

# Beavercreek Road Concept Plan

## Envisioning a Complete and Sustainable Community

Concept Plan Report, Summary and Recommendations

June 30, 2007



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# Beavercreek Road Concept Plan

## Summary and Recommendations

**Prepared by Otak**

### **Funding provide by:**

City of Oregon City

Oregon Department of Transportation - Transportation and Growth Management Program

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Draft 1 - June 30, 2007

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## Technical Appendix (Under Separate Cover)

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| C. Existing Conditions, Opportunities and Constraints Reports | H. Infrastructure Reports          |
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# I. Introduction

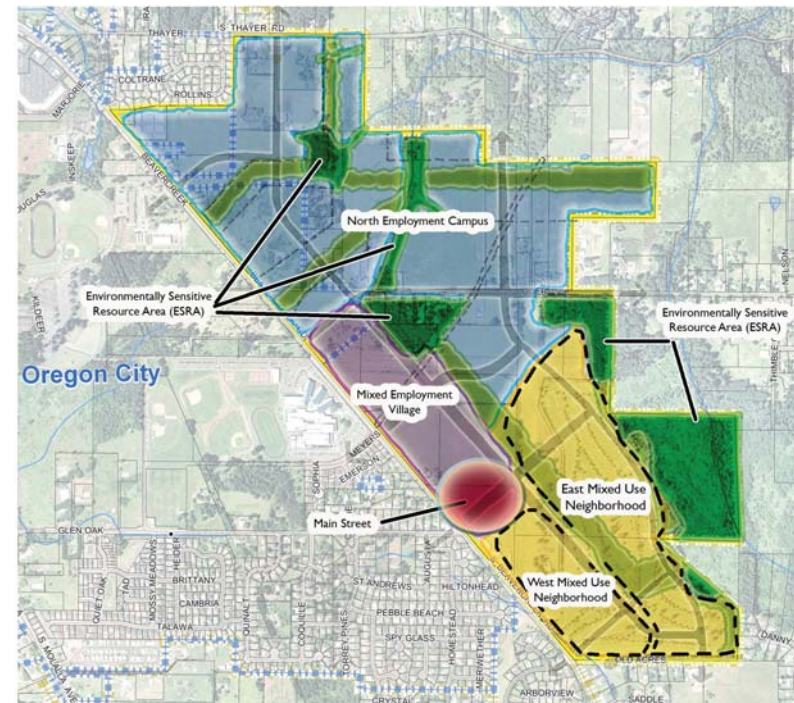
## Summary

The Beavercreek Road Concept Plan is a guide to the creation of a complete and sustainable community in Southeast Oregon City. The 453 acre site along Beavercreek Road was added to the regional urban growth boundary by Metro in 2002 and 2004. The plan envisions a diverse mix of uses (an employment campus north of Loder Road, mixed use districts along Beavercreek Road, and two mixed use neighborhoods) all woven together by open space, trails, a network of green streets, and sustainable development practices. Transit-oriented land uses have been strategically located to increase the feasibility of transit service in the future. The plan has been carefully crafted to create a multi-use community that has synergistic relationships with Clackamas Community College, Oregon City High School, and adjacent neighborhoods.

Key features of the Concept Plan are:

- *A complete mix of land uses, including:*
  - A North Employment Campus for tech flex and campus industrial uses, consistent with Metro requirements for industrial and employment areas.
  - A Mixed Employment Village along Beavercreek Road, between Meyers Road and Glen Oak Road, located as a center for transit-oriented densities, mixed use, 3-5 story building scale, and active street life.
  - A 10-acre Main Street area at Beavercreek Road and Glen Oak Road, located to provide local shops and services adjacent neighborhoods and Beavercreek sub-districts.

- A West Mixed Use Neighborhood along Beavercreek Road, intended for medium to high density (R-2) housing and mixed use.
- An East Mixed Use Neighborhood, intended for low density residential (R-5) and appropriate mixed use. The East Neighborhood has strong green edges and the potential for a fine grain of open space and walking routes throughout.



Proposed Land Use Sub-districts

- *Policy support for employment and program connections with Clackamas Community College.*
- *Sustainability strategies, including:*
  - Mixed and transit supportive land uses.
  - A sustainable stormwater management plan that supports low impact development, open conveyance systems, regional detention, and adequate sizing to avoid downstream flooding.
  - Green street design for all streets, including the three lane boulevard design for Beaver Creek Road.
  - A preliminary recommendation supporting LEED certification or equivalent for all commercial and multi-family buildings, with Earth Advantage or equivalent certification for single family buildings. This recommendation includes establishment of a Green Building Work Group to work collaboratively with the private sector to establish standards.
  - Open spaces and natural areas throughout the plan. North of Loder Road, these include the power line corridors, the tributary to Thimble Creek, and a mature tree grove. South of Loder Road, these include an 18-acre Central Park, the east ridge area, and two scenic view points along the east ridge.
- *A trail framework that traverses all sub-districts and connects to city and regional trails.*
- *A street framework that provides for a logical and connected street pattern, parallel routes to Beaver Creek Road, and connections at Clairmont, Meyers, Glen Oak, and the southern entrance to the site.*
- *A draft Beaver Creek Road Zone development code to implement the plan.*

## Purpose of this Report and Location of Additional Information

This report is a summary of the Plan, with emphasis on describing key elements and recommendations. Many of the recommendation are based on technical reports and other information that is available in the Technical Appendix to this report.



Beaver Creek Road Concept Plan Area - Existing Conditions

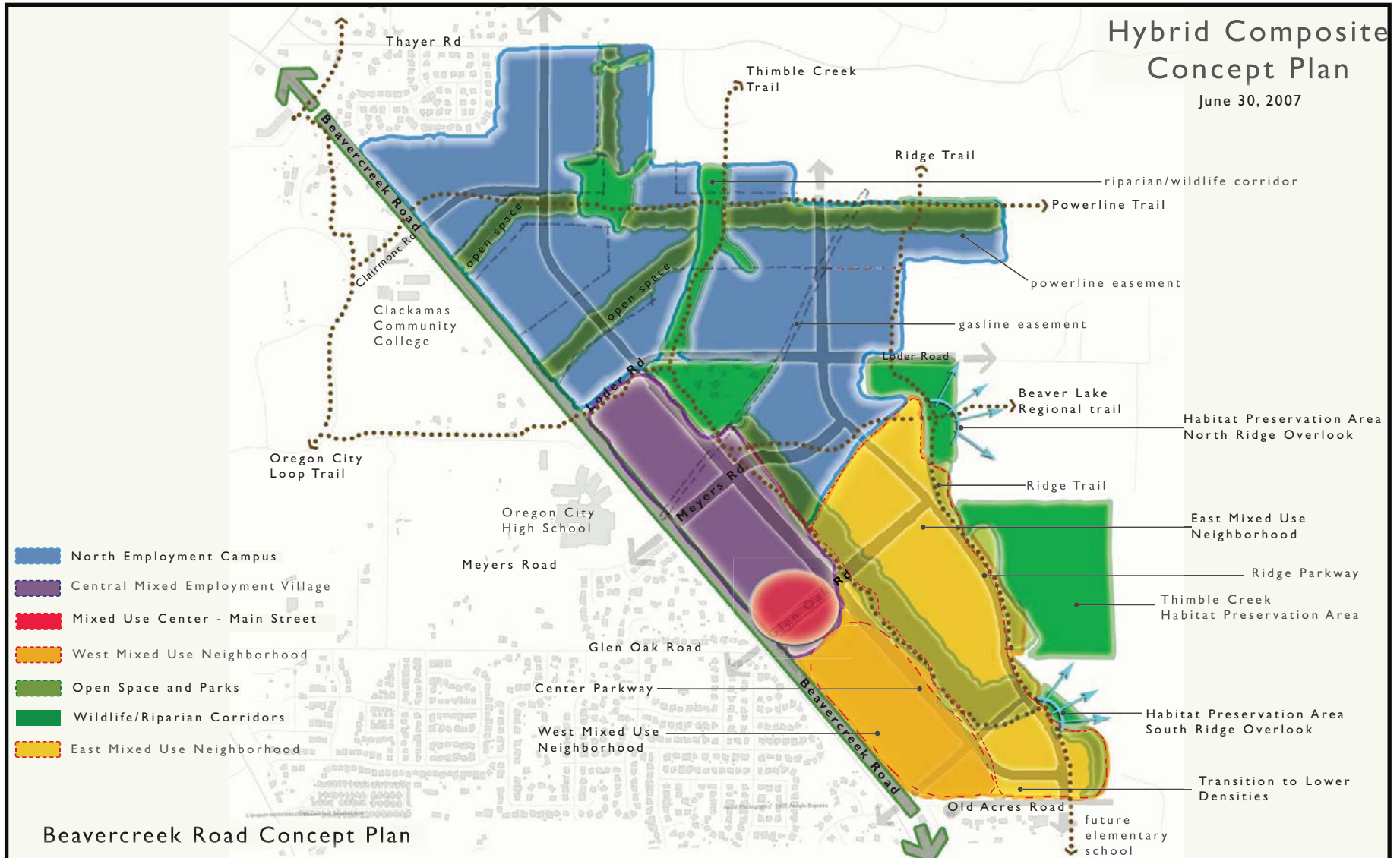


Figure 1 - Composite Concept Plan



## II. Purpose and Process

The purpose of the Beavercreek Road Concept Plan is to provide a conceptual master plan to be adopted as an ancillary document to the City of Oregon City's Comprehensive Plan. As such, it provides a comprehensive and cohesive guide to future development, in three parts:

- Framework plan maps, goals and policies – These elements will be adopted as part of the Oregon City Comprehensive Plan. Compliance will be required for all land use permits and development.
- Ancillary report materials – The descriptive text, graphics and technical appendix of this report will be adopted as an “ancillary document” to the Comprehensive Plan, which provides “operational guidance to city departments in planning and carrying out city services” (Oregon City Comprehensive Plan, page 4). These documents include information for updating the City's utility master plans and Transportation System Plan.
- Draft development code – A working draft development code was prepared as part of the Concept Plan. Once final, it will be adopted as part of the Oregon City Code. Compliance will be required for all land use permits and development. The Beavercreek Zone code requires master planning and/or design review for all development.

The Concept Plan was developed by a 15-member Citizen Advisory Committee (CAC) and 9-member Technical Advisory Committee (TAC) (see Project Participants list at the beginning of this report). The committees met twelve times between June 2006 and July 2007.



Design Workshop Participants

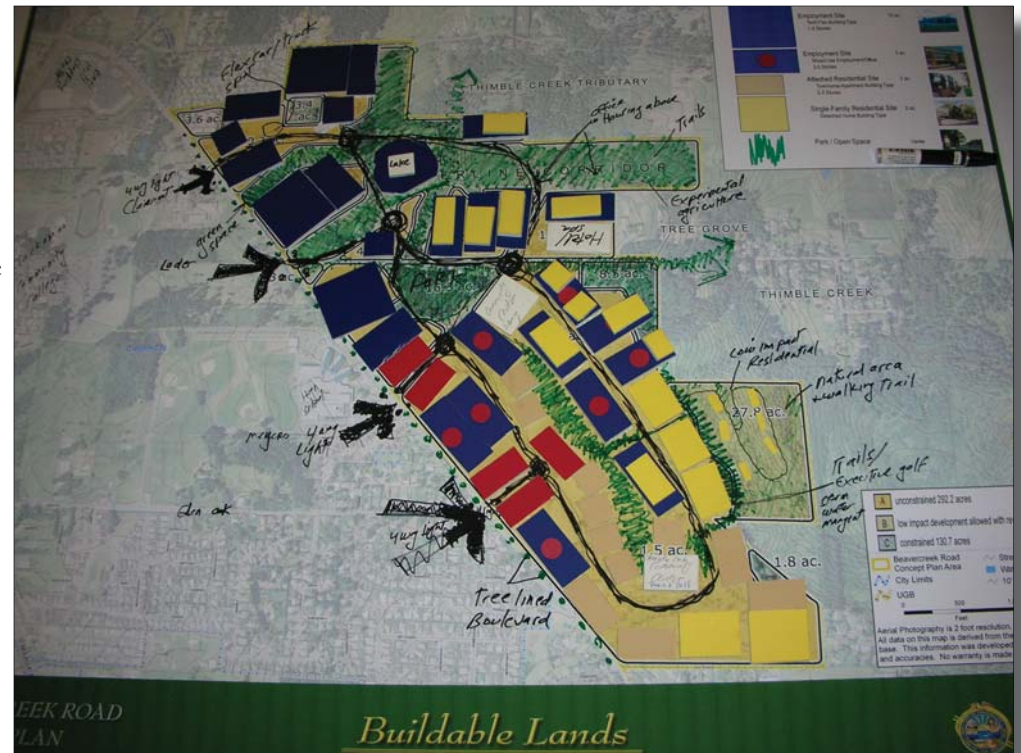
In addition to the Committee meetings, additional process steps and community involvement included:

- Study area tour for CAC and TAC members
- Two public open houses
- Market focus group
- Sustainability focus group
- Employment lands coordination with Metro
- Community design workshop
- Website
- Project posters, site sign, email notice, and extensive mailing prior to each public event

The major steps in the process were:

- Inventory of base conditions, opportunities, constraints for land use, transportation, natural resources, market conditions, infrastructure and sustainability.
- Establishment of project goals.
- Extensive discussion of employment lands questions: how much, what type and where?
- Following the community workshop, preparation of three alternative concept plans (sketch level), addition of a fourth plan, prepared by a CAC member, and narrowing of the alternatives to two for further analysis.
- Evaluation of the alternatives (including transportation modeling) and preparation of a hybrid Concept Plan (framework level).
- Preparation of detailed plans for water, sewer, storm water, and transportation facilities.
- Preparation of a draft development code.
- Committee action to forward the Concept Plan package to the Planning Commission and City Commission.

For additional information please see Technical Appendix, Sections A, D, E, and F.



Design Workshop Plan

### III. Vision, Goals and Principles

The overall vision for the Beavercreek Concept Plan is to create “A Complete and Sustainable Community”. The images shown on this page were displayed throughout the process to convey the project’s intent for this vision statement.

Regarding the meaning of sustainability, the vision statement is based in part on the definition of sustainability originally developed by the United Nations Brandtland Commission: “A sustainable society meets the needs of the present without sacrificing the ability of future generations to meet their own needs”.

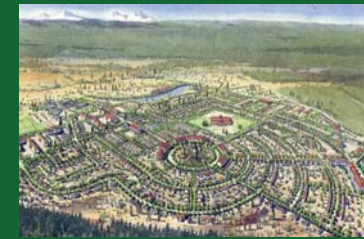
The following project goals were developed by the Citizen Advisory Committee. The Committee also added objectives to each of the goals – please see Appendix 1 for the objectives.

The Beavercreek Road Concept Plan Area will:

- Create a complete and sustainable community, in conjunction with the adjacent land uses, that integrates a diverse mix of uses, including housing, services, and public spaces that are necessary to support a thriving employment center;
- Be a model of sustainable design, development practices, planning, and innovative thinking;
- Attract “green” jobs that pay a living wage;
- Maximize opportunities for sustainable industries that serve markets beyond the Portland region and are compatible with the site’s unique characteristics;

#### Complete Means

- Live
- Work
- Shop
- Play
- Garden
- Lifelong Learning
- (What does “complete” mean to you?)

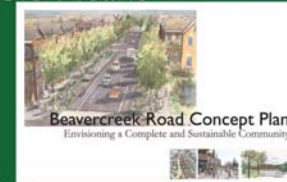


Northwest Crossing, Bend, Oregon

BEAVERCREEK ROAD  
CONCEPT PLAN

#### Sustainable Means

- Walkable
- Green
- Energy Efficient
- Water Efficient
- Non-Resource Depleting
- Clean Employment
- Non-Polluting
- (What does “sustainable” mean to you?)



Beavercreek Road Concept Plan  
Envisioning a Complete and Sustainable Community

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CONCEPT PLAN

#### Community Means

- A Place for People



BEAVERCREEK ROAD  
CONCEPT PLAN

- Incorporate the area’s natural beauty into an ecologically compatible built environment;
  - Provide multi-modal transportation links (such as bus routes, trails, bike-ways, etc.) that are connected within the site as well as to the surrounding areas;
  - Implement design solutions along Beavercreek Road that promote pedestrian safety, control traffic speeds and access, and accommodate projected vehicular demand;
  - Promote connections and relationships with Oregon City High School and Clackamas Community College;
  - Have a unique sense of place created by the mix of uses, human scale design, and commitment to sustainability; and
  - Ecological Health – Manage water resources on site to eliminate pollution to watersheds and lesson impact on municipal infrastructure by integrating ecological and man-made systems to maximize function, efficiency and health.
5. Open Space - Protect and maintain a functioning green space network for a variety of uses.
  6. Integrate Systems - Integrate ecological and man-made systems to maximize function, efficiency and health.
  7. Watershed Health - Manage water resources on site to eliminate pollution to watershed and lesson impact on municipal infrastructures.
  8. Reuse, Recycle, Regenerate - Reuse existing resources, regenerate existing development areas
  9. Green Buildings - Build compact, innovative structures that use less energy and materials
  10. Work Together - Work with community members and neighbors to design and develop.

The following 10 Principles of Sustainable Community Design were submitted by a CAC member, supported by the committee, and used throughout the development of the Concept Plan:

1. Mix Land Uses - Promote a mix of land uses that support living wage jobs and a variety of services.
2. Housing Types - Create a range of housing choices for all ages and incomes.
3. Walk-ability - Make the Neighborhood “walkable” and make services “walk-to-able.”
4. Transportation - Provide a range of transportation options using a connected network of streets and paths.



Thimble Creek Tributary

## IV. Regional and Local Context

The Beaver Creek Road Concept Plan area is 453 acres of land located at the southeast edge of Oregon City and the Urban Growth Boundary (UGB). It marks a transition point between the City's current edge of urbanization and rural and resource lands to the south and east.

The majority of the site (245 acres) was added to the Metro UGB in December 2002 and an additional 63 acres were added to the UGB in 2004. The remaining site acreage was in the UGB and/or the Oregon City limits prior to 2002. The Concept Plan area carries Metro design type designations of Employment, Industrial, and Outer Neighborhood on the Region 2040 Growth Concept Map. The properties with the Outer Neighborhood designation have been in the UGB since 1980. Employment design type areas, as defined by Metro, allow various types of employment with some residential development and limited commercial uses. Industrial design type areas are set aside by Metro primarily for industrial activities with limited supporting uses.

During the update of Oregon City's Comprehensive Plan, a policy was adopted acknowledging the jobs-related importance of the site to Oregon City and the region, while also allowing some flexibility in the project area's land use. Comprehensive Plan policy 2.6.8 states:

“Require lands east of Clackamas Community College that are designated as Future Urban Holding to be the subject of concept plans, which is approved as an amendment to the Comprehensive Plan, would guide zoning designations. The majority of these lands should be designated in a manner that encourages family-wage jobs in order to generate new jobs and move towards meeting the City's employment goals.”

There are relatively limited employment centers within this area of Oregon City and Clackamas County. This imbalance of jobs and housing contributes to Clackamas County's pattern of approximately 60% of the work force traveling outside of the County to work.

The site is surrounded by residential and undeveloped properties within the city limits, including the Hamlet of Beaver Creek, and rural Clackamas County. The nearest commercial area is the Berry Hill Shopping Center at the intersection of Beaver Creek Road and Highway 213. Clackamas Community College (CCC) and Oregon City High School are across Beaver Creek Road adjacent to the site. These institutional uses offer a unique opportunity to plan synergistic land uses that connect the properties, reinforce an identity for the area, and help localize trips. A Tri-Met transit hub is located on the CCC property.

