Bureau of Planning)

- **Wildlife Species of Concern or Habitats of Concern:**
 Pleasant Valley Subarea Wildlife Habitat Assessments, Dec. 2000-Jan 2001 (City of Portland Bureau of Planning)
Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2000 (Oregon Department of Fish and Wildlife; City of Portland Bureau of Environmental Services).
Subwatershed Planning: Evaluation of Aquatic and Upland Habitat for the Kelley Creek Watershed, May 2002 (City of Portland Bureau of Environmental Services; Pleasant Valley project staff).
Kelley Creek Watershed Stream Habitat Assessment, Sept 2002 (City of Portland Bureau of Environmental Services).
Johnson Creek Predesign: Wildlife Habitat Assessments, Wetlands Delineation, and Functional Value Assessment, 2002 (City of Portland Bureau of Environmental Services).
 Information gathered from landowners at Community Forums (Winter and Spring 2001)

- **Other information:**
 USGS 7.5 minute quadrangle maps
 Soil Conservation Survey information (Multnomah and Clackamas Counties)
 Tax lot data

RESOURCE, QUALITY, QUANTITY, AND LOCATION

The Pleasant Valley site is defined by a series of volcanic buttes surrounding largely agricultural and residential areas. The buttes are typically forested and steep, and are divided by perennial and seasonal streams. The buttes were cleared in the early 1900's but are now covered mostly by mid-successional forest that is 60 to 100 years old. The lowlands were originally forested but were cleared in the late 1800's and early 1900's for farming and timber uses. The majority of the lowland area has remained in agricultural and residential use and has also been tilled in many areas for agricultural drainage. The site contains forest types in the Willamette Valley vegetation zone (Franklin and Dyrness, 1988).

Pleasant Valley Subareas. The subareas contain a variety of aquatic and terrestrial habitats. The size and general characteristics of each subarea are noted below. Table 1 provides additional information on the characteristics of each subarea.

Jenne Creek. The Jenne Creek subarea is 364 acres in size (259 acres within the site) and is located on the south slope of Jenne Butte in the vicinity of McKinley Road. The subarea contains Jenne Creek, at approximately 9,850 feet in length, and a headwater forest and emergent wetlands complex with good connectivity to forested open space to the north. Jenne Creek's riparian corridor is relatively intact, except at Foster Road where the stream enters a long (>100 yard) culvert before discharging to Kelley Creek. Habitat types include conifer, hardwood and mixed forests (42.51 acres), shrub (5.36 acres), meadow (10.35 acres), and wetland (6.82 acres).

Clatsop Creek. The Clatsop Creek subarea is located along the western edge of the site, bordering 162nd Avenue. The Clatsop Creek subarea is 368 acres in size, however only the area along the lowest reach (28 acres) is contained within the site. Along this reach are important riparian and instream habitats, which are located within a well-defined canyon at the confluence with Kelley Creek. The primary habitat type within the subwatershed is mixed forest with western red cedar, Douglas fir, and red alder (13.47 acres); small areas of shrub (0.73 acre) and wetland (0.13 acre) habitat are also present.

Mitchell Creek. The Mitchell Creek subarea contains the largest tributary of Kelley Creek. The basin is 561 acres in size (206 acres within the site) and extends into Happy Valley, Portland, and Clackamas County. Mitchell Creek is approximately 16,425 lineal feet with a forested riparian corridor along much of its length. The basin contains significant habitat for wildlife, and supports state-listed sensitive fish and amphibian populations. Habitat types include conifer and mixed forests (103.83 acres), shrub (3.71 acres), meadow (13.70 acres), and wetland (2.92 acres).

The Saddle. The Saddle subarea is characterized by a broad valley floor along the dividing line between the Johnson Creek and Clackamas River basins. The subarea is 537 acres in size (392 acres within the site) and is located in the southern part of the site in the vicinity of Sager and Cheldelin Roads. This subarea contains the greatest diversity of wetland habitats, linked together by a small tributary to Kelley Creek that is approximately 7,415 feet in length. Habitat types include conifer, hardwood and mixed forests (7.15 acres), shrub (5.32 acres), meadow (7.53 acres), and wetland (39.51 acres).

Gresham South Slope. The Gresham South Slope subarea is dominated by agriculture, with Gresham residential development along the ridgetop. The subarea is 343 acres in size (305 acres within the site) and is located in the northwestern part of the site bordering Gresham. This subarea contains a tributary to Kelley Creek (approximately 6,900 feet in length) that flows through a nursery and forestland. The most significant habitat area within the subarea is located west of 182nd Avenue at the confluence of this tributary and the Kelley Creek mainstream. Habitat types include hardwood and mixed forests (19.17 acres), shrub (1.14 acre), meadow (8.87 acres), and wetland (5.28 acres).

Lower Kelley Creek Headwaters. The Lower Kelley Creek Headwaters subarea contains a narrow riparian corridor along the mainstem of Kelley Creek in the eastern part of the site. Though narrow, the corridor supports state-listed sensitive species (see Table). The forested corridor is bordered by pasture and hayfields and broadens to the east into high quality forest habitat. The subarea is 423 acres in size (201 acres within the site). This reach of Kelley Creek is approximately 8,435 lineal feet in length. Habitat types include hardwood and mixed forests (95.60 acres), shrub (2.48 acres), meadow (4.25 acres), and wetland (3.01 acres).

Powell-Jenne Valley. The Powell-Jenne Valley subarea is located north of the Kelley Creek basin along Johnson Creek in the vicinity of Jenne Lane. This subarea is situated in a narrow valley between Powell and Jenne Buttes. It contains a broad floodplain with varied wetland habitats. The subarea is 298 acres in size (136 acres within the site); this reach of Johnson Creek is approximately 4,170 lineal feet in length. The subarea contains a variety of wetland, riparian, and upland habitats, and provides high quality amphibian breeding sites. Habitat types include conifer, hardwood and mixed forests (115.07 acres), meadow (12.90 acres), and wetland (13.18 acres).

HABITAT SUMMARIES

What follows are summaries of habitat types found within the Pleasant Valley site. Table 1 breaks out this, and other information, by subarea and includes known sensitive species, Wildlife Habitat Assessment and Benthic Index of Biological Integrity ratings, special habitat features, and system stresses and sources.

Upland (Terrestrial) Habitat. Upland, terrestrial habitats within the site consist of meadow, shrub, and coniferous, hardwood and mixed forests. The forests are generally 60 to 100 year-old second growth and are in the mid-succession “conifer topping hardwood” stage. The forests include Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), and red alder (*Alnus rubra*) as dominant tree species. Other common tree species include Oregon ash (*Fraxinus latifolia*), big-leaf maple (*Acer macrophyllum*), and black cottonwood (*Populus balsamifera trichocarpa*). Shrub habitats include Himalayan blackberry (*Rubus discolor*) and Pacific willow (*Salix lasiandra*).

Riparian Habitat. Riparian areas are important because they contain water, cover, and food for aquatic and semi-aquatic species. They are transitional areas between aquatic and upland habitats, and provide habitat for plants and wildlife that exist in both environments. They can also provide migration corridors for wildlife. Riparian corridors generally have high structural diversity, due to the debris and sediment that often collects along streams and, therefore, often support diverse groups of plant and wildlife species.

Riparian habitats within the site consist primarily of mixed forest with some coniferous forest and shrub areas. Forested riparian areas include Douglas fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), black cottonwood (*Populus balsamifera trichocarpa*), and red alder (*Alnus rubra*) as dominant tree species. Other common tree species include Oregon ash (*Fraxinus latifolia*) and big-leaf maple (*Acer macrophyllum*). Shrub habitats include Himalayan blackberry (*Rubus discolor*) and Pacific willow (*Salix lasiandra*).

Aquatic Habitat. Aquatic habitats within the site include perennial streams (first and second order), intermittent streams, wetlands, and springs or seeps. Wetland classifications include forested, scrub-shrub, emergent, wet meadows, and open water. Forested wetlands are dominated by western red cedar (*Thuja plicata*), Oregon ash (*Fraxinus latifolia*), Pacific willow, or red alder (*Alnus rubra*). Scrub-shrub wetlands are dominated by Pacific willow, Piper’s willow (*Salix hookeriana*), or hardhack (*Spiraea douglasii*). Emergent wetlands are dominated by common cattail (*Typha latifolia*), colonial bentgrass

(*Agrostis capillaris*), reed canarygrass (*Phalaris arundinaceae*), stinging nettle (*Urtica dioica*), jewelweed (*Impatiens noli-tangere*), creeping spike-rush (*Eleocharis palustris*), common rush (*Juncus effusus*), or slough sedge (*Carex obnupta*). Wet meadows were dominated by common rush, creeping spike-rush, dagger-leaved rush (*Juncus endifolius*), reed canarygrass, or meadow foxtail (*Alopecurus pratensis*).

Sensitive Species and Habitats. One sensitive fish species was documented in the Pleasant Valley site: steelhead (*Oncorhynchus mykiss*) which is federally listed as threatened. Three other sensitive wildlife species were also documented: American peregrine falcon (*Falco peregrinus annatum*) is listed as endangered by the state of Oregon; and pileated woodpecker (*Dryocopus pileatus*) and red-legged frog (*Rana aurora aurora*) are both listed as sensitive-vulnerable by the state of Oregon. Tall bugbane (*Cimicifuga elata*), a plant species that is a candidate for state listing in Oregon, also occurs on the site.

Special habitat features were noted during field surveys done in December 2000 and January 2001. These features include high quality forested wildlife habitat; large wetland complexes; important wildlife corridors; confluence habitats, and habitat for sensitive species (including fish, birds, and amphibians). Stresses on sensitive species include fish passage barriers, wildlife access or passage impediments, erosion and sedimentation, native species suppression by invasive species, habitat disturbance, water quality stresses, habitat fragmentation, disrupted hydrology, and disconnected floodplains.

HABITAT RATING

Characteristic vegetation, wildlife habitat, riparian areas and corridors, streams, and other physical features were documented using the Wildlife Habitat Assessment (WHA) survey form. The WHA method has been acknowledged by the Oregon Land Conservation and Development Commission as complying with Goal 5 guidelines. The WHA form allows a “habitat score” to be calculated for each subarea, so that relative functional values can be compared. Field surveys were conducted on December 21, 2000, and January 3 and 9, 2001. WHA ratings for individual subareas ranged from 39 to 87 (out of a possible score of 108); these ratings are provided in Table 1. The Pleasant Valley site as a whole received a rating of 63. Generally, sites inventoried previously within the Johnson Creek basin have received WHA scores of 18 to 83.

TABLE 1. SUBAREA HABITAT SUMMARY

Sub Water-shed	Acres	Aquatic Habitats	Terrestrial Habitats	Sensitive, Threatened, Endangered Species	Habitat Value	Macro-invertebrates (BIBI)	Special Features	Stresses (Sources)
Jenne Creek	259 (364)	Perennial stream (1 st , 2 nd order); Intermittent stream Emergent wetland: TYLA Wet meadow: JUEF Open water wetland Springs/seeps	Mixed forest: PSME- THPL-ACMA, THPL-PSME, THPL-PSME-ALRU Hardwood forest: FRLA-ALRU, ACMA-ALRU Shrub: RUDI, SALU Meadow	<u>Fish:</u> <i>Onchorhynchus mykiss</i> <u>Wildlife:</u> <i>Dryocopus pileatus</i> <i>Rana aurora aurora</i> <u>Potential species:</u> <i>Cimicifuga elata</i> <i>Empidonax traillii brewsteri</i> <i>Onchorhynchus kisutch</i> <i>Sidalcea nelsoniana</i>	68 (of 108)	18 (of 50)	Largest grand fir in study area Headwater wetlands Functional link to Jenne Butte habitats for mammals, birds Pileated woodpecker Red-legged frog and pacific giant salamander Steelhead and cutthroat trout	Fish passage barrier (114 m. culvert, 1 m. step at gas station; steel dam; lower KC dams, steps, culverts) Wildlife access impediment (gas station, Foster Road) Erosion/sedimentation (agricultural runoff, high flows grazing-Kelley Creek Farm, vehicles crossing KC) Native flora/fauna suppression (invasive species)
Clatsop Creek	28 (368)	Perennial stream (1 st , 2 nd order); Intermittent stream	Mixed forest: THPL-PSME-ALRU	<u>Fish:</u> <i>Onchorhynchus mykiss</i> <u>Wildlife:</u> <i>Dryocopus pileatus</i> <i>Rana aurora aurora</i> <u>Potential species:</u> <i>Empidonax traillii brewsteri</i> <i>Onchorhynchus kisutch</i>	50 (of 108) Basin: 72	20 (of 50) mainstem Kelley Creek	Pileated woodpecker Steelhead and Cutthroat trout Red-legged frog and pacific giant salamander	Fish passage barrier (162 nd culvert; steel dam; lower KC dams, steps, culverts) Wildlife access impediment (162 nd Ave.) High erosion/sediment (Hawthorne Ridge storm discharge; grazing; vehicles crossing stream) Habitat disturbance (invasive species, waste, clearing, housing development)

Sub Water-shed	Acres	Aquatic Habitats	Terrestrial Habitats	Sensitive, Threatened, Endangered Species	Habitat Value	Macro-invertebrates (BIBI)	Special Features	Stresses (Sources)
Mitchell Creek	206 (561)	Perennial stream (1 st , 2 nd order); Intermittent stream Forested wetland: THPL Scrub/shrub wetland: SALU Emergent wetland: CAOB Open water wetland Springs/seeps	Coniferous forest: THPL, THPL-PSME Mixed forest: THPL-PSME-ALRU, PSME-THPL-ACMA Shrub: RUDI, SALU Meadow	<u>Wildlife:</u> <i>Falco peregrinus annatum</i> <i>Rana aurora aurora</i> <u>Potential species:</u> <i>Dryocopus pileatus</i> <i>Empidonax traillii brewsteri</i> <i>Montia howellii</i> <i>Myotis evotis</i> <i>Onchorhynchus kisutch</i> <i>Plecotus townsendii</i> <i>Sidalcea nelsoniana</i>	77 (of 108)	16 (of 50)	Highest quality fish habitat in study area (cutthroat trout) High quality forested wildlife habitat (upper basin and confluence) Red-legged frog Peregrine falcon Osprey	Fish passage barrier (162 nd culvert; dammed pools, steps) Water quality stresses (nutrient loading-residential discharges; high erosion, sedimentation, waste/contaminants, <i>E. coli</i> mobile home park) Habitat disturbance (invasive species, waste, clearing, fill) Habitat fragmentation (roads, fences, farms, housing)

Sub Water-shed	Acres	Aquatic Habitats	Terrestrial Habitats	Sensitive, Threatened, Endangered Species	Habitat Value	Macro-invertebrates (BIBI)	Special Features	Stresses (Sources)
The Saddle	392 (537)	Perennial stream (1 st , 2 nd order); Intermittent stream Forested wetland: FRLA, FRLA-SALU, FRLA-ALRU, ALRU Scrub/shrub wetland: SAHO, SALU, SPDO Emergent wetland: AGCA-PHAR, CAOB, JUEF, PHAR Wet meadow: JUEF Open water wetland Springs/seeps	Coniferous forest: THPL-PSME Mixed forest: PSME-ALRU Hardwood forest: ALRU Shrub: RUDI, SALU Meadow	<u>Wildlife:</u> <i>Dryocopus pileatus</i> <u>Potential species:</u> <i>Empidonax traillii brewsteri</i> <i>Onchorhynchus kisutch</i> <i>Rana aurora aurora</i> <i>Sidalcea nelsoniana</i>	50 (of 108)	Not sampled	Largest wetland complex in study area, with link to Clackamas River habitats Good wildlife linkages, or potential linkages, to forested buttes east and west Pileated woodpecker	Habitat disturbance (farm and residential uses, roads, clearing, fill) Fish passage barrier (public and private culverts, steps) Water quality stresses (sewage plant discharge-PV Elementary School, erosion) Native flora/fauna suppression (invasive species)
Gresham South Slope		Perennial stream (1 st , 2 nd order); Intermittent stream Forested wetland: FRLA-ALRU Emergent wetland: CAOB Wet meadow: PHAR-ALPR Open water wetland Springs/seeps	Mixed forest: THPL-PSME-ALRU Hardwood forest: POBA-ALRU; ALRU; FRLA-ALRU Shrub: RUDI Meadow	<u>Potential species:</u> <i>Dryocopus pileatus</i> <i>Empidonax traillii brewsteri</i> <i>Onchorhynchus kisutch</i> <i>Rana aurora aurora</i> <i>Sidalcea nelsoniana</i>	39 (of 108)	26 (of 50)	Wet meadow/forested ash wetland complex Diverse confluence habitats	Disrupted hydrology (nursery/cropland irrigation) Water quality stresses (sediments, nutrients, contaminants from agriculture, erosion-impervious surfaces) Fragmented habitat (roads, housing, nursery, fences) Fish passage barrier (nursery, culverts) Native flora/fauna suppression (invasive species)

Sub Water-shed	Acres	Aquatic Habitats	Terrestrial Habitats	Sensitive, Threatened, Endangered Species	Habitat Value	Macro-invertebrates (BIBI)	Special Features	Stresses (Sources)
Lower Kelley Creek Head-waters	201 (423)	Perennial stream (1 st order); Intermittent stream Forested wetland: THPL Emergent wetland: JUEF, PHAR Open water wetland Springs/seeps	Mixed forest: PSME-ALRU; THPL- PSME-ALRU Hardwood forest: ACMA-ALRU, ALRU Shrub: RUDI, SALU Meadow	<u>Wildlife:</u> <i>Rana aurora aurora</i> <u>Potential species:</u> <i>Dryocopus pileatus</i> <i>Empidonax traillii brewsteri</i> <i>Onchorhynchus kisutch</i> <i>Sidalcea nelsoniana</i>	70 (of 108)	16 (of 50)	Cutthroat trout Red-legged frog	Fish passage barrier (190 th culvert, 1.3 m. drop; 2 dammed pools) Low dissolved oxygen (pool sample) Water quality stresses (erosion/sedimentation-grazing; former dump east of 190 th) Native flora/fauna suppression (invasive species)
Powell-Jenne Valley	136 (298)	Perennial stream (Johnson Creek); Forested wetland: FRLA; FRLA-THPL Emergent wetland: PHAR; PHAR-URDI; PHAR-IMNO; ELPA (pond edge) Wet meadow: ELPA-JUEN Open water wetland Seeps/springs	<u>Hillslopes</u> Mixed forest: THPL-PSME-ACMA Shrub: RUDI <u>Lowlands</u> Hardwood forest: FRLA; POBA-FRLA Shrub: RUDI; SALU Meadow	<u>Fish:</u> <i>Oncorhynchus mykiss</i> <u>Wildlife:</u> <i>Rana aurora aurora</i> <u>Plant:</u> <i>Cimicifuga elata</i> <u>Potential species:</u> <i>Dryocopus pileatus</i> <i>Empidonax traillii brewsteri</i> <i>Myotis evotis</i> <i>Onchorhynchus kisutch</i> <i>Plecotus townsendii townsendii</i> <i>Sidalcea nelsoniana</i>	61 (of 108)	Not sampled	Amphibian breeding sites; streamside wetlands Wet meadow habitat Largest ash trees within study area (remnant ash wetland) Red-legged and tree frogs; northwestern and long-toed salamanders; chinook, coho salmon; steelhead, cutthroat trout; tall bugbane Travel corridors between Johnson Creek, Powell Butte, and Jenne Butte for birds, mammals, and amphibians	Amphibian/mammal passage (roads/traffic) Disconnected floodplain (rock-lined JC channel) Fragmented habitat (fences, roads, housing, mowed fields) Erosion, soil movement (forest/riparian clearing) Native flora/fauna suppression (invasive species)

Key to Alpha codes:

ACMA: *Acer macrophyllum* (big-leaf maple)
AGCA: *Agrostis capillaris* (colonial bentgrass)
ALPR: *Alopecurus pratensis* (meadow foxtail)
ALRU: *Alnus rubra* (red alder)
CAOB: *Carex obnupta* (slough sedge)
ELPA: *Eleocharis palustris* (creeping spike-rush)
FRLA: *Fraxinus latifolia* (Oregon ash)
IMNO: *Impatiens noli-tangere* (jewelweed)
JUEF: *Juncus effusus* (common rush)
JUEN: *Juncus ensifolius* (dagger-leaved rush)

PHAR: *Phalaris arundinaceae* (reed canarygrass)
POBA: *Populus balsamifera trichocarpa* (black cottonwood)
PSME: *Pseudotsuga menziesii* (Douglas-fir)
RUDI: *Rubus discolor* (Himalayan blackberry)
SAHO: *Salix hookeriana* (Piper's willow)
SALU: *Salix lucida lasiandra* (Pacific willow)
SPDO: *Spiraea douglasii* (hardhack)
THPL: *Thuja plicata* (western red cedar)
TYLA: *Typha latifolia* (common cattail)
URDI: *Urtica dioica* (stinging nettle)

*Score is based on Wildlife Habitat Assessment rating
**BIBI is "Benthic Index of Biological Integrity"

PLEASANT VALLEY SIGNIFICANCE CRITERIA

The determination of resource significance for the Pleasant Valley site reflects the relative quality and quantity, and the location of natural resources within the site. This section presents the significance criteria that were applied to identified natural resources within the Pleasant Valley site.

The natural resource significance criteria are based on fundamental elements, or “functions”, that must be present for natural systems to work properly. The functional elements selected for this project are based on recent scientific literature, the natural resource information collected for the Pleasant Valley inventory, and the subwatershed assessment conducted as part of the Pleasant Valley inventory. The functional elements are similar to those used by the City of Portland for its Natural Resource Inventory Update project and by Metro for its Regional Goal 5 project. However, the significance criteria were tailored to resource data and conditions specific to the Pleasant Valley site.

Riparian and Upland Habitat Functions. The following basic resource functions provide the foundation for the Pleasant Valley significance criteria:

- Water quality
- Channel dynamics and morphology
- Water quantity: stream flow, sources, and storage
- Microclimate
- Fish and aquatic habitat
- Organic inputs
- Riparian and upland wildlife habitat quality
- Upland sensitive species
- Upland interior habitat

Below are brief descriptions of these functions:

Water Quality. The roots, downed wood, and soils in the riparian area help to keep the water clean. Roots and wood help prevent too much dirt and mud from getting in the water by holding soil in place. Riparian vegetation acts as a barrier that slows floodwater or stormwater runoff down so that it does less damage to soil and also acts as a filter for pollutants. Water infiltrating into and through the soils is filtered and kept cool as it flows below ground surface into the stream.

Channel Dynamics and Morphology. Streams move or “meander,” and change over time. The location of the channel may change or the amount of water in the channel may change. Scientists call this type of change channel dynamics. These changes help create a variety of habitats in the channel such as pools, cascades, side channels, swift water areas, and slow water areas. The amount and speed of water changes over time and causes flooding in all or part of the riparian area. The area where this flooding occurs over time is called the floodplain. The stream and floodplain relationship is important for maintaining a successful riparian area because the floodwaters not only help cause channel changes they also wash the litterfall and bugs into the stream and improve the riparian area soil.

Trees and other vegetation in the riparian area also help with channel changes. When a tree, or a large part of it, falls into the stream it helps to create pools and slow water areas and can divert the channel to a new location. Shrubs like willow—with many deep roots—hold some banks in place while nearby

sections change. Together, this creates a variety of places for fish and other animals to live, feed, hide, and rest.

Water Quantity: Stream Flow, Sources, and Storage. Floodplains and riparian areas help to moderate and maintain streamflow. Active floodplains provide temporary storage of floodwaters which helps to reduce and delay peak flows throughout a stream system. Vegetated floodplains and riparian areas catch, store, and release water. The leaves, needles, and branches in the canopy and on the ground can block rain or snow and prevent it from reaching the ground, or slow its progress reducing the impact of rainfall. Dense evergreen forests have greater capability to catch and store water than a deciduous forest, shrubland, or grassland. This help controls how much and how quickly water makes its way back to a stream through the riparian area.

Different types of soil also influence the amount of water that gets back to streams over time. Soil with lots of leaves, twigs, bark, and needles will soak up more water and allow less water to run over the surface of the ground. This type of soil allows for more water to soak into the ground, which supports the riparian vegetation. It also provides water for the stream over a longer period of time because the water travels through the soil more slowly than if it had immediately runoff over the surface.

Microclimate.

Small areas that differ in climatic characteristics (such as temperature and humidity) from the general surrounding climate are described by scientists as having a microclimate. Vegetation can affect a microclimate in riparian areas and uplands. Plants can influence soil moisture and temperature, air temperature, water temperature, wind speed, and relative humidity. An example of this microclimate effect is the difference in temperature and humidity on a hot day between a shady forest and a parking lot in the full sun.

Fish and Aquatic Habitat. In-water habitat structure is important for fish and aquatic species. Certain configurations of pool and riffle sequences in the stream channel, off-channel wetlands, side channels, oxbows, meanders, backwaters, frequently flooded areas (10-year flood or higher frequency), and spawning gravel provide an important diversity of structural habitat. This variety of habitat structure supports species diversity and supports different life stages of individual species.

Organic Materials. Natural material from plants near streams and wetlands that falls into the stream or wetland or onto the ground provides food for fish and other animals. Scientists refer to this as organic inputs. This material is also known as litterfall and is important for riparian area success. Litterfall, such as leaves, twigs, bark, and needles, can fall to the ground or directly into the stream providing an important food source for insects and other bugs. Insects and bugs in the water, and on streamside vegetation, are also an important food source for fish, including young salmon, and other wildlife. Insects from streamside areas are known to make up to half of a young salmon's diet in the summer.

Riparian and Upland Wildlife Habitat Quality. Riparian and upland areas are important to wildlife for a number of reasons. Riparian areas, by definition, are close to the water sources on which wildlife depend. In riparian areas there also tends to be a greater variety of plants which means more places to hide, more places to nest or den, and a greater variety of food. Stream corridors provide a way for wildlife to access other habitat types and, in urban areas, provide places for them to move around safely. More wildlife species occur in and use riparian areas than other types of habitat in Oregon and Washington.

Non-riparian resource areas are also important to wildlife. Upland forests, and other natural areas provide sources for food, cover, nesting and denning. These areas also provide travel corridors and resting places for species moving between habitats. Edge habitat occurs where one habitat type, such as a forest, meets a meadow, stream, or other habitat type.

Upland Sensitive Species. Habitat areas that provide the life-history requirements for known sensitive animal and plant species are important for maintaining these populations.

Upland Interior Habitat. Large intact habitat patches are important for specific wildlife populations. Long-term trends in wildlife populations are directly related to the area of habitat available—the larger the patch, the longer a population can sustain itself. While edge habitats often contain a high number of species, many sensitive species that need interior habitat are unable to survive in edge areas. The size of a habitat patch, as well as the shape, impact the amount of edge and interior habitat available for wildlife use.

Significance Matrix. Each of the resource functions described above is represented in the criteria developed for determining the relative importance or “significance” of the resource areas identified in the inventory. The Pleasant Valley Significance Matrix (Table 2) identifies the applicable resource functions, the landscape features that contribute to the function, and the criteria used to weigh the quality or relative importance of the function.

The significance criteria (or parameters) are divided into two categories called “primary factors” and “contributing factors.” Primary factors are characteristics that, when present, represent significant resource function in and of themselves. Primary factors are highly correlated with resource functionality as described in the scientific literature (e.g., areas of frequent flooding; hydrologically connected wetlands, etc.).

Contributing factors are characteristics that have limited or moderate importance in terms of resource function. Contributing factors are generally associated with riparian landscape features that are farther from streams or wetlands, or have lower habitat quality ratings, but which the scientific studies indicate have an important connection or functional relationship with the resource area. Contributing factors may establish a resource area as significant when considered in combination with other primary or contributing factors.

The significance criteria (and primary and contributing factors) are based on suggested buffer widths and/or other size or distance thresholds recommended in recent scientific literature pertaining to riparian and upland wildlife habitat functions. Table 3 provides a summary of these recommendations by function.

GIS-SUPPORTED SIGNIFICANCE MAPPING

A GIS-supported mapping process was developed to map the significant natural resources within the Pleasant Valley site. This process provides detailed information explaining why natural resources areas are deemed significant. The GIS program can easily and quickly incorporate new or updated data or criteria, and it produces a set of maps that can be easily accessed and distributed. The process also reflects a clear and logical set of steps that can be followed and repeated.

The GIS mapping process begins with the selection of specific data layers to represent landscape features that contribute to the identified riparian and wildlife habitat functions. Each GIS data layer represents a landscape feature that contributes to the riparian and upland wildlife functions. All of the natural resource information collected for the Pleasant Valley site (and described previously in this document) was converted into individual GIS data layers for use in the significance mapping process.

The GIS model searches for and maps features from each data layer than meet appropriate spatial parameters. Spatial parameters are also based on the factors set forth in the Pleasant Valley Significance Matrix. The GIS search area for primary factors generally extends to lower end of the range of buffer widths or distance thresholds found in the literature. However all areas within the first 50 feet of a water body were deemed significant. The GIS search area for features that serve as contributing factors extend from primary factor area out to the greatest distance found in the scientific literature. For example, vegetation, water bodies, and floodplains are those landscape features most essential to maintain the Organic Materials function. Vegetation contributes leaf litter, branches, logs, and other organic matter for fish and other wildlife to consume or utilize in other ways. The Pleasant Valley Significance Matrix identifies vegetation within 75 to 170 feet of a stream or water body as important for this function. The GIS mapping program maps all vegetation within 75 feet of a stream or wetland as a primary significant factor for the Organic Materials function, and vegetation between 75 feet and 170 feet of a stream or wetland as a contributing factor for this function.

Significance Determination. Areas with one or more primary factors were determined to be significant natural resources (see Map12). Areas with no primary factors were not determined to be significant because the number of contributing factors occurring together was not sufficient to warrant a significance determination. In no case did more than four (out of nine) contributing factors occur together at a particular location, and in most cases fewer than four contributing factors occur at a particular location. The area that has been deemed significant by this study is generally consistent with the resource areas that Metro has deemed regionally significant by Metro as part of the regional Goal 5 program development currently underway.

TABLE 2. PLEASANT VALLEY SIGNIFICANCE MATRIX

Resource Functions	Land Features with Functional Value	Land Features	Database Field	Representative GIS Data Layer (Year) [Source]	Primary Factor	Contributing Factor
<p>Water Quality</p> <p>(including sediment filtering, nutrient/pollutant filtering, erosion control, thermal regulation, and stream bank stability)</p>	<p>Vegetation and streambank areas. Vegetation growing from the streambank can help prevent erosion. Roots and fallen tree trunks may also stabilize stream channel banks. Artificial channelization of stream reaches can lead to additional erosion in other downstream reaches.</p> <p>Vegetation growing in the riparian area filters sediment, excess nutrients, and chemical pollutants from stormwater runoff. This functional value occurs where stormwater is allowed to flow through riparian vegetation before entering the stream channel.</p> <p>Riparian vegetation preserves uncompacted topsoil that is rich in organic materials and allows stormwater to infiltrate into the ground rather than flow over the surface (reduced surface erosion).</p> <p>Wetlands and floodplains. Wetlands and vegetated floodplains help to purify water by removing sediments, excess nutrients, and chemical pollutants.</p>	Vegetation	Wqual_veg	<ul style="list-style-type: none"> • Concept Plan Habitat¹ (2002) [METRO] • Concept Plan Wetland Inventory (2002) [METRO] • Slope (2001) [BOP] • Concept Plan Streams (2002) [METRO/BOP] 	<ul style="list-style-type: none"> – Vegetation within 50' of stream or wetland – Vegetation within 200' of stream or wetland if slope \geq 25% 	<ul style="list-style-type: none"> – Woody vegetation within 50' - 200' of a stream or wetland if slope < 25% (maximum 860')
		Healthy Soil ²	Wqual_soil	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Concept Plan Wetland Inventory (2002) [METRO] • Slope (2001) [BOP] • Concept Plan Streams (2002) [METRO/BOP] 	<ul style="list-style-type: none"> – Healthy soils within 50' of stream or wetland – Healthy soils within 200' of stream or wetland if slope > 25% 	<ul style="list-style-type: none"> – Healthy soils within 50' - 200' of a stream or wetland if slope < 25% (maximum 860')
		Water Bodies	Wqual_wat	<ul style="list-style-type: none"> • Concept Plan Streams (2002) [METRO/BOP] • Concept Plan Wetland Inventory (2002) [METRO] 	<ul style="list-style-type: none"> – All land within 50' of a stream – All inventoried wetlands 	
		Floodplain	Wqual fld	<ul style="list-style-type: none"> • Flood Area3 (2002) [METRO/BES] • Developed Floodplain (2002) [METRO] 	<ul style="list-style-type: none"> – All land within the "Undeveloped" floodplain 	<ul style="list-style-type: none"> – All land within the "Developed" floodplain

Resource Functions	Land Features with Functional Value	Land Features	Database Field	Representative GIS Data Layer (Year) [Source]	Primary Factor	Contributing Factor
Channel Dynamics	<p>Large trees. Stream channels that have complex “structure” support a larger diversity of wildlife (for example, a variety of features, such as pools, areas of white water, meanders). Large wood that falls into the stream channel can create pools and other complex channel habitat features.</p> <p>Side-channels, oxbows, and off-channel wetlands. These areas provide refuge for fish during flooding, when the current in the main channel may be too fast.</p> <p>The Meander Zone. Low gradient streams tend to “snake” across their floodplain in a series of “S”-curves. This is a natural hydrologic process. Altering this natural flow pattern in one location can cause significant change in another location as the stream seeks a new equilibrium. Human structures built in the meander zone can interfere with natural stream hydrology, and lead to decreased in-stream habitat complexity.</p> <p>Streambank Areas. The landscape in close proximity to a stream is a dynamic place. Pools, small backwaters, meanders, and other important stream channel features will not form if the channel is confined to a narrow space.</p>	Vegetation	Chdyn_veg	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Concept Plan Fish Presence Layer (2002) [METRO] • Concept Plan Fish Barriers Layer (2002) [METRO] • Concept Plan Channel Meander Zone (2002) [METRO] • Concept Plan Wetland Inventory (2002) [METRO] • Flood Area (2002) [METRO/BES] • Concept Plan Streams (2002) [METRO/BOP] 	<p>– Vegetation within 50’ of a stream, stream meander zone, or wetland connected to a stream⁴</p> <p>– Vegetation within the floodplain</p>	– Vegetation within 50-295’ of fish-accessible stream
	Water Bodies	Chdyn_wat	<ul style="list-style-type: none"> • Concept Plan Streams (2002) [METRO/BOP] • Concept Plan Wetland Inventory (2002) [METRO] • Flood Area (2002) [METRO/BES] 	<p>– All land within 50’ of a stream</p> <p>– Wetlands within the floodplain</p>		

Resource Functions	Land Features with Functional Value	Land Features	Database Field	Representative GIS Data Layer (Year) [Source]	Primary Factor	Contributing Factor
Channel Dynamics Cont.		Floodplain	Chdyn_fld	<ul style="list-style-type: none"> Flood Area (2002) [METRO/BES] Developed Floodplain (2002) [METRO] 	– All land within the “Undeveloped” floodplain	– All land within the “Developed” floodplain
Water Quantity: Stream Flow, Sources, and Storage	<p>Springs, seeps, and wetlands. These land features supply water to streams (cold water sources are particularly important in an urban area).</p> <p>Floodplains and wetlands. These areas store floodwaters and reduce “flashy” stream hydrology.</p> <p>Forests. Headwaters and riparian forests act as a sponge to hold water, slow stormwater runoff, and maintain stable flow in streams (baseflow). Un-compacted topsoil rich in organic materials can hold water and slow stormwater runoff.</p>	Vegetation	Wquan_veg	<ul style="list-style-type: none"> Concept Plan Habitat (2002) [METRO] 		– Vegetation within 984’ of stream
		Healthy Soil	Wquan_soil	<ul style="list-style-type: none"> Concept Plan Habitat (2002) [METRO] 		– Healthy soil within 984’ of a stream
		Water bodies	Wquan_wat	<ul style="list-style-type: none"> Concept Plan Streams (2002) [METRO/BOP] Concept Plan Wetland Inventory (2002) [METRO] 	<ul style="list-style-type: none"> – All land within 50’ of streams and isolated wetlands. – All land within 100’ of wetlands connected to a stream 	
		Floodplain	Wquan_fld	<ul style="list-style-type: none"> Flood Area (2002) [METRO/BES] 	– All land within flood areas	

Resource Functions	Land Features with Functional Value	Land Features	Database Field	Representative GIS Data Layer (Year) [Source]	Primary Factor	Contributing Factor
Microclimate	<p>Stands of trees and shrubs. Stands of trees and other vegetated areas can impact air temperature and humidity within both upland and riparian areas. The local humidity and air temperature can impact water temperature in small streams and impact localized habitat conditions.</p> <p>Topographic features. Localized topography can also impact air temperature and humidity (for example, habitats on a north slope or within a deep gorge may be cooler).</p>	Vegetation	Micro_veg	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Concept Plan Wetland Inventory (2002) [METRO] • Concept Plan Streams (2002) [METRO/BOP] 	– Woody vegetation within 50’ of water body	– Woody vegetation contiguous extent (maximum 984’)
		Water bodies	Micro_wbod	<ul style="list-style-type: none"> • Concept Plan Streams (2002) [METRO/BOP] • Concept Plan Wetland Inventory (2002) [METRO] 	– All land within 50’ of a stream or wetland	
		Floodplain	Micro_fld	<ul style="list-style-type: none"> • Flood Area (2002) [METRO/BES] • Developed Floodplain (2002) [METRO] 	– All land within the “Undeveloped” floodplain	– All land within the “Developed” floodplain
Fish and Aquatic Habitat	In-water habitat structure. Certain configurations of pool and riffle sequences in the stream channel, off-channel wetlands, side channels, oxbows, meanders, backwaters, frequently flooded areas (10-year flood or higher frequency), known spawning gravel.	Aquatic Habitat	Ahab_hab	<ul style="list-style-type: none"> • Concept Plan Fish Habitat Rating (2002) [METRO] 	<ul style="list-style-type: none"> – Within 100’ of high or medium rated stream segment – Within 50’ of low rated stream segment 	

Resource Functions	Land Features with Functional Value	Land Features	Database Field	Representative GIS Data Layer (Year) [Source]	Primary Factor	Contributing Factor
Fish and Aquatic Habitat Cont.		Sensitive Species	Ahab_sens	<ul style="list-style-type: none"> • Concept Plan Sensitive Species (2002) [METRO] • Concept Plan Channel Meander Zone (2002) [METRO] • Concept Plan Fish Habitat Rating (2002) [METRO] 	– All land within 200’ of a channel meander zone of a stream containing aquatic sensitive species or potential habitat for sensitive species ⁵	
		Wetlands	Ahab_wet	<ul style="list-style-type: none"> • Concept Plan Wetland Inventory (2002) [METRO] 	– All inventoried wetlands	
		Floodplain	Ahab_fld	<ul style="list-style-type: none"> • Flood Area (2002) [METRO/BES] • Concept Plan Channel Meander Zone (2002) [METRO] • Concept Plan Fish Presence (2002) [METRO] • Concept Plan Fish Barriers (2002) [METRO] 	– All land within channel meander zone of accessible reach	<ul style="list-style-type: none"> – Within channel meander zone of upstream reach – Within flood prone areas
Organic Materials	<p>Vegetation. Trees and other overhanging vegetation are a source of leaf-litter, fallen branches, logs, and other organic matter. This material is an important food source for the organisms that fish eat (aquatic and terrestrial invertebrates).</p> <p>Floodplains. Organic material can enter the aquatic environment by falling into the stream, or when the stream floods and</p>	Vegetation	Orgm_veg	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Concept Plan Wetland Inventory (2002) [METRO] • Concept Plan Streams (2002) [METRO/BOP] 	<ul style="list-style-type: none"> – Vegetation within 75’ of stream – Vegetation within 75’ of a wetland 	<ul style="list-style-type: none"> – Vegetation within 75-170’ of stream – Vegetation within 75 - 170’ of a wetland

Resource Functions	Land Features with Functional Value	Land Features	Database Field	Representative GIS Data Layer (Year) [Source]	Primary Factor	Contributing Factor
	carries away organic material from a vegetated area.	Water bodies	Orgm_wet	<ul style="list-style-type: none"> • Concept Plan Wetland Inventory (2002) [METRO] 	<ul style="list-style-type: none"> – All land within 10' of a stream – All inventoried wetlands 	
		Floodplain	Orgm_fld	<ul style="list-style-type: none"> • Flood Area (2002) [METRO/BES] • Developed Floodplain (2002) [METRO] 	<ul style="list-style-type: none"> – All land within the “Undeveloped” floodplain 	<ul style="list-style-type: none"> – All land within the “Developed” floodplain
Riparian and Upland Wildlife Habitat Quality	<p>Vegetation or land features that provide food and cover for wildlife. Water and food sources, and structure for nesting, dening, rearing, and cover are important indicators of habitat quality.</p> <p>Corridors and connected patches of native vegetation. Wildlife populations that are connected to each other are more likely to survive over the long term than isolated ones. Many species must migrate seasonally to meet basic needs for food, shelter and breeding, and connections between habitat patches allow this migration to occur. Corridors play an important role in urban areas to provide opportunity for migration and movement, including between upland and riparian habitats.</p>	Vegetation	Uhab_veg	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Concept Plan Wetland Inventory (2002) [METRO] • Concept Plan Streams (2002) [METRO/BOP] 	<ul style="list-style-type: none"> – Vegetation within 100' of a stream or wetland 	<ul style="list-style-type: none"> – Vegetation within 100-300' of a stream
		Structure	Uhab_stru	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Concept Plan Habitat Sub-watershed WHA Scores (2002) [METRO] • Concept Plan Habitat Corridor (2002) [METRO] 	<ul style="list-style-type: none"> – Within 50' of wildlife habitat areas⁶ with WHA score of 45 or more – Wildlife habitat areas within identified habitat corridors 	<ul style="list-style-type: none"> – Within 50' of wildlife habitat areas with WHA >34 and < 45
		Water bodies	Uhab_wat	<ul style="list-style-type: none"> • Concept Plan Wetland Inventory (2002) [METRO] • Concept Plan Streams (2002) [METRO/BOP] 	<ul style="list-style-type: none"> – All land within 50' of water body 	

Resource Functions	Land Features with Functional Value	Land Features	Database Field	Representative GIS Data Layer (Year) [Source]	Primary Factor	Contributing Factor
		Floodplain	Uhab_fld	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Flood Area (2002) [METRO/BES] 		– All land within flood prone areas
Upland Sensitive Species	Sensitive species habitats. Areas that provide life-history requirements for sensitive animal and plant species are important for maintaining sensitive species populations.	Vegetation	Usen_veg	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] • Concept Plan Sensitive Species (2002) [METRO] 	– Wildlife habitat areas within 100' of terrestrial sensitive species point (including contiguous extent of wildlife habitat area)	– Wildlife habitat areas within 100' - 300' of terrestrial sensitive species point (including contiguous extent)
Upland Interior Habitat	Large intact habitat patches. Long-term trends in wildlife populations are directly related to the area of habitat available—the larger the patch, the longer a population can sustain itself.	Vegetation Patches	Uint_veg	<ul style="list-style-type: none"> • Concept Plan Habitat (2002) [METRO] 	– Wildlife habitat areas with an acre or more of interior habitat ⁷	

¹ The Concept Plan Habitat layer includes inventoried meadows and low structure vegetation.

² Vegetation is used as a surrogate feature for healthy soil (healthy soils are assumed to be vegetated).

³ The flood area includes the 100-year floodplain; the 1996 flood inundation area and the Concept Plan delineated stream meander zone.

⁴ Wetlands that begin within 150' of a stream centerline are considered connected to a stream.

⁵ Includes all stream meander zones downstream from a high or medium fish habitat rated stream segment or aquatic sensitive species point.

⁶ Wildlife habitat areas include all woody vegetation (forest and/or low structure woody vegetation).

⁷ Interior habitat defined as the area of a vegetation patch less a 200' "buffer" from the outside edge.

TABLE 3. BUFFER WIDTHS AND OTHER SPATIAL INDICATORS OF SIGNIFICANT RIPARIAN AND WILDLIFE HABITAT FUNCTION

	FUNCTION	STUDY	MINIMUM WIDTH³ OR SIZE THRESHOLD
Organic material	Organic material	FEMAT 1993	100 ft or .5 SPTH
	Organic litter	Spence et al. 1996	.75 SPTH (75-128')
	Large wood (to riparian area)	FEMAT 1993*	1 SPTH of 170 ft.
	Benthic communities	Erman et al. 1977	100 ft
	Benthic communities	FEMAT 1993*	100 ft
<i>Range of width for function 75-170 ft.</i>			
Channel Dynamics	Large wood	FEMAT 1993*	1 SPTH or 170 ft.
	Large wood	May 2000	1 SPTH or 197-295 ft.
	Large wood	Pollock and Kennard 1998*	1 SPTH or 105-250 ft
	Large wood	Van Sickle and Gregory 1990	164 ft
	Large wood	Spence et al. 1996	170 ft
	Erosion control	Knutson and Naef 1997*	100-125 ft.
	Bank stability	Spence et al. 1996	.5 SPTH or 50-75"
	Bank stability	Todd 2000*	49 ft.
	Channel morphology	Johnson and Ryba 1992	65-100 ft
	Channel migration zone	Pollock and Kennard 1998*	100-year floodplain
<i>Range of width for function 49-295 ft/100-year floodplain</i>			
Water Quality	Water quality	FEMAT 1993	12-860 ft
	Water quality	Metro 1997*	50-200 ft
	Filter pollution	Knutson and Naef 1997*	13-600 ft.
	Nutrient regulation	Spence et al. 1996	.75 SPTH o (75-128'
	Nutrient removal	Todd 2000*	33-98 ft
	Filter sediment	FEMAT 1993	200 ft
	Filter sediments	Knutson and Naef 1997*	26-300 ft
	Filter sediments	Johnson and Ryba 1992 citing Wilson 1967*	10-400 ft
Capture surface erosion sediments on all but steep slopes	Spence et al. 1996	1 SPTH or 100-170ft	
<i>Range of width for function 10-860 ft.</i>			
Microclimate	Shade	Johnson and Ryba 1992(based, in part, on Steinblums et al 1994)	.75 SPTH or 100 ft
	Shade	FEMAT 1993	100 ft
	Stream shading	Spence 1996	.75 SPTH or 75-128'
	Shade-water temperature	May 2000	97—164 ft.
	Shade-Water temperature	Todd 2000*	15-33 ft
	Air temperature, soil, temperature, relative humidity	Brososfske, et al. 1997	148--984 ft.
	Microclimate	Knutson and Naef 1997*	200-525 ft
	Microclimate	FEMAT	.5-3 SPTH or 75-510 ft.
Microclimate	Pollock and Kennard 1998*	250 ft	
<i>Range of width for function 15-984 ft.</i>			

³ Refers to the width on each side of the stream.

* Based on author's review of literature

* Based on author's review of literature

* Based on author's review of literature

Riparian and Upland Wildlife Habitat	Riparian Wildlife habitat	FEMAT 1993 (citing Roderick and Milner 1991)	100-600 ft
	Riparian Wildlife habitat	Knutson and Naef 1997 (citing others)	25-984 ft
	Riparian Wildlife corridors	Todd 2000*	100-325 ft
	Riparian Wildlife habitat and migration corridors	Fischer et al. 2000*	325 ft
	Biodiversity	Pollock and Kennard 1998*	200 ft
	General wildlife habitat	May 2000	328 ft
	Willow flycatcher nesting	Knutson and Naef 1997	123 ft
	Full complement of herpetofauna	Rudolph and Dickson 1990	>100 ft
	Belted Kingfisher roosts	USFWS HEP Model	100 – 200 ft
	Smaller mammals	Allen 1983	214 – 297 ft
	Birds	Jones et al. 1988	246 – 656 ft
	Pileated woodpecker	Castelle et al. 1992	450 ft
	Bald eagle nest, roost, perch Nesting ducks, heron rookery and sandhill cranes	Castelle et al. 1992	600 ft
	Pileated woodpecker nesting	Small 1982	328 ft
	Mule deer fawning	Knutson and Naef 1997	600 ft
<i>Range of width for function 25 - 984 ft.</i>			
Fish and Aquatic Habitat	Cutthroat trout	Hickman and Raleigh 1982	98 ft
	Chinook salmon	Raleigh et al. 1986	98 ft
	Cutthroat trout, rainbow trout and steelhead	Knutson and Naef 1997	50 – 200 ft
	Maintenance of benthic communities (aquatic insects)	Erman et al. 1977	100 ft
	Shannon index of macroinvertebrate diversity.	Gregory et al. 1987	100 ft
	Trout and salmon influence zone (Western Washington)	Castelle et al. 1992	200 ft
	<i>Range of width for function 50 - 200 ft.</i>		
Upland Interior Habitat	Interior Habitat – Large Patch	Wilcove 1985	
	Interior Habitat – Patch Dynamics	Forman and Gordon 1986	
	Interior Habitat – Large Patch	Soule 1991	
	Interior Habitat – Large Patch	Duerkson et. al. 1997	
	Interior Habitat – Large Patch	Burke and Nol 1998	
	Interior Habitat	Metro 2002	1 acre of interior habitat
Upland Sensitive Species	Pileated woodpecker	Castelle et al. 1992	Woody Vegetation within 100-300 feet of a species siting ⁴
	Bald eagle nest, roost, perch Nesting ducks, heron rookery and sandhill cranes	Castelle et al. 1992	
	Pileated woodpecker nesting	Small 1982	
	Connectivity of patches	Adams and Dove 1989	
	Connectivity of patches	Lidicker and Koenig 1996	
	Connectivity of patches	Clergeau and Burel 1997	
<i>Range of width for function 328 - 600 ft.</i>			

⁴ This distance reflects principles gleaned from the literature cited.

SIGNIFICANCE MAPPINGS DATA SOURCES

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REFERENCE DATA

- Fish Sittings
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MODEL INPUTS:

Feature:	Pleasant Valley Streams
Original Source:	Subset of Metro's regional streams centerline dataset.
Source Path:	c:\aikevin\pleas_valley\sig_model\pv_streams (arc)
Source Format:	Coverage
Source Date:	04/07/2003
Source Description:	Based on updated, re-attributed Metro stream data originally received 1/15/2003. Stream centerlines where revised (where necessary) based on 2'/5' elevation contours and 2002/2001 aerial photos.
Source Notes:	Use chan_type <> 2 to select only surface (non-piped) streams. See coverage metadata for more information.
Metadata Reference:	None currently available – contact Bureau of Planning for more information.
Model Use:	a. To create stream buffers at specified distances.

b. To create fish stream (streams with fish presence) buffers at specified distances.
c. To create ODFW habitat (low, medium, high) buffers at specified distances.

Processing: 1. Added fish presence information to stream coverage using Metro fish siting and fish barrier data as reference. Refer to the description of these datasets for more information.
2. Added ODFW habitat information to stream coverage using ODFW aquatic habitat data as reference.

Added Database Items: ISFISHSTREAM – identifies stream centerlines with a known fish presence (based on Metro’s Pleasant Valley Concept plan fish siting data.) Includes all upstream and downstream sections of stream accessible to fish (no impassible barriers) (originally based on City of Portland Bureau of Environmental Services fish barriers data.)
ODFW_RANK – Oregon Department of Fish & Wildlife ranking (low, med., high) of in-stream aquatic habitat quality.

Distribution Name: PV_STREAMS.SHP

Feature: **Pleasant Valley Wetlands**
Original Source: Metro Pleasant Valley Archive: Data Files-1 [06/28/02 - #000436; Disk 2 of 6]; Subset of habitat.shp
Source Path: c:\aikevin\pleas_valley\sig_model\wetlands (poly)
Source Format: Coverage
Source Date: 05/2002
Source Description: Subset of the Concept Plan Habitat data – contains only those habitat areas identified as wetland or open water features.
Source Notes: Originally created by Adolfsen Associates based on 1999 Metro aerial photographs, tax lot information, 10’ elevation contours, Metro/Northwest Wetland Inventory data, and Soil Conservation Survey data. Adolfsen Associated conducted limited field verification of this information.
Metadata Reference: None – see Concept Plan Habitat Data for more information.
Model Use: a. To identify wetland areas (including vegetated wetlands).
b. To create wetland buffers at specified distances.
Processing: 1. Converted the habitat shapefile (habitat.shp) to coverage format.
2. Removed all areas not representing wetland or open water.
Added Database Items: ISWETLAND – *boolean*; wetland polygons.
Distribution Name: PV_WETLANDS.SHP

Feature: **Pleasant Valley Vegetation**
Original Source: Metro Pleasant Valley Archive: Data Files-1 [06/28/02 - #000436; Disk 2 of 6]; Subset of habitat.shp
Source Path: c:\aikevin\pleas_valley\sig_model\vegetation (poly)
Source Format: Coverage
Source Date: 05/2002

Source Description: Subset of the Concept Plan Habitat data – contains only those habitat areas identified as vegetated (meadows, shrub/scrub, forest). Includes vegetated wetlands.

Source Notes: Originally created by Adolfson Associates based on 1999 Metro aerial photographs, tax lot information, 10’ elevation contours, and Metro/Northwest Wetland Inventory data. Adolfson Associates identified and assigned vegetation classifications to vegetated areas within the Pleasant Valley study area. Limited field verification was conducted. Initially, Adolfson Associates identified 10 vegetation types. Bureau of Planning staff consolidated the 10 types into 3 for use in the significance mapping process.

Metadata Reference: None – see Concept Plan Habitat Data for more information.

Model Use: a. To identify vegetated areas.
b. To create buffers at around vegetated habitat areas at specified distances.

Processing: 1. Converted the habitat shapefile (habitat.shp) to coverage format.
2. Removed all areas not representing vegetated habitat areas.
3. Summarized the habitat data into three general types – meadow, shrub, and forest.
4. Identified wildlife habitat corridors mapped by Metro in the Concept Plan.
5. Intersected the vegetated areas with the subwatersheds to assign each area a wildlife habitat assessment (WHA) score. The highest score that any intersected any part of a contiguous area of vegetation was assigned to that area.

Added Database Items: VEG_TYPE – *string*; the type of vegetation (Forest, Shrub, Meadow).
ISWETLAND – *boolean*; vegetated wetland polygons.
ISCORRIDOR – *boolean*; vegetated areas within a wildlife corridor.
WHA_SCORE – the WHA score for a vegetated area (based on the subwatershed score as supplied by Adolfson Associates.)

Distribution Name: PV_VEGETATION.SHP

Feature: **Pleasant Valley Flood Area**

FIRST SOURCE:

Original Source: Metro RLIS - 100-year Floodplain (modified version of FEMA 100-year floodplain)

Source Path: \\cgisfile\data\shapes\hazard\ 100yr_floodplain_metro

Source Format: Shapefile

Source Date: 12/2001

Source Description: 100-Year Flood Plain as delineated by the Federal Emergency Management Association (FEMA). Digitized by the Portland Office of the Army Corps of Engineers. Updated with local input.

Source Notes: Members of the Bureau of Planning, Bureau of Environmental Services, the Endangered Species Act Group, the Water Bureau and Metro have agreed that the Metro floodplain is the most accurate information for regional modeling. Metro has modified the data to recent include changes in the Columbia Slough and Johnson Creek.

Metadata Reference: http://mazama.metro-region.org/metadata/display.cfm?Meta_layer_id=463&Db_type=rllislite#ident

SECOND SOURCE:

Original Source: Army Corps of Engineers February 1996 Flood Area
 Source Path: \\cgisfile\data\shapes\hazard\96_flood_army
 Source Format: Shapefile
 Source Date: 2/1996
 Source Description: A record peak flow in February of 1996 caused the Willamette River and its major tributaries to flood. This map was created to delineate the inundated areas near the mainstream and major tributaries of the Willamette River.
 Source Notes: Complete FGDC metadata is available from US Army Corps of Engineers, Portland District.
 Metadata Reference: http://mazama.metro-region.org/metadata/display.cfm?Meta_layer_id=796&Db_type=rllis#ident
 Model Use: a. To identify frequently flooded areas representing an approximation of the 100-year floodplain.
 Processing: 1. Converted all data to coverage format.
 2. Union 100-year floodplain (source #1) with 1996 Flood Area (Source #2) and clipped by the Concept Plan boundary to create pleasant valley flood area coverage.
 3. Identified and attributed all areas within either the 100-year floodplain, the 1996 flood area, or the stream meander zone.
 4. Removed all unneeded database items.
 Added Database Items: ISFLOOD – *boolean*; flood area polygons (either within the 100-year floodplain, the 1996 flood area, or a stream meander zone.)
 Distribution Name: PV_FLOODAREA.SHP

Feature: **Developed Floodplain**
 Original Source: Metro’s Developed Floodplain (from Goal 5)
 Source Path: c:\aikevin\HPS_Project\METRO_Goal5\Shapefiles\May_2002\devfld.shp
 Source Format: Shapefile
 Source Date: 5/2002
 Source Description: Developed floodplain areas identified as part of Metro’s Goal 5 project.
 Source Notes: None.
 Metadata Reference: C:\aikevin\HPS_Project\METRO_Goal5\Shapefiles\ Riparian GIS Data FTP.doc
 Model Use: a. To identify developed portions of the 100-year floodplain.
 Processing: 1. Converted all data to coverage format.
 2. Added field to identify developed floodplain polygons.
 Added Database Items: ISDEVFLOOD – *boolean*; developed floodplain polygons.
 Distribution Name: PV_DEVELOPED_FLOODPLAIN.SHP

Feature: **Steep Slopes**
Original Source: Bureau of Planning
Source Path: x:\maplib\common\dem_2001\slope
Source Format: Coverage
Source Date: 11/2002
Source Description: Steep slopes (greater than or equal to 25%) for the Portland metropolitan area.
Source Notes: Created from 2001 Bureau of Planning 10' DEM (created from July 2001 Metro DTM). Refer to the metadata for a complete description of this dataset.
Metadata Reference: X:/Maplib/COMMON/DEM_2001/ SLOPE_BOP_Metadata.htm
Model Use: a. To identify areas where slope >= 25%.
Processing: 1. Added item to identify all slopes >= 25%.
Added Database Items: ISSLOPE25 – *boolean*; polygons where slope >= 25%.
Distribution Name: PV_STEEP_SLOPES.SHP

Feature: **Pleasant Valley Stream Meander Zones**
Original Source: Metro Pleasant Valley Archive: Data Files-1 [06/28/02 - #000436; Disk 2 of 6]; ESA_T3 (coverage)
Source Path: c:\aikevin\pleas_valley\sig_model\meander (poly)
Source Format: Coverage
Source Date: 4/7/2003
Source Description: Stream meander zones.
Source Notes: Originally created by Adolfsen Associates for the Pleasant Valley Concept Plan based on 1999 Metro aerial photographs, 10' elevation contours, Soil Conservation Survey information, and NOAA Fisheries standard method for identifying channel migration zones. Updated by Bureau of Planning to include areas missing from the original mapping (see Stream Meander Zones data.).
Metadata Reference: None.
Model Use: a. To create stream meander zone buffers at specified distances.
b. To create fish stream (streams with fish presence) meander zone buffers at specified distances.
c. To create medium/high ODFW habitat stream meander zone buffers at specified distances.
Processing: 1. Added missing stream meander zone areas (to upper Jenny Creek, for example.) Estimated location of meander zone using 2'/5' contours and 2001/2002 aerial photos.
2. Added fish presence information to stream meander zone coverage using Metro fish siting and fish barrier data as reference. Refer to the description of these datasets for more information.
3. Added ODFW habitat information to stream meander zone coverage using ODFW aquatic habitat data as reference.
Added Database Items: ISMEANDER - *boolean*; stream meander zones.
ISFISHMEAN – identifies stream meander zones with a known fish presence (based on Metro's Pleasant Valley Concept plan fish siting and aquatic sensitive species data.) Includes all upstream and downstream

sections of stream accessible to fish (no impassible barriers) (based on Metro's Pleasant Valley Concept plan fish barriers data.) Also identifies stream meander zones that are downstream of any medium or high ODFW ranked aquatic habitat.

ESTIMATED – *boolean*; identifies meander zones added by City of Portland Bureau of Planning (digitized using 2'/5' elevation contours and 2001/2002 aerial photos as reference.) Not field verified.

Distribution Name: PV_MEANDER_ZONES.SHP

Feature: **Pleasant Valley Sensitive Species Sittings**
Original Source: Metro Pleasant Valley Archive: Data Files-1 [06/28/02 - #000436; Disk 2 of 6]; OBSERVE (coverage)
Source Path: c:\aikevin\pleas_valley\sig_model\sensspecies (point)
Source Format: Coverage
Source Date: 06/2002
Source Description: Sensitive species (upland and aquatic/riparian) sittings.
Source Notes: Originally created by Adolphson Associates based on lists of sensitive species sittings included in independent studies (Johnson Creek Predesign: Wildlife Habitat Assessments, Wetlands Delineation's, and Functional Value Assessment; Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2000) reporting on sensitive species sittings from local botanists and community members, and field observations.
Metadata Reference: None – refer to Concept Plan “Resource Management” map for more information.
Model Use: a. To identify stream meander zones containing aquatic sensitive species (see stream meander zone data.)
b. To create sensitive species buffers at specified distances.
Processing: 1. Added field to identify “Aquatic” or “Upland” sensitive species.
Added Database Items: SPEC_TYPE – identifies AQUATIC/UPLAND sensitive species based on the species code (refer to the Concept Plan “Resource Management” map for an explanation of species codes.
Distribution Name: PV_SENSITIVE_SPECIES.SHP

Feature: **Pleasant Valley Concept Plan Boundary**
Original Source: Metro Pleasant Valley Archive: Data Files-1 [06/28/02 - #000436; Disk 2 of 6]; subset of PV (coverage)
Source Path: c:\aikevin\pleas_valley\sig_model\pv_bnd (poly)
Source Format: Coverage
Source Date: 06/2002
Source Description: Metro's Concept Plan boundary for the Pleasant Valley area.
Metadata Reference: None.
Model Use: a. To limit the model output to the concept plan boundary.
Processing: 1. Selected 3 areas within the Concept Plan boundary; removed all other areas.
Added Database Items: None.
Distribution Name: PV_PLAN_BOUNDARY.SHP

Feature: **Pleasant Valley Fish Presence**
Original Source:
Source Path:
Source Format: Coverage
Source Date:
Source Description: Stream reaches where fish could live because no barrier to their passage into and out of the reach exists.
Source Notes: This Bureau of Planning created this data by identifying stream reaches that are downstream from a barrier (see Pleasant Valley Fish Barrier)
Metadata Reference:
Model Use:
Processing:
Added Database Items:
Distribution Name:

Feature: **Pleasant Valley Fish Barriers**
Original Source:
Source Path:
Source Format: Coverage
Source Date:
Source Description: Barriers to fish passage.
Source Notes: Originally created by the Bureau of Environmental Services based on a study conducted by the Oregon Department of Fish and Wildlife ([Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2001](#)). This study identified fish barriers in the study area. Additional fish barrier information was added based on field observations.
Metadata Reference: .
Model Use:
Processing:
Added Database Items: .
Distribution Name:

Feature: **Pleasant Valley Fish Habitat Rating**
Original Source:
Source Path:
Source Format: Coverage
Source Date:
Source Description: Aquatic habitat rating.
Source Notes: Ratings were originally created by the Bureau of Environmental Services based on an study conducted by the Oregon Department of Fish and Wildlife ([Aquatic Inventories Project: Physical Habitat Surveys—Kelley Creek and tributaries 1999-2001](#)). ODFW provided a rating of high, medium, or low for stream reaches in the study area.

Metadata Reference:

Model Use:
Processing:
Added Database Items:
Distribution Name:

Feature: **Pleasant Valley Wildlife Habitat Rating**
Original Source:
Source Path:
Source Format: Coverage
Source Date:
Source Description: Wildlife habitat rating for each Pleasant Valley subarea.
Source Notes: Originally created by selecting all woody vegetation within the Pleasant Valley subareas and assigning the vegetation a rank of high or low based on the Wildlife Habitat Assessment score for the subarea. A WHA score of 45 or higher received a wildlife habitat rating of high. A WHA score of less than 45 received a wildlife habitat rating of low. The WHA rating was generated by Adolphson Associates using the standard Wildlife Habitat Assessment form.

Metadata Reference: .
Model Use:
Processing:
Added Database Items:
Distribution Name:

Feature: **Pleasant Valley Wildlife Corridors**
Original Source:
Source Path:
Source Format: Coverage
Source Date:
Source Description: Wildlife corridors within the study area.
Source Notes: Originally created by the project team by looking at the location of vegetation on aerial photographs, reviewing the locations of wildlife sightings and using professional judgement to vegetated corridors between wildlife sightings.

Metadata Reference: .
Model Use:
Processing:
Added Database Items:
Distribution Name:

REFERENCE DATA:

Feature: **Pleasant Valley Fish Sitings**
Original Source: Metro Pleasant Valley Archive: Data Files-1 [06/28/02 - #000436; Disk 2 of 6]; FISHSITE (shapefile)
Source Path: c:\aikevin\pleas_valley\metro_data\pv_fish_sitings.shp
Source Format: Shapefile
Source Date: 06/2002
Source Description: Metro's Concept Plan fish siting data.
Metadata Reference: None.
Processing: None.
Added Database Items: None.
Distribution Name: PV_FISH_SITINGS.SHP

Feature: **Pleasant Valley Fish Barriers**
Original Source: Metro Pleasant Valley Archive: Data Files-1 [06/28/02 - #000436; Disk 2 of 6]; FISHBARRIER (coverage)
Source Path: c:\aikevin\pleas_valley\metro_data\pv_fish_barriers.shp
Source Format: Shapefile
Source Date: 06/2002
Source Description: Metro's Concept Plan fish barriers and culverts.
Metadata Reference: None.
Processing: None.
Added Database Items: None.
Distribution Name: PV_FISH_BARRIERS.SHP

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ECONOMIC, SOCIAL, ENVIRONMENTAL, AND ENERGY ANALYSIS

INTRODUCTION

This section presents the third step in the State Goal 5 Planning process: the ESEE Analysis. This step follows the Inventory and Significance Determination steps, which are addressed in the previous section. The analysis includes the identification of conflicting uses and the analysis of economic, social, environmental, and energy (ESEE) consequences of protecting, partially protecting, or not protecting significant resources and their impact areas where conflicts exist.

BACKGROUND

“The Pleasant Valley...area is a beautiful valley surrounded by lava domes in the southeast portion of the Metro region. It has slowly evolved into a rural residential area over the last 30 years, largely displacing the agricultural uses that once occupied the valley. Now urban development has reached the borders of this community, and rapid and substantial change is in this area’s immediate future. As the area is planned for urbanization, the primary goal is to create a place rather than a carpet of subdivisions. To accomplish this, the unique attributes of this area need to be identified and protected, and the limits to development in the area respected.”

(From a 1998 planning process led by local communities)

The goal of creating a community that allows intensive urban development while protecting the area’s unique attributes was a central theme of the Pleasant Valley Concept Plan. Critical to the “sense of place” in Pleasant Valley, according to the Plan, is the extensive network of streams, wetlands, and other natural features that define and connect urban neighborhoods. Plan goals highlighted the importance of developing the valley in such a way as to minimize impact on these natural features, while maintaining natural features that enhance the built environment.

Through the Concept Planning process, significant natural features and their important functions were identified and mapped. Collectively, this natural system serves as the green framework for the Concept Plan, and was known as the Environmentally Sensitive/Restoration Area (ESRA). The area within the ESRA boundaries corresponds to the significant Goal 5 resource site.

The Concept Plan also included a broad outline for a “limited protection” regulatory program for the significant resource site (also called the ESRA) and for planned intensive urban development within the remainder of the Pleasant Valley planning area. However, the ESEE consequences of “full protection”, “limited protection”, and “no protection” will be considered in this document, as required by the Goal 5 rule.

IMPACT AREA DETERMINATION

Statewide Planning Goal 5 requires local governments to identify “impact areas” for significant Goal 5 resource sites. In this case, the impact area for the significant resource site is the entire Pleasant Valley planning area outside the site.

Under all three Goal 5 conflicting use scenarios (full protection, limited protection, and no protection), there are strong inter-relationships between the significant resource site and its surrounding impact area. The planned intensive urbanization of Pleasant Valley will have a broad array of potential impacts on significant natural resources and vice versa. For example, full protection of the significant resource site would mean that public facilities and services necessary to serve planned development could not be extended through the significant resource site. Similarly, unrestricted development within the impact area (i.e., no green development practices) would result in substantial adverse impacts on water quality and fish habitat functions within the resource site. Thus, the level of protection applied to the significant resource site and its impact area will have distinct economic, social, environmental and energy consequences for the site and for the entire Pleasant Valley planning area.

Because of these mutual impacts, the Goal 5 “impact area” for the significant resource site is the remainder of the Pleasant Valley planning area. The ESEE analysis will focus on the consequences of fully protecting, partially protecting, and not protecting significant Goal 5 resources within the resource site and the impact area—in the context of potential urban development within the Pleasant Valley planning area as a whole.

CONFLICTING USE ANALYSIS

Following the significance determination for inventoried Goal 5 resources, local governments must identify conflicting uses for the resource site and its impact area. Under the Administrative Rule for Goal 5, a conflicting use is one that, if allowed, could negatively impact a significant resource site or its impact area. The rule directs local governments to examine existing uses and potential conflicting uses based on applicable zoning:

“Local governments shall identify conflicting uses that exist, or could occur, with regard to significant Goal 5 resource sites. To identify these uses, local governments shall examine land uses allowed outright or conditionally within the zones applied to the resource site and in its impact area.”

To determine “land uses allowed outright or conditionally within the zones applied” for the Pleasant Valley significant resource site and impact area, current zoning and regulations will be evaluated. The analysis also addresses future zoning as envisioned in the Pleasant Valley Concept Plan and Implementation Plan. The conflicting use analysis is therefore based on uses allowed by existing county zoning and by uses that are envisioned to be allowed in the future. The conflicting use analysis considers uses allowed outright or conditionally. Existing land uses and planned public facilities are also considered.

Agriculture and rural residential are the most widespread existing use within the planning area, and within the significant resource site. Other existing uses include parks, recreational activities, churches, schools, community services, streets and utilities. The following lists detail the current Multnomah and Clackamas County zoning districts that apply to the resource site and impact area. The lists also includes the anticipated zoning districts that will apply to the area as a result of the Pleasant Valley Implementation Plan:

Multnomah County:

- Rural Residential (RR);
- Retail Commercial (C3);

Clackamas County:

- Rural Residential Farm Forest 5 Acres (RRFF-5);
- Farm Forest 10-Acre District (FF-10); and
- Future Urbanizable 10-Acre District (FU-10).

Pleasant Valley Implementation Plan:

Residential Districts

- Low Density Residential—5.3 to 7.9 dwelling units per net buildable acre
- Medium Density Residential—12.2 to 18.2 dwelling units per net buildable acre
- High Density Residential—20 to 60 dwelling units per net buildable acre

Commercial, Mixed-Use Districts, and Employment Districts

- Town Center
- Neighborhood Center
- Mixed Use Employment
- Employment

The following sections describe the uses permitted within these zones, and the potential conflicts and environmental impacts caused by these uses.

USES PERMITTED BY ZONING

The following discussion identifies allowed land uses in each applicable County base zone and the uses that are anticipated to be allowed as a result of the Pleasant Valley planning process. Table 1 lists permitted and conditional uses within the existing Multnomah and Clackamas County zones. Following Table 1 is a discussion of the individual zones, their general location within the planning area, allowed uses within each zone, and existing uses within each zone.

Table 1. Uses Permitted by Multnomah and Clackamas County Zoning

Zone	Allowed/Accessory Uses	Prescribed/Conditional Uses	Allowed Density
Multnomah County*			
RR	<ul style="list-style-type: none"> ▪ Rural residential ▪ Limited farm/forest use ▪ Resource conservation uses ▪ Accessory structures and signs ▪ Home occupations and daycare 	<ul style="list-style-type: none"> ▪ Rural commercial services ▪ Farm related commercial uses ▪ Intensive animal farming ▪ Produce stand ▪ Planned developments ▪ Public safety and service structures ▪ Mining and geothermal 	1 dwelling unit/5 acres
Clackamas County			
RRFF5	<ul style="list-style-type: none"> ▪ Rural residential ▪ Farming and forest operations ▪ Resource conservation uses ▪ Non-profit recreation uses ▪ Utilities and wireless telecommunication facilities ▪ Accessory structures and signs ▪ Home occupations and family daycare ▪ Produce stand 	<ul style="list-style-type: none"> ▪ Public facilities ▪ Community service uses (churches, schools, day care center) ▪ Aircraft land uses ▪ Sanitary landfills ▪ Commercial recreational uses ▪ Mining and geothermal ▪ Commercial activities associated with timber and farm uses. 	1 dwelling unit/5 acres
FF10	<ul style="list-style-type: none"> ▪ Rural residential ▪ Farming and forest operations ▪ Resource conservation uses ▪ Non-profit recreation uses ▪ Utilities and wireless telecommunication facilities ▪ Accessory structures and signs ▪ Home occupations and family daycare ▪ Produce stand 	<ul style="list-style-type: none"> ▪ Public facilities ▪ Community service uses (churches, schools, day care center) ▪ Aircraft land uses ▪ Sanitary landfills ▪ Commercial recreational uses ▪ Mining and geothermal ▪ Commercial timber and farm uses. ▪ Dog kennels ▪ Hydroelectric 	1 dwelling unit/10 acres
FU 10	<ul style="list-style-type: none"> ▪ Rural residential ▪ Farming and forest operations ▪ Resource conservation uses ▪ Non-profit recreation uses ▪ Utilities and wireless telecommunication facilities ▪ Accessory structures and signs ▪ Home occupations and family daycare ▪ Produce stand 	<ul style="list-style-type: none"> ▪ Public facilities ▪ Expansion of community service uses (churches, schools, day care center) ▪ Aircraft land uses ▪ Sanitary landfills ▪ Commercial recreational uses ▪ Commercial activities associated with timber and farm uses. ▪ Dog kennels ▪ Hydroelectric 	1 dwelling unit/10 acres

* Multnomah County land includes a single lot zoned commercial (C3), which is addressed as part of the "impact area" discussed later.

MULTNOMAH COUNTY ZONING

Rural Residential (RR). All of Multnomah County within the Pleasant Valley plan area is zoned RR except for one property (a single lot zoned commercial (C3), which is addressed as part of the “impact area” discussion). The RR zone is intended to provide areas for residential use consistent with desired rural character. Agriculture, forestry, and very low-density single-dwelling residences are the primary allowed uses. The maximum density is one dwelling unit per five acres. Limited rural service commercial uses, community service uses, and mining are permitted with certain limitations or as conditional uses.

Existing conflicting uses within the RR zone include low density residential, agriculture, a community center, church, school, and local service commercial.

CLACKAMAS COUNTY ZONING

Rural Residential Farm/Forest Five Acres (RRFF-5). The portions of Clackamas County within the Pleasant Valley plan area that are east of Foster Road along Cheldelin Road are zoned RRFF-5. The RRFF-5 zone is intended for rural living that is compatible with the continuation of farm and forest uses. The maximum density is one unit per five acres. Agriculture, forestry, and very low-density single-dwelling residences are the primary allowed uses. Non-profit park and open area uses, utilities, and certain broadcast facilities are permitted by right in the RRFF-5 zone. Churches, schools, cemeteries, for-profit parks and recreation, and broadcast facilities are permitted as conditional uses.

Existing conflicting uses within the RRFF-5 zone are rural residential and agriculture.

Farm Forest 10-Acre District (FF-10) Clackamas County. The portions of Clackamas County within the Pleasant Valley plan area that are west of Foster Road are zoned FF-10 including the northern quarter of an isolated group of properties in the southwest corner of the plan area.⁵ The FF-10 zone is intended to provide areas for rural living that are compatible with the continuation of farm and forest uses. The maximum density is one unit per ten acres. The same uses are allowed in the FF-10 zone as are allowed in the RRFF-5 zone with agriculture, forestry, and very low-density single-dwelling residences being the primary uses allowed. Non-profit park and recreation uses, utilities, and certain broadcast facilities are permitted by right in the FF-10 zone. Churches, schools, cemeteries, for-profit park and recreation uses, and broadcast facilities are permitted as conditional uses.

Existing conflicting uses within the FF-10 zone are residential and agricultural uses and a utility substation.

Future Urbanizable 10-Acre District (FU-10) Clackamas County. The FU-10 zone is applied only to two properties isolated in the southwest corner of the Pleasant Valley plan area. The FU-10 zone is intended to preserve land for future development at urban densities. The maximum density is one unit per ten acres. Agriculture, forestry, and very low-density single-dwelling residences are the primary allowed uses. Certain utilities and broadcast facilities are permitted by right in the FU-10 zone. Existing churches and schools are allowed to expand as conditional uses. Cemeteries, and some parks, recreation, and broadcast facilities are permitted as conditional uses.

The existing conflicting use within the FU-10 zone is a manufactured dwelling park.

⁵ These lots have since been annexed to Happy Valley.

PLEASANT VALLEY CONCEPT/IMPLEMENTATION PLAN ZONING

Low Density Residential (LDR). The LDR Sub-District anticipates single-dwelling detached and two-unit attached dwellings on a wide range of lot sizes with an average density of 5.3 to 7.9 dwelling per net residential acre. Development in this district will be arranged to form part of an individual neighborhood, invite walking to gathering places, services and conveniences and a neighborhood park, and connects to the larger community by a pattern of streets, blocks, trails and pedestrian ways and linkages to the significant natural resources area.

Medium Density Residential (MDR). The MDR Sub-District anticipates a range of detached and attached residential development with an average density of 12.2 to 18.2 dwellings per net acre. Development in this sub-district will be arranged to form part of an individual neighborhood, serve as a transition between low density and high density housing types and Subdistricts.

High Density Residential (HDR). The HDR Sub-District is intended to accommodate the highest density housing in Pleasant Valley, with densities ranging from 20 to 60 du/net acre, depending on location. As with the LDR and MDR Sub-District, HDR contributes to completing a variety of housing within, and as part of, individual neighborhoods. Three types of HDR areas, “attached housing” and “town center housing”, and “elderly housing”, are provided to create a complete community with housing choices that reflect differing needs and opportunities within Pleasant Valley.

Town Center (TC). The TC subdistrict permits a range of mixed uses including residential, retail, office, and other uses such as civic. The minimum Floor Area Ratio is .50:1 with a maximum building height of 40 feet. The Pleasant Valley capacity estimates for the Town Center are:

Retail—60% of land, 113,000 sq. ft. of floor area.

Office—30% of land, 131,000 square feet of floor area.

Civic—10% of land, 44,000 sq. ft. of floor area.

Residential—39 units estimated on upper levels.

Neighborhood Center (NC). NC subdistricts consist of a mix of smaller scale retail, service and office uses within walking distance or a short bus ride of surrounding single-family neighborhoods. Neighborhood Centers are pedestrian oriented as realized by inviting storefronts, comfortably scaled sidewalks and a rhythm of repetitive elements including benches, fountains, planting strips and street trees. The minimum Floor Area Ratio is .35:1 with a maximum building height of 40 feet.

Mixed Use Employment (MUE). The MUE subdistrict is located adjacent to the Town Center. The zone is service-oriented with smaller scale offices and retail uses within an easy drive and walking distance to more vibrant Town Centers. The minimum Floor Area Ratio is .50:1 with a maximum building height of 40 feet.

Employment (EC). The EC subdistrict is primarily intended to provide business/office park and medical and other employment uses. Primary uses shall include knowledge-based industries (graphic communications, creative services, etc.), research and development facilities, office uses, medical facilities and other business park uses. Emphasis is placed on business suited to a high environmental quality setting. The minimum Floor Area Ratio is .40:1 with a maximum building height of 40 feet.

CONFLICTING USE ENVIRONMENTAL IMPACTS

This section describes potential adverse environmental consequences of allowing development within the significant resource site or its impact area. Where the same impacts are identified for different conflicting uses, the initial discussion of impacts is referenced and not repeated.

Rural Residential Uses. Housing is permitted in the four rural residential zones in the planning area (RR, RRFF-5, FF-10, FU-10). Rural residential uses in Pleasant Valley generally consist of 5 to 10 acre lots, although both larger and smaller lots exist. In addition to the construction of homes, rural residential development may include the construction of garages, storage sheds, and other accessory buildings, driveways, parking areas, lawns and managed landscaped areas, septic systems and drain fields, and related development.

Preparing land for housing commonly includes excavation and removal of vegetation, or “ground disturbing activities.” Excavation and removal of vegetative cover eliminates habitat for native wildlife and increases the likelihood of erosion. Lost habitat includes feeding, nesting, perching and roosting places for birds, and loss of feeding, nesting and refuge areas for mammals, reptiles, amphibians, fish, and insects. Clearing also removes important structural habitat elements of the forest such as multiple layered canopies, snags and downed logs, and large trees. These habitat components are removed and replaced with large lawns and ornamental landscape areas or, particularly in Pleasant Valley, pastures or small field crops such as berries. Impervious surfaces such as buildings, long driveways, and large vehicle parking and maneuvering areas also may permanently replace native habitats.

Landscape trees, shrubs, and groundcover plants often include invasive, non-native species that escape into natural areas and compete aggressively with natives. For example, English ivy and holly are commonly used in residential landscapes and have escaped into nearby natural habitats in some parts of the valley.

Forest fragmentation caused by the clearing of vegetation for residential uses increases the isolation of one habitat area from another, particularly in the study area where the valley lowlands have been largely cleared, isolating habitat remnants on the surrounding hills and buttes. The lack of habitat connectivity (except along stream corridors) limits wildlife migration opportunities. Roads (and roadway traffic) and fences can form barriers to wildlife migration. As the range of habitat for indigenous wildlife becomes restricted and isolated, opportunities for recruitment from other areas are limited and wildlife populations become vulnerable to disease, predation and local extinction.

The construction of homes, outbuildings, roads and other impervious surfaces, and the replacement of native vegetation with lawns and landscaped areas has adverse consequences on watershed function. Increased impervious surface and loss of vegetation leads to increased storm runoff and peak flows in streams, resulting in erosion, bank failure, flooding, and significant loss of fish and aquatic habitat function. The increase in impervious surface and storm runoff also leads to reduced groundwater recharge and altered volumes of water in wetlands and streams contributed by groundwater. This can alter an area's hydrology by lowering surface water levels or groundwater tables and removing a local source of water essential to the survival of fish, amphibians and aquatic organisms as well as terrestrial animals. Clearing and grading activities can reduce the capacity of soil to support vegetation and absorb groundwater by reducing soil fertility, microorganisms, and damaging soil structure.

Pollution associated with rural residential development such as oil, gasoline, tar, antifreeze, and other contaminants from vehicles, heating and cooling systems, and roofs degrade habitat and water quality. Heated runoff from roads and vehicle maneuvering areas impacts water quality in streams by raising

temperatures and stressing local fish runs. Pesticides, herbicides, and fertilizers used on rural residential landscaping and fields can pollute ground and surface waters and degrade habitat.

Urbanized residential. The Pleasant Valley Implementation Plan anticipates that the rural residential nature of the valley will transition, in part, to higher density residential (ranging from 5.3 units per acre to 60 unit per acre). Several of the Pleasant Valley subdistricts will allow residential (LDR, MDR, HDR, TC). In addition to the construction of homes, this higher density residential development may include the construction of garages, storage sheds, and other accessory buildings, driveways, parking areas, lawns and managed landscaped areas, infrastructure (roads and utilities), and related development. The environmental impacts of this type of development are similar to those that will occur with rural-residential development, however the impacts will be on a much greater scale due to the increased density.

Agricultural Uses. Except for a few large farming operations that have been in the Pleasant Valley area since it was settled in the late 1800's, agricultural uses in the study area mainly consist of small farms. Agricultural uses associated with small farms can have detrimental impacts similar to those described for residential uses, but these are generally concentrated in the area of the farm buildings (where they exist). Additionally, agricultural uses often require plowing fields and exposing bare soil causing erosion that degrades water quality and can adversely impact aquatic habitat. The conversion of forest to farmland replaces diverse forest plant communities with a few, cultivated species. Vegetation acts as a filter, cleansing runoff before it reaches streams or wetlands. Tilling of the soil and removal of vegetation for agricultural uses reduces these water quality benefits. Agriculture typically (but not always) involves the use of pesticides, herbicides, and fertilizers. These chemicals can contaminate surface and groundwater areas and harm fish and wildlife.

Agriculture may draw irrigation water from wells or directly from streams. Extensive use of groundwater can result in draw down of the water table, which in turn can reduce groundwater discharge to streams and degrade fish and wildlife habitats. Use of water from streams directly reduces flow. These surface water reductions are most common during the summer growing season when natural stream flows are low and the potential adverse impacts to fish are the greatest.

Limited commercial activities accessory to agriculture uses are allowed and generally have all of the detrimental effects described for residential uses. Parking lots may be more common with such commercial uses and may increase the detrimental impacts of impervious surfaces (e.g., reduced infiltration and higher runoff, lower groundwater levels, interference with the transfer of air and gases from the soil). Commercial uses may also involve increased risk from pollution from oil, gasoline, and vehicle related contamination.

Existing agricultural uses are likely to continue in the valley until the farm properties are subdivided for urban use. Under certain urban zones anticipated in the valley, agricultural uses may be allowed conditionally. As a practical matter, however, new agricultural uses are not anticipated upon conversion to urban land after annexation. Agricultural uses will gradually be phased out as urbanization occurs.

Forestry Uses. Historical timber harvest cleared almost the entire Pleasant Valley plan area. Forestry uses have most recently been practiced on the steeper hillsides of the buttes surrounding the plan area. Forestry uses can have major impacts on watershed health. Timber harvest and particularly clear-cutting increases the rate of runoff to streams. Increased runoff to streams has all of the same effects described for rural residential uses including soil loss and erosion, channel down-cutting, bank undercutting and failure, and increased risk of landslides and floods. Removal of vegetation eliminates habitat for native wildlife. Clearing also removes important structural features of the forest and creates fragmented patches of forest. Forest fragmentation increases the isolation of one habitat area from another. As the range of

habitat for indigenous wildlife becomes restricted and isolated, opportunities for recruitment from other areas are limited and wildlife populations become vulnerable to disease, predation, and local extinction.

The forestry impacts on watershed hydrology are not generally permanent since harvested areas are replanted with trees or allowed to naturally recover—although recovery is slow. Impacts to wildlife habitat can be permanent when diverse native forest is replaced with intensively managed single-species tree farming. Herbicides and fertilizers may be used and the tree stands grow to be more dense and even-aged than natural forest conditions with little or no understory structure. Such commercial forests have limited value for wildlife.

No commercial forest operations exist in Pleasant Valley and existing development patterns generally preclude such uses. Upon conversion to urban land after annexation, no future commercial forest uses are anticipated.

Commercial and Employment Uses. Commercial and Employment uses, including retail, service, and office/office park, are anticipated for the Pleasant Valley area. The environmental impacts of these uses are generally similar to the impacts related to residential uses. However, Commercial and Employment uses generally have a greater impact than residential due to the greater amount of impervious surface and larger size of buildings.

Park and Recreation Uses. Park and recreation uses focus on public and private parks, recreational grounds, hiking and horse trails, and other similar uses. These lands tend to have few structures and facilities. Parks and recreation construction and maintenance practices can cause erosion and damage vegetation and habitat. Removal of vegetation, creation of impervious surfaces such as roads, parking lots, and construction of buildings are activities associated with development of parks. These activities normally require less impervious surface coverage than residential uses and have fewer environmental impacts. Most park and recreation developments include facilities for maintenance of normal hydrologic relationships and control of erosion. Recreational trails can have very few impacts of natural resources depending on their location, design, and construction.

Park and recreational use are allowed under existing zoning. As annexation and urbanization of Pleasant Valley occurs, recreational use and demand is expected to increase. The Concept Plan identifies specific locations for recreational trails within significant resource areas and for active recreational parks outside these areas.

Community Service Facilities. Community service facilities are limited or conditional uses in the rural residential zones. These uses generally provide a local service to people of the community, such as community centers, schools, daycare centers, religious institutions, and the Grange Hall in Pleasant Valley. These uses have similar impacts as those described for residential uses, but usually with greater impervious surface impacts (e.g., reduced infiltration and higher runoff, lower groundwater levels, interference with the transfer of air and gases from the soil), related to larger buildings and parking areas. Schools may have significant impacts for this reason. By contrast, daycare uses are normally small in size and often contained within other buildings (e.g., religious institutions or community centers). Grounds maintenance for community service uses has the same effects as those described for parks and recreation.

There is one existing school within Pleasant Valley and two new schools are anticipated in the concept Plan. There are currently two churches and one grange hall in Pleasant Valley. New community service facilities in Pleasant Valley are planned within the neighborhoods outside of the significant resource site.

The Pleasant Valley Implementation plan envisions that community service or civic uses will be allowed outright in the Town Center and Neighborhood Center districts. These uses will have similar impacts as those described for the residential uses.

