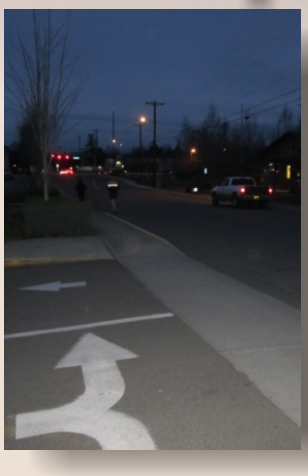
Dundee
Transportation System Plan



Update Volume 1

Prepared for CITY of DUNDEE Oregon

Prepared by DKS

In association with Angelo Planning Group

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Volume 1 Contents

Volume 2 Contents

Volume 2 of the TSP includes all background memos and technical data that was the basis for the Dundee TSP Update.

Figures and Tables

Useful Abbreviations and Acronyms

30 HV – 30th Highest Hourly Volumes
AASHTO – American Association of State Highway and Transportation Officials
ADA – Americans with Disabilities Act
ADT – Average Daily Traffic
ATR – Automatic Traffic Recorder
FHWA – Federal Highway Administration

HCM – Highway Capacity Manual
HDM – Highway Design Manual
LOS – Level of Service
NTM – Neighborhood Traffic Management
ODOT – Oregon Department of Transportation
OHP – Oregon Highway Plan
PAC – Project Advisory Committee
PMT – Project Management Team
ROW – Right of Way
SLM – Shared Lane Marking
TAZ – Transportation Analysis Zone
TDM – Transportation Demand Management
TSP – Transportation System Plan
UGB – Urban Growth Boundary
V/C – Volume to Capacity
VMT – Vehicle Miles Traveled
VPH – Vehicles Per Hour
YCTA – Yamhill County Transit Area

Introduction

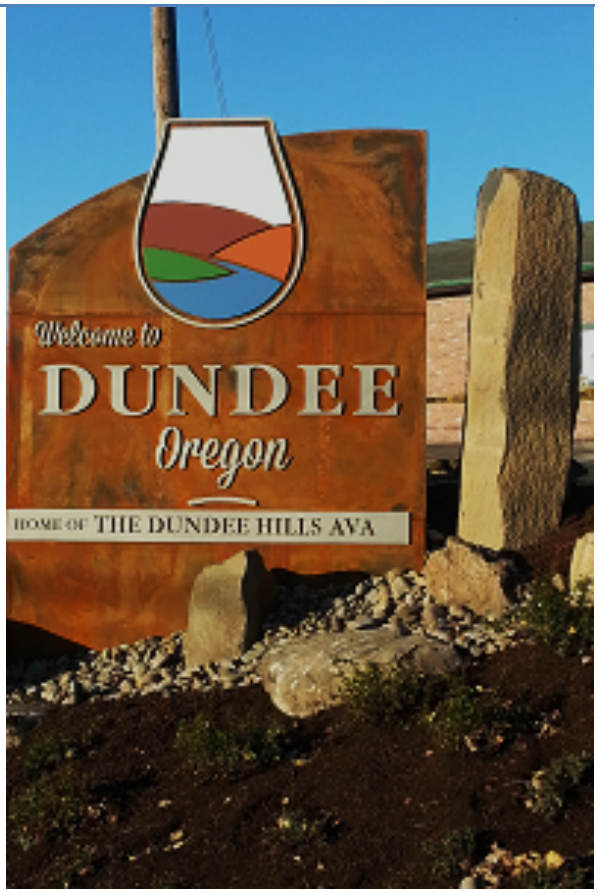
Dundee, Oregon is a small city of approximately 3,000 residents located in the Willamette Valley, 30 miles southwest of Portland. Located between the Dundee Hills and the Willamette River, Dundee is a growing tourism and vacation destination. The Dundee Hills American Viticultural Area is the largest producer of Pinot Noir in Oregon, and numerous wineries populate the hills around Dundee and operate tasting rooms in downtown Dundee.

Dundee will see some big changes over the next 20 years that will impact the transportation system. Phase one of the Newberg-Dundee Bypass will provide a new route for traffic between the northern end of Newberg and areas south of Dundee. The Bypass is expected to help relieve some of the traffic congestion that has historically been associated with Highway 99W through the City.