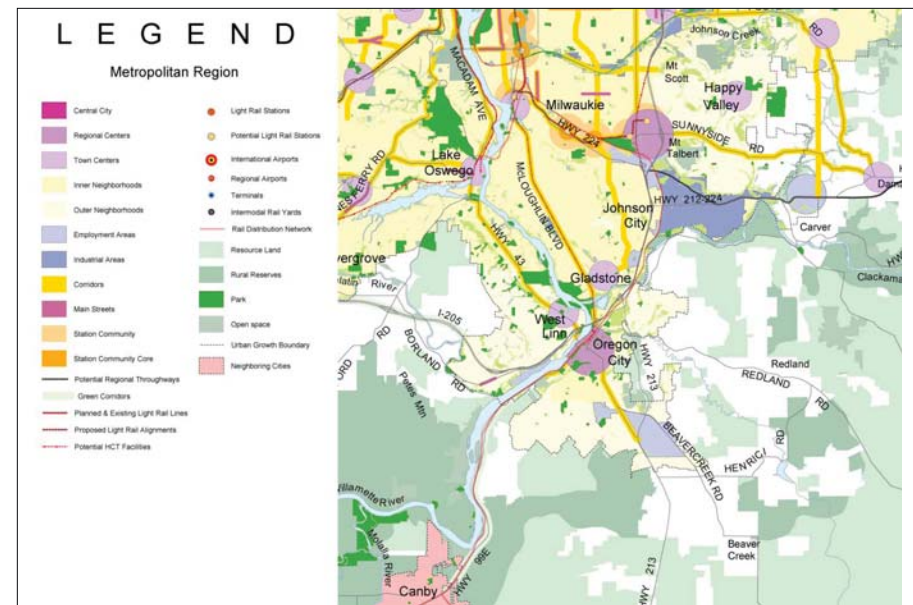


Figure 2 - Regional Context

Like all additions to the Portland Metropolitan Area Urban Growth Boundary, the Beaver Creek Road area is inextricably tied to its place in the region and its place within Oregon City. The Concept Plan responds to this context in multiple ways.

From a regional perspective, the Beaver Creek Road area is currently a transition point from urban to rural use. Whether this “hard line” of transition will remain in the future cannot be established with certainty. The CAC openly acknowledged this issue in its discussions and sought to balance the needs of creating a great urban addition to Oregon City with sensitivity to adjacent areas. Examples of this balance include:

- The plan has land use and transportation connections that support future transit. This will link the Beaver Creek Road area, via alternative transportations, to Clackamas Community College (CCC), the Oregon City Regional Center (downtown and adjacent areas) and the rest of the region.
- Trails and green spaces have been crafted to link into the broader regional network.
- The plan recommends lower densities and buffer treatments along Old Acres Road.
- The north south collector roads are coalesced to one route that could (if needed) be extended south of Old Acres Road.
- The recommended street framework provides for a street that parallels Beaver Creek Road, connecting Thayer Road to Old Acres Road, and potentially north and south in the future. This keeps options open: if the UGB extends south, the beginning of a street network is in place. If it does not, the connection is available for rural to urban connectivity if desired.
- As with the street network described above, the East Ridge trail is extended all the way to Old Acres Road, and therefore, potentially beyond.

This will provide a connection from rural areas to the open spaces and trail network of Beaver Creek Road area and the rest of the region.

From a City and local neighborhood perspective, the Beaver Creek Road area offers an opportunity to establish a new complete and sustainable community within Oregon City. Specific linkages include the following:

- Oregon City needs employment land. The Beaver Creek Concept Plan provides 156 net acres of it in two forms: 127 net acres of tech flex campus industrial land, 29 acres of more vertical mixed use village and main street. Additional employment will be available on the Main Street and as mixed use in the two southern neighborhoods.
- The street framework connects to all of the logical adjacent streets. This includes Thayer, Clairmont, Meyers, Glen Oak, and Old Acres Roads. This connectivity will disperse traffic to many routes, but equally important, make Beaver Creek Road connected to, rather than isolated from, adjacent neighborhoods, districts and corridors.
- The plan provides for a complete community: jobs, varied housing,

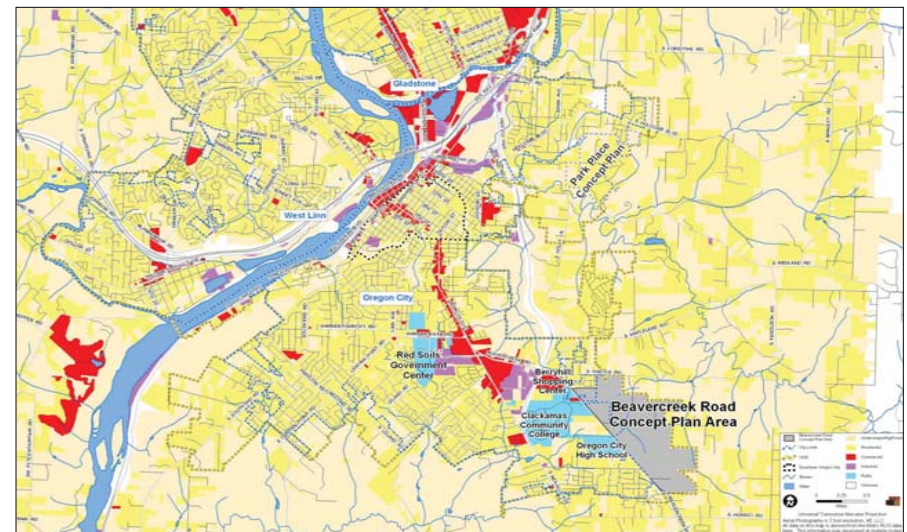


Figure 3 - Oregon City Context

open space, trails, mixed use, focal points of activity, trails, and access to nature.

- The plan provides for a sustainable community, in line with the City's Comprehensive Plan support for sustainability. This takes the form of mixed land uses, transportation options, green streets, sustainable storm water systems, and LEED or equivalent certification for buildings. Much more can certainly be done – the Concept Plan offers an initial platform to work from.
- Physical linkages have been provided to Oregon City High School and Clackamas Community College. These take the form of the planned 3-lane green street design for Beaver Creek Road and the intersections and trails at Clairmont, Loder and Meyers Roads. The physical linkages are only the beginning – the City, School District and College need to work together to promote land uses on the east side of Beaver Creek Road that truly create an institutional connection.



Figure 4 - Existing Conditions

For additional information, see Existing Conditions, Opportunities and Constraints Reports, Technical Appendix C.

## Site Conditions and Buildable Lands

A portion of the study area (approximately 50 acres) is currently within the existing city limits and zoned Campus Industrial (CI). The study area's northern boundary is Thayer Road and the southern boundary is Old Acres Lane. Loder Road is the only existing road that runs through the project area.

Currently, the project area is largely undeveloped, which has allowed the site to retain its natural beauty. There are 448 gross acres in the project area, not including the right-of-way for Loder Road (approximately five acres). The existing land uses are primarily large-lot residential with agricultural and undeveloped rural lands occupying approximately 226 acres of the project area. The Oregon City Golf Club (OCGC) and private airport occupy the remaining 222 acres.

There are several large power line and natural gas utility easements within the project boundaries. These major utility easements crisscross the northern and central areas of the site. The utility easements comprise approximately 97 acres or 20% of the project area.

There are 51 total properties ranging in size from 0.25 acres to 63.2 acres. Many of these properties are under single ownership, resulting in only 42 unique property owner names (Source: Clackamas County Assessor). There are several existing homes and many of the properties have outbuildings such as, sheds, greenhouses, barns, etc. , which result in 127 existing structures on the site (Source: Clackamas County Assessor).

A key step in the concept planning process is the development of a

Buildable Lands Map. The Buildable Lands Map was the base map from which the concept plan alternatives and the final recommended plan were. “Buildable” lands, for the purpose of the Beaver Creek Road Concept Plan, are defined as the gross site area minus wetlands, steep slopes, other Goal 5 resources, public utility easements, road rights-of-way, and committed properties (developed properties with an assessed improvement value greater than \$350,000). Properties with an assessed improvement value of less than \$350,000 (based on County assessment data) are considered redevelopable over the long-term as the existing structures are converted to higher value uses. The OCGC has an improvement value over \$350,000, but has been included as buildable lands (minus the clubhouse) because the owners may wish to redevelop the property in coordination with the recommended concept plan over time. The private airport has also been included as buildable over the long-term, recognizing that the owners may choose to continue the airport’s use for many years.

When land for power lines, the natural gas line, natural resources, and committed structures are removed the net draft buildable acreage is approximately 292 acres. The CAC reviewed the Preliminary Buildable Lands map and approved a three-tier system to define the buildable lands. Tier A or “Unconstrained” has approximately 292 acres, Tier B or “Low Impact Development Allowed with Review” has approximately 28 acres, and Tier C “Constrained” has approximately 131 acres. The “Low Impact” area was later further evaluated and recommended for conservation under a Environmentally Sensitive and Resource Area designation on the plan.

The Buildable Lands Map was reviewed at the July 20th and August 17th Citizen and Technical Advisory Committee (CAC/TAC) meetings, as well as at the August 24th Open House. The draft buildable land boundaries and acreages shown in Figure 6 reflect the input received from the advisory committee members, property owners, and citizen input.

For additional information, see Existing Conditions, Opportunities and Constraints Reports, Technical Appendix C.

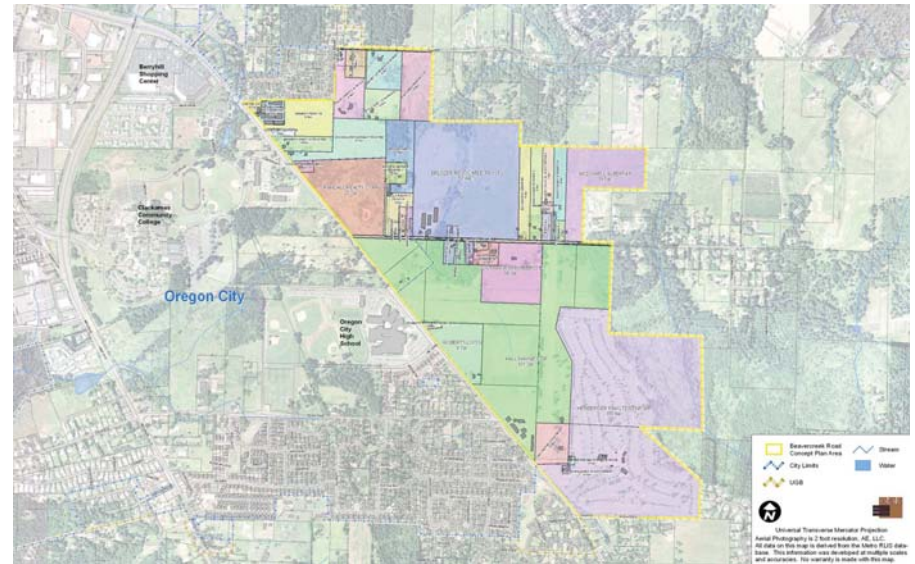


Figure 5 - Ownerships

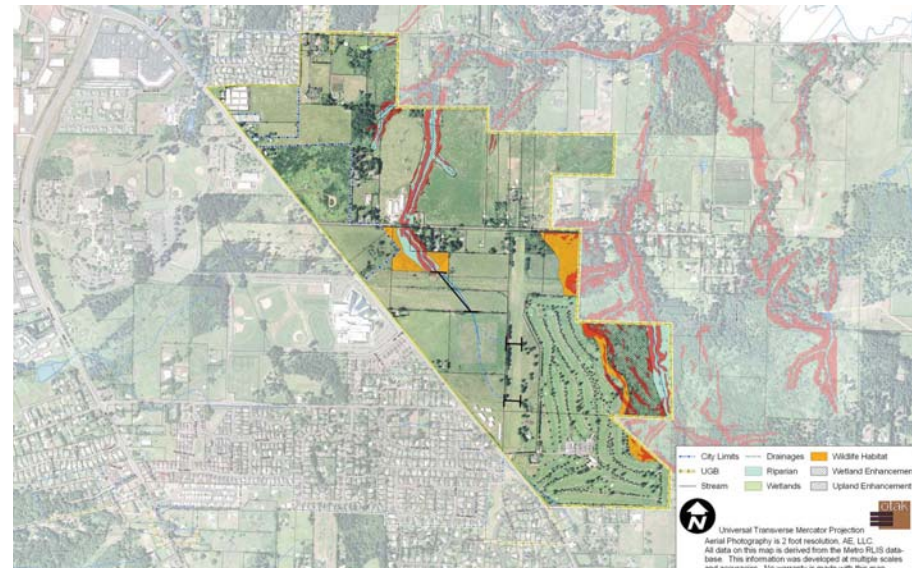


Figure 6 - Natural Resource Inventory



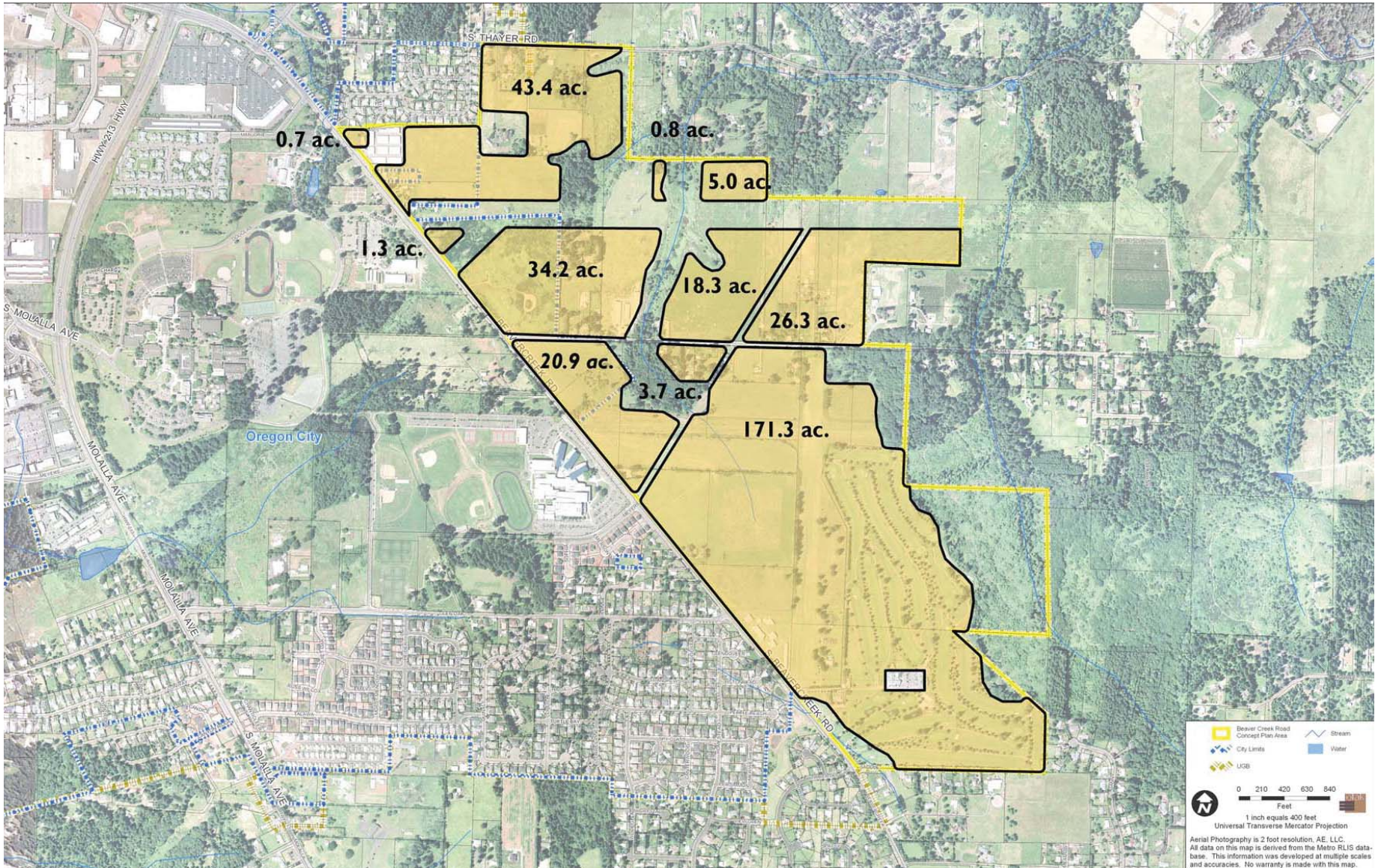


Figure 7 - Buildable Lands

## Employment – A Key Issue

How much employment? What type? And where? These questions were extensively discussed during the development of the Concept Plan. Three perspectives emerged as part of the discussion:

### Oregon City Perspective

Prior to initiating the Concept Plan process, the City adopted a comprehensive plan policy which emphasizes family wage employment on the site. The policy reads: “Require lands east of Clackamas Community College that are designated as Future Urban Holding to be the subject of concept plans, which is approved as an amendment to the Comprehensive Plan, [and will] guide zoning designations. The majority of these lands should be designated in a manner that encourages family-wage jobs in order to generate new jobs and move towards meeting the City’s employment goals.” Oregon City Comprehensive Plan, Policy 2.6.8.

### Metro Perspective

Metro brought the majority of the concept plan area (245 gross acres) into the UGB in 2002 and 2004 to fulfill regional industrial employment needs. These areas (308 gross acres) are designated as the Industrial Design Type on Metro’s 2040 Growth Concept Map. As part of its land need metrics reported to the region and state, Metro estimated 120 net acres of the Beavercreek Road Concept Plan’s land would be used for employment uses. Metro representatives met with the Concept Plan CAC and emphasized: (1) it was important to Metro for the Concept Plan to fulfill their original intent for providing Industrial land; and, (2) that there was flexibility, from Metro’s perspective, for the local process to evaluate creative ways to meet that intent.

### Citizen Advisory Committee Perspective

The CAC discussed extensively the issues and options for employment lands. Many sources of information were consulted: a market analysis by ECONorthwest (See Appendix \_\_\_), a developer focus group, land inventory and expert testimony submitted by property owners, the Metro perspective cited above, and concerns of neighbors. The advice ranged from qualified optimism about long term employment growth to strong opposition based on shorter term market factors and location considerations. Some members of the CAC advocated for a jobs target (as opposed to an acreage target) to be the basis for employment planning.

At its meeting on September 14th, 2006, the CAC developed a set of “bookends” for the project team to use while creating the plan alternatives.

- a. At least one plan alternative will be consistent with the Metro Regional Growth Concept.
- b. At least one plan alternative (may be the same as above) would be designed consistent with Policy 2.6.8.
- c. Other alternatives would have the freedom to vary from “a” and “b” above, but would also include employment.
- d. No alternative would have heavy industrial, regional warehousing or similar employment uses”.

After evaluating alternatives, the CAC ultimately chose a hybrid employment strategy. The recommended Concept Plan includes: (1) about 127 net acres of land as North Employment Campus, which is consistent with Metro’s intent and similar to Oregon City’s Campus Industrial designation; (2) about 29 acres as Mixed Employment Village and Main Street, which allows a variety of uses in a village-oriented transit hub; and, (3) mixed use neighborhoods to the south that also provide for jobs tailored to their neighborhood setting.