Public Facilities. Public facilities are allowed in all zones and include roads, water, sewer, and other public utilities infrastructure services such as water and sewer pump stations, and water towers. Although operation of existing facilities may have limited adverse environmental effects, the effects from construction and maintenance practices for new facilities typically are greater. These activities may create cleared corridors that increase wind and light penetration into adjacent habitats, providing opportunities for the establishment of invasive, non-native plant species. Construction may fragment wildlife habitat areas, degrade wetlands and streams, increase stormwater runoff and erosion, and reduce forest cover. Construction of public facilities that include structures generally has the same effects as those described for residential uses. Certain types of facilities can have few environmental effects if located with minimal disruption to existing resources. Vegetated bio-swales, constructed wetlands, and similar stormwater facilities can have minimal impacts. Similarly, road crossings of streams, when minimal in number and done by bridge, can limit impacts to a certain extent.

Aircraft Land Uses. Aircraft land uses are allowed within the plan area only as conditional uses in the RRFF-5, FF-10, and FU-10 zones in Clackamas County. These uses involve only light plane operations serving local or agricultural needs and have impacts comparable to those for commercial uses described above.

The small, partially developed lots in the Clackamas County portion of the plan area generally preclude development of aircraft land uses. No such uses exist and none would be allowed after annexation.

Mining. Mining is a conditional use in the RR, RRFF-5 and FF-10 zones within the planning area. Mining generally has the most severe environmental impacts of all uses allowed within the plan area. All resources are normally eliminated. Once a mining operation is closed, some restoration of soil, vegetation and other resources may be possible but resources will remain permanently degraded.

As a practical matter, RR, RRFF-5 and FF-10-zoned lands within the planning area are either developed or too small to mine. Furthermore, mineral or aggregate resources are considered Goal 5 resources and no existing or potential mineral or aggregate resource mining operations have been identified within the planning area and mining uses would not be allowed after annexation.

Wireless Communication and Other Broadcast Facilities. Most low powered transmitters such as for cordless telephones and citizen band radios are allowed in all zones. More powerful and wireless communication facilities are allowed subject to limitations or as conditional uses within Pleasant Valley. Their effects can be similar to residential uses, but with less impervious surface and greater adverse visual impacts. Broadcast facilities can be built very high, with towers and guy wires that can be deadly to birds, which are attracted by the tower lights. Some facilities require cables to be laid in the ground, with significant potential impacts to wetlands, streams, and vegetation, and associated fauna.

These uses are allowed under existing zoning, and are expected to continue and expand within Pleasant Valley with urbanization, though outside of the significant resource site.

ESEE CONSEQUENCES ANALYSIS

The Pleasant Valley planning area has existing and allowed conflicting uses, as outlined before. To weigh the consequences of alternative methods of managing these conflicts, the next step in the Goal 5

process is to conduct an economic, social, environmental, and energy (ESEE) consequences analysis. The following section presents this ESEE analysis, which is based on the Goal 5 inventory, significance determination, and conflicting use impacts described in this document.

Approach. As discussed before, the significant Goal 5 resource site corresponds to the Environmental Sensitive/Restoration Areas (ESRA) outlined in the Concept Plan. The impact area for the significant resource site is the remainder of the Pleasant Valley planning area.

The Goal 5 rule requires that the ESEE consequences of “full protection,” “limited protection,” and “no protection” of the resource site and its impact area be considered. The starting point for this ESEE analysis is the existing rural zoning which (a) generally allows one dwelling unit per five acres, while (b) offering a fairly low level of natural resource protection. However, the Pleasant Valley Concept Plan envisions (a) much greater residential and employment densities, while (b) offering a much more comprehensive and effective level of natural resource protection. Table 2 summarizes key elements of the decision options used in this analysis.

Table 2. Summary of Goal 5 Decision Options⁶

	Within Resource Site	Within Impact Area
<p>Full Protection This option would nullify the Pleasant Valley Concept Plan by prohibiting all conflicting uses within the significant resource site and the impact area</p>	No conflicting uses allowed (e.g., no ground-disturbing activity, no expansion of existing uses, no new impervious surface area, no new public facilities or trails).	No conflicting uses allowed (e.g., no ground-disturbing activity, no expansion of existing uses, no new impervious surface area, no new public facilities, no “green development practices”).
<p>Limited Protection This option carries out the policies outlined in the Pleasant Valley Concept Plan, and achieves a balance between intensive urbanization and resource conservation.</p>	Allows for limited ground-disturbing activities for planned public facilities (roads and utilities) and trails. Allows development of one single-dwelling unit on existing, vacant lots. Requires mitigation for all development. Allows density transfer from resource site to impact area at one dwelling unit/acre. Existing agricultural operations may continue.	Provides for intensive urban development outside the significant resource site, subject to “green development practices.” Existing agricultural operations may continue.
<p>No Protection This option would allow marginal increases in planned housing and job potential, but would eliminate two central organizing principals of the Pleasant Valley Concept Plan by allowing unrestricted development within and outside the significant resource site.</p>	All conflicting uses allowed (e.g., ground-disturbing activity, unrestricted expansion of existing uses, unrestricted impervious surface area, unmitigated public facilities).	All conflicting uses allowed without “green development practices.”

⁶ The Oregon DLCD confirmed that this approach to the decision options is consistent with Goal 5 and its associated administrative rule in a letter dated December 27, 2002.

Conclusion. The ESEE analysis supports limited protection for the significant resource site and the impact area in accordance with the Pleasant Valley Concept Plan. This conclusion is based on the fact that the economic, social, environmental and energy consequences of the limited protection option are generally positive, while the consequences of “no protection” and “full protection” are overwhelmingly negative.

The Concept Plan was the result of an extensive community planning process that achieved a balance between resource protection and intensive urbanization. The goal of the Concept Plan is to maintain and restore significant riparian, wetland, and upland habitats in the Pleasant Valley planning area (the ESRA concept), while allowing intensive urban development outside of the significant resource area subject to green development practices.

The ESRA concept and the associated green development practices serve as central organizing features of the Concept Plan. Intensive urban residential and employment development using green development practices is encouraged on buildable land outside the significant resource site while the significant resource site is protected from most conflicting uses. A limited amount of development (e.g. roads and utilities) will be allowed on land within the significant resource site.

Green development practices refer to a toolbox of stormwater management techniques. The techniques involve landscape features that treat and infiltrate stormwater on the development site rather than utilizing a traditional piped collection and conveyance stormwater system. The benefits of green development practices include.

- Reduced stormwater runoff. Traditional development practices clear entire areas for development, add large amounts of impervious surfaces, and compromise the ability of soils to absorb stormwater. Through better site design, soil disturbance can be minimized, unnecessary impervious surfaces can be eliminated, and tree canopy protected, resulting in reduced generation of stormwater runoff.
- Reduced damage from unregulated stormwater flow. Traditional stormwater management techniques convey runoff quickly to management facilities. Without any prior management, these facilities are quickly overwhelmed and release water into streams at rates, volumes, and duration's that compromise stream habitat. Green development practices infiltrate stormwater close to the source, give it an opportunity to evaporate, and attenuate its progress towards streams so that the release of runoff into streams more closely mimics the natural hydrology of the area.
- Increased tree canopy. Green development practices promote the conservation of existing trees and forests and providing tree-planting opportunities in order to create an urban forest. In a forested environment rainfall is intercepted by vegetation, reducing its impact by slowly allowing it to infiltrate and saturate in the soil thus promoting infiltration, minimizing erosion and enhancing water quality. Trees also consume many different types of stormwater-linked pollutants through uptake from the root zone. Forested areas along stream banks provide stability by holding soil in place and slow runoff velocities.

ECONOMIC CONSEQUENCES ANALYSIS

Introduction. To provide a consistent economic analysis covering the most critical factors, each parcel within the plan district was analyzed according to both existing and potential conflicting uses. The economic analysis for each parcel - the comparison of impacts on development and on resource values - was repeated for three development level scenarios: allowing conflicting uses fully; limiting conflicting uses; and prohibiting all conflicting uses.

Through the economic analysis, a determination is made on the type and quantity of functions that are at risk with the loss of these resources, as well as the type and quantity of conflicting uses that may be affected.

It is important to carefully separate the economic consequences on conflicting uses that exist due to physical constraints and those associated with protecting significant resources. There are increased costs incurred in the design and construction of structures and roads where slopes, certain soil types, streams, wetlands, or floodplains exist.

In determining the economic consequences of protecting significant resources, it is first necessary to define value with respect to a significant resource. Many of the benefits of environmental policies are not readily apparent in the form of immediate monetary gains. The benefits are found more in an increase in the quality of life than in any increment to a region's economic output. Environmental features have been shown to increase property values as they provide aesthetic and recreational pleasure and a more livable environment. As a result, properties next to these features have higher property values and produce greater tax revenues.

A parcel by parcel database (developed using GIS) provides the basis for this analysis. The database includes information on tax lots, including size and characteristics (e.g., current use, building size, slope, resource type), current zoning, allowed units, Metro Title 3 and 11 lands, public facilities (e.g., planned water, sewer, stormwater, streets, trails, parks), buildable lands data, significant resource area, units allowed under density transfer, units allowed by Plan District (outside ESRA, by zone), and planned jobs. The database, and associated GIS map of the planning area, are available from the City of Portland Bureau of Planning.

Analysis. The economic analysis considers the impact of allowing, prohibiting, or limiting conflicting uses within the significant resource site and the impact area. The analysis addresses lots with no significant resource area, lots with partial significant resource area, and lots with substantial significant resource area. In this context, "substantial" is defined as when the non-resource portion of a lot is insufficient in size to accommodate the total number of units transferred out of the resource area of the lot. Density within the significant resource area is based on one unit per acre. The amount of area outside of the resource that is required to accommodate each unit is 3000 square feet. "Partial" coverage means that the lot has some resource area but not enough to qualify as "substantial".

Lots with no significant resource area may have conflicting uses that produce off-site impacts on the significant resource area. These uses include residential and community service uses, which have significant potential off-site impacts due to the removal of vegetation, creation of impervious surfaces, construction of stormwater facilities that discharge into streams and wetlands, and similar activities. Conflicting uses within significant resource areas have direct impacts on resources and resource functions as described earlier. Conflicting uses with the greatest potential impacts are the residential and community service uses. Broadcast facilities may have similar impacts, though generally concentrated in a smaller area. Public facilities also can have significant impacts, but may also have important siting constraints (such as the need for roads and utilities to cross-streams and other natural resources). As

noted above, some public facilities, including certain stormwater facilities and road and utility crossings (e.g., via bridges) can have fewer localized resource impacts. Park and recreation uses also range in impact, with natural open space and recreational trails generally having the fewest impacts.

Existing development patterns and small lot sizes preclude development of certain conflicting uses such as mining and aircraft land uses. Similarly, existing development patterns, the absence of current commercial forest production, and the planned urbanization of Pleasant Valley make commercial forestry uses untenable. Additionally, while existing agricultural uses may continue, once the land is annexed and converted to urban lots, farmland will be replaced with urban development.

For the following analysis, conflicting uses are organized in three classes or groups, based broadly on degree of impact. One class includes residential, community service facilities (CSF), and broadcast facilities. The second class is public facilities. The third class is park and recreation uses.

Economic Consequences of Allowing Conflicting Uses Fully. Table 3 summarizes the economic consequences of allowing conflicting uses fully.

Table 3. Economic Consequences of Allowing Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts on ESRA)	<ul style="list-style-type: none"> ▪ Increase in housing and jobs beyond the planned increase (an estimated 5,048 homes and 4,935 new jobs) on parcels within the ESRA, will increase traffic and pollution, but will provide no open space benefit for this class of properties ▪ No restrictions placed on building coverage, impervious surface area or construction methods ▪ Loss of economic values associated with accessible scenic and recreational areas 	<p>Negative: Increase in neighboring densities and traffic, accompanied by loss of economic (amenity) values associated with community open space, clean water, groundwater recharge, recreation, wildlife habitat and scenic views</p>
Lots with partial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Lots with partial ESRA coverage would have unrestricted development potential under this option, although development costs are greater because some lands are highly constrained ▪ Loss of economic value associated with adjacent community open space, scenic, recreational amenities ▪ Economic impacts resulting from potential destabilization of slopes and stream banks, and increase in flood and landslide hazards through vegetation removal, increased impervious surfaces ▪ Adverse economic impact resulting from decreased amenity values for homes and businesses adjacent to water features and upland forests 	<p>Neutral to Negative: On the one hand, the land area that can be devoted to development is increased, but densities will be greater than allowed under existing zoning. On the other hand, the economic value of adjacent open space, water features and forested areas would be lost.</p>
Lots with substantial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Parcels that are substantially covered by the ESRA would now be able to develop without restriction, although development costs may be substantially greater because of highly constrained land area ▪ Loss of economic value associated with on-site community open space, scenic, recreational amenities ▪ Economic impacts resulting from potential destabilization of slopes and stream banks ▪ Increase in flood and landslide hazards through vegetation removal, impervious surfaces ▪ Adverse economic impact resulting from decreased amenity values for homes and businesses adjacent to water features and upland forests 	<p>Negative to Mixed: On the one hand, the land area that can be devoted to development is increased substantially; on the other hand, the economic value of adjacent open space, water features and forested areas is lost. For most property owners in this category, ESRA restrictions would probably be viewed as a negative, although the development potential under the Concept Plan is generally the same or greater than allowed under existing zoning.</p>

Allowing conflicting uses fully within the impact area of Pleasant Valley will provide major economic benefits as the area urbanizes. Both urban housing densities and employment opportunities will increase dramatically, and be supported by parks and open space, community services, and urban infrastructure. As the area urbanizes, however, there is the potential for substantial “off-site” degradation of the natural and open space values of the community within the ESRA. New buildings and roads, for example, will bring a dramatic increase in impervious surfaces within the impact area. This can lead to reduced infiltration and higher runoff, increased flooding, degradation of aquatic habitat, and the potential stress or loss of salmon and trout in the Kelley Creek watershed. Urbanization in the watershed will include a critically important feature, however, that can mitigate these potential off-site impacts. This feature is the Plan District provision for Green Development Practices, which include facilities to infiltrate, clean, and slowly release stormwater before it reaches significant resource areas.

There are significant economic costs associated with allowing conflicting uses fully within the ESRA (allowing significant stream, wetland, and forest resources to be eliminated). These resources collectively provide the community’s natural and open space system, a unique and highly valued feature for the Pleasant Valley community. The amenity values of the ESRA, including its natural, open space, recreational (local parks and trails), and scenic values, are expected to grow as the valley urbanizes. These amenity values will be capitalized into local property values. These resources also provide community services with economic benefits, such as flood reduction, clean water, and slope stabilization. For example, Kelley Creek, its tributaries and associated wetlands, and Johnson Creek and its broad floodplain provide pollution assimilation/water purification, flood attenuation and storage functions. The damage costs associated with flooding and landslide hazards increase with development activities and increased soil disturbance in resource areas. Vegetation loss can have additional economic costs in the form of lost air conditioning, erosion control, stormwater management, and air pollution control services. Any potential increment of additional housing in the ESRA, if “allowed fully” without controls, must be weighed against the unique and highly valued attributes of the community, many of which are embodied in the ESRA. Other considerations, such as physical (e.g., steep ravines, broad floodplains and wetlands, shallow water tables) and regulatory constraints (e.g., wetlands, water quality, listed species) may further limit the “buildable” land within the ESRA.

This analysis strongly favors allowing conflicting uses fully only within the impact area, outside of significant resource areas. At risk are the unique natural resource attributes of Pleasant Valley, identified by the community and expressed in the Pleasant Valley Concept Plan, which include the community’s open spaces and its natural, scenic, and recreational values. The Pleasant Valley Plan District proposes urban levels of housing and employment for the area once annexed, resulting in an estimated 5,048 housing units and 4,935 new jobs. These housing and employment goals can be satisfied within the impact area, as designated in the Plan District, without significant impacts or loss to the community’s unique resources.

Economic Consequences of Limiting Conflicting Uses. To determine the consequences of “limiting” conflicting uses, it is helpful to define what limiting means, at least in broad terms. The basis for these limits comes in large part from the Pleasant Valley Concept Plan. The ESRA (significant resource area) is a central organizing element of the Concept Plan. The valley’s streams, wetlands, and forests were highly valued community assets. Urban housing and employment needs were met outside the ESRA, and these unique assets were preserved and restored. Certain conflicting uses were envisioned within the ESRA, including limited road and utility crossings, parks and trail uses, as shown on the Concept Plan map. In formulating a “limit program,” with input from the Pleasant Valley TAC, Advisory Group, and the public, it was recognized that while properties with partial ESRA would receive substantial economic benefits (an average of 15 housing units), some properties had greater ESRA coverage than others. To provide additional economic value for these properties, a density transfer provision was developed that would permit the equivalent of at least five times the current base densities for lands within ESRA (one

unit per acre) to be transferred out of the ESRA onto the same or adjoining properties. These provisions were incorporated into the “limit” program for Pleasant Valley.

Table 4 summarizes the economic impacts conflicting uses resulting from limiting conflicting uses in accordance with the Pleasant Valley Concept Plan, consistent with the program outlined above.

Table 4. Economic Consequences of Limiting Conflicting Uses Consistent with Pleasant Valley Concept Plan

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts on ESRA)	<ul style="list-style-type: none"> ▪ Provide for significant increase in housing and jobs beyond what is allowed under current zoning (an estimated 5,048 homes and 4,935 new jobs). ▪ Some increased long-term costs associated with green development practices (i.e., increased maintenance versus reduced initial construction costs). ▪ Restrictions placed on building coverage, impervious surface area or construction methods. ▪ Maintain economic values associated with community open space, and accessible scenic and recreational benefits. ▪ Avoid adverse economic impact resulting from decreased amenity values for homes and businesses near water features and upland forests. 	<p>Positive: Manyfold increase in development potential over existing zoning, while maintaining economic values of community open space, clean water, wildlife habitat, scenic views and groundwater recharge. Some long-term maintenance costs increase for green development practices, although short-term costs are usually less.</p>

Lot Type	Conflicting uses	Consequences	Assessment
Lots with partial significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> ▪ Significant increase in allowed density through upzoning and density transfer from ESRA ▪ Since the remaining portions of parcels outside ESRA are from building constraints, development costs are reduced ▪ Maintain economic value associated with adjacent community open space, scenic, recreational amenities ▪ Avoid adverse economic impacts resulting from potential destabilization of slopes and stream banks ▪ Decrease in flood and landslide hazards through vegetation removal, increased impervious surfaces ▪ Avoid adverse economic impact resulting from decreased amenity values for homes and businesses adjacent to water features and upland forests ▪ Some increase in long-term construction costs resulting from green development practices 	Positive: Significant increase in development potential over existing zoning, while maintaining economic values of community open space, clean water, wildlife habitat, scenic views and groundwater recharge. Some long-term increase for green development practices, although short-term costs typically are less.
	Public facilities	<ul style="list-style-type: none"> ▪ Limited new and redeveloped roads provide connections through resource areas as designated in the Plan District ▪ Limited utilities and green stormwater facilities link and serve local neighborhoods within community, located within planned road crossings, or along the outer edge of resource areas 	Positive: Allows roads and other public facilities that are essential to an integrated urban community; resource impacts controlled and mitigated through development standards.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ Parks and trail system located in and along resource areas (as designated in the Plan District) bring residents close to area's unique features ▪ An integrated network of trails, parks and open space is an essential part of a successful urban community 	Positive: An integrated (natural resource-oriented) parks and trail system provides a major community asset.

Lot Type	Conflicting uses	Consequences	Assessment
Lots with substantial ESRA coverage (and limited transfer-ability)	Residential, CSF, Other	<ul style="list-style-type: none"> ▪ Comparable allowed density through to that which is allowed under existing zoning ▪ However, may not be sufficient area for density transfer from ESRA ▪ Maintain economic value associated with adjacent community open space, scenic, recreational amenities ▪ Avoid adverse economic impacts resulting from potential destabilization of slopes and stream banks, and increase in flood and landslide hazards through vegetation removal, increased impervious surfaces ▪ Avoid adverse economic impact resulting from decreased amenity values for homes and businesses adjacent to water features and upland forests ▪ Decrease in short-term construction costs, but increase in long-term maintenance costs, resulting from green development practices 	Neutral: Development potential approximately the same, but lower increase than properties largely or completely outside ESRA. For this reason, recommend adjustments to ESRA boundary to allow for full density transfer. Economic values associated with significant resources protected.
	Public facilities	<ul style="list-style-type: none"> ▪ 14 of the 27 highly constrained properties may be impacted by planned roads allowed under Limited Protection option ▪ New and redeveloped roads provide an integrated transportation system within the valley ▪ Slight increase in construction mitigation costs 	Neutral to Positive: Allows roads that are essential to an integrated urban community with mitigation for impacts on natural resources.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ No existing or planned parks or recreation uses will impact these properties. 	Not applicable.

This analysis supports limiting conflicting uses within significant resource areas of the site. Housing and employment opportunities are dramatically increased within non-resource areas (by an estimated 5,048 housing units and 4,935 new jobs). Additional housing and employment options are permitted through transfers from resource areas to more suitable locations in the impact area, which protects the community’s unique natural, scenic, and open space resources. Approximately 27 highly constrained properties would not be able to transfer densities on site. Additional development flexibility for these properties should be considered (see Conflict Resolution section).

Economic Consequences of Prohibiting Conflicting Uses. Table 5 on the following page summarizes the impacts on both significant resources and on conflicting uses of prohibiting conflicting uses.

Table 5. Economic Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts on ESRA)	<ul style="list-style-type: none"> ▪ Loss of development potential for all parcels in this category. ▪ Pleasant Valley Concept Plan could not be implemented. 	Negative: No new development allowed; substantial economic costs; housing and employment goals cannot be achieved.
Lots with partial significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> ▪ Loss of development potential and density transfer options. ▪ Although protects community open space, scenic, and recreational amenities, the economic value of these amenities will be lower, because fewer people will enjoy them ▪ Although stabilization of slopes and stream banks, and reduction in flood and landslide hazards would occur, there would be no new development ▪ Amenity values of open space would be of questionable value, since no new housing or jobs to enjoy these values 	Negative: Significant loss of development potential from existing zoning, without corresponding increase in amenity value to existing homes.
	Public facilities	<ul style="list-style-type: none"> ▪ No new roads or public facilities would be allowed ▪ Loss of connectivity and services provided by public facilities and roads 	Negative: Road and public facility connectivity is essential to an integrated urban community and could not be provided.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ Loss of integration of parks and trail system with the community’s natural, scenic, and open space resources 	Negative: An integrated parks and trail system is a vital part of a successful community.
Lots with substantial significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> ▪ Same as above, with conflicting uses prohibited on an estimated 27 highly constrained lots 	Negative: Comparable or lower development potential than allowed under existing zoning, without density transfer or economic value associated with natural resource amenities.
	Public facilities	<ul style="list-style-type: none"> ▪ Loss of connectivity provided by planned roads (on 14 properties) 	Negative: Road connectivity is essential to an integrated urban community.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ No existing or planned parks or recreation uses will impact these properties 	Not applicable.

The economic consequences of prohibiting conflicting uses are generally negative for both resource and impact areas. New housing and employment opportunities would be eliminated, and prohibiting all conflicting uses within the impact area would essentially preclude further growth or urbanization of the valley. By prohibiting conflicting uses, the community’s unique natural, scenic, and open space resources are preserved. Arguably, however, these resources have considerably fewer economic amenity values if the community is not able to grow.

Conclusion. The economic analysis supports limiting conflicting uses within significant resource areas and allowing them fully within the impact area. The analysis assumes that within the impact area, potential adverse effects on nearby resource areas can be mitigated by Plan District provisions for Green

Development Practices. For the highly constrained lots where housing density transfer may not be feasible, some additional flexibility may be warranted in the “limit” program (see Conflict Resolution section).

SOCIAL CONSEQUENCES ANALYSIS

This section considers the social consequences of allowing, limiting, or prohibiting conflicting uses within Pleasant Valley. The discussion focuses on the following topics: recreational and educational opportunities; housing and employment opportunities; historic, heritage, and cultural values; screening and buffering of land uses; and health, safety, and welfare.

Allowing, limiting, or prohibiting conflicting uses may have a variety of potential social effects, including the following:

- Changes to the value of the site for recreation and education;
- Changes to the quantity of housing units;
- Changes to the quantity of jobs;
- Changes in an area’s scenic qualities;
- Changes to the historic and cultural values of the site;
- Changes to the health, safety, and welfare benefits provided by resources; and
- Changes in the ability of natural resources to function as an edge or buffer between different land uses.

The characteristics of these potential social consequences are outlined in the following discussion. The social analysis focuses on how conflicting uses may create positive or negative social consequences within resource and impact areas.

Recreational and Educational Opportunities. Existing public recreational and educational opportunities are limited in Pleasant Valley. They include the limited open space areas, such as Pleasant Valley School, local roads (e.g., biking use), and the Springwater Trail (part of the 40-Mile Loop). The Springwater Trail, located in the northern part of the site, provides recreational and educational opportunities for pedestrians, bicyclists, and wildlife enthusiasts. Proximity to Powell Butte Nature Park and to Gresham makes this a popular section of the trail. Additional open space in and adjacent to the Pleasant Valley planning area was recently purchased allowing for recreational and educational opportunities. Metro is strategically acquiring open space on the buttes surrounding Pleasant Valley in an effort to provide a system of continuous trails, open space, and wildlife habitat. Pleasant Valley will provide a critical link in the system.

Housing Opportunities. The Pleasant Valley Plan District proposes urban levels of density for the area once annexed resulting in an estimated 5,048 housing units.

Employment Opportunities. Employment opportunities in Pleasant Valley are currently very restricted: those associated with the school, nurseries, and the potential use of one commercially zoned lot at SW 172nd and SW Foster (currently undeveloped) provide an estimated 50 jobs (primarily at the school).

The Pleasant Valley Plan District proposes new employment areas that will substantially increase in job opportunities within the area once annexed resulting in an estimated 4,935 new jobs.

Historic, Heritage, and Cultural Values. The floodplains and upland areas of the Johnson Creek basin are believed to have been used by Native Americans. Although no archeological sites are known in Pleasant Valley area, early Native Americans used the valley as a travel route and for hunting and other subsistence activities likely took place there.

Euro-American settlement in the area began in the mid 1800s. Foster Road is a historic farm-to-market road in the Portland region. Pleasant Valley has many historic structures along the road that provide a historic context and an insight into an earlier era. The Grange stands between Kelley Creek and Foster Road and provides a focal point for the community. The Richey House is another historic or socially significant structure in Pleasant Valley.

The Springwater Division Line, located along the northern boundary of the planning area, was developed for rail service in 1903. The line reached its peak usage in 1906, under the joint ownership with Portland General Electric and the Portland Railway Light and Power Company. By 1910, the company had six electric plants and 161 miles of rail, carrying 16,000 passengers each year within the Portland area. Destination parks along the line, such as Oaks Amusement Park in Sellwood, became major attractions, drawing thousands of passengers each weekend. In addition to passengers, the rail hauled farm produce to Portland markets. Many communities developed along the Springwater Line including Sellwood, Waverley Heights, Eastmoreland, Woodstock, Errol Heights, Lents, Powellhurst-Gilbert, and Pleasant Valley. During the peak of the railroad era, the Springwater Line was the linkage between these communities. Passenger service was discontinued in 1958. Nearly 40 years later, in 1996, the railroad line between Gresham and Portland was redeveloped as the Springwater Trail.

In the 1930s, flooding along Johnson Creek prompted the Works Progress Administration (WPA) to clean and line the creek channel in an attempt to reduce flooding. Their efforts to control flooding along the creek failed, and some of the hardened and channelized reaches of the creek (including a reach bordering the northern planning area) are now being restored to more natural conditions. One of the WPA's other projects within the planning area was the construction of the Pleasant Valley Elementary School in 1938.

Screening and Buffering. Natural resources, such as those in Pleasant Valley, can function as an edge to different land uses, separating and buffering them from each other both visually and physically. Forest vegetation can serve as a buffer between residential, institutional, commercial, and open space uses. Similarly, Johnson Creek, Kelley Creek, and their associated ravines, wetlands, and vegetation are major defining elements of the community that also provide buffering and other important watershed health functions.

Health, Safety, and Welfare. Erosion and flooding are natural phenomena in Pleasant Valley, but when aggravated by the alteration or removal of vegetation, or increased stormwater runoff, it can lead to damage, injury, or displacement of people and property, and significantly impact aquatic habitats. For example, the area's vegetation helps to stabilize stream banks and hill slopes, and its soils infiltrate rainwater and reduce the frequency and severity of flood events. These functions contribute to the health, safety and welfare of community residents.

There are several other health and welfare benefits provided by forest and riparian vegetation. For example, studies have shown that vegetation in urban or urbanizing areas may reduce stress-related impacts on health. Exposure to natural environments has significant "restorative" benefits (Ulrich 1984). In addition, such forests help reduce air pollution problems and the resulting health impacts (City of Portland 1993).

Social Consequences of Allowing Conflicting Uses Fully. Table 6 summarizes the consequences of allowing conflicting uses to occur in the Pleasant Valley. These consequences are discussed in the context of the social functions or benefits described above. As with the economic analysis, conflicting uses are addressed together or in groups where appropriate, while some uses (e.g., mining and aircraft land uses) are not considered feasible due to existing development patterns or plan designations.

Table 6. Social Consequences of Allowing Conflicting Uses Fully

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts)	<ul style="list-style-type: none"> ▪ No increase in the number of jobs or housing units for these parcels ▪ Loss of nearby community open space and associated social values ▪ Allows for provision of public facilities for area residents 	Negative: Marginal increase in jobs and housing opportunities, but at expense of community open space, degraded water quality and decreased quality of life
Lots with partial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Increase in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson and Kelley Creeks ▪ Loss of scenic and open space values of ESRA ▪ Decrease in screening and buffering benefits ▪ Potential loss of historic features ▪ Marginal increase in housing, employment opportunities on constrained lands, through these goals are met outside of ESRA 	Negative: Unique social values of community and multiple resources highly degraded or lost.
Lots with substantial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Increase in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson and Kelley Creeks ▪ Loss of scenic and open space values of ESRA ▪ Decrease in screening and buffering benefits ▪ Potential loss of historic features ▪ Marginal increase in housing, employment opportunities on constrained lands, through these goals are met outside of ESRA 	Negative: Unique attributes of community and multiple resources highly degraded or lost

This analysis supports allowing conflicting uses fully within the impact area, outside of significant resource areas. The resource areas provide important social values, and include many of the attributes that make Pleasant Valley unique. The Pleasant Valley Plan District proposes a mix of housing and employment opportunities within the non-resource areas that satisfies planning goals, without the higher costs associated with development on constrained lands and without loss of the community’s unique resources.

Social Consequences of Limiting Conflicting Uses. Table 7 summarizes the consequences of limiting conflicting uses in the Pleasant Valley site. These consequences are discussed in the context of the social functions or benefits described previously.

Table 7. Social Consequences of Limiting Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Maintain most social values or nearby protected open space areas ▪ Maintain housing and employment objectives of Pleasant Valley Concept Plan ▪ Allow for public facilities and streets necessary to support housing and jobs ▪ Maintain social values associated with clean water and aquatic habitat by implementing Green Development Practices 	<p>Positive: Social values of community open space maintained for new residents and employees. Green Development Practices minimize off-site impacts.</p>
Lots with partial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Decrease in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson and Kelley Creeks ▪ Maintain scenic and open space values of ESRA ▪ Maintain screening and buffering benefits ▪ Maintain historic features ▪ Allow for housing, employment opportunities through density transfer provisions 	<p>Positive: Social values of community open space and natural resources conserved.</p>
Lots with substantial significant resource area (and limited transfer-ability)	All	<ul style="list-style-type: none"> ▪ Decrease in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson and Kelley Creeks ▪ Maintain scenic and open space values of ESRA ▪ Maintain screening and buffering benefits ▪ Maintain historic features ▪ Allow for housing, employment opportunities through density transfer provisions 	<p>Positive: Social values of community open space and natural resources conserved.</p>

This analysis supports limiting conflicting uses within significant resource areas of the site. Housing and employment opportunities are dramatically increased within non-resource areas (by an estimated 5,048 housing units and 4,935 new jobs). Additional housing and employment options are permitted through transfers from resource areas to more suitable locations in the impact area, which protects the community’s unique resources and avoids higher costs associated with development on constrained lands. Limiting conflicting uses in resource areas preserves a variety of important social values including recreational and educational values, soil stabilization, flood management, land use buffering, and scenic and open space values.

Social Consequences of Prohibiting Conflicting Uses. Table 8 summarizes the consequences of prohibiting conflicting uses in the Pleasant Valley site. These consequences are reviewed in the context of the social functions or benefits described previously.

Table 8. Social Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Prohibiting conflicting uses on non-resource (impact) areas would preclude new housing and employment options ▪ Social benefits of community open space and natural resource preservation would be limited, because fewer people to enjoy these benefits 	<p>Negative: No further growth in community; social benefits associated with community open space and natural resource preservation lost.</p>
Lots with partial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Most social benefits of resources preserved, including health, safety and welfare values, screening and buffering, scenic amenities ▪ Recreational and educational opportunities limited by lack of people to enjoy resources and open space ▪ Livability degraded by prevention of transportation and infrastructure connections. 	<p>Negative: Unique attributes of community open space preserved, but few people to enjoy, and most access and use precluded.</p>
Lots with substantial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Same as above, with housing limited on an estimated 27 highly constrained lots. 	<p>Negative Unique attributes of community open space preserved, but few people to enjoy, and most access and use precluded.</p>

The social consequences of prohibiting conflicting uses are generally negative, except in certain resource areas where social benefits roughly balance the costs. New housing and employment opportunities would be eliminated, and prohibiting all conflicting uses within the impact area would essentially preclude further growth or urbanization of the valley.

Conclusion. The social analysis supports limiting conflicting uses within significant resource areas and allowing them fully within the impact area. The analysis assumes that within the impact area, potential adverse effects on the social values of nearby resource areas can be mitigated by Green Development Practices and Transition Area Design Standards that are part of the Plan District. For the highly constrained lots where housing density transfer may not be feasible, some additional flexibility may be warranted in the “limit” program (i.e., ESRA standards).

ENVIRONMENTAL CONSEQUENCES ANALYSIS

This analysis outlines the environmental consequences of allowing, limiting, or prohibiting conflicting uses within the Pleasant Valley planning area. The inventory of natural resources in the Pleasant Valley planning area describes the environmental functions and values at this resource site. The basis for determining the significance of various types of natural resources also is provided in a separate memorandum. The natural resource significance rating criteria are based on fundamental elements, or “functions” that must be present for natural systems to work properly, and for long-term sustainability.

The functional elements included are based on recent scientific literature, the inventory, and the subwatershed assessment conducted as part of the inventory.

The following resource functions are those identified for the Pleasant Valley site:

- Water quality
- Channel dynamics and morphology
- Water quantity: stream flow, sources, and storage
- Microclimate
- Fish and aquatic habitat
- Organic inputs
- Riparian and upland wildlife habitat quality
- Upland sensitive species
- Upland interior habitat

Environmental Consequences of Allowing Conflicting Uses Fully. Table 9 summarizes the consequences of fully allowing conflicting uses in the Pleasant Valley site. Basically, the resource functions listed above would be highly degraded or lost in the absence of an environmental protection program. Allowing conflicting uses in resource areas without limits or controls results in the loss of significant environmental functions and values identified in the Pleasant Valley natural resources inventory. The environmental consequences, therefore, are extremely negative.

Table 9. Environmental Consequences of Allowing Conflicting Uses Fully

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Degradation of water quality and aquatic habitat functions from off-site impacts ▪ Reduction or disruption of groundwater recharge, stream flow, and hydro-period 	Negative: Lack of Green Development Practices means that water quality and aquatic habitat values of streams and wetlands are lost; probable reduction in groundwater discharge and hydro-period.
Lots with partial significant resource area (ESRA)		<ul style="list-style-type: none"> ▪ Reduction of water quantity function ▪ Degradation or loss of fish and aquatic habitat functions ▪ Reduction of water quality, slope stabilization, microclimate amelioration functions ▪ Disruption or loss of vegetation and organic materials function ▪ Reduction of floodplain and channel dynamics functions ▪ Loss of wildlife habitat functions in wetlands, riparian areas, and uplands 	Extremely Negative: Community natural resources and functions highly degraded or lost.
Lots with substantial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Disruption or elimination of all functional values listed above 	Extremely Negative: Community natural resources and functions highly degraded or lost.

Environmental Consequences of Limiting Conflicting Uses. The decision to limit conflicting uses as indicated in the Pleasant Valley Concept Plan conserves most of the environmental resources and functional values identified in the natural resource inventory. Limiting conflicting uses allows the development goals of the Concept Plan to be met, by preserving most of the ESRA and providing reasonable mitigation for impacts resulting from planned public facilities and limited development. Although impacts are mitigated (i.e., reduced), there will be still be limited degradation and loss of some functional values. Provisions for restoration potentially will increase functional values. The environmental consequences are generally positive under the Concept Plan objective where development impacts are limited to areas generally outside the ESRA and mitigated through Green Practices and restoration within the ESRA.

Table 10 summarizes the consequences of limiting conflicting uses in the Pleasant Valley site.

Table 10. Environmental Consequences of Limiting Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> ▪ Degradation of water quality and aquatic habitat functions from off-site impacts mitigated through Green Practices ▪ Reduction or disruption of groundwater recharge, stream flow, and hydro-period mitigated through Green Practices 	Positive: Potential off-site impacts on resource functions mitigated by Green Practices.
	Public facilities	<ul style="list-style-type: none"> ▪ Potential degradation of water quality and aquatic habitat functions from off-site impacts, particularly streets, mitigated through Green Practices. 	Positive: Potential off-site impacts on resource functions mitigated by Green Practices.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ Potential increase in some functional values outside ESRA. 	Positive: Potential increase in some functional values.
Lots with partial significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> ▪ Protection of functional values through avoidance and density transfer ▪ Potential increase in some functional values with restoration 	Positive: Degradation of some resource functions but potential overall increase throughout the community through restoration.
	Public facilities	<ul style="list-style-type: none"> ▪ Limited disruption resulting from construction of planned public facilities. ▪ Mitigation for most impacts through required restoration. 	Neutral to Slightly Negative: Limited loss of some resources and functions but adverse impacts limited through required mitigation and restoration.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ Limited disruption of functional values. ▪ Mitigation for most impacts through required restoration 	Neutral to Slightly Negative: Limited loss of some resources and functions but adverse impacts limited through required mitigation and restoration.

Lot Type	Conflicting uses	Consequences	Assessment
Lots with substantial significant resource area (and limited transfer-ability)	Residential, CSF, Other	<ul style="list-style-type: none"> With recommended adjustments to ESRA boundary to allow for full density transfer, minor reduction of ESRA area However, with required mitigation, potential increase in some functional values with restoration 	Neutral to Slightly Negative: Limited loss of some resources and functions but adverse impacts limited through required mitigation and restoration.
	Public facilities	<ul style="list-style-type: none"> Limited disruption of some functional values Potential increase in some functional values with restoration 	Positive: Potential off-site impacts on resource functions mitigated by Green Practices.
	Parks and recreation uses	<ul style="list-style-type: none"> No park or recreational uses planned for these parcels 	Not Applicable

Environmental Consequences of Prohibiting Conflicting Uses. The environmental consequences of fully protecting the ESRA resource site are, of course, positive. However, as noted in previous sections, the economic and social consequences are extremely negative. Table 11 summarizes the environmental consequences of prohibiting conflicting uses in the Pleasant Valley site.

Table 11. Environmental Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> No adverse impacts from off-site development on all nine resource functions. 	Positive: No off-site impacts on resource functions.
	Public facilities	<ul style="list-style-type: none"> No adverse impacts from public facility construction on all nine resource functions. 	Positive: No off-site impacts on resource functions.
	Parks and recreation uses	<ul style="list-style-type: none"> No adverse impacts from park construction on all nine-resource functions. 	Positive: No off-site impacts on resource functions.
Lots with partial significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> No adverse impacts from residential or commercial construction on all nine resource functions. 	Positive: No on- or off-site impacts on resource functions.
	Public facilities	<ul style="list-style-type: none"> No adverse impacts from public facility construction on all nine resource functions. 	Positive: No impacts from public facility construction on resource functions.
	Parks and recreation uses	<ul style="list-style-type: none"> No adverse impacts from park construction on all nine-resource functions. 	Positive: No on- or off-site impacts from parks on resource functions.
Lots with substantial significant resource area (ESRA)	Residential, CSF, Other	<ul style="list-style-type: none"> No adverse impacts from residential or commercial construction on all nine resource functions. 	Positive: No on- or off-site impacts on resource functions.
	Public facilities	<ul style="list-style-type: none"> No adverse impacts from road construction on all nine resource functions. 	Positive: No public facilities construction impacts on resource functions.
	Parks and recreation uses	<ul style="list-style-type: none"> No park or recreational uses planned for these parcels 	Not Applicable

Conclusion. This environmental consequences analysis supports either prohibiting conflicting uses or limiting conflicting uses to planned public facilities and limiting incursion into the ESRA to allow for full density transfer for substantially affected parcels, and using Green Practices. Impacts from limited residential and public facility development within the ESRA can be reduced and mitigated through restoration. The resource areas provide important functional values and the opportunity of greatly improving resource function through restoration in the ESRA. The Pleasant Valley Plan District proposes a mix of housing and employment opportunities outside ESRA while maintaining and restoring significant riparian, wetland, and upland areas within the ESRA with limited intrusion.

ENERGY ANALYSIS

This analysis outlines the energy consequences of allowing, limiting, or prohibiting conflicting uses. The energy discussion focuses on three topics: transportation; infrastructure; and the heating and cooling of structures. A general discussion of these topics is presented first, followed by an analysis applying these topics in the context of allowing, limiting, and prohibiting conflicting uses.

Transportation. Energy expenditures for transportation relate primarily to travel distance from origin to destination, and mode of transportation used. Both variables can be affected by natural resource protection.

Transportation in the Pleasant Valley area involves moving people between homes, employment, commercial areas, and other services. The site is located within five miles of major employment and service areas in Southeast Portland and Gresham. Automobiles are the primary means of transportation in and out of the area and though convenient, they generally are not energy efficient. Roads are generally narrow and lack sidewalks, thus discouraging walkers and bicyclists. The Springwater Trail, which passes through the northern part of the site, provides alternative transportation options. Mass transit currently does not serve the valley.

A town center and employment areas are planned for the Pleasant Valley community. Locating homes, jobs, and services within the valley means that residents may not need to travel outside the community to work or for basic services.

The availability of natural resources at the Pleasant Valley site, such as the streams, wetlands and riparian areas, provide opportunities for wildlife observation, education, and recreation for area residents. A growing system of public open space is being developed within and adjacent to the valley, as noted in the social analysis. Because these open space resources are close to users, limited transportation energy is used in reaching them. In addition, the system of trails envisioned in the Pleasant Valley Plan District will provide walking routes to local services, schools, and civic amenities, potentially decreasing dependence on the automobile.

Infrastructure. Locating housing and other development outside of natural resource areas in a planned and efficient manner normally results in less infrastructure needed to serve sewer, water, transportation, and other needs. Development located away from flood and slope hazard areas can reduce or eliminate the need for additional construction considerations, hazard control structures, or emergency repairs. In general, urbanization that is carefully planned and performed efficiently adjacent to existing urban centers can help to reduce and manage energy consumption within the region.

Heating and Cooling of Structures. Energy consumption for the purpose of heating and cooling structures is impacted by resource protection in two ways: building form and presence of vegetation.

Protection of Pleasant Valley’s trees and forested stream corridors, and other resource areas, can help reduce energy costs for heating and cooling. Trees and riparian vegetation at the Pleasant Valley site reduce energy demands for cooling in the summer by providing shade on nearby structures. Plants also absorb sunlight and transpire during growing seasons, thus reducing ambient air temperatures. This moderating effect can reduce energy needs for cooling of nearby development. Trees and large shrubs can also act as a windbreak during winter. By slowing or diverting cold winter winds, heat loss in structures from convection is reduced, resulting in lower energy needs.

Planned urban densities will generally result in an efficient compact development form, which includes greater common wall construction and reduced building surface areas, reducing heat loss and energy consumption.

Energy Consequences of Allowing Conflicting Uses Fully. Table 12 summarizes the energy consequences of allowing conflicting uses to occur in the Pleasant Valley. These consequences are discussed in the context of the energy functions or benefits described above. As with the preceding analyses, conflicting uses are addressed together or in groups where appropriate, while some uses (e.g., mining and aircraft land uses) are not considered feasible due to existing development patterns or plan designations.

Table 12. Energy Consequences of Allowing Conflicting Uses Fully

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Proximity of housing, jobs, and services reduces energy needs for transportation, but this would occur under the “limited option” in any case ▪ Infrastructure development on unconstrained land reduces energy expenditures, but this, too, would occur under the “limited option” in any case ▪ Without green development practices, energy benefits related to heating and cooling will be lost. 	Slightly Negative: The Pleasant Valley Concept Plan provides for clustering of housing and jobs, served by a grid street system than reduces energy needs. These benefits are also found under the “limited option.” However, without green development practices, energy consequences are slightly negative.
Lots with partial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Transportation and infrastructure energy consumption increases as development extends into constrained lands ▪ Loss of nearby open spaces, increasing transportation energy demand for recreation ▪ Energy benefits related to heating and cooling of structures lost as vegetation removed 	Negative: Energy benefits of resources lost, less energy-efficient use of land.
Lots with substantial sig. resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Same as above; ▪ Building on highly constrained lots increases energy expenditures. 	Negative: Energy benefits of resources lost, less energy-efficient use of land.

This analysis supports the clustering of housing and jobs served by an energy efficient transportation system, such as envisioned in the Concept Plan. However, these benefits are also realized in the “limited option.” However, allowing conflicting within the ESRA has negative energy consequences, as does the

lack of green development practices. The ESRA resource areas provide important energy benefits for nearby development and for the community as a whole.

Energy Consequences of Limiting Conflicting Uses. Table 13 summarizes the energy consequences of limiting conflicting uses in the Pleasant Valley site. These consequences are discussed in the context of the energy functions or benefits described above.

Table 13. Energy Consequences of Limiting Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no significant resource area (ESRA)	All (off-site impacts)	<ul style="list-style-type: none"> ▪ This option includes the benefit of energy efficient development through density and clustering of jobs near housing ▪ Energy benefits related to heating and cooling preserved ▪ Green development practices conserve energy 	Positive: Energy benefits accrue from density transfer and heating and coloring effects of natural resource preservation and green development practices
Lots with partial significant resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Transportation and infrastructure energy expenditures reduced through avoidance of constrained lands; ▪ Open spaces conserved, reducing transportation energy demand for recreation; ▪ Supports energy benefits related to heating and cooling of structures. 	Positive: Energy benefits accrue from density transfer and heating and coloring effects of natural resource preservation and green development practices.
Lots with substantial sig. resource area (and limited transferability)	All	<ul style="list-style-type: none"> ▪ Same as above; ▪ Lack of density transferability may lead to greater energy expenditures. 	Positive: Energy benefits accrue from density transfer and heating and coloring effects of natural resource preservation and green development practices. However, because not all density may be transferable for substantially covered parcels, limited incursion into the ESRA is recommended.

This analysis supports limiting conflicting uses within significant resource areas of the site, implementing density transfer, and employing green development practices. Urban housing and employment opportunities can be provided in an energy-efficient manner within non-resource areas. Additional housing and employment options are permitted through transfers from resource areas to more suitable locations in the impact area, which protects the community’s unique natural resources and avoids higher energy costs associated with development on constrained lands. Limiting conflicting uses in resource areas preserves a variety of important energy values related to transportation, infrastructure, and the heating and cooling of structures.

Energy Consequences of Prohibiting Conflicting Uses. Table 14 summarizes the energy consequences of prohibiting conflicting uses in the Pleasant Valley site. These consequences are reviewed in the context of the social functions or benefits described previously.

Table 14. Energy Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting uses	Consequences	Assessment
Lots with no sig. resource area (ESRA)	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Precludes new housing and employment options, potential forcing them outside the UGB with high energy costs from increased vehicle miles traveled. 	Negative: No further growth in community, growth outside UGB would have high energy costs.
Lots with partial sig. resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Loss of transportation and infrastructure connectivity within valley would lead to significant inefficiencies and energy costs; ▪ Loss of recreational and educational opportunities in resource areas could increase energy costs. 	Negative: No further growth in community, growth outside UGB would have high energy costs. Local access and recreational use precluded.
Lots with substantial sig. resource area (ESRA)	All	<ul style="list-style-type: none"> ▪ Same as above; ▪ Lack of density transferability may lead to greater energy expenditures. 	Negative: No further growth in community, growth outside UGB would have high energy costs. Local access and recreational use precluded.

The energy consequences of prohibiting conflicting uses are negative, creating the potential for urban sprawl into more remote parts of the region, outside of established urban growth boundaries. Prohibiting all conflicting uses within the impact area would essentially preclude further growth or urbanization of the valley. Prohibiting conflicting uses within resource areas would prevent efficient, connected transportation and infrastructure systems, increasing energy costs. It would also limit access to open spaces for recreational use, increasing travel costs.

Conclusion. The energy analysis supports limiting conflicting uses within significant resource areas and allowing them fully within the impact area.

The retention of natural resources at the Pleasant Valley site can reduce heating and cooling related energy needs both within the site and in the surrounding community. Conservation of resources can also reduce infrastructure related energy use and enhance the attractiveness of local walking and bicycle routes, including the Springwater Trail. This can decrease transportation-related energy use. Locating homes, jobs, and services in close proximity to one another can significantly reduce transportation energy demand.

ESEE RESULTS

After review of the ESEE impacts on individual property owners within Pleasant Valley, several conclusions can be drawn. First, the Pleasant Valley Plan District will allow much greater residential and employment densities within the community. The economic benefits of urbanization are substantial, and this is true for lands throughout the Pleasant Valley planning area, including lands adjacent to the ESRA. The analysis indicates that most properties located partially within the ESRA will experience substantial increases in development potential and economic value as a result of Plan District implementation. For example, an average of 15 new residential homes can be built on these affected properties outside the ESRA.

Clearly, however, some properties have greater ESRA coverage than others. For landowners with highly constrained property in and along the ESRA, the economic impacts are varied and could be marginal or

negative. The proposed ESRA Subdistrict addresses these impacts in a number of ways. Through the analysis process, and with input from the TAC, Advisory Group and the public, a program was developed to provide additional economic value from lands within the ESRA: the equivalent of at least five times the current base densities for County lands. This additional density is a transfer allowance that increases the net development potential of lands outside the ESRA. Consolidation of properties in common ownership or as part of a larger development package may effectively increase the overall development potential of lands adjacent to the ESRA. Additional value accrues to local landowners from the proximity of these properties to the community’s natural, scenic, and open space amenities. As discussed below, the ESEE analysis suggests that some additional development flexibility is warranted for lands with “substantial ESRA coverage” where there is insufficient land to transfer these units on site. This additional provision would allow construction of homes within the ESRA under prescribed conditions.

Conflict Resolution. Table 15 summarizes the conclusions for each of the four ESEE factors considered. In the table, “prohibit” indicates an analysis conclusion to prohibit conflicting uses, “limit” refers to limiting conflicting uses, and “allow” refers to allowing conflicting uses fully. The final column lists the aggregated assessment for the site.

Table 15. Conflict Resolution Summary Table

Property	Economic	Social	Environmental	Energy	Conclusion*
Lots with no ESRA coverage	Limit	Limit	Limit	Limit	Limit
Lots with partial ESRA coverage	Limit	Limit	Prohibit	Limit	Limit
Lots with substantial ESRA coverage (and limited transfer-ability)	Limit**	Limit**	Prohibit	Limit	Limit**

* *Green Development Practices standards that will apply throughout the Plan District will minimize impacts on nearby/downstream significant resources and resource functions.*

** *In certain cases, on-site density transfers are not possible, with potential loss of economic and social values. Therefore, this analysis recommends limited incursions into the ESRA to allow full density transfer potential to be realized.*

Most properties containing significant resources will experience substantial increases in development potential and economic value as a result of Plan District implementation. Allowing conflicting uses fully (i.e., allowing unrestricted development within the ESRA) fails to meet the goals and objectives of the Concept Plan, fails to protect the unique attributes of the community, and would result in major impacts and loss of significant natural resources and resource functions. Prohibiting conflicting uses altogether would preclude urbanization of the valley, and similarly fail to meet the goals of the community, as expressed in the Concept Plan.

Limiting conflicting uses (through proposed ESRA land use regulations) has positive economic, social, environmental and energy implications for the landowners, resources, and the larger community – so long as existing uses can be maintained, planned streets, utilities, and pedestrian trails are allowed to pass through the ESRA in a manner that minimizes impacts, and residential units within the ESRA can be transferred to more suitable buildings sites outside the ESRA.

Some properties with “substantial ESRA coverage” do not have sufficient area outside the ESRA to fit all of the allowed transfer units on site. As a result of the economic and social analysis, the ESEE recommendation is to create a provision that permits these 27 highly constrained properties to build into the ESRA, after available non-ESRA land has been used, in a manner that minimizes impacts.

With this additional ESRA disturbance allowance, the ESRA program is able to meet the community's natural resource conservation goals (as expressed in the Concept Plan) while preserving the important economic, social, environmental, and energy benefits of urbanization for landowners throughout the Pleasant Valley Plan District.

FUNDING STRATEGY

Title 11 of the Urban Growth Management Functional Plan includes a requirement that the natural resources plan include “a preliminary cost estimate and funding strategy, including likely financing approaches, for options such as mitigation, site acquisition, restoration, enhancement, or easement dedication to ensure that all significant natural resources are protected.”

The Concept Plan project began to address this requirement by doing a preliminary cost estimate, identifying funding strategies and by identifying various existing programs. This was included in the Implementation Strategies adopted as part of the Concept Plan. Additional work concerning cost estimates and funding strategies was done as part of the Implementation Plan Public Facility Plan and most specifically in the parks element. This section will summarize the results of Concept Plan and Implementation Plan regarding funding natural resources.

PRELIMINARY COST ESTIMATES

Concept Plan Estimate:

- Estimated acres of ESRA currently forested: 109
- Estimated acres of ESRA recently reforested by Portland's Environmental Services: 4.4 acres or 2,300 bank feet
- Estimated acres of ESRA needing reforestation: 352.
- Estimated Cost: \$3.7 million. This estimate is based on City of Portland estimates for site preparation, planting, and maintenance over a five-year period.

Implementation Plan Estimate:

- Estimated acre of ESRA in Clackamas County: 70
- Estimated acre of ESRA in Gresham: 233
- Open space benchmark acres in Gresham: 135
- Estimated acre of ESRA in Happy Valley: 17
- Estimated acre of ESRA in Portland North: 90
- Estimated acre of ESRA in Portland West: 66
- Preliminary Cost Estimate based on acquisition at \$40,000 acre and habitat restoration at \$10,000 an acre:
 - Clackamas County: \$3,480,000
 - Gresham Open Space \$6,764,500
 - Gresham ESRA in Excess of Open Space Benchmark: \$4,880,500
 - Portland: \$7,790,000
- Estimated Cost Total: \$21,741,000

These costs estimates vary significantly as the Concept Plan estimates only considered estimates for reforestation and maintenance but not for land acquisitions. The Implementation Plan estimates include costs for acquisition as well as for habitat restoration but did not factor in ESRA area that is already forested.

An analysis of current parks and open space System Development Charges indicates that there would not be sufficient receipts to fund the planned park and trail and open space acquisition much less the restoration of the remaining ESRA lands. The costs for all land acquisition, conservation easements, restoration, and maintenance will be substantial. There is no one method that can or should be used for everything. There are fairly significant public benefits that come from the restoration of ESRAs. Some public participation in their restoration seems appropriate.

FUNDING STRATEGIES

Numerous programs exist at the city, state, and federal level to assist with natural resource planning efforts. Regulatory efforts alone will not succeed in restoring natural resources. Individual property owners, developers, and entire communities must be willing to assume responsibility. Numerous programs provide financial and technical assistance and incentives, but require a commitment from the property owner and the community. Summaries of a sampling of the programs are listed following these funding strategies.

1. Reduce stormwater fees in exchange for protection of resources in the form of conservation easements.
2. Provide property tax credits for protection and maintenance of natural resources.
3. Encourage and further investigate density and development transfer rights and other transfer mechanism from properties inside the ESRA to properties outside.
4. Consider a new System Development Charge (SDC) on all development in the study area to purchase conservation easements. This effectively distributes the burden of resource protection to all that benefit.
5. Consider a bond measure to acquire property along streams and wetlands, either region wide or specific to Pleasant Valley. The measure could be patterned after Metro's bond measure that successfully acquired upland habitat in and around the study area.
6. Grants and donations should continue to be used whenever possible. Numerous programs exist at the state and federal level to assist with natural resource related planning efforts, especially if those planning efforts are related to natural hazard mitigation strategies. In addition to opportunities to obtain funding for the protection and restoration of habitats, opportunities to obtain public open space as part of a hazard mitigation/prevention strategy are available.
7. Landscape Assessment Districts (LADs) could be established as an overlay zone to provide a higher level of design and maintenance standards.
8. Identify strategies to combine public utilities construction projects (such as stormwater regional facilities, trails and pedestrian crossings, and street crossings) with restoration projects.

SAMPLE FUNDING SOURCES

FEDERAL LEVEL⁷

Sustainable Development Challenge Grants – US Environmental Protection Agency

Grants are intended to initiate community-based projects that promote environmentally and economically sustainable development. The program encourages partnering among community, business, and government entities to work cooperatively to develop flexible, locally oriented approaches that link environmental management and quality of life activities with sustainable development and revitalization. This program challenges communities to invest in a sustainable future that will link environmental protection, economic prosperity, and community well-being. These grants are intended to (1) catalyze community-based projects; (2) build partnerships that increase a community's capacity to take steps to ensure long-term ecosystem and human health, economic vitality, and community well-being; and (3) leverage public and private investments to enhance environmental quality by enabling community efforts to continue beyond the period of funding.

Watershed Protection and Flood Prevention Program – US Department of Agriculture

Also known as the "Small Watershed Program," this program provides technical and financial assistance to address resource and related economic problems on a watershed basis. Projects related to watershed protection, flood prevention, water supply, water quality, erosion and sediment control, wetland creation and restoration, fish and wildlife habitat enhancement, and public recreation are eligible for assistance. Technical and financial assistance is also available for planning and installation of works of improvement to protect, develop, and use land and water resources in small watersheds.

Water Quality Cooperative Agreements – US Environmental Protection Agency

Grants are provided to support the creation of unique and new approaches to meeting stormwater, sanitary sewer, and combined sewer outflows, bio-solids, and pretreatment requirements, as well as enhancing state capabilities. Eligible projects include research, investigations, experiments, training, demonstrations, surveys, and studies related to the causes, effects, extent, and prevention of pollution.

Wetlands Reserve Program – US Department of Agriculture

This voluntary program provides landowners with financial incentives to restore and protect wetlands in exchange for retiring marginal agricultural land. Landowners may sell a conservation easement or enter into a cost-share restoration agreement. Landowners voluntarily limit future use of the land, but retain private ownership. Landowners and the Natural Resources Conservation Service develop a plan for the restoration and maintenance of the wetland.

Wetlands Program Development Grants – US Environmental Protection Agency

The Wetlands Program Development Grants provide financial assistance to states, federally- recognized Indian tribes, and local governments to support development of new, or augmentation and enhancement of existing wetland programs. Projects must clearly demonstrate a direct link to an increase in the state's, tribe's, or local government's ability to protect its wetland resources.

Wildlife Habitat Incentives Program – US Department of Agriculture

The Wildlife Habitat Incentives Program (WHIP) is a voluntary program for people who want to develop and improve wildlife habitat on private lands. It provides both technical assistance and cost sharing to help establish and improve fish and wildlife habitat. Participants work with USDA's Natural Resources Conservation Service to prepare a wildlife habitat development plan in consultation with a local conservation district.

⁷ <http://www.epa.gov/OWOW/watershed/wacademy/fund.html>

Partners for Fish and Wildlife Program – US Fish and Wildlife Service

The Partners for Fish and Wildlife Program, through partnerships with conservation groups and federal/state/tribal/local government agencies, provides technical and financial assistance to private landowners interested in voluntarily restoring or otherwise improving native habitats for fish and wildlife on their lands. This program focuses on restoring former and degraded wetlands, native grasslands, stream and riparian areas, and other habitats to conditions as natural as feasible. Under cooperative agreements, private landowners agree to maintain restoration projects, but otherwise retain full control of the land.

STATE LEVEL

Oregon Watershed Enhancement Board (OWEB)

OWEB is a state agency led by a policy oversight board.⁸ Together, they promote and fund voluntary actions that strive to enhance Oregon's watersheds. The Board fosters the collaboration of citizens, agencies, and local interests. OWEB's programs support Oregon's efforts to restore salmon runs, improve water quality, and strengthen ecosystems that are critical to healthy watersheds and sustainable communities. OWEB administers a grant program that awards more than \$20 million annually (from lottery money) to support voluntary efforts by Oregonians seeking to create and maintain healthy watersheds. Examples of on-the-ground work to receive grants include: planting, reseeding, fencing, weed control, culvert replacement, wetland restoration, land purchases, and conservation easements.

Riparian Lands Tax Incentive Program⁹

This program provides landowners with tax incentives to protect, conserve or restore healthy riparian habitat on private lands adjacent to perennial and intermittent streams.

Wildlife Habitat Conservation & Management Program⁹

This program provides landowners with tax incentives to protect wildlife habitat on private lands.

REGIONAL LEVEL

Metro

Metro is responsible for allocating state and federal funds for projects identified in the Regional Transportation Plan. The Metropolitan Transportation Improvement Program (MTIP) allocates the funds every two years and can fund projects such as street and transit improvements, trails, bikeways and sidewalks. In addition, Metro may also make funds available for purchase of land that is deemed important for natural resource purposes through future bond measures.

LOCAL LEVEL

Portland Bureau of Environmental Services¹⁰

The City of Portland forms partnerships with public and private landowners to restore degraded stream bank and upland areas. This restoration work improves water quality, controls erosion, reduces stormwater pollution, aids in long-term salmon recovery, and enhances wildlife habitat. The Watershed Re-vegetation Program is a completely voluntary partnership with Environmental Services. Property

⁸ <http://www.oweb.state.or.us>.

⁹ http://arweb.sos.state.or.us/rules/OARS_600635/635_430.html

¹⁰ <http://www.cleanrivers-pdx.org>.

owners pay from 50 to 100 percent of the project expenses. Environmental Services provides native plants, contract labor, materials, and technical assistance. Projects include upland plantings, riparian zone grading and planting, and wetland construction.

Environmental Services is currently working with willing property owners on efforts to re-vegetate along stream corridors in the Kelley Creek Watershed.

Friends of Trees¹¹

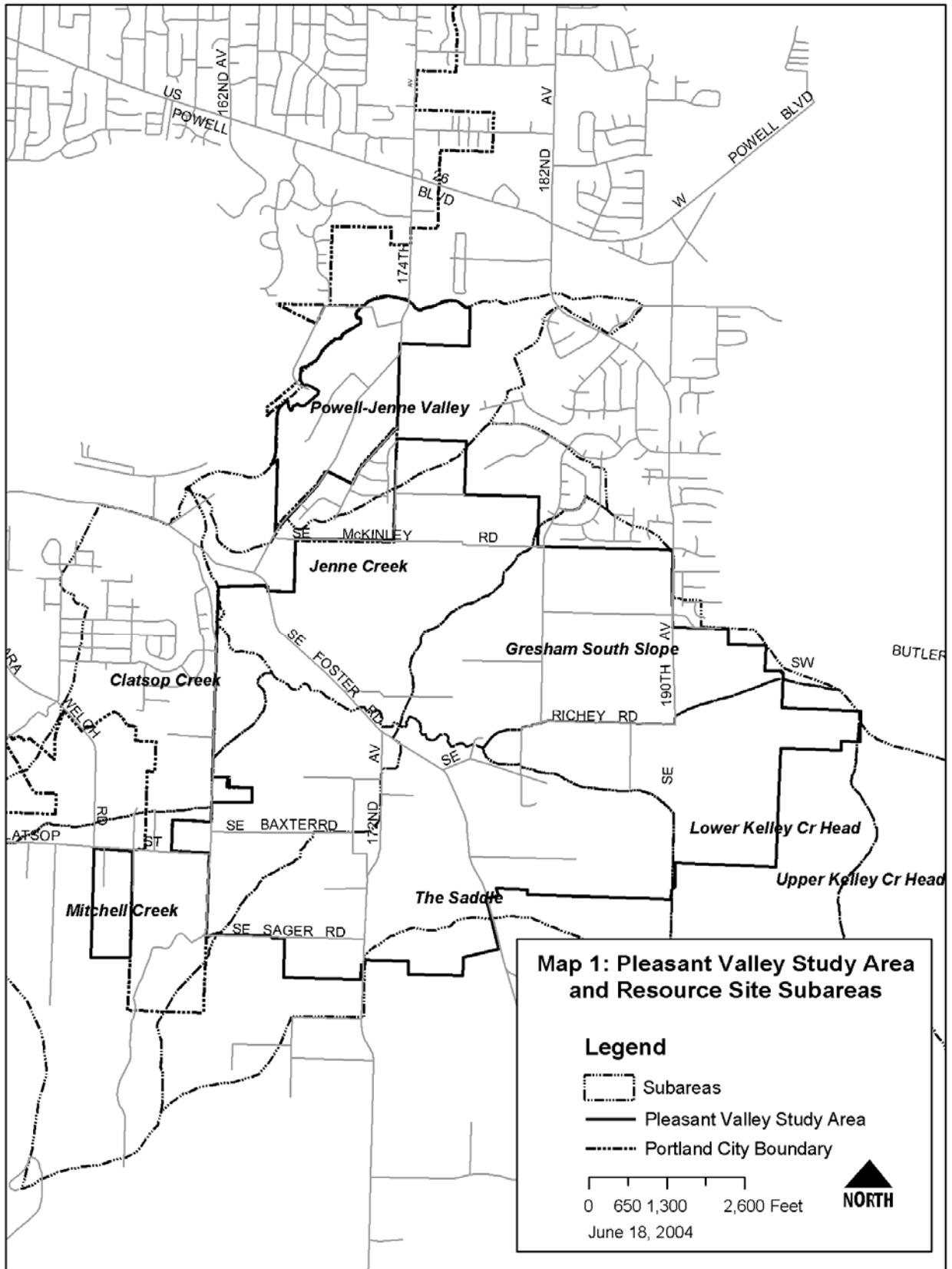
Friends of Trees builds community partnerships to plant, preserve, and care for urban trees in order to strengthen neighborhoods, create an ecologically healthy environment, and enhance the quality of urban life. *Friends of Trees* also works with public agencies, other nonprofit organizations, and citizen "friends" groups to organize community natural area enhancement and restoration projects. *Friends of Trees* is actively working with the Cities of Gresham and Portland on a number of projects. These projects are helping to restore ecosystem functions, including habitat for salmon and other wildlife. Moreover, by bringing people together to restore natural areas, Friends of Trees is training local stewards who will care for these special places in the years after planting.

Johnson Creek Watershed Council¹²

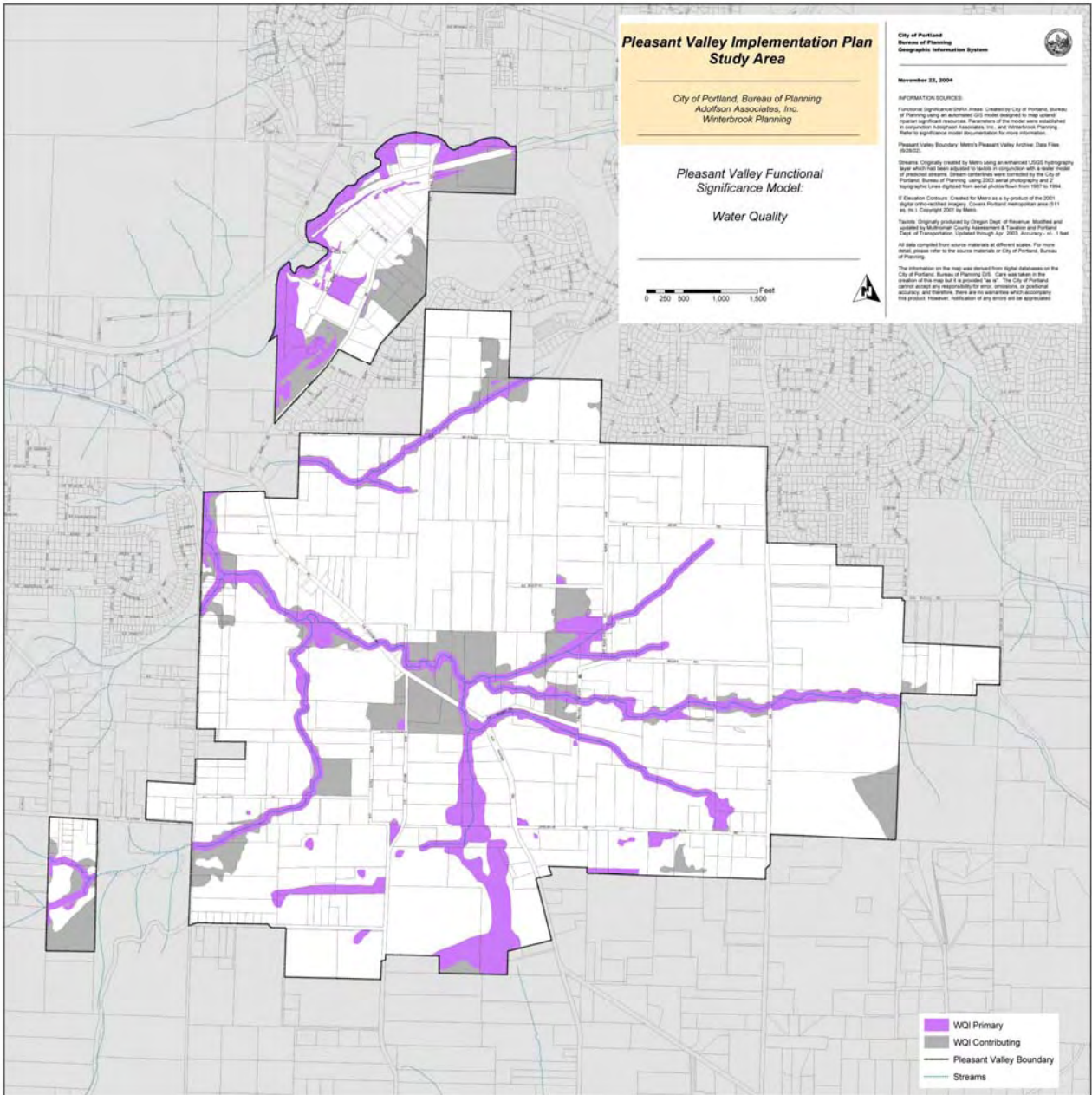
The Johnson Creek Watershed Council is a non-profit community-based organization committed to engaging citizens in improving the health of the Johnson Creek Watershed. To do this, the Council provides healthy creek programs and information for watershed residents, leads restoration projects, and supports watershed education. The Johnson Creek Watershed Council emphasizes protection and recovery of Kelley Creek as a critical first step in the extended process of restoring the greater Johnson Creek Watershed, as outlined in their Watershed Action Plan. The Council, in partnership with local residents, is actively working in Pleasant Valley on a number of projects to improve riparian conditions and restore fish passage. Members of the Johnson Creek Watershed Council have worked for over 10 years to bring local governments and citizens together to promote an integrated watershed approach to habitat restoration and fish recovery.

¹¹ <http://www.friendsoftrees.org>.

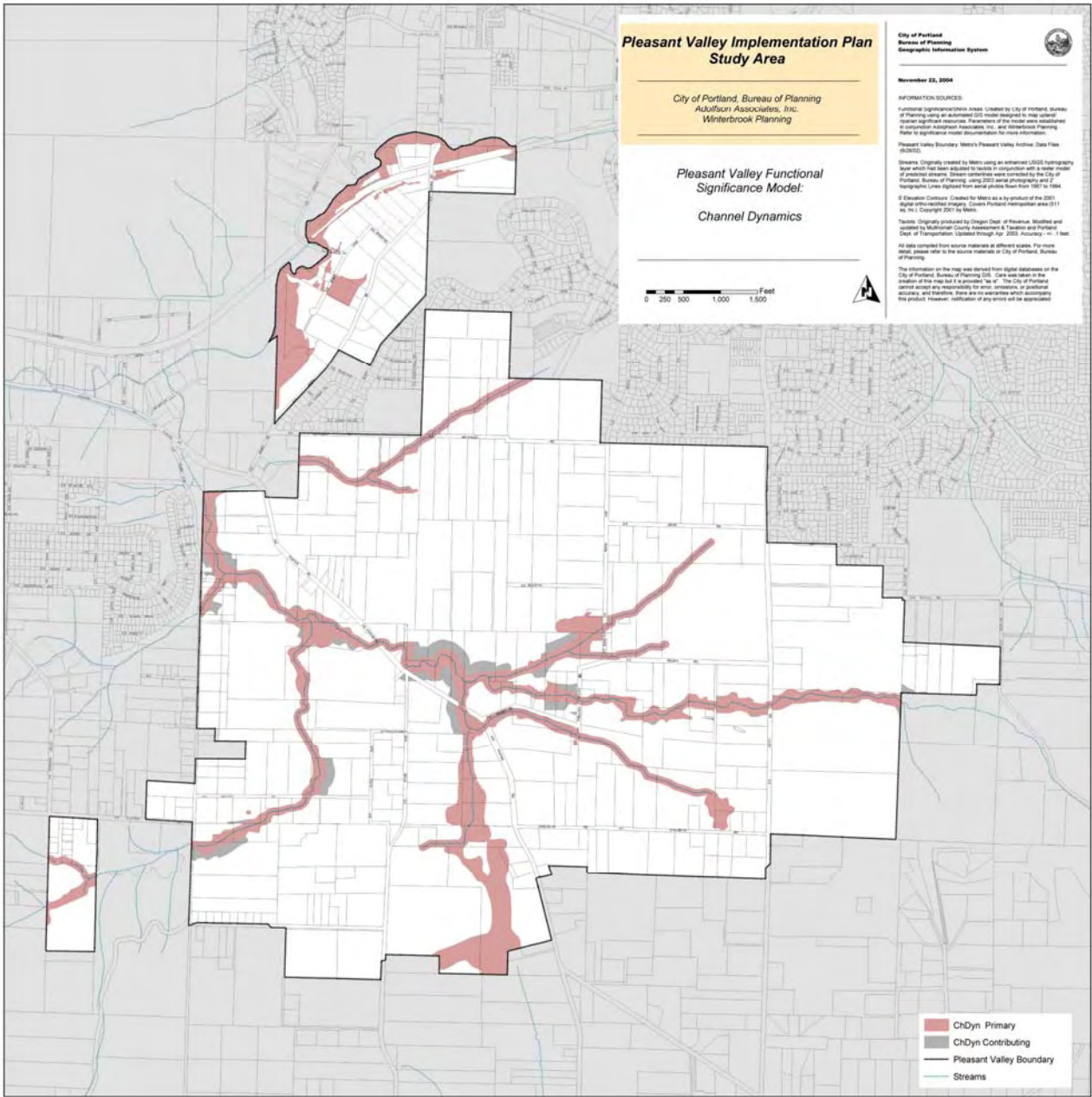
¹² <http://www.jcwc.org/index.htm>



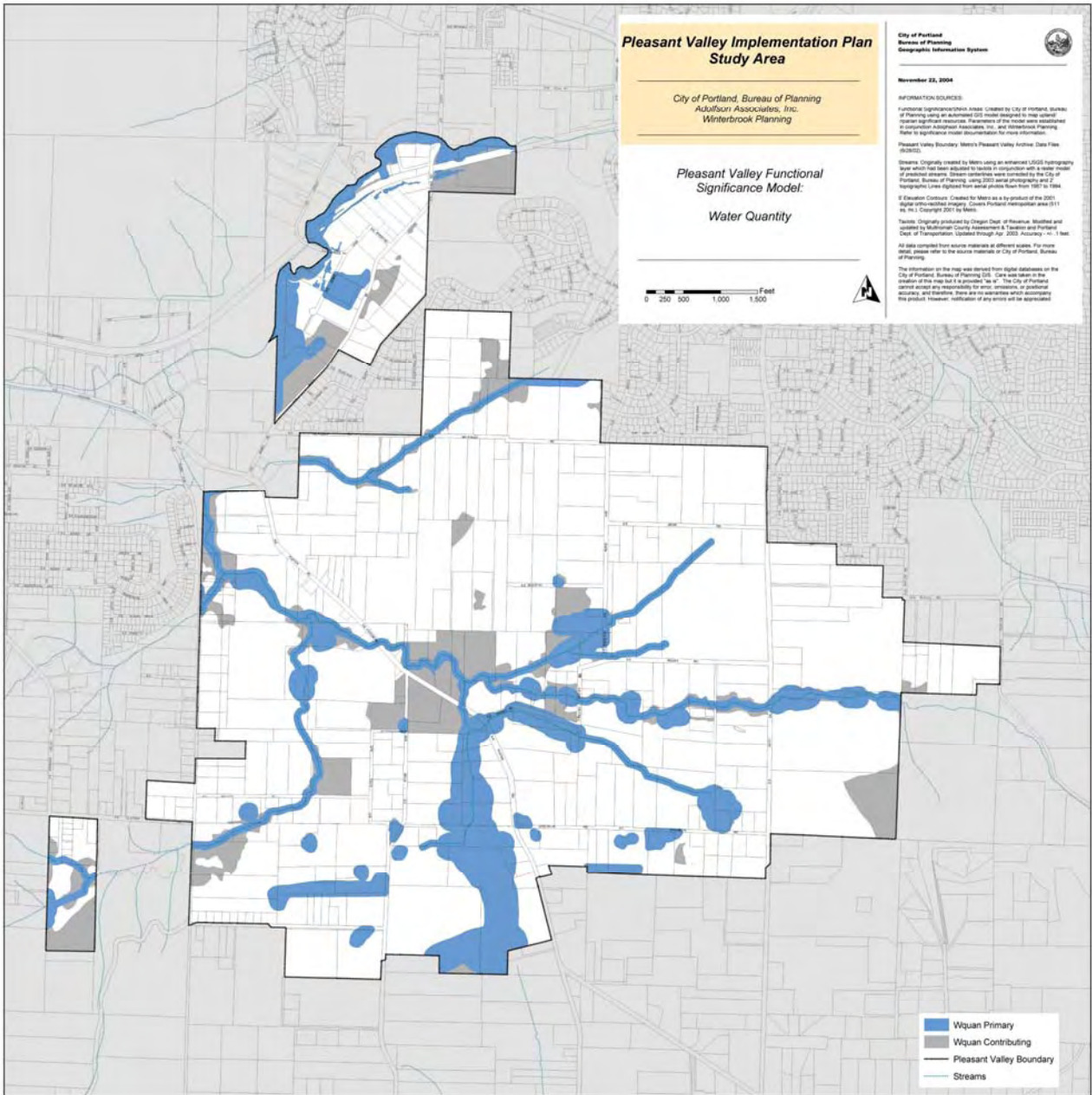
Map 2. Water Quality Function



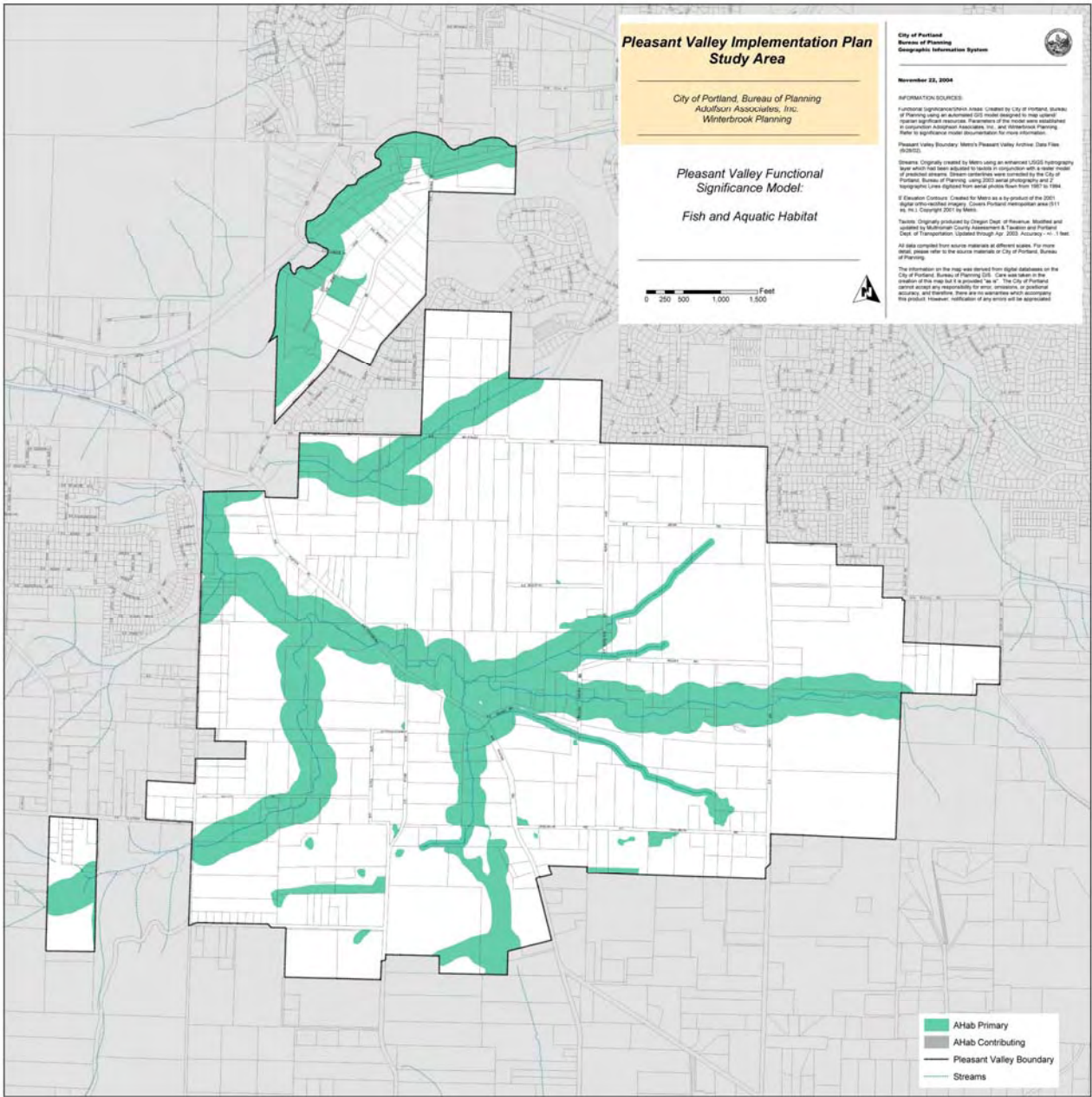
Map 3. Channel Dynamics Function



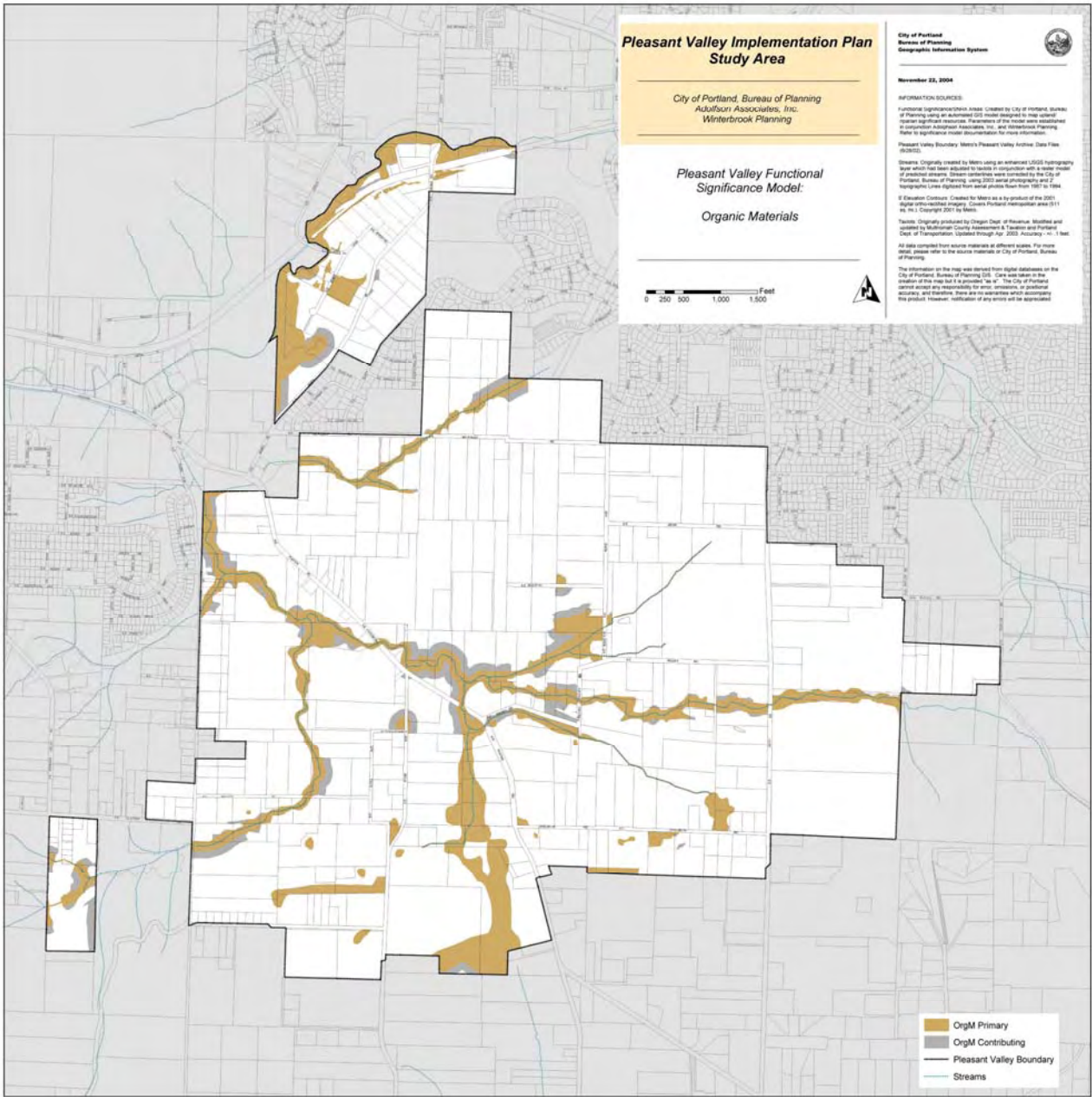
Map 4. Water Quantity



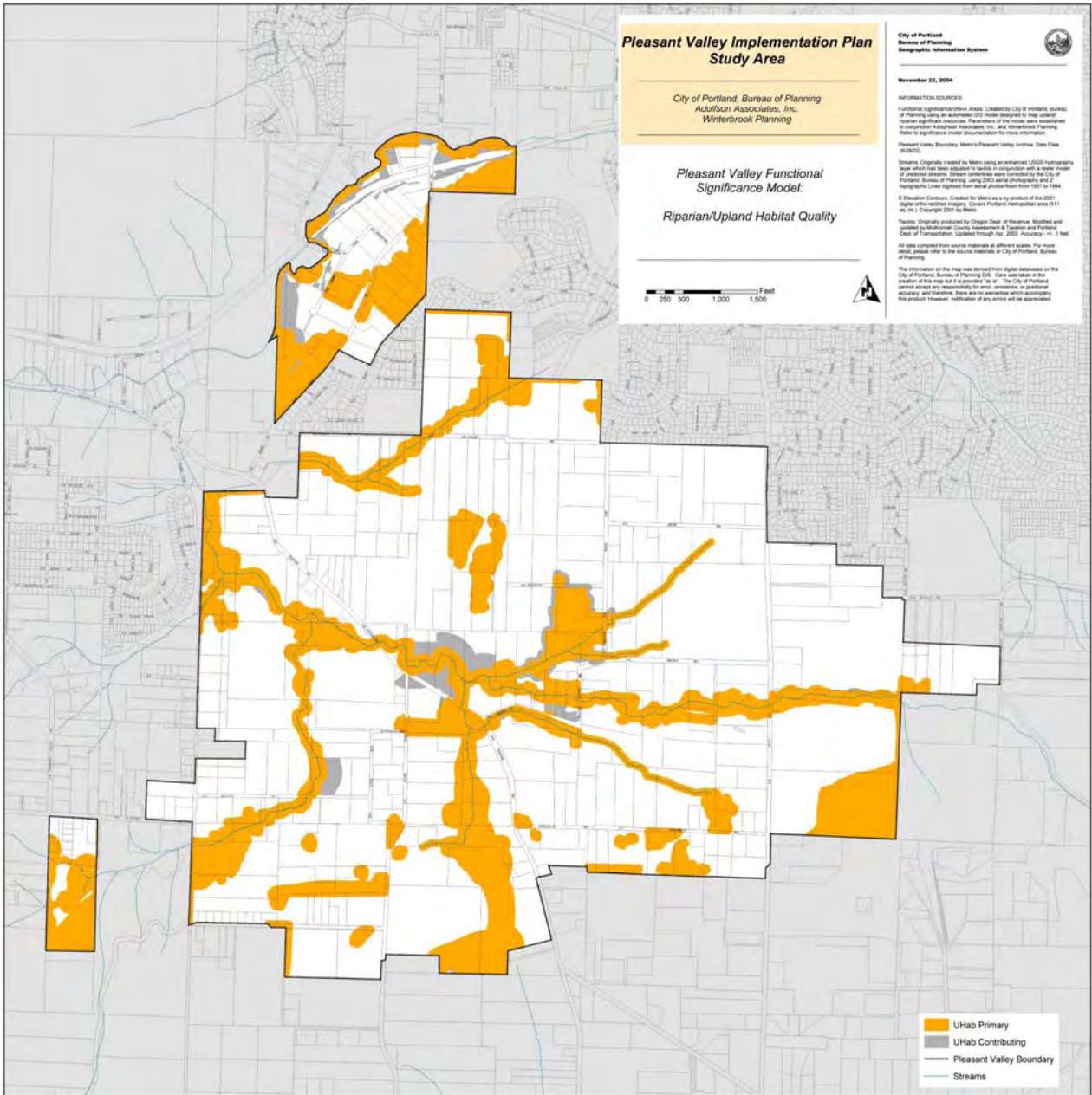
Map 6. Fish and Aquatic Habitat Function