Dundee recently adopted the Riverfront Master Plan, which covers 360 acres in the Riverside District along the Willamette River. This area is planned to develop with a mix of residential, commercial, tourism, open space, and recreational uses.

What is a Transportation System Plan?

The Transportation System Plan (TSP) provides a long term guide for City transportation investments by incorporating the vision of the community into an equitable and efficient transportation system. The plan evaluates the current transportation system and outlines policies and projects that are important to protecting and enhancing the quality of life in



Dundee through the next 20 years. The TSP represents a collection of past and current ideas, incorporating projects, decisions, and standards from past plans into a single document.

A TSP is required by the State of Oregon to help integrate local plans into the statewide transportation system. The plan balances the needs of walking, bicycling, driving, transit, freight, and rail into an equitable and efficient transportation system.

Engaging the Public

The Dundee TSP Update was a collaborative process among various public agencies, key stakeholders, and the community. Throughout this process, the project team took time to understand multiple points of view, obtain fresh ideas and resources, and encourage participation from the community through community meetings and the project website. Figure 1 provides an overview of the public review process.

Project staff hosted five Project Advisory Committee (PAC) meetings, met individually with twelve project stakeholders at two key stages during the process, held regular meetings with decision makers, and conversed informally with members of the community.

Project staff held three community meetings at key stages of the TSP process that gave residents an opportunity to learn about the project, advise project staff of their concerns about the transportation system, and provide feedback on possible transportation solutions.

The Public Review Process

The development of the TSP involved gathering information and ideas from residents, business owners, and stakeholders in Dundee. The process was broken down into 12 manageable pieces. Each piece culminated in a Technical Memorandum discussing specific topic areas and key findings.

The TSP also received input from a Project Advisory Committee comprised of agency technical staff, local residents, and business representatives. Committee members represented the interests and perspectives of their constituencies by reviewing and commenting on each of the memoranda and meeting with the project team at key stages. The PAC helped the project team find agreement on project issues and alternatives. The project team then revised the memoranda based on this feedback and posted the documents to the TSP website.

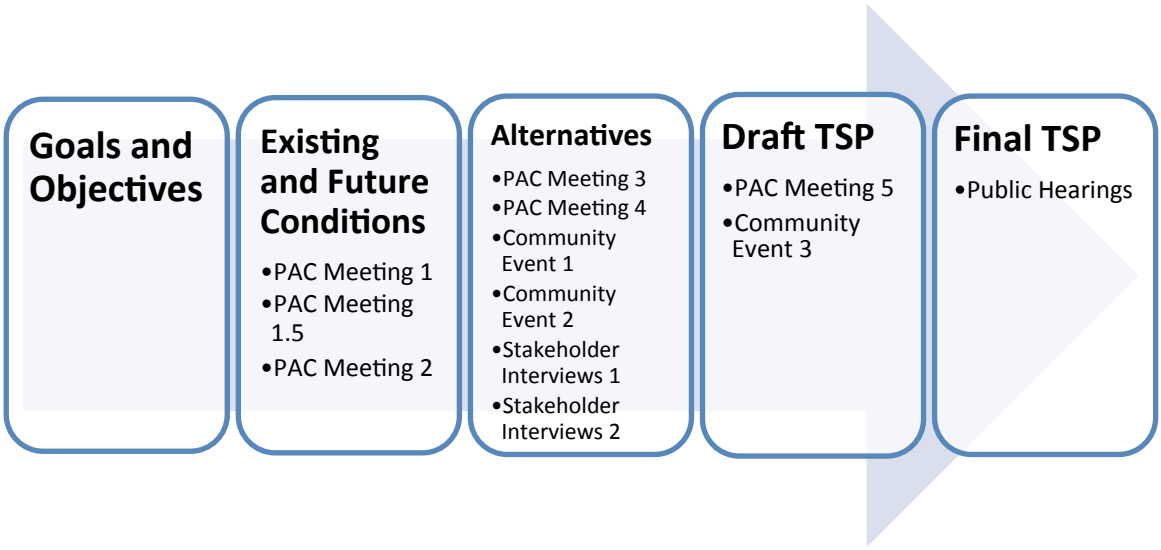


Figure 1: Public Review Process

Public Website

Throughout the project, a website, www.dundeetsp.org, was maintained for the TSP where all project news, documents, and meeting notices were posted. The website also featured a comment map where residents could tell the project team what they thought about the transportation system in the City.