## V. Concept Plan Summary

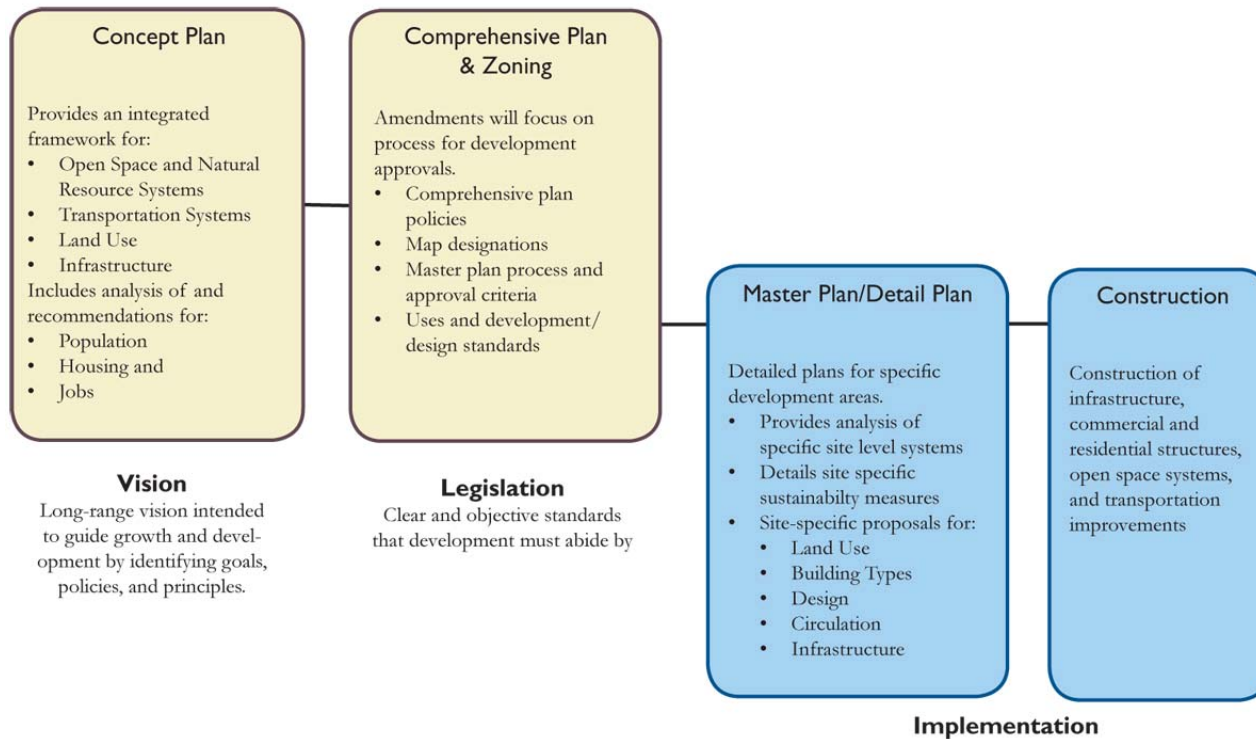
### The Framework Plan Approach

The Beaver Creek Road Concept Plan is a framework for a new, urban community. The plan is comprised of generalized maps and policies that integrate land use, transportation, open space, and green infrastructure. The framework maps and policies are supported by detailed code and requirements for master planning and design review. The approach here is to set the broad framework and intent on the figures and text in this Plan.

Detailed development plans demonstrating compliance with the Concept Plan are required in the implementing code.

The framework plan approach is intended to:

- Ensure the vision, goals and standards are requirements in all land use decisions
- Provide for flexibility in site specific design and implementation of the Plan and code
- Allow for phased development over a long period of time (20+ years)



The code describes many detailed requirements such as street connectivity, block configuration, pocket parks, building scale, pedestrian connections, low impact development features, tree preservation, and sustainable buildings. These design elements will be essential to the success of the area as a walkable, mixed use community. The expectation of this Plan is that the flexibility is coupled with a high standard for sustainable and pedestrian-oriented design.

### Land Use Sub-Districts

Figure 8 illustrates the five land-use “sub-districts” of the concept plan area. Each has a specific focus of land use and intended relationship to its setting and the plan’s transportation and open space systems. Each is briefly described below and illustrated on Figures 9 through 12.

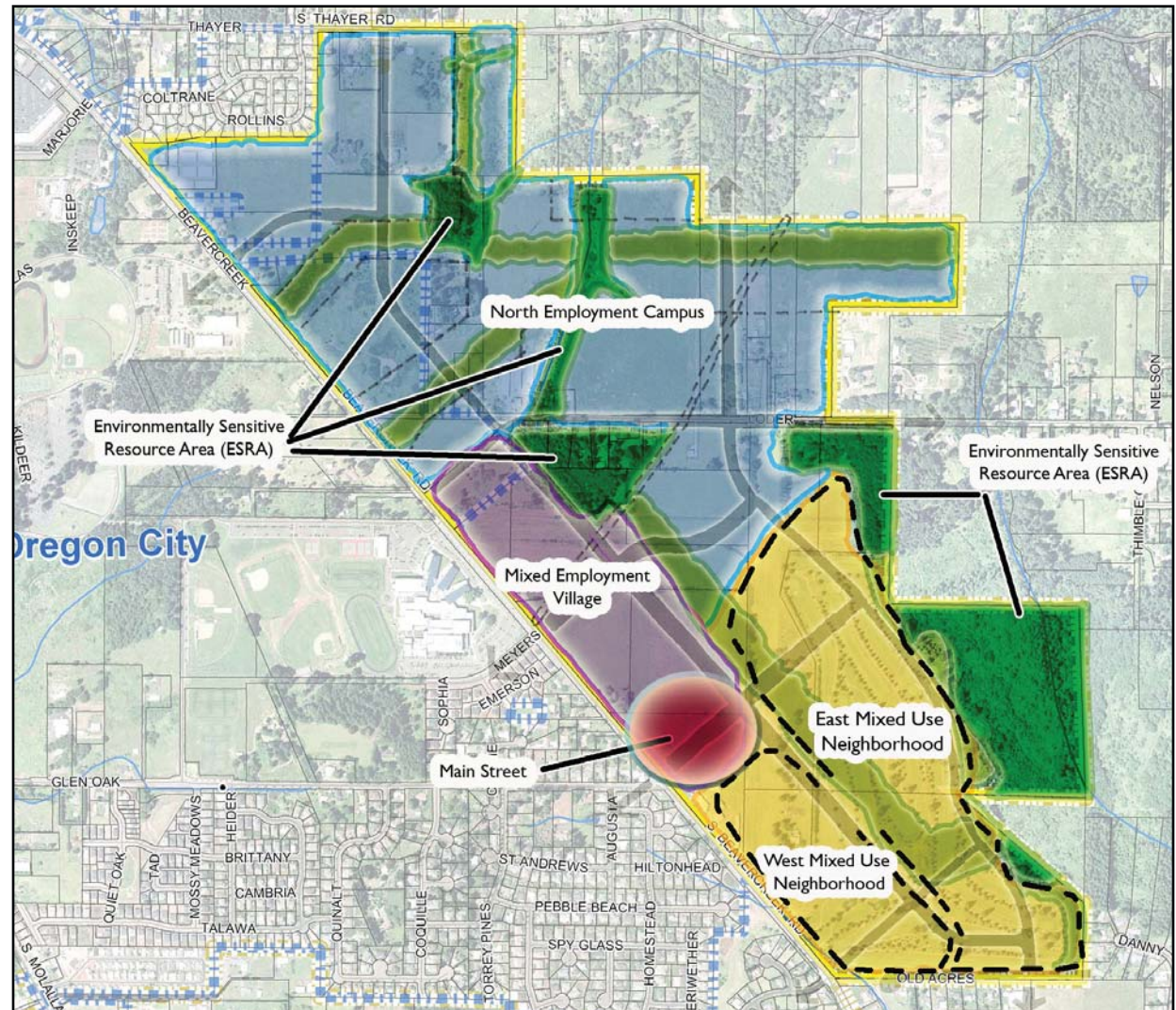


Figure 8 - Land Use Sub-districts

## North Employment Campus – NEC

The purpose of the North Employment Campus is to provide for the location of family wage employment that strengthens and diversifies the economy. The NEC allows a mix of clean industries, offices serving industrial needs, light industrial uses, research and development and large corporate headquarters. The uses permitted are intended to improve the region’s economic climate, promote sustainable and traded sector businesses, and protect the supply of sites for employment by limiting incompatible uses. The sub-district is intended to comply with Metro’s

Title 4 regulations. Site and building design will create pedestrian-friendly areas and utilize cost effective green development practices. Business and program connections to Clackamas Community College (CCC) are encouraged to help establish a positive identity for the area and support synergistic activity between CCC and NEC properties. Businesses making sustainable products and utilizing sustainable materials and practices are encouraged to reinforce the identity of the area and promote the overall vision for the Beaver Creek Road area.

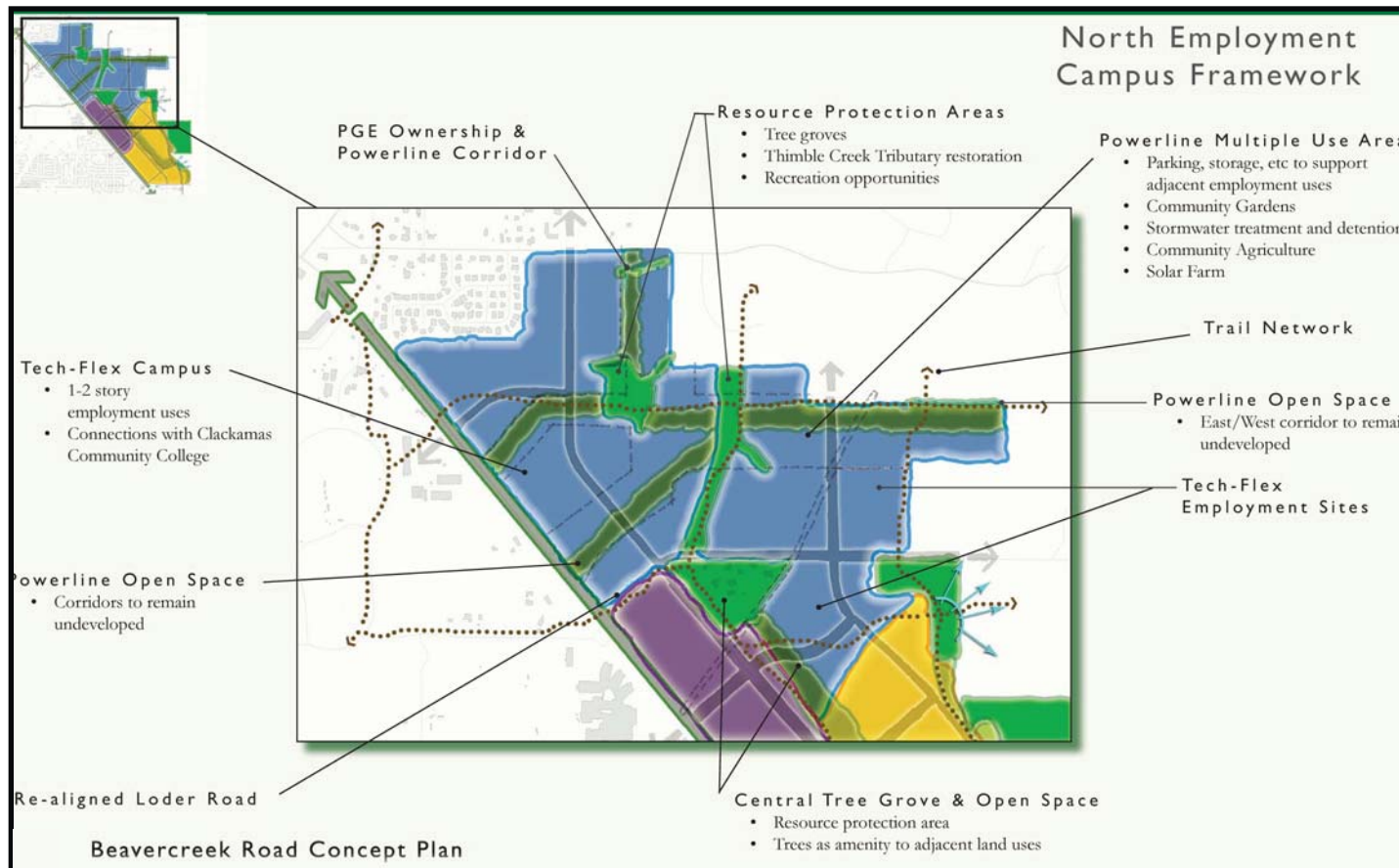


Figure 9 - North Employment Campus Framework

### Mixed Employment Village – MEV

The purpose of the Mixed Employment Village is to provide employment opportunities in an urban, pedestrian friendly, and mixed use setting. The MEV is intended to be transit supportive in its use mix, density, and design so that transit remains an attractive and feasible option. The MEV allows a mix of retail, office, civic and residential uses that make up an active urban district and serve the daily needs of adjacent neighborhoods and Beaver Creek Road sub-districts. Site and building design will create pedestrian-friendly areas and utilize cost effective green development

practices. Business and program connections to Clackamas Community College and Oregon City High School are encouraged. Businesses making sustainable products and utilizing sustainable materials and practices are encouraged to reinforce the identity of the area and promote the overall vision for the Beaver Creek Road area.

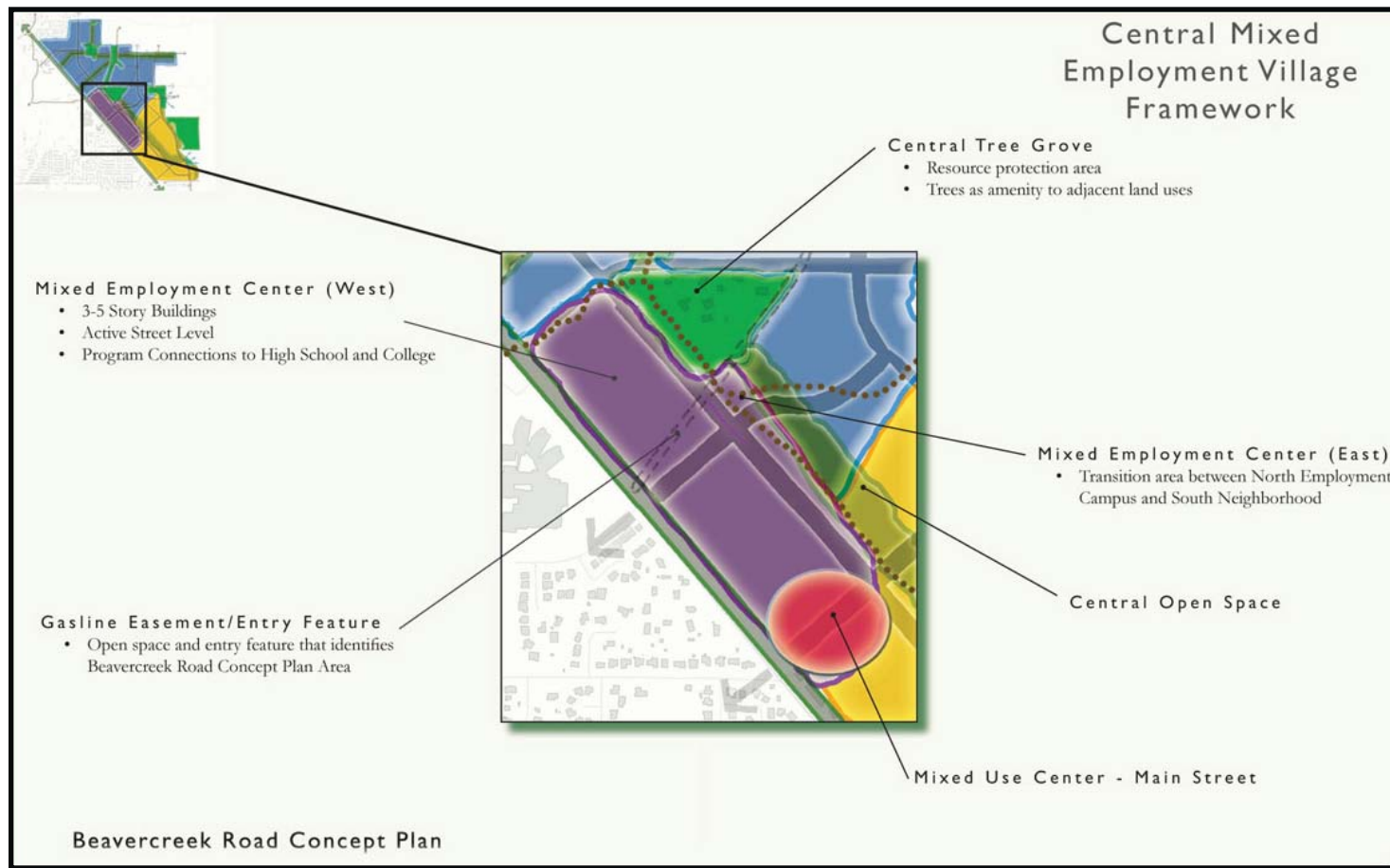


Figure 10 - Central Mixed Employment Village Framework

### Main Street – MS

The purpose of this small mixed-use center is to provide a focal point of pedestrian activity. The MS allows small scale commercial, mixed use and services that serve the daily needs of the surrounding area. “Main Street” design will include buildings oriented to the street, an minimum of 2 story

building scale, attractive streetscape, active ground floor uses and other elements that reinforce pedestrian oriented character and vitality of the area.



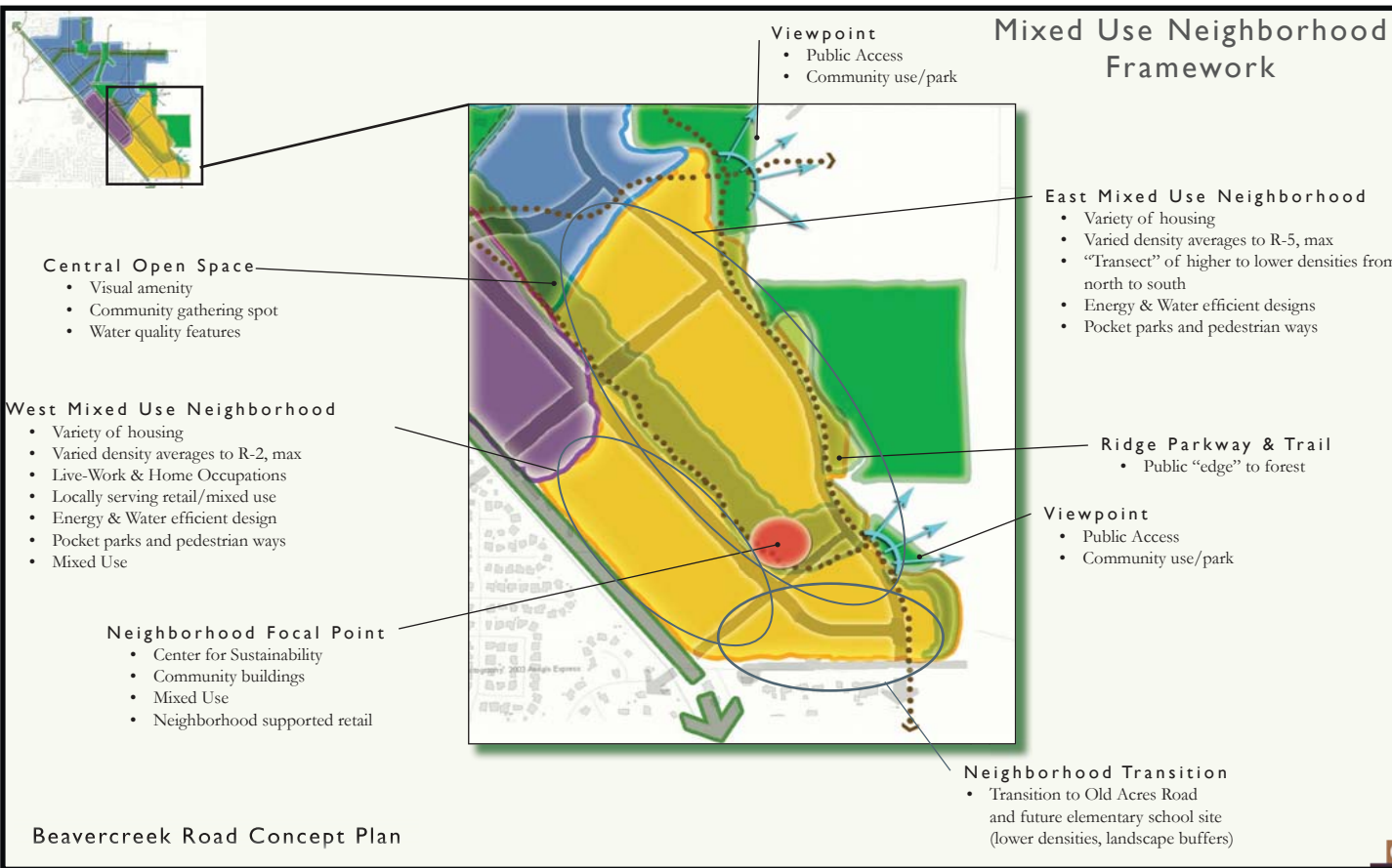
Figure 11 - Main Street Framework

### West Mixed Use Neighborhood – WMU

The West Mixed Use Neighborhood will be a walkable, transit-oriented neighborhood. This area allows a transit supportive mix of housing, live/work units, mixed use buildings and limited commercial uses. A variety of housing and building forms is required, with the overall average of residential uses not exceeding 22 dwelling units per acre. The WMU area’s uses, density and design will support the multi-modal transportation system and provide good access for pedestrians, bicycles, transit and vehicles. Site and building design will create a walkable area and utilize cost effective green development practices.