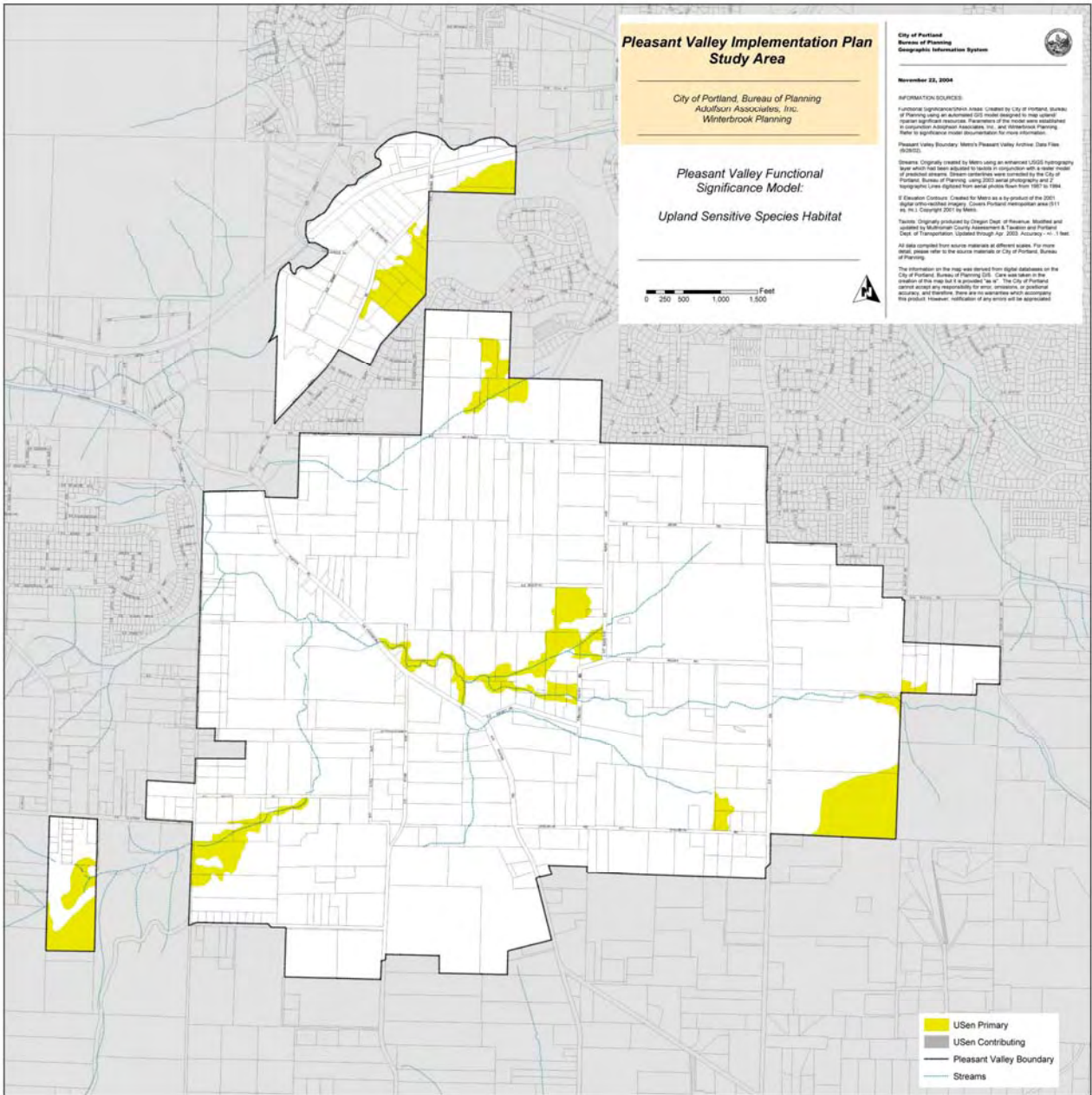
Map 7. Organic Materials Function



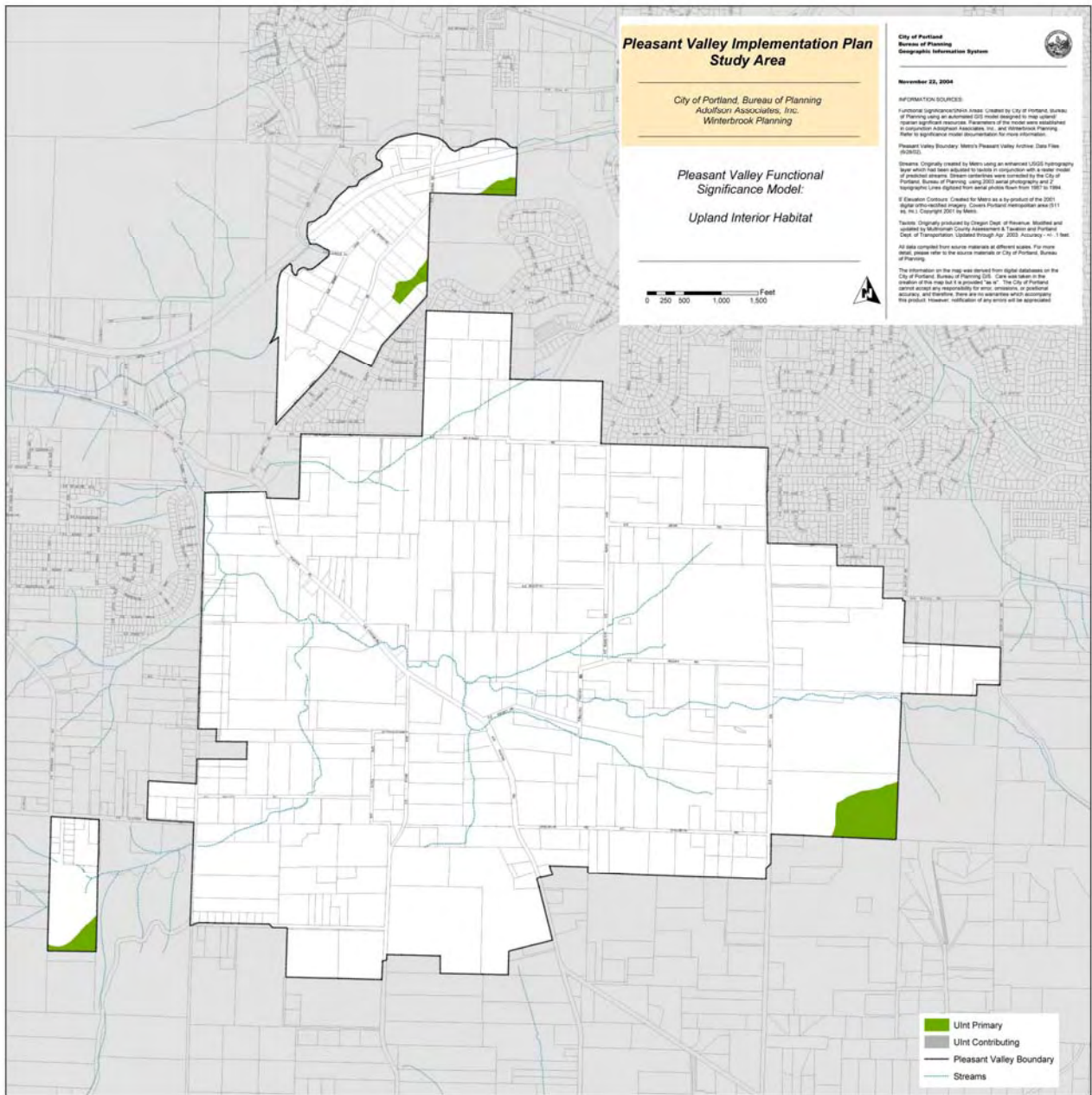
Map 8. Riparian/Upland Habitat Quality Function



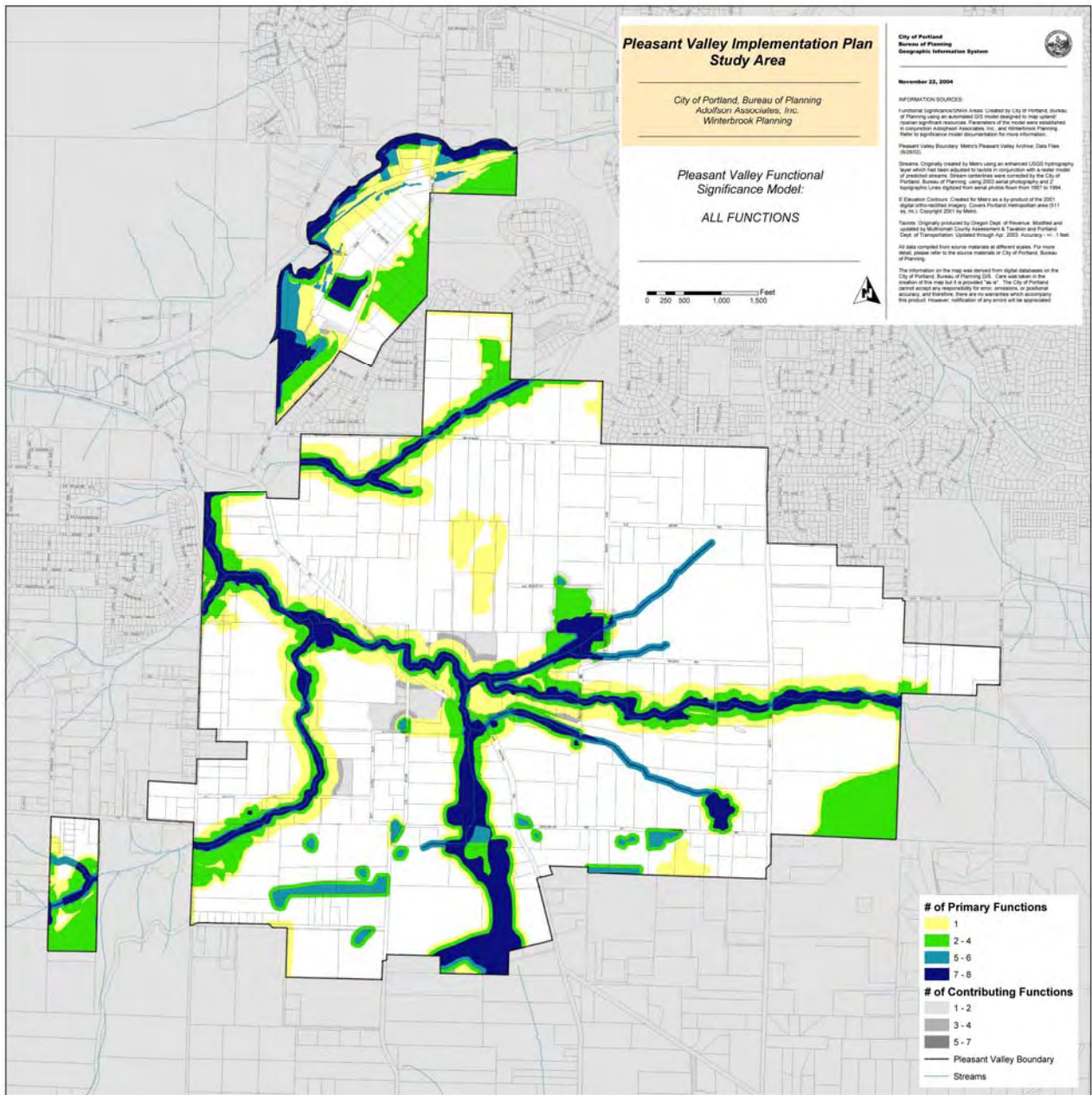
Map 9. Upland Sensitive Species Function



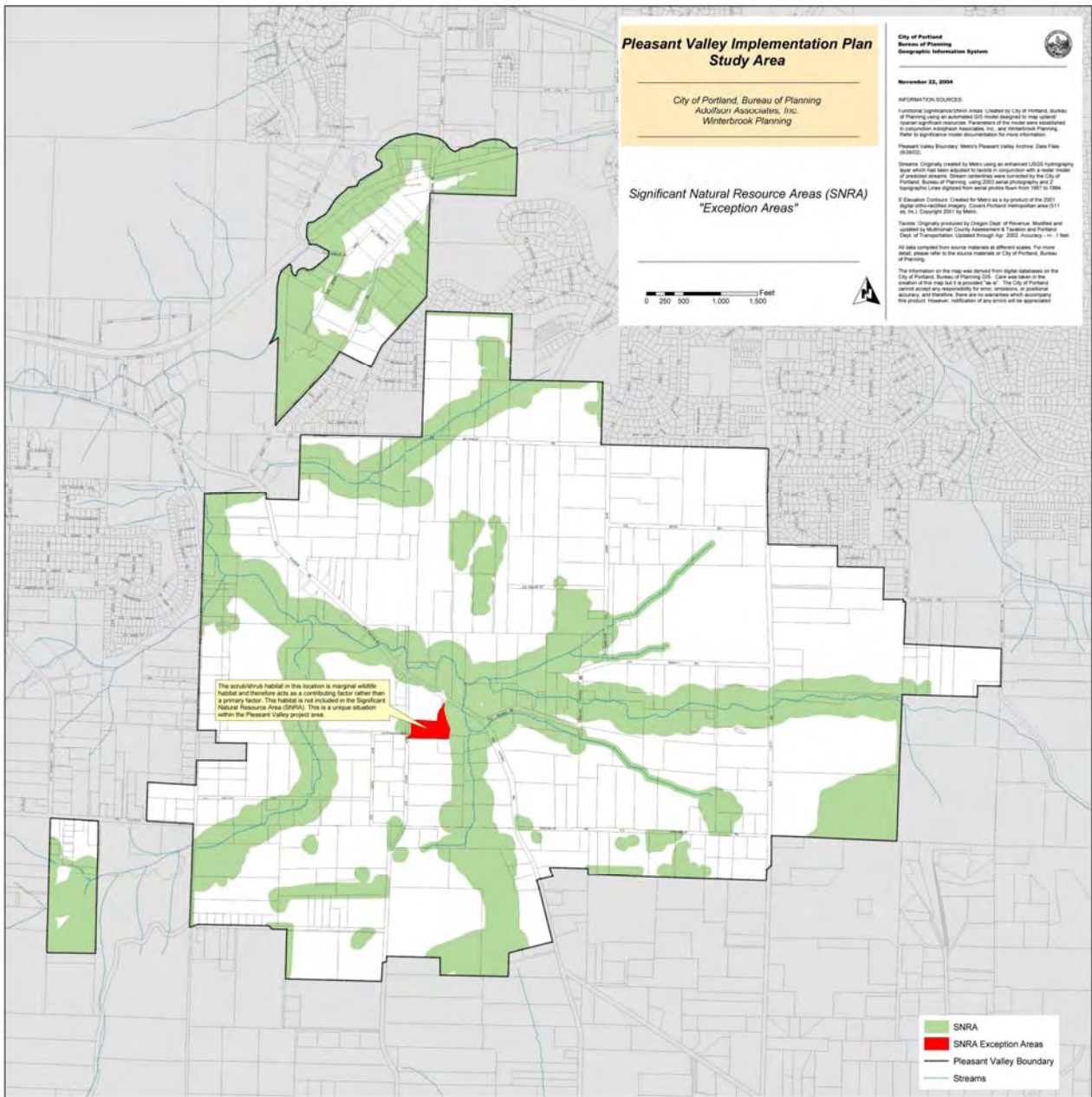
Map 10. Upland Interior Habitat Function



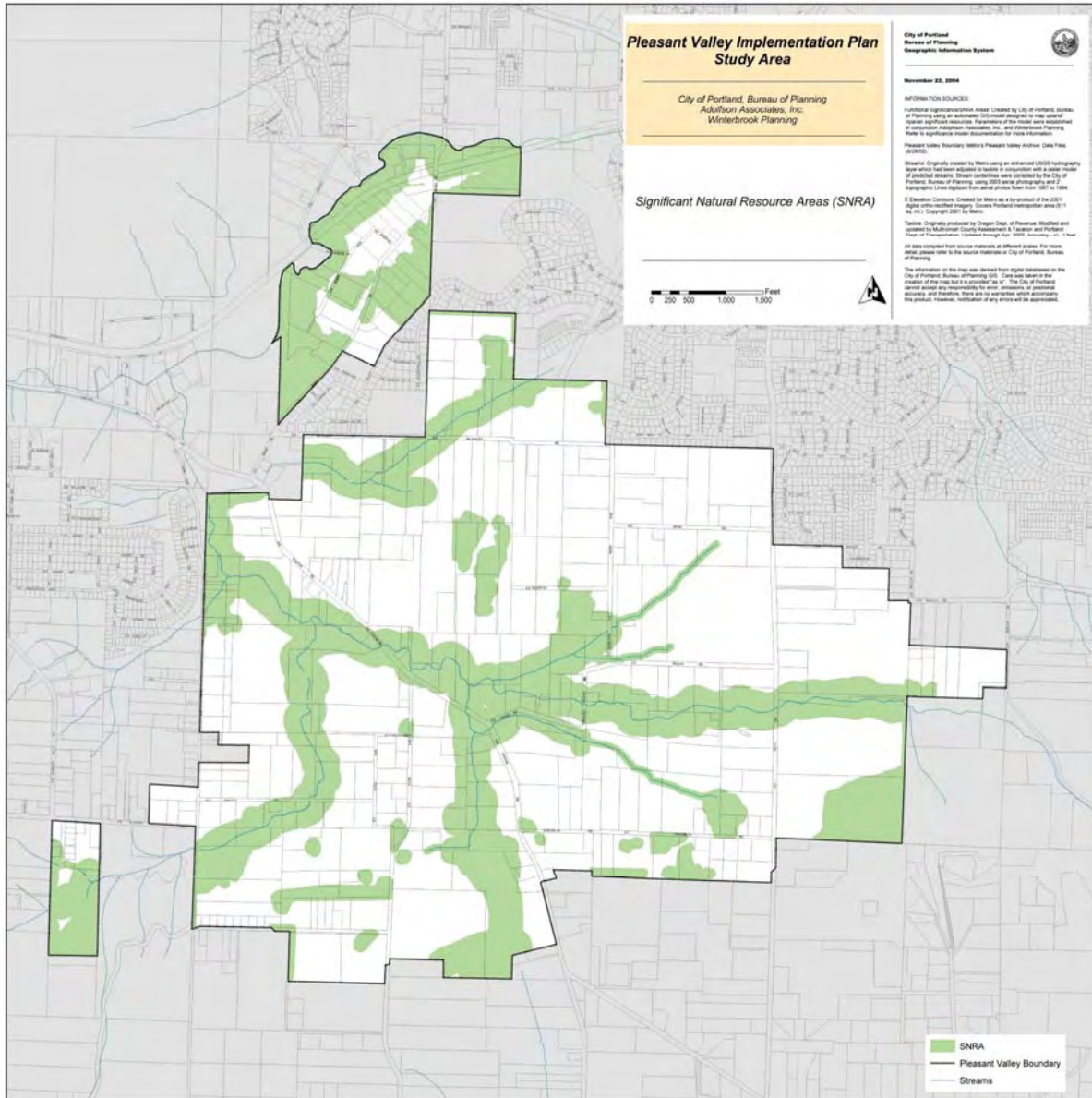
Map 11. All Functions Combined



Map 12. Pleasant Valley Significant Natural Resource Areas – Exception Areas



Map 13. Significant Natural Resource Areas (SNRA)



APPENDIX 44
(Added by Ordinance No. 1614 Effective 12/1/05)

SPRINGWATER COMMUNITY PLAN
SUMMARY REPORT



APPENDIX 44

Springwater Community Plan Summary Report

Section 1

Introduction

The purpose of this document is to summarize the planning process, public involvement, and the major elements of the Springwater Community Plan and its implementing Springwater Plan District. It is a “stand alone” summary document that explains the why, where, how, and what of the Springwater Community Plan. It summarizes the factual information that is the basis for the proposed Springwater Goals and Policies and the Springwater Plan District land use and development code. It amends Volume 1 – Findings of the Gresham Community Development Plan.

The preferred concept plan served as the basis for development of the Springwater Community Plan as a series of documents that update the Gresham Community Development Plan (GCDP) and meet the requirements of Metro Urban Growth Management Functional Plan (UGMFP) Title 11 regarding planning for urbanization. The Springwater Community Plan includes the following elements:

- Summary Report (amendment to Volume 1 GCDP)
- Annexation and Development Strategy (amendment to Volume 1 GCDP)
- Development Plan Policies (amendment to Volume 2 GCDP)
- Public Facilities Plans (amendment to Volume 2 GCDP)
- Development Plan Map (map amendment to Volume 2 GCDP)
- Development Code (amendment to Volume 3 GCDP)
- Natural Resources Report with an ESEE Analysis (amendment to Volume 1 GCDP)
- Transportation System Plan (amendment to Volume 4 GCDP)

1.1 EXECUTIVE SUMMARY

The Springwater Community Plan (Plan) describes an urbanization plan for the Springwater Community that will meet the intent of the December 2002 Urban Growth Boundary (UGB) expansion of bringing high value, family-wage jobs to Gresham. The Springwater Community¹ is 1,272 acres of unincorporated Multnomah County land that lies south (to the County line) and east (as far as 282nd Avenue) of the current Gresham city limits (see Figure 1). This Plan was developed by the City of Gresham in partnership with Multnomah County and in cooperation with Metro, Clackamas County, and others through an 18-month planning process involving residents and property owners, area stakeholders, City staff and appointed and elected officials, and consultant team members.

¹It consists of 1,152 acres that were added to the Urban Growth Boundary in December 2002 and 120 acres that have been in the Gresham urban services boundary since 1983 but which has never been annexed to the city or had planning done for future urbanization. The Springwater study area included, in addition to the Springwater Community, the “Brickworks site” and unincorporated Clackamas County land. The Brickworks site is 183 acres of existing Heavy Industrial designated land in Gresham and was analyzed to help determine how it could work with the Springwater Community. A separate report will be issued for the Brickworks site. The Clackamas County land was initially studied for analysis purposes primarily concerning public facilities. It is now part of the City of Damascus. All areas were included in the study, scenario development, and concept plan. Only unincorporated Multnomah County is included in the Springwater Plan District. See Figure 2.

The Plan is the blueprint for a new community that emphasizes economic development and livability in a sustainable environment. It has a planned capacity for 17,000 new jobs through a mix of employment areas that maintains opportunities for large scale industrial development while allowing the flexibility to respond to market conditions and promoting development within the area's natural topography. Residential areas are proposed in portions of Springwater that are not suitable for employment uses. These areas include a mix of housing from medium-density attached housing units in an urban setting to very large lot residential areas nestled at the foot of Hogan Butte. A Village Center will have services for employees and residents and serve as a focal point for the community. A natural resource protection and enhancement program will protect water quality and habitat in Springwater, and will help maintain the scenic character of the region as development occurs. Finally, new infrastructure – including an interchange on Highway 26 – will support the community's urbanization.

The major steps in the planning process were:

- Inventory of base conditions and projections of land-use, transportation, natural resources, and infrastructure needs.
- Market analysis evaluating current market conditions and trends impacting economic development of industrial uses, village center characteristics, and housing needs.
- Initiation of public process to gain input and provide information including utilizing open houses and workshops, newsletters and other mailings, surveys, and posting of draft documents, schedules, and other information on the web at www.ci.gresham.or.us/springwater/.
- Establishment of an advisory group, the Community Working Group (CWG), a 23 member body representing a diversity on interests including Springwater residents and property owners; neighborhood associations; business owners and developers; school districts; fire, police, and urban services providers; elected and appointed officials; and environmental and livability organizations.
- Establishment of project goals.
- Development of four scenario plans.
- Evaluation of the scenarios and preparation of a draft Concept Plan.
- Endorsement of final draft Concept Plan.
- Development of Comprehensive Plan Amendments to establish the Springwater Plan District.

The Springwater Community will be a major employment district. Key elements of the Plan are:

- A 384-acre industrial sub-district located east of Teleford Road and Johnson Creek. These industrial lands will accommodate large site (50+ acres) development but be flexible enough to allow for business park type development. Initial targeted industries include specialized software applications, recreational equipment and technology, corporate headquarters, specialty food processing, and renewable energy technologies.
- A research and technology industrial sub-district of approximately 106-acres located between Hogan Road and Teleford Road south of the proposed Village Center near McNutt Road. This sub-district provides for future industrial uses that primarily occur in office buildings. Targeted uses include corporate headquarters, knowledge-based industries such as graphic communication and creative services; research and prototype development and testing; professional services such as computer, accounting, and legal services; and medical services. Retail and professional service uses that cater to the daily needs of its customers are limited in size and are primarily to serve the industrial workers and businesses.

- A 23-acre mixed-use Village Center located near McNutt Road between Hogan Road and 252nd/Palmbled. This sub-district will provide retail and service opportunities for nearby residents and employees. It is intended to be anchored by a grocery store. Housing will be permitted in the second or third stories about the commercial uses. The Village Center will also have civic opportunities including a small park and park blocks.
- The Village Center will be supported by about 43 acres of a townhouse sub-district located near the Village Center along Hogan and 252nd. This is a moderate density sub-district allowing attached or detached housing on individual lots and will provide housing choices for the industrial and office sub-district employees.
- About 99 acres of a low density residential (6,000 square foot lots) sub-district located generally north of the Village Center between Hogan and Johnson Creek with a small area located on the east side of 252nd Avenue/Teleford Road. The lands for this sub-district have modest slopes that are not generally suited for the industrial uses that were originally envisioned in this area at the time the Springwater Community was brought into the UGB.
- About 97 acres of a very low density residential (12,000 square foot lots) sub-district located on the west side of Hogan Road and east side Hogan Road north of Botefuhr Creek. The lands for this sub-district provide large lot and estate housing choices and are generally located on more sloped lands. The acreage does not include the improved golf course lands. Lands on the west side of Hogan Road were brought into the UGB primarily as residential lands.
- An emphasis on sustainable design and in the industrial lands on sustainable industries.
- A new arterial and collector system to serve the new land uses. Phased improvements to US Highway 26 to allow for incremental industrial development. When completed there will be a new interchange at a new southern arterial that will connect to Rugg Road and Orient Drive, and a new grade separated bridge-crossing at a new northern collector street that will connect 257th Avenue, Teleford Road, and the Village Center. Regional transit service will loop through the Springwater Community via Hogan Road, the new southern arterial, and 257th Avenue/Orient Drive.
- A natural resources program that integrates the main stem of Johnson Creek and its tributaries with the new urban land uses while providing for the protection and enhancement of its natural resource functions including riparian habitat, water quality, and flood control
- Three new parks that will provide recreational opportunities for residents and workers, and a trails system that will provide connection to the regional trail system and bike and pedestrian travel between employment, village center, and residential neighborhoods.
- Included in the Plan is a 159-acre area commonly known as the “Brickworks Heavy Industrial Site”, located at the southeast quadrant of SE Hogan Road and SE Palmquist Road. This site is within the current Gresham City Limits and has been designated as Heavy Industrial (HI) since the City’s 1980 Plan adoption. With the exception of two schools, the area has seen only very minimal industrial development and is still primarily vacant. The City has adopted the Springwater Plan subdistricts for this overall area in order to more adequately meet contemporary industrial and employment needs. The Springwater Plan expansion and the application of the new subdistricts was done subsequent to the adoption of the overall Springwater UGB Expansion Area. Section 4.9, Volume 1, Appendix 44 provides the supplementary information relating specifically to the Brickworks Site. The information in Section 4.9 modifies the overall analyses of Appendix 44, Section 4, Tables 1, 2, 3 and 4 but adding assumptions and capacities for the Brickworks Site as provided in Section 4.9.

(Amended by Ordinance 1634 effective 1/18/07)

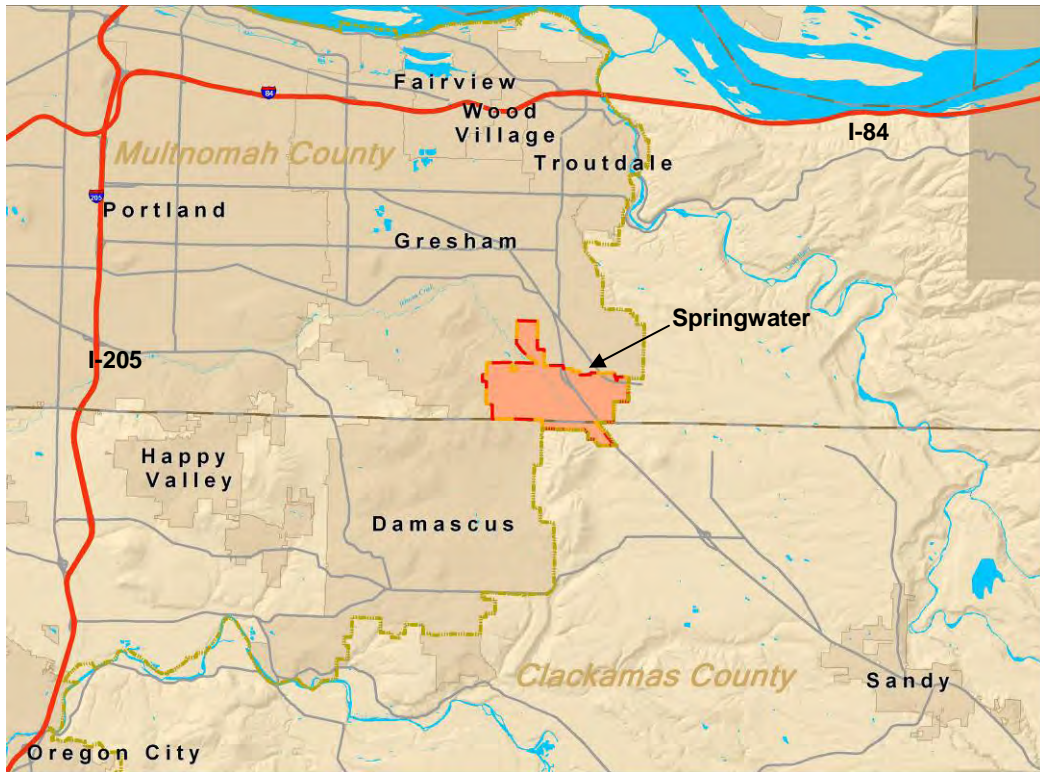


FIGURE 1 – SPRINGWATER REGIONAL CONTEXT

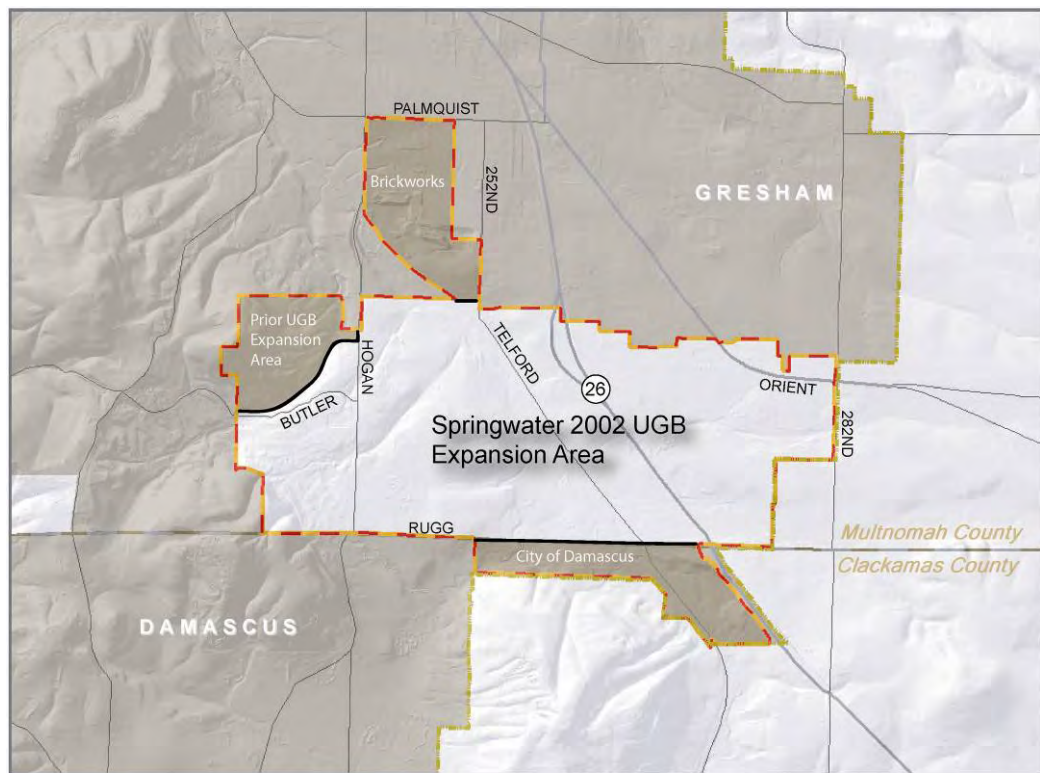


FIGURE 2 – THE SPRINGWATER STUDY AREA

1.2 PURPOSE

In December 2002, Metro brought 18,700 acres of previously unincorporated land into the Metro area UGB for future urbanization. Metro is required by the State to expand the UGB to accommodate future population growth. This expansion included the Springwater area, much of which was designated by Metro as Regionally Significant Industrial Area (RSIA). Previously Springwater was intended primarily for exclusive farm and multiple agricultural uses. The UGB expansion included 4,300 acres of land in Clackamas County south of Gresham and Springwater. The development of the Springwater Community Plan was closely coordinated with planning efforts related for that area.

***What is RSIA?** RSIA refers to Regionally Significant Industrial Areas. The Springwater area was designated a RSIA by Metro in 2002. The purpose of RSIA is “to provide and protect a supply of sites for employment by limiting the types and scale of non-industrial uses in RSIA’s.” Because there are a limited number of areas appropriate for large-scale industry in the region, it is important to preserve these, and to help industry operate efficiently by ensuring that RSIA’s have access to high-quality transportation facilities.*

Before urban development can happen in Springwater a comprehensive planning effort is required. Oregon state law (Planning Goal 14) requires planning for newly urbanized areas in order to ensure orderly, efficient growth. Title 11 of the Metro UGMFP has plan requirements for the UGB expansion area that the City needs to address and adopt into its comprehensive plan. The Metro ordinance bringing Springwater into the UGB and an Intergovernmental Agreement (IGA) between the City of Gresham and Multnomah County also establish guidelines and requirements when planning for the Springwater Community.

Comprehensive planning is also required to ensure that the Plan meets the City and region’s needs of providing high-quality jobs in east Multnomah County, while balancing other priorities for the area such as preserving and enhancing natural resources and providing infrastructure in the most cost-effective method possible.

1.3 PLAN AREA

Springwater enjoys a geographical location that is aesthetically pleasing and ecologically diverse. Its environmentally sensitive natural features include unique habitats such as the western buttes with their steep terrain; seasonal drainages; springs and seeps; ponded wetlands; a two-mile section of mainstem Johnson Creek; and four miles of major tributaries. Johnson Creek is the region’s principal basin that feeds into the Willamette Valley.

Steeper slopes on the western buttes are typically forested and contain some areas of seeps and springs that feed the tributaries of Johnson Creek. The buttes are basaltic lava domes and were formed during the Pliocene epoch, which was a time of sporadic small-scale volcanic activity throughout the region. The buttes were cleared in the early 1900s, but are now covered mostly by mid-succession forest that is 60 to 100 years old. The lowlands were originally forested but were cleared in the late 1800s and early 1900s for farming and timber. The majority of the lowland areas has remained in agricultural and residential use and in many areas has been tilled for drainage.

Johnson Creek is one of the primary tributaries to the Willamette River. Its fish-bearing waters and riparian corridor form the spine of the natural resources through the Springwater Community. Nearly two miles of Johnson Creek runs through Springwater flowing west before entering Gresham. NOAA Fisheries considers the main stem of Johnson Creek (including the Springwater section) as critical habitat for Lower Columbia River steelhead and Chinook, and it has been listed as essential fish habitat for Coho and Chinook. The Oregon Department on Environmental Quality (DEQ) lists Johnson Creek as a water quality limited stream and on the

303(d) lists for various toxins, temperature, and fecal coliform. DEQ is required by the federal Clean Water Act to maintain a list of stream segments that do not meet water quality standards.

As an urban stream, Johnson Creek is affected by the concentration of human activities along its banks. Numerous groups and jurisdictions, including the City of Gresham, are working to improve fish passage facilities and water quality in Johnson Creek and to restore native vegetation to its banks.

Springwater contains forest types in the Willamette Valley vegetation zone including Douglas fir and Western red cedar that are the primary conifer species while broadleaf trees include red alder, Oregon ash, big leaf maple, and black cottonwood. Other woody vegetation such as Nootka rose, Indian plum, willow, and red-osier dogwood also are found in Springwater. One distinctive species found in Springwater is the Hogan Cedar. Hogan Cedars are a unique species of the Western Red Cedar and are found in a large grove along Johnson Creek at the southern corner of the Brickworks site. These cedars are well over 100 years old and many are as tall as 150 feet, and it is believed they are only found naturally in nearby surrounding areas.

Wildlife in the Springwater area is diverse, but typical for western Oregon. Black-tailed deer are the largest mammals to be commonly found in and around the site. Smaller animals include skunks, raccoons, chipmunks, squirrels, and opossums. Common species of bird include red-tailed hawk, robin, song sparrow, Berwick's wren, house finch, cedar waxwing, violet-green swallow, belted kingfisher, great blue heron, mallard, wood duck, and the black-capped chickadee.

Rural residential uses primarily characterize Springwater. In the 2000 census there were 298 households and 833 people in Springwater (includes Brickworks site but not the City of Damascus.) Of these residents, 58 percent were over 35 years old and 22 percent were school age children. The population in Springwater is older than that of Gresham as a whole although school age children are about the same. White, non-Hispanic/Latino residents made up 90 percent of the Springwater population in 2000, with Hispanic/Latinos comprising the next largest ethnic group, which closely mirrors the ethnic make up of Gresham.

Other uses include a portion of a golf course (Persimmon) that occupies much of Springwater on the west side of Hogan Road, and few small commercial buildings especially near Orient Drive. The study area includes a total of 437 tax lots, of these 27 parcels are over 10 acres, 40 parcels are between 5 and 10 acres, and 370 lots are 5 acres or less. The largest single undeveloped parcel is approximately 40 acres.

The existing transportation system was designed primarily to serve the rural residential uses and farm to market route for past agricultural uses. The existing roadway network has mostly rural characteristics. The arterials are generally fast moving with most intersections either having no traffic control or only stop signs. Highway 26 is the major thoroughfare that traverses the study area, connecting Gresham with both Portland (to the west) and Sandy (to the southeast). Hogan Road/242nd Avenue also provides a north/south connection through the western portion of Springwater between cities north of Gresham and Damascus.

There are no public water, wastewater, or stormwater systems. Water is currently accessed via underground wells and wastewater is primarily treated in private subsurface disposal systems. Stormwater runoff is conveyed to natural drainage areas or to drainage ditches adjacent to local roads.

There are no public parks in Springwater, although the area is bisected by the Springwater Corridor Trail – a regional trail running parallel to Johnson Creek. This trail was created by the cities of Gresham and Portland to replace the rail line that once ran between Portland and Clackamas County.

Section 2

Public Involvement

2.1 INTRODUCTION

Public involvement was used early in the planning process to help identify community values and incorporate goals and opportunities identified by members of the public into initial planning efforts. The public involvement process continued through development of the Plan to gain public input, help evaluate issues and alternatives, and guide the process to maximize the interests of all community stakeholders. A public involvement plan was drafted and submitted to the Citizen Involvement Committee who endorsed it at their November 6, 2003 meeting.

The goals of the public involvement and information program for the Plan were to:

- Maximize the community's voice, provide information about the plan and the process, and to gain community consensus
- Include City and regional stakeholders in the planning process
- Consider the existing diversity of the communities
- Provide specific and relevant information and answers to the public
- Coordinate with Damascus and other regional governments
- Provide community education
- Consider other issues and initiatives

2.2 KEY METHODS

To achieve these goals, the project team developed a public involvement and outreach plan that included the following elements:

- An extensive multi-media public outreach effort including a project website, six newsletters (including four, full-color newspaper inserts), press releases, and four postcards
- Stakeholder interviews with 42 area property owners; neighborhood groups; neighboring jurisdictions; and business, natural resource, and other interest groups
- A 23-member Community Working Group which met monthly throughout the project and participated in open houses and workshops
- Four community open houses and one community workshop used to gain input regarding preferred development patterns, issues to address, and ideas to consider
- Informational displays at the open houses and workshops, and for viewing at Gresham City Hall and the Gresham-Barlow School District
- Two web-based surveys, implemented in conjunction with two open houses, and used to gather community input on the scenarios
- Focus groups used to gather professional experts to discuss issues related to sustainability, industry, residential development, industrial development, natural resources, and the Brickworks site
- A brokers panel to answer questions related to property values, annexation, plan adoption and timing
- Community/Agency briefings with City of Gresham elected officials, appointed commissions, business and neighborhood groups, and interest groups
- A postcard mailing in June 2005 providing information on the legislative hearing and how to testify

Through these efforts and through the personal communications of the project team, a number of stakeholders were included in the planning process. These include the following:

- Gresham Area Chamber of Commerce
- Gresham Chamber Governmental Affairs Committee
- City of Gresham Advisory Committees
 - Transportation
 - Parks
 - Historic Resources
 - Finance Committee
 - Development Advisory Group
 - Neighborhood Coalition
- Educational Groups
- Mount Hood Community College Joint Leadership Council
- Gresham-Barlow School District Long Range Planning Committee
- Partner Jurisdictions
 - Damascus/Boring Advisory Committee
 - Multnomah County Board of Commissioners
 - City of Damascus City Council
 - Clackamas County Commissioners (tour and meeting)
 - City of Sandy
- State Organizations and Agencies
- Oregon Economic and Community Development (tour)
- State Legislators (tour & meetings)
- Joint meeting, Senate Transportation and Economic Development Committee and House Trade and Economic Development Committee
- Governor's Economic Revitalization Team
- Oregon Department of Transportation (tour)
- State Treasurer
- Johnson Creek Watershed Council
- League of Oregon Cities -- Industrial Lands session
- East Metro Cities Regional Issues Forum
- Metro/Hood River Economic Revitalization Team
- City of Gresham Industrial Workshop
- Port of Portland
- Gresham Board of Realtors
- Oregon Science & Technology Partnership
- Kelly Creek Neighborhood Association
- Southwest Gresham Neighborhood Association
- Portland General Electric
- East Metro Association of Realtors

Table 1 shows the timeframe for public involvement activities. Highlights of key findings are included below.

TABLE 1 – TIMELINE OF PUBLIC INVOLVEMENT ACTIVITIES

Task	Technical Steps						
	<i>Inventory & issues identification</i>	<i>Develop scenario alternatives</i>	<i>Evaluate & analyze scenario alternatives</i>		<i>Recommend alternative & develop Concept Plan</i>		<i>Implementation Plan review & adoption</i>
	Fall '03	Winter '04	Spring '04	Summer '04	Fall '04	Winter '04	Spring '05
Public Information	◆						
Stakeholder Interviews/ Meetings	◇	◇					◇
Community Working Group		☼ ☼	☼ ☼ ☼ ☼	☼ ☼	☼ ☼	☼	☼ ☼
Community Open Houses	◇		◇		◇		◇
Community Agency Briefings	◆						
Documentation	◆						

2.3 KEY FINDINGS: STAKEHOLDER INTERVIEWS

In November 2003 the City of Gresham conducted 13 meetings involving 42 property owners and other stakeholders, and also provided a briefing to the Gresham Citizen Involvement Committee. The individuals selected for interviews represented a range of local and regional interest groups, neighborhood associations, developers, agricultural users, property owners, and community facilities. The purpose of the interviews was to provide an opportunity for community leaders and residents to:

- Find out about the project
- Identify other community members who should be involved
- Inform the project team about how they would like to be involved in the project as it developed
- Allow stakeholders to share their perceptions of issues or concerns regarding the project

All participants were asked the same questions related to how they had been involved in Springwater planning to date. Common question were what opportunities or constraints they saw, what they thought would be the biggest issues to address in urbanization and why, and issues or concerns regarding specific topical areas applicable to Springwater (i.e., industrial development, residential development, public services, natural resources, etc.). A complete stakeholder interview summary is included in the Reference Documents. Major opportunities and constraints identified by the stakeholders are outlined in Table 2.

TABLE 2. STAKEHOLDER IDENTIFIED OPPORTUNITIES AND CONSTRAINTS

Opportunities	Constraints
<ul style="list-style-type: none"> ▪ Bringing jobs to the area ▪ High end housing ▪ Regional park facilities ▪ Improving protection for natural areas ▪ Limiting commuter miles driven ▪ Bring high paying jobs to the area not just warehousing or service industry jobs ▪ Balances the region with a good job to housing mix ▪ The natural setting is a unique and compelling selling point 	<ul style="list-style-type: none"> ▪ Transportation connection to I-84 (lack of) ▪ Ability for the area to attract large employers ▪ Competition is on a statewide and national scale for attracting industry ▪ Once the natural areas are removed from consideration for development, there isn't a lot of land to develop ▪ Property owners who don't want to annex or sell ▪ Too much protection for natural resources ▪ Lack of infrastructure and inability to pay to put it in ▪ Assembling property into large parcels may be challenging

2.4 GOALS AND POLICIES ADOPTED BY THE COMMUNITY WORKING GROUP

A 23-member Community Working Group (CWG) was formed to provide "on the ground" guidance to the City regarding issues of importance to the community. The CWG served as the advisory group to City technical staff. The CWG represented the range of interests and issues that needed to be addressed as the Plan was developed.

The CWG helped develop goals and policies to guide the development and evaluation of the planning alternatives. The following Goals² were adopted by the CWG in order to guide the plan and provide a 'yardstick' by which to evaluate plan proposals in the following topic areas:

- Create a Community
- Economic Development
- Sustainability
- Livability
- Transportation
- Natural Resources

Create a Community

The Springwater Community shall be an economically and environmentally sustainable community. The primary focus of the Plan will be on providing a high number of industrial and industrial related jobs that enhance the economic viability of Gresham, the greater east Multnomah County region, and their citizens. Industrial and employment lands will be complemented with a village center and housing and will be carefully integrated with the upper Johnson Creek system. Sustainable "green" building and development practices will enhance the community's unique character while supporting the protection and restoration of the area's natural resources.

Economic Development

The Springwater Community shall provide industrial land that will generate a variety of family- wage job opportunities. Job creation is aimed at correcting the imbalance between the number of households and the number of jobs in the East Metro region and increasing the City's economic strength. The Plan will actively encourage businesses with an interest in sustainability and protecting the community's rich natural resources. Springwater will include a village center that can serve residents, employees, and businesses.

² A detailed list of the goals and policy statements is provided in the Springwater Goals and Policies section of the Springwater Community Plan report.

Sustainability

The Springwater Community shall foster sustainability through encouraging businesses, industries and homes that are built with and practice good environmental stewardship.

This shall be accomplished through green practices that include energy-efficiency, water conservation, and reduced pollution, but avoid environmentally harmful materials and processes. The Springwater Community strives to be a model for successful sustainable industrial development. Development also shall preserve, restore, and enhance natural resources by meeting or exceeding local and regional standards. Land uses, transportation systems, and natural resources shall be carefully integrated and balanced.

Livability

The Springwater Community shall have a high quality of life. This will be accomplished through compact and sustainable development; a range of housing choices; walkable neighborhoods; access to natural resource areas and open spaces for employees in the community; preservation of natural resources; and a variety of transportation choices. The community will encompass a village center or series of village centers that provides needed services for employees and residents in an attractive and human-scale environment. A range of housing choices will be provided within close proximity to services and/or employment areas. Overall, the community shall be a unique environment that creates a sense of place both for residences and businesses, and acts as economic attractor.

Transportation

The Springwater Community will encompass a well-planned transportation system that supports the Springwater Community Plan, while promoting transit, walking and bicycling. Good design can also avoid the effects of heavy traffic on neighborhood safety and the natural environment. A well-connected transportation system using trails, bike routes, and a variety of street types reinforces a sense of community and provides adequate routes for travel. The site should provide good connections to and from the employment areas and the surrounding community, as well as regional freight and transportation centers.

Natural Resources

The plan will preserve, protect and enhance natural resources. It will define, protect, restore, and enhance significant natural resources, including stream corridors, wetlands, and forested areas. Resource areas will provide the basis for identifying development constraints as well as serving as open space amenities for the Springwater Community. Resource protection and enhancement will be a shared responsibility of property owners, developers, and governments.

Section 3

Concept Plan

3.1 INTRODUCTION

An essential step in developing the Plan was to create a Concept Plan. A Concept Plan addresses land use, transportation, natural resources, and public facilities patterns and strategies. It provides the basis for future decisions on land use (land use designation and development code), protection of natural resources, and the provision of urban services and facilities. The Springwater Concept Plan³ was developed using a scenario planning process. Utilizing a number of variables that will impact the development of Springwater over the next 20 to 40 years scenario planning considers several possible land use patterns and sees how they match with the community's goals.

3.2 SCENARIO PLANNING

Scenarios are not forecasts or predictions. The Springwater scenarios (Figure 4) are possible futures as Springwater transitions from a rural to an urban area. They are based on existing conditions; on economic, environmental, demographic, and other trends; and on the community's values, goals, and objectives for Springwater. The scenarios are tools to compare how different land use patterns and policies are likely to affect the urbanization of Springwater and which strategies will best meet the Springwater goals while providing for flexible responses as circumstances change in the future.

Scenario planning involves a hands-on workshop process. For Springwater there were three distinct workshop participant groups. The first participant group was project and City staff. The second group was the Gresham Planning Commission. And the third group was Springwater residents and property owners and other stakeholders at a public workshop held at the Hogan Cedar Elementary School. Volunteers from the City's mediation program facilitated at the public workshop.

The hands-on process is that each table (about 8-10 persons at the public workshop) has a map and a chip set. Each map was the same and included the existing road system as well as environmental and topographic features. Each map showed areas considered unbuildable. These included a 200 foot area along both sides of Johnson Creek, a 100 foot area along both sides of all tributaries to Johnson Creek, a 50 foot area around all wetlands, FEMA 100-year flood plain, 25% or greater slopes, and the golf course.

The workshop also featured other maps to help inform the participants' map-making decisions. These included maps that showed the lands that:

- Are relatively flat, have potential to be in larger sites, are adjacent to Highway 26, and relatively not constrained by environmental features (the lands were east of Teleford Road)
- Have similar characteristics as above but have significant site improvements (primarily housing).

³ A Concept Plan was developed for the entire 1,700-acre Springwater area including the "brickworks site" and the "Clackamas County site". A later decision was made that the Concept Plan could be used as the basis for a future plan map changes to the brickworks site. A Concept Plan was created in Clackamas County for analysis purposes and with its incorporation as part of the new City of Damascus a decision was made to forward the concept plan recommendations to the City of Damascus for their use.

- Have similar characteristics as the first bullet except not adjacent to Highway 26 (these lands west of Telford Road and south of McNutt Road.)
- Moderately sloped (6-15%) and most affected by streams features (primarily between Hogan Road and Telford Road, north of McNutt Road)

Three chip sets were developed, each representing an economic development program based on the economic research and on the land use, transportation, and environmental needs analyses. The dominant element of the chip sets was the type and character of the employment designations. Each set had differing amounts of large lot industrial (RSIA), small lot industrial, and business park/office chips. A commercial component included commercial center and mixed-use chips. The housing component was added to the chip sets according to the types of housing most likely to be demanded by the employment uses and included small and large lots single family and apartments and townhouses.

Each chip was scaled to the map and represented a specific area and a specific number and type of jobs or housing. Participants were able to modify transportation elements, designate the location of industrial, office, retail, and housing uses, and consider access to open space and trails. The same unbuildable lands (steep slopes, wetlands, floodplains, and stream buffers) were held constant in each scenario developed.

3.2.1 January 2004 Community Workshop

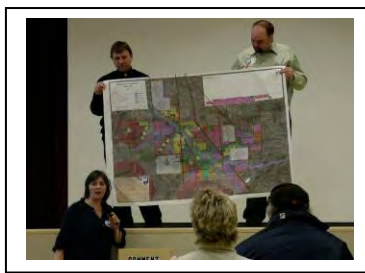
A community workshop was held at the Hogan Cedar Elementary School in January 2004 to obtain public input to help create three different scenarios. Approximately 85 persons were in attendance. The hands-on scenario process teaches participants about the land use issues involved in Springwater planning and allows the project team to learn what solutions the participating public will support. The format of the workshop included a presentation; small group development of a scenario map; group presentation of each scenario; and a question and answer session (Figure 4).

At this community workshop, eleven maps were developed. The maps had the following common themes:

- The large site industrial chips tended to be placed on the east side of Telford Road.
- Instead of industrial chips, office and mixed-use chips tended to be placed between Hogan Road and Telford Road.
- Wide spread support for majority of the area to be employment. However, also support for some residential between Hogan Road and Telford Road and west of Hogan Road in the more sloped areas.



Small Group Table



Scenario Presentation



Q & A Session

FIGURE 3 COMMUNITY WORKSHOP

3.2.2 Alternative Scenarios

The January workshop resulted in eleven scenario maps, and five maps were developed by City staff and the Planning Commission. All of the maps were converted to digital maps using a geographic information system (GIS), which allows them to be viewed in combination and separately. By combining all the maps together into a composite it is was evident that participants in general saw the eastern portion of the site as the most suitable for large-scale employers and the sloped land to the west for residential uses. The land in between was seen as best for industrial-related office uses. There was no clear distinction on where to locate the Village Center.

Utilizing these digitized maps project staff developed three scenarios. After reviewing the results from the workshop and three preliminary scenario concepts, a small group of CWG members felt that they wanted to derive a fourth option. The fourth scenario was developed as a sketch. These four scenarios are shown in Figure 4.

The three scenarios had similarities and differences. [As the fourth scenario was a sketch is was more difficult to evaluate number of jobs, housing, etc. than the GIS derived scenarios.] The scenarios all emphasized an employment-based community built around a strong natural resource network. Each accommodated more than the target 15,000 new jobs – the scenarios ranged from 16,700 to 17,700 projected jobs, reflecting differences in both the amount of land used for jobs and the types of jobs created. Each of the three scenarios had approximately 1,000 jobs in the commercial center and Village Center (except the Fourth Scenario which had about 400). Each of the scenarios had a balanced mix of housing types, with large lot residential housing being the least amount of housing units. Industrial (large and small site) were located in each scenario east of Teleford. Each had a village center that anticipates housing over retail and is located between Hogan and Johnson Creek, although not in the same place. Each has a park and trail system although located at different place. All of the scenarios were based on the same buildable lands analysis, and therefore used the same amount of land for development. Several key differences between the scenarios are highlighted below and in Table 3.

- Scenario A emphasizes industrial employment, providing more large-scale, regionally significant industrial jobs than the other scenarios. Only the fourth scenario provided less housing. It has the smallest Village Center. A community park is proposed at the confluence of McNutt Road and Johnson Creek. Highway 26 has two elevated crossing and one at-grade intersection.
- Scenario B has more emphasis on smaller-scale industrial and office/business park jobs. It has the second most housing. It has a larger Village Center than Scenario A. A community park is located at the “five creeks” confluence where Johnson Creek bends to the east. Highway 26 has two at-grade intersections.
- Scenario C provides significantly more housing as the other scenarios and focuses much more heavily on office and business park type employment, with less emphasis on industrial employment. It has the largest of the Village Centers. Highway 26 has a interchange at the northern and two southern overpasses.
- The fourth scenario appears to provide for the most industrial jobs and the second most office/business park jobs with the least number of households. It was created primarily to show how development could occur in a way that meets the basic economic development goals of the project while putting more emphasis on environmental protection.

Figures 4 through 7 and Table 3 show the differences between the three scenarios. A rough analysis of the fourth scenario sketch was also included for comparison purposes.

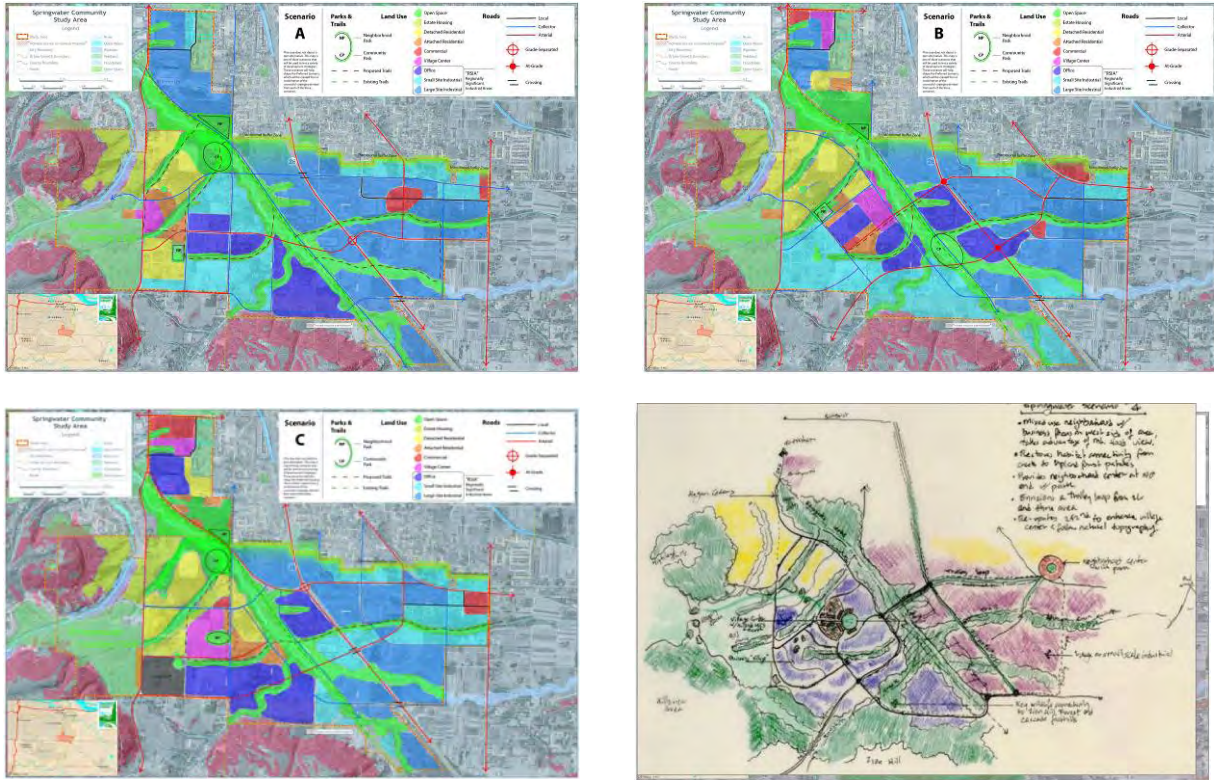


FIGURE 4 – SCENARIO MAPS AND FOURTH SCENARIO SKETCH

TABLE - COMPARISON OF THE SCENARIOS

	Jobs	Housing units
Scenario A	16,724 Includes 6,915 RSIA, 4,929 small scale industrial, 3,840 office/business park*	1,600
Scenario B	17,615 Includes 4,603 RSIA, 5,955 small scale industrial, 5,865 office/business park*	2,542
Scenario C	17,688 Includes 2,120 RSIA, 4,287 small scale industrial, 9,872 office/business park*	3,695
Fourth Scenario	14,847 Includes 6376 RSIA, 2680 small scale industrial, 5360 office/business park*	1,341

See Reference Documents for a full table of acreages and a breakdown of housing types.

* Breakdown of jobs does not include “commercial center” and “village center” employment which averaged around 1,000 jobs in scenarios A, B, and C and about 400 in the fourth scenario.

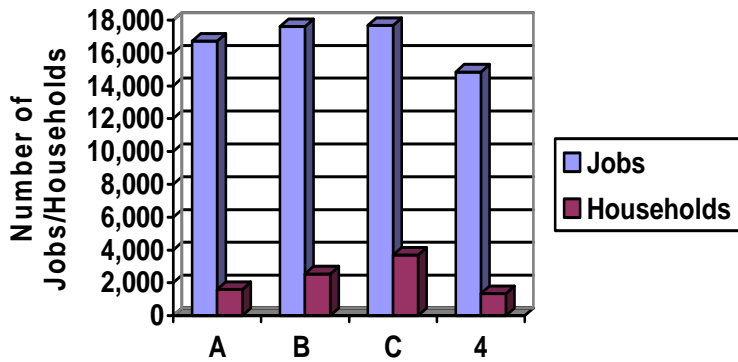


FIGURE 5 – JOBS/HOUSING COMPARISON OF THE SCENARIOS

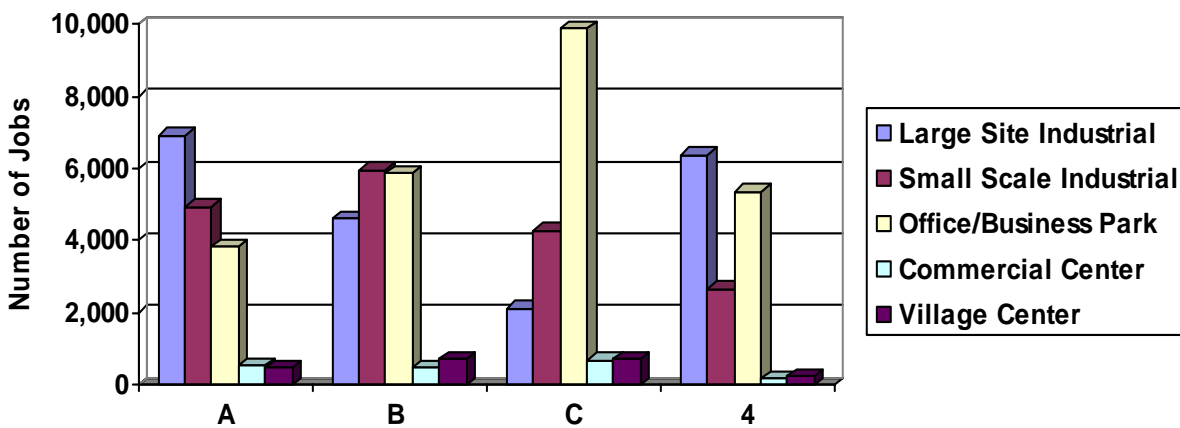


FIGURE 6 – JOBS MIX COMPARISON OF THE SCENARIOS

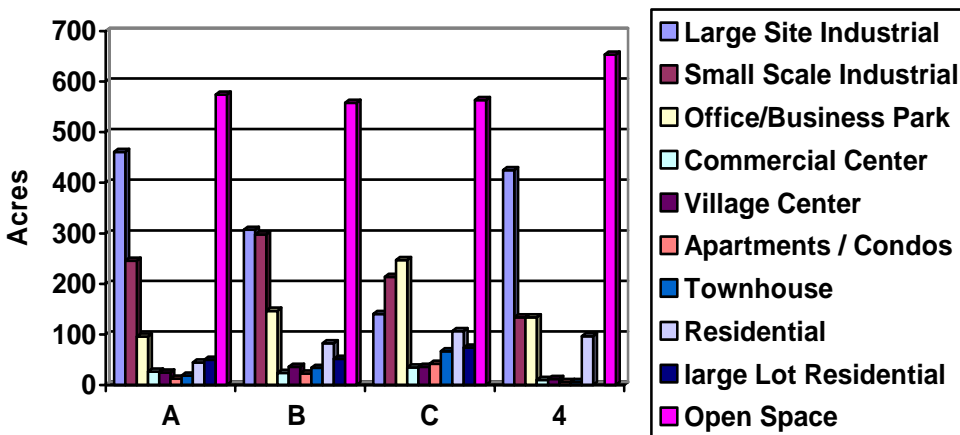


FIGURE 7 – LAND USE COMPARISON OF THE SCENARIOS

3.2.3 Evaluating the Scenarios

The Springwater Project Goals and Policies (as endorsed by the CWG) provided the basis for evaluating the scenarios. Does the scenario show an economically and environmentally sustainable community? Will the scenario foster family-wage job opportunities? Would the scenario foster environmental stewardship? Would the scenario provide a high quality of life for

residents? Does the scenario show a well-planned transportation system that supports non-vehicular transportation? Would it preserve, protect, and enhance natural resources? Each of these questions was answered by evaluating a range of measures for each scenario, and determining which elements from the different scenarios best met the goals and policies.

Computer modeling and other analytical tools were used in evaluating the scenarios.

- A land use model, which not only maps existing conditions but also allocates future growth using various assumptions, was used. The land use model keeps a running inventory of how land resources are used and other data such as number of jobs and households, acreage of parks, and the average annual wage for each of the scenarios.
- A transportation model which is used to design future transportation systems and evaluate the consequences of these systems in terms of congestion measures, pollution, time spent in traffic, and trade-offs between cars and public transportation was used.
- Other models used to evaluate the scenarios included stormwater runoff, sanitary sewage generation, and water demand. This evaluates where public infrastructure should be located, how big it should be, and estimated rough costs.

Based on the model results and input from the project team, evaluation sheets were prepared for each of the project goals. These sheets contained a listing of all of the evaluation measures used to evaluate how well the scenario met the goal, a description of the evaluation measure, and the results of applying that measure to each of the scenarios. The purpose was to use the public values as captured in the goals to objectively evaluate the strengths and weaknesses of each scenario.

Examples of the evaluation criteria include:

- Number of jobs and households
- Amount of land used for jobs and households
- Job to household ratio
- Wastewater, stormwater, and water systems cost
- Total jobs annual wages
- Future assessed property values by development type
- Housing mix
- Employee and residents accessibility to open space
- Land devoted to open space
- Employee and residents distance from trails and parks
- Number of new stream crossings
- Miles of roadways within natural resources areas
- Number of transit trips generated
- Miles of roadway created
- Cost of roadway

Utilizing evaluation sheets, the CWG and the project team determined the best performing elements, or strategies, of the scenarios that should be carried forward for consideration in the Concept Plan.

3.2.4 Key Results of the Scenario Evaluation

The purpose of the scenario evaluation was to develop a Springwater Concept Plan Map as a blueprint for the implementation strategies for a proposed Plan. A key result of the public participation process was that fundamental to the Concept Plan is that it:

- Designate enough land for jobs to meet the project target of 15,000

- Provide housing in support of the jobs and the village
- Preserve the natural environment
- Recognize that topography and existing development patterns may complicate the development process that will require implementation strategies

Other key results were:

- The best opportunities for large site industrial (RSIA on 50 acre parcels) are east of Teleford Road. This is because it is generally level (less than 5% slope); would have good access and visibility at Highway 26 without being constrained by the Springwater Trail and Johnson Creek; and there are a few larger parcels that could be combined with smaller parcels to create 50+ acre sites.
- Large site employers were deemed important, but also significant was the need to provide a mix of different types of employment. Of primary importance was the need to be flexible, allowing a range of uses that can respond to market changes.
- Employment and family wage creation is best achieved by a mix of small and large site industrial uses and by research, technology and professional service uses in office buildings rather than by RSIA designation on all lands east of Hogan Road as originally anticipated by the Metro 2040 Growth Concept Plan.
- The area located between Hogan Road and the Springwater Trail/Johnson Creek and to the south of McNutt Road is suitable for office development. It will have arterial access to Highway 26, have frontage on Hogan Road, and be close the Village Center. Office uses are less constrained by slope than is industrial development and will be supportive of the industrial uses.
- The Village Center is important for establishing a “place” for Springwater, can be a moderate size of retail, mixed use and housing, and should take advantage of views of Mt. Hood.
- Housing was determined necessary for attracting businesses, supporting the Village Center, and providing a balanced, sustainable community. Housing was located in those areas less desirable for employment (mainly slope/environmental and access constraints). Provisions for office uses (shifted from industrial uses) suggest the need for less multi-family and more single family and other homeownership opportunities. Standard size residential subdivisions north of the Village Center would be a good transition from the Village Center and integrate on both sides of Brigman Creek.
- Estate housing would be located in the sloped areas north of Botefuhr Creek and on both side of Hogan Creek.
- Attached housing near the Village Center provides support of the Village Center and the industrial employee housing needs.
- The transportation system should follow the natural terrain to minimize stream crossing, and use existing roadways to the extent possible for costs savings. There should be two locations for access to or crossing of Highway26. Evaluation of specific access configurations is being conducted through a separate study called the Springwater US 26 Concept Design and Access Plan funded by at State Transportation Growth Management grant.
- Already improved parcels pose a greater development constraint than vacant sites especially in the near term. This may be especially true for industrial development as opposed to residential (which can incorporate a residential building) or commercial (which command higher rents). However, the overall marketing/economic development strategies for Springwater can mitigate constraints through techniques such as public-private partnerships, public investment in infrastructure, fee waivers/tax credits, and tax increment financing.

3.3 CONCEPT PLAN OVERVIEW

As a result of the scenario evaluation a Concept Plan Map was developed. It shows the general locations of different land uses, in broad categories such as industrial, office, village, attached housing, and detached housing. The Concept Plan Map is a blueprint that will be refined and implementation strategies added, and will ultimately shape the community development plan and land use designations. The Concept Plan map shown in Figure 8 represents a blend of elements from the four scenarios that were evaluated to best meet the Springwater goals and policies.

Major elements of the Concept Plan are described below.

Economic Development

The land use plan supports the economic development goals adopted by the CWG. The majority of land in the plan is for economic development; and at buildout could result in approximately 17,000 jobs. These jobs will be varied and not solely in traditional manufacturing and warehousing, providing the flexibility for this area to grow under different economic and job growth conditions. The Concept Plan brings the opportunity to lower Gresham's jobs to households ratio closer to the regional average (approximately 1.5).

Employment Areas

Industrial sites, often with large buildings, generally prefer lands on 5% or less slope. The draft concept plan locates the majority of the large site industrial development on the flatter lands east of Telford Road. To support those industrial areas (and serve the neighborhoods to the north) a small commercial area has been sited near 267th Avenue and Orient Drive. The map depicts two separate types of industrial land. Areas with more potential to attract large scale employers are designated as 'Large Site Industrial', while other industrial areas with smaller parcels or some constraints are labeled 'Small Site Industrial'. A third employment category, 'Office', is also shown on the map. Amid these employment designations is one large single parcel marked with a dotted line. This property was being considered by private parties as a site for a mixed area comprised of education, employment, and living space.

Transportation

An improved transportation system for Springwater was developed as part of the Concept Plan. The transportation system includes a network of arterial, collector, community, and local streets that accommodate travel demands and provides multiple routes for travel. Improvements include new east-west arterial connections from 242nd Avenue to Telford Road, improved access to US 26, regional and community transit service, street and trail improvements to accommodate bicycling and walking, and direct and convenient access to employment centers that lead to regional facilities and reduce the possibility of traffic intrusions into neighborhood and rural areas.

The Village Center

The Village Center is located east of Hogan Road along McNutt Road with good planned access to Highway 26. This site has one of the best perspectives with views of rolling hills, buttes, and Mt. Hood to the east. The Village Center needs to have approximately 2,000 households within a 2-mile radius without competing services for the Village Center to develop a grocery store. The Concept Plan accomplishes this.

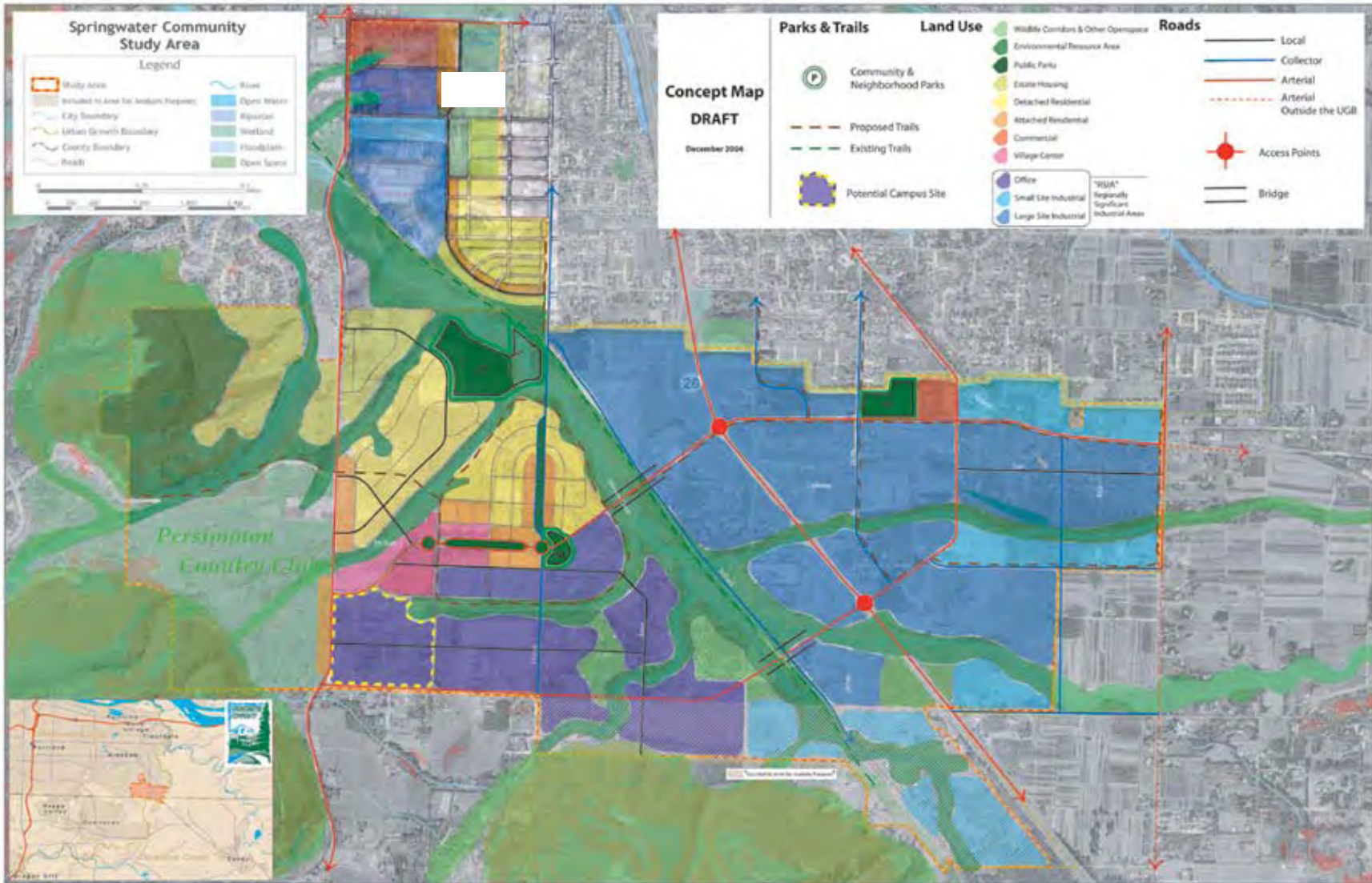


FIGURE 8 – CONCEPT PLAN MAP

Park blocks

Park blocks in the Village Center take advantage of the views of the buttes and Mt. Hood to create a dramatic linear open space. This is an axis for the attached residential uses to be located in a manner that provides ample park space and an appealing pedestrian environment. The park blocks will intersect in a Neighborhood Park Plaza that can serve as a gathering place for the community and help establish an identity for the Village Center.

Development of a “main street”

The main street, as the heart of the Village Center, is envisioned as a comfortable pedestrian environment, with ample on-street parking in front of retail stores, and the location for multi-story, mixed use buildings.

Providing quality housing

The Concept Plan represents a sound housing strategy with a wide variety of housing types including a mixed-use Village Center, small lot housing around the park block, standard lot size single-family housing, and large lot single-family homes with views of Mt. Hood to support executive or estate-type housing. The housing supports the other plan goals by helping to create a real community where residents have close access to services and jobs, and takes advantage of the natural beauty and views of the area to provide attractive housing options for business owners and executives.

Environmentally Sensitive Resource Areas

The Concept Plan identifies over one third of the land in the study as environmentally sensitive. All critical lands have been identified, including the critical habitat located around Johnson Creek and its tributaries. These are areas that are anticipated to have a range of protection, from lightly limited development to City purchase for protection and enhancement. The Concept Plan places a high emphasis on resource protection and habitat connectivity.

Parks and open space

In addition to the park blocks and Neighborhood Park in the Village Center, the Concept Plan includes two community parks, two trail loops, and acquisition of public open space within Springwater. The community parks are located on opposite sides of the study area, and are designed to serve the needs of the surrounding neighbors. The nature-oriented Springwater Community Park is located along the Johnson Creek Corridor adjacent to the residential districts. It will provide two youth sports fields and a regionally significant natural park area, providing interpretive educational opportunities. The athletic facility-oriented East Springwater Park will be located east of US. 26, and will provide sport fields to serve employees in the industrial areas as well as Gresham neighborhoods to the north. The two loop trails – the Village Center Loop and Employee Loop – will provide bicycle and pedestrian connectivity between the Village Center and riparian areas west of Telford Road, employment areas east of Telford Road, and neighborhoods surrounding Springwater.

Public Infrastructure

Recommended infrastructure improvements for transportation, water, wastewater, and stormwater service are designed around supporting the Concept Plan’s implementation, meeting the needs of potential industrial developers, and promoting sustainable development. Water and wastewater improvements were developed to build on Gresham’s existing infrastructure, and minimize cost by locating most facilities in planned road right-of-way. Recommended stormwater improvements include a combination of Green Street swales and

culverts for stormwater conveyance, as well as regional detention and water quality treatment facilities.

Buffering existing neighborhoods

Along the north edge of the site is a “transitional buffer area” that ensures current Gresham neighborhoods adjacent to the study area will not be adversely affected by the new industrial development. The plan requires that planned industrial development adjacent to residential uses reduce conflict with neighboring activities by providing and maintaining proper transitional zones for industrial uses. Section 9.0100 of the Gresham Code contains updated specific guidelines for buffering and screening.

Section 4

Springwater Community Plan

4.1 INTRODUCTION

This section of the report summarizes the Springwater Community Plan. The Plan provides recommendations regarding the unincorporated Multnomah County Springwater area (both the 2002 UGB expansion area and the pre-2002 UGB expansion area), a 1,272 acre area. The Plan also includes a study area commonly known as the Brickworks Site, approximately 159 acres of Heavy Industrial (HI) land inside the existing City of Gresham with Springwater Plan District designations. Such designations were made subsequent to the overall Springwater Plan adoption for the UGB expansion area within Multnomah County. The Brickworks Site analysis is included as Section 4.9 of Appendix 44, Volume 1 of the Gresham Community Development Plan. The legislative process for adoption of a comprehensive plan amendment to apply the Springwater Plan District to the Brickworks Site is being done in two phases. Phase I involves the properties proposed to be RTI-SW, NC-SW, LDR-SW and THR-SW and associated ESRA-SW. Phase II involves the properties to the south of Phase I and are those parcels owned by Mutual Materials currently improved with a manufacturing plant and clay mining as described in the first paragraph of Section 4.9.1. For clarity purposes, where Appendix 44 has specific site descriptions, data and maps, only the Phase I descriptions, data and maps will be included. When the legislative process for Phase II resumes, Appendix 44 will be edited so that all of the Brickworks site descriptions, data and maps including Phase II are provided. The Plan does not include the portion of the study area in Clackamas County (139 acres) as it is now part of the newly incorporated City of Damascus.

This summary consists of the following elements:

- Land Use
- Economic
- Natural Resources
- Transportation
- Sustainable Development
- Public Facilities (Water, Wastewater, Stormwater)
- Parks

(Amended by Ordinance 1634 effective 1/18/07)

4.2 LAND USE ELEMENT

4.2.1 Springwater Plan District Map and Code

The Springwater Plan District Plan Map (Figure 9) will serve as the key regulatory map for land use in Springwater. The Springwater Plan District Map includes the following land use types: industrial and employment; mixed-use and commercial; and residential. This section summarizes these major land use types.

Part of Metro Council bringing Springwater into the UGB in December 2002 was the adoption of Metro 2040 Growth Concept Design designations. The Metro 2040 Growth Concept map designated the Springwater area east of Hogan Road (242nd Avenue) as Regionally Significant Industrial Areas (RSIA). RSIA are industrial areas with site characteristics that are relatively rare in the region that render them especially suitable for industrial use. The area adjacent to Hogan Road was designated as a Corridor. Corridors are along good quality transit lines,

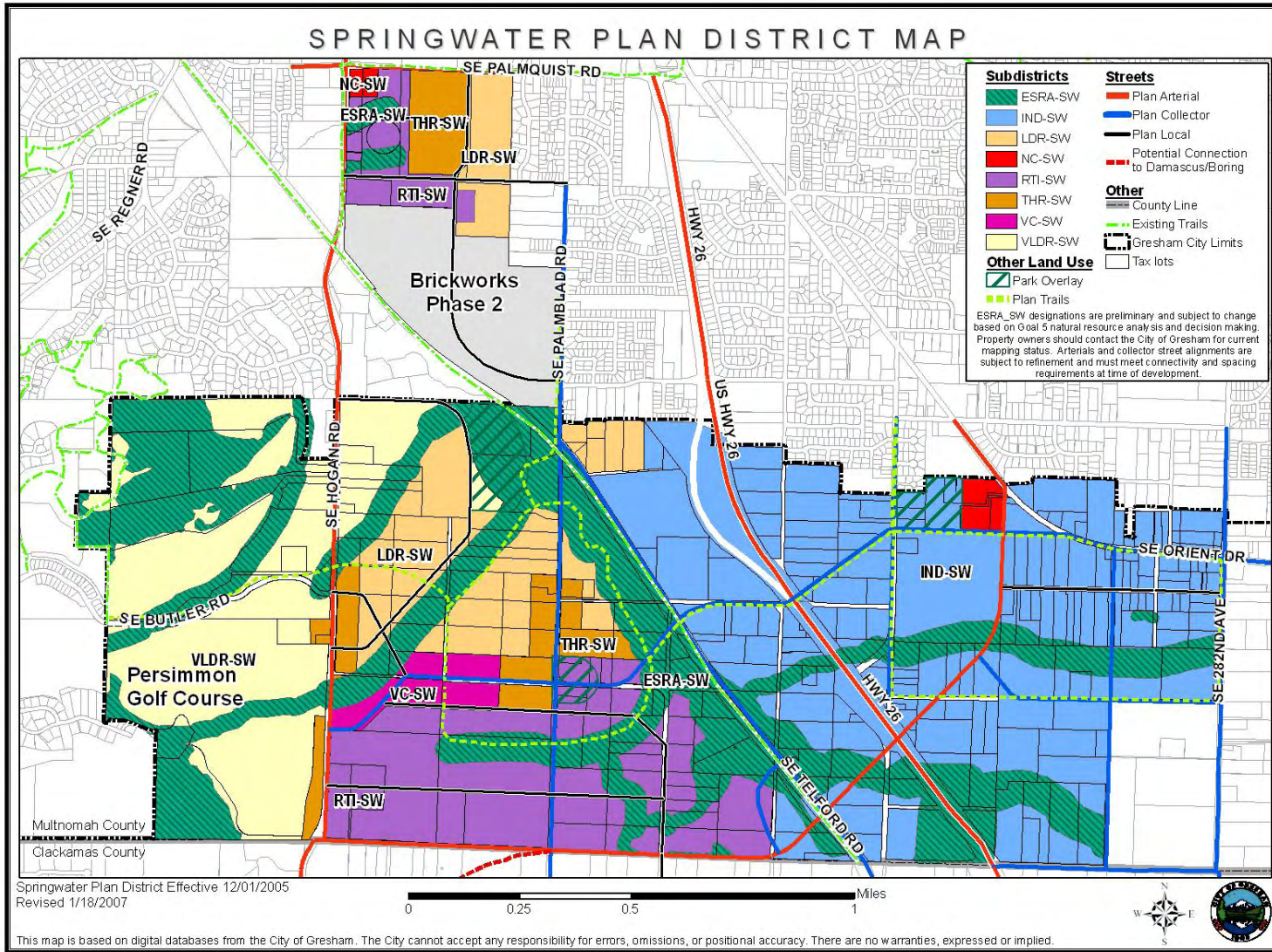


FIGURE 9 – SPRINGWATER LAND USE PLAN

feature a high-quality pedestrian environment, convenient access to transit, and a density recommendation of 25 persons per acre. The rest of the lands were designated as Inner Neighborhood. Inner Neighborhoods are residential areas accessible to jobs and neighborhood businesses with smaller lot sizes with a density recommendation of 14 persons per acre. In developing this Plan, some land was found to be unsuitable for industrial uses; however, most of the developable lands have been designated for industrial and employment related uses.

The Plan represents a greater level of detailed planning, site analysis, and setting community goals than was done at the time it was brought into the UGB and Metro 2040 Growth Concept Design designations were applied. Part of the Plan adoption process is to show compliance with Metro UGMFP, specifically Title 11 – *Planning For New Urban Areas*. Included in the Plan are recommended revisions to the 2040 Growth Concept Design designations based on this greater level of planning. The Plan compliance is outlined in the separate UGMFP Title 11 Compliance Report. The following 2040 Growth Concept Design Types are proposed:

- The land east of Teleford Road and 262nd Avenue will remain as RSIA with two exceptions. One is a small area of sloped land southeast of Palmblad Road/262nd Avenue and Teleford Road that is proposed as Low Density Residential and would be Inner Neighborhood. The second is a small commercial area near Orient Drive that is proposed as Neighborhood Commercial and would be Employment. Employment areas include various types of employment and some residential development with limited commercial uses and recommended density of 20 persons per acre.
- The Corridor designation along Hogan Road would remain and would encompass the Village Center along with some of the Townhouse residential sub-district.
- The land generally between Hogan Road and Teleford Road/262nd Avenue and just to the south of McNutt Road that is proposed as Office would be Employment.
- The rest of the land, including the Low Density Residential, Village Low Density Residential, and the Townhouse sub-districts that are not on the corridor would be Inner Neighborhood.

Employment and housing capacity estimates are 15,330 jobs and 1,609 dwellings. One hundred and fifty three of the dwellings are located in the "Prior UGB Expansion Area" (see figure 2) in the VLDR-SW sub-district. The rest of dwellings and all of the jobs are located in the "2002 UGB Expansion Area". The following tables illustrate assumptions used arriving at the capacity estimates. The data in these Tables 1, 2, 3 and 4 is supplemented by the additional data for the Brickworks Site as described in Section 4.9 of Volume 1, Appendix 44, Gresham Community Development Plan. The tables should be used together for data relating to the entire Springwater Plan District.

Table 1: Springwater Buildable Land Analysis – Gross Acres by Classification

Plan Sub-District	Plan Data Estimate Prior UGB Expansion Area	Plan Data Estimate 2002 UGB Expansion	Plan Data Estimate Total
ESRA	66.2	304.8	371.0
Parks		33.6	33.6
VLDR-SW	54.0	43.1	97.1
VLDR-SW (Private Open Space) ¹		105.1	105.1
LDR-SW		99.4	99.4
THR-SW		43.5	43.5
NC-SW		7.4	7.4
VC-SW		23.3	23.3
RTI-SW		106.8	106.8
IND-SW		384.2	384.2
Total Acres	120.1	1,151.3	1,271.5

¹ Comprised entirely of Persimmon Golf Course lands - not expected for development

Table 2: Springwater Buildable Land Analysis – Gross to Net Assumption

Plan Sub-District	Description	Gross Buildable Acres	Gross to Net Calculation ²	Net Buildable Acres
VLDR-SW (Prior UGB Expansion Area)	Very Low Density Residential	54.1	22%	42.2
VLDR-SW (2002 UGB Expansion Area)	Very Low Density Residential	43.1	22%	33.6
LDR-SW	Low Density Residential	99.4	22%	77.5
THR-SW	Townhouse Residential	43.5	22%	33.9
NC-SW	Neighborhood Commercial	7.4	22%	5.8
VC-SW	Village Commercial (mixed use)	23.3	22%	18.2
RTI-SW	Industrial (office buildings)	106.8	22%	83.3
IND-SW	RSIA Industrial	384.2	22%	299.7
Total Acres		761.9		594.3

² Gross-To-Net of 22% is based on the 25% standard presented by Metro in the 2002-2022 Urban Growth Report: A Residential Land Need Analysis Final Report - December 2002 Page 20 Appendix A, Item #3, Ordinance 02-969. The 3% discount represents land deducted in Table 1 to account for parks.