Compliance with Title VI Outreach Requirements

Public Involvement for the TSP was subject to requirements and guidance found in ODOT's Title VI (1964 Civil Rights Act) Plan. Specifically, Title VI identifies measures to reach and solicit comments from disadvantaged populations within a community. Although Dundee has relatively limited concentrations of minorities and low-income residents, these populations are present in the city.

Based on 2000 census data, the racial makeup of the city was about 92% Caucasian with about 8% of the population classified as Hispanic. This is a higher percentage of Caucasian and lower percentages of nearly all other ethnic groups compared to Oregon as a whole. Materials were made available by request for Spanish-speaking community members.

Approximately 6.6% of individuals in the city were below the poverty line in 2000, compared to 7.6% for the state as a whole. Although over a decade old, the 2000 figures are still considered relatively accurate, although poverty across the state can be assumed to have increased as a result of the recent recession.

Plan Goals

The City's Comprehensive Plan (1977) includes a set of goals, objectives, and policies that direct development of the City's transportation system. The City of Dundee proposed updates to these goals in TM #3: Goals, Objectives, and Evaluation Criteria. The City identified nine transportation-related goals and objectives to guide development of the transportation system. The goals are broad, high-level statements describing the community's intentions for the future. The City evaluated each proposed transportation program and improvement to determine its level of benefit relative to the goals and objectives. Each new capital improvement project, land use application, or implementation measure must be consistent with the goals and objectives.

Transportation projects were selected and prioritized with consideration given to the nine goals and objectives described on in this section. Each project was scored based on evaluation criteria developed for each goal and objective. Project alternatives were compared by summing and weighting the scores for each potential project. Scores for each criterion ranged from +2 to -2 with +2 representing a clear positive impact, 0 indicating no impact, and -2 representing a clear negative impact.

Goal 1: System Capacity and Mobility

Objectives

- Improve system connectivity
- Conduct facility management
- Minimize congestion
- Provide and support travel choices

Goal 1: System Capacity and Mobility

The City will provide and maintain a transportation system that serves the travel needs of all Dundee residents, businesses, and visitors, and minimizes the adverse impact of through travelers on Dundee.

The evaluation criteria for implementing the goal and objectives include:

- Increases system connectivity
- Improves roadway operations

Goal 2: Livability

Goal 2: Livability

The City will provide and maintain a transportation system that fosters a pleasant, small city and preserves and enhances existing neighborhoods and businesses.

The evaluation criteria for implementing the goal and objectives include:

- Improves street aesthetics
- Reflects unique city character
- Provides street classifications that are consistent with residents' travel needs

Objectives

- **Improve mobility**
- **Minimize disruptions to neighborhoods and businesses**
- **Enhance economic vitality**
- **Manage transportation facilities**
- **Minimize energy, social, environmental, and economic impacts**
- **Improve pedestrian facilities**
- **Improve bicycle facilities**
- **Design streets to support a wide range of users and enhance quality of life and sense of place**
- **Incorporate sidewalk and vegetation improvements**
- **Incorporate street furnishings that reflect the city's unique character**

Goal 3: Coordination

Objectives

- Support adopted local land use plans
- Provide for appropriate interjurisdictional communication
- Achieve consistency with State and County plans
- Practice public outreach

Goal 3: Coordination

Develop and maintain a transportation system that is consistent with and supports the goals, objectives, and visions of the Dundee community, participating and affected agencies, the county, and the state.

The evaluation criteria for implementing the goal and objectives include:

- Compatible with regulatory documents
- Demonstrated public and/or decision-maker support

Goal 4: Travel Options

Goal 4: Travel Options Develop and maintain a transportation system that encourages, supports, and incorporates a variety of multi-modal travel options.