### East Mixed Use Neighborhood – EMU

The East Mixed Use Neighborhood will be a walkable and tree-lined neighborhood with a variety of housing types. The EMU allows for a variety of housing types while maintaining a low density residential average not exceeding densities permitted in the R-5 zone. Limited non-residential uses are permitted to encourage a unique identity, sustainable community, and in-home work options. The neighborhood’s design will celebrate open space, trees, and relationships to public open spaces. The central open space, ridge open space scenic viewpoints, and a linked system of open spaces and trails are key features of the



EMU. Residential developments will provide housing for a range of income levels, sustainable building design, and green development practices.

Figure 12 - West and East Mixed Use Neighborhoods



## Open Space

The Open Space Framework illustrated on Figure 13 provides a network of green spaces intended to provide:

- A connected system of parks, open spaces and natural areas that link together and link to the Environmentally Sensitive Resource Areas.
- Scenic and open space amenities and community gathering places
- Access to nature
- Tree and natural area preservation
- Locations where storm water and water quality facilities can be combined with open space amenities, and opportunities to implement sustainable development and infrastructure
- Green spaces near the system of trails and pedestrian connections
- Open spaces which complement buildings and the urban, built environment

### Power Line Open Spaces

The power line corridors comprise approximately 52 acres of land north of Loder Road. They are a dominant feature because they define open corridors and have a significant visual impact related to the towers. They also have an influence on the pattern of land use and transportation connections. In response to these conditions, the Concept Plan includes four main strategies for the use of the power line corridors:

- Provide publicly accessible open spaces. The implementing code includes a minimum 100 foot-wide open space and public access easement would be required at the time of development reviews, or, obtained through cooperative agreements with the utilities and property owners.

- Provide trails. A new east-west trail is shown on Figure \_\_\_ that follows the main east-west corridor. This corridor has outstanding views of Mt. Hood.
- Allow a broad array of uses. Ideas generated by the CAC, and permitted by the code, include: community gardens, urban agriculture, environmental science uses by CCC, storage and other “non-building” uses by adjacent industries, storm water and water quality features, plant nurseries, and solar farms.
- Link to the broader open space network. The power line corridors are linked to the open spaces and trail network in the central and southern areas of the plan.

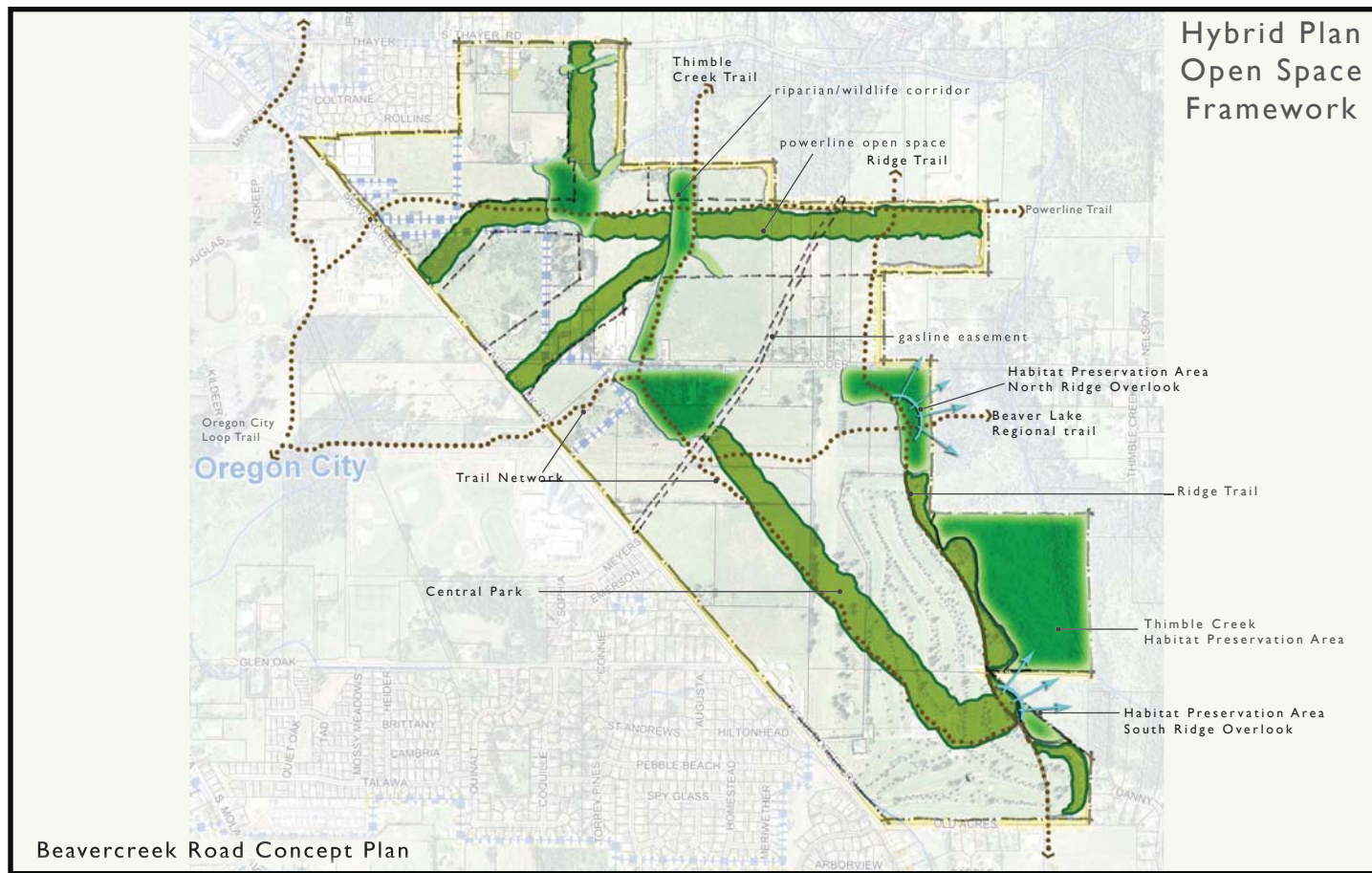
### Central Park

An 18 acre central park is proposed to extend through the central and southern areas of the plan. The location and linearity of the park was first indicated by Metro’s Goal 5 mapping (see Figure 6). It was illustrated by several citizen groups during the design workshop held in October, 2006. This open space feature is intended as a continuous green space that links the districts and neighborhoods south of Loder Road. The code provides for flexibility in its width and shape, provided there remains a clearly identifiable and continuous open space, and no net loss of acreage. If buildings are incorporated as part of the Central Park, they must include primary uses which are open to the public. Civic buildings are encouraged adjacent to the Central Park. Streets may cross the park as needed. The park is an opportunity to locate and design low impact storm water facilities as an amenity for adjacent urban uses.

### East Ridge

The East Ridge area is a beautiful edge to the site that should be planned as a publicly accessible amenity and protected resource area. The natural resource area identified important resources in the riparian areas of Thimble Creek. In addition, Lidar mapping and slope analysis identified steeper slopes (greater than 15%) that are more difficult to develop than

the adjacent flat areas of the concept plan. The sanitary sewer analysis noted that lower areas on the east ridge could not be readily served with gravity systems – they would require private pump facilities. For all of these reasons, it is recommended here that an East Ridge open space be designated.



Beavercreek Road Concept Plan

Figure 13 - Open Space Framework

- The plan and code call for:
- Establishing a limit of development that demarks the clear edge of urban uses and a “window” to adjacent natural areas. In the central area of the east ridge, the limit of development is recommended to be elevation 190 ft. MSL, but may be revised based upon a geologic report.
  - Creating two scenic view points that are small public parks.
  - Creating an East Ridge Trail that will run parallel the East Ridge Parkway on the east side of the road.

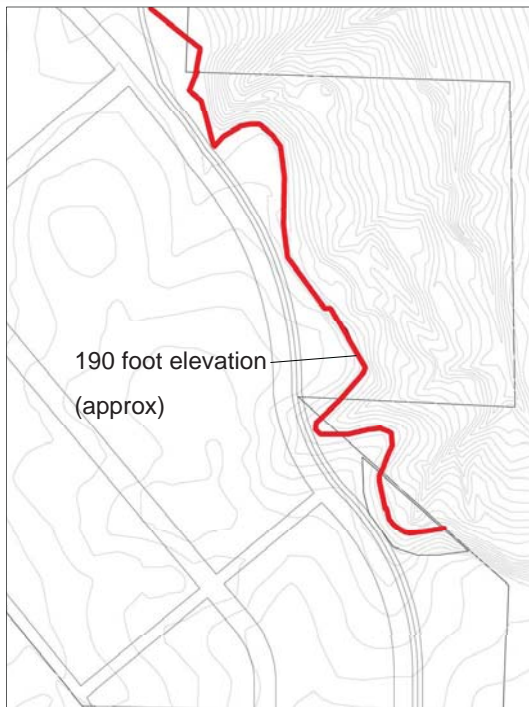


Figure 13A - East Ridge Lidar and 190 foot elevation

## Transportation

In summary, the key elements of the Concept Plan transportation strategy are to:

- Plan a mixed use community that provides viable options for internal trip making (i.e. many daily needs provided on-site), transit use, maximized walking and biking, and re-routed trips within the Oregon City area.
- Improve Beavercreek Road as a green street boulevard.
- Create a framework of collector streets that serve the Beavercreek Road Concept Plan area.
- Require local street and pedestrian way connectivity.
- Provide a system of trails and bikeways.
- Provide a transit-attractive destinations.
- Use green street designs throughout the plan.
- Update the Oregon City Transportation System Plan to include Beavercreek Road Concept Plan, provide necessary off-site improvements, and, assure continued compliance with Oregon's Transportation Planning Rule.

## Streets

Figure 14 illustrates the street plan. Highlights of the plan include:

- *Beavercreek as a green boulevard.* The cross-section will be a 5 lane arterial to Clairmont, then a 3 lane arterial (green street boulevard) from Clairmont to UGB. The signalization of key intersections is illustrated on the Street Plan.

- *Center Parkway as a parallel route to Beaver Creek Road.* This new north-south route provides the opportunity to completely avoid use of Beaver Creek Road for trips between Old Acres and Thayer Road. This provides a much-needed separation of local and through trips, as well as an attractive east-side walking and biking route. The alignment of Center Parkway along the central open space is intended to provide an open edge to the park. The cross-section for Center Parkway includes a multi-use path on the east side and green street swale. Center Parkway is illustrated as a three-lane facility. Depending on land uses and block configurations, it may be able to function well with a two lane section and left turn pockets at selected locations.
- *Ridge Parkway as a parallel route to Center Parkway and Beaver Creek Road.* The section of Ridge Parkway south of the Glen Oak extension is intended as the green edge of the neighborhood. This will provide a community “window” and public walkway adjacent to the undeveloped natural areas east of the parkway. Ridge Parkway should be two lanes except where left turn pockets are needed.
- *Extensions of Clairmont, Meyers, Glen Oak Roads and the south entrance through to the Ridge Parkway.* These connections help complete the network and tie all parts of the community to adjacent streets and neighborhoods.
- *Realignment of Loder Road at its west end. Loder is recommended for re-configuration to create a safer “T” intersection.* The specific location of the intersection is conceptual and subject to more site specific planning.

The streets of the Concept Plan area are recommended to be green streets. This is an integral part of the storm water plan and overall identity and vision planned for the area. The green street cross-sections utilize a combination of designs: vegetated swales, planter islands, curb extensions, and porous pavement. Figures 15 – 19 illustrate the recommended green street cross-sections. These are intended as a starting point for more detailed design.

## Trails

Figure 14 also illustrates the trail network. The City’s existing Thimble Creek Trail and Metro’s Beaver Lake Regional Trail have been incorporated into the plan. New trails include the Powerline Corridor Trail, multi-use path along Center Parkway, and the Ridge Trail.

## Transit

The Concept Plan sets the stage for future transit, recognizing that how that service is delivered will play out over time. Specifics of transit service will depend on the actual rate and type of development built, Tri-Met resources and policies, and, consideration of local options. Three options have been identified:

1. A route modification is made to existing bus service to Clackamas Community College (CCC) that extends the route through CCC to Beaver Creek Road via Clairmont, then south to Meyers or Glen Oak, back to HWY 213, and back onto Molalla to complete the normal route down to the Oregon City Transit Center. To date, CCC has identified Meyers Road as a future transit connection to the college.
2. A new local loop route that connects to the CCC transit center and serves the Beaver Creek Road Concept Planning area, the High School, the residential areas between Beaver Creek and HWY 213, and the residential areas west of HWY 213 (south of Warner Milne).
3. A new “express” route is created from the Oregon City Transit Center, up/down HWY 213 to major destinations (CCC, the Beaver Creek Road Employment area, Red Soils, Hilltop Shopping Center, etc.).

It is the recommendation of this Plan that the transit-oriented (and Use mix), density, and design of the Beaver Creek Road area be implemented so that transit remains a viable option over the long term. The City should work with Tri-Met, CCC, Oregon City High School, and developers within the Concept Plan area to facilitate transit.

### Connectivity

The street network described above will be supplemented by a connected local street network. Consistent with the framework plan approach, connectivity is required by policy and by the standards in the code. The specific design for the local street system is flexible and subject to master plan and design review. Figure 20 illustrates different ways to organize the street and pedestrian systems. These are just three examples. The Plan supports innovative ways to configure the streets that are consistent with the goals and vision for the Beaver Creek Concept Plan area.

For additional information, please see Technical Appendix, Sections C2 and G.

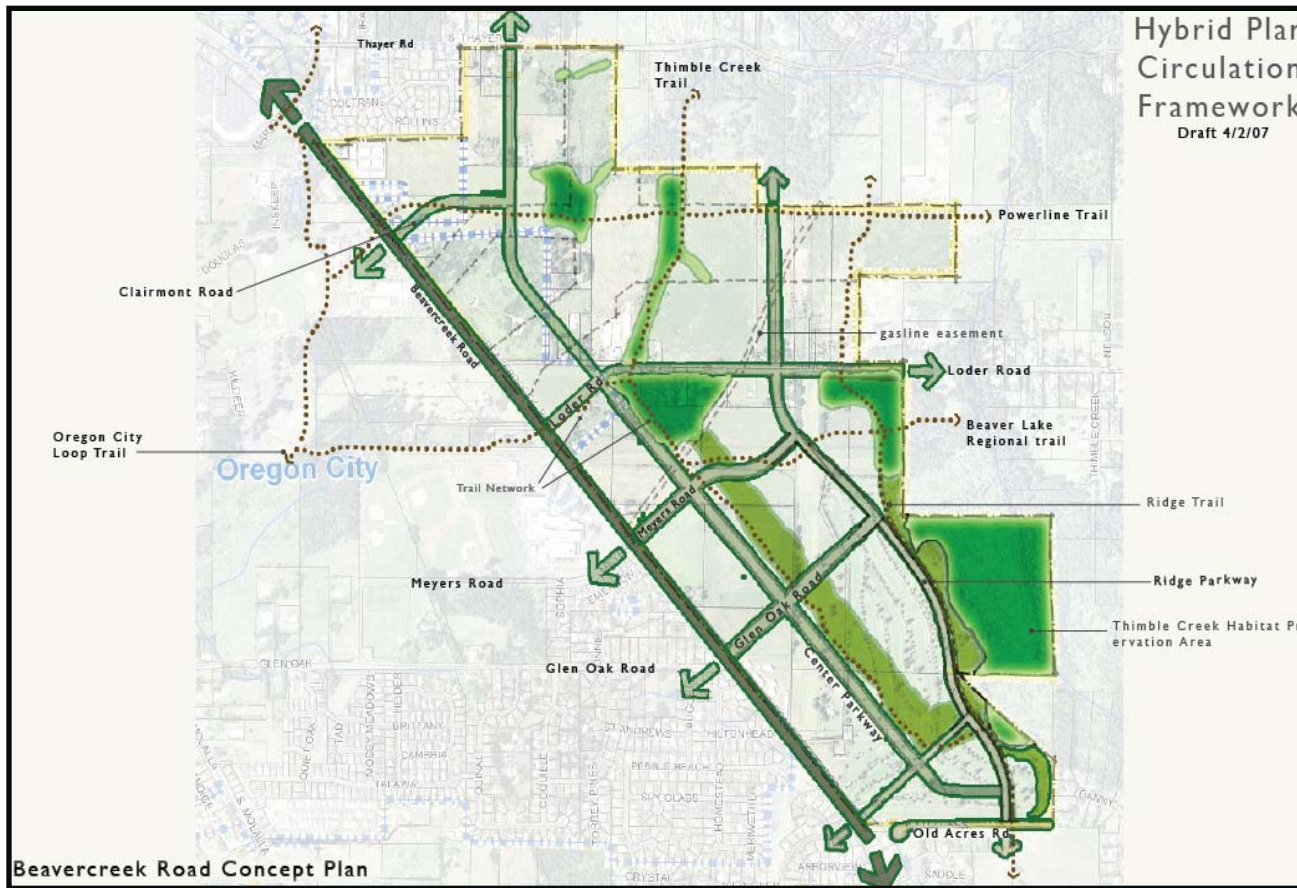
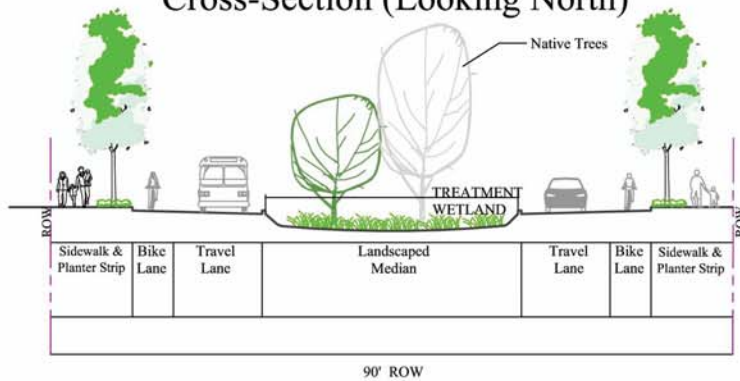