Table 3: Springwater Buildable Land Analysis – Density Assumptions

Plan Sub-District	Net Buildable Acres	Assumed Residential Lot Size	Assumed Square Feet Per Unit ³	Assumed Floor Area Ratio	Dwelling Units	Employment Land Building Square Feet	Square Feet Per Employee	Jobs
VLDR-SW (Prior UGB Expansion Area)	42.2	12,000		NA	153		0	
VLDR-SW (2002 UGB Expansion Area)	33.6	12,000		NA	122		0	
LDR-SW	77.5	6,000		NA	563		0	
THR-SW	33.9	2,500		NA	591		0	
NC-SW	5.8	0		0.33		83,316.7	550	151
VC-SW ³	12.7	0	1,000	0.71	396		0	
VC-SW (Employment Portion)	5.5	0		0.50		118,820.8	350	339
RTI-SW	83.3	0		0.55		1,995,797.2	350	5,702
IND-SW	299.7	0		0.35		4,568,860.3	500	9,138
					1,825			
					(216)	village capacity beyond requirement		
Total	594.3				1,609			15,330
Village In Residential	70%							
Village In Employment	30%							

³ Unit size applies only in potential capacity for mixed-use housing development

Table 4: Springwater Buildable Lands Analysis - Summary of Development Capacity

New Dwelling Capacity	Net DU Per Residential Acre	Net Residential Land Acres	DWELLING UNITS
VLDR-SW (Prior UGB Expansion Area)	3.63	42.20	153
VLDR-SW (2002 UGB Expansion Area)	3.63	33.62	122
LDR-SW	7.26	77.55	563
THR-SW	17.42	33.93	591
VC-SW		NA = MU Land ⁴	180
Total New Units			1,609
New Net Residential Land Acres		187.30	
Dwelling Units per Net Residential Buildable Acre			8.6⁵
New Job Capacity			
NC-SW			151
VC-SW (Employment Portion)			339
RTI-SW			5,702
IND-SW			9,138
Total Job Capacity			15,330

⁴ The residential component of the mixed-use village will be stipulated in the master plan requirement for certainty of capacity.

⁵ For 2002 UGB Expansion area, the dwelling units capacity is 1,456; the net residential land acreage is 145.1; and the dwelling units per net residential acre is 10.04.

The CWG adopted a series of goals that were used in evaluating the scenarios and creating the Concept Plan and the Springwater Plan District. The goal for the overall community was:

Create a Community

The Springwater Community shall be an economically and environmentally sustainable community. The primary focus of the plan will be on providing a high number of industrial and industrial related jobs that enhance the economic viability of Gresham, the greater East County region and its citizens. Industrial and employment lands will be complemented with a village center and housing and will be carefully integrated with the upper Johnson Creek system. Sustainable “green” building and development practices will enhance the community’s unique character, while supporting the protection and restoration of the area’s natural resources.

(Amended by Ordinance 1634 effective 1/18/07)

4.2.2 Industrial Lands

4.2.2.1 Background

The major goal of the Springwater Community Plan is to develop new land for future employment, primarily for specific targeted industries. This is consistent with the regional and local goals of improving the jobs-housing balance in east Multnomah County, and also of improving the region’s competitiveness and supply of land for economic growth.

To comply with Metro UGMFP Title 11, Gresham’s planning for Springwater must include:

*Provision for sufficient commercial and **industrial** development for the needs of the area to be developed for the needs of the area to be development consistent with 2040 Growth Design types.*

The CWG adopted a series of goals that were used in evaluating the scenarios and creating the Concept Plan and the Springwater Plan District. The goal for industrial and employment lands was:

Economic Development

The Springwater Community shall provide industrial land that will generate a variety of family-wage job opportunities. Job creation is aimed at correcting the imbalance between the number of households and the number of jobs in the East Metro region and increasing the City's economic strength. The plan will actively encourage businesses with an interest in sustainability and protecting the community's rich natural resources. Springwater will include a village center that can serve residents, employees and businesses.

The following are some of the major issues that were considered in the urban plan for industrial and employment lands in Springwater:

4.2.2.2 Summary of the Major Issues

Fulfilling the expected role of the Springwater area for regional and City employment

In addition to the area being identified for industrial land, a Springwater project target of approximately 15,000 jobs was set. A goal of the Plan is to help achieve the jobs-housing balance generally experienced in the region. If at least 15,000 jobs can be located in Springwater, east Multnomah County's jobs-housing balance would rise from the current 1.1 jobs per household to 1.5 jobs per household, greatly improving regional transportation performance, and reducing commute times for Gresham residents.

Creating an area that is attractive for targeted industries and other employment

A number of amenities that will be attractive to targeted industries are planned. This includes a Village Center that will serve as a gather place for nearby employees and residents as well as support services. It also includes an interconnected system of trails and open spaces that will be a transportation corridor and a recreational opportunity for employees and nearby residents. In addition, a neighborhood commercial area adjacent to a community park has been located in the northeast area between 267th Avenue and Orient Drive. Together these serve both the residents of the eastern part of the city and the employees that desire either convenient retail services, or recreation opportunities (such as ball fields).

Identifying the best areas for the targeted industries to locate

Generally the constraints to development for employment uses were used to decide the extent of the industrial (RSIA) sub-district and the research and technology industrial (office buildings) sub-district. Factors in making this decision were slope, streams, and other topographic concerns. Additionally access and visibility to an improved Highway 26 and planned arterial and collectors were considered. The flattest and most accessible and visible sites were designated for industrial use. These sites are generally between Johnson Creek to the west and the Springwater (UGB) boundary to the east. The area generally between Hogan Road and Johnson Creek and south of McNutt Road has some slope and access concerns so that it is suitable for research and technology industrial development in office buildings rather than the large industrial sites planned on the east side of Johnson Creek (Teleford Road).

Developing this area while meeting the high environmental standards included in the Plan
A key attraction and goal for Springwater and especially the industrial and employment development is sustainable design. Springwater development can enhance the sensitive environmental areas and the Johnson Creek watershed by using stormwater management techniques that mimic the natural hydraulic system. Other sustainable techniques will include landscaping that maximizes plantings that are adapted to the climate and the use of LEED building techniques. Future actions will include developing programs to attract eco-park industries, waste stream recycling, on-site energy generation and other Natural Step programs.

4.2.2.3 Summary of the Plan Element

The Plan designates about 70% of the gross buildable lands of the site for industrial and related employment uses. Two sub-districts form the bulk of the plan district and lands for industrial and related employment jobs - Industrial-SW (IND-SW) and Research and Technology Industrial-SW (RTI-SW). Both use the North American Industrial Classification System (NAICS) as the use definition. This provides a detailed and standardized way to identify permitted and prohibited uses. On the east side, a single, industrial land use designation (IND-SW) was used rather than the two designations (large site industrial/small site industrial) included in the Concept Plan in order to maximize the Plan's ability to be responsive to market drivers while meeting the intent of Metro's expectations for large site industrial development. Research and Technology Industrial (RTI-SW) was used rather than the office designation in the Concept Plan in order to better describe it as an industrial district that occurs in office buildings.

Industrial-SW (IND-SW)

This sub-district provides a wide range of uses, including all the targeted industries such as advance materials, specialized software applications, recreational equipment and technology, and corporate headquarters as well as many traditional industrial uses. The prohibited uses include those that are heavy, traditional industrial uses (tanneries, metals manufacturing, chemical plants). Large format retail is restricted to ensure the availability and vitality of the lands for industrial uses. Warehousing and distribution are permitted only as accessory uses and for no more than 20 percent of the site. Limits are placed on retail commercial and professional services that cater to daily customers by limiting such uses to no more than 3,000 square feet for a single use, and to no more than 20,000 square feet for multiple uses in single building or multiple buildings that are part of the same development project.

Research and Technology Industrial-SW (RTI-SW)

This sub-district is intended to provide industrial and related employment opportunities in office buildings. Primary uses include knowledge-based industries (graphic communications, creative services), research and development facilities, professional services primarily serving industrial businesses and workers, and medical facilities. The design will create pedestrian friendly areas and utilize green development practices. Development can take advantage of the views and access to creeks in the area. Its proximity to the Springwater Trail, Village Center, and Village Center Loop trail provides amenities. Limits are placed on retail commercial and professional services that cater to daily customers by limiting such uses to no more than 5,000 square feet for a single use, and to no more than 20,000 square feet for multiple uses in single building or multiple buildings that are part of the same development project.

4.2.3 Village Center and Commercial Lands

4.2.3.1 Background

The need for a Village Center comes from a desire to deliver a high degree of amenities to the industrial employees by providing a place for commercial and retail services to gather and to live. These employees will need commercial services, and generally have the ability to work in an environment that meets many of their daily needs. In addition a small Neighborhood Commercial site will be located adjacent to the Industrial-SW sub-district and provide for daily needs of nearby employees and residents to the north.

To comply with Metro UGMFP Title 11, Gresham's planning for Springwater must include:

*Provision for sufficient **commercial** and industrial development for the needs of the area to be developed for the needs of the area to be development consistent with 2040 Growth Design types.*

The CWG adopted a series of goals that were used in evaluating the scenarios and creating the Concept Plan and the Springwater Plan District. The goal for commercial lands was:

Economic Development

*The Springwater Community shall provide industrial land that will generate a variety of family-wage job opportunities. Job creation is aimed at correcting the imbalance between the number of households and the number of jobs in the East Metro region and increasing the City's economic strength. The plan will actively encourage businesses with an interest in sustainability and protecting the community's rich natural resources. **Springwater will include a village center that can serve residents, employees, and businesses.***

The following are some of the major issues that were considered in the urban plan for industrial and employment lands in Springwater:

4.2.3.2 Summary of the Major Issues

The following is a summary of the major issues associated with the development of the Village Center and Neighborhood Commercial.

Develop it to provide day-to-day services for residents to the north and east, and off site as well
Future housing as well as existing housing nearby needs a neighborhood retail center for everyday needs such as groceries, personal services, and other neighborhood uses. The Village Center should be close by, within walking distance. The Village Center is also easily accessed by the employment areas to the east using trails and roadways. An additional Neighborhood Commercial area is needed near the Industrial district but should be located away from 282nd Avenue to avoid conflict with rural commercial uses and the rural arterial street in unincorporated Multnomah County adjacent to the east of Springwater.

Provide for a variety of small-scale retail and upper-floor residential uses in a mixed-use environment and size the Village Center so that it will not compete with the larger Town Centers to the west and south

One of the key issues in designing a Village Center is that it not compete for customers with the Gresham Regional Center and the planned Damascus and Pleasant Valley Town Centers. To meet the day-to-day needs of residents and the commercial service and entertainment needs of employees, the development program conceived was for one to three-stories, mixed-use

buildings, and a small urban grocery store. This Village Center can be located on only 15 acres of land.

Design an area that is appealing to walk in, and provides social gathering places on its wide sidewalks. Design a district that encourages sidewalk uses such as outdoor eating and limited marketing including a “Main Street” design with ample on street parking.

The urban design concept for the Village Neighborhood is integrated with the nearby residential neighborhood to the north and the employment/office area to the south. The design is centered on a pedestrian friendly main street, with the buildings located close to the sidewalk. In order to reduce the size of parking lots, to provide a shared parking resource, and to develop an active street life, the main street is conceived as a broad boulevard with ample on street parking, with both curbside and median parking. Bike lanes are incorporated to enhance opportunities for multi-modal transportation.

Maximize views of Mt. Hood

The small, walkable Village Center was conceived on a site that is between the employment and housing areas. It is located on top of a small hill, and has excellent views of Mt. Hood.

4.2.3.3 Summary of the Plan Element

Village Center-SW (VC-SW)

This sub-district is intended to be gathering place for employees and residents of Springwater. It will contain a mix of retail, office, and civic uses, and housing opportunities in a pedestrian oriented area. It will serve the daily needs of the local neighborhood and the adjacent employment areas. It shall be served by a multi-modal transportation system with good access by vehicular, pedestrian, bicycle, and when appropriate, transit traffic.

Neighborhood Commercial-SW (NC-SW)

This sub-district is to provide for small to medium sized shopping and service facilities and limited office uses adjacent to the existing residential neighborhoods to the north and the adjacent planned industrial district. It is located at the intersection of planned arterial and a collector street.

4.2.4 Residential Lands

4.3.4.1 Background

The Springwater area was brought into the UGB primarily for employment uses; however, residential uses were intended west of Hogan Road. The planning process found that some areas east of Hogan Road were better suited for residential development. The planning process also found that housing was needed to support the Village Center and the large industrial and employment areas. The areas selected for residential uses are generally less suitable for industrial and office development. They often have significant slope and relatively small parcel sizes. Several small creeks flow the residential areas, and they are the least accessible from the planned Highway 26 access points and are more oriented to Hogan Road corridor.

A portion of the site is very suitable for large lot “estate”-type housing, a housing product that can help attract top executives to Springwater.

The housing element provides workforce housing close to the major employment district. People could work, live, and play in a neighborhood designed around the area’s natural

amenities – Johnson Creek and its tributaries. The extensive trail and park system provide for recreation, and also make walking to work in the employment areas not only feasible but very pleasant. This adds an amenity to employers and employees that increases the livability of the area, and will help with the marketing of the employment areas.

To comply with Metro UGMFP Title 11, Gresham's planning for Springwater must address "provisions for residential densities", "measures that will provide a diversity of housing stock that will fulfill needed housing, and "demonstration of affordable housing".

The CWG adopted a series of goals that were used in evaluating the scenarios and creating the Concept Plan and the Springwater Plan District. The goal for residential lands was:

Livability

The Springwater Community shall have a high quality of life. This will be accomplished through compact and sustainable development; a range of housing choices; walkable neighborhoods; access to natural resource areas and open spaces for employees in the community; preservation of natural resources; and, a variety of transportation choices. The community will encompass a village center, or series of village centers that provide needed services for employees and residents in an attractive and human-scale environment. A range of housing choices will be provided within close proximity to services and/or employment areas. Overall, the community shall be a unique environment that creates a sense of place both for residences and businesses, and acts as economic attractor.

The following are some of the major issues that were considered in the urban plan for industrial and employment lands in Springwater:

4.2.4.2 Summary of the Major Issues

The following are the major issues that were addressed in developing the residential component of the plan:

Develop a variety of housing types that take advantage of the varied landscape in this area
Several kinds of homes are anticipated for this area. They are placed in an area that provides opportunities that are well suited to their characteristics.

Large lots with views

Hogan Butte (west of Hogan Road) provides a perfect site for large lots as with slopes ranging from 15% to 25%. The concept is to allow for flexible site development standards at fairly low densities. Large lots also extend on the east side of Hogan Road on the west side of Botefuhr Creek. These areas are adjacent to the existing golf course. Maximum density is 3.6 units per net acre – the lowest current density in Gresham.

Single-Family Residential near creeks

In the less sloped areas east of Hogan Road (and Botefuhr Creek), two small creeks that have extensive natural resources bisect an area of about 108 acres of gross buildable land. This area is rolling terrain, with extensive natural areas and streams. It provides an excellent site for more conventional single-family detached homes. Development densities would be from 5.8 to 7.3 units per net acre. With the extensive protected natural areas associated with the creek, however, the streams will provide an amenity and lower the density of the overall development.

The development pattern envisioned provides a quiet residential area surrounded by creeks, but near the Village center – accessible by an easy walk, on streets or trails.

Townhouse/Small Lot

Small lot single-family home – either attached as a townhouse or detached on a small lot can be located near the Village Center and along the Hogan corridor. The Hogan corridor is planned for regional transit service to support these additional housing options. Density ranges from – 12.0 to 15.6 units per net. Design elements can include incorporating common open spaces or greens.

Mixed-use in Village Center

The Village Center can provide for attached residential on upper floors. This can be cost effective either as owner occupied units or as rental units.

Provide opportunities for affordable housing and a variety of housing types, particularly new housing types designed for ownership

The mixed density and size of units, especially the smaller lots coming from the Townhouse and Mixed-use Village, provide attractive affordable options. These designations will enable housing to be developed for a price that the median income can afford.

Ensure quality design, especially in the smaller lot homes and in the mixed-use housing, ensuring that they contribute to a quality neighborhood

The higher density homes have some basic design standards applied in the zoning. Homes on less than 75 feet of width require that alley access to garages be provided. Safe Neighborhood Design Performance Standards also apply. Attached housing and housing on small lots in the Townhome Residential sub-district also have special design standards to ensure that these homes have the requisite open and private space for a successful neighborhood.

Residential variety

As described previously, residential uses were directed primarily to lands less suitable for industrial or employment use, and in sufficient quantity to serve a successful Village Center. Accordingly residential designations have been limited to the northwestern portion of the site. The higher density home sites are located in close proximity to the walkable village, while the larger lots have been targeted for the sloping hillsides and other areas where development impacts should be minimized.

4.2.4.3 Summary Of The Plan Element

The plan element resolves these issues with the development of three new sub-districts, which, when combined with the natural area protection in the plan, the park and trail system, and the sustainable development practices, result in the development of a residential area with a high degree of variety and quality.

Very Low Density Residential-SW (VLDR-SW)

This sub-district is designed for the most constrained lands where low-density development will result in less disruption of the landscape. In addition, the areas on the small volcanic butte with views of Mt. Hood are included, offering the opportunities for larger lots with scenic views. The expected average lot size is 12,000 square feet.

Low Destiny Residential-SW (LDR-SW)

This sub-district permits detached single-family dwellings on an average 6,000 square foot lot. Duplexes are allowed only on corner lots.

Townhouse Residential-SW (THR-SW)

This sub-district is intended to allow for single-family homes on small lots, as small as 3,000 square feet for detached homes, and 2,200 square feet for attached houses. Like the LDR-SW sub-district, each home must be on its own lot, and duplexes are not allowed.

Pedestrian Orientation and Crime Reduction

Gresham has adopted a Safe Neighborhoods Design program that increases casual surveillance of the street by requiring that a number of windows and doors face the street. This has been adopted for the residential sub-districts in Springwater. In addition, alley access is required for lots of less than 75 feet in width.

4.3 ECONOMIC ELEMENT

The following section describes the background, major issues, and plan elements associated with economic development in Springwater.

4.3.1 Background

Bringing industrial development and family-wage jobs to east Multnomah County was one of the primary drivers for bringing the Springwater area into the UGB. Gresham offers several advantages as an employment center, including a skilled manufacturing workforce, close proximity to the Portland International Airport and regional rail hubs, a respected community college system, and a strong economic development program backed by committed leadership. The Springwater area has scenic views and access to high-end recreational amenities such as the Springwater Corridor Trail, Mt. Hood, and the Columbia River Gorge.

An economic and industrial employment site study, a Village Center study, and a residential housing study were completed to help inform the land use and economic planning for Springwater. They have informed the planning process and helped shape the scenarios and the concept and the final Plan.

The CWG adopted a series of goals that were used in evaluating the scenarios and creating the Concept Plan and the Springwater Plan District. Two of the goals address economic development:

Create a Community

The Springwater Community shall be an economically and environmentally sustainable community. The primary focus of the plan will be on providing a high number of industrial and industrial related jobs that enhance the economic viability of Gresham, the greater East County region and its citizens. Industrial and employment lands will be complemented with a village center and housing and will be carefully integrated with the upper Johnson Creek system. Sustainable “green” building and development practices will enhance the community’s unique character, while supporting the protection and restoration of the area’s natural resources.

Economic Development

The Springwater Community shall provide industrial land that will generate a variety of family-wage job opportunities. Job creation is aimed at correcting the imbalance between the number of households and the number of jobs in the East Metro region and increasing the City’s economic strength. The plan will actively encourage businesses with an interest in sustainability

and protecting the community's rich natural resources. Springwater will include a village center that can serve residents, employees and businesses.

The following are some of the major issues that were considered in the urban plan for economic development in Springwater:

4.3.2 Summary of Major Issues

Industrial Development – Current and Projected Employment Trends

While recent employment growth trends in the region have reflected the recession, economic indicators show that the Portland area is in a good position relative to other urban areas to take advantage of industrial growth as the economy recovers. Furthermore, based on its 2025 forecast, Metro clearly sees the East Multnomah County area emerging as more of a job center than it has been in the past, with the area forecast to gain more than 20,000 jobs in the 2000-2010 period. This is more than one-fifth of all new jobs in Multnomah County and 8 to 9 percent of all new jobs metro wide during the decade. Another 30,000 jobs are anticipated for East Multnomah County over the following 15 years, from 2010 to 2025.

However, Metro's forecast suggests that traditional manufacturing will not be a significant factor in the region's job growth. East Multnomah County currently has less than 5 percent of the metro wide industrial employment, and this share is only projected to rise modestly over the next 20 years. As a percent of total jobs added, industrial employment falls from 1 in every 3 jobs added in the 2000-2005 period (32.3 percent) to roughly 1 in 7 by 2020-2025 (13.7 percent).

In addition to global trends affecting manufacturing expansion in general, one reason for the area's relative lag in anticipated industrial job growth may be its occupational structure. Although Gresham does have a skilled blue-collar labor force, these existing skill sets may not be compatible with the new technology job growth (such as those in advanced processing, and computer and design, for instance) that the metro area – and Gresham – hopes to attract in the coming years.

Land Use Implications

The Portland area industrial vacancy rate is above average for the metro area, and analysis of current trends seems to show sufficient industrial land to support future job growth over the long-term. However, if industrial jobs are targeted successfully, the demand for industrial land in east Multnomah County could be higher than the regional average. Furthermore, in the short-term, some recent studies indicate that the region's supply of "shovel-ready" land is quite constrained. Therefore, while the region as a whole may not be at a shortage for industrial land in the long-term, large parcels such as those available in Springwater may be successfully marketed for development in the short term.

Target Industries

The team used a combination of quantitative and qualitative methods to identify appropriate industrial targets for Springwater. The target industry list is based on consideration of:

- Existing regional industries and their support services as revealed by an analysis of historical and projected employment patterns in the region and interviews with local economic development and industry professionals
- National growth trends and current market conditions

- A review of published reports and industry cluster studies completed by other researchers and economic development organizations for the region and the state
- The limitations and advantages presented by the Springwater site
- The experience of the project team

The target industries were selected based on existing industry strength in Multnomah County and the Metro region, local industry growth trends higher than those seen nationally, potential to leverage existing research initiatives in the region, ability of the industry to bring high-wage occupations, and the interest of state and local officials in targeting the industry.

Based on this analysis, the target industry list in Table 4 was prepared. Each of these industry targets is profiled in detail in a Target Industry Matrix included in the Reference Documents. For purposes of this table, “Short-term” timeframe refers to 1 to 3 years, “Mid-term” 3 to 5 years, and “Long-term” greater than 5 years.

TABLE 4 - SUMMARY OF TARGET INDUSTRIES

Target	Appropriate for Springwater?	Timeframe
Advanced Materials	Yes	Short-term
Medical Devices	Yes	Mid-term
Specialized Software Applications	Yes	Short-term
Forestry & Agricultural Biotechnology	Yes	Mid-term
Nanotechnology	Yes	Long-term
Recreational Equipment/Recreation Technology	Yes	Short-term
Headquarters	Yes	Short-term
Professional Services	Yes	Short-term
Specialty Food Processing	Possible	Short-term
Transportation Equipment/Technology	Possible	Short-term
Logistics	Not Likely	Short-term
Renewable Energy Technology	Yes	Mid-term

Core industries (those companies already established in the region) represent the first tier of economic development opportunity. However, the ability to retain “traditional manufacturing,” even if successfully lured to an area, is increasingly unlikely. With increasingly advanced fabrication requirements, manufacturing should be seen in a new light. Industries were once thought of as the working of raw material, but are now a matter of design, process control, and assembly. Therefore, identifying companies employing specialized engineering and advanced manufacturing processes should be part of a successful recruitment strategy for Springwater. Within this broad concept, a few specific industries are worthy of consideration, including medical devices, advanced materials, recreational technology, and specialized software applications.

An additional target, corporate headquarters, is also recommended for the study area. There are several obvious benefits from professional service employment, especially when connected with a corporate center. These include environmental friendliness, highly educated workers, and

the prestige factor associated with a corporate “brand.” Add to these the potential cluster effect of additional professional activity, such as the need for ancillary services in legal, marketing and accounting activity and the argument becomes stronger.

Portions of the Springwater area are in many ways extraordinarily well suited for a corporate center. The quality golf course, the beauty of the setting, and the availability of housing all come into play. In addition, corporate center recruitment in other parts of the country has resulted in the ability to attract manufacturing, distribution, and commercial development in near proximity. Recruiting a corporate headquarters may prove to be the signature project by which the Springwater study area can become known throughout the State.

Village Center

Workers and residents of the Springwater community will require supporting commercial services. The development of a Village Center is one means for accomplishing this goal. Two important assumptions guided planning for the Village Center:

- The design of the Village Center should meet the needs of future area industries, businesses and residents, as well as nearby existing urban and rural residents. It should not compete directly with existing retail centers in the Gresham area, such as Historic Downtown, the Rockwood Town Center and planned new areas such as the Pleasant Valley Town Center.
- The Village Center should be a walkable, mixed-use district, including medium-density housing, retail and commercial areas.

An assessment was made of the current retail environment in Gresham and the broader region, and of national data on shopping center characteristics to develop an understanding of uses typically found in neighborhood-serving retail areas. There was an evaluation of whether projected population growth in east Multnomah County and expected increases in retail spending would be sufficient to support a Village Center.

The market assessment indicates sufficient demand in east Multnomah County to support the retail portion of the proposed Village Center. The analysis of market demand, coupled with the City’s vision for the area, and Metro’s regulations governing neighborhood-serving retail developments⁴, suggests that an incremental, long-term build-out of the Village Center may be the best strategy for serving the needs of future area industries, businesses, and residents, as well as nearby existing urban and rural residents. The use of an incremental build-out plan would allow specific phases that could be triggered by certain population and employment thresholds.

Residential

Springwater was envisioned as a community in which people could live, work, and play. Accomplishing this vision requires some level of housing. As part of the planning process the characteristics of housing needed for the Springwater community and crafting an overall strategy for housing within the area were assessed.

⁴ The Metro Code does not yet provide density recommendations for the Village Center design type. However, an appropriate target would be 25-30 people per acre. This figure is less than the 39 to 40 people per acre recommended under Title 3.07.170 for the Main Street and Town Center design types, respectively, but above the 20 person per acre for Employment Areas. This level of density should accommodate the housing and employment generated by a mixed-used development.

Based on the average number of jobs per household in the region, it would take more than 10,000 households to provide the targeted 15,000 employees in Springwater. While some of these jobs could be filled by current residents of Gresham and Springwater or residents of nearby communities such as Pleasant Valley, it is unlikely that all of them would be. Furthermore, one of the key planning requirements was that the commercial and retail services in Springwater would not compete with adjacent centers. For Springwater's commercial and retail services to be self-supporting, a minimum population of approximately 3,000 people is required. While some of the support for the Village Center may come from outside Springwater, it is difficult to estimate the extent to which existing residents would help support the Village Center. Both of these issues point to the need, and capability, of Springwater to support a certain level of housing.

Housing demand within Springwater is likely to be driven to some extent by the industry targets chosen and the City's success in attracting specific companies to the area. However, given the City's goals and the characteristics of the property, the team views some executive housing as a logical strategy for Springwater. The topography of the site, particularly the buttes on the western edge, and the abundant natural features make it an appealing site for high-end residential development. Existing amenities, such as the Persimmon Golf Course and access to Mt. Hood, make the area attractive to outdoor enthusiasts. With the right mix of uses and scale, the Village Center development could be an important element in creating the "complete environment" for corporate executives and upper-level management.

4.3.3 Summary of Challenges

There are several challenges associated with economic development in Springwater.

Interstate Access

Perhaps the most significant drawback of the Springwater area for many industrial uses is the lack of interstate access. The property is served primarily by US 26, which currently does not offer direct connection to either I-84 or I-205. Scheduled improvements contained in Metro's regional transportation plan, including plans to improve the linkage with both interstates from US 26, will improve access to the area. Businesses with a strong distribution/warehousing component will likely look for sites that are better connected to the region's transportation infrastructure. On the other hand, many businesses such as the recreation technology group, particularly those start up businesses with small component products, are minimally dependent on interstate access.

The transportation network will be significantly improved over time as the results of the concurrent North-South Transportation Corridor Study and the Damascus/Boring Concept Plan work for the area to the south of Springwater are implemented. These studies will result in recommendations that will provide more direct linkages to both I-84 to the north and to I-205 to the south and west through the Damascus area.

Land Assembly

Land assembly will also be a significant challenge for very large-scale industrial development. An analysis of tax lot value per acre revealed a few areas where land assembly would be important for near-term marketing of sites. These are generally areas where there are smaller lots, many with improvements such as existing residences already on the parcel, and where owners may feel less motivated to sell. In more general terms, the number of parcels also creates challenges for land assembly - the more owners involved, the more complicated the process.

There are several examples of property owners agreements, and new ones can be created, which can be effective in land assembly, and in both giving more control to a group of property owners and in providing a simpler negotiations and potential purchase process for a potential buyer/end user. A Real Estate Investment Trust (REIT) is one of those entities, which could be explored to achieve these goals.

The City has identified this issue and has taken some steps, such as a “Brokers Forum”, to help property owners in the Springwater area to consider this issue as it relates to future sale of properties. A second forum will be scheduled focusing on the land assembly strategies that property owners may want to consider. Ongoing work may be needed in this area to overcome the challenge.

Recruitment

Recruitment of technology-related companies is likely to be hampered by a number of issues. In the short-term, Springwater faces competition from existing vacant industrial property in the Metro area, particularly for tech-related space. In addition to existing sites in the Portland region, the feasibility of attracting certain high-tech companies and prominent industrial developers to Springwater is complicated by competition from other metropolitan areas in the Northwest, primarily the Puget Sound. Finally, the state’s relatively low ranking in terms of federal research and development funding suggests a challenge for technology-related recruitment. However, the development of signature research centers, such as the new MMD Signature Research Center and the collaboration between Hewlett Packard and Oregon’s higher educational infrastructure, indicates the leadership’s willingness to address some of these challenges. Some industry groups such as recreation technology where an individual may be marketing his or her own “invention” or idea for an improved product, or is in fact, marketing the idea itself, are well suited as short-term recruitment targets.

There are also existing significant efforts on a statewide economic development level which would be natural venues for Springwater recruitment. The State’s emphasis on the official list of “shovel-ready” sites for potential new industrial recruitments would provide a broad forum and exposure for sites in Springwater once the planning and annexations have been completed.

4.3.4 Summary of Proposed Plan Element

The information gained through the Village Center, residential, and economic and employment industrial site studies were used to help develop the land use allocations that were used in the scenarios and the selected Concept Plan for Springwater. However, this is just the start of the economic development effort. Implementing the plan will require an effective recruiting and marketing program to ensure that the Plan can be carried forward as intended. This section focuses on the marketing and recruiting strategy necessary to attract economic development to Springwater.

In light of the competitive nature of industrial recruitment and Springwater’s challenges, City leaders will need to be innovative and flexible in their approach to developing the area, both in terms of the targets selected and the incentives offered.

Flexibility and innovation in terms of the targets selected means that the City must not limit its recruitment efforts to the manufacturing sector. While these jobs were once seen as the primary drivers of the economy because they paid high wages and served non-local demand, this notion is outdated. As the country transitions to a service-oriented economy, there are many high-end business and professional services that pay wages above that of manufacturing and are exporters of their services, thereby also bringing in outside dollars. Furthermore, global trends

suggest that many traditional manufacturing industries are poor targets for expansion. This is due to the diminishing number of such firms in the U.S. and the intense competition among jurisdictions to attract those companies that remain on-shore.

The City may be in a good position to take maximum advantage of the unique opportunities in the Springwater area for professional and technical services, which may not otherwise be attracted to a more traditional historic downtown setting, and which may not be suited to some of the RSIA lands.

Flexibility and innovation in terms of incentives offered means that the City must identify specific actions that can serve as a stimulus for the private sector. Current trends, including the region's high vacancy rates, suggest that market demand will not bring Springwater to the attention of developers for a number of years. Providing developer incentives, such as road improvements, sewer and water lines, utilities, as well as non-traditional infrastructure such as cable and wireless connectivity, landscaping, signage, and other scenic enhancements could help move Springwater up the list.

Recruitment Team

One of the first steps in marketing Springwater is developing a recruitment team including representation from the City, the development community, local residents and neighborhood associations affected by the City's plans, and business leaders from the region with specific areas of expertise related to marketing or to the industries being recruited.

As with any economic development effort, it is essential that barriers to a successful strategy be made as clear as possible. One barrier to marketing Springwater is that, for the most part, specific industrial and commercial sites do not have clearly defined individual ownership. As a result, the promotion of those sites may simply drive up land prices and make acquisition more difficult. Infrastructure requirements (especially road and highway access) and site preparation (including run-off issues and related environmental concerns) compound this problem regardless of how the land is zoned.

The City should begin addressing these issues by conducting a parcel-level inventory for all land within industrial and commercially zoned tracts of Springwater. This inventory should result in the creation of "land briefs" for each parcel that describes all available information on the property including ownership, assessed valuation, current sales listing and pricing, and available infrastructure.

In addition to the parcel inventory, the City should prepare a list of brokers and owners and establish a meeting schedule with those brokers and owners to ascertain interest levels in selling the land. Since the land will be zoned industrial-commercial, it should be in the interest of sellers to work with the community both in the sale and assembly of land. City supported infrastructure improvements will most likely be the strongest incentive both for businesses to locate there and for owners to sell at reasonable costs. These steps should be undertaken before any formal marketing or promotion is undertaken. To initiate an actual campaign before there is definitive understanding of what land is available (and at what level of service) could seriously compromise the Springwater development effort.

Target Market

The primary purpose of economic development marketing is to generate interest in an area from companies with expansion or relocation plans. However, economic development marketing must also focus on attracting workers to the region. To do so, the City will need to clearly

differentiate Springwater from its competitors, both regionally and nationally, and provide focus to the community's efforts.

One important yet often overlooked audience is the people and businesses that are already in Gresham. These people have made some level of investment in the city already. They are also the ones who represent the city on a daily basis and who can best tell the Gresham story to the outside world. Building awareness locally among the region's business leadership that the community is dedicated to advancing business opportunities is another key step. Other significant groups include employers in the targeted industries, major allies (such as state and regional economic development organizations, institutions of higher education), members of the media, and site location consultants.

Springwater and other key sites should be promoted through a combination of partner advertising, public relations, and networking. An important decision point for this action is whether the City should hire a professional marketing firm to assist it. While this approach has obvious benefits, it should not be undertaken until the development community and, if possible, major employers have had an opportunity to comment on the sites.

Incentives

The successful recruitment of corporations, as well as high profile start-ups, always involves some form of public inducement. In fact, incentive packages now typically involve multiple units of government. In broad terms, the degree to which incentives tie back to the economic well-being of the community affects the degree to which their use can be defended. For example, infrastructure improvements are tangible assets a City can draw upon even if the business does not achieve its goals. Direct cash subsidies represent the opposite end of the spectrum.

In the case of Springwater, incentives should be made available to developers and businesses that conform to the broad goals of the project, and should be developed in conjunction with the State when possible. Potential incentives include:

- *Infrastructure (developer-oriented)* — Roads, road improvements, sewer and water lines, utilities, and other traditional and non-traditional infrastructure (such as cable and wireless connectivity, as well as landscaping, signage, and other scenic enhancements) may be candidates for incentives. In a broad sense, these can be subsumed under a tax increment financing (TIF) or tax increment reinvestment zone (TIRZ) program.
- *Tax abatements* — Tax increment financing is unlikely to be a viable tool in a greenfield development such as Springwater. Graduated tax forgiveness for capital intensive businesses, however, should be an option. Proposed changes to the state's Strategic Investment Program (SIP) may make this incentive an important tool, particularly if Springwater becomes a designated zone under the program. An additional related incentive is the state's lack of sales tax.
- *Developer support* — It is reasonable to expect that the initial marketing and recruitment of businesses will be conducted in tandem with the development community. Marketing assistance, both from a technical as well as a financial standpoint, should be available to the developers.
- *Promotions* — In addition to joint marketing with developers, the City should actively promote Springwater sites in its overall economic development efforts. The same should be true of the State and the Portland metropolitan area (including the Portland Development Commission, Regional Partners, and Metro).
- *Industry-specific* — If Gresham is to be successful in attracting companies in emerging industries or advanced technologies to Springwater, the State would need to be

aggressive in providing tax incentives that encourage investment and aid capital formation. Ideal targets such as biotechnology or nanotechnology would almost certainly require significant state incentives, and marketing to reach these targets would also have to be a joint effort. The marketing package should address the question of incentives, based on the State's available resources. These include:

- Tax incentives that encourage investment (such as capital gains tax cuts; tax credit transferability; research and development tax credits; and investment tax credits)
- Government programs that encourage capital formation (such as capital access funds; targeted pension fund investments; incubators or other means of shared facilities; and loan programs targeted for the mid-level or clinical trials stage of product development)
- Indirect assistance (such as legal support from the City to developers, builders and target industry representatives; off-budget financing, such as lease arrangements and land swaps; and planning and zoning related bonuses for conforming uses)

Sustainability

There is significant interest in the region in progressing Springwater as a sustainable community. This positioning could take several forms. Some level of sustainability will be achieved through the development standards adopted for Springwater. Additional incentives could be provided by developing an outreach program to inform developers of the benefits of green building practices. A Developer's Forum could be used to promote green site development and building practices by educating local developers about the benefits, preferably through the use of local examples (e.g., American Honda).

The formation of an eco-industrial park (EIP) at Springwater would be another way to incorporate sustainability into the community. The EIP concept entails identifying manufacturing and service companies that would benefit from co-location and collaboration in the management of resources and environmental concerns such as energy, water, and materials management. One promoter of EIPs, Indigo Development, suggests the following types of companies as targets for this type of facility: "manufacturers using recycled feed stocks; remanufactures of capital or consumer equipment; companies with major supply requirements that could be filled by the outputs of other tenants or plants in the area; users of reclaimed materials and energy by-products or agriculture and aquaculture firms if there is by-product energy or water available to the site." The region's existing metal cluster (primarily small and medium sized companies in plating and steel products) could be considered as a foundation for the development of an EIP in Springwater, or the City could identify other potential industries with synergistic needs through the recruiting process. Such an effort may require developing a more detailed understanding of the industries' manufacturing processes, raw product needs, and waste characteristics than may typically be considered during recruiting.

Third would be the targeting of green companies — those that produce environmentally friendly or "holistic" products (i.e., products that use organically produced materials). There is currently no clear method for identifying such companies as a group, although these types of companies are clearly a growing business sector. Because these companies are responding to a consumer trend that cuts across many different industries, marketing Springwater to environmentally responsible companies may require developing marketing messages that are tailored to each specific industry identified.

While none of these concepts would necessarily change the targeting approach recommended in this document, they do provide a set of criteria that could be applied when deciding among alternatives or in developing the incentive package that would be offered to a particular company.

Land Development

A major land development project is a long and painstaking process. From the community's point of view, managing the process is essential. As a result, organizational issues must be addressed as early as feasible. Other communities often deal with this time consuming effort by forming a development authority or similar commission. This has several advantages, including the ability to communicate clearly with landowners and developers, and to address concerns expressed by neighborhood associations and private individuals. Finally, such an organization provides continuity often lost as a result of elections or staff changes.

City's Role

The City should assess how development can occur and its own role in that process. If it is decided that the public sector should play an active part in developing specific properties, a long-term approach for development is necessary. Possible approaches include:

- *Master developer strategy* — In this scenario, the City serves as a primary participant. The City acquires land, and then leases or sells land to a private developer and allows that party to develop the land according to pre-approved guidelines. In return, the developer is allowed to realize the long-term revenue streams.
- *Cooperative city-developer acquisition* — Here, the City serves as a facilitator. For instance, a developer agrees to make an investment in a property in return for improvements to the existing physical infrastructure by the city.
- *Public/private partnership* — In this case, the City serves as both a participant and a facilitator. The City could choose to develop a portion of a development on its own or could confer the rights to a property in exchange for certain improvements. In addition, the City could enter into ground leases (short or long-term) with individual landowners as a way of assembling property for development purposes. From a financing and marketing standpoint, long-term ground leasing is more viable for commercial/industrial property, than it is for residential property.
- *Private equity models* — There are many examples of private development in conjunction with existing landowners. Individual properties or groups of properties could be optioned by the City through an LLC (Limited Liability Company) or REIT for the purpose of assembling the property subject to various contingencies. The option holder could then assemble the needed properties, obtain the necessary entitlements and financing, and begin to negotiate with future tenants/buyers. They would then be in a position to exercise the option to purchase.

Such an approach, encouraged and supported by the City, can function as a useful mechanism for enfranchising landowners who might not otherwise want to sell their land. Under this scenario, landowners would retain ownership of the land while allowing development to occur according to established "preferred uses." In other words, through a REIT or similar mechanism, the City could purchase the land, with the underlying landowners holding shares in the REIT. This innovative land assembly tool allows landowners to participate in the overall economic growth of the district, while providing a defined mechanism for purchasing and selling land within the REIT.

Closely related to this model are quasi-private corporations such as the Milwaukee Economic Development Corporation. While it remains private, it is non-profit and works closely with the municipality to see that development occurs in way beneficial to the city.

Additional closely related options include:

- *Development Agreements.* While not traditionally used as a land assembly tool in Oregon, ORS 94.504 et seq., provides a statutory mechanism for cities and counties to enter into development agreements with persons having legal or equitable interests in real property to facilitate development of that property. A development agreement could be used to assemble land, seek entitlements, and market the property based upon the terms of a development agreement approved by the governing body of the city or county involved.
- *Urban Renewal/Tax Increment Financing.* ORS Chapter 457 defines the urban renewal and tax increment financing powers of a city, under state law. Under this scenario, the City would form an urban renewal agency, area and plan, which would allow the agency to sell bonds to acquire and develop property in the district. The bonds would be financed by the property taxes attributable to the increased value of property within the district, over the life of the urban renewal plan. The agency would have the power to assemble, plan for, clear, acquire, rehabilitate and develop property within the urban renewal district, as provided for in the plan.

Financing Considerations

The Springwater project must be of financial benefit for the City. Monies lost through typical planned unit (housing) developments can be regained through a project in which commercial and industrial properties carry the cost of services. This is also true of housing development that exceeds the break-even point of residential property taxes versus cost of City services.

Since the financial viability of cities is always of concern, the use of tax incentives must be structured with great care. The best way to achieve that goal is to reserve tax abatements for those businesses that meet high standards of wage and capital investment. Typically, this would be in the total number of jobs at 125 percent of the regional median wage, and with significant capital investment.

The timing of development has a specific relationship to its financial performance. The community's goal for Springwater to be a self-sustaining community requires that a broad range of services be made available to residents, employees, and business owners. The presence of services and other amenities, including food and retail services, has a bearing on the appeal to potential homeowners and business location decision-makers. Based on this consideration, the Village Center should be seriously considered as one of the potential initial sites for development.

From a financial standpoint, high-end retail and commercial property envisioned for the area would provide an immediate source of tax revenue. Starting with industrial property, in contrast, would likely delay tax revenues due to the longer timeframe required for industrial recruitment and the potential for any tax abatements to take effect. The Village Center, if properly conceived, can also help to establish an image for Springwater, increasing its desirability as a location for both residential and industrial users.

One tool for spurring investment in a specific site is the inclusion of public uses, such as post offices or City services like police and fire. The advantage of beginning development with those uses (which a community can influence directly) is especially important. The location of a public

use in a commercial area, such as the Village Center, can increase the viability of related activity, such as medical and professional services, as well as retail, which would benefit from the traffic generated by the public facility.

4.4 NATURAL RESOURCES

4.4.1 Background

The Springwater Community has an extensive natural resource system that includes a two-mile section of mainstream Johnson Creek, four miles of major tributaries, and other unique habitats such as the steep slopes of Hogan Butte. The Johnson Creek Watershed Council has characterized one reach of Johnson Creek (JC16) that flows through Springwater as one of the watershed's highest quality reaches.

To comply with Metro UGMFP Title 11 in bringing the Springwater area into the UGB, Gresham's planning for this area must include:

Identification, mapping, and a funding strategy for protecting areas from development due to fish and wildlife habitat protection, water quality enhancement and mitigation, and natural hazards mitigation. A natural resource protection plan to protect fish and wildlife habitat, water quality enhancement areas and natural hazard areas shall be completed as part of the comprehensive plan and zoning for lands added to the Urban Growth Boundary prior to urban development. The plan shall include preliminary cost estimates and funding strategies, including likely financing approaches, for options such as mitigation, site acquisition, restoration, enhancement, or easement dedication to ensure that all significant natural resources are protected.

The Natural Resources Plan must also comply with Metro Ordinance 02-969B, Exhibit M regarding the inclusion of the project area in the UGB, and an IGA between the City of Gresham and Multnomah County establishing guidance for planning for urbanization in Springwater. Specifically, the IGA states that the Springwater Plan shall:

Establish a consistent and comprehensive plan for urban and rural watershed management of stormwater, stream corridors and confluences, and riparian areas for the Upper Johnson Creek Basin (upstream of the 2002 Gresham city limits). Utilize the City's Johnson Creek Master Plan, Metro Goal 5 requirements (which consider the Endangered Species Act, Clean Water Act, and Statewide Goal 5 planning provisions), and habitat protection measures that are at least equivalent in the level of protection to the County's West of Sandy River Rural Area Plan in development of the watershed plan.

The CWG was convened to provide input through the planning effort. Together, the CWG and the project team developed a set of goals and policies that were ultimately adopted by the CWG. The purpose of the goals and policies was to identify the City's intent to accomplish certain results through the Plan. The following goal was adopted for natural resources:

The plan will preserve, protect, and enhance natural resources. It will define, protect, restore and enhance significant natural resources, including stream corridors, wetlands, and forested areas. Resource areas will provide the basis for identifying development constraints as well as serving as open space amenities for the Springwater Community. Resource protection and enhancement will be a shared responsibility of property owners, developers and governments.

The work of the Natural Resource team used this goal as a basis for developing the Environmentally Sensitive Resource Areas (ESRAs). After a thorough inventory of resources in the study area, the work team presented its findings through a series of inventory maps at public meetings. Local residents made additions and corrections to the maps. This information, combined with extensive field studies conducted by the project team, formed the basis for assigning significance levels to each resource in the study area. The final ESRA was determined through an Environmental, Social, Energy, and Economic (ESEE) study to determine where urban development in resource areas should be allowed, limited, or prohibited.

4.4.2 Summary of Major Issues

The following are the major issues that were addressed in development a natural resources component of the plan:

Inventory

Considerable inventory data was available from Metro, Johnson Creek Watershed Council, Multnomah County, the Oregon Department of Fish and Wildlife (ODFW), and others. However, some of this data needed to be supplemented with field surveys that were conducted by project staff.

Existing Regulatory Issues

In creating a natural resources plan for Springwater, consideration of other programs related to Springwater was necessary. Multnomah County has adopted a protection plan (West of Sandy River Plan) for unincorporated rural Multnomah County including Springwater. A Gresham and Multnomah County adopted agreement is that the Plan will be at least as protective as the West of Sandy River Plan. Metro requirements for water quality, floodplain, and erosion control (Title 3) apply to Springwater. These, however, do not address all natural resource issues. Metro is in the process of creating a regional Goal 5 program. Metro has adopted a Goal 5 Inventory that is included in the Springwater program. To the extent possible consistency with the Metro process was maintained.

Johnson Creek

Nearly two miles of Johnson Creek runs through Springwater flowing west before entering Gresham. Two (16 and 17) of the four Johnson Creek reaches (ODFW stream segments) are exceptional for their high channel complexity, lack of human disturbance, and good fish habitat. NOAA Fisheries considers the main stem of Johnson Creek (including the Springwater section) as critical habitat for Lower Columbia River steelhead and Chinook and it has been listed as essential fish habitat for Coho and Chinook. Oregon DEQ lists Johnson Creek as a water quality limited stream and on the 303(d) lists for various toxins, temperature, and fecal coliform. DEQ is required by the federal Clean Water Act to maintain a list of stream segments that do not meet water quality standards.

Tributaries

Six creeks feed Johnson Creek from the west and one from the east. The creeks are: Hogan Creek; Botefuhr Creek; Brigman Creek; Sunshine Creek; Badge Creek; seasonal Bus and Ops Creeks, and the North Fork Johnson Creek.

Natural Resources Wetland

A local wetland inventory was conducted and six emergent marsh type wetlands were identified to be locally significant. The wetlands total less than six acres and are generally part of larger a wetland, floodplain, and/or forest complex.

Riparian Areas

Riparian areas are essential to wildlife passage, stream bank protection and erosion control, fish and aquatic habitat, and other ecological functions. Some of the Springwater riparian reaches have relatively intact diverse, mature riparian growth, however many areas lack high quality riparian vegetation. Areas that appear as wide canopy trees in aerial photography hide under-story that has been cleared, with significant stream bank erosion occurring. There are about 430 acres of riparian acres (in the Springwater study area) of which about 14% has been altered, e.g. mowed, cut down or lacking in high quality riparian vegetation.

Wildlife Habitat

Wildlife habitats include woodland and tree groves and riparian wetland complexes. Springwater's mature forests are valuable wildlife areas within the watershed's landscape because of their relatively pristine natures, large patch size, and proximity to the Johnson Creek riparian zone. Forested patches often provided continuous wildlife passages between the major western tributaries and Johnson Creek.

Rural Development and Agricultural Practices

Major issues associated with natural resource planning and enhancements in Springwater are related to the existing rural development and agricultural practices in the area. MacDonald Creek (Badger) has been modified by Telford Road, and urban development at the headwaters of Botefuhr Creek has changed the flow regime of the creek channel. A Himalayan blackberry monoculture has been established in the area west of Hogan Road, and an incised channel has minimized the channel's connectivity to its floodplain. Open (ditched) stormwater systems and failing septic systems contribute negatively to water quality in Johnson Creek and the other tributaries in the study area.

State Goal 5 Natural Resources

In order to protect natural resource values, Statewide Planning Goal 5 and its administrative rules require that jurisdictions complete a natural resource inventory, a determination of resource significance, an analysis of the consequences of resource protection (to the resource and adjacent areas), and develop resource protections standards. This work is one of the major elements in the effort to create an urban industrial and employment district in Springwater.

4.4.3 Summary of Proposed Plan Element

The ESRA forms the green infrastructure around which other Plan elements were developed. The intent of protecting and enhancing the natural resources in Springwater is not only to preserve and protect the natural resources in the area to recognize their contribution to the environmental and ecological health of the watershed and the region, but to maintain these areas as amenities for future employees and residents of Springwater.

Selected characteristics of the ESRA include:

- The ESRA designation is applied to 200 feet from top of bank on both sides of Johnson Creek and associated tree groves, locally significant wetlands, or unique habitats; to locally significant wetlands, to tributary reaches (100 feet from top of bank on both sides) and associated tree groves (within 150 feet of top of bank).
- Wetlands, riparian habitat, and upland habitat offering both opportunities for protection of high value resources and opportunities for enhancement of degraded resources
- Habitat migration routes along the waterways and between the buttes
- Implementation strategies including planning-level project cost, funding strategies, regulatory and incentive options, and enhancement priorities

In addition to defining the ESRA, the team identified key objective elements of the environmentally sensitive resource areas management. These measures are intended to allow the entire planning area to be more ecologically sustainable, to improve the aquatic habitat through healthy streams with cool, clear water, and allow continued wildlife migration within and beyond Springwater. The measures include:

- Restoring the headwater wetlands of McNutt Creek and riparian habitat along the tributaries of Johnson Creek
- Retaining undeveloped land as green wildlife corridors between the buttes and major tributaries of Johnson Creek
- Protecting the mature forests and riparian habitat within the five-creek confluence area in the southeastern part of the study area
- Preserving the integrity of large stands of mature forests such as the Hogan Cedars grove

Specific projects, project costs, and potential funding sources to achieve these objectives are identified in the Springwater Natural Resources Report.

4.5 TRANSPORTATION

4.5.1 Background

A well-planned transportation system is critical to attracting economic development to Springwater and to achieving the area's goals for livability and sustainable development.

Metro UGMFP Title 11 requires “a transportation plan consistent with the applicable provisions of the Regional Transportation Plan” and “the protection of natural resources”.

The CWG was convened to provide input through the planning effort. Together, the CWG and the project team developed a set of goals and policies that were ultimately adopted by the CWG. The purpose of the goals and policies was to identify the City of Gresham's intent to accomplish certain results through the Springwater Community Plan. The following goal was adopted for transportation:

The Springwater Community will encompass a well-planned transportation system that supports the Springwater Community Plan, while promoting transit, walking, and bicycling. Good design can avoid the effects of heavy traffic on neighborhood safety and the natural environment. A well-connected transportation system using trails, bicycle routes and a variety of street types reinforces a sense of community and provides adequate routes for travel. The site should provide good connections to and from the employment areas and the surrounding community, as well as regional freight and transportation centers.

The transportation plan for Springwater was developed in compliance with transportation plans adopted by the State, Metro, Multnomah County, and the City. Guidelines from these entities were used as a primary resource to develop the policy framework for the mobility standards and street spacing set forth in the Springwater Transportation System Plan (TSP). Review of the Gresham and Multnomah County Transportation System Plans also revealed the current street functional class designations for existing streets and highways, any planned pathways or trails, and any planned transportation improvements within or close to the Springwater area that should be included in the basic framework of the new planning area.

4.5.1 Summary of Major Issues

Major issues faced in the transportation planning for Springwater are described below.

Develop a network of arterial and collector streets adequate to serve future growth in Springwater, while protecting environmentally sensitive areas and adjacent neighborhoods and rural areas from the effects of urbanization.

Traffic analysis conducted as part of the update to the Regional Transportation Plan (RTP) demonstrated that future growth in Springwater would likely have widespread effects on the regional transportation system, despite significant improvements to the primary routes serving the area. Springwater's transportation plan must support the land use goals of the community, protect the natural features that define the area, and improve community access by all modes of travel by providing a variety of travel choices.

The availability of alternative arterials and highways leading away from Springwater are limited. The rural Springwater community today, in general, is adequately served by US 26, and several City and County two-lane arterial roadways. Recurring congestion occurs during peak periods at major intersections along Burnside Road, Hogan Drive, and Powell Boulevard just north of Springwater inside city limits, but delays are within acceptable levels according to City and State standards.

The planned job growth will create much higher demand for regional travel to I-84, I-205, and the future Sunrise Corridor. A long-time need for freight traffic on US 26 has been more direct and reliable routes connecting to I-84 and I-205. On-going work by the City and east Multnomah County communities on a parallel study to the Springwater Master Plan is reconsidering the north / south corridor issue which is identified as a need in the Regional Transportation Plan. A separate study has been conducted to examine options for access to US 26 within Springwater. This study is included in the Reference Documents. Gresham's ongoing participation in these studies is critical to coordinate the studies' evaluations and outcomes with needs for Springwater.

The existing street system is not adequate to serve future growth. Connect Springwater to major streets in Gresham, Pleasant Valley, and Damascus/Boring in a manner that provides alternatives to US 26 while protecting existing neighborhoods from traffic infiltration. Additional connections and improvements to existing streets are needed to increase access from Springwater to other parts of the region. However, evaluation of appropriate north/south street connections needs to address the potential impact of traffic generated in Springwater area on adjacent neighborhoods. The Plan must balance the need to provide appropriate connectivity between Springwater and the surrounding neighborhoods while minimizing "through" traffic from Springwater to residential Gresham neighborhoods and maintaining a "hard urban edge" at the eastern boundary of the community as required by Gresham's intergovernmental agreement with Multnomah County.

US 26 Concept Design and Access Plan study. The City with the Oregon Department of Transportation analyzed and created a design and access plan for the Springwater segment of US 26 in order to support the Springwater Plan. This plan identifies US 26 improvements for traffic, freight, transit, and pedestrian travel that will be needed to support the land uses planned for Springwater.

4.5.3 Summary of Proposed Plan Element

Key features of the transportation element of the Plan are:

- Create a network of arterial, collector, neighborhood, connector, and local streets that accommodate travel demands and provide multiple routes for travel. Key new street extensions and connections include:
 - One (or two) new east-west arterial connections from 242nd Avenue to Telford Road between Rugg Road and 252nd Avenue
 - Phased improvements to provide access to US 26, including a new at-grade controlled intersection in the northern part of Springwater (intersection with a new collector) that ultimately will be a grade separated bridge crossing after an interchange with an new arterial is constructed at the southern part of Springwater
 - A new street connection to Orient Drive around the east side of the existing Gresham neighborhoods
- Upgrade existing streets and design all new streets to accommodate biking and walking, with special pedestrian amenities on transit streets. Upgrade intersections with safety issues identified as part of the inventory work.
- Provide regional and community transit service on key roads in Springwater, with direct connections to Gresham, Sandy, Clackamas regional center, Damascus, the Columbia Corridor, and downtown Portland. Transit streets include 242nd Avenue, Orient Drive, and US 26.
- Provide a logical and connected street system that connects directly to community destinations while also avoiding the ESRA where possible. Plan for a local street system that complements the arterial and collector street system and meets regional connectivity requirements within the residential areas of the plan.
- Provide for direct and convenient access to employment centers that lead to regional facilities, and reduce the possibility of traffic intrusions into neighborhood and rural areas.
- Use Green Street designs that are an integral part of the stormwater management system and provide walkable, tree lined streets.
- Plan for a long-term arterial connection from Hogan Road to US 26 north of the Springwater Corridor Trail, to serve long-term regional mobility needs.
- Implement a Transit Plan that includes a primary transit route on Hogan as well as secondary and neighborhood circulation routes.

4.6 SUSTAINABLE DEVELOPMENT

4.6.1 Background

The City's goal for Springwater is to develop an economically, environmentally, and socially sustainable community. Providing sustainable development will help integrate the quality of life with the quality of the community that develops as Springwater is urbanized and annexed. The philosophy of sustainable development starts at the community planning level and continues through the design and construction of individual buildings. Each element along the continuum from community to structure is critical to this systematic model. This approach seeks to balance the use of natural resources with the creation of spaces and places needed to meet the community's social, functional, and economic needs.

Early in development of the Plan, a Community Working Group (CWG) was convened to provide input through the planning effort. Together, the CWG and the project team developed a set of goals and policies that were ultimately adopted by the CWG. The purpose of the goals

and policies was to identify the intent of the City to accomplish certain results through the Plan. The following goal was adopted for sustainability:

The Springwater Community shall foster sustainability through encouraging businesses, industries and homes that are designed and built with good environmental stewardship. This shall be accomplished through green practices that provide for energy efficiency, water conservation, reduced pollution, and avoid environmentally harmful materials and processes. The Springwater Community strives to be a model for successful sustainable industrial development. Development shall also preserve, restore, and enhance natural resources by meeting or exceeding local and regional standards. Land uses, transportation systems and natural resources shall be carefully integrated and balanced.

4.6.1 Summary of Major Issues

The following are some of the major issues that were considered in planning for sustainable development in Springwater. These issues represent the full range of sustainable development opportunities, from the community level to the building level.

Economic Development

Positioning Springwater as a sustainable community can take several approaches, all of which should be considered during implementation of the Plan.

- Targeting companies that produce environmentally-friendly or holistic products
- Targeting groups of industries that would benefit from co-location and collaboration in the management of resources and environmental concerns such as energy, water, and materials management
- Promoting or requiring green building practices for industrial, commercial, and residential development. The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System includes standards for building construction and operation that aim to improve occupant wellbeing, environmental performance, and economic returns of buildings. The LEED program uses both established and innovative practices, standards, and technologies to improve the environment for building occupants and minimize the impact of building construction. Incorporating elements of the LEED program in the Springwater code and supporting developer participation in the U.S. Green Building Council's LEED Program will result in a more sustainable built environment in Springwater, as well as supporting other sustainability goals.

Site Development Practice

Green site development practices are implemented through a combination of techniques that minimize the impact of development on the natural areas and surrounding communities. Green site development incorporates the following elements:

- *Stormwater Management.* The high level of industrial and urban development planned for Springwater will increase stormwater runoff and pollutant load beyond what is currently experienced. Green or low impact development uses a system of landscaping features that treat and infiltrate stormwater on the development site instead of using a traditional piped collection and conveyance system. Stormwater that is not managed on individual sites will be conveyed using Green Street swales rather than a conventional piped system. The benefit of green development is that it minimizes the production of stormwater runoff and manages it close to the source. These practices mimic the natural hydrology of the area, minimizing erosion and enhancing water quality in the streams. Green development practices include the following:

- Minimizing impervious surface coverage
 - Using eco-roofs to absorb precipitation and reduce runoff from developed areas.
 - Maximizing tree canopy through preserving and planting trees in landscaped areas and parking lots, on residential property, in street medians, and in neighborhood and community parks
 - Using onsite stormwater treatment techniques such as bioswales and landscape planters.
 - Using Green Streets for all streets that do not have a high level of on-street parking (as in the Village Center).
- *Xeriscape Landscaping.* Xeriscape landscaping promotes water conservation by minimizing the amount of native vegetation removed, limiting new vegetation to native or drought tolerant vegetation, and limiting irrigation. This approach also supports and encourages protection and restoration of natural areas where development occurs on parcels adjacent to Environmentally Sensitive Resource Areas.
 - *Minimizing Night Sky Impacts.* Urbanization of Springwater will result in new lighting sources that could increase night sky illumination and impact the nocturnal environment. Applying site lighting restrictions reduces the development impact by avoiding off-site lighting and night sky pollution.
 - *Water Reuse.* The high density of proposed industrial development, distance from the City's existing wastewater treatment plant, and potential demand for reclaimed water for either non-contact industrial uses or environmental benefits (such as aquifer recharge, stream flow augmentation, etc.) support investigating wastewater reuse in Springwater.

4.6.3 Summary of Proposed Plan Element

The City is encouraging sustainability in Springwater in three ways: regulation, recruitment, and incentives.

Regulation

Several green building techniques are incorporated into the Springwater Land Use Code in order to promote sustainability. The code requires all mixed-use, industrial, and office building to earn three points toward meeting Green Building standards by applying two or more of the practices identified in the development code. These practices include:

- Alternative transportation measures (bicycle storage, alternative fuel vehicle parking or refueling stations)
- Vegetated roofs (Eco-roofs)
- Wastewater reuse
- Water conservation
- Renewable energy
- Building recycling and use of recycled materials for construction
- Improving the building working environment (prohibiting smoking, providing operable windows, improving daylighting)

The code also requires developers to comply with low impact stormwater development practices, minimize impervious surfaces, reduce night lighting, and use xeriscape landscaping principles.

While the Springwater code does not require buildings to be certified by the U.S. Green Building Council's LEED program, it does provide a straightforward starting point if a developer elects to apply for certification.

Recruitment

Springwater's marketing and recruitment plan suggests several methods for positioning Springwater as a sustainable community. One of the suggestions is to incorporate elements of green building techniques in the development code, which has been addressed as described above. Other options include:

- Targeting "green" companies that produce environmentally friendly or holistic products
- Considering forming an eco-industrial park (EIP). This concept entails identifying manufacturing and service companies that benefit from co-location and collaboration in the management of resources and environmental concerns such as energy, water, and materials management.

Incentives

A group of Portland State University graduate students is working with the City to identify incentives for sustainable practices within Springwater. Incentives might include funding from outside sources (such as State or federal programs), tax credits, fee reductions and other City programs.

The City is also exploring the option of certifying Springwater as a LEED Neighborhood Development. This is a program under development by the U.S. Green Building Council. It is similar to the LEED certification for individual buildings, but looks at the neighborhood as a whole.

4.7 PUBLIC FACILITIES

4.7.1 Background

The Metro Council brought Springwater into the UGB in December 2002. When land is brought into the UGB, Metro UGMFP Title 11 requires that the added territory be brought into a City's Comprehensive Plan prior to urbanization with the intent to promote the integration of the new land into existing communities.

Title 11 requires conceptual public facilities plans for each of these services that demonstrate how Springwater can be served. The conceptual plans are to include preliminary cost estimates and funding strategies, including likely financing approaches and maps that show general locations of the public facilities.

To address this need, conceptual public facility plans were developed for water, wastewater, stormwater, and parks during the Concept Plan phase of the project. The general steps in generating the conceptual public facilities plans were:

- Inventory of existing system
- Needs analysis based on planned future uses
- Developing a conceptual system layout for each planning scenario, including facility needs and cost estimates
- Evaluating each conceptual public facility system with respect to project evaluation criteria
- Creating a preferred public facility alternative based on the preferred land use, transportation, and natural resource concepts and the scenario evaluation results.
- Refining facility needs, cost estimates, and funding strategies for the recommended plan.

The Concept Plan also included the CWG's adoption of plan goals. No specific goals were developed for water, wastewater, stormwater, or parks public facilities. However, evaluation measures associated with these public infrastructure areas were incorporated into evaluation measures for the broader community goals (i.e., create a community, livability, sustainability, etc.).

The Concept Plan and concurrent master utility plan work was the basis for the Public Facilities Plans that are included in this document. These Public Facilities Plans describe the elements necessary to comply with Statewide Planning Goal 11 and OAR 660-011-000 necessary to amend the City's Public Facility Plan for each of the public facilities:

660-011-0010

The public facility plan shall contain the following items:

- An inventory and general assessment of the condition of all the significant public facility systems which support the land uses designated in the acknowledged comprehensive plan
- A list of the significant public facility projects that are to support the land uses designated in the acknowledged comprehensive plan. Public facility project descriptions or specifications of these projects as necessary
- Rough cost estimates of each public facility project
- A map or written description of each public facility project's general location or service area
- Policy statement(s) or urban growth management agreement identifying the provider of each public facility system. If there is more than one provider with the authority to provide the system within the area covered by the public facility plan, then the provider of each project shall be designated
- An estimate of when each facility project will be needed; and
- A discussion of the provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each public facility project or system

4.7.2 Summary of Major Issues

Current residents of Springwater have no public water, wastewater or stormwater systems. Water is currently accessed via underground wells and wastewater is primarily treated in private subsurface disposal systems. Stormwater runoff is conveyed to natural drainage areas or to drainage ditches adjacent to local roads.

Urbanization of Springwater requires that a public infrastructure system be constructed and maintained. Therefore, new water services, wastewater services, and stormwater management services will be required for Springwater. Urban service needs were evaluated for the entire Springwater area, although service provider responsibility for the portion of Springwater in Clackamas County has not yet been determined.

The major issues associated with the water and wastewater network revolved around providing connections to the existing City systems that maximize the use of available capacity without providing undue strain on the existing system. The City is currently taking measures to maximize the amount of wastewater conveyed by gravity and eliminate pump stations wherever possible, so wastewater system alternatives were designed to minimize or eliminate the need for future pump stations.

The stormwater system was designed around low impact development practices to be consistent with the desire to make Springwater a sustainable community, minimize public infrastructure needs, and be consistent with the stormwater management approach adopted for Pleasant Valley.

4.7.3 Summary of Proposed Plan Element

4.7.3.1 Water System

Recommendations for the water system in Springwater include a distribution network to serve the Springwater community, and improvements to existing infrastructure in the City to provide additional flow to Springwater from the City's current sources. To maintain consistency with the City's current practices, parallel piping is included in some areas to minimize the use of pressure reducing valves where possible. Improvements are summarized below.

- The Springwater system is divided into three service levels – extensions of the South Hills, Intermediate, and Lusted service levels. Within each service level there is a network of distribution mains ranging in size from 12-inch to 18-inch. These mains are looped to the maximum extent possible.
- Existing 8-inch and 12-inch mains in two areas will need to be upsized to accommodate the demands anticipated in Springwater.
- Two new pumps will need to be added to Regner Pump Station. These pumps are to be of similar capacity to those existing at the pump station (1,100 gpm capacity).
- Two new reservoirs will be required. One will be located near and of a similar size as the existing South Hills Reservoir (2.6 MG) and the other will be located near and of the same size as the existing Wheeler Reservoir (3.2 MG). Controls at the Regner, Barnes, and Salquist Pump Stations will have to be modified to incorporate these new tanks.

No provisions are included in the recommended plan to serve the Phase 2 Springwater area. It is possible that service will be provided by the Sunrise Water Authority, but no formal agreements regarding potable water service have been reached.

The estimated cost of the water system is \$23.2 million. These improvements will be funded through system development charges (SDCs). SDCs adopted for Springwater should be sufficient to fund required improvements over the life of the development; however depending on the location of the early developments, initial investment by Gresham may be required. This investment will be minimized if the initial development is within a single service area, and is located in relatively close proximity to an existing storage tank.

4.7.3.2 Wastewater System

The recommended wastewater system for Springwater includes a gravity collection system to serve the Springwater community, and improvements to existing infrastructure in the City to convey the additional flow from Springwater to the City's treatment plant. Improvements are summarized below.

- The backbone of the Springwater collection system is the extension of the Johnson Creek interceptor along Telford Road. The interceptor will extend from the terminus of the existing system at 252nd Avenue/Telford Road to approximately Stone Road/Telford Road. The interceptor size will range in diameter from 12 inches at Stone Road to 21 inches at the connection to the existing system.

- A series of 8-inch to 18-inch gravity sewers will convey wastewater from the development areas to the interceptor extension. These new sewers will be routed in existing or proposed roadways.
- Two new 8-inch collectors are required to facilitate proposed development on the Brickworks site.
- Several new sewers will discharge directly to the existing Johnson Creek interceptor. These include the collectors from the Village Center area, the residential neighborhood north of the Village Center.
- A portion of the existing Johnson Creek Interceptor pipeline will require upsizing (approximately 2,100 feet of 15-inch diameter pipe will be replaced with 21-inch diameter pipe) between Hogan Road and the Linneman Pump (lift) Station near SW Pleasant View Drive (190th Street).
- The Linneman Pump (lift) Station is currently capacity limited and will be replaced by a larger pump station (and force main) or a gravity pipeline to convey the Johnson Creek Interceptor flows to the City's treatment plant.
- Preliminary infrastructure improvements to serve Springwater Phase 2 (southwest of the current planning area) were developed. These improvements are based on the assumption that all of the area that drains by gravity to Springwater will be served by the City of Gresham. The topography in the Phase 2 area results in gravity wastewater flow being conveyed along Sunshine Creek. It is anticipated that flow from the Phase 2 area would enter the Springwater system at approximately the intersection of 252nd Avenue and Rugg Road. In order for the City to provide service to this area, the main interceptor through Springwater would need to be upsized, and a new interceptor provided to route this flow from approximately the intersection of 252nd Avenue and Telford Road to the treatment plant. An alignment study for this new interceptor would need to be provided in the future to determine the optimal routing of such an interceptor.

The estimated cost of the wastewater conveyance system to provide service for Springwater is \$26.7 million. This cost does not include the reimbursement (or future investment required) for wastewater treatment plant capacity.

While the system was developed based around conventional conveyance and treatment of wastewater, there may be opportunities to investigate alternative treatment and reuse in Springwater. Satellite wastewater treatment is becoming more cost-effective for onsite treatment of sanitary wastewater from large industrial sites. There could be multiple benefits of satellite treatment in Springwater, including:

- Providing irrigation water for public parks or other public areas (schools, government facilities, etc.)
- Providing flow augmentation in Johnson Creek
- Providing irrigation water for nursery or agricultural land outside of the study area in exchange for water rights

In addition to these benefits, satellite treatment and effluent reuse is consistent with the desire to make Springwater a green development. Use of satellite or onsite treatment could even be incorporated in a public demonstration project in a highly visible area such as the Village Center to educate the public and further promote sustainable development in the community. The opportunities associated with reuse are strongly dependent on the specific types of industries that locate in Springwater. The City should continue to evaluate opportunities for satellite treatment and effluent reuse as development occurs, and should conduct early discussions with the Oregon DEQ to determine requirements associated with this type of system.

4.7.3.3 Stormwater System

Historical drainage practices in Springwater have resulted in a significantly altered watershed and have had a dramatic adverse impact on watershed health, especially in riparian areas. The recommended stormwater system for Springwater is intended to minimize the impact of development and maintain or restore watershed functionality.

As in Pleasant Valley, stormwater management in Springwater is based on green practices that include both onsite stormwater management and public infrastructure facilities. Both components use techniques and processes that mimic natural hydrology to the greatest extent practical, reducing impacts of runoff to pre-development conditions, or improving over current conditions.

Rather than routing runoff to underground pipes for conveyance, runoff will be conveyed through green street swales and swale culverts. Vegetated swales located between the roadway and sidewalks will slow the flow of runoff and also provide some infiltration, reducing the quantity of stormwater that must be managed in regional facilities. These swales will generally have an 8-foot top width, 2-foot bottom width, and 4:1 side slope. In areas where the standard swale geometry does not provide adequate capacity, a 10-foot top width will be provided. Approximately four miles of swale improvements are recommended. In addition, 21 stream crossings have been identified. These crossings, which will be a combination of reinforced concrete box culverts, circular culverts, and bridges, will be constructed in conjunction with roadway improvements and will be designed to provide fish passage.

Regional facilities will control the flow of runoff back to the streams in order to regulate the rate and volume of flow entering the stream. In addition, vegetation in the facility will improve water quality by “polishing” the runoff to remove excessive sediment and pollutants⁵. Fifteen new regional stormwater facilities have been identified for the Springwater planning area. This includes two facilities in the Brickyard area in the existing city limits, one facility at the base of the Persimmon Country Club, and 13 facilities within the area added as part of the 2002 Urban Growth Boundary expansion. All of the proposed facilities are located in Multnomah County. The facilities range in size from 4 acre-feet to 22 acre-feet, providing volume for flood control, channel stability enhancement, and water quality enhancement. Flow that does not enter a regional facility will be treated in local facilities. The total cost of recommend stormwater improvements in Springwater is \$22.6 million.

In conjunction with recommended capital improvements for stormwater management, onsite stormwater management in Springwater will require the use of green development practices. Green development practices are a set of techniques that mimic and incorporate the predevelopment hydrology of a site into future development. Green development practices include site management techniques that minimize (1) disturbance to existing soils, tree canopy, and other sensitive natural resource features and (2) impervious surfaces, to reduce the production of surface runoff. They also manage runoff through techniques that use natural areas and landscaping to treat, retain, attenuate, and infiltrate stormwater within each development site instead of using traditional piped collection and conveyance systems.

⁵ Pleasant Valley Implementation Plan Report, December 2003.

4.8 PARKS, TRAILS, AND OPEN SPACE

4.8.1 Background

There are currently no parks in Springwater. There is one trail – the Springwater Trail – that bisects the planning area. Both regional and site conditions directly affect the potential of parks, open space, and trails in Springwater. These regional and site conditions include the following:

- *Regional Trails* outlined in Metro’s Trails Master Plan, including the Springwater Trail that runs through Springwater, the 40 Mile Loop Trail planned to be located less than a mile to the northeast of Springwater along Beaver Creek, and the proposed East Buttes Loop Trail that will be located directly to the west of Springwater.
- *Natural Features* including the local buttes (Hogan Butte in the northwest portion of Springwater, and additional buttes directly south of Springwater), Johnson Creek and its tributaries running throughout the study area, and significant forested areas along creek corridors and in upland areas.
- Nearby *parks and open spaces* including the Gradin Youth Sports Park, Southeast Neighborhood Park, the privately owned Persimmon Golf Course, and public open space adjacent to the Springwater Trail.

The City provides a number of park and recreational amenities for the community. These are categorized as follows:

- *Neighborhood Parks* provide access to basic recreation opportunities for nearby residents of all ages. They are located within walking and biking distance of all users, and may include urban plazas in denser areas to provide space for community events.
- *Community Parks* are generally located adjacent to natural resources and/or in areas with good vehicular access. They accommodate larger group activities, provide a variety of accessible recreation opportunities for all age groups, offer environmental education opportunities, serve recreational needs of families, and create opportunities for community social activities.
- *Open Space, greenways, and corridors* protect natural and scenic resources, and create nature-oriented outdoor recreation and trail-oriented activities.

4.8.2 Summary of Major Issues

The City currently has Level of Service standards for determining the acreage of particular park types required to meet the needs of a community. Historically, parks have been developed largely to serve the needs of residential communities. Therefore, using the City’s current Level of Service standards would not provide amenities to support the anticipated 17,000 employees working in Springwater. To address this need, a Level of Service standard for employees was added to the typical residential Level of Service standards for community park areas. Similarly, and employee contribution was included in the Level of Service calculation for open space needs, with the intent of providing appropriate opportunities for employees to recreate in Springwater. The Level of Service was based on the City of Portland’s practice of calculating parks levels of service including each employee as 0.32 residential equivalents. Subsequent to completion of the Parks Master Plan for Springwater, it was determined through a separate study that the City of Gresham’s current ratio is 0.10 employees per resident.

Determining trail locations also reflected the unique nature of Springwater. The purpose of trails is to interconnect parks and open spaces; to maximize access to programs and facilities; to promote physical fitness and health for a variety of users; to encourage social interaction and community pride; to provide opportunities for rest and relaxation within natural settings through

trail related recreation; to reduce auto-dependency and enhance connections to transit facilities; to link open space amenities with homes, workplaces and other community facilities; and to provide outdoor classroom opportunities for environmental education. Balancing these various purposes in Springwater resulted in the identification of two distinctly different trail facilities.

4.8.3 Summary of Proposed Plan Element

The proposed parks and open space plan for Springwater incorporates the following elements:

Neighborhood Park

Recommended neighborhood parks include a Village Center park and park blocks. The park blocks are proposed along the north-south and east-west axes of the Village Center, and provide pedestrian access to the Village Center through the heart of the commercial and mixed-use development. At the intersection of these park blocks is a Village Center Park and Plaza that will serve as the primary public park for the area. The Village Center Park is envisioned to include a multi-use plaza with seating, public art, pedestrian walks, permanent restrooms, children's play equipment, and room for non-organized sports such as bocce ball. The Village Center Park could also be used for sustainable demonstration projects such as small-scale stormwater management or wastewater treatment and reuse facilities.

Community Parks

The Plan recommends creating two new community parks, located adjacent to natural resources and/or in areas with good vehicular accessibility.

The nature-oriented Springwater Community Park is envisioned to be located along the Johnson Creek Corridor and adjacent to the residential districts. It will provide two youth sports fields, and a regionally significant natural park area, providing interpretive educational opportunities. This park is intended to tie together open space, trails, and interpretive opportunities into a respectful and educational encounter with the natural environment. By locating the park along the Johnson Creek and Springwater Trail corridor, visitors would be able to enjoy the natural features of the district and become informed of the challenges facing the overall watershed. It is envisioned that this park would become the identity of the district. The larger district goals of sustainability should be expressed in the design and implementation of the park.

The athletic facility-oriented East Springwater Park will be located east of US. 26, and will provide two to three adult sports fields for employee recreational opportunities as well as for the adjacent neighborhood to the north. This park is intended to be a community-wide resource with organized sports fields for adults and youth, and therefore be accessible by pedestrians, bikes and cars.

Trails

The recommended trails plan for Springwater creates two loop trails to provide resident and employee access within the area, and also creates connections to existing and planned trails adjacent to Springwater. The precise alignment of the Employee Loop Trail will need to be further considered during implementation of the Springwater Plan.

Village Center Loop Trail

To the west of US 26, the trail system will follow creek corridors to create a roughly 1-mile trail loop. This loop trail will be located between the protected creek corridors and either street right of way or residential parcels. At special points along the trail an overlook can be implemented to

allow better views into the protected corridor. The overlook should be implemented to create the least impact possible. Requirements for trail construction in the ESRAs are outlined in the ESRA section of the Springwater Community Plan Development Code.

Employee Loop Trail

To the east of US. 26 the trail system will follow the road network or parallel stream corridors. The option providing trails adjacent to the roadway would be implemented as a multi-use corridor located between private property and the roadway swales. This option would include a slightly wider trail corridor to allow for a more informal planting arrangement of native species to distinguish the street edge as a special corridor. The option providing trails adjacent to stream corridors would include a multi-use trail located between private property and the ESRA adjacent to the stream. The trail could be located immediately adjacent to private property, or separated from the private property by a vegetated stormwater swale.

The Employee Loop Trail alignment options (roadside and streamside) are under continuing investigation. The following considerations will be weighed in selection of the final location of the Employee Loop Trail:

- *Maintenance:* The selection of the roadside vs. streamside alignment option has potential implications for on-going maintenance responsibilities and practices. The roadside option could result in shared maintenance responsibilities between parks and transportation divisions within the City, while the streamside option and its more complex natural area maintenance requirements requires specialized expertise that could be developed in the Parks and Recreation Division. The approach to maintenance practices in the roadside option are pathway litter patrol and conventional landscape maintenance. The streamside option would require litter patrol and a carefully-considered vegetation management plan for habitat preservation and enhancement goals.
- *Trail R.O.W. Acquisition:* The evaluation of the acquisition costs for trail ROW alignment options is on-going. The roadside trail has the advantage of being incorporated in the Street ROW acquisition effort, while the streamside option would require a separate negotiation.
- *Implementation Cost:* Trails along creeks are potentially more costly to implement because of environmental restrictions and access limitations.
- *Connectivity:* Both the roadside and streamside trail alignment options offer similar connections to surrounding neighborhoods and the broader Gresham community. The primary difference in this evaluation is that the streamside option greatly enhances trail users connections to the natural environment over the roadside alignment.

Open Space/Greenways

The Plan recommends purchasing between 120 and 150 acres of Parks-funded open space and greenways to make available as a public amenity for residents and employees of Springwater. This allocation will be prioritized first for the acquisition of property along the Johnson Creek and Springwater Trail corridor, and along the McNutt and Brigman Creek corridors for the Village Center Loop Trail. Additional open space acquisition should be used for the acquisition of natural resource areas, based on the strategy identified in the Natural Resources Report.

4.9 BRICKWORKS HEAVY INDUSTRIAL SITE

4.9.1 Background

The Brickworks Heavy Industrial Site of approximately 159 acres is within the existing City of Gresham and has been designated as a Heavy Industrial land use district since 1980. It has had only minimal industrial development and has seen the construction of two schools on the overall site, approved under prior City land use standards. The most substantial industrial use on the overall site is a longtime Brickworks facility and a Concrete Pavers facility now under construction and owned by Mutual Materials, Inc. This industrial use encompasses only a small part of the overall site, most of which is vacant at this time.

When the 2002 Urban Growth Boundary expansion brought in the large Springwater area, the City agreed to analyze the Brickworks site as part of the overall Springwater planning and to develop recommended appropriate land use districts. The Brickworks site was included in all of the goal development, documentation, data analysis, public involvement, natural resources, public facilities master plans, economic reports, and related efforts as part of the Springwater Plan. The Brickworks site was brought into the Springwater Plan boundary and the Springwater land use designations were applied to the Phase I Brickworks site subsequent to the adoption of the Springwater Plan for the UGB expansion area.

4.9.2 Summary of Major Issues

Industrial Development and Site Suitability

The Brickworks site was analyzed together with the balance of the Springwater Plan Area, taking into account all of the regional employment trends, Metro forecasts, and the projection for East Multnomah County's emergence as an increasingly important jobs center. The Brickworks site had many of the same advantages and disadvantages for industrial growth as much of the rest of the Springwater Plan area.

The area is relatively flat, but is not very well served by a transportation network which would support intensive industrial development. There are some relatively minor natural resource areas in the northwest portion of the site, and a considerably larger natural resource area being a mature tree grove in the southeast portion of the site. There is abutting existing residential development to the east and the north, in addition to the two existing schools and a small maintenance facility in the northeast portion of the site. The area immediately to the north (across SE Palmquist Road) is the site of a slowly developing public sports park complex of several athletic fields.

Generally, considerable analysis and documentation exists to demonstrate that this is not a viable Heavy Industrial site. Given the lack of available Industrial and employment sites in the Metro area, and given the other elements of the Springwater Plan for those areas to the south and southeast of the Brickworks site, portions of the site identified were as having good potential for future Industrial and/or jobs growth. A significant majority of the overall acreage was identified as viable jobs land. Other areas of the site, particularly those near the schools and the Sports Park were identified as being most appropriate for residential development.

For Phase I, the Plan designates approximately 27.2 acres in the north and central portions as "Research Technology Industrial-Springwater" (RTI-SW). This area would be compatible as Metro 2040 Industrial Land.

Natural Resources

A Natural Resources inventory and ESEE analysis for the overall Brickworks Site was completed as part of the Springwater Plan. In Phase I the resulting areas for protection include two relatively small (approximately 7.1 acres total) stream segments in the northwest portion of the site. The stream segments feed into Johnson Creek at offsite locations.

Consistent with the Springwater Plan, a land use designation of “Environmentally Sensitive Resource Area – Springwater” (ESRA-SW) was applied to this identified resource area.

Residential Lands

Consistent with the balance of the Springwater Plan area, analysis was done on the suitability of portions of the site for residential development. Significant components of that analysis were a review of the existing abutting residential development to the east and to the northwest, the location of the two relatively new schools in the northeast area of the site, the types and numbers of residential housing in the immediate area, and the needs for new residential housing to support the potential jobs being created both within the Brickworks site and in the new Springwater Industrial and Employments lands to the south and southeast.

The small portion (about 7 acres) of the School ownership property which is vacant and available for development is in the central east portion of the larger Brickworks site. As such it is not well suited to Industrial or Employment uses. It is functionally and physically most well connected to the existing single-family detached subdivisions to the east. The public facilities and street network make this small area a logical extension of that neighborhood. Additionally the abutting developed schools and the future Sports Park to the north make this a logical site for future subdivision development compatible with the existing abutting uses.

The existing schools were permitted under prior City of Gresham code provisions which allowed public schools within Industrially designated lands. That is no longer the case. As such, it is the current City policy to generally encourage schools to be located within Residentially designated lands.

This plan designates the school sites and the vacant school owned properties (a total of approximately 24 acres) as “Low Density Residential-Springwater” (LDR-SW).

The analysis showed that there is some lack of ownership townhome options within this particular area. Taking into account the potential jobs in the area, the Sports Park, and the schools, this plan designates approximately 19 acres as “Townhouse Residential-Springwater” (THR-SW). The Metro 2040 designation for the residential lands is “inner neighborhood.” All of the proposed residential lands in the Brickworks Site are in Phase I.

Summary of Proposed Plan Elements

Consistent with the adopted Springwater Plan for the new UGB Expansion area, the Brickworks Site Plan addition to the overall Springwater Plan District, as well as the mix and the acreages for the subdistricts provide for a mix of uses, heavily weighted to the Industrial and Employment needs of the City and the Region, preserving an acreage of Natural Resource lands, and providing the opportunity for a range of housing and support commercial services that make the Brickworks site a viable development area.

SECTION 4.9 SUPPLEMENTARY TABLES:

Table 1: Brickworks Site Buildable Land Analysis – Gross Acres by Classification

Plan Sub-District	Plan Data Estimate Total
ESRA	7.1
LDR-SW	23.6
THR-SW	19.1
RTI-SW	27.2
Phase II	81.6
Total Acres	158.6

Table 2*: Brickworks Site – Buildable Land Analysis – Gross to Net Assumption

Plan Sub-District	Description	Gross Buildable Acres	Gross to Net Calculation ¹	Net Buildable Acres
LDR-SW	Low Density Residential	9.1 ²	22%	7.1
THR-SW	Townhouse Residential	19.1	22%	14.9
RTI-SW	Research-Technology Industrial	27.2	22%	21.2
Total Acres		52.2		43.2

¹Gross-to-Net of 22% is based on the 25% standard presented by Metro in the 2002-2022 Urban Growth Report: A Residential Land Need Analysis Final Report – December 2002 Page 20 Appendix A, Item #3, Ordinance 02-969. The 3% discount represents land deducted in Table 1 to account for parks.

²The land improved with the school improvements is not included in the gross acres.

Table 3*: Brickworks Site Buildable Land Analysis – Density Assumptions

Plan Sub-District	Net Buildable Acres	Assumed Residential Lot Size	Assumed Square Feet Per Unit	Assumed Floor Area Ratio	Dwelling Units	Employment Land Building Square Feet ¹	Square Feet Per employee ²	Jobs
LDR-SW	7.1	6,000		NA	51			
THR-SW	14.9	2,500		NA	259			
RTI-SW	21.2	0		.55		507,910	350	1,451
Total	43.7				310			1,451

¹Based on the average Floor Area Ratios (FARs) for the RTI-SW district found in the Springwater Title 11 Compliance Report

²From Springwater Title Compliance Report

*Tables 2, 3 and 4 do not include data or calculations regarding Phase II.