Figure 14 - Circulation Framework



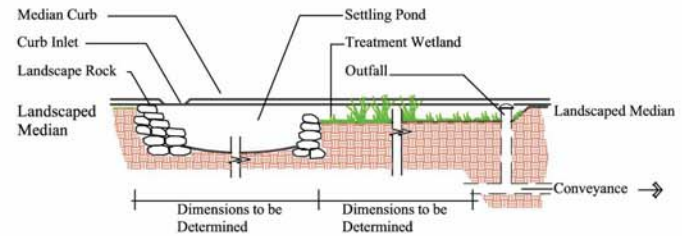
Figure 20 - Connectivity Diagrams

### Beavercreek Road Greenstreet - Option 1 3-lane Right-of-way Cross-Section (Looking North)



### Beavercreek Road Concept Plan

#### Median Treatment Wetland Conceptual Detail



#### Beavercreek Road - Option 1 3-lane Right-of-way Plan Concept

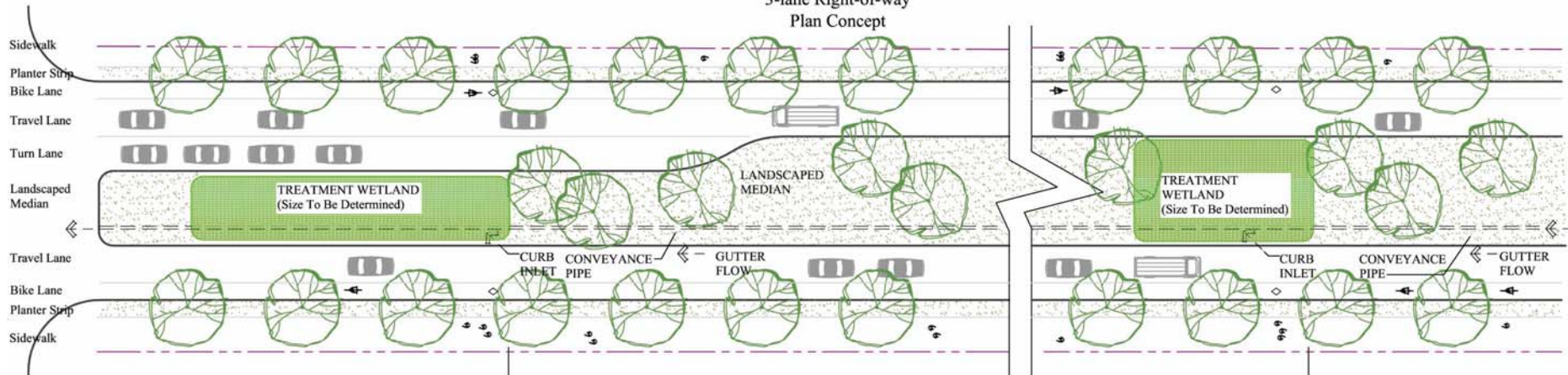
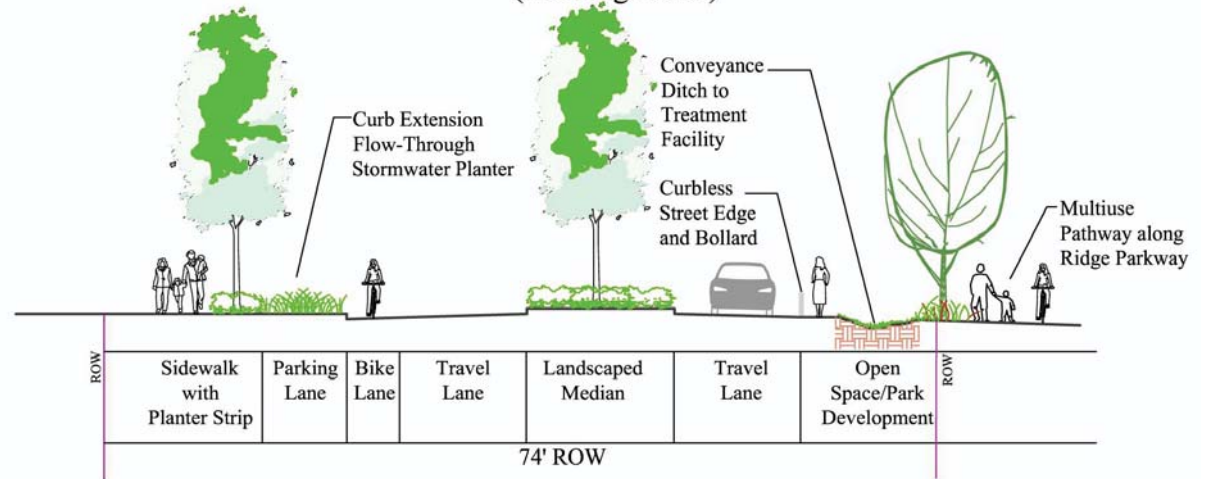


Figure 15 - Beavercreek Road Green Street

### Ridge Parkway & Central Parkway

(Looking North)



### Ridge Parkway & Central Parkway

Plan View

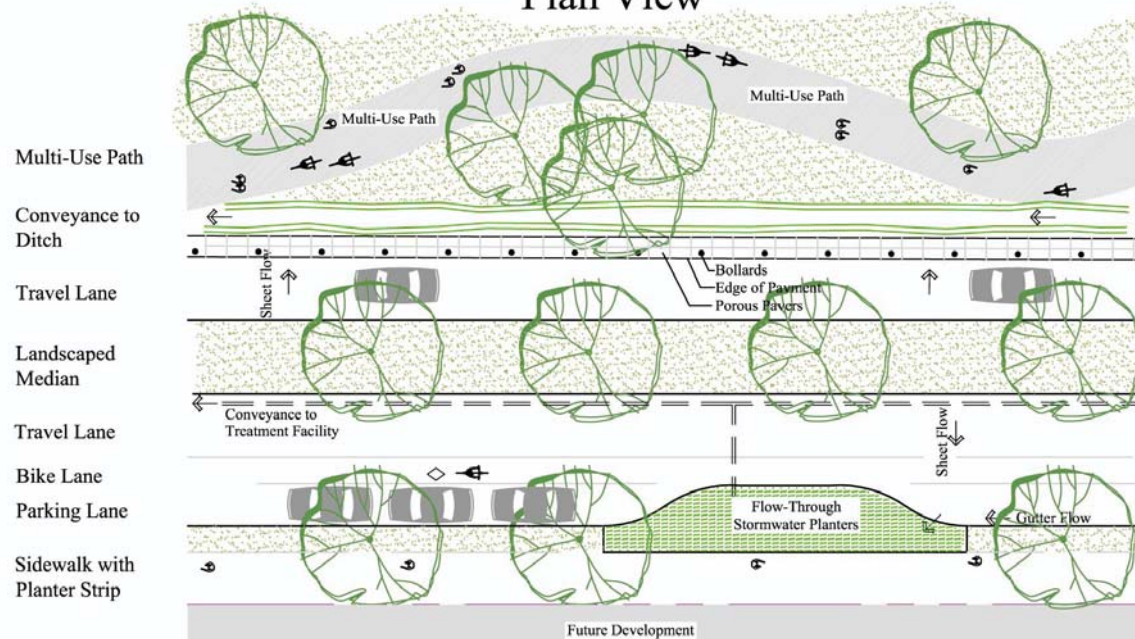
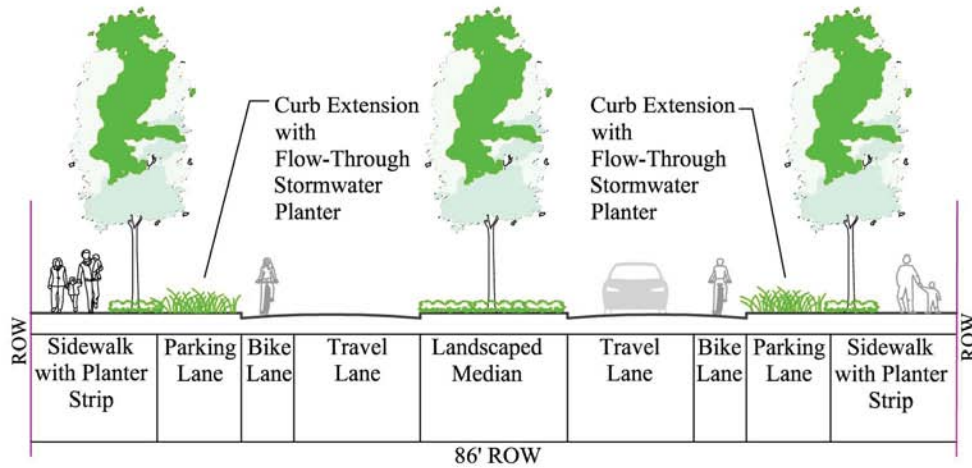


Figure 16 - Ridge Parkway and Central Parkway Green Streets

### Collector Greenstreet (Looking North)



### Collector Greenstreet Plan View

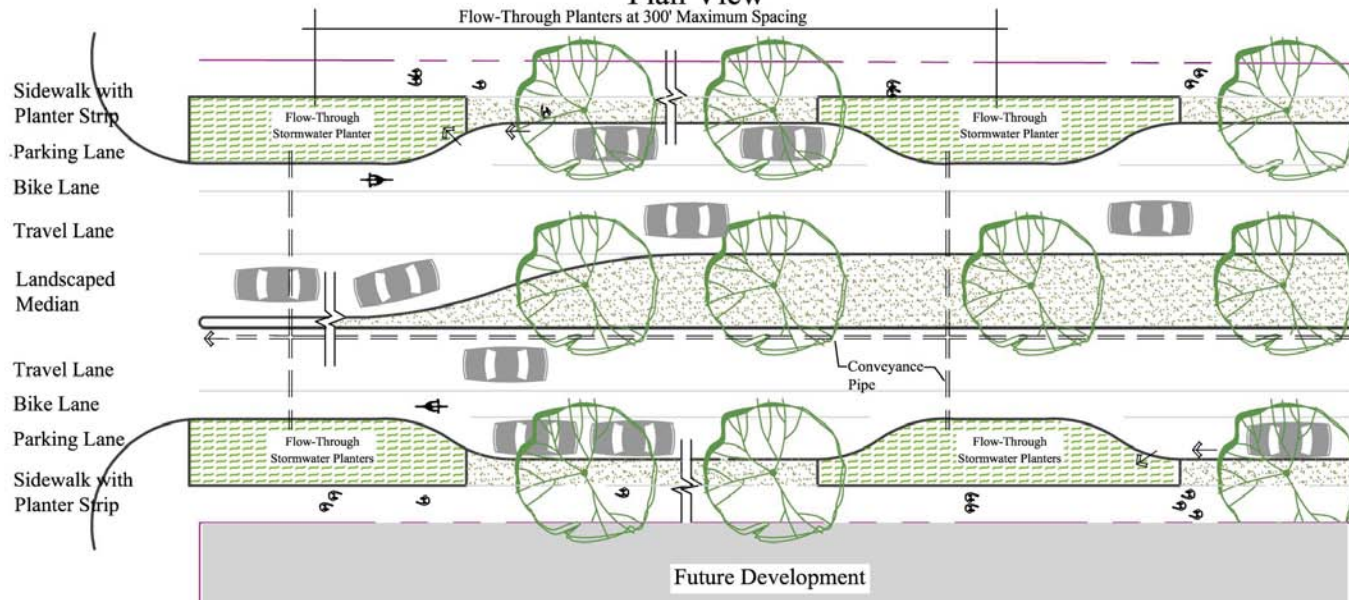
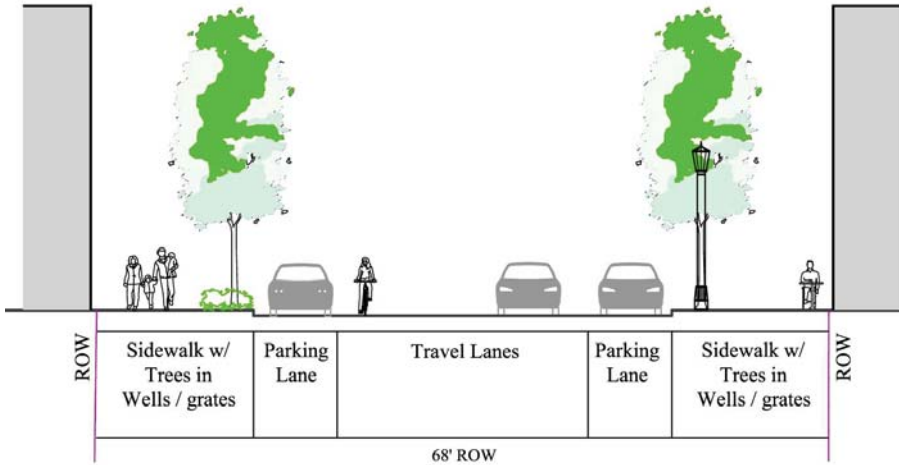


Figure 17 - Collector Green Street

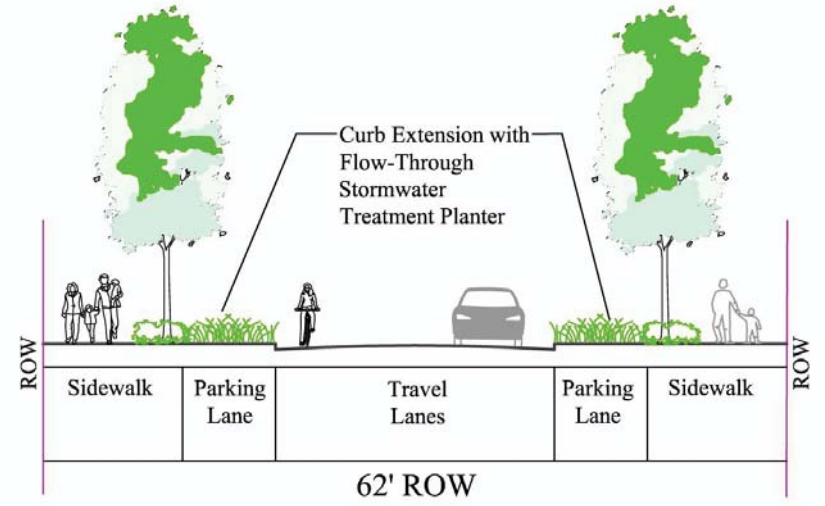


### Main Street Collector

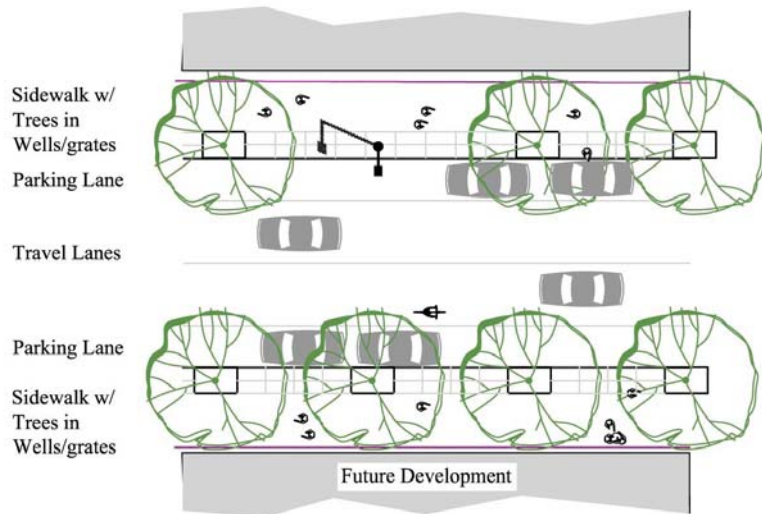
Potential Building Frontage with Future Development



### Neighborhood Greenstreet



### Main Street Collector Plan View



### Neighborhood Greenstreet Plan View

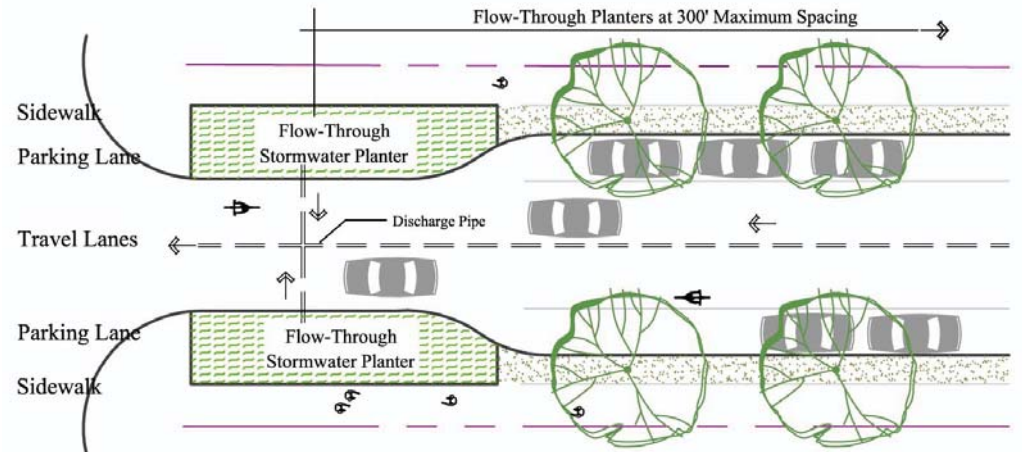


Figure 18 - Main Street Green Street

Figure 19 - Neighborhood Green Street

## Storm Water and Water Quality

This Beaver Creek Road stormwater infrastructure plan embraces the application of low-impact development practices that mimic natural hydrologic processes and minimize impacts to existing natural resources. It outlines and describes a stormwater hierarchy focused on managing stormwater in a naturalistic manner at three separate scales: site, street, and neighborhood.

### Tier 1 – Site Specific Stormwater Management Facilities (Site)

All property within the study area will have to utilize on-site best management practices (BMPs) to reduce the transport of pollutants from their site. Non-structural BMPs, such as source control (e.g. using less water) are the best at eliminating pollution. Low-impact structural BMPs such as rain gardens, vegetated swales, pervious surface treatments, etc. can be designed to treat stormwater runoff and reduce the quantity (flow and volume) by encouraging retention/infiltration. They can also provide beneficial habitat for wildlife and aesthetic enhancements to a neighborhood. These low-impact BMPs are preferred over other structural solutions such as underground tanks and filtration systems. Most of these facilities will be privately maintained.

### Tier 2 – Green Street Stormwater Management Facilities (Street)

Green Streets are recommended for the entire Beaver Creek Concept Plan area. The recommended green street design in Figures \_\_\_\_ - \_\_\_\_ use a combination of vegetated swales and adjacent to the street with curb cuts that allow runoff to enter. Bioretention facilities confined within a container are recommended in higher density locations where space is limited or is needed for other urban design features, such as on-street parking or wide sidewalks. The majority of the site is underlain with silt loam and silty clay loam. Both soils are categorized as Hydrologic Soil Group C and have

relatively slow infiltration rates.

The recommended green streets will operate as a collection and conveyance system to transport stormwater from both private property and streets to regional stormwater facilities. The conveyance facilities need to be capable of managing large storm events that exceed the capacity of the swales. For this reason, the storm water plan's conveyance system is a combination of open channels, pipes, and culverts. Open channels should be used wherever feasible to increase the opportunity for stormwater to infiltrate and reduce the need for piped conveyance.

### Tier 3 – Regional Stormwater Management Facilities (Neighborhood)

Regional stormwater management facilities are recommended to manage stormwater from larger storms that pass through the Tier 1 and Tier 2 facilities. Figure \_\_\_\_ illustrates seven regional detention pond locations. Coordinating the use of these for multiple properties will require land owner cooperation during development reviews, and/or, City initiative in advance of development.

The regional facilities should be incorporated into the open space areas wherever possible to reduce land costs, and reduce impacts to the buildable land area. Regional stormwater facilities should be designed to blend with the other uses of the open space area, and can be designed as a water feature that offers educational or recreational opportunities. Stormwater runoff should be considered as a resource, rather than a waste stream. The collection and conveyance of stormwater runoff to regional facilities can offer an opportunity to collect the water for re-use.

# Beavercreek Road Concept Plan Stormwater System

## Tier 1 - Site Specific



## Tier 2 - Greenstreets



## Tier 3 - Regional Facilities



Beavercreek Road Concept Plan  
**Figure 4:  
 Hybrid Alternative  
 Stormwater System**

**Legend**  
 — Streams  
 Tier 1 - Site Specific  
 (Not Illustrated)  
 Tier 2 - Greenstreets  
 — Conveyance & Treatment  
 Tier 3 - Regional Facilities  
 ● Detention  
 — Detention Outfall

Map Creation Date: 03/14/17  
 (Based on CAD Data from 03/01/17)

0 200 400 600  
 Feet

North Arrow

Aerial Photography is a 2014 production. All rights reserved. All data on this map is derived from the Beavercreek GIS data base. This information was developed at multiple scales and accuracies. No warranty is made with this map.

Figure 21 - Sustainable Stormwater Plan

## Discharge Locations

Post-development stormwater runoff rates from the Beaver Creek Road Concept Plan Area will need to match pre-development rates at the existing discharge locations, per City Stormwater Design Standards. Since there are several small discharge locations to Thimble Creek, flow control facilities may not be feasible at all discharge locations. In this situation, over-detention is needed at some discharge locations to compensate for the undetained areas so that flows in Thimble Creek at the downstream point of compliance meet City Stormwater Design Standards for flow control.

The stormwater infrastructure for the Beaver Creek Road Concept Plan Area is estimated to cost between \$9.0 million and \$9.7 million for base construction. When construction contingencies, soft costs (engineering, permitting, construction management), and land acquisition, the total cost is estimated at \$\_\_\_ to \$\_\_\_ million. (Note: cost estimates are being updated.)

For additional information, please see Technical Appendix, Sections C6 and H3.

## Water

The proposed water infrastructure plan creates a network of water supply pipelines as the “backbone” system. In addition, as individual parcels are developed, a local service network of water mains will be needed to serve individual lots.

Since there are two pressure zones in the concept plan area, there will need to be a network of pipes for each of the two zones. These systems are illustrated on Figure 22. The Fairway Downs Pressure Zone will serve the south one-third of the concept plan area. This zone receives water from

the system reservoirs. But, because this zone is at the highest elevation in the entire water system, pressure from the reservoir system is insufficient to maintain a usable pressure to customers in this part of the system. The water pressure is increased by using a booster pump station located at the intersection of Glen Oak Road and Beaver Creek Road.

In the Fairway Downs Pressure Zone, the majority of the water mains will be installed in the proposed public rights-of-way. However, a small portion of the system may need to be in strip easements along the perimeter of the zone at the far southeast corner of the concept plan area. The system layout shown is preliminary and largely dependent on future development and the final system of internal (local) streets. Additional mains may be needed or some of the water mains shown may need to be removed. For instance, if the development of the residential area located at the southeast end of the site, adjacent to Old Acres Road, includes internal streets, the water mains shown along the perimeter of the site may be deleted because service will be provided from pipes that will be installed in the internal street system.

Some of the planned streets in the Fairway Downs Pressure Zone will contain two water mains. One water main will provide direct water service to the area from the booster pump system. The other water main will carry water to the lower elevation areas in the Upper Pressure Zone.

The Upper Pressure Zone will serve the north two-thirds of the concept plan area. The “backbone” network for the Upper Pressure Zone will have water mains that are pressured from the Henrici and Boynton reservoirs. A single 12-inch water main will run parallel with Beaver Creek Road through the middle of concept plan area. This water conduit will serve as the “spine” for the Upper Pressure Zone. A network of 8-inch water pipes will be

located in the public rights-of-way and will provide water to the parcels that are identified for development. The system can be extended easterly on Loder Road, if needed.

The preliminary design ensures that the system is looped so that there are no dead-end pipes in the system. Along a portion of the north perimeter, approximately 1,600 feet of water pipe will be needed to complete a system loop and provide water service to adjacent lots. This pipe will share a utility easement with a gravity sanitary sewer and a pressure sewer. There may also be stormwater facilities in this same alignment.

In the Water Master Plan, under pipeline project P-201, there is a system connection in a strip easement between Thayer Road and Beaver Creek Road at the intersection with Marjorie Lane. Consideration should be given to routing this connection along Thayer Road to Maplelane Road and then onto Beaver Creek Road. This will keep this proposed 12-inch main in the public

street area where it can be better accessed.

The estimated total capital cost for the “backbone” network within the concept plan area will be in the area of \$5,400,000 (see Table 3). This estimate is based the one derived for Alternative D, which for concept planning purposes, is representative of the plan and costs for the final Concept Plan. This is in addition to the \$6.9 million of programmed capital improvement projects that will extend the water system to the

concept plan area. All estimates are based on year 2003 dollars. Before the SDC can be established, the estimates will need to be adjusted for the actual programmed year of construction.

For additional information, please see Technical Appendix, Sections C6 and H3.

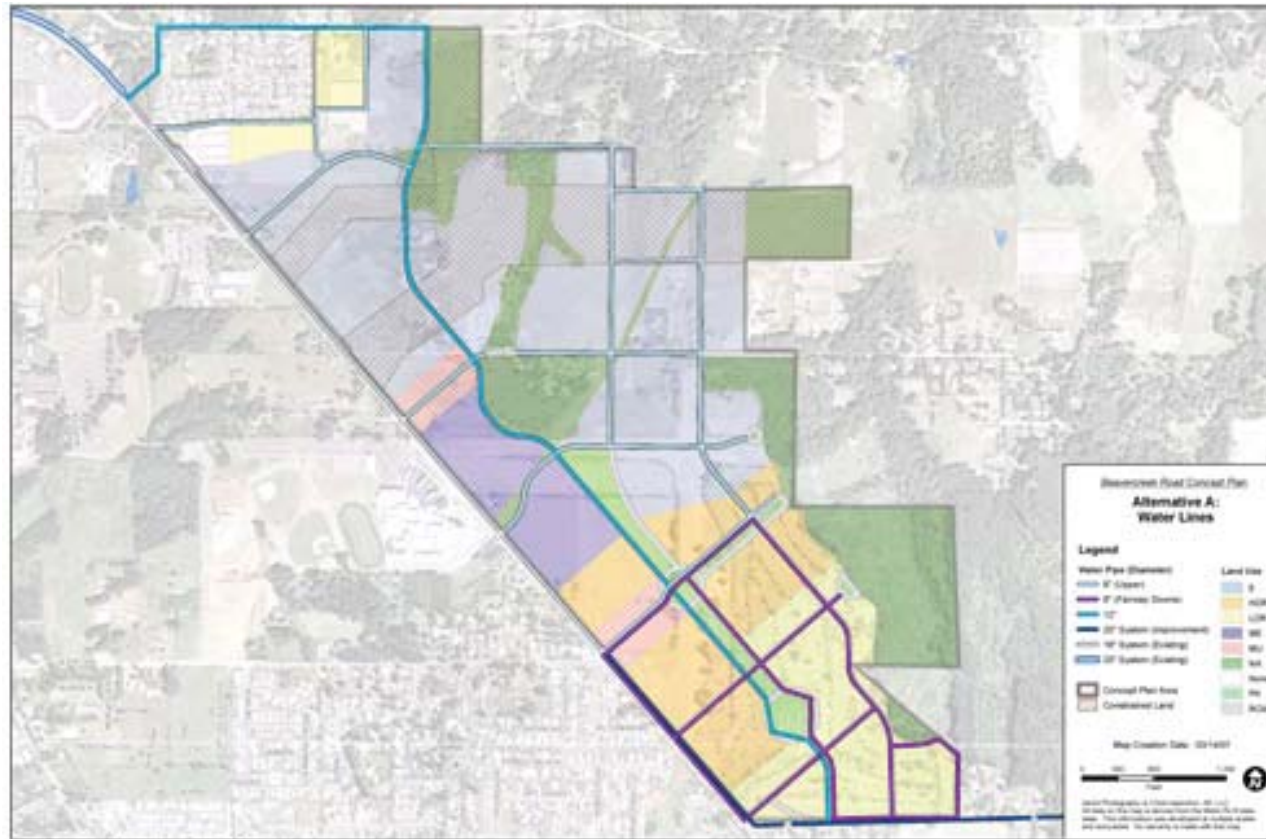


Figure 22 - Water Plan *Note: This is a placeholder graphic.*

## Sanitary Sewer

The northern half of the concept area drains generally to the north and follows the natural land contours formed by the uppermost portion of Thimble Creek. The proposed sanitary sewer system in the vicinity of Loder Road will follow the north-south street rights-of-way. This part of the system will terminate at the low point of the concept plan area in a wetwell. A sanitary lift station over the wetwell will pump the wastewater uphill in a westerly direction to a point that it can be discharged into a gravity sewer that will flow west to the trunk sewer in Beavercreek Road. The lift station and pressure sewer project has been identified in the Sanitary Sewer Master Plan as projects BC-COL-5 and 6. A utility bridge that will carry the pressure pipe and gravity sewer pipe over Thimble Creek is anticipated. A short road access to the pump station that is parallel to Thimble Creek will also be needed.

The majority of the southern half of the concept area will have a gravity sanitary sewer system that will convey waste water to the Beavercreek Road collector sewer at the current intersection of Beavercreek Road and Loder Road. This portion of the system can be built in the planned roadways. A portion of the system, approximately 900 feet long, will need to be built in the current alignment of Loder Road so that the gravity sewer can be connected to the trunk sewer in Beavercreek Road. The circulation plan includes a realignment of Loder Road. Therefore, a sewer easement will

need to be retained across the future parcel that now includes the current Loder Road alignment.

The final Concept Plan locates Ridge Parkway at an elevation (approximately 190 ft MSL) and anticipates open space on the downhill side of the road. This will ensure that sanitary sewer serving this area can be gravity fed. If any land uses requiring sewer are located on the east side of this line, they may require individual pump stations.

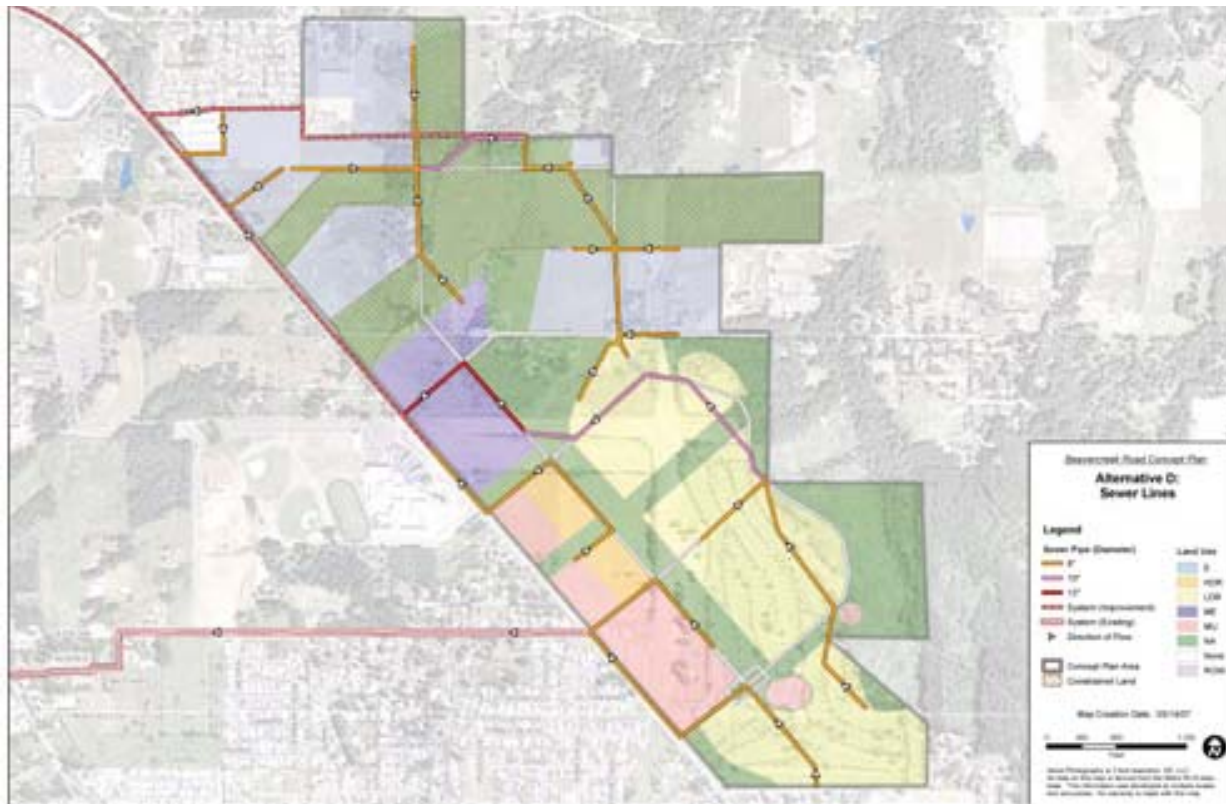


Figure 23 - Sewer Plan *Note: This is a placeholder graphic.*

The estimated total capital cost will be in the vicinity of \$4,100,000. This estimate is based on the cost analysis for Alternative D, which is comparable. This is in addition to the \$2.3 million in sanitary sewer master plan capital costs that needed to bring the sanitary sewers to the concept plan area. These estimates are based on year 2003 dollars. The estimates will need to be adjusted for the programmed year of construction.

For additional information, please see Technical Appendix, Sections C6 and H2.

## Funding strategies

For water, sewer, storm water and parks, there are five primary funding sources and strategies that can be used:

- *System development charges (SDCs)*– Oregon City requires developers to pay SDCs for new development. Developers pay these charges up front based on the predicted impact of the new development on the existing infrastructure and the requirements it creates for new improvements. Although the charges are paid by the developer, the developer may pass on some of these costs to buyers of newly developed property. Thus, SDCs allocate costs of development to the developer and buyers of the new homes or new commercial or industrial buildings.
- *Urban renewal/tax increment financing* - Tax increment financing is the primary funding vehicle used within urban renewal areas (URA). The tax increment revenue is generated within a URA when a designated area is established and the normal property taxes within that area are ‘frozen’ (often called the frozen base). Any new taxes generated within that area through either property appreciation or new investment

becomes the increment. Taxing jurisdictions continue to collect income from the frozen base but agree to release assessed value above the base to the URA. The URA then can issue bonds to pay for identified public improvements. The tax increment is used to pay off the bonds.

Oregon City has the authority to establish an URA. The Beavercreek Road Concept Plan Area would have to meet the definition of ‘blight’ as defined in ORS 457. It is likely to meet ‘blight’ standards because its existing ratios of improvement-to-land values are likely low enough to meet that standard.

- *Local Improvement Districts* - Local Improvement Districts (LIDs) are formed for the purpose of assessing local property owners an amount sufficient to pay for a project deemed to be of local benefit. LIDs are a specific type of special assessment district, which more broadly includes any district that is formed within an existing taxing district to assess specific property owners for some service that is not available throughout the larger district. The revenues from the LID assessments are used to pay the debt payments on a special assessment bond or a note payable issued for the capital improvements.

LID assessments increase costs for property owners. Under a LID the improvements must increase the value of the taxed properties by more than the properties are taxed. LIDs are typically used to fund improvements that primarily benefit residents and property owners within the LID.

- *Bonds* - Bonds provide a financing mechanism for local governments to raise millions of dollars for parks and other capital projects. The City could back a bond with revenue from a LID, the Urban Renewal Districts, or property taxes citywide. General obligation (GO) bonds issued by local governments are secured by a pledge of the issuer’s power to levy real and personal property taxes. Property taxes necessary to repay GO bonds are not subject to limitation imposed by recent property tax initiatives. Oregon law requires GO bonds to be

authorized by popular vote.

Bond levies are used to pay principal and interest for voter-approved bonded debt for capital improvements. Bond levies typically are approved in terms of dollars, and the tax rate is calculated as the total levy divided by the assessed value in the district.

- Developer funded infrastructure – The City conditions land use approvals and permits to include required infrastructure. Beyond the sources cited above, developers cover the remaining costs for the infrastructure required for their development.

For transportation infrastructure, the same sources as cited above are available. For larger facilities, such as Beaver Creek Road, additional funds may be available. They include Metro-administered federal STP and CMAQ funding, and, regional Metro Transportation Improvement Plan funding. These sources are limited and extremely competitive. County funding via County SCSs should also be considered a potential source for Beaver Creek Road. Facilities like Beaver Creek Road are often funded with a combination of sources, where one source leverages the availability of another.

## Sustainability

One of the adopted goals is: The Beaver Creek Road Concept Plan Area will be a model of sustainable design, development practices, planning, and innovative thinking.

Throughout the development of the concept plan, sustainability has been paramount in guiding the CAC, the City, and the consultant team. The final plan assumes that sustainable practices will be a combination of private initiatives (such as LEED certified buildings), public requirements (green streets and low impact development policies), and public-private

partnerships. It is recommended that City use incentives, education and policy support as much as possible for promoting sustainability at Beaver Creek Road. Some initiatives will require regulation and City mandates, but caution and balance should be used. At the end of the day, it is up to the private sector to invest in sustainable development. The Beaver Creek Road’s site’s legacy as a model of sustainable design will depend, in LARGE on the built projects that are successful in the marketplace and help generate the type of reputation that the community desires and deserves.

The key to fulfilling the above-listed goal will be in the implementation. For the City’s part, implementation strategies that support sustainable design will be included within the Oregon City Comprehensive Plan policies and Code provisions. They will be applied during master plan and design review permitting. Some of these strategies will be “required” while other are appropriate to “encourage.” These sustainability strategies include:

- Energy efficiency
- Water conservation
- Compact development
- Solar orientation
- Green streets/infrastructure
- Adaptive reuse of existing buildings/infrastructure
- Alternative transportation
- Pedestrian/Cyclist friendly developments
- Natural drainage systems
- Tree preservation and planting to “re-establish” a tree canopy
- Minimizing impervious surfaces



- Sustainability education (builder, residents, businesses and visitors)
- Collaboration with “local” institutional and economic partners, particularly Clackamas Community College and Oregon City High School
- Community based sustainable programs and activities

### Principles for Sustainable Community Design

The CAC discussed Principles for Sustainable Community Design that were offered by one of the members. These provide a good framework for how the Concept Plan is addressing sustainability.

*Mix Land Uses - Promote a mix of land uses that support living wage jobs and a variety of services.*

All of the sub-districts are, to some degree, mixed use districts. The Mixed Use Village, Main Street and West Mixed Use Neighborhood allow a rich mix of employment, housing, and services. Taken together, the entire 453 acre area will be a complete community.

*Housing Types - Create a range of housing choices for all ages and incomes.*

The concept plan includes housing in many forms: mixed use formats in the 3-5 story buildings, high density apartments and condominiums, live-work units, townhomes, small cottage lots, and low density single family homes.

*Walk-ability - Make the Neighborhood “walkable” and make services “walk-to-able.”*

The plan provides a street and trail framework. The code will require a high level of connectivity and maximum block sizes for most sub-districts. Services are provided throughout the plan as part of mixed use areas and a broad range of permitted uses.

*Transportation - Provide a range of transportation options using a connected network of streets and paths.*

The plan provides for all modes: walking, biking, driving and transit. Transit-supportive land use is specifically required in the Mixed Employment Village, Main Street and West Mixed Use Neighborhoods. The framework of connected streets and paths will be supplemented by a further-connected system of local streets and walking routes.

*Open Space - Protect and maintain a functioning green space network for a variety of uses.*

Open space is distributed throughout the plan. New green spaces are connected with existing higher-value natural areas.

*Integrate Systems - Integrate ecological and man-made systems to maximize function, efficiency and health.*

Infrastructure systems (green storm water, multi-modal transportation) are highly integrated with the open space network and array of land uses. It will be important for the implementation of the plan to further integrate heating, cooling, irrigation and other man-made systems with the Concept Plan framework.