Table 4*: Brickworks Site Buildable Lands Analysis – Summary of Development Capacity

New Dwelling Capacity	Net DU Per Residential Acre	Net Residential Land Acres	Dwelling Units
LDR-SW	7.2	7.1	51
THR-SW	17.4	14.9	259
Total New Units			310
New Net Residential Land Acres		22.0	
Dwelling Units per Net Residential Buildable Acre			14.0
New Job Capacity			
RTI-SW			1,451
Total Job Capacity			1,451

Tables 2, 3 and 4 do not include data or calculations regarding Phase II.

(Section 4.9 added by Ordinance 1634 effective 1/18/07)

Urban Growth Management Functional Plan (UGMFP) Title 11 Compliance Report

Introduction

This report describes how the Springwater Plan District (Plan) complies with Title 11 of the Metro Urban Growth Management Functional Plan (UGMFP).

In December 2002, the Metro Council (Ordinance No. 02-969B) brought the Springwater Community Plan area into the Urban Growth Boundary (UGB). Land brought into the UGB is subject to Title 11: Planning for New Urban Areas.

It is the purpose of Title 11 to require and guide planning for conversion from rural to urban use of areas brought into the UGB. It is the intent of Title 11 that development of areas brought into the UGB implement the Regional Framework Plan and 2040 Growth Concept. (3.07.1105 – Purpose and Intent)

All territory added to the Urban Growth Boundary ... shall be subject to adopted comprehensive plan provisions consistent with the requirements of all applicable titles of the Metro Urban Growth Management Functional Plan and, particularly, this Title 11. The comprehensive plan provisions shall be fully coordinated with all other applicable plans. The comprehensive plan provisions shall contain an urban growth plan diagram and policies that demonstrate compliance with the RUGGOs, including the Metro Council adopted 2040 Growth Concept design types. (3.07.1120 – Plan Requirements)

For purposes of this report only, the Springwater Community Plan area is the 1,151.3 acres in Multnomah County brought into the UGB in 2002 (Metro Study Area 6 and part of Study Area 12). There are three areas included in the Springwater Community Plan study area that are not subject to this report (See Figure 1). The area shown in Figure 1 as 2020 Springwater UGB Expansion Area is the area subject to this report.

- Study area 12 of the 2002 UGB expansion included 139 acres on land in Clackamas County (the area east of 252nd Avenue) that originally was being considered as part of the Springwater Community and was included in the study area for analysis purposes. The land was included in the City of Damascus 2004 incorporation and thus is not subject to this Title 11 Compliance Report.
- Unincorporated land (119 acres) found at the northwest corner of the Springwater Community that has been inside the UGB (and the Gresham's Urban Services Boundary) for over 20 years.
- The "Brickworks" site which is 183 acres of designated Heavy Industrial land within the Gresham city limits. It was included in the study area to analyze how the site would work with the UGB expansion area and the appropriateness of re-designating the site or portions of the site as employment or for mixed-uses.

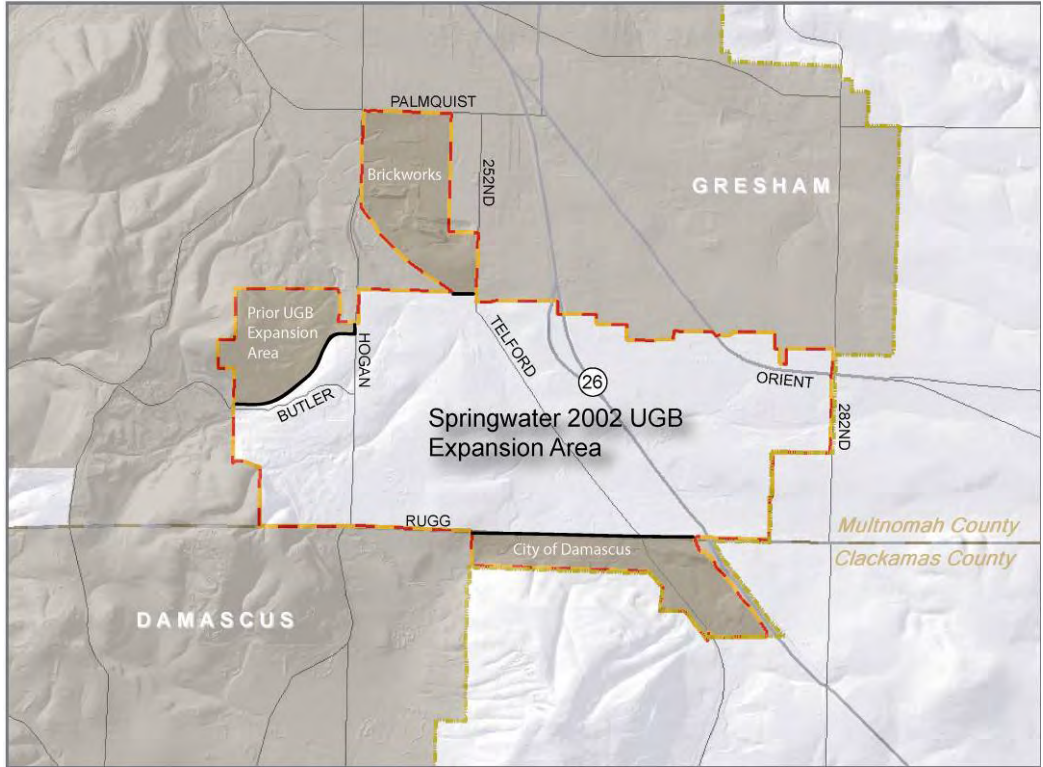


Figure 1 – Springwater Study Area

Title 11 requires the submittal to Metro of the following:

On or before 60 days prior to the adoption of any comprehensive plan amendment subject to this Title 11, the local government shall transmit to Metro the following:

- 1. A copy of the comprehensive plan amendment proposed for adoption;***
- 2. An evaluation of the comprehensive plan amendment for compliance with the Functional Plan and 2040 Growth Concept design types requirements and any additional conditions of approval of the urban growth boundary amendment. This evaluation shall include an explanation of how the plan implements the 2040 Growth Concept;***
- 3. Copies of all applicable comprehensive plan provisions and implementing ordinances as proposed to be amended. (3.07.1130.A Implementation Requirements)***

The City submitted the Planning Commission Draft to Metro on July 29, 2005, and which constitutes a copy of the proposed comprehensive plan amendments and applicable plan provisions and implementing ordinance to be amended. The Springwater Community Plan (CPA 04-8178) consists of the following:

- Springwater Community Plan Summary
- Springwater Natural Resources and ESEE Analysis Report
- Springwater Economic Development Strategy Report
- Springwater Title 11 Compliance Report

- Springwater Goals, Policies and Action Measures
- Springwater Public Facility Plans (water, wastewater, stormwater, parks)
- Springwater Plan District Plan Map
- Springwater Plan District Land Use Development Code
- Springwater Transportation System Plan

This report constitutes the compliance evaluation report. The City has scheduled, at the earliest, an October 4 enactment meeting, so that the 60 days prior provision is met. The City, on May 13, 2005, submitted to Metro an earlier draft of the proposed Comprehensive Plan Amendments, which was at least 45 days prior to the first scheduled hearing (Planning Commission on August 8, 2005).

Section 3.07.1130.B provides a method of extending timelines for adoption of comprehensive plan amendments required by Title 11. No extension of timelines is requested.

Organization

The rest of this report is organized to first show the text of a Title 11 criterion or other applicable provisions or the Conditions of Approval for Ordinance 02-969B (*italicized*); and second provide findings that describe how the proposed comprehensive plan amendments (CPA 04-8178) comply with the specific criterion; and third reach a conclusion as to whether or not the criterion is met.

Section 3.07.1120 Urban Growth Boundary Amendment Urban Reserve Plan Requirements

A – Provision for annexation to a city or any necessary service districts prior to urbanization of the territory or incorporation of a city or necessary service districts to provide all required urban services.

Findings

The Plan lands are currently in unincorporated Multnomah County. The City has an Intergovernmental Agreement (IGA) with Multnomah County (Transition of Planning and Development Services) that provides that the City will be responsible for urban reserve planning (Fourth Amendment 3/11/98). This amendment is to a 1979 Urban Planning Area Agreement that provides for Gresham providing urban services after annexations.

Gresham and Multnomah County also have an IGA specific to Springwater (5/13/04). This IGA established a Gresham and Multnomah County partnership that includes doing the following:

- Create a Springwater Urbanization Plan consistent with Title 11
- Coordinate with Metro, ODOT, Clackamas County, TriMet and the Damascus/Boring Concept Planning project
- Utilize a comprehensive public involvement process
- Address mutual objectives of a jointly adopted resolution which includes addressing the urban/rural edge
- Pursue mutual efforts to develop and implement the financial components necessary to implement the Plan.
- Pursue mutual efforts to amend the Regional Transportation Plan (as needed) and to support funding projects through MTIP and other funding sources

The City provides full city services including water, wastewater, stormwater, fire, police, development and building services, parks and trails, and streets. The City has a current IGA

with Multnomah County (1995) regarding arterial and collector road jurisdiction. The Springwater IGA provides that the 1995 roads IGA would continue to be implemented but also recognized that the City and the County may enter into good faith discussions and negotiations on road jurisdictions.

The City has an established Urban Services Boundary (USB). The USB establishes the geographical limits of where the City provides, or will provide after annexation, city-supplied urban services. A recent ordinance (CPA 04-1480) amending the USB to include the lands covered by the Title 11 compliance report was passed by the Council and became effective on June 3, 2005. This ordinance also established a new annexation goal to “provide for the orderly and efficient annexation of Pleasant Valley, Springwater and subsequently planned new community urban areas.” This ordinance also updated the City’s annexation approval code to be consistent with the Metro 3.09, including allowing for the expedited annexation process. Criterion includes “For Springwater, the adopted Springwater Plan District Plan Map shall apply” and adopted Public Facility and Transportation System Plans shall apply. As is discussed elsewhere in this report the Plan includes public facility and transportation system plans.

Conclusion

The City is engaged in the urban reserve planning for Springwater and will provide city-supplied urban services to Springwater after annexations as provided for in agreements with Multnomah County. As the City is a full service city no additional agreements with other urban service providers are necessary. The City has included Springwater in its USB and has annexation code provisions that can allow for annexations after the comprehensive plan amendments are adopted and effective. The Plan is consistent with this criterion.

B – Provision for average residential densities of at least 10 dwelling units per net developable residential acre or lower densities that conform to the 2040 Growth Concept Plan design type designation for the area.

Findings

The Metro Order that brought Springwater into the UGB only anticipated residential acreage west of Hogan Road (Inner Neighborhood) and potentially along Hogan Road (Corridor). The Plan does provide for residential acres west of and along Hogan Road but it also provides for some residential acreage east of Hogan Road. Findings and conclusion regarding 2040 Growth Concept Plan design types are found in response to Condition B of *General Conditions Applicable to All Land Added to UGB* found later in this report.

The 2002 UGB expansion added just less than 1,300 acres of land. 1,151 acres of the expansion is within the portion of Multnomah County to be governed by the City, and is such the subject of this title 11 compliance. The table below details the amount and distribution of land within the Plan both within the 2002 UGB expansion and the area that was in the UGB prior to the 2002 expansion.

Table 1: Springwater Buildable Land Analysis – Gross Acres by Classification

Plan Sub-District	Plan Data Estimate Prior UGB Expansion Area	Plan Data Estimate 2002 UGB Expansion	Plan Data Estimate Total
ESRA	66.2	304.8	371.0
Parks		33.6	33.6
VLDR-SW	54.0	43.1	97.1
VLDR-SW (Private Open Space) ¹		105.1	105.1
LDR-SW		99.4	99.4
THR-SW		43.5	43.5
NC-SW		7.4	7.4
VC-SW		23.3	23.3
RTI-SW		106.8	106.8
IND-SW		384.2	384.2
Total Acres	120.1	1,151.3	1,271.5

¹ Comprised entirely of Persimmon Golf Course lands - not expected for development

Of the 1,151.3 acres of land within the lands subject to Title 11, protected environmental lands, and land set asides for infrastructure and parks (Gross to net reduction), 552 acres were determined to qualify as “Net Buildable”. Table 2, below, describes the allocation of these lands

Table 2: Springwater Buildable Land Analysis – Gross to Net Assumption

Plan Sub-District	Description	Gross Buildable Acres	Gross to Net Calculation ²	Net Buildable Acres
VLDR-SW (Prior UGB Expansion Area)	Very Low Density Residential	54.1	22%	42.2
VLDR-SW (2002 UGB Expansion Area)	Very Low Density Residential	43.1	22%	33.6
LDR-SW	Low Density Residential	99.4	22%	77.5
THR-SW	Townhouse Residential	43.5	22%	33.9
NC-SW	Neighborhood Commercial	7.4	22%	5.8
VC-SW	Village Commercial (mixed use)	23.3	22%	18.2
RTI-SW	Industrial	106.8	22%	83.3
IND-SW	RSIA Industrial	384.2	22%	299.7
Total Acres		761.9		594.3

² Gross-To-Net of 22% is based on the 25% standard presented by Metro in the 2002-2022 Urban Growth Report: A Residential Land Need Analysis Final Report - December 2002 Page 20 Appendix A, Item #3, Ordinance 02-969. The 3% discount represents land deducted in Table 1 to account for parks.

With the proposed comprehensive plan and implementing ordinances the area will have a capacity for 1,456 total dwellings at buildout occupying 145.1 net acres of buildable residential land. Accordingly Springwater achieves the Metro standard of an overall average density equal to or greater than 10 dwelling units per net residential acre of land with an average of 10.04 Units per Net Residential Buildable Acre (NRBA).

Table 3, below summarizes the residential density assumptions for the Springwater Plan District:

Table 3: Springwater Buildable Lands Analysis - Summary of Residential Development Capacity 2002 UGB Expansion Area

New Dwelling Capacity	Net DU Per Residential Acre	Net Residential Land Acres	DWELLING UNITS
VLDR-SW	3.63	33.62	122
LDR-SW	7.26	77.55	563
THR-SW	17.42	33.93	591
VC-SW		NA = MU Land ⁴	180
Total New Units			1,456
New Net Residential Land Acres		145.1	
Dwelling Units per Net Residential Buildable Acre			10.04

⁴ The residential component of the mixed-use village will be stipulated in the master plan requirement for certainty of capacity.

Conclusion

The proposed comprehensive plan amendments are consistent with this criterion. The residential density, as stated above averages 10.04 units per net buildable residential acre of land.

C – Demonstrable measures that will provide a diversity of housing stock that will fulfill needed housing requirements as defined by ORS 197.303. Measures may include, but are not limited to, implementation of recommendations in Title 7 of the Urban Growth Management Functional Plan.

Findings

The City's approach to providing a diversity of housing in Springwater is closely tied to meeting housing needs related to the industrial and employment districts. Springwater was originally seen as only having housing on the west side of Hogan Road and perhaps along the Hogan Road corridor. Residential development on the west side of Hogan Road is limited by the existing golf course development, slopes and stream areas. A small lot (attached and detached) sub-district (THR-SW) is proposed along the corridor in the non-sloped and non golf course areas and larger lot single family housing (VLDR-SW, LDR-SW) elsewhere. Some housing is proposed on the west side of Hogan Road. This will support the Village Center and provide some nearby housing for industrial and employment districts. These areas are not well suited for industrial development due mainly to topography and natural resources.

Five key housing types are proposed for Springwater (see Table 4 for Housing Range):

1. Large Lot Single Family Detached Housing (Average 12,000 square foot lots).
2. Standard Single Family Detached Housing (Average 6,000 square foot lots)
3. Small Lot Single Family Detached Housing
4. Townhouse Single Family Attached Housing
5. Attached housing in Mixed Use Buildings in the Village Center

Plan Sub-District	Net Buildable Acres	Assumed Residential Lot Size	Dwelling Units
VLDR-SW (2002 UGB Expansion Area)	33.6	12,000	122
LDR-SW	77.5	6,000	563
THR-SW	33.9	2,500	591
VC-SW ¹	12.7	0 ¹	396
			1,672
			(216)
Total	157.7		1,456

¹ 1,000 square foot unit size applied for potential capacity for mixed-use housing development

Key issues related to housing choice addressed by the Springwater Plan District include:

- A focus on executive housing opportunities primarily on or near steeper slopes. Topography and streams along with the proximity to the Persimmons Golf Course provides an opportunity provide some housing opportunities for upper management and executives related to the Springwater industrial and employment areas.
- Locating small lot (attached and detached) housing along Hogan Avenue, a 2040 Corridor and planned primary transit route. This small lot housing is also located near the Village Center along two collector streets, one of which will provide local transit circulation service. The units provide additional housing to support the industrial and employment districts.
- Locating standard lot detached housing north and near the Village Center on those lands that are more constrained by slope and stream corridors than other areas in Springwater. And which will have limited access to US 26 as the planned future access is at the southern section of part of Springwater.
- Allowing and promoting housing over commercial (mixed-use buildings) in the Village Center to help create a lively pedestrian district.
- Planned and existing housing units, coupled with an anticipated 15,000 employees, are intended to provide necessary support for the Village Center. The Village Center has been identified as an important amenity for attracting industries to Springwater.

ORS 197.303 is a State planning statute that defines “needed housing.” Needed housing in general is the housing types shown to be needed within an urban growth boundary. Additionally, it means, but is not limited to, attached and detached single-family housing and multiple family housing for both owner and renter occupancy, government assisted housing, manufactured dwellings parks, and manufactured dwelling on single lots within single-family dwelling subdivisions.

All of these “needed housing” types except for manufactured dwelling parks are proposed for Springwater. Government assisted housing is not a function of zoning or permitted uses. The City does allow special needs housing and elderly housing as community service uses in the Springwater residential districts.

Demonstrable measures that provide a diversity of housing include:

- Permitting the following housing types in the three proposed residential sub-districts. The proposed VLDR-SW and LDR-SW will allow single family and manufactured homes on individual lots. The LDR-SW will allow duplexes and both the VLDR-SW and LDR-SW will allow accessory dwellings. The THR-SW allows attached and detached single family on small lots and accessory dwellings in conjunction with the detached single family dwellings.
- Attached Housing is allowed in the mixed-use Village Center (VC-SW). Housing opportunities are focused on mixed-use buildings.
- Provisions for planned developments to allow an alternative of clustering of units in part to preserve open spaces.
- Provisions for elderly and special needs housing in all residential districts.

Conclusion

The Plan has demonstrable measures to provide diversity of needed housing in single family, townhouse and mixed-use sub-districts. The City is in compliance with Title 7 and measures utilized within the existing city boundaries will also be utilized in Springwater. The proposed comprehensive plan amendments are consistent with this criterion.

D – Demonstration of how residential developments will include, without public subsidy, housing affordable to households with incomes at or below area median incomes for home ownership and at or below 80% of area median incomes for rental as defined by U.S. Department of Housing and Development for the adjacent urban jurisdictions⁶. Public subsidies shall not be interpreted to mean the following: density bonuses, streamlined permitting processes, extensions to the time at which systems development charges and other fees are collected, and other exercises of the regulatory and zoning powers.

Findings

The Springwater Plan includes homeownership and rental housing opportunities for households at or below median household income. For households at or below \$37,107, the median household income for Gresham according to the estimate by the 2003 American Community Survey, the proposed mixed-use attached units in the Village Center and the detached and attached small lot units in the THR-SW sub-district are considered affordable.

According to HUD guidelines, housing is affordable if annual mortgage payments are no more than 26 percent of the household's annual income⁷. In Gresham, that would equate to \$804 per month. Fannie Mae contends that affordable housing should be dependent on the household's total debt, not just mortgage debt, and recommends a range of 35% to 41% of monthly gross income to determine the range of housing affordability. Both Fannie Mae and HUD consider the following assumptions to be standard lending practices when determining affordable home prices: 30 year mortgage, 6.75 annual interest rate, 90 percent financed. Based on these assumptions, the Fannie Mae mortgage calculator (<http://www.fmcals.com/tools-tcc/fanniemae/calculator>) was utilized to determine a range of affordable home prices. Homes selling between \$77,886 and \$133,521 are considered affordable for those at or below median household income. Table 5 below specifies the affordable home selling prices.

⁶ Statistics for analyzing affordable housing are based on current Gresham homeownership markets.

⁷ From the Witch Hazel Village Community Plan, June 30, 2003.

Table 5. Affordable Homeownership Prices

% of Mortgage Debt	Actual Dollars of Mortgage Debt	% of Other Debt	Actual Dollars of Other Debt	Affordable Monthly Payment	Home Sales Price
26%	\$804	0%	\$0	\$1,113	\$133,521
26%	\$804	9%	\$278	\$835	\$100,142
26%	\$804	n/a	N/A	\$804	\$96,433
26%	\$804	15%	\$464	\$649	\$77,886

1. Fannie Mae recommends affordable housing based on household debt ranging from 35% to 41%.
2. Standard lending practices = 30 year mortgage at 6.75% annual interest rate and 90% financing.
3. The Fannie Mae mortgage calculator was utilized to identify the range of affordable housing.

The types of housing that would represent viable development opportunities, based on the local housing market are small lot, town home and condominium housing⁸. Each of these housing types has product that can be found within, or below, the high-end (\$133,521) price for affordable housing. The THR-SW and VC-SW sub-district provide for these housing types.

Affordable rental housing is defined by Metro as affordable for households at or below 80 percent of the area median household income. For Gresham, this equates to \$29,686 as the affordable rental housing income limit. Assuming affordable rent payments do not exceed 30 percent of monthly income, a family of four could afford a monthly rent of \$742.⁹ A review of rental listings for Gresham indicates that apartment units, at rents ranging from \$550 to \$900, would provide affordable renting housing for Springwater¹⁰. The VC-SW housing designations provided by the Plan would allow apartment dwelling units as part of a mixed-use building.

According to Metro's report "Damascus/Boring Concept Plan Affordable Housing Analysis" (May11, 2005), both attached single-family and high and medium density multi-family housing can be affordable to residents based on HUD affordability standards. In fact, the report states that attached single family (which is allowed under the THR-SW zone at 15 units/acre) is the only owner-occupied housing type affordable to households in the region earning 100% of the region's median household income. The report also states that high density and medium density multi-family residential units (allowed under the VS-SW zone) can be made affordable to households making between 51-80% of the region's MHI (starting at \$33,951/year) or more.

⁸ RMLS listings were reviewed for Gresham homeownership market.

⁹ This calculation was extrapolated from 2004 HUD income guidelines.

¹⁰ www.rent.com rental listings were reviewed for Gresham rental housing market.

Conclusion

The Plan provides affordable rental and homeownership opportunities. The proposed comprehensive plans amendments are consistent with this criterion.

E – Provision for sufficient commercial and industrial development for the needs of the area to be developed consistent with the 2040 Growth Concept design types. Commercial and industrial designations in nearby areas inside the Urban Growth Boundary shall be considered in comprehensive plans to maintain consistency.

Findings

The Plan includes four sub-districts to accommodate commercial and/or industrial development. The four sub-districts are Village Center, Neighborhood Commercial, Industrial and Research and Technology Industrial and are summarized below. See Table 6 for employment density assumptions:

Village Center-SW (VC-SW)

This sub-district is intended to be gathering place for employees and residents of Springwater. It will contain a mix of retail, office, civic uses, and housing opportunities in a pedestrian oriented area. It will serve the daily needs of the local neighborhood and the adjacent employment areas. It shall be served by a multi-modal transportation system with good access by vehicular, pedestrian, bicycle, and when appropriate, transit traffic.

Neighborhood Commercial-SW (NC-SW)

This sub-district is to provide for small to medium sized shopping and service facilities and limited office uses adjacent to the existing residential neighborhoods to the north and the adjacent planned industrial district. It is located at the intersection of a planned arterial and collector street.

Industrial-SW (IND-SW)

This sub-district provides a wide range of uses, including all the targeted industries such as advance materials, specialized software applications, recreational equipment and technology, and corporate headquarters as well as many traditional industrial uses. The prohibited uses include those that are heavy, traditional industrial uses (tanneries, metals manufacturing, chemical plants). Large format retail is restricted to ensure the availability and vitality of the lands for industrial uses. Warehousing and distribution are permitted only as accessory. The IND-SW zoning is located east of Telford Road and has about 424 gross buildable acres.

Metro's title 4 RSIA Industrial land protection standards were considered integral to this sub-district. Limits are placed on retail commercial and professional services that cater to daily customers by limiting such uses to no more than 3,000 square feet for a single use, and to no more than 20,000 square feet for multiple uses in single building or multiple buildings that are part of the same development project.

Research and Technology Industrial-SW (RTI-SW)

This sub-district is intended to provide industrial and related employment opportunities in office buildings. Primary uses include knowledge-based industries (graphic communications, creative services), research and development facilities, professional services primarily serving industrial businesses and workers, and medical facilities. The design will create pedestrian friendly areas and utilize green development practices. Development can take advantage of the views and access to creeks in the area. Its proximity to the Springwater Trail, Village Center, and Village

Center Loop trail provides amenities. The RTI-SW sub-district is located west of Johnson Creek in the southern portion of Springwater (south of McNutt Road) and is about 149 gross acres of developable land.

Metro’s title 4 Industrial land protection standards were considered integral to this sub-district. Limits are placed on retail commercial and professional services that cater to daily customers by limiting such uses to no more than 5,000 square feet for a single use, and to no more than 20,000 square feet for multiple uses in single building or multiple buildings that are part of the same development project.

Plan Sub-District	Net Buildable Acres	Assumed Square Feet Per Unit³	Assumed Floor Area Ratio	Employment Land Building Square Feet	Square Feet Per Employee	Jobs
VC-SW (Employment Portion)	5.5		0.50	118,820.8	350	339
RTI-SW	83.3		0.55	1,995,797.2	350	5,702
IND-SW	299.7		0.35	4,568,860.3	500	9,138
Total	594.3					15,330

Springwater was brought into the UGB primarily for the development of employment lands and as a place that could provide some “shovel-ready” land in a relatively short time period.

The proposed mix of Industrial and Research & Technology Industrial sub-districts in Springwater was based on findings made in the Springwater economic development needs analysis. These findings included:

- Springwater needed to be more diverse than depending on traditional manufacturing anticipated by the RSIA designation
- National trends require a different way of thinking about “primary jobs”. Some companies that fall under manufacturing categories actually contain large numbers of non-manufacturing employees whereas others closely associated with manufacturing, such as Research and Development and Product Design, are classified as professional services.
- Some portion of new industrial development will be absorbed by existing space in Gresham.
- Research and Technology Industrial in office buildings can cover a broad spectrum of design, use and land requirements. A large category of these uses do not require face-to-face contact. Corporate centers, call centers and other related professional uses are in demand but may have no specific interest in downtown or town center locations.

The economic development analysis recommends target industries for Springwater (short, medium and long term). The targeted industries were developed based on consideration of:

- Existing regional industries and their support services as revealed by an analysis of historical and projected employment patterns in the region
- Interviews with local economic development and industry professionals
- National growth trends and current market conditions

- A review of published reports and industry clusters studies completed by other researchers and economic development organizations for the region and the state
- The limitations and advantages presented by the Springwater site

The targeted industries included:

- Advanced Metals
- Medical Devices
- Specialized Software Applications
- Forestry & Agricultural Biotechnology
- Recreational Equipment/Recreational Technology
- Corporate Headquarters
- Professional Services
- Renewable Energy Technology

The economic development analysis concluded that these targeted industries could be accommodated with the proposed mix of industrial and office sub-districts.

The IND-SW sub-district has many of the site attributes associated with RSIA. These include:

- Excellent arterial access (planned) that includes phased improvements to US 26 (two crossings are planned – a northern over crossing and a southern interchange) and a new arterial that will traverse the industrial area connecting to the new US 26 interchange and a potential arterial connection to Boring/Damascus.
- Some mix of 20+ acre sites that provide opportunities to be aggregated into large developments generally in a square or rectangular configuration
- Flat lands
- Ability to create an industrial district of 250 to 300 acres.

The Research and Technology Industrial district is somewhat separated from the RSIA Industrial district by the mainstem of Johnson Creek and the Springwater Corridor Trail. It will be connected to the RSIA Industrial district by a planned collector street (that ultimately will be built as an overcrossing US 26) and by a planned arterial street that will eventually connect to Rugg Road along the southern boundary of Springwater and the Research and Technology Industrial district. It will be served by Hogan Avenue that will be improved to a four lane arterial and is a planned primary transit route. Hogan Avenue will also be a main corridor to the Damascus/Boring Concept Plan area. The site has more slope than normally associated with industrial development but is suitable for office development.

The Village Center will be designed to meet the needs of future area industries, businesses, and residents. It will also be a key amenity and attraction for industrial and office development. As recommended by the economic development analysis it will be a walkable, mixed-use district, including medium density housing, retail, and commercial areas. The market assessment indicated the planned industrial and employment and new residential districts along with nearby existing residential neighborhoods will be sufficient to support the retail portion. The size of the Village Center is large enough to support a specialty grocery store, but it will not directly compete with the existing Gresham Regional Center or planned Damascus and Pleasant Valley Town Centers.

The small Neighborhood Commercial center provides an amenity to the nearby existing residential neighborhoods (which are currently underserved) and the planned industrial district. It is small in scale and intended to provide a variety of daily retail and service needs.

Conclusion

The economic development analysis conducted for Springwater recommends the four commercial and industrial sub-districts. It concludes that these are sufficient for the needed commercial and employment development in Springwater and are necessary for the successful economic development of nearly 15,000 jobs. The proposed comprehensive plan amendments are consistent with this criterion.

F. A conceptual transportation plan consistent with the applicable provisions of the Regional Transportation Plan, Sections 6.4.4 through 6.4.7 Regional Transportation Plan¹¹ and that is also consistent with the protection of natural resources either identified in acknowledged comprehensive plan inventories or as required by Title 3 of the Urban Growth Management Functional Plan. The plan shall, consistent with OAR Chapter 660, Division 11, include preliminary cost estimates and funding strategies, including likely financing approaches.

Findings

The Springwater Plan District proposes a Springwater Transportation System Plan that will amend the City's current Transportation System Plan (TSP). The proposed TSP amendments document the planning framework, policies and strategies, system inventory and assessment, and forecast and alternatives, which have resulted in a conceptual transportation system plan. The conceptual transportation system plan consists of the following:

- Motor Vehicle Plan including Functional Street Classifications
- Transit Plan
- Bicycle and Pedestrian Plan
- Street Cross Sections
- Freight Master Plan
- US 26 Improvements
- Street Project List Including Costs and Funding Strategies
- Local Street Connectivity Map

Section 6.6.4 (RTP) Transportation System Analysis Required for Local Plan Amendments concerns "city comprehensive plan amendments that would recommend or require an amendment to the Regional Transportation Plan." The Springwater Plan District will require amendment to the RTP as it proposes new regional arterials, transit service, and multi-use trails. Potential RTP amendments include:

- Upgraded Hogan Avenue to 4 lane arterial
- A new 4 lane arterial from Orient Drive to an upgraded 4 lane arterial Rugg Road
- A new east-west collector street
- Upgraded 2 lane collector Teleford, 252nd Avenue, and 282nd Avenue
- Design and access improvement to US 26

¹¹ Although the language of this Title 11 section refers to "Title 6 of the Urban Growth Management Functional Plan" Title 6 no longer concerns Transportation. Instead transportation elements have been moved to Title 6 Regional Transportation Plan. Specifically (as stated in section 6.3 -- Demonstration of Compliance with Regional Requirements) are 6.4.4 through 6.4.7, 6.6., 6.6.3 and 6.7.3. Section 6.6 (6.6.3) deals with amendments to the RTP which are not part of the proposal and thus are not applicable to this Report. Section 6.7.3 deals with Project Development Requirements and is not applicable for a Conceptual Transportation Plan and this Report.

- Multi-use Village Center Loop and Employment Loop Trails

The Transportation System Analysis section of the Springwater TSP summarizes the modeling analysis that was used and that resulted in the proposed conceptual transportation plan. It is more completely documented in the Springwater Appendices. The City conducted the transportation system analysis for Springwater using the Metro regional travel demand model. The results of the analysis include identifying regional strategies, local transit, pedestrian and bike improvements, appropriate modal splits; improvements to the street system including connectivity standards, traffic calming methods and the need for significant capacity improvements in the Plan District. A separate (TGM Grant) project Springwater US 26 Concept Design and Access Study was completed for the Springwater plan. It recommends a phased approach to improvements as the land develops for industrial and other urban uses. At build-out there will be two new crossings. One is the north collector facility which will ultimately be bridged over US 26 but in earlier phases will be an at-grade controlled intersection. The second is a southern arterial that will be a full interchange.

Section 6.4.5 (RTP) Design Standards for Street Connectivity describes that the design of local street systems should be such to keep through trips on arterial streets and provide local trips with alternative routes. In general, the section requires a map and provides guidance to landowners and developers on desired street connections. It also requires street connectivity standards that provide full street connections at no more than 530 feet except where streets cross Title 3 water, in which case the average spacing is 800 to 1,200 feet. In water crossing situations the larger spacing is to be interspersed with pedestrian accessways at no more than 530 feet when feasible.

The proposed transportation system plan is intended to meet these standards. The connectivity plan generally provides for connections every 300 feet for pedestrians and bicycles and every 530 feet for automobiles. It provides for protection of residential neighborhoods from potential traffic impacts at the northern edge of Springwater where a planned industrial district abuts an existing residential district. The 530 foot standard for street connections is not provided where the street crossing would impact streams and wetlands (Title 3 and Goal 5 resources). In these cases pedestrian “foot bridges” provide the extra connectivity when greater street spacing is required due to water crossings. Springwater is essentially a “greenfield” setting – the existing network of streets is rural and an entirely new network of connections will be needed to create the Plan District’s vision of a new, urban and employment community.

The proposed street design cross sections are all “green streets.” The guidelines and cross sections of Metro’s *Green Streets* are used for those cross sections.

Section 6.4.6 (RTP) Alternative Mode Analysis. This section deals with improvements in non-SOV mode share. The Springwater proposed TSP includes a transit plan that shows regional and community bus service and transit streets. The land use types and densities along the proposed transit streets are transit supportive (village center, townhouse residential, and office employment center). The Village Center will have strong pedestrian linkages to the adjacent residential areas to its north and the adjacent office employment areas to its south. The bicycle and pedestrian system connects neighborhoods to the village center, to the office and industrial areas and to multi-use trails and transit stops.

As the Springwater TSP will amend each City’s existing TSP, existing strategies found in those TSPs will also apply the Springwater.

Section 6.4.7 (RTP) Motor Vehicle Congestion Analysis. This section deals with how motor vehicle congestion is modeled and with regional motor vehicle performance measures. This section is not an applicable provision for Title 11 compliance but rather is an applicable provision for the City-wide TSPs.

Consistency with Title 3 – Title 3 deals with protecting beneficial water uses and functions and values of natural resources in water quality and flood management areas. The Springwater Plan District has identified and mapped water quality and floodplain areas and incorporated them into the Environmental Sensitive and Restoration Areas (ESRAs). In developing the conceptual transportation plan particular attention was given to both minimizing the number of stream crossings and minimizing the length of those stream crossings – this is reflected in the Springwater Plan District plan map. In addition the street design standards for stream crossings will utilize Metro’s *Green Streets: Innovative Solutions for Stormwater and Stream Crossings* handbook.

Preliminary cost estimates and funding strategies consistent with OAR Chapter 660, Division 11. Preliminary cost estimates and funding strategies were developed as part of creating the TSP and are consistent with OAR Chapter 660, Division 11. The Springwater TSP includes:

- Preliminary cost estimates
- A project and funding plan that includes a list of projects and description, cost, timing, jurisdiction, and likely funding sources for each project
- A discussion of funding strategies including grants, developer exactions, and transportation impact fee assessments

Conclusion

The Springwater TSP describes a conceptual transportation system including street functional classifications and design, pedestrian and bike plans, transit plans, connectivity and other local street design issues consistent with RTP, Title 3 considerations and preliminary costs, and likely funding strategies for needed improvements. The proposed comprehensive plan amendments are consistent with the criterion.

G. Identification, mapping and a funding strategy for protecting areas from development due to fish and wildlife habitat protection, water quality enhancement and mitigation, and natural hazards mitigation. A natural resource protection plan to protect fish and wildlife habitat, water quality enhancement areas and natural hazard areas shall be completed as part of the comprehensive plan and zoning for lands added to the Urban Growth Boundary prior to urban development. The plan shall include a preliminary cost estimate and funding strategy, including likely financing approaches, for options such as mitigation, site acquisition, restoration, enhancement, or easement dedication to ensure that all significant natural resources are protected.

Findings

The proposed Plan includes a natural resource protection plan. A Goal 5 ESEE analysis has been completed and is part of the proposed comprehensive plan amendments. The process included a natural resources inventory (identifying and mapping natural resources areas), a resources significance determination, an Economic, Social, Environmental and Energy (ESEE) analysis of the consequences of resource protection, an Environmentally Sensitive Resource Area (ESRA-SW) funding strategy and ESRA-SW resource protection standards in the development code. The Springwater Plan District established an ESRA-SW sub-district to

implement Springwater's natural resource goals and to resolve conflicts between development and conservation of natural resources. The ESRA-SW development standards apply to those lands identified on the ESRA-SW map.

The mapped and regulated areas include Johnson Creek and its tributaries; wetlands (including those identified in a Local Wetland Inventory), associated floodplains, and sloped areas (25 %+).

Green development practices are included in the Plan District development code. Green development practices are a toolbox of techniques that promote sustainable building practices. They include regulations that mimic and incorporate predevelopment hydrology of a site into future development. The intent is to minimize potential adverse impacts of stormwater run-off to water quality, fish and other wildlife habitat, and flooding. The use of these green development practices enhance water quality and control the stormwater flow utilizing techniques of retention, infiltration and evapotranspiration to treat runoff and reduce the volume of stormwater.

Conclusion

The Springwater Community Plan has:

- Extensively identified and mapped natural resources areas.
- Identified through the State Goal 5 process those natural resources areas to be protected and restored.
- Developed a funding and non-regulatory restoration strategy.
- Developed development code standards to protect and enhance the ESRA areas while providing for urban development in the rest of the Springwater Plan District area.

The proposed comprehensive plan amendments are consistent with this criterion.

H. A conceptual public facilities and services plan for provision of sanitary sewer, water, storm drainage, transportation, parks and police and fire protection. The plan shall, consistent with OAR Chapter 660, Division 11, include preliminary cost estimates and funding strategies including likely financing approaches.

Findings

The proposed Plan includes a Public Facilities Plan (PFP) for sanitary sewer (wastewater), water, storm drainage (stormwater management) and parks (including open spaces and trails). The Springwater PFP specifically addresses the requirements of OAR Chapter 660, Division 11. For each element it includes an inventory and general assessment of the existing public facilities; a list of the significant public facility projects needed to support the proposed land uses; a rough cost estimate of each project; written descriptions and general location map of the proposed public facilities; goals, policies and future action measures; a statement of who will provide the services; estimates of when the projects would be needed; and a discussion of existing funding mechanism and a likely funding strategy for each facility.

The PFP also evaluated the TSP to be consistent with the State OAR and that work was incorporated into the proposed TSP. The Springwater PFP amends the current citywide PFPs.

Interviews with the police and fire/safety agencies did not identify the need for additional police or fire facilities.

Conclusion

The Public Facilities Plan (PFP) establishes a framework for how urban services will be developed and maintained with the implementation of the Plan. The PFP is consistent with OAR Chapter 660, Division 11. The proposed comprehensive plan amendments are consistent with this criterion.

I. A conceptual school plan that provides for the amount of land and improvements needed, if any, for school facilities on new or existing sites that will serve the territory added to the UGB. The estimate of need shall be coordinated with affected local governments and special districts.

Findings

Springwater land is within the Gresham/Barlow School District. Project staff worked with the District to determine Plan needs. The district has projected that new residential development in Springwater would add 1,150 to 1,500 new elementary and middle school students. This would require a new elementary and a new middle school. An elementary school requires 10 acres and a middle school requires 20 acres; but if sited together they could be on a 25 acre site.

The District did not identify a specific site but rather expressed a desire for a site near future students in Springwater. The part of Springwater proposed as RSIA industrial (east of Telford Road) does not permit schools. However, other non-RSIA industrial lands would permit schools under the City's community services development procedures that will be applied to the Plan. This provides adequate opportunity to site the schools, combined or separate.

Conclusion

A conceptual school plan has been developed in coordination with the Gresham/Barlow School District and is included in the proposal. The proposed comprehensive plan amendments are consistent with this criterion.

J. An urban growth diagram for the designated planning area showing, at least, the following, when applicable:

- 1. General locations of arterial, collector, and essential local streets and connections and necessary public facilities such as sanitary sewer, storm sewer, and water to demonstrate that the area can be served;***
- 2. Location of steep slopes and unbuildable lands including, but not limited to, wetlands, floodplains and riparian areas;***
- 3. General locations for mixed-use areas, commercial and industrial lands;***
- 4. General locations for single and multi-family housing;***
- 5. General locations for public open space, plazas and neighborhood centers, and***
- 6. General locations or alternative locations for any needed school, park or fire hall sites.***

Findings

The Springwater Plan District Plan Map (Plan Map) serves as the basic urban growth diagram and includes most of the applicable elements listed above including general locations of streets;

the environmental areas (ESRA); land use areas (mixed, commercial, office, industrial and residential) and open space, trails and parks.

The PFP has maps for each of the public facilities listed in 1 (plus parks and trails) that show how the area can be served. The TSP also has maps that show the different transportation facilities (streets, pedestrians and transit) and how the area can be served. As noted earlier, a specific conceptual location has not been sited but schools can occur in non-industrial areas. No needed fire or police facilities have been identified.

Conclusion

The applicable items listed in the section have been mapped and are included in the proposed Plan. The proposed comprehensive plan amendments are consistent with this criterion.

K. The plan amendments shall be coordinated among the city, county, school district and other service districts.

Findings

Development of the Springwater Community Plan included representatives of related jurisdictions and entities. Representatives of the City of Gresham, Metro, Multnomah County, and Gresham-Barlow School District served in active planning roles on work teams and/or on the Springwater advisory group known as the Community Working Group. Additionally the project has been coordinated with the Damascus/Boring planning effort with Springwater project staff participating on Damascus/Boring work teams and advisory groups.

Conclusion

The Plan amendments have been coordinated among the appropriate agencies. The proposed comprehensive plan amendments are consistent with this criterion.

Metro Conditions on Addition of Land to UGB (Ordinance No. 02-969B)

I. General Conditions Applicable to All Land Added to UGB

A. The city or county with land use planning responsibility for a study area included in the UGB shall complete the planning required by Metro Code Title 11, Urban Growth Management Functional Plan (“UGMFP”), section 3.07.1120 (“Title 11 planning”) for the area. Unless otherwise stated in specific conditions below, the city or county shall complete Title 11 planning within two years. Specific conditions below identify the city or county responsible for each study area.

Finding

The City has an Urban Planning Agreement with Multnomah County that gives the City planning responsibilities for urban reserve planning. The City also has IGA (Gresham Contract #1897) with Multnomah County specific to the Springwater project that establishes a partnership with Multnomah County in developing an urbanization Plan for Springwater. The IGA established the City as the lead in the urbanization planning project. Study areas 6 and 12 (partial) in Multnomah County are the 2002 UGB expansion area included in the proposed Springwater Plan.

The Metro ordinance establishing the Springwater UGB expansion became effective on March 5, 2003. Specific condition A.1 requires completion of Title 11 planning within four years as an exception to this general condition. Adoption of the Plan is expected to be complete and effective by December 1, 2005 which is well before March 5, 2007 (4 years from March 5, 2003). As detailed in the compliance report the proposed Springwater comprehensive plan amendments are consistent with Title 11.

Conclusion

Through the adoption of the proposed Plan, the City will have completed the Title 11 planning within the time period established for Springwater. The proposed comprehensive plan amendments are consistent with the condition.

B. The city or county with land use planning responsibility for a study area included in the UGB, as specified below, shall apply the 2040 Growth Concept design types shown on Exhibit N of this ordinance to the planning required by Title 11 for the study area.

Finding

The December 2002 Metro 2040 Growth Concept map Springwater designations included three design types:

- The area east of Hogan Road (242nd Avenue) as Regionally Significant Industrial Areas (RSIA). RSIA are industrial areas with site characteristics that are relatively rare in the region that render them especially suitable for industrial use.
- The area directly adjacent to Hogan Road was designated as a Corridor. Corridors are along good quality transit lines, feature a high-quality pedestrian environment, convenient access to transit and a density recommendation of 25 persons per acre.
- The rest of the lands were designated as Inner Neighborhood. Inner Neighborhoods are residential areas accessible to jobs and neighborhood businesses with smaller lot sizes with a density recommendation of 14 persons per acre.

In developing this Plan, some land was found to be unsuitable for industrial or employment uses however, most of the developable lands have been designated for employment related uses.

The Springwater Community Plan represents a greater level of detailed planning, site analysis, and setting community goals than had been done at the time it was brought into the UGB and Metro 2040 Growth Concept Design designations were applied.

The major steps in the planning process were:

- Inventory of base conditions and projections of land-use, transportation, natural resources and infrastructure needs
- Market analysis evaluating current market conditions and trends impacting economic development of industrial uses, village center characteristics and housing needs
- Initiation and carrying out of public process to gain input and provide information.
- Establishment of an advisory group, the Community Working Group (CWG), a 23 member group representing a diversity on interests including Springwater residents and property owners; neighborhood associations; business owners; developers; school districts; fire, police and other urban services providers; elected and appointed officials; and environmental and livability organizations
- Establishment of project goals
- Development of four scenario plans

- Evaluation of the scenarios and preparation of a draft Concept Plan
- Endorsement of final draft Concept Plan
- Development of comprehensive plan amendments to establish the Springwater Plan District

This planning process has resulted in a Springwater Plan that is different than the original UGB 2040 Design types. Revisions to the 2040 Growth Concept Design designations based on this greater level of planning are recommended as follows:

- The land east of Telford Road and 262nd Avenue shown on the plan map as IND-SW will remain as RSIA.
- There are two areas east of Telford/262nd Avenue that are changed from the original RSIA designation. One is a small area of sloped land southeast of Palmbled/262nd and Telford that is proposed as LDR-SW and would be Inner Neighborhood. The second is a small commercial area near Orient Drive that is proposed as NC-SW and would be Employment. Employment areas include various types of employment and some residential development with limited commercial uses and recommended density of 20 persons per acre.
- The land generally between Hogan Avenue and Telford Road/262nd Avenue and just to the south of McNutt Road that is proposed as RTI-SW would be Industrial.
- The Corridor designation along Hogan Avenue would remain and would encompass the Village Center, the THR-SW sub-district where it abuts Hogan Avenue and the OFF-SW sub-district where it abuts Hogan Avenue.
- The rest of the land, including the LDR-SW, VLDR-SW and the THR-SW sub-districts that are not on the Hogan corridor would be Inner Neighborhood.

The major change to 2002 UGB 2040 Growth Concept design types is to the land between Hogan and Telford that was designated as RSIA but which is proposed to be a mix of inner neighborhood, industrial, employment and a nodal extension of corridor.

- The area directly east of Hogan Avenue (and shown as VLDR-SW and LDR-SW) that is proposed as Inner Neighborhood is characterized by diagonally flowing tributaries (Botefuhr and Brigman creeks) of Johnson Creek. The land between the two tributaries has a dense forest canopy with slopes between 5 to 10% in some areas and 10 to 25% slopes in much of the area. There is also some area of greater than 25% slope. The rest of the Inner Neighborhood area is on 5 to 15% or higher slopes with only a small amount of less than 5% slope.
- These two tributaries and sloped land near Johnson Creek make it impractical to plan a new arterial street to serve this area. Planned access to US 26 will be limited to the south interchange. However, the area will have good access to the Industrial district via the planned north collector.
- The small section of LDR-SW on the east side Johnson Creek is an area with slopes of 5 to 25% and is thus proposed for Inner Neighborhood.
- The residential areas will support the Village Center, providing an evening presence (as opposed to the daytime presence of the industrial and office districts). The combination of steep slopes, natural resources (two tributaries and extensive forested canopy) and as residential will support the Village Center and provide housing for the future employment and industrial areas and is more compatible with the natural resources it is appropriate for Inner Neighborhood.

- The Village Center is proposed as an extension of the Corridor district as a nodal area. The Village Center will be a mixed-use development that will develop at transit supportive densities and thus consistent with the existing corridor designation.
- The Research and Technology Industrial area is proposed as an Industrial district. Although there are significant clusters of less than 5% slopes there is a considerable area of 5 to 10% and 10 to 15% slopes associated with McNutt Creek and Sunshine Creek. Slopes, natural resources and flood plain associated with the west side of Johnson Creek prevent the possibility of aggregating a large parcel for RSIA type development. Nor will the area have direct visibility to US 26. It will have access to US 26 at the southern interchange via a planned arterial that will connect to Rugg Road at the southern edge of Springwater.
- The Research and Technology Industrial district will provide many of the same uses as the RSIA Industrial district but also for targeted industries such as a corporate headquarters and professional services and is intended to accommodate forms of future industrial uses. The economic development analysis found the business services are “dramatically underrepresented in Gresham” and said it is a “key to the recruitment of new industries of all types”. Linking this sector to the Village Center would reinforce the Village Center and help attract other small businesses. Retail and professional service uses that cater to daily customers in the Research and Technology Industrial district are limited to 5,000 square feet per use and 20,000 square feet for multiple uses. Although slope and access constraints make this area unsuitable for RSIA development its economic development potential for corporate headquarters and for professional, scientific and technical services and limits on retail and professional services use make it appropriate for Industrial.
- The small (six plus acre) Neighborhood Commercial district located near Orient Drive at the northern limit of Springwater will provide for small to medium sized shopping and service facilities and limited office uses. It is adjacent to the existing residential neighborhoods to the north and the adjacent Springwater Industrial district. Retail and service uses are limited in size and primarily cater to workers and nearby residents. As an example retail stores are limited to 10,000 square feet, restaurants to 3,500 square feet, a grocery store to 35,000 square feet, and professional services to 5,000 square feet. It is appropriate for Employment.

Conclusion

The Springwater planning process in its inventory and needs assessment phase applied the 2040 Growth Concept Plan designations as adopted in 2002. However, in subsequent planning process it was found that some land was unsuitable for the RSIA designation mainly related to slope, environmental constraints and access and visibility to US 26. Additionally it was found that this same area was more suited for Inner Neighborhood, Corridor, Industrial and Employment designations. This was mainly for economic development purposes and to take advantage of site characteristics. Title 11 expects the detailed level of planning that has occurred with the community over the past 18 months. It is appropriate that the 2040 Growth Concept Plan Map be refined based on this planning effort and it is recommended that the changes outlined in the findings above be applied as the 2040 Growth Concept Plan Map is updated after the Springwater Plan is adopted. This condition is met.

C. The city or county with land use planning responsibility for a study area included in the UGB shall apply interim protection standards in Metro Code Title 11, UGMFP, section 3.07.1110, to the study area.

Finding

The City and Multnomah County entered into an IGA (Gresham Contract #1897) effective in May 2004. The IGA specifically provides that “County shall continue to apply interim protection standards in Metro Code Title 11 UGMFP and in the Conditions of Ordinance 02-969B.”

Conclusion

Multnomah County is applying the interim protection standards and this condition is met.

D. In Title 11 planning, each city or county with land use planning responsibility for a study area included in the UGB shall recommend appropriate long-range boundaries for consideration by the Council in future expansion of the UGB or designation of urban reserves pursuant to 660 Oregon Administrative Rules Division 21.

Finding

The Springwater expansion area is bounded to the west and north by the existing city of Gresham. It is bounded to the south by the Damascus 2002 UGB expansion, an area that is now part of the City of Damascus. The only non-UGB area adjacent to Springwater is unincorporated Multnomah County lands to the east. The aforementioned City/County IGA has the following agreement concerning Rural/Urban Edge Planning: “D.1 Consistent with the joint objectives of the aforementioned resolutions, City and County will coordinate development of a permanent hard rural/urban edge between the Springwater UGB boundary and the unincorporated rural Multnomah County to the east that are part of the West of Sandy River Rural Area Plan. D.2 Actions necessary to accomplish a hard rural/urban edge will be included in the Plan for Springwater and the amended West of Sandy River Rural Area Plan.” Pursuant to this IGA the City would recommend no change to the UGB on the east side of Springwater.

Conclusion

Springwater is surrounded by lands within the UGB on its west, north, and south sides. The City and the County have established a hard urban/rural edge at the east boundary of Springwater. The City recommends no change to the UGB adjacent to Springwater. This condition is met.

E. Each city or county with land use planning responsibility for a study area included in the UGB shall adopt provisions in its comprehensive plan and zoning regulations – such as setbacks, buffers and designated lanes for movement of slow-moving farm machinery - to ensure compatibility between urban uses in an included study area and agricultural practices on adjacent land outside the UGB zoned for farm or forest use.

Finding

A major purpose of the aforementioned Gresham/Multnomah IGA is to “join in a common strategy to support the timely development of Springwater and the creation of a permanent and thriving urban/rural edge.” This edge is located at the east extent of Springwater, partly along 282nd Avenue where adjoining lands are MUA-20 (Mixed Use Agricultural) and partly along EFU (Exclusive Farm Use) zoned land west of 282nd Avenue. Elements of the plan that support this agreed purpose and this condition include:

- Designating all of the Springwater land at this edge as Industrial. There was consideration during the scenario alternatives evaluation to have a neighborhood commercial area on 282nd Avenue. However, this alternative was not selected as evaluations indicated that there is less conflict between farm operational practices and industrial users as opposed to urban residential and commercial uses. Industrial uses

are less likely to be concerned about noise, hours of operation (early morning, late night), and odor and field burning/aerial spraying than residential or commercial users. Additionally, industrial users are less likely to cause problems to rural farm users such as trespassing, vandalizing and theft than urban residential or commercial users.

- The current MUA-20 lands are separated from Springwater by 282nd Avenue. The current EFU lands will be separated from Springwater by a proposed community street. Buildings with street frontage in the Springwater Industrial development will have a required setback.
- The designation of 282nd Avenue as a collector rather than as an arterial street. Additional access management controls will be applied to the west side of 282nd Avenue so that Springwater development will not access off of 282nd Avenue. These actions reduce the conflict between commuter traffic to Springwater and the rural traffic.
- Routing northbound traffic from the south (Damascus) to connect to US 26 west of 282nd Avenue. This will also lessen conflicts between Springwater commuter traffic and rural traffic on 282nd Avenue.

Conclusion

The industrial designation at the edge, separation between Springwater and rural area by streets and building setback, and the classification and access control of 282nd Avenue help ensure the compatibility between Springwater and the adjoining mixed agricultural and exclusive farm zoned lands. This condition is met.

F. Each city or county with land use planning responsibility for a study area included in the UGB shall apply Title 4 of the UGMFP to those portions of the study area designated Regionally Significant Industrial Area (“RSIA”), Industrial Area or Employment Area on the 2040 Growth Concept Map (Exhibit N). If the Council places a specific condition on a RSIA below, the city or county shall apply the more restrictive condition.

Finding

As detailed in General Condition ‘B’ the Springwater Planning process has resulted in a finding that while most of the area shown as RSIA on Exhibit N should be retained some of the area shown as RSIA is better suited for Inner Neighborhood, Corridor and Employment designations.

The proposed Industrial-SW (IND-SW) sub-district will apply Title 4 for RSIA lands. This is appropriate as the area will have access and visibility to US 26. The IND-SW limits retail and profession service uses that cater to daily customers to occupy no more than 3,000 square feet of sales or service area in a single outlet, or multiple outlets that occupy no more than 20,000 square feet. The IND-SW also limits the division of 50 acre or more lots. Both of these provisions are provided in Title 4 (3.07.420) regarding RSIA. Also findings are made in this report that the proposal is consistent with specific conditions that apply to the RSIA.

The proposed Research and Technology Industrial-SW (RTI-SW) sub-district will apply Title 4 for Industrial lands. The RTI-SW will limit square footage of single retail and professional services uses to 5,000 square and to multiple outlets to 20,000 square feet (as provided for in Title 4 for Industrial).

The proposed Neighborhood Commercial-SW (NC-SW) sub-district will apply Title 4 for employment lands. This sub-district generally allows small and medium sized retail uses with retail stores limited to 10,000 square feet, restaurants to 3,500 square feet, a grocery store to 35,000 square feet, and professional services to 5,000 square feet.

Conclusion

The proposed IND-SW sub-district applies Title 4 for RSIA, the proposed RTI-SW applies Title 4 for Industrial and the proposed NC-SW sub-district applies Title 4 for Employment and this condition is met.

G. In the application of statewide planning Goal 5 (Natural Resources, Scenic and Historic Areas, and Open Spaces) to Title 11 planning, each city and county with land use planning responsibility for a study area included in the UGB shall comply with those provisions of Title 3 of the UGMFP acknowledged by the Land Conservation and Development Commission (“LCDC”) to comply with Goal 5. If LCDC has not acknowledged those provisions of Title 3 intended to comply with Goal 5 by the deadline for completion of Title 11 planning, the city or county shall consider any inventory of regionally significant Goal 5 resources adopted by resolution of the Metro Council in the city or county’s application of Goal 5 to its Title 11 planning.

Finding

Metro has not adopted a Goal 5 program and therefore LCDC has not considered or found Metro’s Goal 5 program in compliance with the State Goal 5 rules. Therefore the part of this condition that applies is “the city ... shall consider any inventory of the regionally significant Goal 5 resources adopted by resolution of the Metro Council in the city’s ... application of Goal 5 to its Title 11 planning.”

The Springwater planning for natural resources began with an inventory and needs analysis. As is stated in the natural resources report that is part of the comprehensive plan amendments: “These sources included: “1. Metro’s baseline information for riparian and wildlife resources, specifically Metro’s adopted regionally significant habitat inventory ... The planning team found this inventory for Metro’s Goal 5 resources needed refining to better understand the possibilities after future development. The areas that were misinterpreted or in a few cases overlooked in Metro’s high-level air photo evaluation were corrected through ground-level observation ... consistent with Metro’s inventory, the project found most of the riparian areas and waterways are assumed to be regionally significant.” The inventory was the basis for the Goal 5 ESEE analysis that was done for Springwater.

Conclusion

The natural resources planning for Springwater specifically included Metro’s adopted regionally significant Goal 5 resources as indicated in the Natural Resources report. This condition is met.

H. Each city and county with land use planning responsibility for a study area included in the UGB shall provide, in the conceptual transportation plan required by Title 11, subsection 3.07.1120F, for bicycle and pedestrian access to and within school sites from surrounding area designated to allow residential use.

Finding

No specific place in Springwater was designated a school site (consistent with the Gresham/Barlow School District’s direction) but the need for future elementary and middle school was identified. The proposed Springwater development code would allow schools in the residential, mixed-use, and employment Springwater sub-districts but not in the industrial sub-district. This means that any school sited would be west of Telford Road. The Springwater TSP includes a bicycle and pedestrian plan that details that all arterial, collector and important local connecting streets will have bicycle lanes and sidewalks. Additionally it details an off-street

trails system that also provides for bicycle and pedestrian traffic. This system of arterials, collectors, important local connectors and off-street trails will provide good student access from the residential sub-districts to any school site located west of Telford Road. In addition all local streets that will have sidewalks which enhance future access to a school and any school site proposed in the RTI-SW would require an additional access plan for connections between the school site and adjacent residential areas.

Conclusion

Bicycle and pedestrian access to school sites will be provided by future arterial, collector, local connectors and local streets as well as off-street trails. The condition is met.

A. Study Areas 6 (partial), 10 (partial), 11, 12, 13, 14, 15, 16, 17, 18 and 19 (partial)

1. Clackamas and Multnomah Counties and Metro shall complete Title 11 planning for the portions of these study areas in the Gresham and Damascus areas as shown on Exhibit N within four years following the effective date of this ordinance. The counties shall invite the participation of the cities of Gresham and Happy Valley and all special districts currently providing or likely to provide an urban service to territory in the area. If a portion of the area incorporates or annexes to the City of Happy Valley or the City of Gresham prior to adoption by Clackamas and Multnomah Counties of the comprehensive plan provisions and land use regulations required by Title 11, the Metro Council shall coordinate Title 11 planning activities among the counties and the new city pursuant to ORS 195.025.

Finding

As was noted earlier, the City has an Urban Planning Agreement with Multnomah County that gives the City planning responsibilities for urban reserve planning. The City also has an IGA (Gresham Contract #1897) with Multnomah County specific to the Springwater project that establishes a partnership with Multnomah County in developing an urbanization plan for Springwater. The IGA established the City as the lead in the urbanization planning project. The study area 6 and 12 (partial) in Multnomah County is the 2002 UGB expansion area included in the proposed Springwater Plan.

Additionally the City has an agreement with Metro to participate in the Clackamas County and Metro-led Damascus/Boring Concept Plan project that involves 2002 UGB expansion areas covered under these special conditions. The City is actively participating in the Advisory Committee, the Land Use Work Team, the Transportation Work Team, and the Natural Resources Work Team.

The Metro ordinance establishing the Springwater UGB expansion became effective on March 5, 2003, with the four year date being March 5, 2007. The current hearing scheduled is to have, at the latest date, an enactment ordinance on November 1, 2005, with an effective date 30 day later.

Conclusion

Multnomah County has entered into an IGA providing for Gresham to lead the Springwater Plan effort. The Plan is scheduled to be effective on December 1, 2005 well before the four year period that ends on March 5, 2007. Gresham was invited by Metro and Clackamas County to participate in the Damascus/Boring Concept Plan project and is an active participant in the main advisory committee and several of the functional work teams. This condition is met.

2. In the planning required by Title 11, subsections A and F of section 3.07.1120, Clackamas and Multnomah Counties shall provide for annexation to the Tri-met district of those portions of the study areas whose planned capacity for jobs or housing is sufficient to support transit.

Finding

According to the TriMet District the Springwater Community Plan area is already within the District's boundary. A transit plan that was developed in coordination with TriMet is included in the Springwater TSP.

Conclusion

Springwater in is the TriMet District and this condition is met.

3. In the planning required by Title 11, Clackamas County shall ensure, through phasing or staging urbanization of the study areas and the timing of extension of urban services to the areas, that the Town Center of Damascus, as shown on the 2040 Growth Concept Map (Exhibit N) or comprehensive plan maps amended pursuant to Title 1 of the UGMFP, section 3.07.130, becomes the commercial services center of Study Areas 10 and 11 and appropriate portions of Study Areas 12, 13, 14, 17 and 19. Appropriate portions of these study areas shall be considered intended for governance by a new City of Damascus. The Damascus Town Center shall include the majority of these areas' commercial retail services and commercial office space. Title 11 planning for these areas shall ensure that the timing of urbanization of the remainder of these areas contributes to the success of the town center.

This condition regards Clackamas County and the Damascus Town Center and is thus not applicable to the Springwater comprehensive plan amendments.

4. In the planning required by Title 11, Clackamas and Multnomah Counties shall provide for separation between the Damascus Town Center and other town centers and neighborhoods centers designated in Title 11 planning or other measures in order to preserve the emerging and intended identities of the centers using, to the extent practicable, the natural features of the landscape features in the study areas.

Finding

City staff with the Springwater Plan project has participated and provided information to the Damascus/Boring Concept Plan project. One result of that participation is that the Springwater Plan was part of the alternatives maps and the evaluation of those maps to arrive at a proposed Damascus/Boring hybrid concept plan. This means that the location of the Damascus Town Center can take into account neighborhood commercial land proposed for Springwater.

Two commercial areas are proposed for Springwater. A small 5.6 net acre site is proposed at the north edge of Springwater near Orient Drive. It is intended to provide local services to the planned Industrial district and the existing Gresham residential district to the north. Floor area is restricted (3,500 sq. ft. for restaurants, 5,000 for offices, 10,000 for retail and 35,000 for grocery). Its size, limited floor area and location would not affect the identity of the Damascus Town Center. The other commercial area is an 18.9 net acre "Village Center". The Village Center is a mixed-use area allowing housing above retail and commercial space. It is located on Hogan Avenue north of McNutt Creek and the proposed Office district and about 1,800 feet

north of the Clackamas County line. Its primary purpose is to provide amenity for the Springwater industrial and employment districts. The planned residential districts along with nearby existing City residential neighborhoods will support the village center. Generally office and clinic uses are limited to 10,000 square foot footprint and retail to a 35,000 square foot print (with the intent of a grocery store). Its location, size and orientation to Springwater will not affect the identity of the Damascus Town Center.

Conclusion

The Springwater planning effort has been coordinated with the Damascus/Boring Concept Plan effort to inform and ensure that neighborhood commercial areas in Springwater will not affect the identity of the Damascus Town Center. The two commercial areas planned for Springwater are limited in scale, at significant distances from the County line (and Damascus city limits), and are oriented towards Springwater and thus will not affect the Damascus Town Center identity. The condition is met.

5. If, prior to completion by Clackamas County of Title 11 planning for the Damascus Area, the county and Metro have determined through amendment to the 2000 Regional Transportation Plan to build the proposed Sunrise Corridor, the county shall provide for the preservation of the proposed rights-of-way for the highway as part of the conceptual transportation plan required by subsection G of section 3.07.1120 of Title 11.

This condition regards Clackamas County and the Damascus Area and is thus not applicable to Springwater comprehensive plan amendments.

6. Neither Multnomah County nor, upon annexation of the area to the City of Gresham, the city shall allow the division of a lot or parcel in an area designated RSIA to create a smaller lot or parcel except as part of the lot/parcel reconfiguration plan required in Condition 7.

Finding

The City and Multnomah County entered into an IGA (Gresham Contract #1897) effective in May 2004. The IGA specifically provides that "County shall continue to apply interim protection standards in Metro Code Title 11 UGMFP and in the Conditions of Ordinance 02-969B." That would include this Condition.

Land, when annexed into the City, will be designated as one of the Springwater land use sub-districts. The proposed Industrial-Springwater sub-district that implements RSIA includes the Title 4 provisions concerning the division of lots or parcels. This means that, once in the City of Gresham, no land divisions will occur except as provided by Title 4.

Conclusion

Multnomah County is currently enforcing Title 11 interim protection standards and these conditions of approval. Gresham will impose Title 4 land division restrictions upon annexation of RSIA lands. This condition is met.

7. Multnomah County or, upon annexation of the area to the City of Gresham, the city, as part of Title 11 planning, shall, in conjunction with property owners and affected local governments, develop a lot/parcel reconfiguration plan for land designated RSIA that results in the largest practicable number of parcels 50 acres or larger.

Finding

The requirements of this condition do not fall within that which the City could accomplish through the use of regulation. Accordingly, it is not possible to point to any regulation that will ensure compliance with this condition. The City cannot require landowners to combine their properties for sale or development.

The City has made significant strides in accomplishing land assembly. This task predominately falls under the responsibility of the City's economic development and outreach efforts. The City is devoting significant staff time to encourage land owners to work together to assemble larger parcels.

The Springwater economic development research notes there are several examples of property owners' agreements, which can be effective in land assembly, and in both giving control to a group of property owners and in providing simpler negotiations and potential purchase process for a potential buyer/end user. An example of this is Real Estate Investment Trusts (REIT).

One step that the City has taken is a "Brokers Forum", to help property owners in the Springwater area to consider land assemblage along with other issues that relate to future sales of property. A second forum will be scheduled focusing on the land assembly strategies, such as a REIT, that property owners may want to consider.

Action measures that will help achieve land assemblage are part of the proposed Economic Development Goal (10.802). They include conducting a parcel-level inventory of all industrial zoned land to create "land briefs" for each parcel and to prepare a list of brokers and owners based on the inventory and to continue to schedule meetings of these brokers and owners.

Additionally, the City has created a strategy for annexation and development that should prove beneficial in creating usable pieces of land. The Springwater area has been broken up into 14 modules, as shown in figure 2 below. Any one of these would be logical annexation modules, and logical extensions of public services. Therefore, as annexation potentials develop, the City has the ability to quickly calculate whether the double majority exists in any module, and if it does, what can be expected for providing services and developing property.

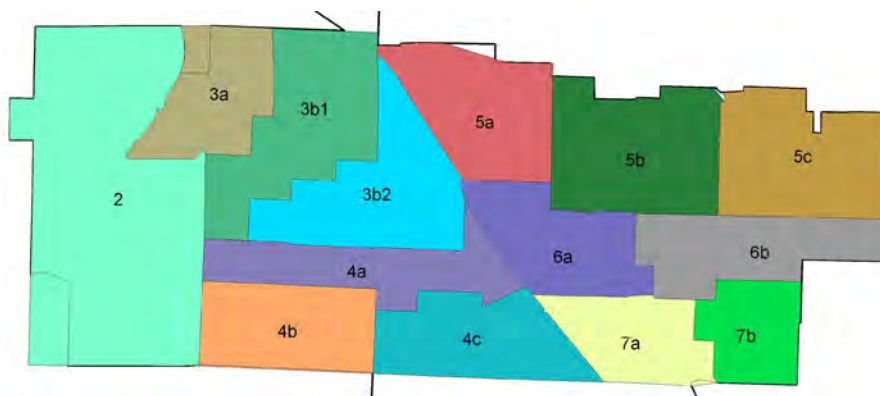


FIGURE 2. ANNEXATION MODULES

APPENDIX 45
(Added by Ordinance No. 1614 Effective 12/1/05)

SPRINGWATER NATURAL RESOURCES REPORT



APPENDIX 45 SPRINGWATER COMMUNITY PLAN REPORT NATURAL RESOURCES REPORT

Introduction/Overview

SITE LOCATION

The Springwater Phase I Planning Area (Springwater) begins at the southeastern edge of the City of Gresham's urban growth boundary in Multnomah County. The Springwater planning area (Figure 1) also includes a portion of Clackamas County south of Rugg Road and part of incorporated Gresham in the "brickworks" area. The total study area for resources comprises about 1,727 acres and is a roughly rectangular piece of land bounded in the east by 282nd Avenue and in the west by Hogan Butte and other volcanic geologic features.

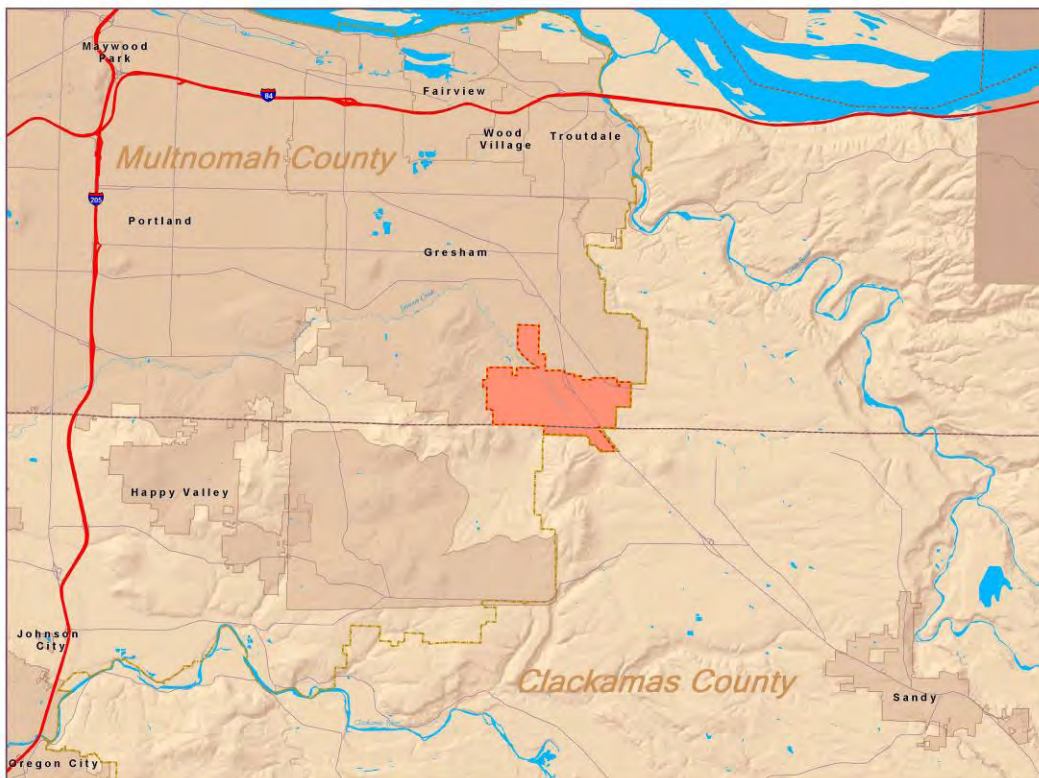


Figure 1. Site Location - Springwater Phase I Planning Area

OVERVIEW OF AREA'S NATURAL RESOURCES

Natural resources and significant physiographic features within the Springwater planning area are aesthetically pleasing and ecologically diverse (Figure 2). Its environmentally sensitive natural features include unique habitats such as the buttes with their steep terrain; seasonal drainages, springs and seeps; ponded wetlands; a two-mile section of mainstem Johnson Creek (Figure 3). Johnson Creek is the region's principal basin that feeds into the Willamette Valley, and four miles of major tributaries.



Figure 2. Landscape of the Springwater Planning Area June 2004

The portion of Johnson Creek flowing through Springwater features a wide range of habitat and water quality conditions. There are areas where the main stem or tributaries have been channelized and denuded of riparian vegetation, but there do also exist intact sections of high quality. The small portion of Reach 16 (ODFW 2000), for instance, that is located within the plan area includes some of the highest functioning riparian and aquatic resources in the watershed, according to analyses completed by the Oregon Department of Fish and Wildlife (2000).



Figure 3. Johnson Creek at Bankfull Flow 2004

HISTORICAL CONTEXT

The natural resource planning area for Springwater extends just beyond the Multnomah and Clackamas County line into the Sunshine Creek basin. It is defined by rolling hills in the west and a series of highways and flat agricultural parcels with mostly single-family residential areas along most of the areas local roads. Steeper slopes on the western buttes are typically forested and contain some areas of seeps and springs that feed the tributaries of Johnson Creek. The buttes also feature a number of seasonal drainages that collect precipitation during the rainy season and direct it to receiving tributaries on the eastern portion of the plan area. The buttes were cleared in the early 1900's, but are now covered mostly by mid-succession forest that is 60 to 100 years old. The lowlands were originally forested but were cleared in the late 1800's and early 1900's for farming and timber. The majority of the lowland areas have remained in agricultural and residential use, and in many areas have been tiled for drainage. The site contains forest types in the Willamette Valley vegetation zone (Franklin and Dyrness, 1988).

Johnson Creek is one of the last streams in the Portland Metro region with anadromous salmon and steelhead present, albeit in small numbers. These fish-bearing waters and the associated floodplains and riparian corridor form the spine of the natural resources through the Springwater Community. The mainstem of Johnson Creek runs through the study area flowing west, then entering the urban growth boundary of Gresham at the edge of study area about 500 feet east of SE Palmbled Rd. Its headwaters are to the east of the study area where nursery and other agricultural industrial inputs from upstream introduce pollutants and sediments into the water column. Paralleling the creek throughout the plan area is the Springwater Recreational Trail, which was created by the City of Portland on the rail line that once ran between Portland and Clackamas County. This trail is still maintained by the City. Large areas of cleared riparian corridor and multiple manmade discharge outlets from surrounding rural agricultural uses have changed the stream hydraulics, resulting in increased flood damage and downcutting in many areas within the entire basin.

Natural Resources as a Framework for the Springwater Community

The resources of the natural and physical environment within the Springwater planning area are beautiful to view and rich with a variety of landscape types. Central to the planning area is the confluence of four major tributaries with the Johnson Creek mainstem. There are also several other tributaries (Figure 4) as well as the steep butte slopes at the western border. The planning team and community members agreed that the physical layout of the landscape and creeks provided an environmental framework around which development decisions could be made, based upon features of the landscape that best lend to certain land uses. As such, careful analysis of the current and potential function of Springwater's natural resources was needed in order to develop a green framework that adequately considered the landscape's unique features. This analysis would be used to inform the decision making process regarding the siting of the roadway network, determining land use designations, placement of public infrastructure, providing adequate open space and habitat areas, and ensuring optimal function of the creek system to help meet water quality goals and minimize potential downstream impacts from Springwater development.

NATURAL RESOURCE PLANNING OVERVIEW

This section of the report describes the framework in which the natural resource planning was conducted. It describes the goals and policies of the natural resource planning effort, reviews existing regulatory guidance, and describes data used to conduct the natural resource inventory.



Figure 4. Riparian Condition on Bus Creek Brickworks Site

Goals

The Community Working Group (CWG) – the public committee that provided input through the planning process – worked with the project team to develop a goal and set of policies to guide natural resource protection and enhancement in Springwater. The goal established for Springwater natural resources reads:

The plan will preserve, protect and enhance natural resources. It will define, protect, restore and enhance significant natural resources, including stream corridors, wetlands, and forested areas. Resource areas will provide the basis for identifying development constraints as well as serving as open space amenities for the Springwater community. Resource protection and enhancement will be a shared responsibility of property owners, developers, and governments.

To achieve this goal, a natural resource needs analysis and protection strategy for Springwater was developed to:

- Embrace community values for regionally connected greenspaces that have outstanding views, healthy wildlife habitats, clean water, and can support diverse plant assemblages.
- Conform to the legal requirements and policies adopted by the City, Metro, the State of Oregon Goal 5 process and the Federal Government.

- Consider the role that natural resources play in sustainable land development and incentives for economic growth.
- Include land use code and ordinance responsibilities that are simple to understand and limit costly maintenance or monitoring for compliance.
- Integrate with the design and implementation of public parks and recreation, roads, sewer and stormwater facilities.

Policy Statements

The project team and CWG also developed policy statements to guide the team in developing a plan to achieve the natural resource goal. These policy statements directed the Springwater Community Plan to:

1. The Springwater Community Plan shall recognize the importance of the upper Johnson Creek system for Gresham, the Portland Metro region and the Willamette Valley.
2. Mitigation for any impacts of development in Springwater to stream corridor function shall be prioritized first to other sites in the Springwater Plan District and second to within the upper Johnson Creek basin.
3. The Plan will result in a green infrastructure that will provide regional natural amenities for future generations.
4. The plan will identify potential opportunities for “natural park” facilities that would enhance the sense of place for economic developments and that could be an attraction for residents and businesses.
5. Stream crossings will be minimized to the greatest extent feasible.
6. Road and pedestrian crossings of the natural resources areas shall be designed for the least impact practical.
7. The entire Johnson Creek Watershed and ecosystem will be considered.
8. To the extent practical, watershed functions and sensitive/natural species will be restored.
9. Barriers to wildlife habitat corridors, such as bridges and roads, shall be designed to provide proper opportunities for wildlife migration.
10. The urbanization of the Springwater Community shall be balanced with the protection of sensitive species and habitat, water quality, and groundwater resources.
11. The urbanization of the Springwater Community shall achieve, to the maximum extent practical, low levels of effective impervious surfaces, high levels of tree protection and reforestation, management of stormwater as close to the point of origin as possible, improved hydrology and flood protection, and removal of barriers to fish passages.
12. Urbanization of the Springwater Community shall provide appropriate erosion control and shall control sedimentation through the use of green development practices, context sensitive design, and appropriate construction management practices, re-vegetation of disturbed areas, and regular maintenance and monitoring.

13. Lands with slopes of 25 percent or above shall be protected.
14. The use of native plants shall be a priority for re-vegetation and Green Streets.
15. The development code for Springwater shall maintain fish and wildlife habitat protection measures that are at least as protective as those adopted by Multnomah County for the West of Sandy River Plan Area upon annexation.

Furthermore, the plan was developed to support urbanization in Springwater that is:

- Balanced with the protection of sensitive species and habitat, water quality, and groundwater resources.
- Achieves, to the maximum extent practical, low levels of effective impervious surfaces, high levels of tree protection and reforestation, management of stormwater as close to the point of origin as possible, improved hydrology and flood protection, and removal of barriers to fish passages.
- Provides appropriate erosion control and controls sedimentation through the use of green development practices, context sensitive design, appropriate construction management practices, vegetation of disturbed areas with native plants, and regular maintenance and monitoring.

Regulatory Guidance

The lands within Springwater are managed by an array of laws, ordinances, regulations, plans and policies via various jurisdictions that have authority in the area. One of the primary regulatory programs guiding the land use in Springwater is Oregon's land use planning goal for "Open Spaces, Scenic and Historic Areas, and Natural Resources," known as Goal 5 (Oregon Administrative Rule (OAR) 600-023-0000, et. al.; Goal 5 is "to protect natural resources and conserve scenic and historic areas and open spaces"). Various jurisdictions have developed programs to meet the Goal 5 vision. The City of Gresham has specifically adopted Multnomah County's program for Goal 5 protection. For Springwater, however, the City's intention is to establish a new district that has a unique set of guidance, a separate Goal 5 Resource Inventory, a separate Economic, Social, Environmental and Energy (ESEE) analysis and a development code unique to Springwater. To achieve this, it is prudent to research and compare the Goal 5 programs and floodplain protections currently in place to use as references in developing the Springwater Community guidelines.

Multnomah County and the City of Gresham entered into an intergovernmental agreement (IGA) that provides a concept of environmental protection measures that are at least as protective as those of Multnomah County. Multnomah County has recently adopted wildlife habitat protection measures for the Springwater area, has adopted a Metro Title 3 implementation program, and the Senate Bill 1010 Basin Plan that is implemented by the Oregon Department of Agriculture has also recently been adopted. As well, the County currently has a Goal 5 resource map and manages all County lands in accordance with the West of Sandy River Rural Area Transportation and Land Use Plan. The results of the ESEE analysis propose conserving a 200-foot corridor on either side of the stream channels and limiting development (while allowing existing uses to continue) within that 200-foot corridor. This is further discussed within the section describing the West of Sandy Plan and Metro's Allow/Limit/Prohibit (ALP) discussion in the ESEE analysis report for this Springwater Community Plan.

The Metro Council recently developed the definitions for allowing, limiting and prohibiting development within the Metro Goal 5 resource areas. Metro Council proposes to adopt these definitions in the fall of 2005 as part of the Functional Plan adoption. Once adopted, Metro's Goal 5 Protection Program will define the level of protection that is necessary for natural resources within the entire tri-county Metro area. The various regulatory programs within Metro's plan do not prohibit activities; rather they suggest varying levels of limited activity based upon the activity's proximity to the resource and magnitude of impact. Although not protective of all Goal 5 resources, the guidance in Metro's Title 3 - Water Quality and Flood Management Plan is a good basis for protection of aquatic habitat and riparian areas from perturbations such as flooding and erosion. For water quality protection and flood control, this plan recommends that structures not be built and activities are limited with a specified distance from top of bank on either side of all the channels. The actual distance varies between 50 and 200 feet depending on the creek flow volume, the slope of the bank, and the extent of the drainage basin. Table 1 compares the recommendations or development limits under the current programs for the Metro Tri-County Region, Multnomah County, and the City of Gresham.

Table 1. Current CODES, Regulatory Guidelines and Policies

Resource	Multnomah County Code and Policies ²	Metro's Title 3 Water Quality and Flood Management Standards	Metro's Goal 5 Recommendations ¹	City of Gresham Code ³
Riparian Corridors	Development permit required within 200 feet and requires mitigation for development within that area, allows development as close as 100" of the stream where slopes are <25% implements Metro Title 3	50 feet from top of bank on slopes <25%; up to 200 feet from top of bank on slopes >200%; 15 to 50 feet from top of bank for streams that drain between 50 and 99 acres of land	Class I and II Riparian Habitats are protected with variable regulatory width from 50 to 200 feet from top of bank	50 feet from top of bank on slopes <25%; and up to 200 feet from top of bank with slopes >25%
Trees and Wildlife Habitat	Riparian areas protected as wildlife habitat, standards applicable >200" from stream require development in cleared areas or wildlife conservation plan required, cleared area limit of 1 acre	N/A	Riparian areas are protected as wildlife habitat	One grove of the City's Hogan Cedars is protected
Floodplains and Wetlands	Consistent with Metro Title 3, no increase in fill allowed	Implement FEMA standards and require balanced cut and fill in 100 year floodplains; maintain a 50 foot buffer around wetlands.	Avoid undeveloped floodplains; protect any locally significant wetlands	Consistent with Metro Title 3
Steep Slopes (>25%)	Geotechnical review/development permit on slopes >25%	N/A	Avoid landslide prone areas and geologic hazards such as faults according to the USGS	Hillside Physical Constraint Density 1 DU per acre; Maximum Average = 1 acre; Preserve all areas exhibiting slopes >35%

¹ Source: Metro ESEE Analysis 2003 and Phase II Analysis of program options 2004

² Source: West of Sandy River Rural Plan Area Chapter 36.4500 Significant Environmental Concern Overlay Zone

³ Source: City of Gresham Development Code, Section(s) 4.1300, 5.0103, 5.0200; 5.0600

Planning Steps

The planning process used to determine the Springwater resources that would be protected under the State's Goal 5 rule followed a sequence using similar methods as those used by Metro and Multnomah County, but at a higher level of resolution, pursuant to the Goal 5 process in OAR 660-023. Consistent with the standard Goal 5 process, the team:

- Collected and reviewed existing information
- Determined the adequacy of the information
- Conducted field studies and determined habitat quantity and quality
- Prepared map layers of resources
- Determined the significance of all resources mapped
- Adopted a list of significant resource sites

INVENTORY PROCESS

The basis for the inventory was the Statewide Goal 5 process adopted by Metro, as outlined in the procedures and requirements for complying with Goal 5. The development of the natural resources inventory is the result of the collation of existing data along with fresh analysis of the plan region. The focus is on creek and riparian condition, flow modifications and restrictions at road crossings, wetlands in ponds and riparian forests, wildlife use areas, scenic quality, and topography.

Existing information review

The inventory utilized information from previous studies conducted in the Johnson Creek drainage. Full citations for sources are listed in the bibliography at the end of this chapter.

The natural resource features inventory and needs analysis study began by collecting and reviewing existing data on Johnson Creek. These sources included:

1. Metro's baseline information for riparian and wildlife resources, specifically Metro's adopted regionally significant habitat inventory (Figure 5). The planning team found this inventory for Metro's Goal 5 resources needed refining to better understand the possibilities after future development. The areas that were misinterpreted or in a few cases overlooked in Metro's high-level air photo interpretation evaluation were corrected through ground-level observations (Figure 6). Consistent with Metro's inventory, the project team found most of the riparian areas and waterways are assumed to be regionally significant.