*Ecological Health - Manage natural resources to eliminate pollution to watersheds and lesson impact on habitat and green infrastructure.*

Methods to achieve this principle are identified in the Stormwater Infrastructure Report. Additionally, the code requires measures to preserve natural resources and eliminate pollution to watersheds necessary to achieve this principle.

*Reuse, Recycle, Regenerate - Reuse existing resources, regenerate existing development areas.*

The principle will be applied primarily at time of development and beyond.

*Green Buildings - Build compact, innovative structures that use less energy and materials.*

The draft code includes provisions for green buildings. This is a new area for the City to regulate, so a public-private Green Building Work Group is recommend to explore issues, build consensus, and develop specific code recommendations.

*Work Together - Work with community members and neighbors to design and develop.*

The development of the alternatives and the recommended plan has been a collaborative process with all project partners. The concept plan process through implementation and subsequent project area developments will continue to be a collaborative process where all stakeholders are invited to participate.

For additional information, please see Technical Appendix, Sections C3, D, and F.

Metrics

Land Use

The following table summarizes the acreages for major land uses on the Concept Plan.

<b>Land Use Category (acres)</b>	<b>Hybrid</b>
North Employment Campus (adjusted gross acreage)*	149
Mixed Employment Village	26
Main Street	10
West Mixed Use Neighborhood	22
East Mixed Use Neighborhood	77
<b>Total Acres of "built" land use</b>	<b>284</b>
<b>Other Land Uses (not "built")</b>	
Parks/Open Space/Natural Areas (Total)**	113
Major ROW+	56
Existing Uses (unbuildable)	0
<b>Total Project Area Gross Acres</b>	<b>453</b>

\*Adjusted gross acreage is the sum of 50% of the employment land use shown under the powerline easement plus all other unconstrained employment land use areas. Calculations shown below:

<b>Land Use Category (acres)</b>	<b>Hybrid</b>
Total North Employment Campus	175
<b>Unconstrained NEC</b>	<b>123</b>
Employment with powerline overlay	52
<b>Useable portion of powerline overlay (50%)</b>	<b>26</b>
<b>North Employment Campus (adjusted gross acreage)*</b>	<b>149</b>

### Housing and Employment Estimates

The Concept Plan has an estimated capacity for approximately 5000 jobs and 1000 dwellings. The following table displays the estimates and assumptions used to estimate jobs and housing. On a net acreage, these averages are 33 jobs/ net developable acre and 10.3 dwellings/ net developable acre.

Land Use Category	Hybrid Gross Acres	Hybrid Net Acres*	FAR/Acre**	SF/Job**	# of Jobs***	Avg. Units/Acre	# of Units+
North Employment Campus (adjusted gross acreage)	149	127	0.3	450	3,678		
Mixed Employment Village	26	21	0.44	350	1,139		
Main Street****	10	8	0.44	350	219	25	100
West Mixed Use Neighborhood	22	18			15	22	387
East Mixed Use Neighborhood	77	62			21	8.7	536
<b>Total # of Jobs</b>					<b>5,073</b>		
<b>Total # of Housing Units</b>							<b>1,023</b>
<b>Total Acres of Developed Land++</b>	<b>284</b>	<b>235</b>					

\*For Hybrid - Net acres equals gross acres minus 15% for local roads and easements in Employment. Mixed Employment, Mixed Use, and residential areas assume 20% for local roads and easements

\*\*Based on Metro 2002-2022 Urban Growth Report: An Employment Land Need Analysis. Includes total on site employment (full and part time). Mixed Employment FAR and job density reflects a mix of office, tech/flex, and ground floor retail.

\*\*\*Number of Jobs in Employment, Mixed Employment, Mixed Use calculated by multiplying total acres by the FAR; Converting to square feet; and dividing by number of jobs/square foot. Jobs in residential areas (Work at Home Jobs) estimated at 4% (potential could be as high as 15%).

\*\*\*\* Mixed Use land use assumes 50% of acreage devoted to commercial uses and the remaining 50% devoted to vertical mixed use.

+Number of units calculated by multiplying total net acres of residential land use by average units per acre

++Includes 50% of useable power line corridor (26 acres total) as part of developed land (included in Employment land area)

+++Does not include powerline corridor acreage as part of developed land

## VI. Goals and Policies

The following goals and policies are recommended for adoption into the Oregon City Comprehensive Plan. The goal statements are those developed by the Citizen Advisory Committee as goals for the plan.

### Goal 1 Complete and Sustainable Community

Create a complete and sustainable community, in conjunction with the adjacent land uses, that integrates a diverse mix of uses, including housing, services, and public spaces that are necessary to support a thriving employment center.

#### Policy 1.1

Adopt new comprehensive plan and zone designations, and development code, that implement the Beavercreek Concept Plan. Require all development to be consistent with the Concept Plan and implementing code.

#### Policy 1.2

Establish sub-districts within the code to implement the Concept Plan. The sub-districts are:

#### North Employment Campus – NEC

The purpose of the North Employment Campus is to provide for the location of family wage employment that strengthens and diversifies the economy. The NEC allows a mix of clean industries, offices serving industrial needs, light industrial uses, research and development and large corporate headquarters. The uses permitted are intended to improve the region’s economic climate, promote sustainable and traded sector

businesses, and protect the supply of sites for employment by limiting incompatible uses. The sub-district is intended to comply with Metro’s Title 4 regulations. Site and building design will create pedestrian-friendly areas and utilize cost effective green development practices. Business and program connections to Clackamas Community College (CCC) are encouraged to help establish a positive identity for the area and support synergistic activity between CCC and NEC properties. Businesses making sustainable products and utilizing sustainable materials and practices are encouraged to reinforce the identity of the area and promote the overall vision for the Beavercreek Road area.

#### Mixed Employment Village – MEV

The purpose of the Mixed Employment Village is to provide employment opportunities in an urban, pedestrian friendly, and mixed use setting. The MEV is intended to be transit supportive in its use mix, density, and design so that transit remains an attractive and feasible option. The MEV allows a mix of retail, office, civic and residential uses that make up an active urban district and serve the daily needs of adjacent neighborhoods and Beavercreek Road sub-districts. Site and building design will create pedestrian-friendly areas and utilize cost effective green development practices. Business and program connections to Clackamas Community College and Oregon City High School are encouraged. Businesses making sustainable products and utilizing sustainable materials and practices are encouraged to reinforce the identity of the area and promote the overall vision for the Beavercreek Road area.

#### Main Street – MS

The purpose of this small mixed-use center is to provide a focal point of pedestrian activity. The MS allows small scale commercial, mixed use and services that serve the daily needs of the surrounding area. “Main Street” design will include buildings oriented to the street, and minimum of 2 story building scale, attractive streetscape, active ground floor uses and other elements that reinforce pedestrian oriented character and vitality of the area.

**West Mixed Use Neighborhood – WMU**

The West Mixed Use Neighborhood will be a walkable, transit-oriented neighborhood. This area allows a transit supportive mix of housing, live/work units, mixed use buildings and limited commercial uses. A variety of housing and building forms is required, with the overall average of residential uses not exceeding 22 dwelling units per acre. The WMU area’s uses, density and design will support the multi-modal transportation system and provide good access for pedestrians, bicycles, transit and vehicles. Site and building design will create a walkable area and utilize cost effective green development practices.

**East Mixed Use Neighborhood – EMU**

The East Mixed Use Neighborhood will be a walkable and tree-lined neighborhood with a variety of housing types. The EMU allows for a variety of housing types while maintaining a low density residential average not exceeding six dwelling units per acre. Limited non-residential uses are permitted to encourage a unique identity, sustainable community, and in-home work options. The neighborhood’s design will celebrate open space, trees, and relationships to public open spaces. The central open space, ridge open space scenic viewpoints, and a linked system of open spaces and trails are key features of the EMU. Residential developments will provide housing for a range of income levels, sustainable building design, and green development practices.

**Policy 1.3**

Within the Northern Employment Campus sub-district, support the attraction of family wage jobs and connections with Clackamas Community College.

**Policy 1.4**

Within the Mixed Employment Village and Main Street sub-districts, promote job creation, mixed use and transit oriented development. Adopt minimum densities, limitations on stand-alone residential developments, and other standards that implement this policy.

**Policy 1.5**

The Main Street sub-district will be located along the extension of Glen Oak Road and not exceed 10 gross acres. The specific configuration of the MS sub-district will be established as part of a master plan.

**Policy 1.6**

Within the West and East Mixed Use Neighborhoods, require a variety of housing types. Allow lot size averaging and other techniques that help create housing variety while maintaining overall average density.

**Policy 1.7**

Within the MEV, MS, WMU and EMU sub-districts, require master plans to ensure coordinated planning and excellent design for relatively large areas (e.g. 40 acres per master plan). Master plans are optional in the NEC due to the larger lot and campus industrial nature of the area.

**Goal 2 Model of Sustainable Design**

Be a model of sustainable design, development practices, planning, and innovative thinking.

### Policy 2.1

Implement the Sustainable Storm Water plan recommended in the Concept Plan. During site specific design, encourage innovative system design and require low impact development practices that manage water at the site, street and neighborhood scales.

### Policy 2.2

Storm water facilities will be designed so they are amenities and integrated into the overall community design.

### Policy 2.3

Support public and private sector initiatives to promote sustainable design, development practices and programs, including but not limited to:

- Energy efficiency
- Water conservation
- Compact development
- Solar orientation
- Green streets/infrastructure
- Adaptive reuse of existing buildings/infrastructure
- Alternative transportation
- Pedestrian/Cyclist friendly developments
- Natural drainage systems
- Tree preservation and planting to “re-establish” a tree canopy
- Minimizing impervious surfaces
- Sustainability education (builder, residents, businesses and visitors)

- Collaboration with “local” institutional and economic partners, particularly Clackamas Community College and Oregon City High School
- Community based sustainable programs and activities

### Policy 2.4

Work with stakeholders and the community to develop LEED or equivalent green building standards and guidelines to apply in the Concept Plan area.

## Goal 3 Green Jobs

Attract “green” jobs that pay a living wage.

### Policy 3.1

Coordinate with county, regional and state economic development representatives to recruit green industry to the Concept Plan area.

### Policy 3.2

Promote the Concept Plan area as a place for green industry.

### Policy 3.3

Work with Clackamas Community College to establish programs and education that will promote green development within the Concept Plan area.

## Goal 4 Sustainable Industries

Maximize opportunities for sustainable industries that serve markets beyond the Portland region and are compatible with the site's unique characteristics.

### Policy 4.1

As master plans are approved, ensure there is no net loss of land designated North Employment Campus.

### Policy 4.2

Coordinate with County, regional and state economic development representatives to recruit sustainable industries that serve markets beyond the Portland region.

## Goal 5 Natural Beauty

Incorporate the area's natural beauty into an ecologically compatible built environment.

### Policy 5.1

Incorporate significant trees into master plans and site specific designs. Plant new trees to establish an extensive tree canopy as part of the creation of an urban community.

### Policy 5.2

Provide scenic viewpoints and public access along the east ridge.

### Policy 5.3

Protect views of Mt Hood and locate trails and public areas so Mt Hood can be viewed within the community

### Policy 5.4

Establish open space throughout the community consistent with the Open Space Framework Plan. Allow flexibility in site specific design of open space, with no net loss of total open space area.

### Policy 5.5

Protect steeply sloped and geologically sensitive areas along the east ridge from development.

## Goal 6 Multi-modal Transportation

Provide multi-modal transportation links (such as bus routes, trails, bike-ways, etc.) that are connected within the site as well as to the surrounding areas.

### Policy 6.1

Work with Tri-Met and stakeholders to provide bus service to the Concept Plan area.



**Policy 6.2**

As land use reviews and development occur prior to extension of bus service, ensure that the mix of land uses, density and design help retain transit as an attractive and feasible option in the future.

**Policy 6.3**

Ensure that local street connectivity and off-street pedestrian routes link together into a highly connected pedestrian system that is safe, direct, convenient, and attractive to walking.

**Policy 6.4**

The “walkability” of the Concept Plan area will be one of its distinctive qualities. The density of walking routes and connectivity should mirror the urban form – the higher the density and larger the building form, the “finer” the network of pedestrian connections.

**Policy 6.5**

Require trails to be provided consistent with the Concept Plan Circulation Framework.

**Policy 6.6**

Provide bike lanes on Beaver Creek Road and all collector streets, except for Main Street. The City may consider off-street multi-use paths and similar measures in meeting this policy. Bike routes will be coordinated with the trails shown on the Circulation Framework.

**Goal 7 Safety Along Beaver Creek Road**

Implement design solutions along Beaver Creek Road that promote

pedestrian safety, control traffic speeds and access, and accommodate projected vehicular demand.

**Policy 7.1**

Design Beaver Creek Road to be a green street boulevard that maximizes pedestrian safety.

**Policy 7.2**

Work with the County and State to establish posted speeds that are safe for pedestrians and reinforce the pedestrian-oriented character of the area.

**Policy 7.3**

Control access along the east side of Beaver Creek Road so that full access points are limited to the intersections shown on the Circulation Framework. Right in-Right-out access points may be considered as part of master plans or design review.

**Goal 8 Oregon City High School and Clackamas Community College**

Promote connections and relationships with Oregon City High School and Clackamas Community College.

### Policy 8.1

Coordinate with OCHS and CCC when recruiting businesses and promoting sustainability. Encourage curricula that are synergistic with employment and sustainability in the Concept Plan area.

### Policy 8.2

Prior to application submittal, require applicants to contact OCHS and CCC to inform them and obtain early comment for master plans and design review applications.

## Goal 9 Unique Sense of Place

Have a unique sense of place created by the mix of uses, human scale design, and commitment to sustainability.

### Policy 9.1

Utilize master plans and design review to ensure detailed and coordinated design. Allow flexibility in development standards and the configuration of land uses when they are consistent with the comprehensive plan, development code, and vision to create a complete and sustainable community.

### Policy 9.2

Implement human scale design through building orientation, attractive streetscapes, building form/architecture that is matched to the purpose of the sub-district, location of parking, and other techniques. The design qualities of the community should mirror the urban form – the higher the density and larger the buildings, the higher the expectation for urban

amenities and architectural details.

### Policy 9.3

Density should generally transition from highest on the west to lowest in the eastern part of the site.

### Policy 9.4

Promote compatibility with existing residential areas at the north and south end of the Concept Plan area. Transition to lower densities, setbacks, buffers and other techniques shall be used.

## Goal 10 Ecological Health

Manage water resources on site to eliminate pollution to watersheds and lesson impact on municipal infrastructure by integrating ecological and man-made systems to maximize function, efficiency and health.

### Policy 10.1


Utilize low impact development practices and stormwater system designs that mimic natural hydrologic processes, minimize impacts to natural resources and eliminate pollution to watersheds.

### Policy 10.2

Prepare the Environmentally Sensitive Resource Area overlay to protect, conserve and enhance natural areas identified on the Concept Plan. Apply low-density base zoning that allows property owners to cluster density outside the ESRA and transfer to other sites.

## Appendix

1. Project Goals and Objectives, March 13, 2007
2. Alternatives
3. GIS Analysis Map
4. Job and Housing Estimates

	<p>To: Beavercreek Road Concept Plan Citizens and Technical Advisory Committees</p> <p>From: Tony Konkol</p> <p>Date: March 13, 2007</p> <p>Subject: Project Goals with Objectives</p>
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The following project goals and supplemental objectives were prepared using the *Ideas we Like, Principles of Sustainable Development*, and the Advisory Committees' long-term vision for the project area. This update reflects input by the Citizens and Technical Advisory Committees at their March 8<sup>th</sup>, 2007 meeting.

The Beavercreek Road Concept Plan Area will:

Goal

1. Create a **complete community**, in conjunction with the adjacent land uses, that integrates a diverse mix of uses, including housing, services, and public spaces that are necessary to support a thriving employment center;

Objective 1.1

Allow a variety of employment uses that may integrate and utilize the surrounding city and rural economies.

Objective 1.2

Develop plans that consider the existing rural lands and uses around the Urban Growth Boundary.

Objective 1.3

Continue to coordinate with the Oregon City School District and Clackamas Community College to identify partnerships, land needs and programs that would be beneficial to all parties and contribute to the community.

Objective 1.4

Encourage neighborhood-oriented and scaled mixed-use centers that provide goods, services, and housing for local workers and residents of all ages and incomes.

Objective 1.5

Become a model of sustainability that may be implemented throughout the City.

Objective 1.6

Allow the integration of housing and employment uses where practicable.

Objective 1.7

Work with Metro to ensure that there is enough land available within the Beavercreek Road Study Area to meet the need for employment/industrial development and reduce the jobs to housing imbalance in the sub-region.

2. Be a **model of sustainable design**, development practices, planning, and innovative thinking;

Objective 2.1

Allow a variety of employment uses that may integrate and utilize the surrounding city and rural economies.

Objective 2.2

Develop plans that consider the existing rural lands and uses around the Urban Growth Boundary.

Objective 2.3

Encourage neighborhood-oriented and scaled mixed-use centers that provide goods, services and housing for local workers and residents of all ages and incomes.

Objective 2.4

Encourage environmentally responsible developments that are economically feasible, enhance livability of neighborhoods and enhance the natural environment.

Objective 2.5

Investigate development standards that offer incentives for developments that exceed energy efficiency standards and meets green development requirements and goals.

3. Attract **“green” jobs** that pay a living wage;

Objective 3.1

Allow a variety of employment uses that may integrate and utilize the surrounding city and rural economies.

Objective 3.2

Develop plans that consider the existing rural lands and uses around the Urban Growth Boundary.

Objective 3.3

Encourage neighborhood-oriented and scaled mixed-use centers that provide goods, services and housing for local workers and residents of all ages and incomes.

Objective 3.4

Allow the integration of housing and employment uses where practicable.

Objective 3.5

Work with Metro to ensure that there is enough land available within the Beavercreek Road Study Area to meet the need for employment/industrial development and reduce the jobs to housing imbalance in the sub-region.

Objective 3.6

Create a “brand” for the area that reflects the desire for sustainable development that will serve as the theme to attract and recruit businesses and developers as well as guide the design standards and build-out of the area.

4. Maximize opportunities for **sustainable industries that serve markets beyond the Portland region** and are compatible with the site’s unique characteristics;

Objective 4.1

Create a “brand” for the area that reflects the desire for sustainable development that will serve as the theme to attract and recruit businesses and developers as well as guide the design standards and build-out of the area.

Objective 4.2

Work with Metro to ensure that there is enough land available within the Beavercreek Road Study Area to meet the need for employment/industrial development and reduce the jobs to housing imbalance in the sub-region.

Objective 4.3

Support locally based and founded employers that provide living wages jobs.

Objective 4.4

Support the development of sustainable industries that utilize green design standards and development practices.

5. Incorporate the area’s **natural beauty** into an ecologically compatible built environment;

Objective 5.1

Design the adjacent land-uses to Beavercreek Road in such a manner to ensure that the pedestrian experience is not diminished through the development of fences, parking lots, backs of buildings, or other impediments to pedestrian access and circulation.

Objective 5.2

Allow a variety of employment uses that may integrate and utilize the surrounding city and rural economies.

Objective 5.3

Develop plans that consider the existing rural lands and uses around the Urban Growth Boundary.

Objective 5.4

Work with Metro to ensure that there is enough land available within the Beavercreek Road Study Area to meet the need for employment/industrial development and reduce the jobs to housing imbalance in the sub-region.

6. Provide **multi-modal transportation links** (such as bus routes, trails, bike-ways, etc.) that are connected within the site as well as to the surrounding areas;

Objective 6.1

Provide public connectivity routes for bicycles and pedestrians that encourage non-vehicular trips to employment, retail and recreational areas within the study area and to the communities beyond.