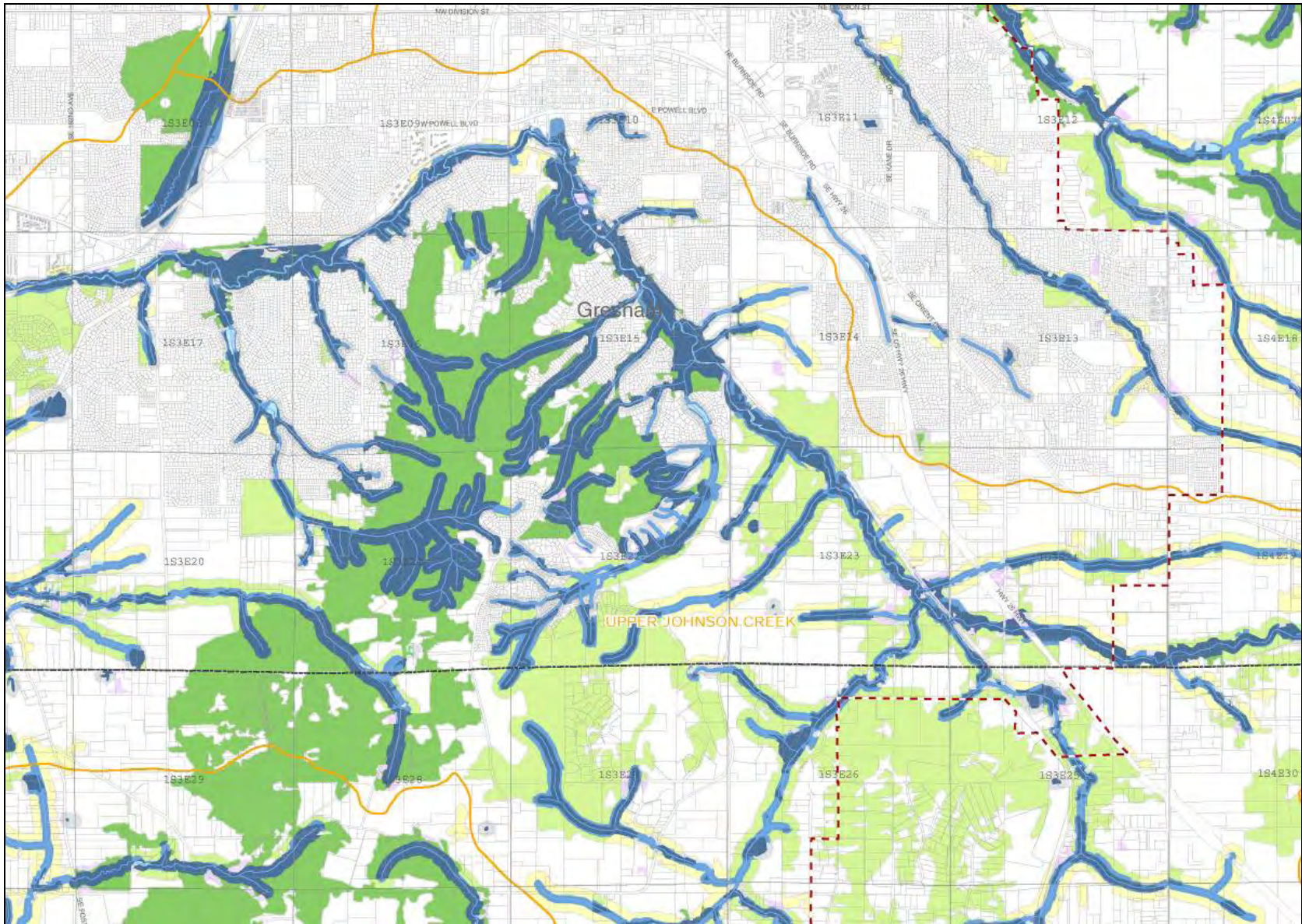


Figure 5. Metro's Resource Areas Map

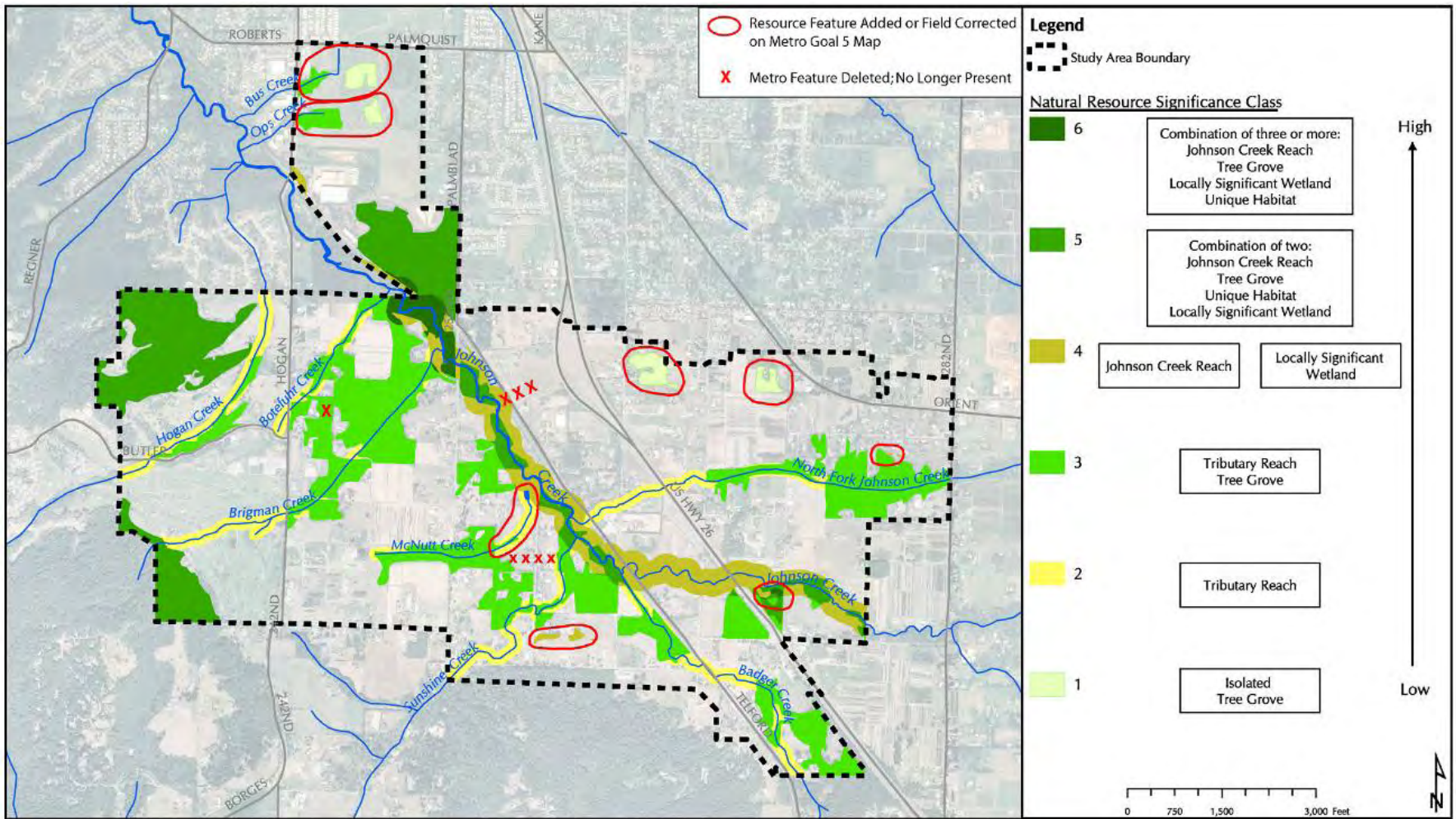


Figure 6. Field Corrections to Metro's Resources Map

2. Multnomah County West of Sandy Rural Transportation Plan Natural Resource Inventory and wildlife habitat protection measures.
3. Oregon Department of Fish and Wildlife (ODFW) stream surveys. Detailed stream survey of the Johnson Creek mainstem conducted by ODFW between 1999 and 2000. Reach designations from this inventory including portions of Reach 16, all of Reach 17, 18 and a portion of Reach 19. The entire Johnson Creek contains 39 reaches according to the ODFW nomenclature.
4. Other regional studies coordinated by the Johnson Creek Watershed Council, the City of Portland or Metro Greenspaces Program. Products include the Johnson Creek Restoration Plan by the City of Portland, and the Johnson Creek Watershed Action Plan.

Data Adequacy Review

The availability of these resources meant that the City had enough data on Johnson Creek to aid decisions about protecting resources that it considers significant, which is acceptable under Goal 5 procedures (OAR 660-023-0000 through 660-023-0250). However the project team and community supported refinements of existing data sets through field analysis where site access could be gained in the planning area. The approach to the field component of the additional natural resource inventory was to create a consistent database to document and compare function and value of the eight tributaries, wetlands, riparian and upland vegetation, and the value of these lands to wildlife.

Field surveys

The data analysis reviewed for baseline information was augmented through field observations and resource mapping conducted by Natural Resource Planning Services, Inc. staff, MDRM LLC, and John Gordon, wetland consultant, in May 2003 and February to April of 2004. Several methodologies were used to document characteristic wetlands, riparian and upland vegetation, wildlife habitat, sensitive species, steep slopes, springs, seeps, viewpoints and other natural features or geologic hazard zones. The Urban Riparian Inventory and Assessment Method (City of Portland 2000), Oregon Freshwater Wetland Assessment Methodology (Oregon Department of State Lands 2001), and Wildlife Habitat Assessment (WHA) (Metro 2003) parts of the Oregon Watershed Assessment Methodology (Watershed Professionals Network, 1999) methods were used to collect and record data on natural features. The Oregon Department of Land Conservation and Development (DLCDC) has accepted use of the WHA method for compliance with Goal 5 guidelines. Results of the field surveys were tabulated and are included in the Reference Documents that accompany this report.

The initial study (Upper Springwater Corridor Study, NRPS, Spring 2003) involved outlining four Planning Units based upon the roads and geophysical constraints within the area in south Multnomah County between the Urban Growth Boundary (UGB) and the Clackamas County line. This initial study provided the following for the City:

- A database framework for incorporating detailed channel characteristics by reach sometime in the future
- Eight to ten key observation points with data at a high level of detail comparable to the UGB database (at least one location in each tributary)
- Riparian - Composition of riparian communities and species richness along at least one transect per each tributary of Johnson Creek

- Surface area extent of natural features that were measured using a Geographic Information System (GIS) and tabulated
- Transects of sampling sites located using the Global Positioning System (GPS) and imported into the GIS and mapped
- Wetlands and plants – general vegetative cover type map with open water wetlands and large wetland complexes identified
- Aerial photo mapping of general land uses and natural resources for the entire 1575 acres

Additional field study conducted (NRPS Fall 2003 and Spring 2004) during this inventory period included the Brickworks area, i.e., roughly 160 acres of additional study area north of Telford between Palmblad and Palmquist roads, and 81 acres south of the Clackamas County line between Telford Rd. and Mt. Hood Highway (US-26). It also included a detailed literature review and analysis, agency coordination, additional field observations, GPS data collection, and input to the GIS mapping system. This study provided:

- Identification of potential conflicts with the City's existing transportation network
- Field assessment of forested riparian wetlands, seeps and ponds and emergent marshes
- Analysis of scenic quality and viewsheds
- Identification of geologic hazards, faults, seismic zones
- Hydraulic data analysis and re-evaluation of flood-prone areas

Floodplain Function

The 100-year flood plain extent (Figure 7) shows the Johnson Creek floodplain. Aerial photographs of the 1996 flood extent were examined at the U.S. Army Corps of Engineers District office; however, this event was beyond the 500 year level and inappropriate for map comparison for adequate flood protection. The examination of the major flood occurrence in the project study area provides important so that the goals of the project to safeguard or restore wetland function, to minimize flooding in the planning area, and to ensure that Springwater development does not exacerbate flooding downstream after implementation. The riparian zone, wetlands and undeveloped floodplain serve as water infiltration areas that are important for support of base flows within the watershed. Careful management of undeveloped floodplains will help the city and the region to meet water quality standards and provide for water temperatures and flows that allow the resident and anadromous fish species to thrive.

Resource Quantity and Quality

To gain an understanding of the planning area's resource quality, one must comprehend some concepts of landscape ecology. The operation of an ecological system depends upon a number of factors at a number of different scales (USBLM 2002). Each level in this time-space hierarchy has its' own importance. Assessing the watershed and using this assessment in a predictive fashion needs both an understanding and analysis of the natural processes occurring at all relevant spatial and temporal scales.



Figure 7. Johnson Creek Floodplain FEMA 100-year extent

A watershed resembles a pyramid with three levels representing scales. The highest scale of assessment of ecosystem function and dynamics contains the control, which describe the ecosystem state variables. They represent ecosystem elements as geology, geography, and climate. All ecosystem control have (varying) degrees of resistance to change, of time it takes to return to steady state, of levels of disturbance from which they will not return to steady state, and of differences between initial and recovered steady states. Identifying the control provides the constraints for determining the resiliency of the system and the prediction of the trajectory of changes that may occur. They also put boundaries on the range of natural variability, and provide some insight into the time frame for these changes to occur (Carlsson and Nilsson 2001, Martin 2001, Martin and Benda 2001).

A watershed's land base controls its processes. Focusing all rehabilitative efforts within the stream channel ignores the effects of land use and riparian vegetation on the supply of water, sediment, shade, and wood to the streams. Past errors, based on doing things thought to be 'good' for the species, eg. placing large wood in any salmonid streams, would be less likely to occur if the restoration goal is to reestablish processes to which most species have adapted. In addition, by looking at watershed processes instead of individual species habitat requirements, actions can be identified that restore habitat for aquatic and terrestrial species. This approach requires analysis of habitat forming processes at the watershed scale in order to identify processes that have been disrupted, as well as the locations and timing of land use effects on those processes.

Field Study Results and Resource Mapping

The key natural resources within the planning area are depicted on Figure 8. The Natural Resource documentation in the Reference Documents contain detailed characteristics and functional values of Springwater's natural features by stream reach or plot of riparian and stream characteristics, tree groves and wetland types, sensitive species, wildlife habitat value, and unique habitat features. A summary of the characteristics by subwatershed is provided in Table 2, with a more detailed description of the stream reaches following the table.

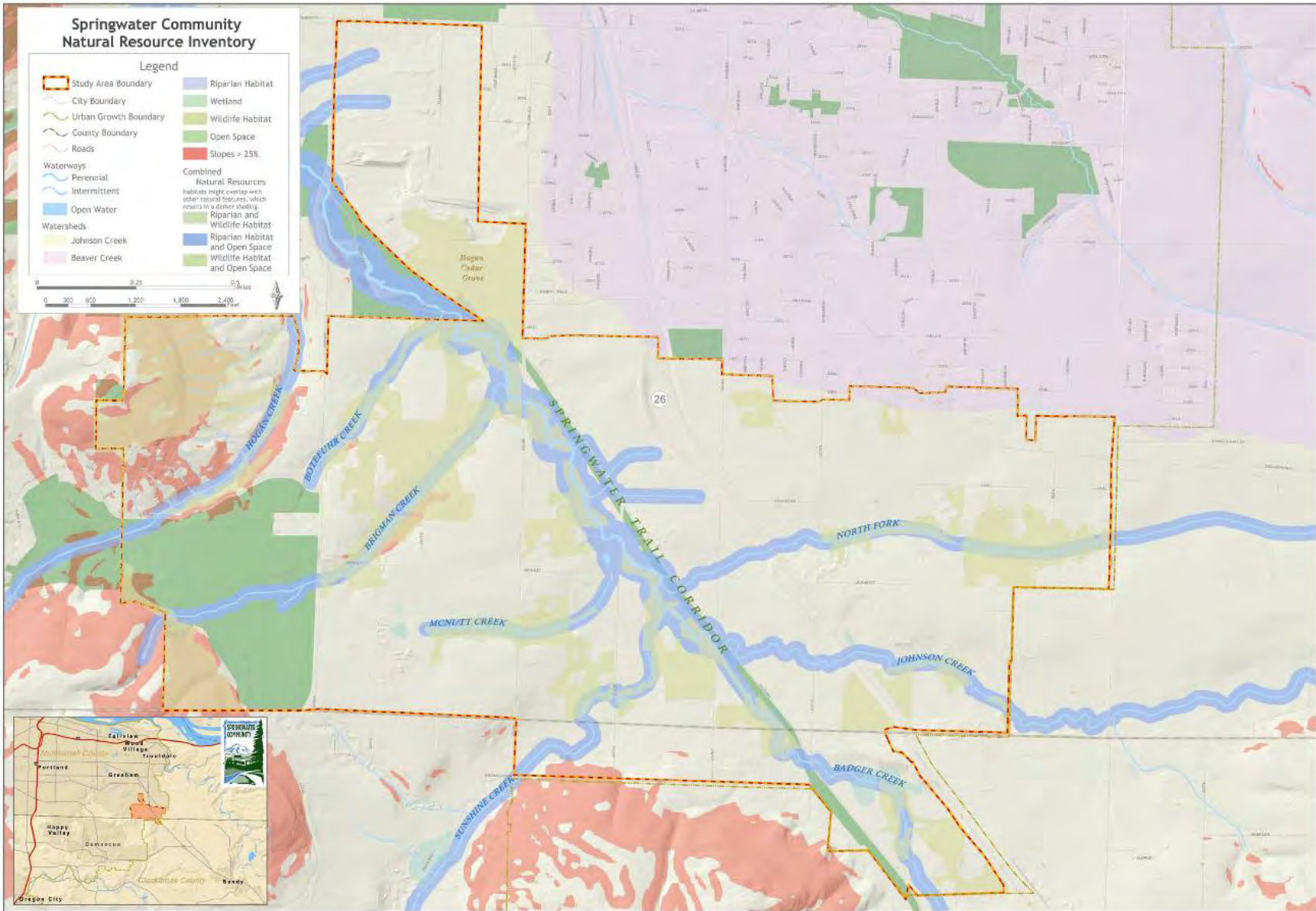


Figure 8. Natural Resource Inventory

Table 2 Natural Features Summary

Basin	Riparian	Wetlands	Wildlife Habitat	Slopes
Hogan Creek	Early to mid successional stage mixed deciduous and conifer (37.3 acres)	A few intermittent seeps and seasonal drainages flow from buttes to Hogan Creek	Good wildlife value on the buttes; good along the creek with mix of tree ages	Buttes > 25% along entire western side of the creek
Bus Creek	Conifer with extensive ivy and other non-native plants (6.9 acres)	None	Limited; development encroaches on all sides; creek is fed through a culvert and pipe	flat
Ops Creek	Conifer with extensive ivy and other non-native plants (8.2 acres)	None	Limited; development encroaches on all sides	flat
Botefuhr Creek	Very high quality reach in study area; Mature mixed deciduous and conifer (26.6 acres)	None	Near pristine condition; wildlife movement corridor	Rolling hills with channels in steep ravines
Brigman Creek	Mature mixed deciduous and conifer (54.2 acres)	Limited due to steep slopes	Good value; slightly disturbed understory; upper reaches poor vegetation is invasives only	Rolling hills with channels in steep ravines
McNutt Creek	Mature mixed deciduous and conifer (29.4 acres)	Small isolated manmade pond at headwaters	Marginal; impacts to understory shrubs reduces value for wildlife	flat
Johnson Creek Reach 16	Highest quality reach in study area; Mature high quality mixed deciduous and conifer. One fifth of reach is within the study area (981 sq. m; 0.2 acres)	Three possible palustrine wetlands	Highest quality conifer stands; near pristine condition and good wildlife movement corridor; Dense Hogan Cedar groves east of creek with lush undergrowth of shrubs, forest ferns and forbs	Variable throughout the reaches; 0.5% gradient

Table 2 Natural Features Summary (Continued)

Basin	Riparian	Wetlands	Wildlife Habitat	Slopes
Johnson Creek Reach 17	Second highest quality reach in study area: Mature mixed deciduous and conifer (4245 Sq. m; 1.0 acres)	Locally Significant Wetland near 252 nd and the Springwater Trail and ten possible wetlands mostly on the east side of the creek	Good wildlife movement along reach	Variable throughout the reaches; 0.8% gradient
Johnson Creek Reach 18	Mature mixed deciduous and conifer (3477 sq. m; 0.86 acres)	One Locally Significant Wetland and two possible wetlands west of US Hwy 26 crossing	Poor; land is devoid of wildlife habitat	Variable throughout the reaches; 0.8% gradient
Johnson Creek Reach 19	Mature mixed deciduous and conifer (3010.4 sq. m; 0.74 acres)	Three Locally Significant Wetlands east of US Hwy 26 crossing	Marginal to good, some thick understory provides for bird species and cover for mammals others are surrounded by nurseries	Variable throughout the reaches; 0.9% gradient
Sunshine Creek	Mature mixed deciduous and conifer (34.4 acres)	A two-part Locally Significant Wetland southeast of the creek	Good as patches are connected to mainstem; also wildlife habitat connection between McNutt and Sunshine creeks	Area within the Springwater study area is meandering and mostly flat, the creek is fed by higher gradient upper reaches
Badger Creek	Mature mixed deciduous and conifer (43 acres)	Manmade pond near confluence with Johnson Creek	Marginal due to relatively small patch size but better where it does connect with riparian	Mostly flat
North Fork Johnson	High riparian function except for flood management function; Mature mixed deciduous and conifer (56 acres)	A Locally Significant Wetland and a cluster of possible palustrine emergent wetlands ¼ mi west of 282 nd Avenue north of the creek	Good mixture of habitat for all wildlife species; thick understory provides food and cover for birds and mammals	Mostly flat

Johnson Creek and Tributaries

The study area's creek system (Johnson Creek main stem and nine tributaries) create opportunities to achieve multiple benefits in preserving a healthy aquatic habitat combined with meeting stormwater treatment/conveyance needs, restoring riparian or wetland habitats in headwaters, and providing passive recreation areas and natural areas.

Central to the area is the Johnson Creek mainstem (specifically the upper portion of reach 16, all of reaches 17 and 18, and the lower portion of reach 19--see Figure 9 Stream Reach and

Riparian Index), which runs through the entire planning area diagonally. Again, ODFW field surveys called out reach 16 as one of the watershed's most valuable reaches and fieldwork by NRPS staff confirmed the portion of reach 16 within the planning area is in excellent condition. The Springwater section of Johnson Creek has the following qualities:

- Reaches 16 and 17 have shown to be fish-bearing, with high channel complexity and lack of human disturbance. This provides good fish habitat for resident and anadromous fish.
- At time of printing, NOAA Fisheries is considering the main stem of Johnson Creek (including the Springwater section) as critical habitat for Lower Columbia River steelhead and Chinook, and the Magnuson Stevens Act lists it as essential fish habitat (EFH) for Coho and Chinook.
- Johnson Creek is considered by Oregon Department of Environmental Quality as a water quality-limited stream, and is 303(d)-listed for toxins (PCBs, Polynuclear Aromatic Hydrocarbons, dieldrin, and DDT), temperature, and fecal coliform.
- Relatively good riparian condition exists along the main stem.

Within the Springwater planning area, nine creeks are primary tributaries to Johnson Creek. These creeks are:

- Hogan Creek
- Bus Creek
- Ops Creek
- Botefuhr Creek
- Brigman Creek
- McNutt Creek
- Sunshine Creek
- Badger (MacDonald) Creek
- North Fork Johnson Creek

Existing rural development and agricultural practices creates many environmental planning issues for water resources. For example, while North Fork Johnson Creek is surrounded by complexes of tree groves and is not "water quality limited" according to the Oregon State Department of Environmental Quality (DEQ), Badger Creek (otherwise known as MacDonald Creek) has been modified by Telford Road. Coordination and Green Streets design for road improvements are intended to increase functional value and aesthetics of this riparian area. Also, urban development at the headwaters of Botefuhr Creek at Butler Road has changed the flow regime of the creek channel. Opportunity exists to restore the area west of Hogan Road where a Himalayan blackberry monoculture currently exists, and an incised channel has minimized the channel's connectivity to its floodplain. Brigman Creek is currently constrained by the golf course. It is essential that the creek's riparian corridor and headwaters be preserved to maintain the water quality of Brigman Creek.

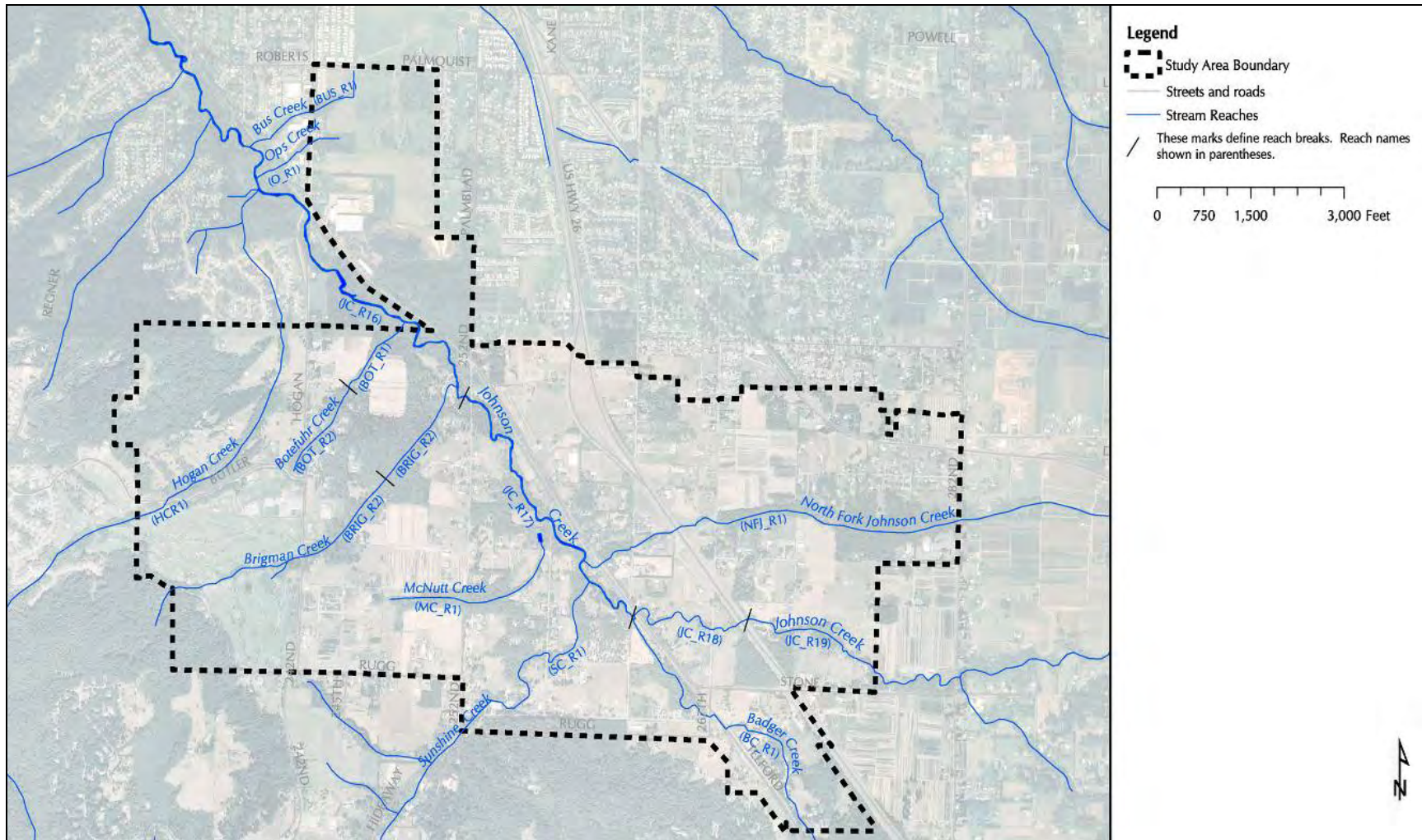


Figure 9. Stream Reach and Riparian Index

Stormwater management, or the lack thereof, has been a major influence on the landscape. Over ninety percent of the site has an open stormwater system, (predominantly ditched), which adds to sediment concerns in Johnson Creek due to erosion. For homes constructed decades ago, occasional septic system failures contribute to the degradation of water quality.

There is currently no treatment of stormwater in the Springwater plan area except at Highway 26 and at Butler Road. The increased direct input to the creek during high precipitation events increases seasonal flooding potential due to the high water table.

Wetlands

Through conducting a Local Wetland Inventory (Gordon, J. 2004), six of the planning areas emergent marsh type complexes were determined to be “locally significant” as defined by the functional and site characterization of the OFWAM (Figure 10). These wetlands totaled no more than six (6) acres across the study area and were recommended for protection usually as part of a larger wetland, floodplain, and forest complex. Restoration of original headwater wetlands should improve the following environmental conditions that were apparent during the resource inventory and needs analysis planning process.

Across the planning area, there are:

- Undulating landscapes that tends to pond water (Figure 11)
- Many roads and manmade linear features that increase surface water runoff to the low areas
- A high percentage of altered wetlands and
- A high water table



Figure 11 Badger Creek near Johnson Creek Confluence Ponded Wetlands

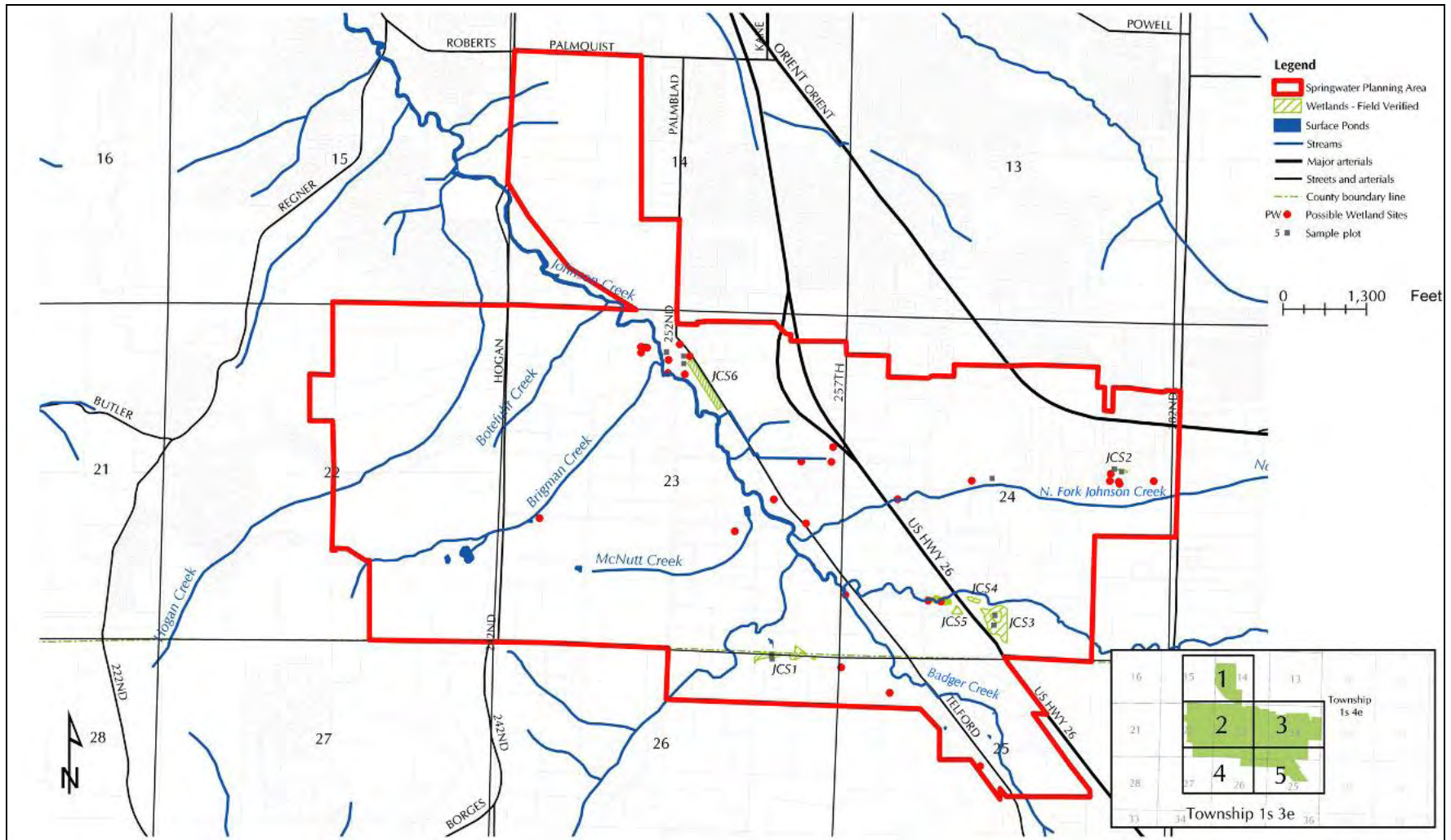


Figure 10 Wetlands Inventory

Riparian Areas

Riparian corridors are essential to wildlife passage, streambank protection and erosion control, and fish and aquatic habitat health, and they perform numerous necessary ecological functions. In Springwater, riparian vegetation has been removed, mowed or cleared throughout much of the planning area. The riparian area of Johnson Creek has been altered due to Telford Road and the Springwater Trail; in some places the riparian area is less than 20 feet wide. However, the intact portions of riparian areas are home to a dense mix of shrubs and mature conifer and deciduous trees. The trees provide shade to the waterway and protect aquatic habitat of this fish-bearing stream. Table 3 shows the riparian corridors that form the green corridors along each creek in the planning area and some results of the condition analysis. Out of 430 acres of riparian habitat approximately 14 percent or 60 acres have been entirely denuded and need to be restored to provide the expected functions of high quality riparian habitat (Figures 12 and 13). Approximately 40% of the riparian area is greatly intact and in comparatively healthy condition. These will be important areas to focus protection and some enhancement efforts. The majority of the riparian area (60%) has experienced varying degrees of alteration 14 percent has been physically mowed or cleared, and will need corresponding degrees of restoration and enhancement activity conducted in order to return the riparian area to a higher quality functional condition.

Table 3 Riparian Habitat with Highest Restoration Needs

Location	Total Riparian Area ¹	Percentage to be Replaced
Hogan Creek	37.3	13%
Bus Creek (Brickworks Ditch 1)	6.9	8%
Ops Creek (Brickworks Ditch)	8.2	0%
Botefuhr Creek	26.2	11%
Brigman Creek	54.2	17%
McNutt Creek	29.4	13%
Johnson Creek	109.6	11%
Badger (MacDonald)) Creek	43.0	16%
Sunshine Creek	34.4	14%
North Fork Johnson Creek	56.0	13%
Totals	429.9	14%

¹ Area within 100 feet of either side of top of bank. Note: There is some variability in calculations (approx. ±1 acre in 632)



Figure 12 Riparian Area North Fork Johnson Creek

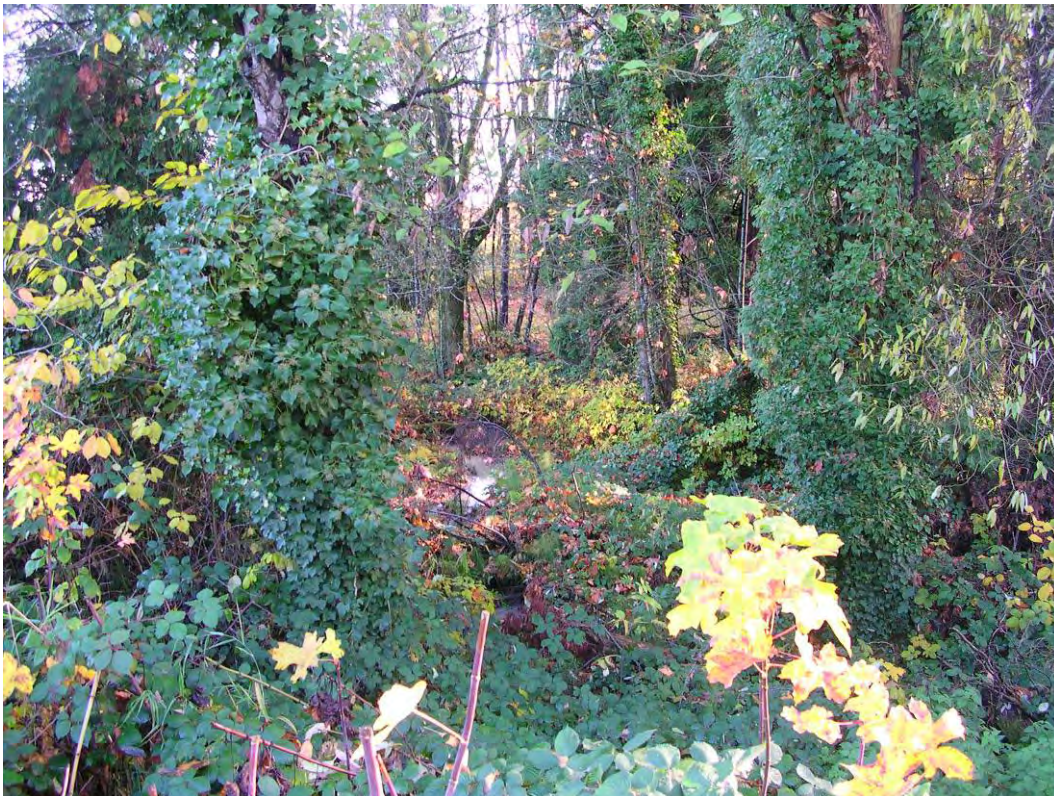


Figure 13 Riparian Zone Overgrown with Invasive Plants Bus Creek

Where native vegetation still exists, it varies from riparian shrubs and trees to mature tree groves. This portion of the landscape is characterized by:

- Predominantly mixed deciduous/conifer tree groves
- Large tree groves within Botefuhr, Brigman, and Johnson Creeks
- Landscape, which is predominantly nursery farms (wholesale and public) and rural residential with light grazing
- Predominant tree species of Douglas fir, Western red cedar (and Hogan Cedars), Red alder, Oregon ash, black cottonwood, and big-leaf maple
- Hogan Cedars Grove. This is one of the most valuable natural resource portions of the watershed landscape and certainly the Springwater Community Planning area, because of the relatively pristine and rare nature of vegetation, value to wildlife, and benefits to Johnson Creek riparian and aquatic zones.

Wildlife Habitat

Mid- to late-succession mixed conifer/deciduous tree groves within the study area provide a structurally diverse environment for numerous bird and terrestrial mammals. There are several ponded wetlands associated with these woodlands (Figure 14, Tree Groves and Wildlife Index). Individual plots are described in data sheets in the Reference Documents and depicted on Figure 14. A summary of the wildlife habitat inventory is also given in Table 4.

Wildlife habitats (e.g., woodland and tree groves and riparian wetland complexes) and non-riverine wetlands were examined in surveys conducted by the team in Spring 2004. Metro's fish and wildlife model used quantified data regarding vegetation structure, patch size, water quality/quantity, and other features to determine the value of an area to wildlife.

Incidental sightings of mammals, birds, and fish that use the study area throughout the two-year study revealed numerous deer present as well as migratory songbirds, diving ducks, and raptors. Amphibians and juvenile fish appear to be prevalent within the entire subbasin. The area is so highly disturbed there is very little habitat broad enough to support winter or breeding ranges for large ungulates or carnivores. The wildlife habitat assessment relied primarily on the vegetative structure, diversity, patch size and connections to waterways for determining the relative value of certain portions of the study area for wildlife.

Springwater's mature forests are valuable wildlife use areas within the watershed's landscape because of their relatively pristine nature, large patch size and proximity to the Johnson Creek riparian zone (Figure 15). Forested patches often provide continuous wildlife passages between the major western tributaries to Johnson Creek; i.e., McNutt and Brigman Creeks, Sunshine and MacDonald Creeks, Brigman and Botefuhr Creeks. Tree groves provide contiguous large patches of mature forest habitat that extend to the northeast as far as Johnson Creek and Telford Road. They connect with undeveloped forest habitat in south, northwest, and southeast directions and therefore are likely to be important to the regional wildlife migration or movement (D. Apostel, Personal Communication, June 2004).

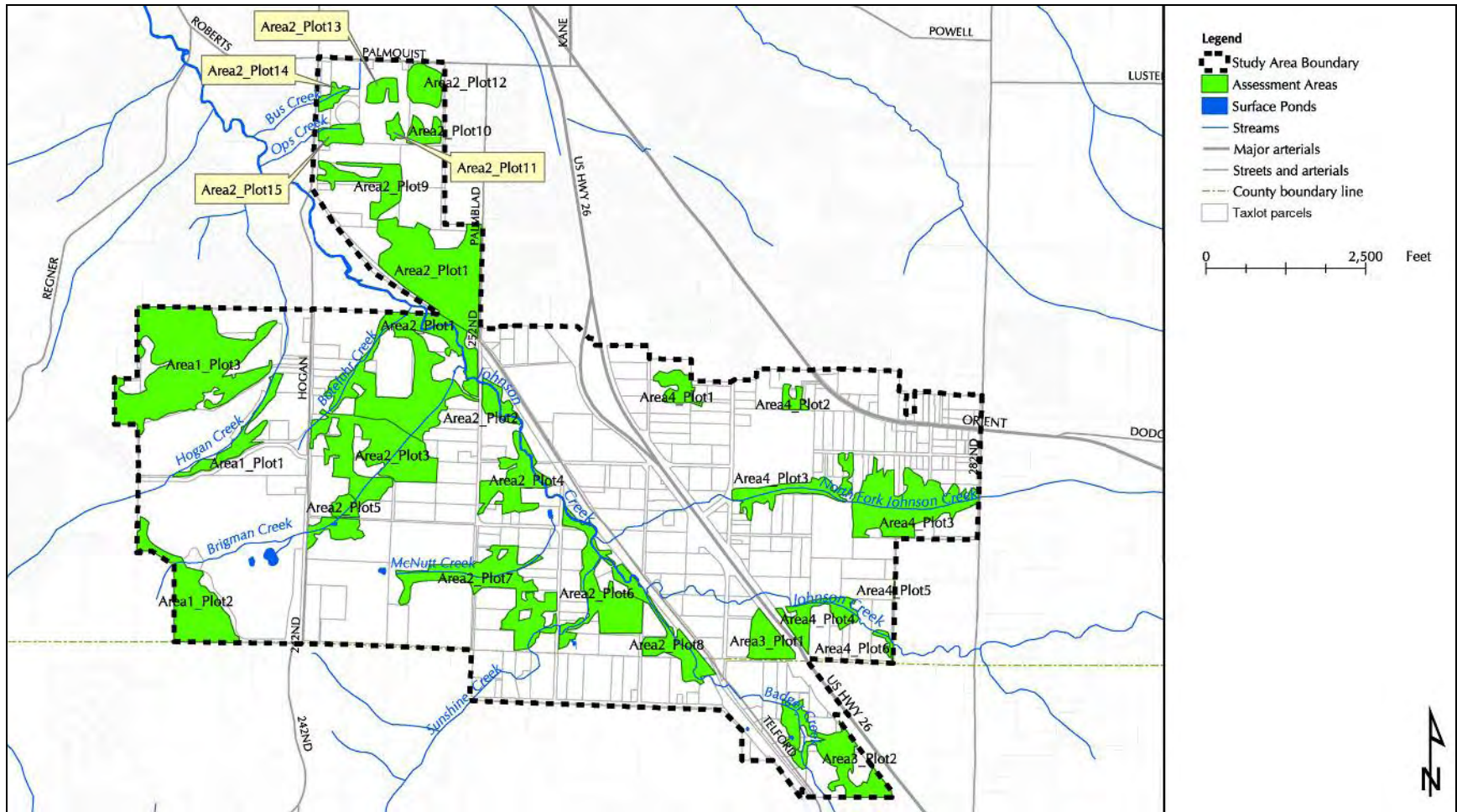


Table 4. Wildlife Habitat Inventory

Planning Area	Plot (Tree Grove #)	Surveyed (Y)es or (N)o	Vegetation Type (Vegetation Community Composition)	Seral Stage (Age of the stand)	Wildlife Value	Recreation Value
Area 1	Plot 1	Y	Mixed Deciduous/Conifer	Early to Mid Deciduous/Mid to Late Conifers	Good, as wildlife movement corridor.	Poor, due to existing constraints and steep riparian area.
	Plot 2	N	Mixed Deciduous/Conifer	Mid to Late Deciduous/Coniferous	Good, mixture of young and old trees. Both deciduous and Evergreen.	Good, view of valley and good mixture of young and old trees.
Area 2	Plot 1	Y	Mixed Conifer/Deciduous	Late Deciduous/Coniferous	Good, wildlife movement corridor. Undisturbed area.	Marginal, untouched forest. Should be saved as wildlife
	Plot 2	N	Mixed Conifer/Deciduous	Mid to Late Deciduous/Coniferous	Good, small patch, but provides continued wildlife movement corridor for wildlife along Johnson.	Marginal, trail already exists.
	Plot 3	Y	Predominantly Deciduous	Early to Mid Deciduous	Good, slightly disturbed understory. Connected to plot 1 to form large continuous grove.	Marginal, due to lack of scenic value, but a quiet place to see wildlife.
	Plot 4	N	Predominantly Deciduous	Early to Mid	Good	Poor
	Plot 5	N	Mixed Conifer/Deciduous	Mid to Late Conifer/Early to Mid	Marginal, due to himalayan blackberry infestation.	Poor
	Plot 6	N	Predominantly Deciduous	Early to Mid Deciduous	Good, because of connection to the mainstem of johnson.	Poor
	Plot 7	N	Mixed Conifer/Deciduous	Mid to Late Conifer/Early to Mid Deciduous	Marginal, connection to mainstem Johnson provides movement corridor but impacts to understory and shrub reduce value.	Poor, narrow and steep.
	Plot 8	N	Predominantly Deciduous	Early to Mid Deciduous/Mid to Late Conifers	Marginal, due to relative small size but is of value due to connection to riparian area of creek.	Poor
Area 3	Plot 1	N	Mixed Conifer/Deciduous	Early to Mid Deciduous/Mid to Late Conifers	Good, thick understory provides for bird species and cover for mammals.	Poor, very thick understory.
Area 4	Plot 1	N	Predominantly Deciduous	Early to Mid Deciduous	Marginal, due to surrounding constraints.	Marginal, up on a plateau with possible view of the
	Plot 2	N	Mixed Deciduous/Conifer	Early to Mid Deciduous/Mid to Late Conifers	Marginal, due to surrounding constraints and relative size.	Poor
	Plot 3	N	Mixed Deciduous/Conifer	Early to Mid Deciduous/Mid to Late Conifers	Good, large continuous tree grove surrounding creek channel. Provides a good mixture of habitat for all species.	Marginal, due to thick understory and relatively little scenic value but could provide an area for a nice
	Plot 4	N	Mixed Deciduous/Conifer	Early to Mid Deciduous/Early to Mid Conifers	Good, thick understory provides for bird species and cover for mammals. Also connected to Johnson Creek riparian area.	Poor, very thick understory.
	Plot 5	N	Predominantly Conifer	Mid to Late Conifer	Marginal, small grove surrounded completely by nursery land.	Marginal, up on a plateau with possible view of the
	Plot 6	N	Predominantly Deciduous	Early to Mid Deciduous	Marginal, provides movement corridor. Rehabilitation to north side could increase value.	Poor, high density of streamside wetlands. Possible flooding concerns.



Figure 15 Wildlife Use Areas Near Springwater Trail

Wildlife certainly uses Johnson Creek and its tributaries' riparian/upland habitats as travel corridors, and for feeding, resting and potentially for denning or nesting, depending on the species and their respective behavior. Mature tree groves give wildlife the protection they need to travel to and from, as well as along, the Johnson Creek riparian area.

SIGNIFICANCE DETERMINATION

Natural resource significance determination used a combination of inventories from NRPS fieldwork and data analysis, as well as Goal 5 resources identified by Multnomah County and Metro for the same planning area. These studies used a set of criteria to evaluate the resources' significance for the regional planning goal for land use. Our study used the same significance criteria as Metro which relies heavily on well-researched, scientifically established, regionally recognize studies that evaluate the function and value of natural and biological resources (see Table 5). We then considered the tolerance or thresholds that each resource has for long term viability within the physical environment and the resources location within the context of the other resources and the landscape. For example, not only was function considered but also position in a spatial hierarchy and size of the area. This enabled us to rate them on the basis of the multiple factors within certain types of landscape forms. The significant natural features of Springwater Community compared favorably with those identified within the West of Sandy River Rural Area Transportation and Land Use Plan, Goal 5 process and with Metro's Goal 5 resource inventory.

The following section details the approach used to evaluate the data and create an accurate description of the baseline conditions. The basis of the analysis recognizes that the dynamic nature of systems in both space and time must be used to inform any determinations of significance for the purposes of planning. Critical to the process is the realization that while each

area deserves and requires protection of some sort, planning must take into account that not all functions exist in all areas, so the “cookie-cutter” approach typically used will fail to recognize the key ecological elements of each area, and the scale at which these elements should be recognized.

This first step occurs at a very broad scale and requires recognition of ecoregion characteristics. These include the geology and terrain as well as any human infrastructure (it tends to constrain processes in a manner similar to geology). For instance, Springwater is positioned between the buttes in the south and west and Mt. Hood foothills toward the east; the Johnson Creek bisects it diagonally draining toward the northwest.

The next step involves a determination of ecosystem processes and habitat effects, or “functions”. Identifying the conditions provides the constraints for determining the resiliency of the system and the prediction of the trajectory of changes that may occur. They also put boundaries on the range of natural variability, and provide some insight into the time frame for these changes to occur. Each individual natural feature within Springwater was examined for the number of functions that were available to it at the observation year and the question was asked, given the area is not manipulated, what would it look like how would it function over time. Many of Springwater’s habitat effects within many of its riparian zones are frequent flooding; streambank erosion due to clearing, poor water quality degraded by fertilizers. Should these stream reaches be left alone with no human influence, the system is resilient and the trajectory of change would be to re-establish the channel migration zone, aggrade the streambed, self seed the riparian vegetation and improve water quality by reducing turbidity and inputs from surrounding land uses.

The third step identifies those elements of the system that demonstrate the least resilience to change, over time; those characteristics modified most. In Springwater several stormwater ditches that drain the existing highways, highways, bridges and culverts, the Springwater Trail and Persimmon Golf Course are fixed and least resilient to the natural process of ecosystem variability and resources in or near these areas would require the most human effort and cost to return them to their natural state. The third step also allows the siting of development features to allow system function to continue along a desired trajectory. On the other hand, those areas where several natural features or ecosystem elements occur in combination at a single location, i.e. backwater wetlands along a low gradient stream with well developed riparian vegetation structure along a gradient to scrub shrub and then mature mixed conifer/deciduous forest are examples of highly functioning natural areas that are relatively unmodified, pristine. All of these elements provide a rating of the “significance” or value to overall function of each of the major ecosystem elements represented in Springwater community.

Using a watershed approach for planning and rehabilitation, therefore, involves understanding the arena in which change occurs (controls), the vehicle for change (processes), and the outcomes, as well as responses to change (disturbance and resilience). Ultimately preserving watershed function, and in the case of the City of Gresham, preserving desired riparian conditions, means allowing these elements, or understanding how they respond to the various changes required to produce the desired result. Natural systems have a dynamic nature that consists of all the above, and that an attempt to draw a circle around the result of control and processes, the effects, will eventually result in the cessation of the more dynamic nature of the environment. This, in turn, will cause the system to assume a stable state not resembling the desired condition, as some its more important elements no longer process inputs as they originally did, or the system overwhelms the attempt at preservation and retains its original dynamism.

By preserving specific areas, and paying attention to processes and inputs, the City of Gresham will achieve its desired result of combining development with maintaining a watershed functioning in a manner they desire. The distances around each natural feature recommended for environmental protection are defined by fitting each to the current control constraining the area, identifying the important processes, understanding the inputs to the systems, and preserving the important features.

The basic resource characteristics inherent in certain natural systems (incorporating the spatial and temporal elements described above) provided the foundation for significance rating criteria (Table 5). These have been evaluated through numerous research studies and used to represent areas of importance to the continued functioning of the natural environment. Table 5 shows the relationship of each resource function to a particular resource or land form. Functions such as: water flow, storage and sources, water quality, channel dynamics and morphology, microclimate, fish and aquatic habitat, riparian habitat, upland vegetated habitat, and provision for sensitive plant or animal species are part of the equation for significance. If none of these functions exist, the site was not identified as significant. If any of these factors exist, the site was identified as significant to ecological system.

Table 5 Significance Criteria

Resource functions	Land features with functional value	Land features	Primary factor	Contributing factor
Water Quality (including sediment filtering, nutrient/pollutant filtering, erosion control, thermal regulation, and stream bank stability)	Vegetation and streambank areas. Vegetation growing from the streambank can help prevent erosion. Roots and fallen tree trunks may also stabilize stream channel banks. Artificial channelization of stream reaches can lead to additional erosion in other downstream reaches.	Vegetation	- Vegetation within 100' of stream or wetland - Vegetation within 200' of stream or wetland if slope \geq 25%	- Vegetation within 100-200' of stream or wetland ¹
	Vegetation growing in the riparian area filters sediment, excess nutrients, and chemical pollutants from stormwater runoff. This functional value occurs where stormwater is allowed to flow through riparian vegetation before entering the stream channel.	Water Bodies	- All land within 50' of a stream - All inventoried wetlands	
	Riparian vegetation preserves un-compacted topsoil that is rich in organic materials and allows stormwater to infiltrate into the ground rather than flow over the surface (reduced surface erosion). Wetlands and floodplains. Wetlands and vegetated floodplains help to purify water by removing sediments, excess nutrients, and chemical pollutants.	Floodplain	- "Undeveloped" floodplain	- "Developed" floodplain

¹ Intact forests contiguous to riparian areas are included out to a maximum of 860 feet.

Table 5 Significance Criteria (Continued)

Resource functions	Land features with functional value	Land features	Primary factor	Contributing factor
<p>Channel Dynamics</p>	<p>Large trees. Stream channels that have complex “structure” support a larger diversity of wildlife (for example, a variety of features, such as pools, areas of white water, meanders). Large wood that falls into the stream channel can create pools and other complex channel habitat features.</p> <p>Side-channels, oxbows, and off-channel wetlands. These areas provide refuge for fish during flooding, when the current in the main channel may be too fast.</p> <p>The Meander Zone. Low gradient streams tend to “snake” across their floodplain in a series of “S”-curves. This is a natural hydrologic process. Altering this natural flow pattern in one location can cause significant change in another location as the stream seeks a new equilibrium. Human structures built in the meander zone can interfere with natural stream hydrology, and lead to decreased in-stream habitat complexity.</p> <p>Streambank Areas. The landscape in close proximity to a stream is a dynamic place. Pools, small backwaters, meanders, and other important stream channel features will not form if the channel is confined to a narrow space.</p>	<p>Vegetation</p>	<ul style="list-style-type: none"> - Vegetation within 100' of a stream, stream meander zone, or wetland connected to a stream - Vegetation within 150' of fish-accessible stream - Vegetation within the floodplain 	<ul style="list-style-type: none"> - Vegetation within 150-200' of fish-accessible stream
		<p>Water Bodies</p>	<ul style="list-style-type: none"> - Within 50' of a stream - Within wetlands connected to a stream 	
		<p>Floodplain</p>	<ul style="list-style-type: none"> - “Undeveloped” floodplain 	<ul style="list-style-type: none"> - “Developed” floodplain

Table 5 Significance Criteria (Continued)

Resource functions	Land features with functional value	Land features	Primary factor	Contributing factor
Water Quantity: Stream Flow, Sources, and Storage	<p>Springs, seeps, and wetlands. These land features supply water to streams (cold water sources are particularly important in an urban area).</p> <p>Floodplains and wetlands. These areas store floodwaters and reduce “flashy” stream hydrology.</p> <p>Forests. Headwaters and riparian forests act as a sponge to hold water, slow stormwater runoff, and maintain stable flow in streams (baseflow). Un-compacted topsoil rich in organic materials can hold water and slow stormwater runoff.</p>	Vegetation		– Vegetation within 98' of stream
		Water bodies	<ul style="list-style-type: none"> – Within 50' of streams and isolated wetlands. – Within 100' of stream associated wetlands 	
		Floodplain	– Within flood prone areas	
Microclimate	<p>Stands of trees and shrubs. Stands of trees and other vegetated areas can impact air temperature and humidity within both upland and riparian areas. The local humidity and air temperature can impact water temperature in small streams and impact localized habitat conditions.</p> <p>Topographic features. Localized topography can also impact air temperature and humidity (for example, habitats on a north slope or within a deep gorge may be cooler).</p>	Vegetation	– Woody vegetation within 50' of water body	– Woody vegetation contiguous extent to maximum 525'

Table 5 Significance Criteria (Continued)

Resource functions	Land features with functional value	Land features	Primary factor	Contributing factor
Fish and Aquatic Habitat	In-water habitat structure. Certain configurations of pool and riffle sequences in the stream channel, off-channel wetlands, side channels, oxbows, meanders, backwaters, frequently flooded areas (10-year flood or higher frequency), known spawning gravel.	Aquatic Habitat	– Within 100' of high or medium rated stream segment	– Within 100' of low rated stream segment
		Sensitive Species	Within 200' of channel meander zone of a stream containing aquatic sensitive species or potential (high or medium rated) habitat for sensitive species	
		Wetlands	– Within wetlands connected to a stream	
		Floodplain	– Within channel meander zone of accessible reach	– Within channel meander zone of upstream reach – Within flood prone areas
Organic Materials	Vegetation. Trees and other overhanging vegetation are a source of leaf-litter, fallen branches, logs, and other organic matter. This material is an important food source for the organisms that fish eat (aquatic and terrestrial invertebrates). Floodplains. Organic material can enter the aquatic environment by falling into the stream, or when the stream floods and carries away organic material from a vegetated area.	Vegetation	– Vegetation within 100' of stream – Vegetation within 50' of a wetland connected to a stream	– Vegetation within 100-200' of stream – Vegetation within 50 - 200' of a wetland

Table 5 Significance Criteria (Continued)

Resource functions	Land features with functional value	Land features	Primary factor	Contributing factor
Terrestrial Wildlife Habitat Quality	Vegetation or land features that provide food and cover for wildlife. Water and food sources, and structure for nesting, dening, rearing, and cover are important indicators of habitat quality. Corridors and connected patches of native vegetation. Wildlife populations that are connected to each other are more likely to survive over the long term than isolated ones. Many species must migrate seasonally to meet basic needs for food, shelter and breeding, and connections between habitat patches allow this migration to occur. Corridors play an important role in urban areas to provide opportunity for migration and movement, including between upland and riparian habitats.	Vegetation	– Vegetation within 100' of a stream or wetland	– Vegetation within 100-300' of a stream ⁴
		Structure	– Within 50' of wildlife habitat (woody vegetation) with WHA score of 45 or more – Wildlife habitat areas within identified habitat corridors	– Within 50' of wildlife habitat (woody vegetation) with WHA >34 and < 45 ⁴
		Water bodies	– Within 50' of water body	
		Floodplain		– Within flood prone area
Terrestrial Sensitive Species	Sensitive species habitats. Areas that provide life-history requirements for sensitive animal and plant species are important for maintaining sensitive species populations.	Vegetation	– Wildlife habitat areas within 100' of terrestrial sensitive species point	– Wildlife habitat areas within 100'-300' of terrestrial sensitive species point ⁴
Upland Interior Habitat	Large intact habitat patches. Long-term trends in wildlife populations are directly related to the area of habitat available—the larger the patch, the longer a population can sustain itself.	Vegetation Patches	– Wildlife habitat areas with an acre or more of interior habitat	

The Johnson Creek watershed and its resources are very important to the region and the integrity of the areas outside the urban growth boundary. Approximately 450 acres of significant natural resource areas exist across the 1700-acre planning area. To determine where the most function could be regained, the inventory evaluated the types of land forms or natural features that occur and the total quantity of resources in any particular area within the planning area. For example, if the stream riparian corridor adjoined a mature grove of trees, i.e. upland wildlife habitat or a wetland, it was rated a higher class than if there was only a single resource at that point in the planning area. In this way, the detail of the field observations and GIS mapping were employed to help the planners make informed decisions about the recommendations for protection and enhancement of the green framework of the planned community.

Classification of Protection and Enhancement Sites

More refined significance classes provided the planners with a simple tool to better inform decisions concerning proper levels of site development, or priorities for site protection or restoration. Once the resource inventory was complete, and natural features mapped individually, and discretely, the resource GIS layers were combined (Figure 16). Certain patterns arose that provided a mechanism to discern the difference in condition and resource value, as well as the level of potential for improving natural resource function and value. While the LWI process, the wildlife habitat assessment, and stream survey methodologies all contain this capability, none of them can evaluate the increases in functionality (and therefore, significance) provided when resources combine at a location. The Significance Class map shows the proximity of resources and their relative value and current function (Figure 16). Those functioning well, and/or combining three or more resource features, gained a rating of 6 whereas those isolated and lacking proximity to water were rated low (1). The various classes of significance (shown in Table 6) provide the basis for planning and prioritizing resource protection and restoration activities. Resource data sheets and summary tables for individual factors, evaluated for each resource that combined to create the significance classes, are provided in the Reference Documents.

Table 6. Natural Resource Significance Classification

High Resource Function	
6	Combination of three or more of the following: Johnson Creek Reach Tree Grove Locally Significant Wetland Unique Habitat
5	Combination of two of the following: Johnson Creek Reach Tree Grove Locally Significant Wetland Unique Habitat
4	Johnson Creek Reach or Locally Significant Wetland
3	Tributary Reach with a Tree Grove
2	Tributary Reach
1	Isolated Tree Grove
Low Resource Function	

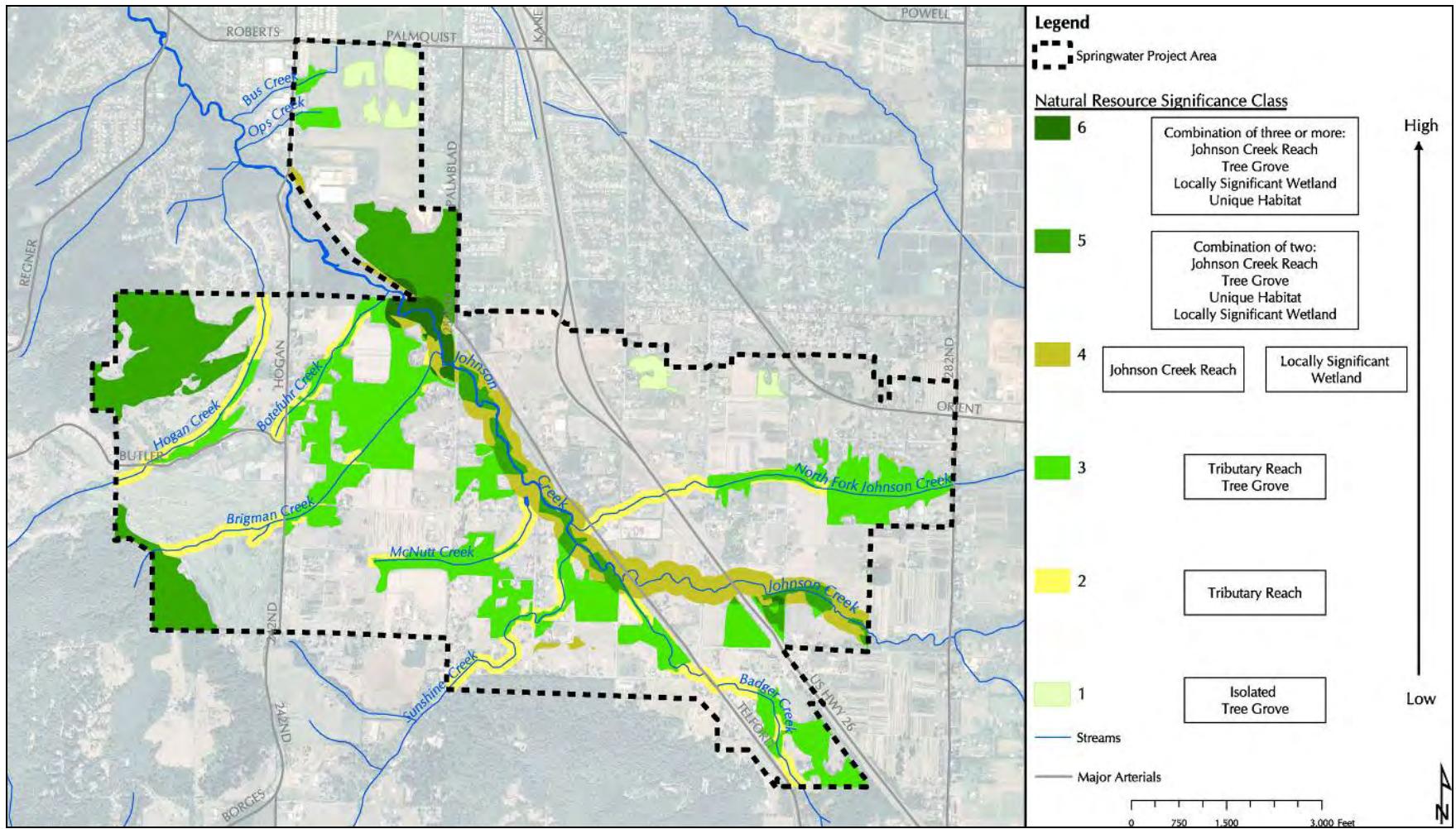


Figure 16. Significant Resource Classifications

The various grouping of resource features and landforms were then evaluated to identify the potential for enhancement and to identify the few areas where the current function and value is so high that it is particularly important to preserve and protect these lands.

Summary of Recommendations

MANAGEMENT PLAN OBJECTIVES

Following the community working group meetings and field observations made by the planning team, priorities emerged for the planning area's natural resources. These priorities are key objective elements in managing the environmentally sensitive resource areas and include:

- Restoring the headwater wetlands of McNutt Creek and riparian habitat along the tributaries of Johnson Creek.
- Retaining undeveloped land as "green" wildlife corridors between the buttes and major tributaries of Johnson Creek.
- Protecting the mature forests and riparian habitat within the five-creek confluence area in the southeastern part of the study area.
- Preserving the integrity of large stands of mature forests such as the Hogan Cedars grove.

Preliminary results suggest that the study area presents many opportunities for increasing watershed health, resource value, and improving water quality. The gentle westerly slopes and rolling terrain is the water source of several creeks and is the location of many disturbed wetland complexes. The headwaters of Botefuhr and Brigman Creeks and the channel of Hogan Creek have all been altered by construction; which results in sedimentation of the waterways. Butler Road is the only treated roadway within the area, leaving many of the roads without stormwater flow detention or treatment before discharging to the creeks.

Protecting the wetlands and forested area complexes at the southeastern boundary of the study area preserves the value of the natural resource and provides a "gateway" to Springwater that reflects the desired character of the community. High-quality, riparian wetlands and wildlife habitats of concern within the study area, if protected, will allow the entire planning area to be more ecologically sustainable. This will include improving the aquatic habitat through cool, clear, healthy streams, promoting Green Streets, and providing and aesthetically pleasing stormwater treatment areas.

REGULATED LANDS

All lands within the Environmentally Sensitive Resource Areas (ESRA) will be protected from urban development. Limited development will be allowed and managed in a way that is compatible with the goals of the natural resource protection. Properly constructed, this development could lend itself to habitat enhancement. The requirements for limited development will be stipulated through the development code.

OPPORTUNITIES FOR RESOURCE PROTECTION AND ENHANCEMENT

The habitat quantity and quality classification created by the Springwater Planning Team serve as the basis for appropriate decisions to protect or enhance natural resource areas, and

determining protection or enhancement priorities. Areas where multiple resources overlapped or existed adjacent to each other, rated highest. Where a solitary resource was isolated from other aspects of the environment that could assist it in functioning viably, these areas rated lowest. Recommendations for areas to protect and preserve as well as enhancement opportunities are shown on Table 7 and located on Figure 17.

FUNDING STRATEGY

As the area develops, environmentally sensitive habitats and natural features will be protected through a combination of public acquisition and regulation.

Several mechanisms have been evaluated for funding the proposed preservation and restoration goals for the project. For those lands that are not fully protected by federal, state or local regulation, but have high resource value, the City would be well advised to attempt to acquire the sites. The Parks and Open Space Plan estimates land acquisition costs to be approximately \$48,000 per acre; however, including typical costs for enhancement and maintenance of the site, the cost for the City to acquire and manage a natural resource area is likely to be near \$100,000/acre. Table 7 shows the lands that are recommended for incorporation into a land acquisition program. Also, for those projects that would not be required, options are explored for funding mechanisms for enhancement of the natural resources.

Other means to preserve the resource value without direct acquisition would include tax incentives to the property owner. For tax incentives, City Council would create an ordinance, then apply to the County with a certified management plan and in turn the City reduces their tax assessment on the parcel that contains the natural resources. When individual property owners are asked to give something up for the greater good, they often respond well to a long-term reduction of taxes on the land.

Additional programs exist at the city, state, and federal level to assist with natural resource planning efforts. These provide financial and technical assistance and incentives, but require a commitment from the property owners and the communities. Potential funding opportunities are listed below.

1. Reduce stormwater fees in exchange for protection of resources in the form of conservation easements.
2. Encourage and further investigate density and development transfer rights and other transfer mechanisms from properties inside the ESRA to properties outside.
3. Consider a new System Development Charge (SDC) on all development in the study area to purchase conservation easements. This effectively distributes the burden of resource protection to all who benefit.
4. Consider a bond measure to acquire property along streams and wetlands, either region wide or specific to Springwater. The measure could be patterned after Metro's bond measure that successfully acquired upland habitat in and around the study area.
5. Grants and donations should continue to be used whenever possible. Numerous programs exist at the state and federal level to assist with natural resource related planning efforts, especially if those planning efforts are related to natural hazard

mitigation strategies. In addition to opportunities to obtain funding for the protection and restoration of habitats, opportunities are available to obtain public open space as part of a hazard mitigation/prevention strategy.

6. Landscape Assessment Districts (LADs) could be established as an overlay zone to provide a higher level of design and maintenance standards.
7. Restoration projects could be combined with other public utilities construction projects to minimize total project costs.

Table 7 Natural Resource Management Plan

Project Name	Location	Existing Functions and Values	Expected Outcomes	Natural Resource Plan Objectives Met	Cost, \$Million ¹	Potential Funding Source
PROTECTION						
Hogan Cedar Grove	Area 2 Plot 1	scored 28 highest for tree grove; scored 103 for wildlife highest value; enhanced score increased by 5	preservation recommended as enhanced score increased only by 5; future successional stages will be very valuable	opportunity for a natural park; protects a significant patch of forested wildlife habitat	\$8.6	consider acquisition as the parcel is within City limits and has tremendous development pressure
Springwater Gateway Wetlands (Stone Rd/Hwy 26)	Area 3 Plot 1 Area 4 Plot 4	Area 3 Plot 1 has poor recreation value and scores 17 average for tree grove and 71 for wildlife; Area 4 Plot 4 contains a significant wetland; scores 18 for tree groves; 79 for wildlife	Area 3 Plot 1 enhanced score increased only 9 whereas Area 4 Plot 4 enhanced score increased 17 for wildlife value if the wetland is protected	protects the areas most significant wetland and provides a natural beauty for the southern gateway to the community	\$1.6	may be partially within the highway right-of-way and riparian corridor of Johnson Creek; consider acquiring the remainder of parcel
Buttes with Slopes > 25%	Area 1 Plot 3	unique habitat with tree groves; landslide and uncertain geologic hazard	high development pressure for single family residential to capture views	protects forested areas and open space amenities with views	\$6.0	density requirements and developers fees for mitigation on slopes greater than 20%

1. Based on \$100,000/acre for acquisition and enhancement projects. Cost for acquisition only is \$48,000/acre.

Table 7 Natural Resource Management Plan (Continued)

Project Name	Location	Existing Functions and Values	Expected Outcomes	Natural Resource Plan Objectives Met	Cost, \$Million ¹	Potential Funding Source
WILDLIFE PASSAGE						
Reserve a corridor between Hogan and Botefuhr creeks for wildlife passage	connects BOT R2 with HC R1	Botefuhr Creek is a deep channel with dense high value riparian; steep area containing springs are excellent wildlife habitat with poor recreation potential	Locating this corridor somewhere between the two creek channels would provide east-west route for wildlife to pass from Johnson Creek through to the buttes	increases opportunities for wildlife movement east and west through the community to buttes in the west	\$0.6	most of this corridor should be included as either setbacks from creeks or "green street" redesign of Butler Road
Sunshine and McNutt Wildlife Corridor	Area 2_ Plot 7	this channel has been degraded score is 69 for wildlife habitat and the understory has been modified by residents' activities and there are three existing houses	protection of this corridor will allow understory to grow back and the wildlife a choice to use this as an alternate route to the Sunshine Valley	increases passageways for wildlife movement south to the buttes	\$2.8	preservation through including these lands in the green infrastructure
RESTORATION – WETLAND RIPARIAN COMPLEX						
Brigman Pond Removal and Restoration	BRIG_R2	the creek riparian has been removed; golf course filled in the headwaters and caused down cutting and poor water quality	restore the flood control function and water quality of Brigman Creek; will improve riparian condition	long term water quality improvement and sustainable development	\$0.9	encourage private property owner; otherwise not likely to be completed
McNutt Headwater Wetland Complex	MC_R1	Wetlands filled; riparian degraded as the channel has been ditched	improved water quality; aesthetically pleasing area for local residents	long term water quality improvement and sustainable development	\$0.4	reserve as environmentally sensitive and engage volunteer efforts
Johnson Creek Hwy 26 Wetland Complex and Floodplain Reconnection	Area 4 Plot 5 Area 4 Plot 4 JC R19	poor quality habitat due to surrounding nursery activities and poorly functioning culvert	reconnect floodplain and flood storage function; enhance wetlands and riparian	improves aesthetic quality, water quality, riparian and wildlife habitats	\$0.9	some of this site is within right-of-way for Hwy 26; consider acquiring the wetland site

1. Based on \$100,000/acre for acquisition and enhancement projects. Cost for acquisition only is \$48,000/acre.

Table 7 Natural Resource Management Plan (Continued)

Project Name	Location	Existing Functions and Values	Expected Outcomes	Natural Resource Plan Objectives Met	Cost, \$Million ¹	Potential Funding Source
RIPARIAN REHABILITATION						
North Fork Johnson Creek Riparian Restoration	NF_R1	riparian quality is low as vegetation is cleared or mowed on one or both banks of the creek	improved aquatic habitat, water quality, culvert should be upgraded	provides natural corridor for wildlife movement east to west	\$0.75	consider volunteer riparian planting
Johnson Creek (Telford - Hwy 26) Riparian Floodplain Reconnection	JC_R18	riparian quality is low as vegetation has been altered by logging and land practices	culvert should be replaced with a bridge; channel should be allowed to meander and riparian vegetation replaced	confluence of the five creeks is of high aesthetic value for public and recreationists	\$0.1	consider acquiring the corridor and designing a bridge that reconnects floodplain or integrate with stormwater facilities
Badger Creek Culvert Removal and Channel Rehabilitation	BC_R1 at Telford Rd.	riparian quality is low as vegetation is invasive species; stream channel has been moved and displaced riparian and altered flow	culvert should be replaced with a bridge	provides natural corridor for wildlife movement to southeast and buttes	\$0.67	culvert may be included in the highway improvements program; consider volunteer riparian planting

1. Based on \$100,000/acre for acquisition and enhancement projects. Cost for acquisition only is \$48,000/acre.

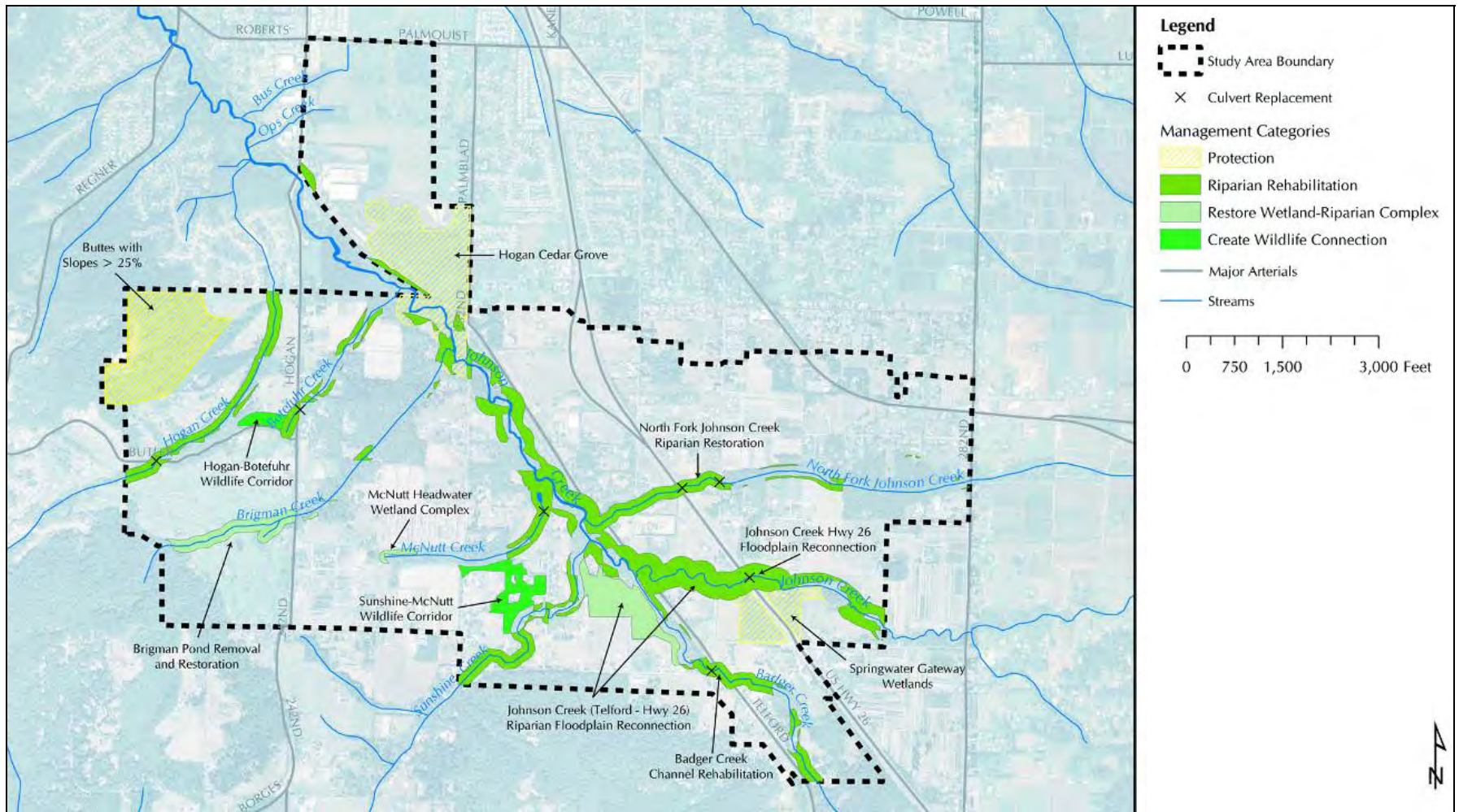


Figure 17 Natural Resource Protection and Restoration Plan

ABBREVIATIONS AND ACRONYMS

CWA – Clean Water Act
ESRA – Environmentally Sensitive Resource Areas
ESRA-SW – Environmentally Sensitive Resource Areas - Springwater
ESA – Endangered Species Act
ESU – Evolutionary Significant Unit
FEMA – Federal Emergency Management Agency
GIS – Geographic Information Systems
GPS – Global Positioning System
LWD – large woody debris
NMFS – National Marine Fisheries Service
NRCS – Natural Resources Conservation Service
NWI – National Wetland Inventory
ODFW – Oregon Department of Fish and Wildlife
SEC – Significant Environmental Concern
WDFW – Washington Department of Fish and Wildlife

GLOSSARY

Allow - Decision to permit land-use activities regardless of the impacts on *fish and wildlife habitat*. Under an allow decision, habitat areas would be protected only by existing regulations and *non-regulatory tools*. This option offers the lowest level of protection for regionally significant habitat.

Anadromous - Moving from sea to freshwater for reproduction.

Anthropogenic - Relating to, or resulting from the influence of human beings on nature.

Assessment - A thorough documentation of existing conditions within a watershed. Identifies the actions needed to get from baseline conditions to the conditions implied in the vision and goals for a watershed. Refines objectives by identifying where and to what extent existing conditions diverge from the vision, and identifying appropriate targets for an objective given existing conditions.

Bankfull width – Channel width between the tops of the most pronounced banks on either side of a stream reach.

Baseline – Reference point for comparison of subsequent measurements or observations

Basin – A topographical area of a watershed or geological land area that slopes toward a common center or depression where all surface and subsurface water drains

Bedrock type – The parent rock (e.g., granite or sandstone) in a channel

Biodiversity - The variety of plants and animals in a particular area.

Conflicting uses - As defined by the Goal 5 planning guidelines, a land-use practice or development activity that is harmful to *fish and wildlife habitat*. Two major conflicting uses are removing plants and increasing *impervious* surfaces such as roads.

Edge effects - The negative impacts on wildlife that occur along the border of a *fish and wildlife habitat* area such as greater vulnerability to predators, *nonnative* plants, traffic and noise.

ESEE analysis - The second step of Metro's fish and wildlife habitat protection program which entails assessing the potential economic, social, environmental and energy (ESEE) impacts of protecting and not protecting regionally significant fish and wildlife habitat.

Fish and wildlife habitat - An area upon which fish and wildlife depend in order to meet their requirements for food, water, shelter and reproduction.

Goal 5 - One of 19 statewide planning objectives (adopted in 1973) that establishes standards for protecting natural resources, open spaces, and scenic and historic areas. Metro is currently working to address Goal 5 by developing a program to protect the region's significant natural resources, specifically *fish and wildlife habitat*.

Habitat fragmentation - The breaking up of a single large habitat area such that the remaining *habitat* patches are smaller and farther apart from each other. This results in a lack of connections among different habitat areas, which makes movement between areas difficult for

wildlife and reduces habitat quality (for example, by increasing *edge effects* and decreasing important *interior habitat*).

Habitat inventory - The first step of Metro's fish and wildlife habitat protection program that involved identifying the significant *fish and wildlife habitat* in the region. The result of the inventory is a map of regionally significant habitat classified from low to high value based on each area's importance for fish and wildlife.

Impervious/impermeable surface - A surface that does not allow water to seep into the ground and, therefore, increases *stormwater runoff*. Roads, parking lots and standard building roofs are all impervious surfaces.

Interior habitat - The area in the center of a *fish and wildlife habitat* patch that is higher quality habitat than areas along the edge of patches, since areas along the border are more prone to *edge effects*. Some species need interior habitat to survive.

Impact area - Land next to regionally significant habitat that may significantly affect the condition and value of the habitat area. Certain land-use and development activities within impact areas may have a substantial adverse effect on nearby habitats, and thus are worthy of special consideration.

Limit - Decision to apply some restrictions to land use activities that harm *fish and wildlife habitat*, but not *allow* or *prohibit* development entirely. This is the "middle-of-the-road" option for protecting regionally significant habitat.

Metro - A regional government that serves the 1.3 million people who live in 24 cities and three counties in the Portland metropolitan area. Metro works on land-use, transportation, natural resources, parks and greenspaces planning and waste management issues that cross local boundaries.

Non-native species - A type of plant or animal that is not local to an area, but rather originates from a another place. Also called "exotic" or "alien" species.

Non-regulatory tool - A way of achieving *fish and wildlife habitat* protection that does not rely on legal standards and restrictions, but instead relies on other methods such as education and outreach, financial and other incentives, and land acquisition from willing sellers.

Program development - The third step of Metro's fish and wildlife habitat protection program which entails determining how to protect various habitat lands identified in the inventory (step 1) while balancing the economic, social, environmental and energy (ESEE) impacts of protecting and not protecting *fish and wildlife habitat* (identified in step 2). Program development will entail deciding which policy tools – incentives, education, regulation or land acquisition – to apply to various lands throughout the region.

Prohibit - Decision to not *allow* a conflicting use because of the negative impacts on *fish and wildlife habitat*. This option offers the highest level of regulatory protection for *regionally significant habitat*.

Regionally significant habitat - Habitat areas Metro has identified as important at the regional level based on a resource inventory undertaken in the first step of Metro's *fish and wildlife*

habitat protection program. Regionally significant habitat includes habitat in riparian areas near water and drier upland areas away from water.

Regulatory tool - A way of achieving *fish and wildlife habitat* protection that relies on legal standards and restrictions on such things as vegetation removal and development activities.

Riparian area - The vegetated land near water bodies such as streams, rivers, wetlands and lakes that provides important benefits to wildlife and humans including clean water, reduced flooding and healthy habitat.

Soil erosion - The action of soil being worn away by water or wind.

Stormwater runoff - Water that flows off *impervious surfaces* such as roads, parking lots and roofs of buildings because it cannot enter and soak into the ground.

Title 3 - An ordinance adopted by Metro Council in 1998 to meet standards for statewide planning goals that deal with water quality (Goal 6) and flood management (Goal 7). Title 3 also establishes a plan to address the *fish and wildlife habitat* protection aspects of *Goal 5* within the metro region.

Upland area - Land located at a higher elevation than *riparian areas* that stays relatively dry.

Urban growth boundary (UGB) - The line that marks the separation between rural and urban land. The UGB is updated every five years so that the land within the boundary can accommodate 20 years of expected growth in the region. *Metro's* jurisdiction covers the land within the UGB plus some additional lands outside the UGB.

Watershed - All the land and streams that drain to a particular water body or point in a stream. Since water flows downhill, points of high elevation generally determine watershed boundaries.

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Springwater Community Plan Report Economic, Social, Environmental and Energy (ESEE) Decision

1.0 SPRINGWATER NATURAL RESOURCE INVENTORY AND ESEE REPORT

1.1 PURPOSE

In order for the City of Gresham to comply with Oregon Statewide Goal 5 requirements (Oregon Administrative Rules [OAR] 660-023 et. al.) to conserve significant natural resources, an Economic, Social, Environmental and Energy (ESEE) analysis has been performed to identify the consequences for allowing, limiting, or prohibiting conflicting uses in the Springwater Community Planning area. The ESEE analysis follows the procedures outlined in OAR 660-023-0040, which states that “local governments shall develop a program to achieve Goal 5 for all significant resource sites based on an analysis of the economic, social environmental, and energy (ESEE) consequences.”

1.2 STUDY AREA

The study area for the ESEE decision report includes the entire Springwater Community Planning area. It is divided into three distinct areas that encompass three jurisdictions (City of Gresham, unincorporated Multnomah County (Springwater), and the incorporated portion of Clackamas County that is now the City of Damascus) for a total of 1,589 acres (See Figure 1.1).

The Springwater area has approximately 1,272 acres of unincorporated Multnomah County. It is part of the study because it is included in Gresham’s recent (December 2002) Gresham Urban Growth Boundary (UGB) expansion. This area includes approximately 120 acres of unincorporated Multnomah County that is located at the foot of the buttes west of Hogan Road. It has been included in the study because the area has never been planned, yet it is within Gresham’s UGB and its Urban Services Boundary.

A second area is the “Brickworks” site, which includes approximately 183 acres of land north of the Springwater area. It is currently zoned as Heavy Industrial (HI) and is within the City of Gresham. It is included in the Springwater Community Planning area in order to access the relationship of the site and its current HI designation to the proposed industrial lands in the Springwater Community. The current Springwater Plan District adoption process will not apply to the “brickyards” site, though it may be included at a future date through a separate legislative action.

A third area includes approximately 139 acres that are located in Clackamas County. That area is included in the Study because it was originally included as part of Gresham’s UGB expansion (December 2002) and is located in the same Johnson Creek watershed basin as the Multnomah County portion of Springwater. During the Springwater Community Planning process, however, the City of Damascus incorporated the Clackamas portion of Springwater. While the City of Gresham does not consider the City of Damascus as part of the Springwater Community Plan, the area has been kept in the study to help broaden the understanding of the environmental processes operating in the area and to contribute to the decision making process.

1.3 GOAL 5 PLANNING REQUIREMENTS

Prior to performing an ESEE analysis, Goal 5 requirements outline specific procedures for identifying and inventorying Goal 5 resources. Inventoried resources are subject to a significance determination based on the resources quality, location and quantity.

Only Goal 5 resources considered significant can be subject to protections through either a Safe Harbor process (OAR 660-023-0090) or a more complex ESEE analysis, which allows a jurisdiction greater flexibility in determining and implementing Goal 5 protections. The ESEE analysis is used to determine whether a jurisdiction will allow, limit or prohibit a use that may conflict with preservation of the significant natural resource.

To perform an ESEE analysis OAR 660-023-0040 requires the following steps to be addressed:

- Identify conflicting uses,
- Determine the impact area,
- Analyze the ESEE consequences, and
- Develop a program to achieve Goal 5.

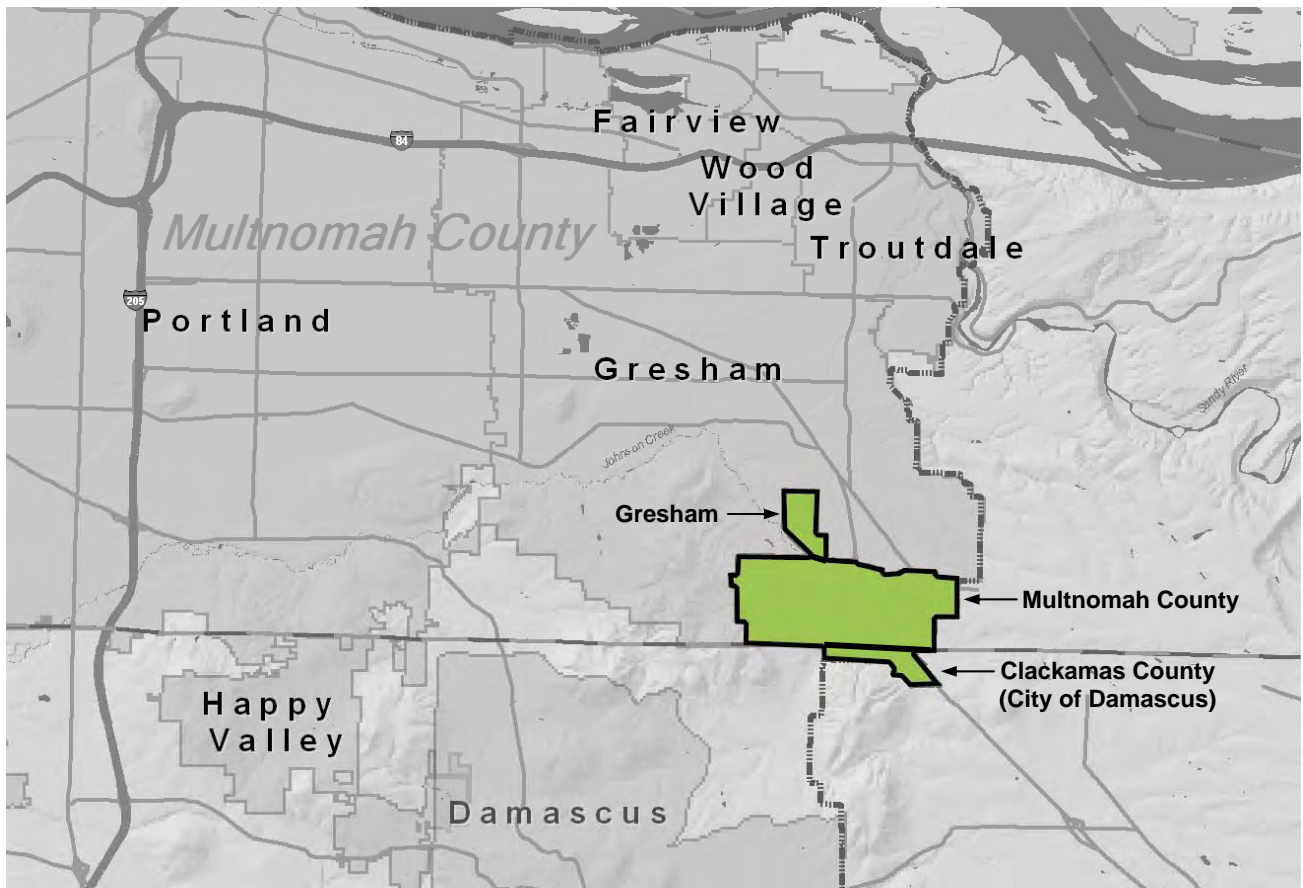


Figure 1.1 Springwater Community Plan Area Existing Jurisdictions

1.4 ESEE REPORT SECTIONS

Before performing an ESEE analysis, however, a local jurisdiction must conduct a thorough inventory and identification of all Goal 5 significant natural resource sites. Section 2.0 below briefly addresses what the City of Gresham has done to comply with the Goal 5 inventory and resource identification process. Section 3.0 discusses the elements that must be addressed in the ESEE report. The body of the report follows with discussions regarding Conflicting Uses (Section 4.0), Impact Area Identification (Section 5.0), ESEE Consequences (Section 6.0), and Goal 5 Program Development (Section 7.0).

2.0 NATURAL RESOURCE INVENTORY AND SIGNIFICANCE DETERMINATION

2.1 INTRODUCTION

This section briefly reviews the natural resource information that was collected for the study and assessment process to determine significant Goal 5 resources. For a comprehensive discussion of the Goal 5 inventory and significant resource determination process see the *Springwater Community Plan Natural Resource Protection and Restoration Plan* (April 2005).

2.2 RESOURCE INVENTORY

Prior to the ESEE analysis, a comprehensive inventory and examination of all Goal 5 natural resources was performed in 2003-04.

2.2.1 Data Collected

The following natural resource data were reviewed and collected in the Springwater Community Plan area.

- Existing fish distribution studies (ODFW, Portland BES, Multnomah County)
- Local Wetlands Inventory
- Streambank characterization
- Riparian characterization
- Tree grove characterization
- Wildlife and aquatic species habitat identification

2.3 SIGNIFICANCE DETERMINATION

2.3.1 Significance Criteria Guidelines

Goal 5 provides guidelines for determining the significance of the resource sites that are identified (OAR 660-023-0030). The determination of significance shall be based on the quality, quantity and location information; supplemental or superseding significance criteria outlined in other sections of OAR 660-023-0090 to 0230; and additional criteria that is adopted by the local government (as long as the criteria do not conflict with Goal 5). A list of resource sites that are determined to be significant based on these criteria are to be adopted by the jurisdiction's comprehensive plan or as a land use regulation. Those sites not considered significant shall not be regulated under Goal 5.

2.3.2 Sites Identified as Significant

The Springwater Community Plan adopted the Natural Resource Significance Class rating system. The system outlined the minimum criteria a natural resource area must meet to be considered significant. In addition, the rating system also ranked each significant resource area as to its relative value or contribution toward sustaining Goal 5 natural resources within the Springwater area. That is, some Goal 5 resources were considered to make a greater contribution toward protecting the natural resources than other Goal 5 resources.

Briefly, the Natural Resource Significance Class rating system incorporates criteria to determine significance as well as relative value for each Goal 5 resource area. The criteria are based on the quantity and quality of the Springwater natural resources, their spatial distribution, and their relative contribution toward sustaining and preserving the natural resources (see the *Springwater Community Plan Natural Resource and Hazards Inventory* (April 2005)).

The rating system uses a 1 (low) to 6 (high) ranking. Goal 5 resource sites that are isolated and only have a single natural resource, such as an isolated tree grove, are rated low or 1. Goal 5 resource sites that are located along the mainstem of Johnson Creek and have multiple natural resources, such as significant local wetlands, unique habitat (aquatic and terrestrial), and tree groves, are rated as highly significant or a 6. In between the 1 to 6 rating are resource sites that have natural resources that are considered of greater value than the isolated tree groves but less valuable than the Johnson Creek mainstem with tree groves, wetlands and unique habitat.

Figure 2.1 displays all the significant Goal 5 natural resource sites. All sites have been classified according to their contribution toward sustaining and preserving the natural resources in the Springwater Area.

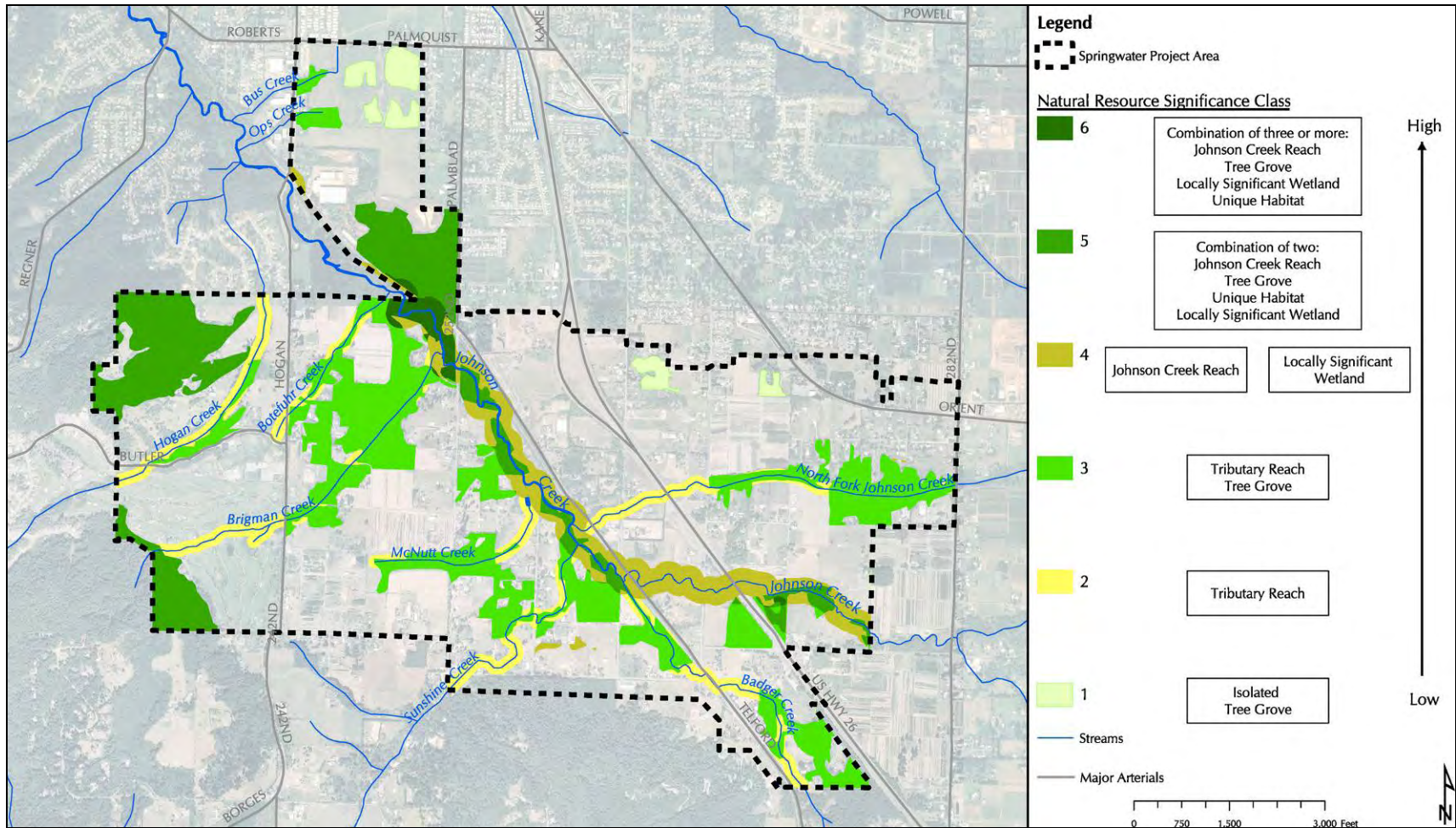


Figure 2.1 Springwater Community Natural Resource Inventory

3.0 ESEE ELEMENTS

This section provides an outline of the ESEE analysis. It addresses the components of the analysis and the specific information that must be provided in order for the City of Gresham to make an informed decision as to the level of Goal 5 protection that will be adopted in the Springwater Community Plan: The following are the range of protections to be considered for each resource site.

- Protect the resource (do not allow conflicting uses within the impact area)
- Partially protect the resource (limit conflicting uses within the impact area)
- Allow conflicting uses in the impact area.

The advantage of using the ESEE approach is its flexibility. The ESEE process makes it possible to adopt different Goal 5 protections for different Goal 5 resource sites. For example, Goal 5 protections could vary between the resource sites based on the Goal 5 Significance ratings. That is, those Goal 5 resources with a higher significance rating could have greater resource protections than those with a lower significance rating.

3.1 COMPONENTS OF THE ESEE ANALYSIS

There are a set of procedures that need to be performed to complete the ESEE analysis. Goal 5 (OAR 660-023-0040) outlines the three steps.

- Identify conflicting uses
- Determine the impact area
- Analyze the ESEE consequences

The results of these procedures are then used to determine the Goal 5 program to protect the resource sites. The Goal 5 resource program is adopted into the Springwater Community Plan and implemented through ordinance.

3.2 CONFLICTING USES

OAR 660-023-0040 (2) specifies that local governments must identify conflicting uses that “exist or could occur” with respect to the identified Goal 5 resources. The conflicting uses to be examined are those that the zone allows either outright or conditionally within the impact area and natural resource site.

The Springwater area has two sets of zones for which conflicting uses must be analyzed – existing zoning and proposed or future zoning districts. With respect to the existing zones, there are currently seven zoning districts located in the Springwater area. The zoning districts are administered by three jurisdictions – City of Gresham and Multnomah and Clackamas Counties.

With respect to future zones, there will be seven new zoning districts. Only one jurisdiction, the City of Gresham, will administer these new zones once the City annexes the entire Springwater Area within Multnomah County.

The purpose of the conflicting use analysis is to determine whether a particular zone may restrict or upset the environmental health of the resource site. The analysis can range from the identification of conflicting uses that lead to permanent natural resource loss to zones where

there are no conflicting uses. In the later instance where no conflicting use is identified, the zoning regulations are considered adequate to fully protect the resource site.

3.3 IMPACT AREA

The jurisdiction is required to identify the impact area for each resource site. The impact area according to OAR 660-023-0010 is that “geographic area within which conflicting uses could adversely affect a significant Goal 5 resource.”

The impact area defines the geographic limit of the ESEE analysis. Since ESEE analysis will not be performed outside of the impact area, the boundary must be wide enough to cover all conflicting uses that could affect the resource.

For the purposes of the Springwater ESEE analysis, the impact area will be the boundary surrounding the entire Springwater Community Planning Area. Figure 3.1 displays the impact area boundary for the ESEE analysis.

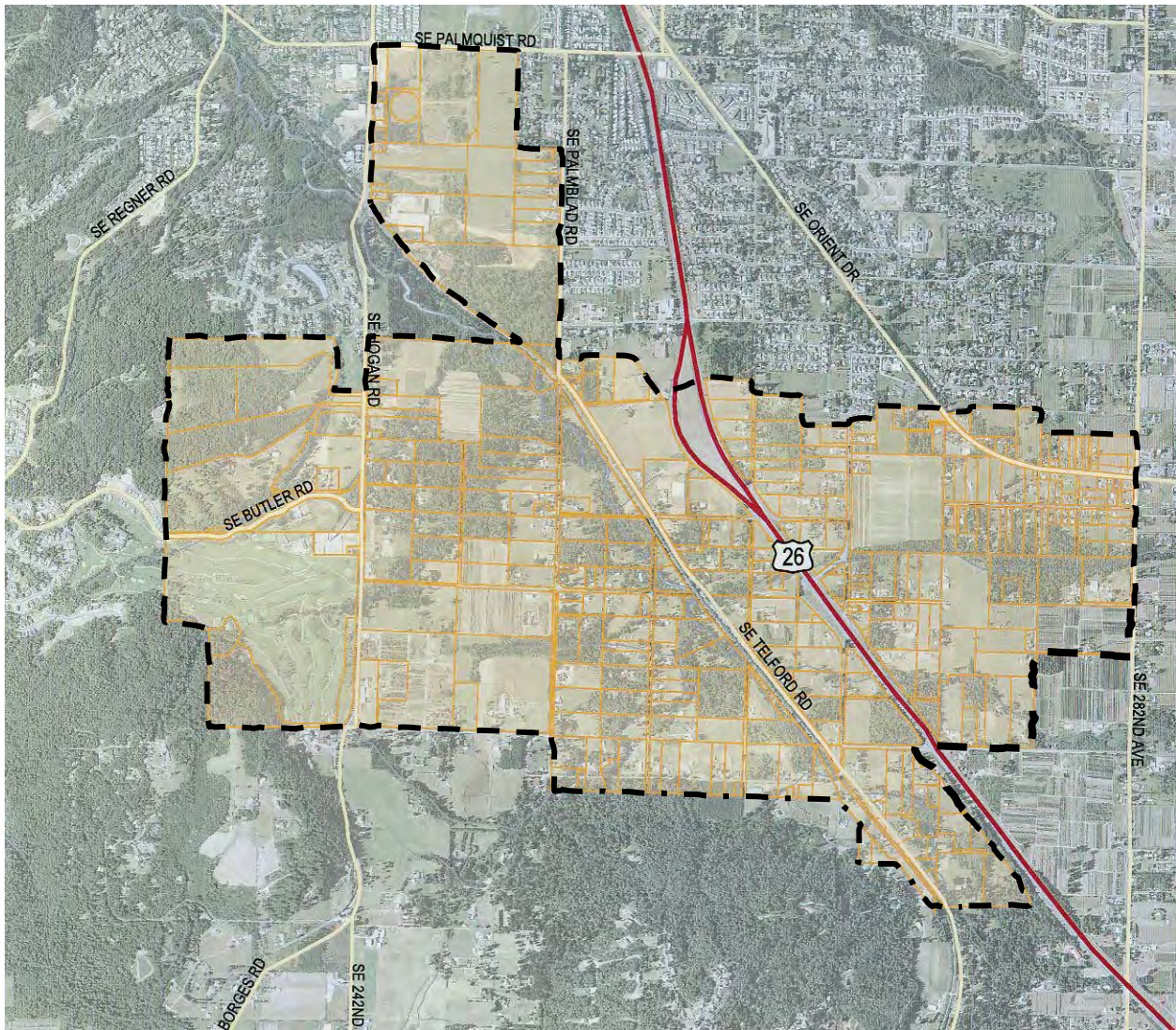


Figure 3.1 Springwater Community Impact Area Boundary

3.4 ESEE RANGE OF ALTERNATIVES AND CONSEQUENCES

Goal 5 requires that the ESEE analysis address three alternatives. For each of the alternatives the analysis must examine the potential ESEE consequences of allowing, limiting or prohibiting a conflicting use to the natural resource site and to the permitted use (OAR 660-023-0040 (4)).

- Alternative One – Conflicting Use is Allowed
 - Examine the impact to the resource site if conflicting use is allowed.
 - Examine the impact to the permitted use if the conflicting use is allowed.
- Alternative Two – Conflicting Use is Limited.
 - Examine the impact to the resource site if conflicting use is limited.
 - Examine the impact to the permitted use if the conflicting use is limited.
- Alternative Three – Conflicting use Prohibited.
 - Examine the impact to the resource site if conflicting use is prohibited.
 - Examine the impact to the permitted use if the conflicting use is prohibited.

For each alternative the analysis will examine the economic, social, environmental and energy consequences of the conflicting use. Where possible, the ESEE analysis will incorporate allowances outlined in OAR 660-023-0040(4). The allowances described in the OAR include performing a single analysis for similar resource sites subject to the same zoning and applying a matrix of commonly occurring conflicting uses to resource sites.

The ESEE consequences section will only address conflicting uses identified for future zoning in those areas that are currently under the jurisdiction of Multnomah and Clackamas Counties. This is due to the following reasons:

- Gresham does not now and will not in the future have jurisdiction over the Springwater area until it is annexed.
- Current zoning remains under the jurisdiction of Multnomah and Clackamas Counties (City of Damascus) and therefore it is their responsibility for implementing all land use and zoning activities.
- Proposed Springwater Plan District for the Springwater Community Plan will not be implemented until the territory is annexed into the City of Gresham.

3.5 PROGRAM DEVELOPMENT

The ESEE analysis will become the basis for the City of Gresham to develop the program to achieve Goal 5 requirements. The City is required to determine whether to allow, limit or prohibit conflicting uses on the resource sites. Different resource sites may have different determinations. Some sites may allow some or all conflicting uses, while others may prohibit or restrict the number of conflicting uses. All combinations are acceptable as long as it is supported by the ESEE analysis.

The City will need to make a determination once the ESEE analysis is complete as to the program it will implement. Program decisions must be based on the ESEE analysis. Regardless of whether conflicting uses should be prohibited or, conversely, conflicting uses be allowed, the ESEE analysis must demonstrate with sufficient evidence either decision.

4.0 CONFLICTING USES

4.1 INTRODUCTION

The following section identifies the conflicting land uses. The focus of the section is on types of changes to land that are allowed to occur within a zoning district and how those changes may conflict with Springwater's Goal 5 Resource sites.

Since OAR 660-023-0040(2) requires identification of conflicting uses "that exist, or could occur, with respect to significant Goal 5 resources", this section addresses zoning that currently exists and future zoning that has been proposed by the City after annexation of the Springwater Community Planning Area.

4.2 ZONING DESIGNATIONS, RESOURCE SITES AND ACREAGE CALCULATIONS

Within each of the zoning designations are activities and uses that are permitted outright and uses and activities that may be permitted should certain conditions be met. Permitted uses and conditional uses can potentially conflict with the environmental health of the resource sites. This section identifies the zoning districts and area of each zone that is located inside and outside of the significant resource sites.

4.2.1 Existing Zoning and Goal 5 Resource Sites

The following lists the three jurisdictions that are located in the Springwater Community Planning Area and the seven zoning districts for which they are responsible (See Figure 4.1).

- City of Gresham
 - Heavy Industrial District (HI)
- Multnomah County
 - Exclusive Farm Use District (EFU)
 - Multiple Use Agriculture District (MUA-20)
 - Rural Center (RC)
 - Urban Future (UF-20)
- Clackamas County
 - Rural Residential Farm/Forest 5 Acres District (RRFF-5)
 - Timber District (TBR)

Table 4.1 displays the area that each existing zone has within the Goal 5 resource sites that have been identified in the Springwater Community Planning Area.

Legend

- ARTERIAL
- CTY_LINE
- CO_LINE

ZONE

- EFU
- HI
- MUA20
- RC
- RRFF5
- TBR
- UF20

Resource Area

- 1 Low
- 2
- 3
- 4
- 5
- 6 High

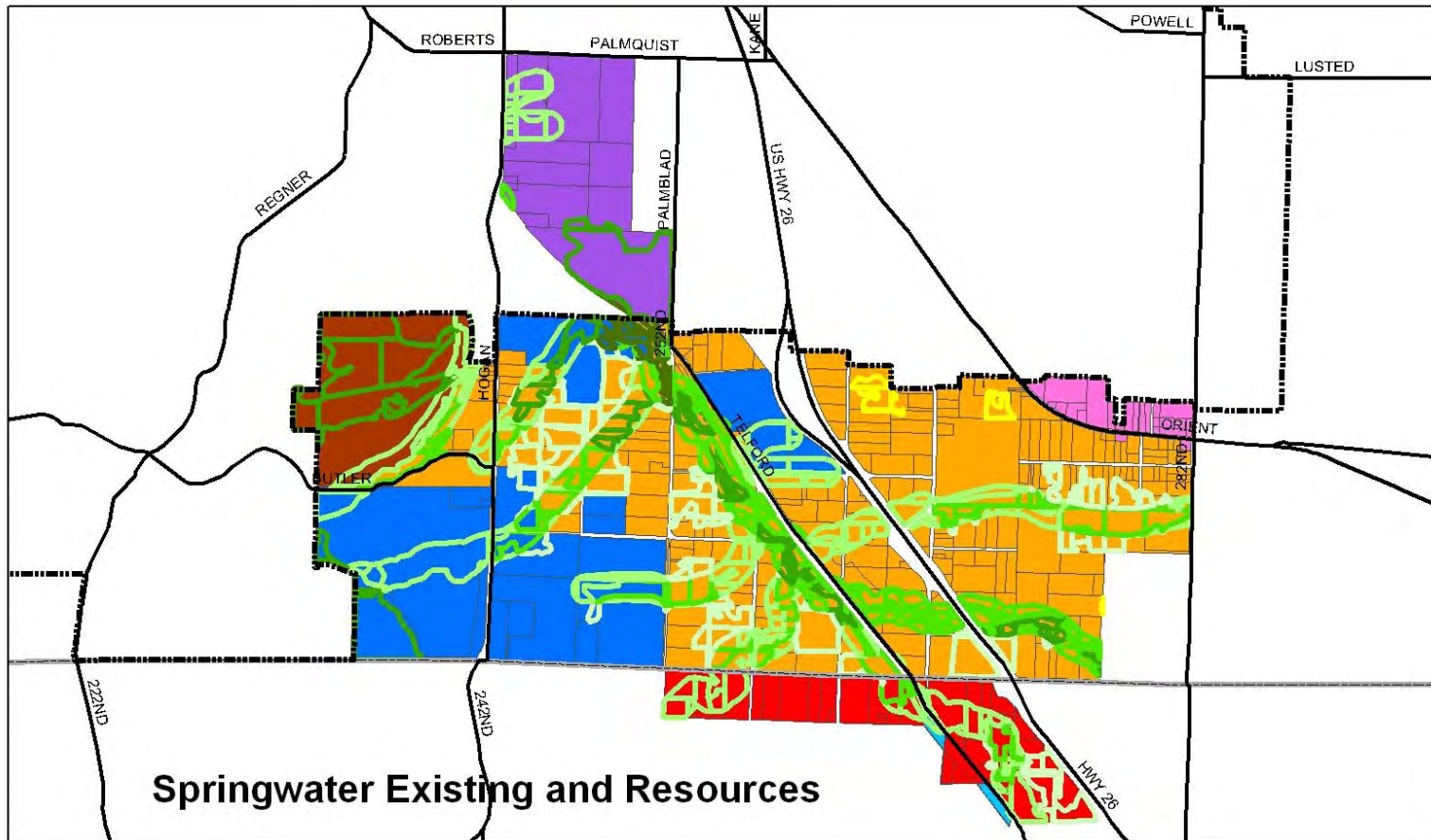


Figure 4.1 Current Zoning with Significant Resource Area Overlay

Table 4.1 Existing Zoning Districts and Goal 5 Resource Sites

Jurisdiction	Zone District	Total Acreage	Acreage Within Resource Sites	Acreage Outside Resource Sites
City of Gresham	HI	158.3	51.8	106.6
Subtotal		158.3	51.8	106.6
Multnomah County	EFU	352.6	102.7	249.9
	MUA-20	783.7	339.0	444.8
	RC	28.4	0.0	28.4
	UF-20	115.6	72.8	42.8
Subtotal		1,280.3	514.5	765.9
Clackamas County	RRFF-5	130.4	56.2	74.3
	TBR	4.0	0.8	3.9
Subtotal		134.4	57.0	78.2
Total Acreage		1,573.0	623.3	950.7

4.2.2 Proposed Zoning District and Goal 5 Resource Sites

The following lists the eight sub-districts (zones) that the City of Gresham is proposing to implement in the Springwater Community Planning Area once annexation is completed. Gresham will be responsible for implementing and enforcing all of these sub-districts (See Figure 4.2 for a display of proposed zoning sub-districts).

- City of Gresham
 - Very Low-Density Residential - Springwater (VLDR-SW)
 - Low Density Residential - Springwater (LDR-SW)
 - Townhouse Residential – Springwater (THR-SW)
 - Village Center – Springwater (VC-SW)
 - Neighborhood Commercial – (NC-SW)
 - Industrial – Springwater (IND-SW)
 - Research/Technology Industrial – Springwater (RTI-SW)¹
 - Environmentally Sensitive Resource Areas –Springwater (ESRA-SW)

¹ The district RTI-SW was formerly called OFF-SW, and is shown as such on Figure 4.1 and 4.2

Legend

- ARTERIAL
- CTY_LINE
- CO_LINE

NEW ZONE

- VLDR-SW
- LDR-SW
- THR-SW
- NC-SW
- VC-SW
- OFF-SW
- IND-SW
- HI

Resource Area

- 1 Low
- 2
- 3
- 4
- 5
- 6 High

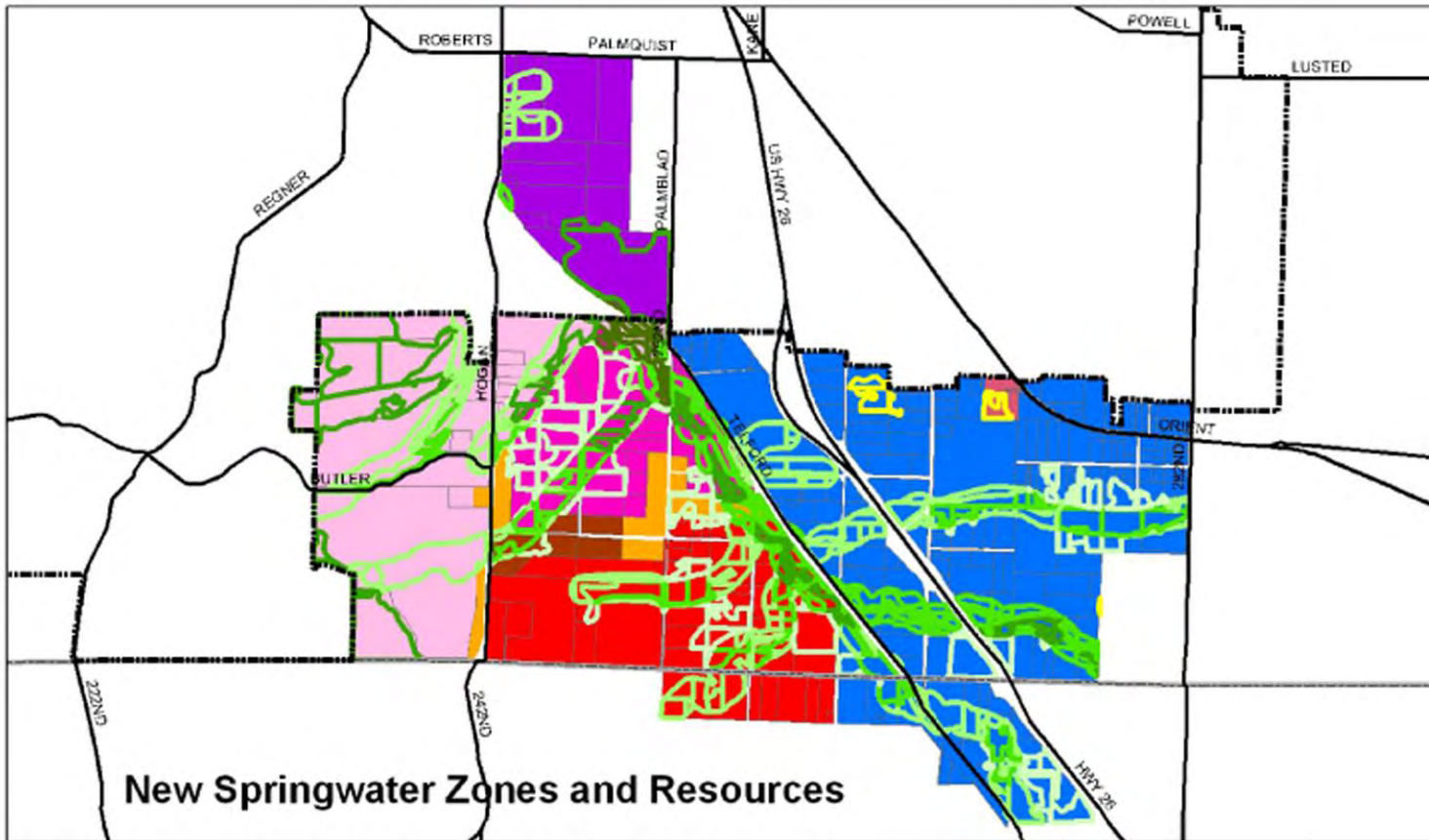


Figure 4.2 Proposed Zone Districts with Significant Natural Resource Area Overlay

Table 4.2 displays the area that each proposed zone has within the Goal 5 resource sites that have been identified in the Springwater Community Planning Area.

Table 4.2 Proposed Zoning and Environmentally Sensitive Resource Areas

Jurisdiction	Zone	Total Acreage	Acreage Within ESRA Boundary	Acreage Outside ESRA Boundary
City of Gresham (Springwater)*	VLDR-SW	202.2	0.0	202.2
	LDR-SW	99.4	0.0	99.4
	THR-SW	43.5	0.0	43.5
	VC-SW	23.3	0.0	23.3
	NC-SW	7.4	0.0	7.4
	RTI-SW	155.5	0.0	155.5
	IND-SW	462.2	0.0	462.2
	ESRA-SW (Springwater)	404.6	404.6	0.0
	SubTotal Acreage:	1,398.1	404.6	993.5
City of Gresham (Brickworks Area)	HI	106.5	0.0	106.5
	ESRA-SW	51.8	51.8	0.0
	SubTotal Acreage	158.3	51.8	106.5
Springwater & Brickworks Areas	Total Acreage:	1,556.4	456.4	1,100.0
City of Damascus (Clackamas Co.)	ESRA-SW	57.0	57.0	0.0
Total Acreage (Springwater, Brickworks, Damascus)		1,613.4	513.4	1,100.0

**Includes 115.6 acres of unincorporated Multnomah County that is located at the foot of the buttes west of Hogan Road.*

4.3 USES PERMITTED BY ZONING DISTRICTS

Both existing and proposed district codes outline land use activities that are allowed within the particular zoning district. This section describes the allowable uses beginning with a narrative of each district's purpose and a brief list of potential conflicting uses that may negatively impact the environmental health of the Goal 5 resource sites, followed by a table displaying uses that are allowed outright and those allowed conditionally for each district.

4.3.1 Uses Permitted by Existing Zoning Districts

4.3.1.1 Existing Gresham Zoning Districts

Heavy Industrial

The Heavy Industrial District is primarily intended for industrial uses which are generally not compatible with residential development because of their operational characteristics, which can include noise and air pollution. The district is also intended for uses that may require extensive outdoor areas to conduct business activities, or for product storage or display. These regulations are designed to permit the development of land within the district in a manner consistent with efficient industrial operations.

Existing conflicting uses within the zone: manufacturing, storage, assembly, warehousing and industrial uses.

4.3.1.2 Existing Multnomah County Zoning Districts

Exclusive Farm Use

The purposes of the Exclusive Farm Use District are to preserve and maintain agricultural lands for farm use consistent with existing and future needs for agricultural products, forests and open spaces. In addition, it is designed to conserve and protect scenic and wildlife resources, as well as maintain and improve the County's air quality, water and land resources, and to establish criteria and standards for farm uses and related and compatible uses, which are deemed appropriate. Land within this district shall be used exclusively for farm uses as provided in the Oregon Revised Statutes (ORS) Chapter 215 and OAR Chapter 660, Division 33 as interpreted by this Exclusive Farm Use code section.

Existing conflicting uses within the zone: agricultural, mining/extraction uses, as well as residential, business and utility uses.

Multiple Use Agriculture - 20

The purposes of the Multiple Use Agriculture District are to conserve those agricultural lands not suited to full-time commercial farming for diversified or part-time agriculture uses. In addition, the district is designed to encourage the use of non-agricultural lands for other non-agricultural purposes, such as forestry, outdoor recreation, open space, low density residential development as well as appropriate conditional uses when these uses are shown to be compatible with the natural resource base, the character of the area and the applicable County policies.

Existing conflicting uses within the zone: agricultural, mining/extraction uses, as well as residential and business uses.

Rural Center

The purposes of the Rural Center District are to provide standards and review procedures that will encourage concentrations of rural residential development, together with limited local and tourist commercial uses which satisfy area and regional needs. In addition, the district is designed to provide for local employment through light industrial uses consistent with rural character and to manage the location and extent of public service centers and limit the extension of public services.

Existing conflicting uses within the zone: residential uses, public services, commercial uses, manufacturing uses.

Urban Future - 20

The purposes of the Urban Future Districts are to implement the growth management policy of the community plans and to provide for appropriate interim uses, which are consistent with the resource base, community identity and unique natural features pending the reclassification of specific areas for urban uses. To accomplish this purpose the district encourages retaining land suitable for future urbanization in large parcels in consideration of the levels of public services available, the characteristics of current uses, the needs for larger sites for planned future uses and for maximum flexibility in the preparation of future development plans. The district also is designed to provide for public review of other use proposals in order to assure compatibility with applicable Multnomah County policies.

Existing conflicting uses within the zone: agricultural, farm, and forest uses; mining and extraction uses; kennels; residential uses; community services.

4.3.1.3 Existing Clackamas County Zoning Districts

Rural Residential Farm/Forest - 5

The purposes of this district are to provide areas for rural living that is compatible with the continuation of farm and forest uses. The zone is intended to conserve the natural scenic beauty of Clackamas County, and to protect the watersheds of existing or potential major sources of municipal or domestic water supply from encroachment by uses that would affect the quantity or quality of water produced, protect wildlife habitats, and other such uses associated with the forest. Finally, the zone is designed to avoid the potential hazards of damage from fire, pollution, and conflict caused by urbanization.

Existing conflicting uses within the zone: rural residential and agriculture uses.

Timber District

The purposes of this zone are to conserve forest lands and protect the state's forest economy by making possible economically efficient forest practices that assure the continuous growing and harvesting of timber as the leading use on forest land. It is also designed to conserve, protect and enhance watersheds, wildlife and fisheries resources, agriculture, and recreational opportunities that are compatible with the primary intent of the zone. By doing so the district will help to minimize wildfire hazards and risks.

Existing conflicting uses within the zone: mining/extraction uses, agriculture and forest practice uses, parks and campground uses.

Table 4.3 Summary of Uses Permitted by Existing Zone Districts/Jurisdictions

Zone	Uses Permitted Outright or Prescribed Conditions	Uses Permitted Conditionally	Minimum Lot Size / Allowed Density
Gresham			
HI	<ul style="list-style-type: none"> • Manufacturing, assembly and distribution activities • Storage and warehousing uses • Research and Development activities • Repair, finishing, testing activities • Commercial services • Retail sales activities • Wholesale activities • Industrial services • Laboratory activities 	<ul style="list-style-type: none"> • Community services 	20,000 sq. ft., building coverage may cover up to 75% of the lot.
Multnomah County			
EFU	<ul style="list-style-type: none"> • Farm and forest product harvesting uses • Farm use buildings, accessory structures • New dwellings, mobile/modular dwellings (not on high value farmland) • Geothermal and mineral Exploration/ production • Roads (detours, passing lanes, reconstruction) • Community service uses (schools, churches, cemeteries) • Emergency disaster response • Utility poles, towers 	<ul style="list-style-type: none"> • Commercial activities related to farm use • Mining and Geothermal processing operations • Parks (private and public) • Home occupations • Forest products processing (temporary) • Dog kennels • Aquatic species cultivation and harvesting • Dwellings (allowed on high value farmland) • Public road improvements related to rest stops, maintenance yards, etc. 	80 acres (exceptions can allow smaller lot sizes to a minimum of 19 acres); allowed density for dwelling unit dependent on factors such as soil class, but must be on a lot less than 21 acres.
MUA-20	<ul style="list-style-type: none"> • Farm and forest product uses including sale of farm and forest products • Residential dwelling construction • Conservation/ protection of water, soil, open space, forest and wildlife resources • Placement/ replacement of public safety structures 	<ul style="list-style-type: none"> • Mining and geothermal operations • Agricultural and forest products processing • Livestock and fowl raising • Dog kennel operations • Planned residential developments • Rural commercial uses (e.g., repair/maintenance shops, retail, etc.) • Tourist commercial uses 	1 dwelling unit/20 acres

Table 4.3 Summary of Uses Permitted by Existing Zone Districts/Jurisdictions

Zone	Uses Permitted Outright or Prescribed Conditions	Uses Permitted Conditionally	Minimum Lot Size / Allowed Density
RC	<ul style="list-style-type: none"> • Residential dwellings • Farm related commercial uses • Placement/ replacement of public safety structures 	<ul style="list-style-type: none"> • Community service uses • Rural commercial services • Tourist commercial services • Light manufacturing uses • Commercial agricultural processing uses • Home occupations • Large fills • Family day care uses 	1 acre (some exceptions that can reduce the lot size); dwelling unit/acre
UF-20	<ul style="list-style-type: none"> • Residential dwellings • Agricultural and animal husbandry activities • Forest product activities • Home occupation activities • Conservation activities (e.g., water, soil, open space, forest and wildlife resources) • Emergency response and public safety activities 	<ul style="list-style-type: none"> • Community services • Agricultural product processing activities • Animal husbandry activities • Mining and processing of geothermal resource activities • Dog kennel activities • Log storage and sorting activities 	1 dwelling unit/ 20 acres
Clackamas County			
RRFF-5	<ul style="list-style-type: none"> • Rural residential • Farming and forest operations • Resource conservation uses • Non-profit recreation uses • Utilities and wireless telecommunication facilities • Accessory structures and signs • Home occupations and family daycare • Produce stand 	<ul style="list-style-type: none"> • Public facilities • Community service uses (churches, schools, day care center) • Aircraft land uses • Sanitary landfills • Commercial recreational uses • Mining and geothermal • Commercial activities associated with timber and farm uses 	1 dwelling unit/5 acres

Table 4.3 Summary of Uses Permitted by Existing Zone Districts/Jurisdictions

Zone	Uses Permitted Outright or Prescribed Conditions	Uses Permitted Conditionally	Minimum Lot Size / Allowed Density
TBR	<ul style="list-style-type: none"> • Farm and forest operations/ practices • Conservation activities (e.g., wildlife, fisheries, water quality, soil, air) • Mining and gravel extraction uses • Residential development • Road maintenance • Utility installation/ service (electrical, wireless communication, gas, water supply) activities • Irrigation activities • Home occupation uses 	<ul style="list-style-type: none"> • Forest products uses • Park and campground uses • Mining, exploration, processing subsurface resource activities • Solid waste disposal site • Fire station and protection activities • Utility activities (e.g., wireless communication, electric transmission, power generation, etc.) activities. • Water supply impoundment activities • Cemeteries • Asphalt production activities • Aircraft and navigation aid activities • Public road improvement activities • Composting activities 	Varies subject to parcel size and conditions: 1 dwelling unit/200 acres; 1 dwelling unit/160 acres, and up to 5 dwelling units/160 acres

4.3.2 Uses Permitted by Proposed Zoning Districts

4.3.2.1 Proposed Springwater Zoning Districts

Very Low Density Residential - SW

The district purpose is primarily intended for single-family detached dwelling development. Lot sizes are larger than the other proposed residential districts to create more open space and lower density residential areas. The district covers the largest land area of the three residential districts and is located on the western portion of the Springwater Community area. The district is designed for the most constrained lands where low-density development will result in less disruption of the landscape. In addition, the areas on the small volcanic butte with views of Mt. Hood are included, offering the opportunities for larger lots with scenic views.

Potential conflicting uses within the zone: residential uses and community services.

Low Density Residential - SW

The purpose of this district is intended primarily for residential development. The district provides a range of residential options with greater urban density than the Very Low Density Residential - SW District. It consists primarily of detached and attached dwellings, but attached housing must be on its own lot. The district covers the next largest land area of the three residential districts and is located west of Telford Road, generally north of McNutt and east of Hogan Roads.

Potential conflicting uses within the zone: residential uses, community services.

Townhouse Residential - SW

Like all the residential districts proposed for the Springwater Community this district is primarily intended for residential development. This district is designed to allow for the greatest residential density of the three districts purposed in the Springwater Community area and is located in three smaller areas all located west of Telford Road and adjacent to the Village Center and Industrial districts and the Very Low Density Residential and Low Density Residential districts. It consists of detached and attached dwellings like Low Density Residential district but double the dwelling unit density. In addition to attached single-family homes, it is intended to allow for detached single-family homes on small lots, also called patio, cottage or green court homes. Like the Low Density Residential zone, each home must be on its own taxlot, and duplexes are not allowed

Potential conflicting uses within the zone: residential uses, live-work uses, community services.

Village Center - SW

The Village Center - SW sub-district (VC-SW) is intended to provide retail and services to the Springwater Community employees and residents. The district will be located in a rectangular band of land west of 242nd Street and east of Hogan Avenue. It will contain a mix of retail, office, and civic uses, and housing opportunities in a pedestrian oriented area. The Village Center shall be the focus of retail, civic, and office related uses, and services that serve the daily needs of the local neighborhood and the adjacent employment areas. It shall be served by a multi-modal transportation system with good access by vehicular, pedestrian, bicycle, and when appropriate, transit traffic.

Potential conflicting uses within the zone: business, professional and retail trade/services, residential uses, utility services, education and public services (community services).

Research/Technology Industrial - SW

The Research/Technology Industrial sub-district (RTI-SW) is primarily intended to provide industrial uses in a business/office park setting. Primary uses shall include knowledge-based industries (graphic communications, creative services, etc.), research and development facilities and corporate headquarters. Emphasis is placed on business suited to a high environmental quality setting. The design will create pedestrian-friendly areas and utilize cost effective green development practices.

The proposed location of this district is along the southern portion of Springwater west of Telford Road, extending into Clackamas County (note that the RTI-SW shown in the Clackamas County area is only for analysis purposes as the land is in the City of Damascus). This area is one of more varied topography, and buildings with smaller footprints are expected to locate here. Also, the research/technology uses do not require that the entire site be at the same level, as is frequently the case with other industrial uses. No residential uses are permitted. This sub-district is expected to interact with the Village Center sub-district to provide retail and entertainment needs for persons employed in the area.

Potential conflicting uses within the zone: business, professional and retail trade/services, utilities, education and public services (community services).

Industrial - SW

The Industrial (I-SW) sub-district is intended to provide industrial land for the City and the east metro area. It is the largest district and is located generally east of Telford Road, except for a small area west of Telford Road in Clackamas County and a triangular shaped portion extending into Multnomah County bounded on the west by 267th Street and on the east by Telford Road. Note that the I-SW shown in the Clackamas County area is for analysis purposes only as the land is within the City of Damascus.

It will be predominantly a mix of manufacturing and information industries, with a high degree of use diversity. It is intended to have an aesthetic appearance of a business park with a high degree of sustainable design practices, reflecting the water quality and quantity concerns of the area as well as the sensitive streams that cross the district.

Potential conflicting uses within the zone: business, medical; and professional services; manufacturing, construction and warehousing activities; public, educational and community services.

Neighborhood Commercial –SW Sub-district

The purpose of the Neighborhood Commercial (NC-SW) sub-district is to provide for small- to medium-sized shopping and service facilities and limited office uses adjacent to residential neighborhoods. The district is intended to meet the shopping and service needs of the immediate neighborhood and to have minimal negative impacts on surrounding residential uses. It is located adjacent to the I-SW sub-district at the north edge of the Springwater Planning area with frontage on the southwest side of Orient Drive.

Potential conflicting uses within the zone: commercial and business uses, community services uses.

Heavy Industrial

The Heavy Industrial District is primarily intended for industrial uses which are generally not compatible with residential development because of their operational characteristics, which can include noise and air pollution. This sub-district will continue to be located in the same area as currently located. The district is also intended for uses, which may require extensive outdoor areas to conduct business activities or for product storage or display. These regulations are designed to permit the development of land within the district in a manner consistent with efficient industrial operations.

Existing conflicting uses within the zone: manufacturing, storage, assembly, warehousing and industrial uses.

Environmentally Sensitive Resource Areas (ESRA-SW)

The Environmentally Sensitive Resource Areas (ESRA-SW) sub-district provides a framework for protection of Metro Title 13 (Nature in the Neighborhoods) lands and Statewide Planning Goal 5 resources within the Springwater Plan District. The ESRA-SW is located on Goal 5 significant resource sites. It implements the Springwater Natural Resource Goals and Policies and is intended to resolve conflicts between development and conservation of streams corridors, wetlands, floodplains, and forests. The sub-district contributes to the following community objectives:

- Protect and restore streams and riparian areas for their ecologic functions and as an open space amenity for the community.
- Protect floodplains and wetlands, and restore them for improved hydrology, flood protection, aquifer recharge, and habitat functions.
- Protect upland habitats, and enhance connections between upland and riparian habitats and between Springwater habitats and nearby habitats.
- Maintain and enhance water quality and control erosion and sedimentation through the revegetation of disturbed sites and by placing limits on construction, impervious surfaces, and pollutant discharges.
- Conserve scenic, recreational, and educational values of significant natural resources.

Potential conflicting uses within the zone: unlike all other sub-district designations, the ESRA-SW does not have conflicting uses.

Table 4.4 Summary of Uses Permitted by Proposed Zone/Jurisdiction

Zone	Uses Permitted Outright or Prescribed Conditions	Uses Permitted Conditionally	Minimum Lot Size/ Allowed Density
City Gresham			
VLDR-SW	<ul style="list-style-type: none"> • Residential dwelling units • Accessory structures and dwellings • Home occupations • Temporary uses • Residential facility and home 	<ul style="list-style-type: none"> • Community services 	10,000 sq. ft.; 2.9-3.6 dwelling units/net acre
LDR-SW	<ul style="list-style-type: none"> • Residential dwelling units • Accessory structures and dwellings • Home occupations • Temporary uses • Residential facility and home 	<ul style="list-style-type: none"> • Community services 	5,000 sq. ft.; 5.8-7.3 dwelling units/net acre
THR-SW	<ul style="list-style-type: none"> • Residential dwelling units • Accessory structures • Home occupations • Temporary uses • Residential facility • Live-Work units 	<ul style="list-style-type: none"> • Community services 	Attached dwelling = 2,200 sq. ft.; Detached = 3,000 sq. ft.; 12.5-16 dwelling units/net acre
VC-SW	<ul style="list-style-type: none"> • Mixed use residential (office/residential with residential on upper floors) activities • Temporary uses • Home occupations • Offices • Clinic • Retail trade/services • Business services • Live-work residential uses (i.e., limited office, retail services, and/or business services with residential living space) 	<ul style="list-style-type: none"> • Community services 	None

Table 4.4 Summary of Uses Permitted by Proposed Zone/Jurisdiction

Zone	Uses Permitted Outright or Prescribed Conditions	Uses Permitted Conditionally	Minimum Lot Size/ Allowed Density
RTI-SW	<ul style="list-style-type: none"> • Finance and insurance services • Real estate and rental and leasing • Professional, Scientific, and technical services • Management of companies and enterprises • Health care and social assistance • Arts, entertainment, and recreation • Accommodation and food services • Public Administration • Retail trade • Transportation and warehousing • Information uses • Educational Services 	<ul style="list-style-type: none"> • Community service (electric power and natural gas distribution, and water, sewage and other systems) 	5,000 square feet
IND-SW	<ul style="list-style-type: none"> • Construction • Management of companies and enterprises • Health care and social assistance • Arts, entertainment, and recreation • Accommodation and food services • Public Administration • Manufacturing • Wholesale trade • Retail trade • Transportation and warehousing • Information uses • Finance and insurance • Real estate and rental and leasing • Professional, Scientific, and technical services • Educational Services 	<ul style="list-style-type: none"> • Community services (electric power and natural gas distribution, and water, sewage and other systems) 	10,000 square feet

Table 4.4 Summary of Uses Permitted by Proposed Zone/Jurisdiction

Zone	Uses Permitted Outright or Prescribed Conditions	Uses Permitted Conditionally	Minimum Lot Size/ Allowed Density
ESRA-SW	<ul style="list-style-type: none"> • Stream, wetland, riparian, upland restoration and enhancement • Farming Practices as defined under ORS 215.203 (Exclusive Farm Use), excluding buildings and structures • Utility service poles that meet site installation requirements • Boundary and topographic surveys that meet survey requirements • Soil testing that meet testing requirements • Trails that meet siting, design, and construction specifications • Land divisions with tentative plans and approved building permit/construction plans that meet siting, design, and construction specifications (i.e., parcel's building sites, utilities, streets/driveways/parking outside ESRA), ESRA-SW portions of lot protected by conservation easement or entire lot or tract created and dedicated for unimproved open space • Routine repair and maintenance of existing structures, roadways, driveways and utilities • Replacement, additions, alterations and rehabilitation of existing structures, roadways, utilities, etc. where there is no increase in impervious surface • Measures mandated by city of Gresham to remove or abate nuisances or hazardous conditions • Planting native vegetation, removal non-native vegetation that meets City of Gresham requirements 	<ul style="list-style-type: none"> • Existing structure alteration that does not violate uses exempted by uses allowed outright • Vacant lot development with less than 3,500 sq. ft. buildable area outside the ESRA-SW portion of the property. • Land division creating a new lot for an existing residence currently within the ESRA-SW • Trails/pedestrian paths that are not exempted under the uses permitted outright • New roadways, bridges/creek crossings, utilities or alterations to such facilities that are not already exempted by uses permitted outright 	Varies based on significant resource location and classification

Table 4.4 Summary of Uses Permitted by Proposed Zone/Jurisdiction

Zone	Uses Permitted Outright or Prescribed Conditions	Uses Permitted Conditionally	Minimum Lot Size/ Allowed Density
NC-SW	<ul style="list-style-type: none"> • Eating and drinking establishments • Insurance agencies, real estate and other offices • Grocery stores • Personal service establishments • Retail businesses • Community services • Temporary uses • Home occupations (only within pre-existing homes) • Temporary health hardship dwellings (only in conjunction with pre-existing single-family homes) 		10,000 square feet
HI	<ul style="list-style-type: none"> • Manufacturing, assembly and distribution activities • Storage and warehousing uses • Research and Development activities • Repair, finishing, testing activities • Commercial services • Retail sales activities • Wholesale activities • Industrial services 	<ul style="list-style-type: none"> • Laboratory activities • Community services • Home occupations • Temporary health hardship dwellings 	20,000 sq. ft., building coverage may cover up to 75% of the lot.

4.4 CONFLICTING USE ENVIRONMENTAL IMPACTS

This section describes potential adverse environmental consequences of allowing development adjacent to and within the significant resource sites. The section is divided between the existing zone districts and the proposed zone districts. Conflicting uses have also been grouped into general use categories in order to minimize repetition for each zone district.

4.4.1 Existing Zone District Conflicting Use Environmental Impacts

4.4.1.1 Agricultural, Farm Uses

Agricultural and farm uses are allowed in four of the seven existing zoning districts. These activities include crop growing, animal husbandry, agricultural product processing and associated commercial activities to support the farming uses.

While agricultural activities can have a positive impact on significant resources (e.g., wildlife food source, run-off filtering, habitat cover and connectivity), there are activities associated with agricultural and farming practices that can have detrimental impacts related not only to activities concentrated in the area of the farm buildings where conflicting impacts may be similar to residential development (see below for further discussion) but, more importantly, on the larger land areas where the farming practices occur.

Agricultural uses often require plowing fields and exposing bare soil causing erosion that degrades water quality, which can adversely impact aquatic habitat. The conversion of forests to farmland replaces diverse, complex forest plant communities with a few, cultivated, non-native species. Vegetation acts as a filter, cleansing runoff before it reaches streams or wetlands. Tilling of the soil and removal of vegetation for agricultural uses reduces these water quality benefits. Further, conversion of forests to farmland can reduce tree cover canopy leaving fragmented forest patches instead of corridors on which wildlife rely for travel, foraging and protection (see forest uses below).

Agriculture typically (but not always) involves the use of pesticides, herbicides, and fertilizers. These chemicals can contaminate surface and groundwater areas and harm fish and wildlife.

Animal husbandry (livestock) activities can degrade stream water quality as well as accelerate erosion in riparian areas. Concentrated animal waste and unimpeded access to streams and water bodies can result in contaminated run-off to streams, additional channel down-cutting along stream banks, loss or degradation of riparian vegetation and wetland areas and detrimental impacts to aquatic habitat. Presence of livestock can also degrade wildlife habitats that depend on riparian cover and the natural function and value of the riparian, stream, wetland interface for survival.

Agriculture may draw irrigation water from wells or directly from streams. Extensive use of groundwater can result in draw down of the water table, which in turn can reduce groundwater discharge to streams and degrade fish and wildlife habitats. Use of water from streams directly reduces flow. These surface water reductions are most common during the summer growing season when natural stream flows are low and the potential adverse impacts to fish are the greatest.

Commercial and other activities associated with agriculture uses generally have detrimental effects similar to residential uses. That is, these activities share with residential uses such as buildings, structures, and parking lots, which may increase the detrimental impacts of impervious surfaces (e.g., reduced infiltration and higher runoff, lower groundwater levels, interference with the transfer of air and gases from the soil). Commercial uses may also involve increased risk of pollution from oil, gasoline, and other vehicle-related contamination.

4.4.1.2 Forestry Facilities

Forestry and associated activities, like agricultural and farming practices is one of the most commonly allowed activities in all the existing zone districts. Forest activities are allowed in four of the seven zone districts, although the one district that is dedicated exclusively to promoting forest growing and harvesting practices, Clackamas County's Timber District, occupies only a tiny four acre portion of the Springwater area (less than 1% of the entire area). While there are still significant tree groves located in the Springwater Community, the area has a history of timber harvests that has resulted in the clearing of most of the Springwater area for agricultural activities. Even existing tree groves are third and even fourth generation stands.

Forestry uses can have major impacts on watershed health. Timber harvest and particularly clear-cutting increases the rate and volume of runoff to streams as well as stream velocity. Such runoff to streams can promote sediment transport, soil loss and erosion, channel down-cutting, bank undercutting and failure, and increased risk of landslides and floods, which can also lead to riparian vegetation and wetland loss.

Removal of vegetation eliminates habitat for native wildlife. Clearing also removes important structural features of the forest and creates fragmented patches. Forest fragmentation increases the isolation of one habitat area from another. As the range of habitat for indigenous wildlife becomes restricted and isolated, opportunities for recruitment from other areas are limited and wildlife populations become vulnerable to disease, predation, and local extinction.

The forestry impacts on watershed hydrology are not generally permanent since harvested areas are replanted with trees or allowed to naturally recover, although recovery is slow. Impacts to wildlife habitat can be permanent when diverse native forest is replaced with intensively managed single-species tree farming. Herbicides and fertilizers may be used and the tree stands grow to be more dense and even-aged than natural forest conditions with little or no understory structure. Such commercial forests have limited value for wildlife.

Forest operations and commercial operations can have similar impacts as the previously described farm operations. Staging areas, log sorting and storage areas, and accessory building/structures as well as parking areas can increase run-off and erosion that is associated with impervious surfaces. Traffic and motorized equipment may increase risk of pollution from oil, gasoline, and other vehicle-related contamination.

4.4.1.3 Mining and Extraction Facilities

Mining is a conditional use in five of the seven zoning districts. Mining generally has the most severe environmental impacts of all uses allowed. All resources are normally eliminated. Once a mining operation is closed, some restoration of soil, vegetation and other resources may be possible but resources will remain permanently degraded.

Springwater has no active gravel extraction or mining activities. From a practical standpoint there will not likely be such activities that would meet the conditional requirements for such activities.

4.4.1.4 Residential Dwelling Facilities

Residential dwellings are permitted in four of the seven existing zone districts. Lot sizes are generally low density, ranging from the greatest density of one dwelling unit per acre to the lowest density of one dwelling unit per 200 acres. Most zoning districts, however, do have some exceptions that could allow slightly greater dwelling densities.

Residential Dwelling Facilities typically allow the construction of accessory structures and features such as garages, storage sheds and other buildings, and driveways, parking areas, lawns and managed landscaped areas. In addition, septic systems and drain fields, and related development necessary to support a residential structure are allowed.

There are both short-term, construction-related impacts, and long-run or permanent environmental conflicts. Short-run conflicts occur when preparing land for and constructing the dwelling or accessory structures. This short-term period may also happen with dwelling restoration, remodeling or rehabilitation of an existing structure.

Short-run conflicts may not have long lasting impacts, but can temporarily create environmental problems that may take time to restore natural functions. These temporary conflicts include any land clearing or vegetation removal related to staging areas, storage of materials, parking of equipment, etc. Equipment clean-up (concrete wash-down, paint clean-up, etc.) in construction areas can also contribute to contamination. These activities can cause erosion, increased run-

off, and soil contamination. Impacts to streams may include water quality degradation and increased sedimentation, which can affect aquatic resources. In addition, construction noise can have a detrimental impact on wildlife, especially during nesting periods.

Building a dwelling and accessory structure commonly includes excavation and removal of vegetation, or “ground disturbing activities.” Excavation and removal of vegetative cover eliminates habitat for native wildlife and increases the likelihood of erosion. Lost habitat includes feeding, nesting, perching and roosting places for birds, and loss of feeding, nesting and refuge areas for mammals, reptiles, amphibians, fish, and insects. Clearing also removes important structural habitat elements of the forest such as multiple layered canopies, snags and downed logs, and large trees. These habitat components may be removed and replaced with lawns and ornamental, non-native vegetation. Impervious surfaces such as buildings, long driveways, and large vehicle parking and maneuvering areas also may permanently replace native habitats.

Landscape trees, shrubs, and groundcover plants often include invasive, non-native species that escape into natural areas and compete aggressively with natives. For example, English ivy and holly are commonly used in residential landscapes and have escaped into nearby natural habitats in some parts of the valley.

Forest fragmentation caused by the clearing of vegetation for residential uses increases the isolation of one habitat area from another, and can result in similar environmental conflicts identified in the previous forest section. The lack of habitat connectivity (except along stream corridors) limits wildlife migration opportunities. Roads (and roadway traffic) and fences can form barriers to wildlife migration. As the range of habitat for indigenous wildlife becomes restricted and isolated, opportunities for recruitment from other areas are limited and wildlife populations become vulnerable to disease, predation and local extinction.

The construction of homes, outbuildings, roads and other impervious surface facilities, and the replacement of native vegetation with lawns and landscaped areas has adverse consequences on watershed function. Increased impervious surface and vegetation loss leads to increased storm runoff and peak flows in streams, resulting in erosion, bank failure, flooding, and significant loss of fish and aquatic habitat function.

The increase in impervious surface and storm runoff also leads to reduced groundwater recharge and altered volumes of water in wetlands and streams contributed by groundwater. This can alter an area's hydrology by lowering surface water levels or groundwater tables and removing a local source of water essential to the survival of fish, amphibians and aquatic organisms as well as terrestrial animals. Clearing and grading activities can reduce the capacity of soil to support vegetation and absorb groundwater by reducing soil fertility, microorganisms, and damaging soil structure.

Pollution associated with residential development such as oil, gasoline, tar, antifreeze, and other contaminants from vehicles, heating and cooling systems, and roofs degrade habitat and water quality. Heated runoff from roads and vehicle maneuvering areas impacts water quality in streams by raising temperatures and stressing local fish runs. Pesticides, herbicides, and fertilizers used on rural residential landscaping and fields can pollute ground and surface waters and degrade habitat.

4.4.1.5 Heavy Industrial Facilities

Large scale and intensive industrial uses are allowed in one of the seven zone districts (City of Gresham Heavy Industrial Zone). The scale of activities and the facilities necessary to support industrial uses can significantly conflict with resource sites. Activities such as manufacturing, assembly, storage and warehousing require large structures and impervious surfaces, as well as transportation networks needed to move materials and goods into and out of the area. The City recognizes that these activities are intensive and extensive, and consequently allow building coverage to cover up to 75% of a 20,000 square foot lot.

To provide these facilities large land areas must be cleared, soil excavated to level grade variation, and vegetation removed to build structures and pave outdoor areas. Roads must be constructed to handle heavy vehicle traffic. The result is increased stormwater run-off volumes that can cause erosion and transport sediment as well as contaminants (e.g., petroleum, manufacturing chemical spills, etc.) to streams and wetlands.

This can have long-term consequences on riparian areas, wetlands and streams and the terrestrial and aquatic habitat that it supports. Unchecked, the long-term impacts can be increased flood events, increased stream water temperature and sediment that can cover spawning gravels. Overall, water quality would be degraded and the functions and value that the resource site provides would be reduced.

4.4.1.6 Park and Recreation Facilities

Two zone districts allow development of park and recreation activities. Park and recreation uses typically focus on public and private parks, recreational grounds, hiking and horse trails, and other similar uses. While most such lands tend to have few structures and facilities and therefore minimal conflict with the environmental resources, the Timber District allows campgrounds as a conditional use. Such uses can conflict with resource sites because of the facilities and features necessary to support camping activities.

Parks and recreation construction and maintenance practices can cause erosion and damage vegetation and habitat. Removal of vegetation, creation of impervious surfaces such as roads, parking lots, and construction of buildings are activities associated with development of parks. These activities normally require less impervious surface coverage than residential uses yet, though they may have fewer environmental impacts, they can still increase run-off and erosion.

Recreational trails can have very few impacts on natural resources depending on their location, design, and materials used for construction. Trails that are close to or within riparian areas, designed wide enough to accommodate bikes or other wheeled equipment require cut and fill to minimize grade differential, and use impervious materials. This can result in increased run-off and native vegetation removal. Such impacts could disrupt the natural filtering processes of vegetation.

4.4.1.7 Community Service Facilities

Community service facilities are allowed in four of the seven zoning districts. These uses generally provide a local service to people of the community, such as community centers, schools, daycare centers, religious institutions and cemeteries. These uses have similar impacts as those described for residential uses, but usually with greater impervious surface impacts related to larger buildings and parking areas (e.g., reduced infiltration and higher runoff, lower groundwater levels, interference with the transfer of air and gases from the soil). Schools may have significant impacts for this reason. By contrast, daycare uses are normally small in size and often contained within other buildings (e.g., religious institutions or community centers).

Grounds maintenance for community service uses has the same effects as those described for parks and recreation.

4.4.1.8 Public Facilities, Utilities, and Communication Facilities

Public facilities, utilities, and communication facilities are allowed in five of the seven zone districts. Public facilities includes a broad set of activities such as roads, water, sewer, power transmission, wireless communication, and other public utilities infrastructure services such as water and sewer pump stations, water towers, and utility and communication poles.

Although operation of existing facilities may have limited adverse environmental effects, construction and maintenance practices for the facilities typically are greater. These activities may create cleared corridors that increase wind and light penetration into adjacent habitats, providing opportunities for the establishment of invasive, non-native plant species. Construction may fragment wildlife habitat areas, degrade wetlands and streams, increase stormwater runoff and erosion, and reduce forest cover.

Specific public infrastructure features can have detrimental impacts. Underground pipelines can upset local groundwater hydrology and groundwater flow to streams. Transportation facilities such as roads and bridges can result in water run-off and transport of petroleum contaminants, which can be detrimental to aquatic species, wetlands, and riparian areas. If designed correctly, bridges can span streams and riparian areas, but often they do not and therefore can result in modifying stream flow as well as increasing sedimentation, which fill gravels that fish rely on for spawning. In addition, bridges can increase channel down-cutting and increase the risk of bank failure.

Communication towers can also conflict with the resource sites. Their effects can be similar to residential uses, but with less impervious surface and greater adverse visual impacts. Communication towers can be tall, which can be deadly to birds, which are attracted by the tower lights. Some facilities require cables to be laid in the ground, with potential impacts to wetlands, streams, and vegetation, and associated fauna.

Public facility construction that includes structures generally have the same effects as those described for residential uses. That is, staging areas, equipment storage and cleaning can have a negative impact on the resource sites through erosion, contamination transport, and vegetation removal.

4.4.1.9 Aircraft Land Uses

Aircraft land uses are allowed as conditional land uses in two of the seven zone districts (RRFF-5, TBR). These uses involve only light airplane operations serving local or agricultural needs and have impacts comparable to those for commercial uses described above.

4.4.2 Proposed Zone District Conflicting Use Environmental Impacts

4.4.2.1 Introduction

Unlike existing zoning districts and their conflicting uses that are addressed in the previous section, the proposed zone districts in the Springwater Community Plan have considered the potential conflicting uses that could impact significant environmental resource sites and have integrated design and development features that avoid, minimize, or mitigate the potential impacts. That is, the code incorporates features that “mimic” the natural functions of the surrounding environmental processes (e.g., management of run-off, landscaping, tree

replacement, etc). These features are a critical component of the zoning code and cover design requirements as well as operations and maintenance activities to ensure that the zone districts continue to operate in an environmentally friendly and sustainable fashion as much as possible. While there are inevitable conflicting uses, they are expected to be minor compared to existing zone districts.

4.4.2.1 Urbanized Residential Facilities

The Springwater Community Plan proposes three exclusively residential zone districts (VLDR-SW, LDR-SW, and THR-SW) and a mixed use zone district (VC-SW) that allows residential living, which are designed to provide a diverse range of housing. It will encourage transition from its current rural residential character to a more densely urban oriented character (approximately 3 to 16 dwelling units per acre) to support employment growth in the Springwater Community and eastern Multnomah and Clackamas Counties. Such higher density residential uses, though, could conflict with environmental resource sites.

The construction of homes whether single-family detached or attached will result in greater land coverage with impervious surfaces such as dwellings, garages and accessory structures, driveways, and parking areas. In addition, supporting infrastructure such as roads and utilities would also contribute to the total impervious surface area.

Land clearing for residential development will remove native vegetation as well as trees. Even with landscaping requirements to encourage replacement with native vegetation and requirements for tree replacement, there will be less area for these natural functions and processes to take place. There will also be non-native landscaping such as lawns and managed landscape areas (roads and utilities).

The resulting conflicting uses would likely be habitat loss, including feeding, nesting, perching and roosting places for birds, and loss of feeding, nesting and refuge areas for mammals, reptiles, amphibians, fish, and insects. There would also be a potential for increasing stormwater run-off volumes that could include contaminants washed from driveways and streets. Greater water run-off volumes would increase erosion as well as sediment transport that could enter streams. Flooding and stream bank down-cutting and failure from increased volumes and velocity would impact riparian vegetation, wetlands, and aquatic habitat. Lack of water filtration could impact groundwater hydrology and impact water temperature in streams and wetlands. Contaminants can degrade water quality. Sediments can cover gravels, preventing fish from spawning.

There is also the potential for short-term uses that conflict with resource sites. Staging areas for storing construction materials, parking equipment, cleaning equipment (e.g., cement trucks, paint and solvent cleaners, etc.), and even construction noise could have negative consequences. These supporting activities for residential development could reduce food sources, contaminant soil, and, depending on the season, disrupt bird nesting and foraging patterns.

The environmental impacts of this type of development are somewhat similar to those that have been described in the previous section on residential development in existing zone districts, however the impacts could be on a much greater scale due to the increased density.

4.4.2.3 Commercial and Employment Facilities

Commercial and Employment uses, including retail, service, and office/office parks, are in four of the nine proposed zone districts (VC-SW, RTI-SW, I-SW, NC-SW). The environmental

impacts of these uses are generally similar to the impacts related to residential uses described in the previous section. The scale of the impacts, however, would be expected to be greater primarily because of the greater amount of impervious surface and larger size of buildings and accessory structures.

In particular, the VC-SW, NC-SW and commercial areas, which will allow dense urban development (primarily commercial retail) to support the residential and business communities, will have significant conflicting uses. There will be greater impervious surface due to shorter blocks, higher street development densities, and more parking lots. The area will be designed as a walkable center where commercial and businesses are compact and close by therefore there would not be large landscaped yards or wide stream buffers.

RTI-SW zone district would have some of the same conflicting uses, although, the scale of development will not be as dense. Development would be more “campus” oriented with landscaped areas. Multi-story buildings will result in smaller footprints, which will allow some flexibility in design to avoid or minimize environmental impacts. Nevertheless, there will be large areas of impervious surfaces from parking lots, roadways, and buildings.

The conflicting uses would result from land clearing, ground excavation and disturbance, vegetation removal, replacement with impervious surfaces, and reduction of open space for the operation of natural processes (e.g., groundwater percolation, contaminant filtering, etc.). From this would be a higher risk of soil erosion, increased stormwater run-off, stream water quality degradation, and potential habitat loss (aquatic as well as terrestrial).

4.4.2.4 Heavy Industrial Facilities

Large scale and intensive industrial uses will continue to be allowed in one of the nine proposed zone districts (Heavy Industrial Zone). While this existing zone district will require the adoption of the “Green Development Practices” that are proposed for the new zone districts, the scale of activities and the facilities necessary to support industrial uses could still significantly conflict with resource sites.

Activities such as manufacturing, assembly, storage and warehousing require large structures and impervious surfaces, as well as transportation networks needed to move materials and goods into and out of the area. These activities are intensive and extensive, and the zone allows buildings to cover up to 75% of a 20,000 square foot lot. The remaining portion of the lot can be paved as necessary to support the industrial activity.

To provide these facilities large land areas must be cleared, soil excavated to level grade variation, and vegetation removed to build structures and pave outdoor areas. Roads must be constructed to handle heavy vehicle traffic. The result will be increased stormwater run-off volumes that can cause erosion, and transport sediment as well as contaminants (e.g., petroleum, manufacturing chemical spills, etc.) to streams and wetlands.

This can have long-term consequences on riparian areas, wetlands and streams and the terrestrial and aquatic habitat that it supports. Unchecked, the long-term impacts can be increased flood events, increased stream water temperature and sediment that can cover spawning gravels. Overall, water quality would be degraded and the functions and value that the resource site provides would be reduced.

4.4.2.5 Industrial Facilities

One zone district is designed to provide land for industrial activities (IND-SW). The types of facilities to be developed in this zone district will support research, development and information activities; and some light manufacturing and warehousing. In the proposed Springwater Plan District the emphasis is on a mix of facilities and sustainable design practices that are integrated into structures and surrounding land.

Conflicting uses will likely occur. Land clearing, excavation, vegetation removal, building and accessory structure construction, parking lots, maneuvering areas, infrastructure support, streets and roads, and open paved areas could conflict with resource sites. These types of impacts are similar to those described in the previous urban residential section. However, they will have a greater degree of conflicting uses because the I-SW zone district covers more land than any of the other eight zone districts and allows greater overall development density.

4.4.2.6 Community Service Facilities

Community service facilities covers a wide set of facilities. Some community service facilities are allowed in eight of the nine zoning districts (VLDR-SW, LDR-SW, THR-SW, VC-SW, RTI-SW, IND-SW, NC-SW,). Not all zone districts, however, allow the same set of community services. Restrictions on the types of community services permitted are detailed in Springwater Community Plan Report, which identifies the allowed community services for each zone district (detailed definitions are in the City of Gresham Development Code: Article VIII Special Uses, Section 8.0100, Community Services).

Community services generally provide a local service to people of the community, such as community centers, public buildings, schools, daycare centers, religious institutions, cemeteries, community parks, campgrounds and public plazas. Utilities (e.g., water, sewer, cellular communication, telephone, power transmission) are also listed as a community service, though, due to their conflicting use impacts, they are discussed in the next section.

Community service facilities have similar impacts as those described for residential uses, but usually with greater impervious surface impacts related to larger buildings and parking areas (e.g., reduced infiltration and higher runoff, lower groundwater levels, interference with the transfer of air and gases from the soil, etc.). Schools may have significant impacts for this reason. By contrast, daycare uses are normally small in size and often contained within other buildings (e.g., religious institutions or community centers).

4.4.2.7 Public Facilities, Utilities, Communication Facilities

Public facilities and utilities are allowed in all proposed zone districts, although the ESRA-SW zone district has very restrictive standards for utilities. Public facilities and utilities includes a broad set of facilities such as roads, water, sewer, and other public utilities infrastructure services such as water and sewer pump stations, water towers, and utility, power, and communication poles.

Although operation of existing facilities may have limited adverse environmental effects, construction and maintenance practices for the facilities typically are greater. These activities may create cleared corridors that increase wind and light penetration into adjacent habitats, providing opportunities for the establishment of invasive, non-native plant species. Construction may fragment wildlife habitat areas, degrade wetlands and streams, increase stormwater runoff and erosion, and reduce forest cover.

Specific public infrastructure features can have detrimental impacts. Underground pipelines may upset local groundwater hydrology and groundwater flow to streams. Transportation facilities such as roads and bridges can result in water run-off and transport of petroleum contaminants, which can be detrimental to aquatic species, wetlands, and riparian areas. If designed correctly, bridges can span streams and riparian areas, but often they do not and therefore can result in modifying stream flow as well as increasing sedimentation, which fill gravels that fish rely on for spawning. In addition, bridges can increase channel down-cutting, scour, and increase the risk of bank failure.

Communication towers can also conflict with the resource sites. Their effects can be similar to residential uses, but with less impervious surface and greater adverse visual impacts. Communication towers can be tall, which can be deadly to birds, which are attracted by the tower lights. Some facilities require cables to be laid in the ground, with potential impacts to wetlands, streams, and vegetation, and associated fauna.

Public facility construction that includes structures generally have the same effects as those described for residential uses. That is, staging areas, equipment storage and cleaning can have a negative impact on the resource sites through erosion, contamination transport, and vegetation removal.

4.4.2.8 Parks and Trail Facilities

Seven zone districts of the nine allow development of park and trail facilities (VLDR-SW, LDR-SW, THR-SW, VC-SW, RTI-SW, IND-SW, ESRA-SW). These activities typically focus on public and private parks, hiking and horse trails, and other similar uses. Most such lands tend to have few structures and facilities and therefore minimal conflict with the environmental resources. Such uses, though, can conflict with resource sites because of the necessary facilities and features to support the activities.

Parks construction and maintenance practices can cause erosion and damage vegetation and habitat. Removal of vegetation, creation of impervious surfaces such as roads, parking lots, and construction of buildings are activities associated with park development. These activities normally require less impervious surface coverage than residential uses yet they can still increase run-off and erosion, although they may have fewer environmental impacts.

Recreational trails can have few impacts on natural resources depending on their location, design, and materials used for construction. Trails that are close to or within riparian areas, designed wide enough to accommodate bikes or other wheeled equipment require cut and fill to minimize grade differential, and use impervious materials that can result in increased run-off and native vegetation removal. Such impacts could disrupt the natural filtering processes of vegetation.

The ESRA-SW sub-district only allows the development of trail facilities, no parks. The trail standards, though, are extremely restrictive in their design, location and construction materials. These restrictions minimize conflicting uses.

4.4.2.9 Agricultural, Farm Uses

Only the ESRA-SW sub-district allows farming uses that are related to Exclusive Farm Use as defined in ORS 215.203. The ESRA-SW further restricts development by prohibiting buildings and structures within the district. As defined in the ORS, activities that are allowed include crop growing, animal husbandry activities, propagation, cultivation, maintenance and harvesting of aquatic species, and all supporting activities necessary to manage these activities.

While prohibition of farm structures reduces some of the conflicting uses other farming activities can conflict with the resource sites. The conflicting uses include plowing fields and exposing bare soil causing erosion that degrades water quality, which can adversely impact aquatic habitat. Conversion of forests to farmland replaces diverse, complex forest plant communities with a few, cultivated, non-native species. Vegetation acts as a filter, cleansing runoff before it reaches streams or wetlands. Tilling of the soil and removal of vegetation for agricultural uses reduces these water quality benefits. Conversion of forests to farmland can reduce tree cover canopy leaving fragmented forest patches instead of corridors on which wildlife rely for travel, foraging and protection.

Agriculture typically (but not always) involves the use of pesticides, herbicides, and fertilizers. These chemicals can contaminate surface and groundwater areas and harm fish and wildlife.

Animal husbandry (livestock) activities can degrade stream water quality as well as accelerate erosion in riparian areas. Concentrated animal waste and unimpeded access to streams and water bodies can result in contaminated run-off to streams, additional channel down-cutting along stream banks, loss or degradation of riparian vegetation and wetland areas and detrimental impacts to aquatic habitat. Presence of livestock can also degrade wildlife habitats that depend on riparian cover and the natural function and value of the riparian, stream, wetland interface for survival.

Agriculture may draw irrigation water from wells or directly from streams. Extensive use of groundwater can result in draw down of the water table, which in turn can reduce groundwater discharge to streams and degrade fish and wildlife habitats. Use of water from streams directly reduces flow. These surface water reductions are most common during the summer growing season when natural stream flows are low and the potential adverse impacts to fish are the greatest.

Commercial and other activities associated with agriculture uses generally have detrimental effects similar to residential uses. That is, these activities share with residential uses such as buildings, structures, and parking lots, which may increase the detrimental impacts of impervious surfaces (e.g., reduced infiltration and higher runoff, lower groundwater levels, interference with the transfer of air and gases from the soil). Commercial uses may also involve increased risk of pollution from oil, gasoline, and other vehicle-related contamination.

5.0 IMPACT AREA IDENTIFICATION

The impact area has been defined as the boundary surrounding the Springwater Community Area. See Figure 3.1 for a map of the Springwater Community Impact Area.

6.0 ESEE ANALYSIS

6.1 INTRODUCTION

The following ESEE analysis examines the impacts to significant resource sites based on the three options – allow the conflicting use, limit the conflicting use, or prohibit the conflicting use (ALP). As discussed in an earlier section of this report, only economic, social, environmental, and energy (ESEE) consequences for proposed zoning districts are analyzed.

For efficiency purposes resource sites have been grouped into areas that have similar zoning districts. This allows the analysis to be consistently applied.

The Springwater Community Area has conflicting uses for proposed zone districts, as outlined above. To weigh the consequences of alternative methods of managing these conflicts the next step in the Goal 5 process is to conduct an ESEE consequences analysis. The following section presents this analysis, which is based on the Goal 5 inventory, significance determination, and conflicting use impacts described in this document.

The significant Goal 5 resource sites correspond to the Environmental Sensitive/Restoration Areas (ESRA) outlined in the concept plan (See Volume I of the Springwater Community Plan). The impact area for the significant resource sites is the remainder of the Springwater Community Planning area.

The Goal 5 rule requires that the ESEE consequences of “full protection,” “limited protection,” and “no protection” of the resource site and its impact area be considered. The Springwater Community Plan envisions much greater residential development and employment densities, while offering a much more comprehensive and effective level of natural resource protection through the ESRA-SW zone district. What is important in the ESEE analysis is to determine what level of protection should be provided for the Springwater environmental resource sites to meet the Goal 5 requirements while at the same time achieving the development goals that are outlined in the Springwater Community Plan. Table 6.1 summarizes key elements of the decision options used in this analysis.

Table 6.1 Summary of Goal 5 Decision Options

	Within Resource Site	Within Impact Area
<p>Full Protection</p> <p>This option would nullify the Springwater Community Plan by prohibiting all conflicting uses within the significant resource site and the impact area</p>	<p>No conflicting uses allowed (e.g., no ground-disturbing activity, no expansion of existing uses, no new impervious surface area, no new public facilities or trails).</p>	<p>No conflicting uses allowed (e.g., no ground-disturbing activity, no expansion of existing uses, no new impervious surface area, no new public facilities, no “green development practices”).</p>
<p>Limited Protection</p> <p>This option carries out most of the policies outlined in the Springwater Community Plan, and achieves a balance between intensive urbanization and resource conservation.</p>	<p>Allows for limited ground-disturbing activities for planned public facilities (roads and utilities) and trails. Allows for prohibiting activities in certain resource areas (based on the Natural Resource Significance Classifications). Requires mitigation for all development. Allows density transfer from resource site to impact area. Existing agricultural operations may continue.</p>	<p>Provides for intensive urban development outside the significant resource site, subject to green development practices and tree planting requirements as required in the Springwater Development Code and Gresham water quality manual. Existing agricultural operations may continue.</p>

Table 6.1 Summary of Goal 5 Decision Options

	Within Resource Site	Within Impact Area
<p>No Protection</p> <p>Would allow unrestricted development in planned housing and employment, but would violate two central organizing principals of the Springwater Community Plan by allowing unrestricted development within and outside the significant resource site.</p>	<p>All conflicting uses allowed (e.g., ground-disturbing activity, unrestricted expansion of existing uses, unrestricted impervious surface area, unmitigated public facilities).</p>	<p>All conflicting uses allowed without “green development practices.”</p>

The ESEE analysis supports a range of limited protections based on the ESEE consequences and the impact these consequences have on the resource sites as measured by the natural resource significance classes in accordance with the Springwater Community Plan. The range of these limited protections are based on the fact that the economic, social, environmental and energy consequences of the limited protection option are positive (i.e., meet Goal 5 requirements and Springwater Community Plan goals), while the consequences of “no protection” and “full protection” will be overwhelmingly negative.

The ESRA-SW concept and the associated green development practices required in the proposed zone districts serve as central organizing features of the Concept Plan. Intensive urban residential and employment development using green development practices is encouraged on buildable land outside the significant resource sites while the significant resource site is protected from most conflicting uses. A limited amount of development (e.g. roads and utilities) will be allowed on land within the significant resource site, except for those specific resource sites that are determined to require full protection. In addition, as allowed by the ESEE Decision Process (ORS 660-023-0040(5)(c)), there are some sites where the conflicting uses should be allowed fully notwithstanding the possible impacts on the resource site.

Green development practices refer to a toolbox of stormwater management and design techniques that are required as part of development in each zone district. The techniques involve landscape features that are designed to “mimic and incorporate the predevelopment hydrology of a site into future development” through site design that minimizes ground disturbance (to soils, tree canopy, and other sensitive natural features), and minimal impervious surfaces. Run-off that does occur is managed through “techniques that use natural areas and landscaping to treat, retain, attenuate, and infiltrate stormwater on the development site” (Development Code, Springwater Community Plan Report).

The benefits of green development practices include the following:

- **Reduced stormwater runoff.** Traditional development practices clear entire areas for development, add large amounts of impervious surfaces, and compromise the ability of soils to absorb stormwater. Through better site design, soil disturbance can be minimized, unnecessary impervious surfaces can be eliminated, and tree canopy protected, resulting in reduced generation of stormwater runoff.

- Reduced damage from unregulated stormwater flow. Traditional stormwater management techniques convey runoff quickly to management facilities. Without any prior management, these facilities are quickly overwhelmed and release water into streams at rates, volumes, and durations that compromise stream habitat. Green development practices infiltrate stormwater close to the source, give it an opportunity to evaporate, and attenuate its progress towards streams so that the release of runoff into streams more closely mimics the natural hydrology of the area.
- Increased tree canopy. Green development practices when combined with tree planting requirements promote the conservation of existing trees and forests, and providing tree-planting opportunities in order to create an urban forest. In a forested environment, rainfall is intercepted by vegetation reducing its impact by slowly allowing it to infiltrate and saturate the soil thus promoting infiltration, minimizing erosion and enhancing water quality. Trees also consume many different types of stormwater-linked pollutants through uptake from the root zone. Forested areas along stream banks provide stability by holding soil in place and slow runoff velocities.

There are tree planting requirements (Development Code) and sustainability goals that are incorporated into the Springwater Community Plan. These elements, when combined with the green development practices, provide a comprehensive approach to ensure that the Springwater Community will preserve significant resources while allowing growth and development to occur in the area.

6.2 ECONOMIC CONSEQUENCES

6.2.1 Introduction

To provide a consistent economic analysis covering the most critical factors, all parcels have been analyzed according to both existing and potential conflicting uses. The economic analysis for each parcel – the comparison of impacts on development and on resource values – has been repeated for three development level scenarios: allowing conflicting uses fully; limiting conflicting uses; and prohibiting all conflicting uses.

Through the economic analysis, a determination is made on the type and quantity of functions that are at risk with the loss of these resources, as well as the type and quantity of conflicting uses that may be affected.

This process is aided by including a natural resource significance classification system that ranks significance resource sites according to their overall functional and value and contribution toward maintenance and preservation of the watershed (see detailed explanation of the classification system elsewhere in this report). What this allows is the ability to make more informed decisions on resource sites and their impact from allowing, limiting or prohibiting development activities.

It is important to carefully separate the economic consequences on conflicting uses that exist due to physical constraints and those associated with protecting significant resources. There are increased costs incurred in the design and construction of structures and roads where slopes, certain soil types, streams, wetlands, or floodplains exist.

In determining the economic consequences of protecting significant resources, it is first necessary to define value with respect to a significant resource (i.e., natural resource significance classes). Many of the benefits of environmental policies are difficult measure. The

benefits are found more in an increase in the quality of life than in an incremental contribution to a region's economic output, although, value of environmental quality has been shown as a desirable factor that affects real estate purchases. Further, environmental features have been shown to increase property values as they provide aesthetic and recreational pleasure and a more livable environment. As a result, properties next to these features generally have higher property values and produce greater tax revenues.

6.2.2 Methods and Analysis

A parcel-by-parcel database (developed using GIS) provides the basis for this analysis. The planning consultant team created the database for analyzing the land in the Springwater community. The database includes information on tax lots, including ownership, size and characteristics, proposed zoning, Metro Title 13 designation, public facilities, significant resource area designation and classification, units allowed under density transfer, and units allowed by sub-district (outside ESRA-SW, by sub-district).

The economic analysis considers the impact of allowing, prohibiting, or limiting conflicting uses within the significant resource site and the impact area. The analysis addresses lots with no significant resource area, lots with partial significant resource area, and lots with substantial significant resource area. In this context, "substantial" is defined as when the non-resource portion of a lot is insufficient in size to accommodate the total number of units transferred out of the resource area of the lot. "Partial" coverage means that the lot has some resource area but not enough to qualify as "substantial".

Lots with no significant resource area may have conflicting uses that produce off-site impacts on the significant resource area. These uses include residential, commercial, industrial, manufacturing and community service uses, which have significant potential off-site impacts due to the removal of vegetation, creation of impervious surfaces, and construction of stormwater facilities that discharge into streams and wetlands, and similar activities.

Conflicting uses within significant resource areas have direct impacts on resources and resource functions as described in the previous section. Conflicting uses with the greatest potential impacts are the higher density residential areas, commercial, business, manufacturing, industrial and community service areas. Public facilities also can have significant impacts, but may also have important siting constraints (such as the need for roads and utilities to cross streams and other natural resources). As noted above, some public facilities, including certain stormwater facilities and road and utility crossings (e.g., via bridges) can have fewer localized resource impacts. Park and recreation uses also range in impact, with natural open space and recreational trails generally having the fewest impacts.

For the following analysis, conflicting uses are organized in three classes or groups, based broadly on degree of impact. One class includes residential, community service facilities (CSF), and broadcast facilities. The second class is public facilities. The third class is park and recreation uses.

6.2.3 Economic Consequences of Allowing Conflicting Uses

Allowing conflicting uses within the impact area of Springwater could provide major economic benefits as the area urbanizes up to a point. As the area urbanizes and there are increased development densities beyond what is proposed by sub-districts, there will likely be a diminishing marginal economic return. That is, a break point where the additional increment of development may not increase overall value because the costs of development would increase

as more marginal land converted and the amenities that would attract developers, buyers or employers become less attractive. This will likely occur as the resource sites are degraded.

New buildings and roads, for example, will bring a dramatic increase in impervious surfaces within the impact area. This can lead to reduced infiltration and higher runoff, increased flooding; degradation of aquatic habitat; and negative impacts to salmon, wetlands and riparian areas in the Johnson Creek watershed (including tributaries).

While the application of green development practices and other requirements (e.g., tree planting requirements, and sustainable designs) will help to off-set adverse impacts to resource sites, the point where development density exceeds the ability of these design elements to prevent environmental impacts will likely have a progressive adverse economic impact in the Springwater Community.

Table 6.2 summarizes the economic consequences of allowing conflicting uses.

Table 6.2 Economic Consequences of Allowing Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All	<ul style="list-style-type: none"> ▪ Increase in housing and jobs beyond the planned increase (an estimated 10,000 households and 17,000 new jobs) on parcels within the resource sites as there will be no protections ▪ Will increase traffic and pollution, but will provide no open space benefit or protections to resource sites. ▪ No restrictions placed on building coverage, impervious surface area or construction methods ▪ Loss of economic values associated with accessible scenic and recreational areas ▪ Specific problem areas: lots adjacent to resources areas, especially with resource class designations of 3, 4, 5, 6 with 5 and 6 under the greatest risk of negative environmental consequence. ▪ However, lower adverse economic impact where lots are distant from resource sites, especially in the I-SW area along northern boundary, and lots near resource sites rated #1 (isolated tree groves). 	<ul style="list-style-type: none"> • Negative: <ul style="list-style-type: none"> ▪ Increase in neighboring densities and traffic, accompanied by loss of economic (amenity) values associated with community open space, clean water, groundwater recharge, recreation, wildlife habitat and scenic views.