Objective 6.2

Provide an integrated street system that is designed as practicable to minimize the impacts to the environment through the use of green streets, swales and other natural stormwater systems that provide water quality and quantity control and contribute to the natural beauty of the area.

Objective 6.3

Explore local and regional transit opportunities that will increase non-single occupancy vehicle travel.

7. Implement **design solutions along Beavercreek Road** that promote pedestrian safety, control traffic speeds and access, and accommodate projected vehicular demand;

Objective 7.1

Develop and maintain a multi-modal transportation system that is safe for all users and will minimize conflict points between different modes of travel, especially across Beavercreek Road to the existing neighborhoods, Clackamas Community College, Oregon City High School and the Berry Hill Shopping Center.

Objective 7.2

Design the adjacent land-uses to Beavercreek Road in such a manner to ensure that the pedestrian experience is not diminished through the development of fences, parking lots, backs of buildings, or other impediments to pedestrian access and circulation.

8. Promote connections and relationships with **Oregon City High School and Clackamas Community College;**

Objective 8.1

Allow a variety of employment uses that may integrate and utilize the surrounding city and rural economies.

Objective 8.2

Develop plans that consider the existing rural lands and uses around the Urban Growth Boundary.

Objective 8.3

Continue to coordinate with the Oregon City School District and Clackamas Community College to identify partnerships, land needs and programs that would be beneficial to all parties and contribute to the community.

9. Have a **unique sense of place** created by the mix of uses, human scale design, and commitment to sustainability.

Objective 9.1

Provide public connectivity routes for bicycles and pedestrians that encourage non-vehicular trips to employment, retail and recreational areas within the study area and to the communities beyond.

Objective 9.2

Provide an integrated street system that is designed as practicable to minimize the impacts to the environment through the use of green streets, swales and other natural stormwater systems that provide water quality and quantity control and contribute to the natural beauty of the area.

Objective 9.3

Allow a variety of employment uses that may integrate and utilize the surrounding city and rural economies.

Objective 9.4

Develop plans that consider the existing rural lands and uses around the Urban Growth Boundary.

Objective 9.5

Encourage neighborhood-oriented and scaled mixed-use centers that provide goods, services and housing for local workers and residents of all ages and incomes.

Objective 9.6

Allow the integration of housing and employment uses where practicable.

Objective 9.7

Work with Metro to ensure that there is enough land available within the Beavercreek Road Study Area to meet the need for employment/industrial development and reduce the jobs to housing imbalance in the sub-region.

Objective 9.8

Create a “brand” for the area that reflects the desire for sustainable development that will serve as the theme to attract and recruit businesses and developers as well as guide the design standards and build-out of the area.

Objective 9.9

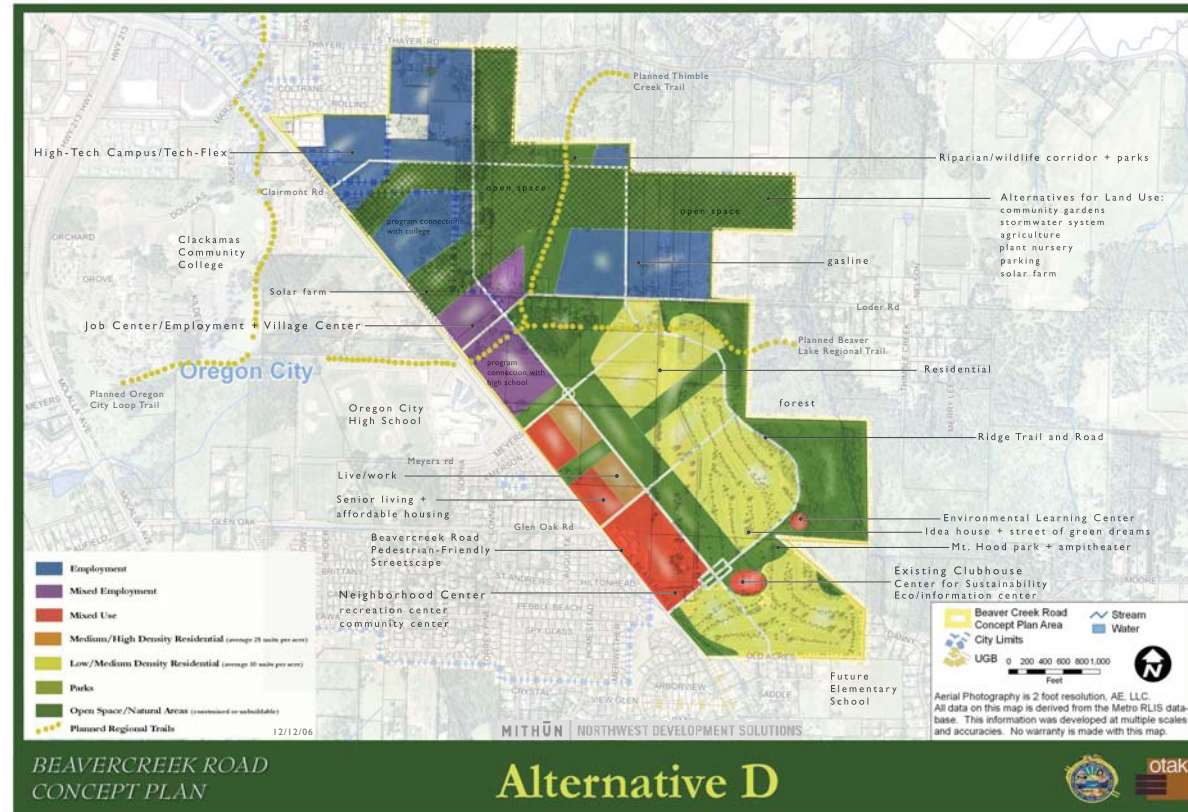
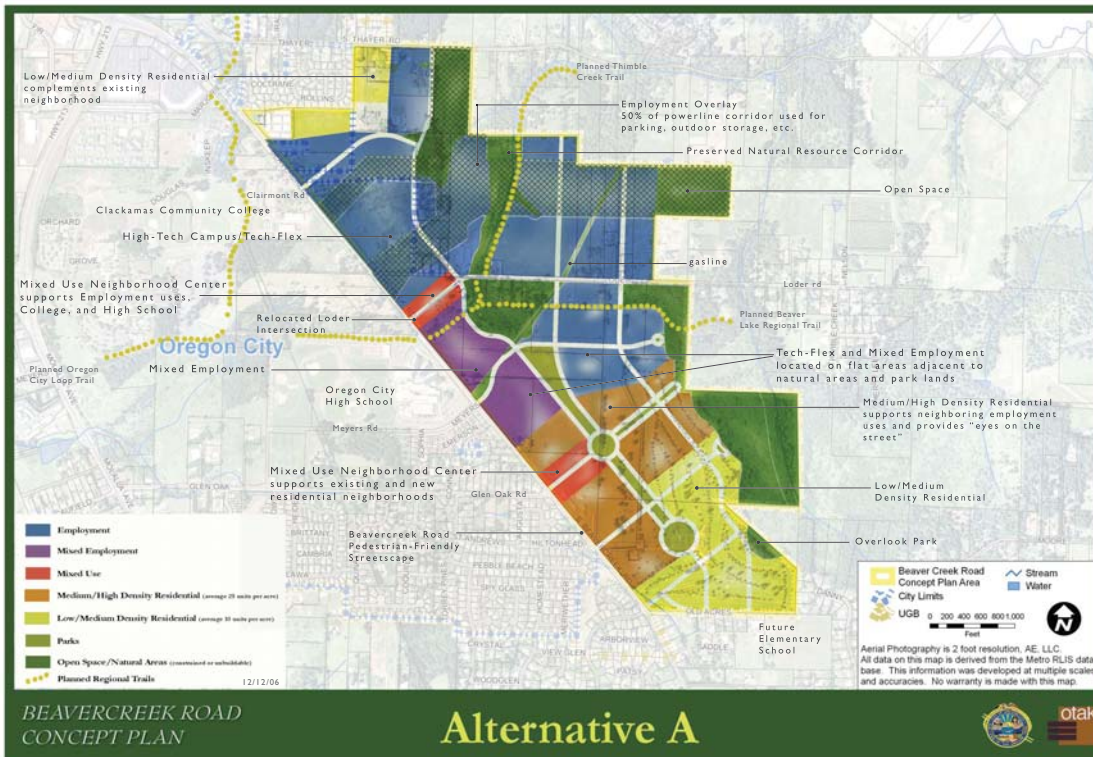
Design the adjacent land-uses to Beavercreek Road in such a manner to ensure that the pedestrian experience is not diminished through the development of fences, parking lots, backs of buildings, or other impediments to pedestrian access and circulation.

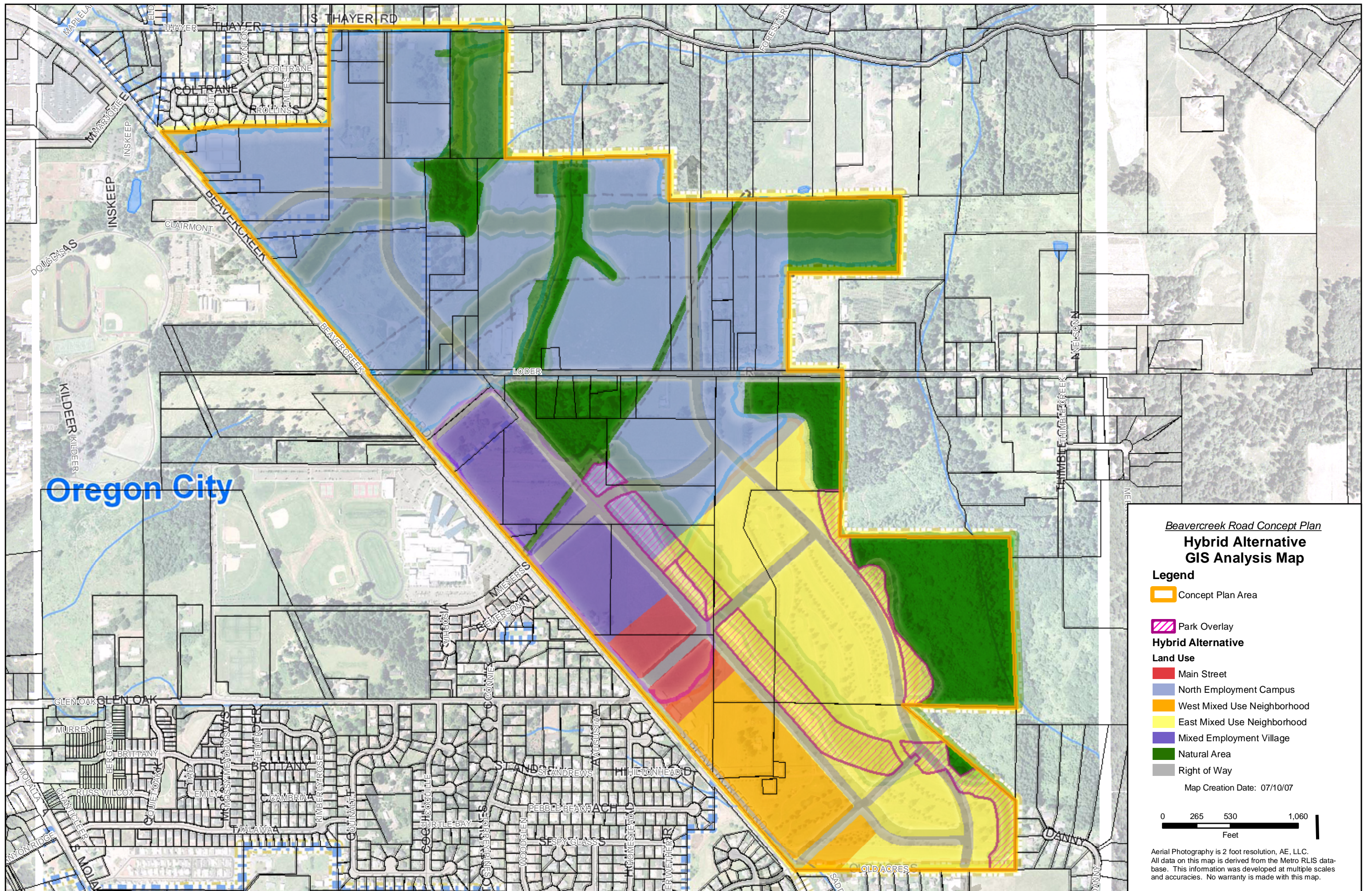
10. Ecological Health – Manage water resources on site to **eliminate pollution to watersheds** and lesson impact on municipal infrastructure by integrating ecological and man-made systems to maximize function, efficiency and health.

Objective 10.1

Provide an integrated street system that is designed as practicable to minimize the impacts to the environment through the use of green streets, swales and other natural stormwater systems that provide water quality and quantity control and contribute to the natural beauty of the area.



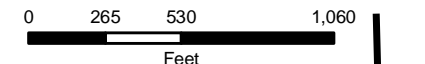




Oregon City

**Beaver Creek Road Concept Plan  
Hybrid Alternative  
GIS Analysis Map**

- Legend**
- Concept Plan Area
  - Park Overlay
  - Hybrid Alternative Land Use**
  - Main Street
  - North Employment Campus
  - West Mixed Use Neighborhood
  - East Mixed Use Neighborhood
  - Mixed Employment Village
  - Natural Area
  - Right of Way
- Map Creation Date: 07/10/07



Aerial Photography is 2 foot resolution, AE, LLC.  
All data on this map is derived from the Metro RLIS data-base. This information was developed at multiple scales and accuracies. No warranty is made with this map.

**Table 2**  
**Beavercreek Concept Plan Job & Housing Density Assumptions**  
 Revised - 7/10/07

<b>Land Use Category</b>	<b>Hybrid Gross Acres</b>	<b>Hybrid Net Acres*</b>	<b>FAR/Acre**</b>	<b>SF/Job**</b>	<b># of Jobs***</b>	<b>Avg. Units/Acre</b>	<b># of Units+</b>
North Employment Campus (adjusted gross acreage)	149	127	0.3	450	3,678		
Mixed Employment Village	26	21	0.44	350	1,139		
Main Street****	10	8	0.44	350	219	25	100
West Mixed Use Neighborhood	22	18			15	22	387
East Mixed Use Neighborhood	77	62			21	8.7	536
<b>Total # of Jobs</b>					<b>5,073</b>		
<b>Total # of Housing Units</b>							<b>1,023</b>
<b>Total Acres of Developed Land++</b>	<b>284</b>	<b>235</b>					
<b>Land Use Category</b>	<b>Plan A Gross Acres</b>	<b>Plan A Net Acres*</b>	<b>FAR/Acre**</b>	<b>SF/Job**</b>	<b># of Jobs***</b>	<b>Avg. Units/Acre</b>	<b># of Units+</b>
Employment (adjusted gross acreage)	139	118	0.3	450	3,431		
Mixed Employment	24	20	0.44	350	1,117		
Mixed Use****	10	9	0.44	350	233	25	106
Medium/High Density Residential	50	43			43	25	1,063
Low/Medium Density Residential	53	45			18	10	451
<b>Total # of Jobs</b>					<b>4,841</b>		
<b>Total # of Housing Units</b>							<b>1,619</b>
<b>Total Acres of Developed Land++</b>	<b>276</b>	<b>235</b>					
<b>Land Use Category</b>	<b>Plan D Gross Acres</b>	<b>Plan D Net Acres*</b>	<b>FAR/Acre**</b>	<b>SF/Job**</b>	<b># of Jobs***</b>	<b>Avg. Units/Acre</b>	<b># of Units+</b>
Employment (adjusted gross acreage)	84	71	0.3	450	2,073		
Mixed Employment	25	21	0.44	350	1,164		
Mixed Use****	29	25	0.44	350	675	25	308
Medium/High Density Residential	9	8			8	25	191
Low/Medium Density Residential	99	84			34	10	842
<b>Total # of Jobs</b>					<b>3,953</b>		
<b>Total # of Housing Units</b>							<b>1,341</b>
<b>Total Acres of Developed Land+++</b>	<b>246</b>	<b>209</b>					

\*For Hybrid - Net acres equals gross acres minus 15% for local roads and easements in Employment. Mixed Employment, Mixed Use, and residential areas assume 20% for local roads and easements

\* \*Based on Metro 2002-2022 Urban Growth Report: An Employment Land Need Analysis. Includes total on site employment (full and part time). Mixed Employment FAR and job density reflects a mix of office, tech/flex, and ground floor retail.

\*\*\*Number of Jobs in Employment, Mixed Employment, Mixed Use calculated by multiplying total acres by the FAR; Converting to square feet; and dividing by number of jobs/square foot. Jobs in residential areas (Work at Home Jobs) estimated at 4% (potential could be as high as 15%).

\*\*\*\* Mixed Use land use assumes 50% of acreage devoted to commercial uses and the remaining 50% devoted to vertical mixed use.

+Number of units calculated by multiplying total net acres of residential land use by average units per acre

++Includes 50% of useable power line corridor (26 acres total) as part of developed land (included in Employment land area)

+++Does not include powerline corridor acreage as part of developed land

**Table 3**  
**Land Use Metrics/Assumptions - HYBRID**  
 Revised - 7/10/07

<b>Land Use Category (acres)</b>	<b>Hybrid</b>	<b>Alt. A</b>	<b>Alt. D</b>
North Employment Campus (adjusted gross acreage)*	149	139	84
Mixed Employment Village	26	24	25
Main Street	10	10	29
West Mixed Use Neighborhood	22	50	9
East Mixed Use Neighborhood	77	53	99
<b>Total Acres of "built" land use</b>	<b>284</b>	<b>276</b>	<b>246</b>
<b>Other Land Uses (not "built")</b>			
Parks/Open Space/Natural Areas (Total)**	113	132	166
Major ROW+	56	36	30
Existing Uses (unbuildable)	0	7	7
<b>Total Project Area Gross Acres</b>	<b>453</b>	<b>~450</b>	<b>~450</b>

\***Adjusted gross acreage** is the sum of 50% of the employment land use shown under the powerline easement plus all other unconstrained employment land use areas. Calculations shown below:

<u>Land Use Category (acres)</u>	<u>Hybrid</u>	<u>Alt. A</u>	<u>Alt. D</u>
Total North Employment Campus	175	166	84
<b>Unconstrained NEC</b>	<b>123</b>	<b>111</b>	<b>84</b>
Employment with powerline overlay	52	55	0
<b>Useable portion of powerline overlay (50%)</b>	<b>26</b>	<b>28</b>	<b>na</b>
<b>North Employment Campus (adjusted gross acreage)*</b>	<b>149</b>	<b>139</b>	<b>84</b>

\*\* Open Space/Natural areas is the sum of all "unbuildable lands" as shown on the *Buildable Lands Map* plus two areas under the powerlines. Calculations shown below.

<u>Open Space/Natural Areas Break-Out</u>	<u>Hybrid</u>	<u>Alt. A</u>	<u>Alt. D</u>
Open Space -Gas Overlay	3	4	4
Open Space - Unbuildable Powerlines***	48	49	0
Environmental Resources/ <i>Buildable Lands Map</i>	61	61	61
Parks	na	12	na
Other Open Space Areas	18	6	101
<b>Open Space/Natural Areas (Total)</b>	<b>130</b>	<b>132</b>	<b>166</b>

\*\*\***For Hybrid** - Unbuildable Powerlines area includes 12 acres on east edge of site under powerlines plus 50% of employment area under powerlines (~26 acres) and the PGE parcel (10 acres). **For Alt. A** - Unbuildable Powerlines area includes 12 acres on east edge of site under powerlines and 10 acres of the PGE Parcel and 50% of powerline area (27 acres).

+Major ROW are approximate location & acreage (may be shown as crossing natural resource areas. Actual location and size of ROW will be addressed during development review/master planning). Includes 2 acre adjustment for GIS polygon alignment.