Table 6.2 Economic Consequences of Allowing Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with partial significant resource sites.	All	<ul style="list-style-type: none"> • Lots with partial resource site coverage would have unrestricted development potential under this option, although development costs are greater because some lands are highly constrained • Loss of economic value associated with loss of adjacent community open space, scenic, recreational amenities • Economic impacts resulting from risk of destabilization of slopes and stream banks, flooding and landslide hazards through vegetation removal, increased impervious surfaces and lack of appropriate stormwater management. • Adverse economic impact resulting from decreased amenity values for homes and businesses adjacent to water features and upland forests • Specific problem areas: Most impact to sites along Johnson Creek and tributaries, Boring Hills (ratings #2-6). Least impact lots w/ isolated tree groves (rated #1) – Brickworks, proposed NC-SW area and lots between 267th and 262nd. 	<ul style="list-style-type: none"> • Negative to mixed. • The land area can be devoted to development is increased, but densities will be greater than proposed. The economic value of adjacent open space, water features and forested areas would be lost. • Employment, commercial, industrial zone districts will develop beyond densities proposed and economic value of planned development that offers amenities to attract specific types of businesses, industries, and commerce would be lost.
Lots with substantial significant resource sites	All	<ul style="list-style-type: none"> • Parcels substantially covered by the resource sites would now be able to develop without restriction, although development costs may be greater because some of the lands are more constrained land area • Loss of economic value associated with on-site community open space, scenic, recreational amenities • Economic impacts resulting from potential destabilization of slopes and stream banks • Increase in flood and landslide hazards through vegetation removal, impervious surfaces • Adverse economic impact resulting from decreased amenity values for homes, and commercial, industrial, business, and employment areas within resource sites. 	<ul style="list-style-type: none"> • Negative • Land area can be devoted to development is increased substantially. However, economic value of adjacent to resource areas is reduced, especially for residential areas that rely on these amenities to attract buyers. • For some development, such as the HI zone district, there will likely be little economic change. • Other land that depends on the economic values imputed to resource sites will have adverse economic impacts even if development densities can be increased.

There are significant economic costs associated with allowing conflicting uses within the resource areas (allowing significant stream, wetland, and forest resources to be eliminated). These resources collectively provide the community's natural and open space system, a unique and highly valued feature along Johnson Creek, its tributaries and along the forested corridors between creeks (e.g., Sunshine Creek to McNutt and Johnson Creeks, Brigman Creek to Botefuhr Creek). The amenity values of the resource site, including its natural, open space, recreational (local parks and trails), and scenic values, are expected to grow as the valley urbanizes. These amenity values will be capitalized into local property values.

These resources also provide community services with economic benefits, such as flood reduction, clean water, and slope stabilization. Johnson Creek and its tributaries provide pollution assimilation/water purification, flood attenuation and storage functions. The damage costs associated with flooding and landslide hazards increase with development activities and increased soil disturbance in resource areas. Vegetation loss can have additional economic costs in the form of lost air conditioning, erosion control, stormwater management, and air pollution control services.

The increment of additional housing, business, industry/manufacturing, office and village center, if "allowed fully" without controls, must be weighed against the unique and highly valued attributes of the community. Other considerations, such as physical (e.g., steep ravines, broad floodplains and wetlands, shallow water tables) and regulatory constraints (e.g., wetlands, water quality, listed species) may further limit the developable land within the resource sites.

This analysis strongly favors allowing conflicting uses fully only within the impact area, outside of significant resource areas where the off-site impacts will be relatively low. At some point, however, the scale of development could risk off-site adverse impacts to surrounding resource. Since preservation of these resource areas have been identified as critical to the development success of the Springwater Community, there is a risk that development beyond the proposed densities will reduce the attractiveness of the area and therefore the economic values expected to be generated by development.

6.2.4 Economic Consequences of Limiting Conflicting Uses

To determine the consequences of "limiting" conflicting uses, it is helpful to define what limiting means, at least in broad terms. The basis for these limits comes in large part from the Springwater Community Plan (see Volume I of the Springwater Community Plan Report). Through an active public involvement and participation element and a special Community Working Group, appointed to create guiding goals and policies to help "codify" the major themes for the Springwater Community, a number of policy statements and goals were identified. An overarching theme was creation of an environmentally sustainable community. Resource site preservation and the incorporation of sustainable design and green development practices were seen as key to Springwater Community's success. Economic development, housing, jobs and all supporting or accessory activities were considered important, but in the context of how they would fit into the environmental sustainability theme.

From these goal statements and policies it was apparent that streams, wetlands, and forests were highly valued community assets. Residential development, employment and supporting activities and needs were generally to be met with land outside the resource sites. These unique assets were to be preserved and restored as best as possible. Certain conflicting uses were envisioned within resource areas, including limited road and utility crossings, parks and trail uses, and continuation of agricultural practices.

It was recognized that resource areas would not be able to develop to the surrounding proposed zone densities. To provide additional economic value for these properties, a density transfer provision was developed that would permit the transfer of development out of the resource area onto the same or adjoining properties. These provisions were incorporated into the “limit” program for the Springwater Community Plan.

Table 6.3 summarizes the economic impacts resulting from limiting conflicting uses in accordance with the Springwater Community Plan, consistent with the program outlined above.

Table 6.3 Economic Consequences of Limiting Conflicting Uses Consistent with the Springwater Community Plan

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts on resource sites)	<ul style="list-style-type: none"> • Provide for significant increase in housing and jobs beyond what is currently allowed under the proposed zoning districts (an estimated 10,000 households and 17,000 new jobs). • Some increased long-term costs associated with green development practices (i.e., increased maintenance versus reduced initial construction costs). • Restrictions placed on building coverage, impervious surface area or construction methods. • Maintain economic values associated with community open space, accessible scenic, recreational benefits. • Avoid adverse economic impact resulting from decreased amenity values for homes and businesses near resource sites. 	Positive: <ul style="list-style-type: none"> • Manyfold increase in development potential over existing zoning districts, while maintaining economic values of community open space, clean water, wildlife habitat, scenic views and groundwater recharge. • Some long-term maintenance costs increase for green development practices, although short-term costs are usually less. • Economic values of incorporating the goals of environmental and economic sustainability will, in the long run exceed development costs as Springwater will attract the type of employment and residential development that values such preservation.
Lots with partial significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> • Significant increase in allowed density through up-zoning and density transfer from resource sites • Since the remaining portions of parcels outside resource sites are from building constraints, development costs are reduced • Maintain economic value associated with adjacent community open space, scenic, recreational amenities • Avoids adverse economic impacts resulting from potential destabilization of slopes and stream banks due to green development practices • Avoids adverse economic impact resulting from decreased amenity values for homes and businesses adjacent to resource sites and adjacent open space and recreational sites. 	Positive: <ul style="list-style-type: none"> • Significant increase in development potential over existing zoning, while maintaining economic values of community open space, clean water, wildlife habitat, scenic views and groundwater recharge. • Some long-term increase in costs for green development practices.

Table 6.3 Economic Consequences of Limiting Conflicting Uses Consistent with the Springwater Community Plan

Lot Type	Conflicting Uses	Consequences	Assessment
	Public facilities	<ul style="list-style-type: none"> • Some increase in long-term construction costs resulting from green development practices • Limited new and redeveloped roads provide connections through resource sites • Limited utilities and green stormwater facilities link and serve local neighborhoods within community, located within planned road crossings, or along the outer edge of resource areas. 	<p>Positive:</p> <ul style="list-style-type: none"> • Allows roads and other public facilities that are essential to an integrated urban community; resource impacts controlled and mitigated through development standards and green development practices.
	Parks and recreation uses	<ul style="list-style-type: none"> • Parks and trail system located in and along resource areas (as designated in the Plan District) bring residents close to area's unique features • An integrated network of trails, parks and open space is an essential part of a successful urban community. • Trails and paths will also be part of the transportation network linking residential areas to commercial, business, and employment areas, which minimizes pollution impacts 	<p>Positive:</p> <ul style="list-style-type: none"> • An integrated (natural resource-oriented) parks and trail system provides a major community asset.
Lots with substantial resource site coverage (and limited transferability)	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> • Comparable density to that which is allowed under existing zoning • May not be sufficient area for density transfer from resource site • Maintain economic value associated with adjacent community open space, scenic, recreational amenities • Avoids adverse economic impacts resulting from potential destabilization of slopes and stream banks, and increase in flood and landslide hazards through vegetation removal, increased impervious surfaces • Avoids adverse economic impact resulting from decreased amenity values for homes and businesses adjacent to resource sites and adjacent open space and recreational sites. • Decrease in short-term construction costs, but increase in long-term maintenance costs, resulting from green development practices 	<p>Neutral:</p> <ul style="list-style-type: none"> • Development potential approximately the same, but lower increase than properties largely or completely outside ESRA-SW. For this reason, recommend adjustments to ESRA-SW boundary to allow for full density transfer. Economic values associated with significant resources protected.

Table 6.3 Economic Consequences of Limiting Conflicting Uses Consistent with the Springwater Community Plan

Lot Type	Conflicting Uses	Consequences	Assessment
	Public facilities	<ul style="list-style-type: none"> • New and redeveloped roads provide an integrated transportation system within the community • Slight increase in construction costs due to mitigation 	Neutral to Positive: <ul style="list-style-type: none"> • Allows roads that are essential to an integrated urban community with mitigation for impacts on natural resources.

This analysis supports limiting conflicting uses within significant resource areas of the Springwater Community. Housing and employment opportunities are dramatically increased within non-resource areas (by an estimated 1,500 households and 16,000 new jobs in the Springwater Plan District area). Additional housing and employment options are permitted through transfers from resource sites to more suitable locations in the impact area, which protects the community's unique natural, scenic, and open space resources.

There will be a number of constrained properties in some of the high valued resource areas (ratings of 4, 5, and 6) that would not be able to transfer densities on site. These sites could be addressed through other methods or development flexibility. Importantly, the higher rated resource sites, which are critical to the preservation of Johnson Creek watershed within the Springwater Community, may need methods to ensure preservation without development. The City could consider designating these or some portion of these parcels for public ownership. Thus, a public program to purchase these properties to preserve them in perpetuity could compensate the property owners.

6.2.5 Economic Consequences of Prohibiting Conflicting Uses

Table 6.4 summarizes the impacts on both significant resources and on conflicting uses of prohibiting conflicting uses.

Table 6.4 Economic Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts on resource sites)	<ul style="list-style-type: none"> • Loss of development potential for all parcels in this category. • Springwater Community Plan could not be implemented. 	Negative: <ul style="list-style-type: none"> • No new development allowed; substantial economic costs; housing and employment goals cannot be achieved. • Annexation not likely
Lots with partial significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> • Loss of development potential and density transfer options. • Although protects community open space, scenic, and recreational amenities, the economic value of these amenities will likely be lower, because fewer people will enjoy them • Although stabilization of slopes and stream banks, and reduction in flood and landslide hazards would occur, there would be no new development 	Negative: <ul style="list-style-type: none"> • Significant loss of development potential from existing zoning, without corresponding increase in amenity value to existing homes. • Annexation not likely
	Public facilities	<ul style="list-style-type: none"> • No new roads or public facilities would be allowed • Loss of connectivity and services provided by public facilities and roads 	Negative: <ul style="list-style-type: none"> • Road and public facility connectivity is essential to an integrated urban community and could not be provided.

Table 6.4 Economic Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
	Parks and recreation uses	<ul style="list-style-type: none"> Loss of integration of parks and trail system with the community's natural, scenic, and open space resources 	Negative: <ul style="list-style-type: none"> An integrated parks and trail system is a vital part of a successful community.
Lots with substantial significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> Conflicting uses prohibited on a number of parcels located within resource sites rated 4, 5, and 6. 	Negative: <ul style="list-style-type: none"> Comparable or lower development potential than allowed under existing zoning, without density transfer or economic value associated with natural resource amenities.
	Public facilities	<ul style="list-style-type: none"> Loss of connectivity provided by planned roads (on 14 properties) 	Negative: <ul style="list-style-type: none"> Road connectivity is essential to an integrated urban community.
	Parks and recreation uses	<ul style="list-style-type: none"> No existing or planned parks or recreation uses will impact the properties within the resource sites. 	Not applicable.

The economic consequences of prohibiting conflicting uses are generally negative for both resource and impact areas. New housing and employment opportunities would be eliminated, and prohibiting all conflicting uses within the impact area would essentially preclude further growth or urbanization of the Springwater Community. By prohibiting conflicting uses, the community's unique natural, scenic, and open space resources are preserved. Arguably, however, these resources will likely have considerably fewer economic amenity values should the Community not be able to grow. Further, there would be no economic incentive for the City to annex the properties as the economic value from property tax revenue would not likely support the costs of public services to the area.

6.2.6 Conclusion

The economic analysis supports limiting conflicting uses within significant resource areas and allowing them fully within the impact area. The analysis assumes that within the impact area, potential adverse effects on nearby resource sites can be mitigated by provisions for green development practices. For the highly constrained lots where housing density transfer may not be feasible, some additional flexibility may be warranted in the way the City may compensate these landowners.

6.3 SOCIAL CONSEQUENCES

This section considers the social consequences of allowing, limiting, or prohibiting conflicting uses in the Springwater Community. The discussion focuses on the following topics: recreational and educational opportunities; housing and employment opportunities; historic, heritage, and cultural values; screening and buffering of land uses; and health, safety, and welfare.

Allowing, limiting, or prohibiting conflicting uses may have a variety of potential social effects, including the following:

- Changes to the value of the site for recreation and education;
- Changes to the quantity and quality of housing units;
- Changes in an area's scenic qualities;
- Changes to the historic and cultural values of the site;
- Changes to the health, safety, and welfare benefits provided by resources; and

- Changes in the ability of natural resources to function as an edge or buffer between different land uses.

The characteristics of these potential social consequences are outlined in the following discussion. The social analysis focuses on how conflicting uses may create positive or negative social consequences within resource and impact areas.

Recreational and Educational Amenities (for more details See the Springwater Community Plan Report): Existing public recreational opportunities are limited in Springwater. There are no parks in the area. There is one trail, the Springwater Trail, which bisects the planning area and public space running adjacent to the Trail. There is the privately owned Persimmon Golf Course located in the area.

There are no public educational facilities within the Springwater Community.

Housing Opportunities: The Springwater Community Plan proposes urban levels of density for the area once annexed resulting in an estimated 1,500 housing units in the Springwater Plan District area.

Employment Opportunities. Employment opportunities in the Springwater Community are currently very restricted and are mainly those associated with agriculture, with the exception of the HI zone District that is currently within the City of Gresham. At build-out, there are estimated to be approximately 16,000 new jobs in the Springwater Plan District area.

Historic, Heritage, and Cultural Values. The floodplains and upland areas of the Johnson Creek basin are believed to have been used by Native Americans. Although no archeological sites are known in Springwater Community area, early Native Americans used the valley as a travel route, and hunting and other subsistence activities likely took place there.

Euro-American settlement in the area began in the mid 1800s.

Screening and Buffering: Natural resources, such as those in Springwater, can function as an edge to different land uses, separating and buffering them from each other both visually and physically. Forest vegetation can serve as a buffer between residential, institutional, commercial, and open space uses. Similarly, Johnson Creek and its tributaries (North Fork Johnson, Badger, McNutt, Sunshine, Brigman, Botefuhr and Hogan Creeks, and to a certain extent Bus and Ops Creeks) and their associated ravines, wetlands, and vegetation are major defining elements of the community that also provide buffering and other important watershed health functions.

Health, Safety, and Welfare. Erosion and flooding are natural phenomena in Springwater, but when aggravated by the modification, alternation or removal of vegetation, or increased stormwater runoff, it can lead to damage, injury, or displacement of people and property, and significantly impact aquatic habitats. For example, the area's vegetation helps to stabilize stream banks and hill slopes, and its soils infiltrate rainwater and reduce the frequency and severity of flood events. These functions contribute to the health, safety and welfare of community residents.

There are several other health and welfare benefits provided by forest and riparian vegetation. The following are some of the other health and welfare benefits:

- Vegetation in urban or urbanizing areas may reduce stress-related impacts on health.
- Exposure to natural environments has significant “restorative” benefits.
- Forests help reduce air pollution problems and resulting health impacts

6.3.1 Social Consequences of Allowing Conflicting Uses

Table 6.5 summarizes the consequences of allowing conflicting uses to occur in the Springwater Community. These consequences are discussed in the context of the social functions or benefits described above. As with the economic analysis, conflicting uses are addressed together or in groups where appropriate.

Table 6.5 Social Consequences of Allowing Conflicting Uses Fully

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts)	<ul style="list-style-type: none"> • Increase in the number of jobs and housing units at densities greater than the Community Plan proposes. • With all conflicting uses there will likely be a loss of nearby community open space and associated social values 	Negative: <ul style="list-style-type: none"> • Marginal increase in jobs and housing opportunities, but at expense of community open space, degraded water quality and decreased quality of life. • Also, risk that development with all conflicting uses allowed to degrade resource sites and associated social values
Lots with partial significant resource sites	All	<ul style="list-style-type: none"> • Increase in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson Creek and tributaries • Loss of scenic and open space values of resource sites • Decrease in screening and buffering benefits • Potential loss of historic features • Increase in housing, employment opportunities on constrained lands, through these goals are met outside of resource sites. 	Negative: <ul style="list-style-type: none"> • Unique social values of community and multiple resources highly degraded or lost.
Lots with substantial significant resource sites	All	<ul style="list-style-type: none"> • Increase in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson Creek and tributaries • Loss of scenic and open space values of resource sites • Decrease in screening and buffering benefits • Potential loss of historic features • Increase in housing, employment opportunities on constrained lands, through these goals are met outside of resource sites. 	Negative: <ul style="list-style-type: none"> • Unique attributes of community and multiple resources highly degraded or lost

This analysis supports allowing conflicting uses within the impact area, outside of significant resource sites. The resource sites provide important social values, and include many of the attributes that make the Springwater Community unique. The Springwater Plan District proposes a mix of housing and employment opportunities within the non-resource sites that

satisfies planning goals. Goals and policies identified in the Plan are designed to maintain existing amenities and develop new ones that will enhance the community’s unique resources.

6.3.2 Social Consequences of Limiting Conflicting Uses

Table 6.6 summarizes the consequences of limiting conflicting uses in the Springwater Community Area.

Table 6.6 Social Consequences of Limiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts)	<ul style="list-style-type: none"> • Maintain most social values on nearby protected open space areas • Maintain housing and employment objectives of Springwater Community Plan • Allow for public facilities and streets necessary to support proposed housing and employment • Maintain social values associated with clean water and aquatic habitat by implementing Green Development Practices, tree planting and sustainable design development 	Positive: <ul style="list-style-type: none"> • Social values of community open space maintained for new residents and employees. Green Development Practices minimize off-site impacts.
Lots with partial significant resource sites	All	<ul style="list-style-type: none"> • Decrease in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson Creek and its tributaries • Maintain scenic and open space values of ESRA-SW • Maintain screening and buffering benefits • Maintain historic features • Allow for housing, employment opportunities through density transfer provisions 	Positive: <ul style="list-style-type: none"> • Social values of community open space and natural resources conserved.
Lots with substantial significant resource area (and limited transfer-ability)	All	<ul style="list-style-type: none"> • Decrease in potential damage, injury, and displacement caused by erosion, landslides, and flooding along Johnson and Kelley Creeks • Maintain scenic and open space values of ESRA-SW • Maintain screening and buffering benefits • Maintain historic features • Allow for housing, employment opportunities through density transfer provisions 	Positive: <ul style="list-style-type: none"> • Social values of community open space and natural resources conserved.

This analysis supports limiting conflicting uses within significant resource sites. Housing and employment opportunities are dramatically increased within non-resource areas (by an estimated 1,500 housing units and 16,000 new jobs in the Springwater Plan District area). Additional housing and employment options are permitted through transfers from resource areas to more suitable locations in the impact area, which protects the community's unique resources and avoids higher costs associated with development on constrained lands. Limiting conflicting uses in resource areas preserves a variety of important social values including recreational and educational values, soil stabilization, flood management, land use buffering, and scenic and open space values.

6.3.3 Social Consequences of Prohibiting Conflicting Uses

Table 6.7 summarizes the consequences of prohibiting conflicting uses in the Springwater Community Area. These consequences are reviewed in the context of the social functions or benefits described previously.

The social consequences of prohibiting conflicting uses are generally negative, except in certain resource areas where social benefits roughly balance the costs. New housing and employment opportunities would be eliminated, and prohibiting all conflicting uses within the impact area would essentially preclude further growth or urbanization of the Springwater Community area.

Table 6.7 Social Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts)	<ul style="list-style-type: none"> Prohibiting conflicting uses on non-resource (impact) areas would preclude new housing and employment options Social benefits of community open space and natural resource preservation would be limited, because fewer people to enjoy these benefits 	Negative: <ul style="list-style-type: none"> No further growth in community; social benefits associated with community open space and natural resource preservation lost.
Lots with partial significant resource sites	All	<ul style="list-style-type: none"> Most social benefits of resources preserved, including health, safety and welfare values, screening and buffering, scenic amenities Recreational and educational opportunities limited by lack of people to enjoy resources and open space Livability degraded by prevention of transportation and infrastructure connections. 	Negative: <ul style="list-style-type: none"> Unique attributes of community open space preserved, but few people to enjoy, and most access and use precluded.
Lots with substantial significant resource sites	All	<ul style="list-style-type: none"> Same as above, with housing limited on those located within resource rating of 4, 5, and 6. 	Negative <ul style="list-style-type: none"> Unique attributes of community open space preserved, but few people to enjoy, and most access and use precluded.

6.3.4 Conclusion

The social analysis supports limiting conflicting uses within significant resource areas and allowing them fully within the impact area. The analysis assumes that within the impact area, potential adverse effects on the social values of nearby resource areas can be mitigated by green development practices, tree-planting requirements and sustainable design requirements outlined in the Plan. For the highly constrained lots where housing density transfer may not be feasible, there may be a need for the City to consider other methods of compensation such as purchase of the land.

6.4 ENVIRONMENTAL CONSEQUENCES

This analysis outlines the environmental consequences of allowing, limiting, or prohibiting conflicting uses within the Springwater Community. The inventory of natural resources in the Springwater Community Plan describes the environmental functions and values at this resource site (Springwater Community Plan Natural Resource and Hazards Inventory, October 2004). The basis for determining the significance of various types of natural resources also is provided in a technical memorandum to the report. The natural resource significance rating criteria are based on fundamental elements, or “functions” that must be present for natural systems to work properly, and for long-term sustainability. The functional elements included are based on recent scientific literature, the inventory, and the subwatershed assessment conducted as part of the inventory.

The following resource functions are those identified for the Springwater Community area:

- Water quality
- Channel dynamics and morphology
- Water quantity: stream flow, sources, and storage
- Microclimate
- Fish and aquatic habitat
- Organic inputs
- Riparian and upland wildlife habitat quality
- Upland sensitive species
- Upland interior habitat

In addition, each significant resource site has been assigned a Natural Resource Significance Classification rating of 1 to 6. This corresponds to their functional value and contribution toward preservation of the watershed in the Springwater Community.

Briefly, the rating class addresses the number of functions exhibited by the specific site. The greater the number of functions exhibited, the greater the significance class and overall importance to the watershed. This rating system allows differentiations between resource sites. That is, not all resource sites may be of equal importance to the maintenance of the watershed. Some resources sites may be more valuable than others (see Technical Memorandum on Resource Needs Analysis and Significance, August 2004).

The value of this rating is that decision makers could use it when deciding what levels of protections they are willing to accept in order to meet planning goals in the Springwater Community area.

The following are the significance Classifications:

1. Isolated Tree Groves (single attribute, not located adjacent to any other significant resource sites)
2. Tributary Reach (single attribute but located adjacent to other significant resource sites)
3. Tributary Reach and Tree Grove
4. Johnson Creek Reach, locally Significant wetland
5. Combination of Two: Johnson Creek Reach, Tree Grove, unique habitat, locally significant wetland
6. Combination of three or more: Johnson Creek Reach, tree grove, locally significant wetland, unique habitat

6.4.1 Environmental Consequences of Allowing Conflicting Uses

Basically, the resource functions listed above would be highly degraded or lost in the absence of an environmental protection program. Allowing conflicting uses in resource areas without limits or controls results in the loss of significant environmental functions and values identified in the Springwater Community Plan natural resources inventory. The environmental consequences, therefore, are extremely negative.

Table 6.8 summarizes the potential impacts of allowing the conflicting uses.

Table 6.8 Environmental Consequences of Allowing Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Degradation of water quality and aquatic habitat functions from off-site impacts ▪ Reduction or disruption of groundwater recharge, stream flow, and hydro-period 	Negative: <ul style="list-style-type: none"> ▪ Lack of Green Development Practices means that water quality and aquatic habitat values of streams and wetlands are lost; probable reduction in groundwater discharge and hydro-period.
Lots with partial significant resource sites	All	<ul style="list-style-type: none"> ▪ Reduction of water quantity function ▪ Degradation or loss of fish and aquatic habitat functions ▪ Reduction of water quality, slope stabilization, microclimate amelioration functions ▪ Disruption or loss of vegetation and organic materials function ▪ Reduction of floodplain and channel dynamics functions ▪ Loss of wildlife habitat functions in wetlands, riparian areas, and uplands 	Extremely Negative: <ul style="list-style-type: none"> ▪ Community natural resources and functions highly degraded or lost.
Lots with substantial significant resource sites	All	<ul style="list-style-type: none"> ▪ Disruption or elimination of all functional values listed above 	Extremely Negative: <ul style="list-style-type: none"> ▪ Community natural resources and functions highly degraded or lost.

6.4.2 Environmental Consequences of Limiting Conflicting Uses

The decision to limit conflicting uses as indicated in the Springwater Community Plan conserves most of the environmental resources and functional values identified in the natural resource inventory. Limiting conflicting uses allows the development goals of the Plan to be met, by preserving most of the ESRA-SW and providing reasonable mitigation for impacts resulting from planned public facilities and limited development. Although impacts are mitigated (i.e., reduced) there would still be limited degradation and loss of some functional values. Provisions for restoration potentially will increase functional values. The environmental consequences are generally positive under the Springwater Community Plan objective where development impacts are limited to areas generally outside the ESRA-SW and mitigated through green development practices and restoration within the resource site.

Table 6.9 summarizes the consequences of limiting conflicting uses.

Table 6.9 Environmental Consequences of Limiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> ▪ Degradation of water quality and aquatic habitat functions from off-site impacts mitigated through Green Practices ▪ Reduction or disruption of groundwater recharge, stream flow, and hydro-period mitigated through Green Practices 	Positive: <ul style="list-style-type: none"> ▪ Potential off-site impacts on resource functions mitigated by Green Development Practices.
	Public facilities	<ul style="list-style-type: none"> ▪ Potential degradation of water quality and aquatic habitat functions from off-site impacts, particularly streets, mitigated through Green Development Practices. 	Positive: <ul style="list-style-type: none"> ▪ Potential off-site impacts on resource functions mitigated by Green Development Practices.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ Potential increase in some functional values outside resource sites. 	Positive: <ul style="list-style-type: none"> ▪ Potential increase in some functional values.
Lots with partial significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> ▪ Protection of functional values through avoidance and density transfer ▪ Potential increase in some functional values with restoration 	Positive: <ul style="list-style-type: none"> ▪ Degradation of some resource functions but potential overall increase throughout the community through restoration.
	Public facilities	<ul style="list-style-type: none"> ▪ Limited disruption resulting from construction of planned public facilities. ▪ Mitigation for most impacts through required restoration. 	Neutral to Slightly Negative: <ul style="list-style-type: none"> ▪ Limited loss of some resources and functions but adverse impacts limited through required mitigation and restoration.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ Limited disruption of functional values. ▪ Mitigation for most impacts through required restoration 	Neutral to Slightly Negative: <ul style="list-style-type: none"> ▪ Limited loss of some resources and functions but adverse impacts limited through required mitigation and restoration.

Table 6.9 Environmental Consequences of Limiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with substantial significant resource sites (and limited transfer-ability)	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> ▪ With recommended adjustments to resource site boundary to allow for full density transfer, minor reduction of resource area ▪ However, with required mitigation, potential increase in some functional values with restoration 	Neutral to Slightly Negative: <ul style="list-style-type: none"> ▪ Limited loss of some resources and functions but adverse impacts limited through required mitigation and restoration.
	Public facilities	<ul style="list-style-type: none"> ▪ Limited disruption of some functional values ▪ Potential increase in some functional values with restoration 	Positive: <ul style="list-style-type: none"> ▪ Potential off-site impacts on resource functions mitigated by Green Practices.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ No park or recreational uses planned for these parcels, except for potential trails 	Not Applicable

6.4.3 Environmental Consequences of Prohibiting Conflicting Uses

The environmental consequences of fully protecting the resource sites are positive. However, as noted in previous sections, the economic and social consequences are extremely negative since the Springwater Community Plan goals would not be met. It would not be likely that the City of Gresham would consider annexing the Springwater Plan District area if it was constrained to prohibiting all conflicting uses.

Table 6.10 summarizes the environmental consequences of prohibiting conflicting uses in the Springwater Community Plan.

Table 6.10 Environmental Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> ▪ No adverse impacts from off-site development on resource functions. 	Positive: <ul style="list-style-type: none"> ▪ No off-site impacts on resource functions.
	Public facilities	<ul style="list-style-type: none"> ▪ No adverse impacts from public facility construction on resource functions. 	Positive: <ul style="list-style-type: none"> ▪ No off-site impacts on resource functions.
	Parks and recreation uses	<ul style="list-style-type: none"> ▪ No adverse impacts from park construction on resource functions. 	Positive: <ul style="list-style-type: none"> ▪ No off-site impacts on resource functions.
Lots with partial significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> ▪ No adverse impacts from residential or commercial construction on resource functions. 	Positive: <ul style="list-style-type: none"> ▪ No on- or off-site impacts on resource functions.
	Public facilities	<ul style="list-style-type: none"> ▪ No adverse impacts from public facility construction on resource functions. 	Positive: <ul style="list-style-type: none"> ▪ No impacts from public facility construction on resource functions.

Table 6.10 Environmental Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
	Parks and recreation uses	<ul style="list-style-type: none"> No adverse impacts from park construction on resource functions. 	Positive: <ul style="list-style-type: none"> No on- or off-site impacts from parks on resource functions.
Lots with substantial significant resource sites	All (except for public facilities, parks recreation)	<ul style="list-style-type: none"> No adverse impacts from residential or commercial construction on resource functions. 	Positive: <ul style="list-style-type: none"> No on- or off-site impacts on resource functions.
	Public facilities	<ul style="list-style-type: none"> No adverse impacts from road construction on resource functions. 	Positive: <ul style="list-style-type: none"> No public facilities construction impacts on resource functions.
	Parks and recreation uses	<ul style="list-style-type: none"> No park or recreational uses planned except for trails. 	Not Applicable

6.4.4 Conclusion

This environmental consequences analysis supports either prohibiting conflicting uses or limiting conflicting uses to planned public facilities and limiting incursion into the resource sites to allow for full density transfer for substantially affected parcels, and using green development practices. Impacts from limited residential and public facility development within the resource sites can be reduced and mitigated through restoration. The resource areas provide important functional values and the opportunity of greatly improving resource function through restoration in the resource sites. The Springwater Plan District proposes a mix of housing and employment opportunities outside the resource sites while maintaining and restoring significant riparian, wetland, and upland areas within the resource sites with limited intrusion.

6.5 ENERGY ANALYSIS

This analysis outlines the energy consequences of allowing, limiting, or prohibiting conflicting uses. The energy discussion focuses on three topics: transportation; infrastructure; and the heating and cooling of structures. A general discussion of these topics is presented first, followed by an analysis applying these topics in the context of allowing, limiting, and prohibiting conflicting uses.

Transportation. Energy expenditures for transportation relate primarily to travel distance from origin to destination and mode of transportation used. Both variables can be affected by natural resource protection. The Springwater Community Plan outlines goals and policies to develop an efficient transportation system with a range of modes available to those who reside and work in the Community as well as those commuting to and from the area to work or live (See Development Policies of the Springwater Community Plan Report).

Transportation in the Springwater Community involves moving people between homes, employment, commercial areas, and other services. The site will have major employment areas within the Community as well as be within very short distances of other major employment areas elsewhere in the City of Gresham and the eastern portions of Multnomah and Clackamas Counties. Automobiles will still be the primary means of transportation in and out of the area and though convenient, they generally are not energy efficient. Roads will be upgraded to allow for other transportation modes including transit and bicycles. The Springwater Trail, which passes through the northern part of the site, provides alternative transportation options.

With the Village Center, industrial, and employment areas to be developed within the community it is expected that residents will not have to travel far to and from work. Locating homes, jobs, and services within the Community means that residents may not need to travel outside the community to work or for basic services.

The availability of natural resources at the Springwater Community, such as the streams, wetlands and riparian areas, provide opportunities for wildlife observation, education, and recreation for area residents. A growing system of public open space is planned for developed within the Springwater Community. Because these open space resources are close to users, limited transportation energy is used in reaching them. In addition, the system of trails that are planned within the Springwater Community will provide walking routes to local services, schools, and civic amenities, potentially decreasing dependence on the automobile.

Infrastructure. Locating housing and other development outside of natural resource sites in a planned and efficient manner normally results in less infrastructure needed to serve sewer, water, transportation, and other needs. Development located away from flood and slope hazard areas can reduce or eliminate the need for additional construction considerations, hazard control structures, or emergency repairs. In general, urbanization that is carefully planned and performed efficiently adjacent to existing urban centers can help to reduce and manage energy consumption within the region.

Heating and Cooling of Structures. Energy consumption for the purpose of heating and cooling structures is impacted by resource protection in two ways: building form and presence of vegetation.

Protection of Springwater Community's trees and forested stream corridors, and other resource sites, can help reduce energy costs for heating and cooling. Trees and riparian vegetation within the Community will reduce energy demands for cooling in the summer by providing shade on nearby structures. Plants also absorb sunlight and transpire during growing seasons, thus reducing ambient air temperatures. This moderating effect can reduce energy needs for cooling of nearby development. Trees and large shrubs can also act as a windbreak during winter. Slowing or diverting cold winter winds will reduce heat loss in structures from convection, resulting in lower energy needs.

Planned urban densities will generally result in an efficient compact development form, which includes greater common wall construction and reduced building surface areas, reducing heat loss and energy consumption. In addition, the incorporation of sustainable development designs will encourage more efficient selection and use of materials that reduce energy consumption.

6.5.1 Energy Consequences of Allowing Conflicting Uses

Table 6.11 summarizes the energy consequences of allowing conflicting uses to occur in the Springwater Community. These consequences are discussed in the context of the energy functions or benefits described above. As with the preceding analyses, conflicting uses are addressed together or in groups where appropriate.

Table 6.11 Energy Consequences of Allowing Conflicting Uses Fully

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Proximity of housing, jobs, and services reduces energy needs for transportation ▪ Infrastructure development on unconstrained land reduces energy expenditures ▪ Without green development practices, energy benefits related to heating and cooling will be lost. 	<p>Slightly Negative: The Springwater Community Plan provides for clustering of housing and jobs. These benefits are also found under the “limited option.” However, without green development practices, energy consequences are slightly negative.</p>
Lots with partial significant resource sites	All	<ul style="list-style-type: none"> ▪ Transportation and infrastructure energy consumption increases as development extends into constrained lands ▪ Loss of nearby open spaces, increasing transportation energy demand for recreation ▪ Energy benefits related to heating and cooling of structures lost as vegetation is removed 	<p>Negative:</p> <ul style="list-style-type: none"> ▪ Energy benefits of resources lost, less energy-efficient use of land.
Lots with substantial sig. resource sites	All	<ul style="list-style-type: none"> ▪ Same as above; ▪ Building on highly constrained lots increases energy expenditures. 	<p>Negative:</p> <ul style="list-style-type: none"> ▪ Energy benefits of resources lost, less energy-efficient use of land.

This analysis supports the clustering of housing and jobs served by an energy efficient transportation system. These benefits, however, are also realized in the “limited option.” Allowing conflicting uses within the resource sites has negative energy consequences, as does the lack of green development practices. The resource sites provide important energy benefits for nearby development and for the community as a whole.

6.5.2 Energy Consequences of Limiting Conflicting Uses

Table 6.12 summarizes the energy consequences of limiting conflicting uses in the Springwater Community. These consequences are discussed in the context of the energy functions or benefits described above.

Table 6.12 Energy Consequences of Limiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no significant resource sites	All (off-site impacts)	<ul style="list-style-type: none"> ▪ This option includes the benefit of energy efficient development through density and clustering of jobs near housing ▪ Energy benefits related to heating and cooling preserved ▪ Green development practices conserve energy 	Positive: <ul style="list-style-type: none"> ▪ Energy benefits accrue from density transfer and heating and coloring effects of natural resource preservation and green development practices
Lots with partial significant resource sites	All	<ul style="list-style-type: none"> ▪ Transportation and infrastructure energy expenditures reduced through avoidance of constrained lands; ▪ Open spaces conserved, reducing transportation energy demand for recreation; ▪ Supports energy benefits related to heating and cooling of structures. 	Positive: <ul style="list-style-type: none"> ▪ Energy benefits accrue from density transfer and heating and coloring effects of natural resource preservation and green development practices.
Lots with substantial sig. resource area (and limited transferability)	All	<ul style="list-style-type: none"> ▪ Same as above; ▪ Lack of density transferability may lead to greater energy expenditures. 	Positive: <ul style="list-style-type: none"> ▪ Energy benefits accrue from density transfer and heating and coloring effects of natural resource preservation and green development practices. However, because not all density may be transferable for substantially covered parcels, limited incursion into the resource sites is recommended.

This analysis supports limiting conflicting uses within significant resource areas of the site, implementing density transfer, and employing green development practices. Urban housing and employment opportunities can be provided in an energy-efficient manner within non-resource areas. Additional housing and employment options are permitted through transfers from resource areas to more suitable locations in the impact area, which protects the community's unique natural resources and avoids higher energy costs associated with development on constrained lands. Limiting conflicting uses in resource areas preserves a variety of important energy values related to transportation, infrastructure, and the heating and cooling of structures.

6.5.3 Energy Consequences of Prohibiting Conflicting Use

Table 6.13 summarizes the energy consequences of prohibiting conflicting uses in the Springwater Community. These consequences are reviewed in the context of the social functions or benefits described previously.

Table 6.13 Energy Consequences of Prohibiting Conflicting Uses

Lot Type	Conflicting Uses	Consequences	Assessment
Lots with no sig. resource site	All (off-site impacts)	<ul style="list-style-type: none"> ▪ Precludes new housing and employment options, potential of forcing developers to look for land further distant, thus increasing vehicle miles traveled. 	Negative: <ul style="list-style-type: none"> ▪ No further growth in community, which would result in higher energy costs and expenditures.
Lots with partial sig. resource site	All	<ul style="list-style-type: none"> ▪ Loss of transportation and infrastructure connectivity within valley would lead to significant inefficiencies and energy costs; ▪ Loss of recreational and educational opportunities in resource areas could increase energy costs. 	Negative: <ul style="list-style-type: none"> ▪ No further growth in community, which would result in higher energy costs and expenditures. ▪ Local access and recreational use precluded.
Lots with substantial sig. resource site	All	<ul style="list-style-type: none"> ▪ Same as above; ▪ Lack of density transferability may lead to greater energy expenditures. 	Negative: <ul style="list-style-type: none"> ▪ No further growth in community, which would result in higher energy costs and expenditures. ▪ Local access and recreational use precluded.

The energy consequences of prohibiting conflicting uses are negative, creating the potential for urban sprawl into more remote parts of the region, potentially outside of established urban growth boundaries. Prohibiting all conflicting uses within the impact area would essentially preclude further growth or urbanization of the Community. Prohibiting conflicting uses within resource areas would prevent efficient transportation and infrastructure systems, and increase energy costs. It would also limit access to open spaces for recreational use, increasing travel costs.

6.5.4 Conclusion

The energy analysis supports limiting conflicting uses within significant resource areas and allowing them fully within the impact area.

The retention of natural resources in the Springwater Community can reduce heating and cooling related energy needs both within the site and in the surrounding community. Conservation of resources can also reduce infrastructure-related energy use and enhance the attractiveness of local walking and bicycle routes, including the Springwater Trail and other trails. This can decrease transportation-related energy use. Locating homes, jobs, and services in close proximity to one another can significantly reduce transportation-related energy demands.

7.0 DETERMINING LEVEL OF PROTECTION BASED ON ESEE RESULTS

This section contains the levels of protections recommended for implementation for the Goal 5 significant resources. It will be based on the ALP, the resource classifications that the City has identified for each resource site, and the goals and policies that the City has developed to plan the Springwater community. The Goal 5 significant resource sites will be identified and incorporated into the Environmentally Sensitive Resource Areas (ESRA-SW) developed to provide adequate protections to maintain the functional value of each site.

After review of the ESEE impacts on property owners within Springwater, several conclusions can be drawn. First, the Springwater Community Plan is designed to provide greater residential and employment densities than what currently exists. The economic benefits of urbanization are substantial for all lands including the ESRA-SW sites. The analysis indicates that most properties located partially within the ESRA-SW will experience substantial increases in development potential and economic value as a result of the Springwater Community Plan implementation compared to the existing rural zoning.

For landowners with highly constrained property that may be located substantially within resource sites, the economic impacts are varied and could be marginal or negative. The proposed ESRA-SW sub-district addresses these impacts in a number of ways. A program has been developed to provide additional economic value from lands within the ESRA-SW through a density transfer allowance. This density transfer allowance increases the net development potential of lands outside the ESRA-SW. Aggregation of properties in common ownership or as part of a larger development package may effectively increase the overall development potential of lands adjacent to the ESRA-SW. Additional value accrues to local landowners from the proximity of these properties to the community’s natural, scenic, and open space amenities.

Table 7.1 summarizes the conclusions for each of the four ESEE factors considered. In the table, “prohibit” indicates an analysis conclusion to prohibit conflicting uses, “limit” refers to limiting conflicting uses, and “allow” refers to fully allowing conflicting uses. The final column, “conclusion,” lists the aggregated assessment for the site.

Table 7.1 Conflict Resolution Summary Table

Property	Economic	Social	Environmental	Energy	Conclusion*
Lots with no ESRA-SW coverage	Limit	Limit	Limit	Limit	Limit
Lots with partial ESRA-SW coverage	Limit	Limit	Prohibit	Limit	Limit
Lots with substantial ESRA-SW coverage (and limited transfer-ability)	Limit**	Limit**	Prohibit	Limit	Limit**

** Green Development Practices standards that will apply throughout the Plan District will minimize impacts on nearby/downstream significant resources and resource functions.*

*** In certain cases, on-site density transfers are not possible, with potential loss of economic and social values. Therefore, this analysis recommends limited incursions into the ESR-SW A to allow full density transfer potential to be realized, or alternatively, outright purchase of those parcels located within the resource sites.*

Most properties containing significant resources will experience substantial increases in development potential and economic value as a result of Plan District implementation. Fully allowing conflicting uses (i.e., allowing unrestricted development within the ESRA-SW) fails to meet the goals and objectives of the Concept Plan, fails to protect the unique attributes of the community, and could result in major impacts and loss of significant natural resources and ecological functions. Prohibiting conflicting uses altogether would preclude urbanization of the community, and similarly fail to meet the goals of the community, as expressed in the Springwater Community Plan.

Limiting conflicting uses through proposed ESRA-SW land use regulations has positive economic, social, environmental and energy implications for the landowners, resources, and the larger community – so long as existing uses can be maintained, planned streets, utilities, and pedestrian trails are allowed to pass through the ESRA-SW in a manner that minimizes impacts, and residential units within the ESRA-SW can be transferred to more suitable buildings sites outside the ESRA-SW.

Some properties with “substantial ESRA-SW coverage” do not have sufficient area outside the ESRA-SW to fit all of the allowed transfer units on site. As a result of the economic and social analysis, the ESEE recommendation is to create a provision that permits these highly constrained properties to build into the ESRA-SW, after available non-ESRA-SW land has been used, in a manner that minimizes impacts. Alternatively, the City of Gresham could decide to compensate parcel owners by purchasing the parcels located within the resource sites.

7.1 ESRA BOUNDARIES

Finally, there is a need to determine the correct boundaries for the resource sites that will become part of the ESRA-SW sub-district. As mentioned in the ESEE analysis, resource sites have been classified according to their contribution to the functional value of the watershed by using a 1 to 6 rating (see section 2.3 and Figure 2.1). This reflects the variability of the resource sites. That is, not all sites have equal value. While they may contribute to maintenance and protection of a watershed’s function and value, the ESEE approach allows flexibility to make the following determinations:

- Flexibility to determine buffer widths and boundaries that differ between each resource site, yet provide adequate protection
- When justified by the ESEE analysis a jurisdiction may decide not to provide protective measures should it be demonstrated that the “conflicting use is of sufficient importance relative to the resource site” that any “measure to protect the resource to some extent should not be provided” (ORS 660-023-0040(5)(c))

7.1.1 Springwater Environmental Protection and Enhancement Goals

As mentioned in the introduction of this section, one of the goals for the Springwater Community development will be to “protect, restore and enhance significant natural resources, including stream corridors, wetlands, and forested areas.” This goal and the 12 policy statements, which are designed to guide development, are a critical part of the principles (others include economic development, sustainability, community, livability, and transportation) that the Springwater Community Plan will use to ensure a successful development and a desirable place to live (see Springwater Community Plan Report).

The policies shed light on how the natural resource goals will be met. These are important statements because they help outline levels of environmental maintenance, protection, and enhancement that will be implemented in the community. An important element of the environmental protection and enhancement is the determination of the ESRA-SW sub-district size and extent. That is, what are appropriate boundaries for the natural resource sites that meet the natural resource goal?

The policy statements clearly recognize that proper stewardship of the Springwater Community portion of the Johnson Creek Watershed is necessary because of its importance locally and regionally. Further, the policies express that any new development must be balanced against:

- Protection of sensitive species and habitat, water quality, and groundwater resources,
- Restoration of watershed functions as well as sensitive/natural species,
- Protection of steeply sloped lands, and
- Protection of wildlife habitat corridor for wildlife migration.

With goal and policy statements in mind, combined with the significant resource site classifications and the “Limited” conflicts approach that this ESEE analysis supports, it is possible to provide guidance and recommendations for ESRA-SW boundaries. Not all ESRA-SW boundaries need to be identical; there can be boundary flexibility depending on the combination of the three factors.

7.1.2 ESRA-SW Boundary Determination Guidelines

The following outlines the boundaries for the Springwater ESRA-SW. Using the four factors of goal/policies, resource rating classifications, Metro Title 13 protections (as part of the Gresham/Multnomah Intergovernmental Agreement), and allowance of Limited conflicts as supported by the ESEE analysis, it is possible to outline a set of guidelines to determine appropriate ESRA-SW boundaries. These guidelines are then compared to the proposed Springwater Concept Plan to determine whether the ESRA-SW boundaries are adequate to at least meet the minimum boundary requirements.

Once the minimum boundaries for protection of significant natural resource sites have been identified based on the four factors, the ESRA-SW boundaries should be broad enough to:

- Prevent resource site degradation
- Protect the functional value of the resource site and health of the watershed
- Provide where possible opportunities for enhancement of resource site and overall watershed health

7.1.2.1 Boundary Determination and Natural Resource Classifications

The ESRA-SW boundary can vary depending on the significant resource site’s functional classification and their location in the watershed. The following are boundary guidelines for each resource classification. For detailed discussion of the significance class determination see the *Springwater Community Plan Natural Resource Protection and Restoration Plan* (April 2005).

Class 1 – Isolated Tree Grove

Class 1 areas are small-sized tree groves isolated from streams or wetland. They have the lowest functional value within the planning area and limited enhancement potential. Sites in this classification provide some habitat resource value, but not are considered critical to preservation of watershed health. Boundary protections can be minimal and could, given, the tree planting standards, be non-existent. No specific recommended boundary.

Class 2 – Tributary Reach

Class 2 areas are located along the relatively narrow tributaries to the Johnson Creek main stem. While they lack mature tree cover they have value by providing function to prevent erosion, bank cutting, and some wildlife habitat value. In most cases, these areas have been disturbed (mowed) and no longer have native vegetation, but they do contribute to overall watershed health. Boundaries need to be adequate to protect this function, though they could be narrower than the natural resource inventory boundary and still protect the sites. Should enhancement opportunities be considered, the sites would need to be equal to the boundary

identified in the natural resource inventory. Recommended boundary width is 100 feet either side of stream or wetland unless there are steep slopes (greater than 25% slope) in which case the recommended boundary width is 175 feet.

Class 3 – Tributary Reach and Tree Grove

Class 3 acknowledges the increased functional value of two resource features in one site, i.e., tributary reach and a tree grove. The combination of the elements provides stream protection for aquatic habitat, water quality and erosion protection from canopy and riparian vegetation, and forested corridors to support wildlife habitat. Boundaries for these areas need to be of adequate width to protect the tree groves and that there be adequate width of tree groves spanning the tributaries or the Johnson Creek main stem to maintain wildlife passage. Recommended boundary width is 175 feet either side of stream or wetland, or 250 feet where tree groves are located away from water features.

Class 4 – Johnson Creek Reach or Locally Significant Wetland

Class 4 sites include either the entire Johnson Creek corridor or those sites identified through the Local Wetland Inventory (see Reference Documents) as locally significant wetlands. As documented through the inventory process, these sites provide significant value to watershed health through water quality and channel protection and support of aquatic and terrestrial habitat. ESRA-SW boundaries should match the natural resource inventory boundaries in order to protect existing resource functions. Similarly for enhancement opportunities, the ESRA-SW boundary should be equal to the natural resource inventory boundary. Recommended boundary width is 200 feet either side of stream or 100 feet surrounding a wetland.

Class 5 – Combination of Two: Johnson Creek Reach, Tree Grove, Unique Habitat, Locally Significant Wetland

Class 5 sites include multiple functions that contribute to watershed health, habitat protection (aquatic and terrestrial) and protection of steep slopes. ESRA-SW boundary should match the existing natural resource inventory boundary to maintain existing resource functions and provide enhancement opportunities. Recommended boundary width is 200 feet either side of stream or wetland. Recommended boundary should surround entire resource site if it is located away from a water feature.

Class 6 – Combination of Three or More: Johnson Creek Reach, Tree Grove, Unique Habitat, Locally Significant Wetland

Class 6 sites provide the greatest functional value of all resource sites. These sites exhibit the greatest number of resource functions and are vital to maintaining watershed health. These sites are also the most sensitive to changing conditions and can be degraded should there not be adequate protection. Therefore, ESRA-SW boundaries should match the existing natural resource boundary to preserve existing resource functions and provide enhancement opportunities. Recommended boundary width is to surround entire resource site.

7.1.2.2 Boundary Determination - Sites Adjacent to Water Features

The ESRA-SW boundary must also conform to the requirements set forth in the Intergovernmental Agreement between the City of Gresham and Multnomah County. That agreement states that the City will apply Metro's Title 13 protection standards and where possible exceed them.

A recent draft of Metro’s Title 13 Model Habitat Conservation Ordinance (March 24, 2005) outlines the proposed setback boundary distances for protecting resource sites adjacent to water features. These setback boundary requirements have been applied to Springwater’s natural resource classifications (see previous classification definitions and Figure 2.1) to determine a recommended boundary setback for the ESRA-SW District. Table 7.2 identifies the recommended setback widths. For comparative purposes the table also includes the minimum setback widths currently required by the Gresham Water Quality Resource Area Ordinance and Metro’s existing Title III Ordinance. All setback distances are measured in feet from top-of-bank if a stream or from delineated wetland boundary.

Table 7.2 Springwater Minimum ESRA-SW Setback Distance – Sites Adjacent to Water Features

Resource Classification	Regulated Corridor for Water Quality Protection¹	Recommended Distance for Primary Factor Protection²
Class 2 – Tributary to Johnson Creek with no or highly modified riparian vegetation	50 feet	100 feet either side of top-of-bank or one site potential tree height for streambank protection and replacement of riparian vegetation
Class 2 – Tributary to Johnson Creek, slopes greater than (>) 25% grade. Applies only to a small segment of Hogan Creek. (see Figure 7.1, letter A)	75 feet	175 feet either side of top of bank for stream bank protection; water quality
Class 3 – Tributary to Johnson Creek in forest canopy	75 feet	175 feet either side of top of bank for riparian/upland connectivity and proximity to upland habitat area; large wood recruitment
Class 3 -- Tributary to Johnson Creek, slopes greater than (>) 25% grade in forest canopy. Applies only to small segments of Brigman and Botefuhr Creeks, and a larger segment of Hogan Creek. (see Figure 7.1, letter B)	150 feet	175 feet either side of top of bank for wildlife passage while protecting the integrity of the streambanks or vegetated ravines
Class 4 – Johnson Creek Mainstem	150 feet	200 feet either side of top of bank or to the edge of the 100 year floodplain, whichever is greater. For the extent of 100 yr floodplain and channel dynamics; wildlife passage; riparian/upland connectivity; flood storage
Class 4 – Locally Significant Wetland as shown in Figure 4 of the Natural Resources Report	50 feet	100 feet surrounding the entire wetland for connection to upland interior habitat
Class 5 – Johnson Creek mainstem, tree groves, unique habitat, and or locally significant wetland.	150 feet	200 feet either side of top of bank or to the edge of the 100 year floodplain, whichever is greater. For the extent of 100 yr floodplain and channel dynamics; wildlife passage; riparian/upland connectivity; flood storage

¹ From City of Gresham’s Water Quality Resource Areas Ordinance and Metro’s existing Title 3 Ordinance.

² Metro’s Title 13 Model Habitat Conservation Ordinance (3/24/05).

7.1.2.3 Boundary Determination – Sites Not Adjacent to Water Features and Class 6 Resource Site
 For resource sites not located adjacent to water features and a Class 6 resource site, recommended boundary distance guidelines have been identified by the Springwater Community Working Group to meet protection goals. Table 7.3 displays the recommended distance boundaries for those natural resource site classifications away from water features and a Class 6 resource site near Johnson Creek.

It is recognized that the protection recommendations for these areas go beyond Goal 5 requirements. They are recommended because of the Springwater Community Planning goals designed to promote a sustainable community. A previous section of the ESEE report (Section 7.1.1) outlined the Community Plan’s stewardship goals for environmental resources. Among the goals were protection of steep slopes, sensitive species and habitats, and protection of wildlife habitat corridors for wildlife migration. The boundary recommendations for sites not adjacent to water features meets these goals by protecting steep slopes and maintaining corridors that allow wildlife to migrate between upland areas and the stream corridors. The boundary recommendation for the Class 6 resource site meets these goals by protecting a particularly high value and sensitive habitat site located along the upper mainstem of Johnson Creek.

7.3 Springwater Minimum ESRA-SW Setback Distance – Sites Not Adjacent to Water Features & a Class 6 Resource Site

Resource Classification	Recommended Boundary on Sites Not Adjacent to Water Features ¹
Class 3 – Tree Groves as corridors between water features See Figure 14 Tree Groves in the Natural Resources Report. Applies only to the tree grove between Sunshine and McNutt Creeks and the tree grove near Badger Creek.	250-feet wide for riparian to upland connection; wildlife habitat larger patch sizes, microclimate and shade, recharge to groundwater sources and large woody recruitment
Class 5 -- Slopes greater than (>) 25% grade. Applies only to the Hogan Butte and the Persimmon Areas. (see Figure 7.1, letter C)	Preserve entire resource site; but allow needed public facilities
Class 6 – Johnson Creek Reach, Tree Grove, Unique Habitat, Locally Significant Wetlands	Preserve entire resource site; but allow needed public facilities

¹ From Springwater Community Working Group

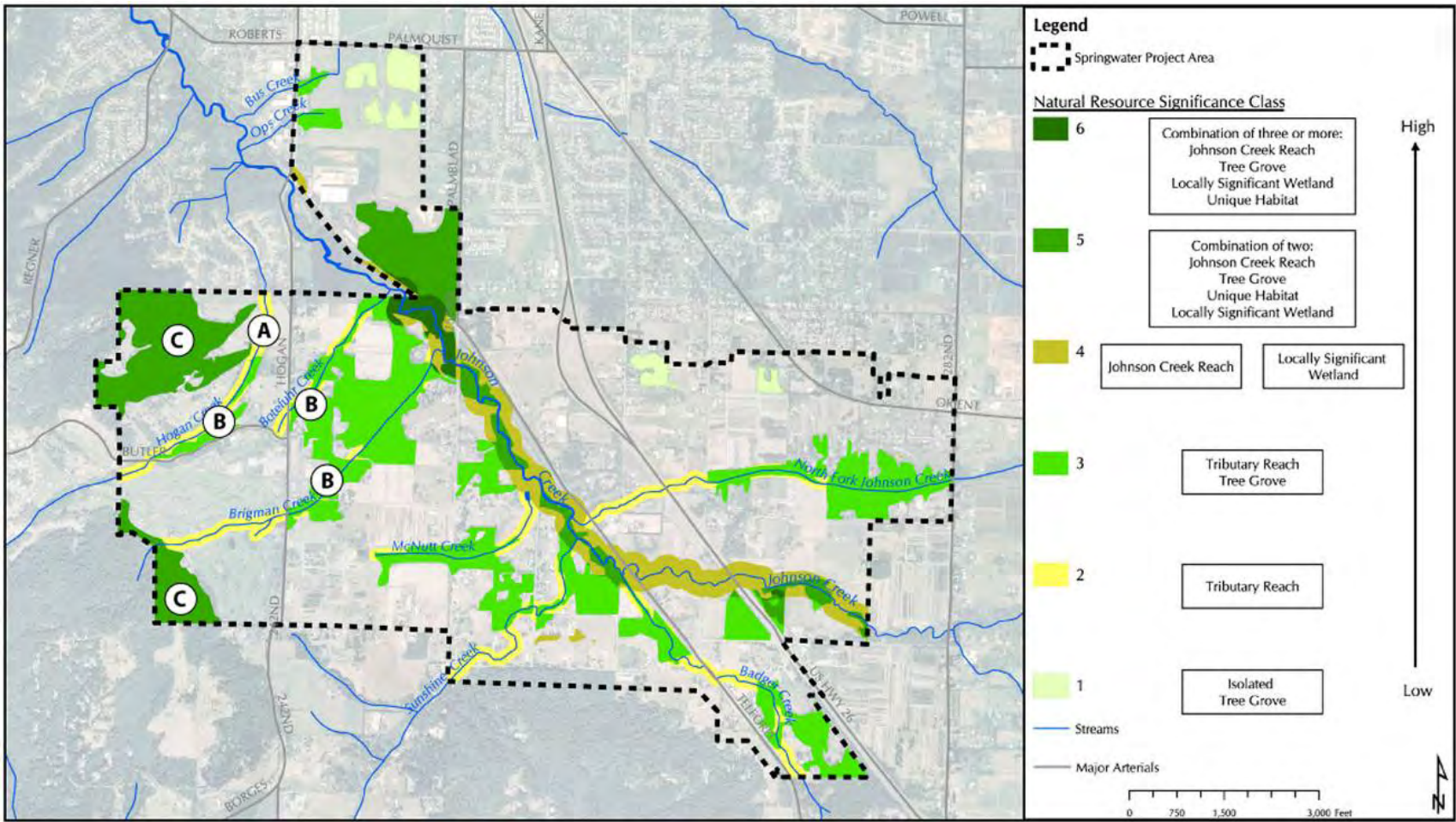


Figure 7.1 Approximate Locations of Steep Slope Sites by Natural Resource Significance Class

7.2 ESRA-SW COMPARISON TO CONCEPT PLAN AND NATURAL RESOURCE SITE INVENTORY BOUNDARY

The following section compares boundary guidelines in the previous sub-section to the proposed Springwater Community Concept Plan (Figure 7.2) and the resource site inventory boundary (Figure 7.3). Figure 7.3 is a composite map that overlays the proposed ESRA-SW district boundary on the resource site inventory boundary. This allows the reader to view differences, if any, between the ESRA and resource boundary.

The ESRA-SW boundary guidelines are applied to each of the resource sites by resource significance classifications and/or stream reach. In the first sub-section a determination has been made as to whether the Concept Plan boundary meets the recommended ESRA-SW boundary guidelines. In the second subsection the ESRA-SW boundary is compared to determine differences, if any, between the proposed ESRA-SW boundary and the resource site inventory boundary. Both the Concept Plan and Natural Resource Site Inventory Boundary figures are labeled 1 to 5 to identify sections that are addressed in the comparisons.

7.2.1 ESRA-SW Boundary and Concept Plan Comparison

The recommended ESRA-SW sub-district boundary widths are met for the entire Springwater Community except in locations that are indicated in Figure 7.2. There are five sites where the ESRA-SW sub-district boundaries do not exist. These five are identified and discussed in detail below.

7.2.1.1 Sites 1 and 2

Sites 1 and 2 in Figure 7.2 do not have ESRA-SW sub-district boundaries. These sites have a natural resource significance class rating of #1. Sites with this classification provide the lowest contribution to watershed health and protection (see Figure 7.1 and sub-section 7.1.2.1). The sites are located in the Brickworks area (zoned district HI or Heavy Industrial) and the Springwater Community area along the northern boundary of the Springwater Community bounded by 262nd Street on the western side and 267th Street on the eastern side (to be zoned IND-SW or Industrial).

These are isolated tree groves that, if left, unprotected and the conflicting uses of the proposed zone district allowed, would not impact the overall functional value of the watershed. Certainly, tree removal would be a concern and therefore such removal would need to comply with the tree planting requirements, but the overall impact would not risk the environmental health of the Springwater Community. Given the lower functional value of these resource sites and tree planting the requirements that must be followed should there be development at the sites, there is no need to provide an ESRA-SW boundary for these locations.

7.2.1.2 Site 3

Site 2 has a tree grove that spans the upper reaches between Botefuhr and Brigman Creeks. Site 3 has a natural resource significance class rating of #3, which means that the site's contribution to watershed health is based either on its proximity to a tributary of the Johnson Creek Watershed or in this case its contribution as a tree grove connecting tributaries to allow wildlife passage between reaches, to a forested area, or for wildlife cover protection.

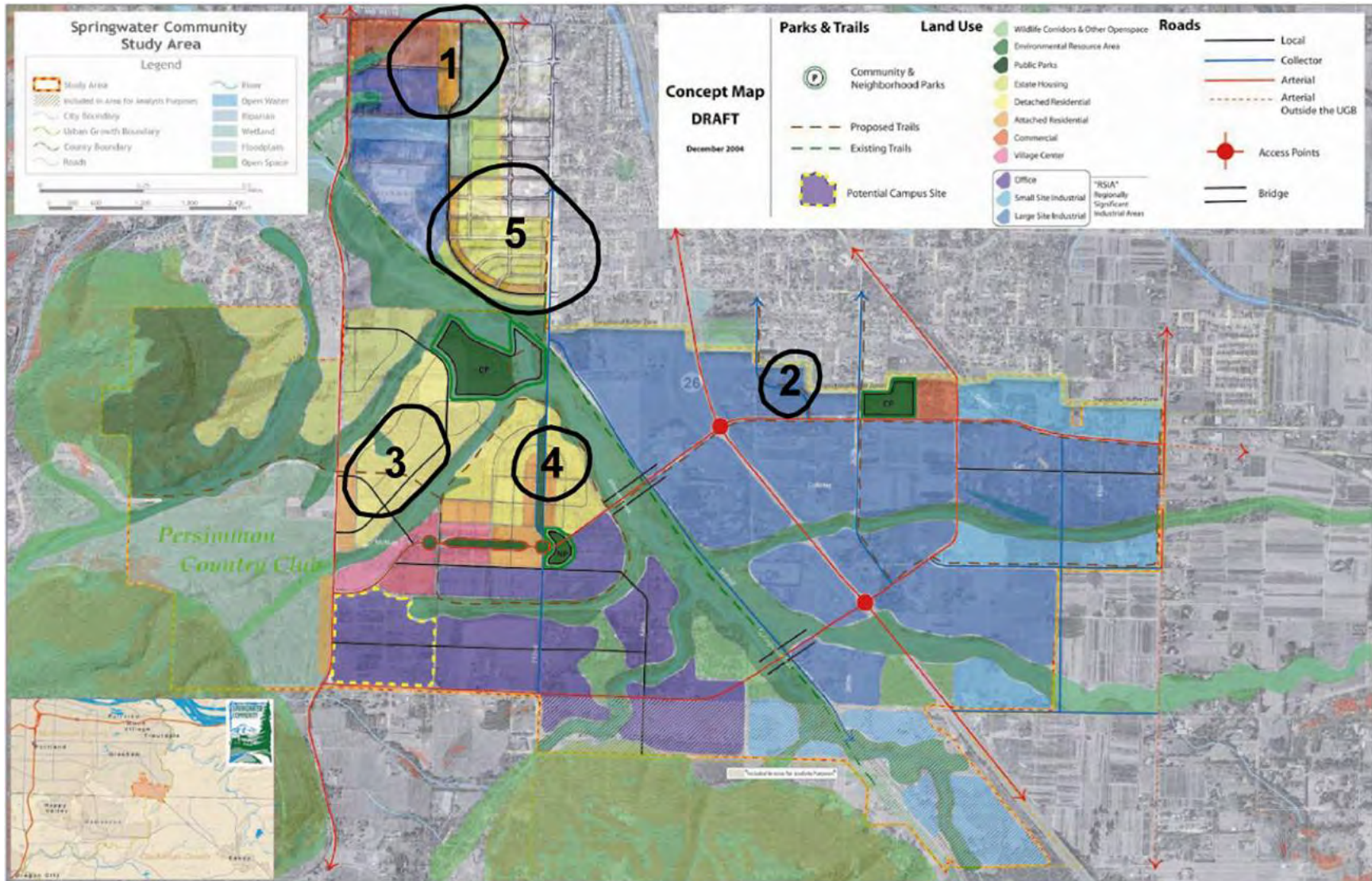


Figure 7.2 Springwater Community Concept Plan

The concept plan does not provide a boundary for this site, which has a recommended tree grove corridor boundary width of 250 feet to allow for wildlife passage. The reason for this is due to the higher development densities that are proposed for this area. The area is to be zoned Low Density Residential (LDR-SW) which allows single detached dwellings. The following is the rationale for the lack of an ESRA-SW boundary:

- Encourage urbanization such as higher residential density, commercial and business development and activities that result from urbanization (e.g., vehicular traffic, impervious surfaces, residential and business population) that may conflict with wildlife and aquatic habitat.
- Promote public safety: reduce the potential interaction between human populations and wildlife (e.g., deer/vehicle collisions) that might otherwise result in safety and health concerns.

Reduce risk to wildlife: increased vehicle movement, noise, presence of domestic pets could result in greater risks to wildlife if there is a tree grove corridor.

7.2.1.3 Site 4

Site 4 has a natural resource significance class rating of #3. It is located upland from the Johnson Creek. Its rating, like Site 3, is based on its contribution as a tree grove that provides wildlife cover and protection.

The concept plan provides a partial boundary around some of the tree grove but there is a significant portion of Site 4 that is outside the ESRA-SW. This is due to the same reasons as Site 3. High development densities are proposed for this area. The area is to be zoned Low Density Residential (LDR-SW), Townhouse Residential (THR-SW), and Research/Technology Industrial (RTI-SW). Such development will allow attached dwellings commercial and retail development. The following is the rationale for the lack of an ESRA-SW boundary surrounding the entire tree grove area:

- Encourage urbanization such as higher residential density, commercial and business development and activities that result from urbanization (e.g., vehicular traffic, impervious surfaces, residential and business population) that may conflict with wildlife and aquatic habitat.
- Promote public safety: reduce the potential interaction between human populations and wildlife (e.g., deer/vehicle collisions) that might otherwise result in safety and health concerns.
- Reduce risk to wildlife: increased vehicle movement, noise, presence of domestic pets could result in greater risks to wildlife if there is a tree grove corridor.

7.2.1.4 Site 5

Site 5 has a natural resource significance class rating of #5. It is located in the Brickworks area within Gresham city limits. As a resource class #5 rating its major contribution to watershed protection is based on a combination of tree grove and unique habitat protection qualities. The boundary width recommendation for this resource rating is to preserve the entire site. The Concept Plan, however, proposes housing development in this area and no ESRA-SW boundary.

There are several indications that the Concept Plan's proposed activity for this site might change. First, the City of Gresham is continuing its assessment of the appropriate land uses and ESRA-SW protection boundaries to propose for this site. Second, the City currently has a protection ordinance for heritage trees. A Hogan Cedar tree that is located in this site is on that

list. The City also has a tree ordinance to protect significant, mature trees. Many of the trees that are within the site qualify for protection under this ordinance. Since the site has a high significance rating it is likely that the Concept Plan land use proposal will be modified to protect the area following the recommended boundaries for a class #5 natural resource site.

7.2.2 ESRA-SW and Natural Resource Boundary Comparison

By overlaying the ESRA-SW district on the significant natural resource boundaries, it is possible to compare the ESRA-SW boundaries to the resource site boundaries. Figure 7.3 displays these overlays.

Within the Springwater Community Planning Area (the area excluding Brickworks and Clackamas County) the ESRA-SW boundary matches closely with nearly all natural resource classes, except for the 4 sites that are labeled on the figure. In a few other locations there are slight differences in boundaries, however, they do not affect the functional integrity of the resource sites.

7.2.2.1 Site 1

Site 1 is located along the North Fork of Johnson Creek and has a natural resource significance rating of #3 as a Johnson Creek Tributary. A recommended boundary for a #3 rating is 175 feet. The proposed ESRA-SW boundary for this site, though, is wider than the recommended width. The total corridor width approaches 500 feet. The natural resource boundary associated with this tributary, however, extends in some places beyond the ESRA-SW boundary by several hundred feet.

From the standpoint of protection of watershed functions the ESRA-SW boundary width that has been recommended for this site is considered sufficient to help maintain the functional integrity of the Johnson Creek watershed. That the boundary has been expanded by a total of nearly 150 feet will provide additional resource protection.

7.2.2.2 Site 2

Site 2 has a natural resource significance class rating of #3. It is located upland from the Johnson Creek. Its rating is based on its contribution as a tree grove that provides wildlife cover and protection. The ESRA-SW boundary does not include a significant portion of this natural resource site.

It is removed from ESRA-SW protection because the area has been designated for higher density development (housing, office and commercial). This is the flexibility that performing an ESEE analysis allows under the Goal 5 statute (ORS 660-023-0040(5)(c)). The Springwater Community Plan has identified this area for future development. Through the ESEE analysis that has assessed the consequences of conflicting uses, it has been determined that development is considered of greater importance than the Goal 5 protections. Therefore at this particular location the ESRA-SW boundary does not protect the entire natural resource site.

That there is not an ESRA-SW boundary surrounding this site does not mean that the site will be completely degraded. There are environmental standards in the proposed development code for these sub-districts that promote sustainability and environmental protection. These requirements include standards for water quality, stormwater run-off, tree replacement, etc.

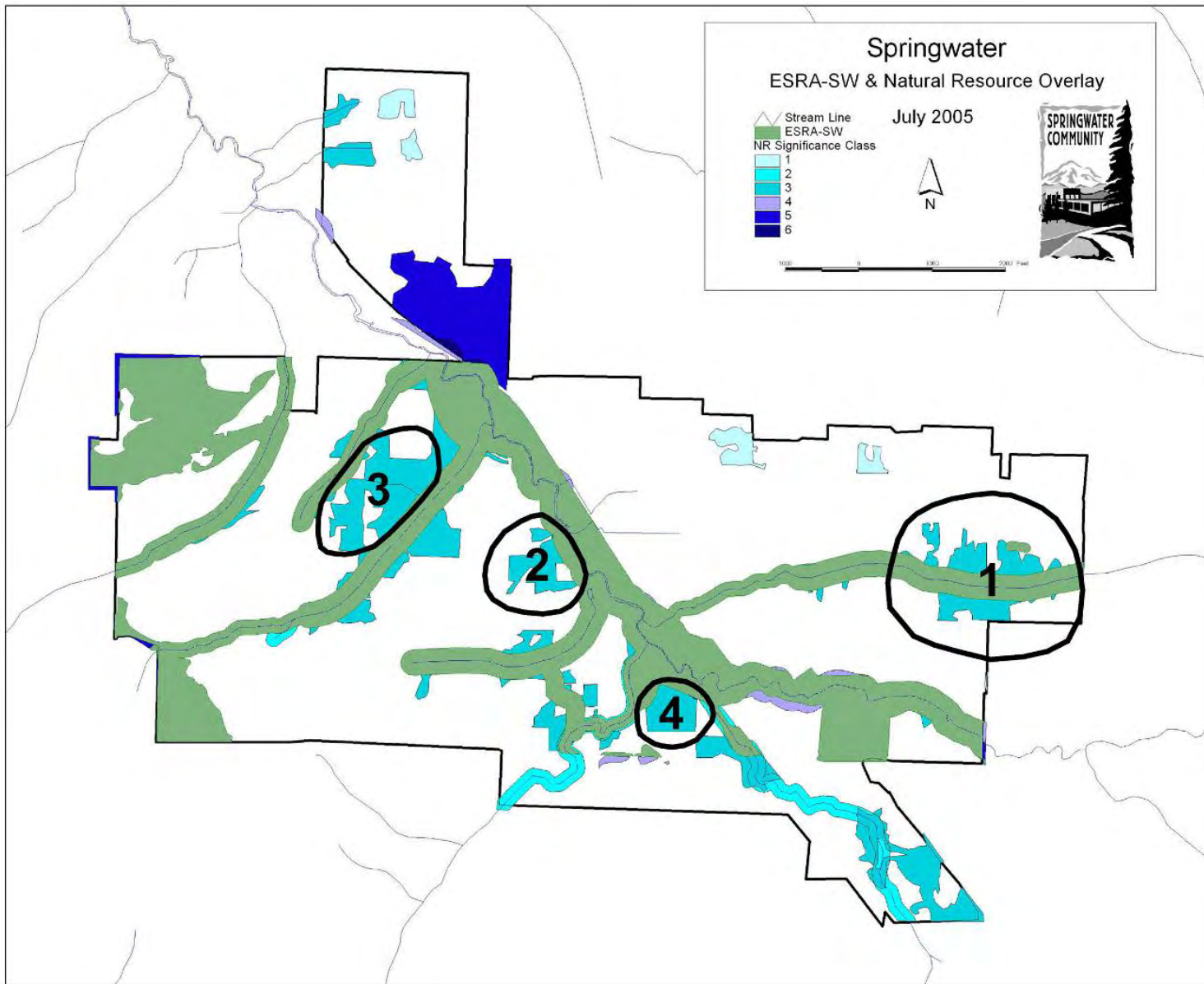


Figure 7.3 Springwater ESRA-SW and Natural Resource Boundary Overlays

7.2.2.3 Site 3

Site 3 has a natural resource significance class rating of #3. It is located between Brigman and Botefuhr Creeks. Its rating is based on its contribution as a tree grove that provides wildlife passage, cover and protection. The ESRA-SW boundary does not include this natural resource site.

It is removed from ESRA-SW protection for the same reasons as Site 2, which has been designated for higher density development (principally housing). Like Site 2, the ESEE allows flexibility in determining protection boundaries. For this specific site allowing the consequences of conflicting uses has been determined to be of greater importance than protecting the site.

Like Site 2, the development standards for the proposed sub-districts in Site 3 will require environmental protections to address water quality, stormwater run-off, and vegetation and tree replacement. These requirements will not prevent the conflicting uses but will reduce their overall impact on the resource site.

7.2.2.4 Site 4

Site 4 has a natural resource significance class rating of #3. It is located between Sunshine Creek and the confluence of Badger and Johnson Creeks. Like Site 3 the rating is based on its contribution as a tree grove that provides wildlife passage, cover and protection. The proposed ESRA-SW boundary does not include the entire natural resource site boundary at this location.

Site 4 is also removed from ESRA-SW protection because the area has been designated for higher density development, primarily office development. Again, the ESEE allows flexibility in determining protection boundaries. For this specific site allowing the consequences of conflicting uses has been determined to be of greater importance than protecting the site.

Like Site 2, the development standards for the proposed sub-district in Site 4 will require environmental protections to address water quality, stormwater run-off, and vegetation and tree replacement. These requirements will not prevent the conflicting uses but will reduce their overall impact on the resource site.

APPENDIX 46
(Added by Ordinance No. 1614 Effective 12/1/05)

**SPRINGWATER ANNEXATION AND
DEVELOPMENT STRATEGIES REPORT**



APPENDIX 46

SPRINGWATER COMMUNITY PLAN

ANNEXATION AND DEVELOPMENT STRATEGIES

With the adoption of this Plan, there is a development path for the entire Springwater area. The next steps to development of the area based on this plan hinge on two essential steps: first, a majority of property owners in the area have to agree to annexation. Secondly, the private sector has to be motivated to develop the property. Both of these elements depend on many elements some of which, such as the state of the economy, are totally outside the control of anyone involved. There are elements however that the City can strategize and plan for based on an analysis of the staged feasibility of land acquisition and development in the Springwater Plan Area.

In an annexation process, individual property owners typically act in their own best interests. With a large number of unique tax lots and property owners, there will be a complex matrix of interests as the many personal circumstances interact with the Plan goals and interested buyers. These will ultimately align, but in unpredictable ways and at an unpredictable timeline. Gresham needs tools that will allow it to react to the alignment of public and private interests in a timely and flexible way.

There are three crucial steps to be carried out prior to planned development of properties:

1. The areas must be annexed. Generally, the most desirable method to do this is using a “double majority” petition – that is, a petition that is signed by property owners representing a majority of the area, and a majority of the registered voters living in the area. While this is not the only way to process an annexation, for Springwater it is the most likely process since it allows considerable flexibility in terms of staging annexation areas, and an election in the area to be annexed does not have to be held. The area to be annexed may be a portion or all of the Springwater Plan area, but must be contiguous to City Limits at time of annexation.
2. Planned services must be provided or guaranteed in conjunction with development. This includes sewer, water, storm drainage, and transportation (typically the arterial, collector and local streets are built when the property develops). In addition, park acquisition and development needs to be ensured, and environmental area compensation needs to be funded where needed.
3. Land Use Districts based upon the Springwater Plan District Map will be assigned to properties at time of annexation. Development approvals must be obtained prior to actual land divisions or construction of improvements on private properties. Once construction of the private and public improvements have been completed, the development can be occupied.

PLAN VS. STRATEGY

Both individual interests and economic conditions must be right and timely for the kind of development contemplated in the plan. Over time, a variety of potential interests for both existing and future property owners and for developers will evolve and will certainly change over the course of the Plan horizon (20 years). For the City of Gresham to help implement the Plan, there is a need for a high degree of flexibility in order to accommodate opportunities that arise

over time. The City will need to be proactive in partnering with property owners and with the private sector in achieving the alignment of the three major factors to development. A “typical” annexation plan proposes an orderly annexation of a few phases, following one another in a clean and logical progression. Because of the size and the challenges (as well as the opportunities) inherent in the Springwater Plan Area, what is being recommended is an Annexation Strategy Tool which identifies the most likely annexation modules based on a series of factors, including willing property owners, proximity to existing services, topography, natural resources, drainage basins, targeted industries, relationships between modules and economic projections for all plan elements. This tool establishes a City plan of action to support the annexation, marketing and development of those modules.

While it is important to have an understanding of likely initial annexation areas, the actual annexation phasing may not proceed as planned, especially when it comes to complex interactions among individuals, the economy, and developers. The City will need to be able to respond quickly and efficiently to development opportunities that arise over time. This plan includes the tool for the City to use to evaluate and respond to unanticipated opportunities for annexation and development, and also to develop preliminary scenarios that can be used to help examine new and more effective ways for financing the services for the area. This tool has been used to identify likely initial annexation areas, but can easily be modified by the City to evaluate other annexation scenarios.

Annexation and target industry recruitment strategies will work together and each will need to be flexible enough for the City to respond and work within the overall implementation goals and to respond quickly as circumstances and opportunities evolve.

ANNEXATION STRATEGIC TOOL

At this point in time, based on evaluation of elements identified in the prior section of this report, the Springwater area is suggested to be composed of 14 modules ranging in size from 52 to 294 acres each, as shown in Figure 1, below. The modules are formed to include all of the properties that would be benefited by the service extension to the area, and they take into account connections to existing neighborhoods along with the other elements. The boundaries follow property lines whenever possible.

It is desirable, but not essential, to annex as much of the module as possible when the services are ready to be extended in order to spread the costs of these new services to as many benefited properties as possible, and to open a logical and appropriately sized area for potential development opportunities. An important determinant in shaping the modules is the planned public facilities extensions, (including wastewater services) looking to maximize areas which can be developed based on logically phased public facilities construction.

Any one of these could be logical annexation modules, and the recommended tool will include analysis and costs for logical extensions of public services, as well as estimation of development values based on the Springwater Plan Land Use District permitted uses. As annexation potentials develop, the City can utilize this tool to do preliminary evaluations of property owner interests and expectations for providing public facilities services.

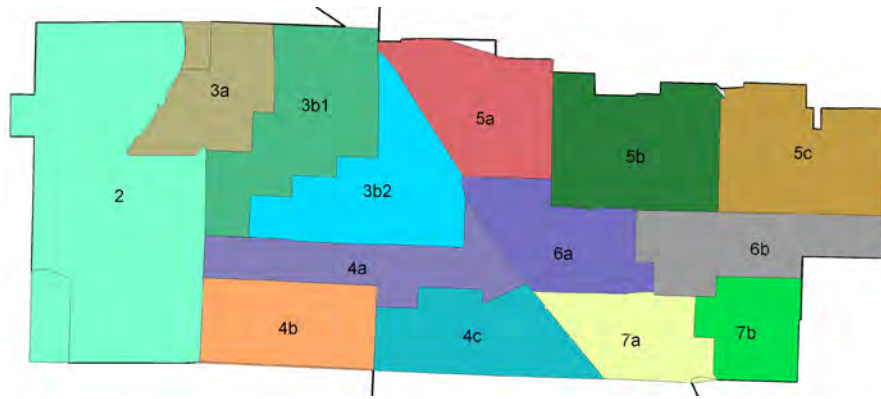


FIGURE 1. ANNEXATION MODULES

The module database includes relevant data to make it a useful tool for both evaluating proposals and developing policies to respond to future challenges. For example, it includes estimates of how much development and new construction value is assumed at buildout of each module. In addition, the annexation module database also contains data on antecedents; that is, the modules that must be developed in order to bring services to the boundary of the module.

Module components:

The module database will utilize data including the following information:

1. Current Data
 - a. Parcels and Tax Assessor's Data
 - b. Current Housing Units
 - c. Total Assessed Value
 - d. Number of Registered Voters
2. Data Calculated from Plan's Implementation
 - a. New Housing
 - b. New Commercial Space
 - c. New Employment
 - d. New Parks
 - e. Open Space Protected
 - f. New Impervious area
 - g. Future Assessed value
 - h. System Development Charges
3. Estimated Costs to the City
 - a. Cost of Sewer
 - b. Cost of Water
 - c. Cost of Storm Drainage
 - d. Cost of acquisition and development of Parks
 - e. Cost of Open Space Acquisition or Compensation (ESRA implementation)

Because the modules are based in GIS, they can be linked with any other GIS system, including the tax assessors, Metro's RLIS database, the County Election office, aerial photos, and countless others. This helps insure that the most updated information is easily accessible over time.

While the concept is simple it can be used to quickly assess a successful strategy in what will be a complex and dynamic process.

RECOMMENDED ANNEXATION STRATEGY

The goal of developing land for new employment has always been a primary driver behind the generation of the Springwater planning.

This Annexation Modules tool will be utilized to identify what will be recommended as the first phase annexations areas for Springwater, and will be used as an ongoing tool for the City to continue to strategize and respond quickly to changing circumstances over the Plan timeline.

At this time, the primary Phase One area for industrial recruitment and development would be that area surrounding the proposed northerly intersection of a new Collector road and Highway 26. This is generally that area which includes Modules 5A and 5B, roughly 200 acres of proposed Industrial land.

RECOMMENDED RECRUITMENT/DEVELOPMENT STRATEGIES

A key aspect for successful industrial development in Springwater will be the ability to identify and market the Springwater Community as a unique opportunity area and to develop industrial recruitment strategies for the targeted industries.

The Economic Development Plan recognizes the value of the Village Center and the residential component of the Community Plan as basic elements which support the effective marketing and recruitment of the Plan area. The recruitment plan recognizes the need for flexibility in industry targets and emphasizes knowledge-based professional and technical service industries. Early development of the Village Center, if properly conceived, can help establish an image for Springwater and increase the area's desirability as a location for industrial investment.

The Plan recommends the early development of a recruitment team, including representatives of the City, the development community, local residents, business leaders from the region and others with specific areas of expertise related to the industries being recruited. This "Team Gresham" would have as its express purpose the evaluation, promotion, and shepherding of economic development activity on selected Springwater sites.

Secondly, the Plan recommends a parcel-specific inventory for all land within the industrial targeted areas. This inventory should result in "land briefs" for each site that describes all available information such as parcel sizes, slope, ownership, etc. This inventory allows quick identification of prime development sites for recruitment and response to opportunities as they arise.

In addition to the parcel inventory, the City should prepare a list of brokers and property owners and take steps in regularly scheduled meeting or work sessions to ascertain levels of interest from both buyers and sellers. It will be in the best interests of property owners, brokers and developers to establish communication networks and to evaluate land assembly strategies to best position sites for potential purchase and development.

Once these steps have been taken, a more formal marketing and recruitment campaign can begin. The primary purpose of any marketing is to generate interest in the area from companies with expansion or relocation plans. The market must also focus on attracting skilled workers to the region. An additional key target audience for Springwater is the people and businesses that are already in the region.

The marketing efforts will need to identify the target audiences and focus the efforts on them. The primary targets for this marketing effort are:

- Regional business leaders that can influence business location decisions
- Key allies, such as state and regional economic development organizations and institutes of higher education
- Members of the Media
- Site location consultants
- Decision-makers at companies within the targeted industries

The consultant recommends the following marketing strategies for Gresham:

1. Develop a consistent theme for marketing Gresham in conjunction with Springwater. The City should move forward on initiatives that help position the community and lay the basis for more targeted Springwater marketing. (It is similar to a marketing strategy that promotes the larger company while signaling the roll out of a new product.)
2. Build awareness locally among the region’s business leadership that the community is dedicated to advancing business opportunities. Identify those business leaders most likely to influence decision-makers and invite them to establish an “Ambassador” program.
3. Build awareness through the region. Opportunities such as Springwater need to be promoted through partner advertising and networking.
4. Build awareness of Springwater among corporate site selectors. Gresham should create a data base of site consultants and target them through direct marketing, visitation opportunities, and invitation to the City to see specific projects.
5. Continue to build awareness among decision makers in target industries. Produce one-page summary for each target industry, develop database for target companies, conduct a direct marketing campaign, and participate in selected key industry trade events.

Target Industries:

Some of the target industries identified for the Springwater plan area are identified in the following table:

SUMMARY OF TARGET INDUSTRIES		
Target	Appropriate for Springwater?	Timeframe
Advanced Materials	Yes	Mid-term
Specialized Software Applications	Yes	Short-term
Forestry & Agricultural Biotechnology	Yes	Mid-term
Nanotechnology	Yes	Long-term
Recreational Equipment/Recreation Technology	Yes	Short-term
Specialty Food Processing	Possible	Short-term
Transportation Equipment/Technology	Possible	Short-term
Logistics	Not Likely	Short-term
Renewable Energy Technology	Yes	Short-term

In addition to the listed targeted industries, there are several other factors that act as a set of criteria that could be applied when developing the marketing package and can broaden the potential targets. They include sustainability, incentives and financing considerations.

Sustainability: There is significant interest in the region in positioning Springwater as a sustainable community. This positioning could take several forms. One would be to require that all structures built in the Springwater area be constructed using “green building” techniques. The formation of an eco-industrial park (EIP) at Springwater would be another way to incorporate sustainability into the community. The EIP concept entails identifying manufacturing and service companies that would benefit from co-location and collaboration in the management of resources and environmental concerns, such as energy, water, and materials management. Third would be the targeting of “green” companies—those that produce environmentally friendly or “holistic” products (e.g., products that use organically produced materials).

Incentives: The competitive environment for business expansion and relocation has never been more intense. The successful recruitment of corporations – as well as high profile start-ups – always involves some form of public inducement. In the case of Springwater, it is recommended that incentives be made available to developers and businesses that conform to the broad goals of the project. Possible incentives include infrastructure improvements, tax abatements, developer support and promotions.

Financing Options: The Springwater project should be of financial benefit for the City. Some of the financing considerations include public finance, private investment, timing and public use.

- **Public finance** > Since the financial viability of cities are always of concern, the use of tax incentives must be structured with great care. The best way to achieve that goal is to reserve tax abatements for those business who meet high standards of wage and capital investment.
- **Private investment** > The idea of a *developer's forum* can help define the scale of public involvement required to trigger development. This will also help frame the development standards that will have to be met at Springwater.
- **Timing** > The timing of development does have a specific relationship to its financial performance. The presence of services and other amenities, such as retail, have a direct bearing on the desirability of a location for potential homeowners and industrial users.
- **Public uses** > One tool for spurring investment in a specific site is the inclusion of public uses, such as post offices or city services like police and fire. The location of a public use in a commercial area, such as the Village Center, can increase the viability of related activity, such as medical and professional services, as well as retail, which would benefit from the traffic generated by the public facility.

The City will continue to explore incentives, land assembly strategies, public-private partnerships, and economic development promotions -- both industry-specific and broader based -- in order to increase and to maintain the visibility of the Springwater Community as a unique opportunity area.