The evaluation criteria for implementing the goal and objectives include:

- Improves pedestrian/bicycle access to key destinations
- Improves pedestrian comfort
- Improves freight access/connectivity
- Increases alternatives to single-occupant vehicle travel
- Increases attractiveness of walking and bicycling

Objectives

- Improve pedestrian facilities
- Improve bicycle facilities
- Support transit and rail system development
- Improve truck access and circulation
- Encourage walking and bicycling for trips within the city

Goal 5: Accessibility

Objectives

- Link recreation and other local destination
- Comply with Americans with Disabilities Act requirements
- Support local land use plans
- Manage transportation facilities
- Provide and support travel choices
- Provide adequate access to properties

Goal 5: Accessibility Provide and maintain a well-connected transportation system that serves the needs of all members of the community and ensures adequate and efficient accessibility for all acknowledged land uses and available modes of travel.

The evaluation criteria for implementing the goal and objectives include:

- Improves connections to recreation facilities and other local destinations
- Compatible with ADA requirements
- Supportive of local land use plans
- Maintains or improves access to properties

Goal 6: Environment

Goal 6: Environment Provide and maintain a transportation system that preserves, protects, and supports the social, natural, and cultural environment of the Dundee community.

The evaluation criteria for implementing the goal and objectives include:

- Protects environmentally sensitive areas
- Reduces vehicle miles traveled
- Minimizes impacts to historic structures and subsurface archeological resources
- Promotes opportunities for positive social interaction

Objectives

- **Minimize energy, social, environmental, and economic impacts**
- **Prioritize environmentally sustainable transportation improvements**

Goal 7: Funding

Objectives

- Identify full range of potential funding sources
- Match fund sources to system improvement and maintenance needs
- Prioritize improvement needs
- Phase needed improvements
- Acquire and preserve right-of-way needed for system improvements
- Require mitigation of public and private development transportation impacts

Goal 7: Timely Provision and Funding of Transportation Facilities
Develop reasonable and effective funding and financing strategies and priorities to ensure that the future transportation facilities and services called for in the TSP are provided to support community development and acceptable transportation operations and safety.

The evaluation criteria for implementing the goal and objectives include:

- Eligible for a variety of funding opportunities
- Addresses a transportation need or deficiency identified in the TSP

Goal 8: Safety

Goal 8: Safety Develop and maintain a transportation system that protects the health and safety of transportation system users.

The evaluation criteria for implementing the goal and objectives include:

- Improves intersection/bicycle/pedestrian/railroad crossing safety

Objectives

- **Reduce vehicle crashes**
- **Reduce transportation-related injuries**
- **Improve pedestrian facilities**
- **Improve bicycle facilities**
- **Reduces pedestrian/motor vehicle conflicts**
- **Reduces bicycle/motor vehicle conflicts**

Goal 9: Economic Development

Objectives

- Accommodate freight movement to support local businesses
- Provide for convenient parking and access to local business and other key destinations
- Provide economic development opportunities
- Provide transportation choices that support employers and employees
- Minimize transportation conflicts between neighborhoods and businesses
- Improve pedestrian and bicycle circulation

Goal 9: Economic Development Provide and maintain a transportation system that supports the economic vitality of the Dundee community.

The evaluation criteria for implementing the goal and objectives include:

- Minimizes negative impacts to existing land uses
- Increases attractiveness to investment and development
- Minimize impacts to on-street parking
- Provides access to commercial and "destination" (recreation, wineries, tourism, etc.) uses

Travel Trends

The City of Dundee's travel patterns and system operating conditions were reviewed, and forecasts were made to illustrate how conditions will change by 2035.

Dundee Today

Understanding where Dundee residents want to go is vital for planning a transportation system that meets the City's needs. This requires an understanding of key travel destinations – locations that create demand for travel because they are where people go to work, school, or take care of other daily needs. These key destinations can be thought of as activity generators or trip attractors. The most common types of activity generators in Dundee are:

- Recreational
- Schools
- Places of employment
- Shopping
- Public transportation

As seen in Figure 2, the majority of Dundee residents travel outside of Dundee for work, most to Newberg or the Portland metro area. Dundee residents typically have a longer commute with an average commute time of 29 minutes compared with an average commute time of 22 minutes for all Oregon workers. Dundee workers are more likely to drive alone to work than typical Oregon workers, and are less likely to commute by walking, biking, or public transportation, probably in part due to longer commutes.

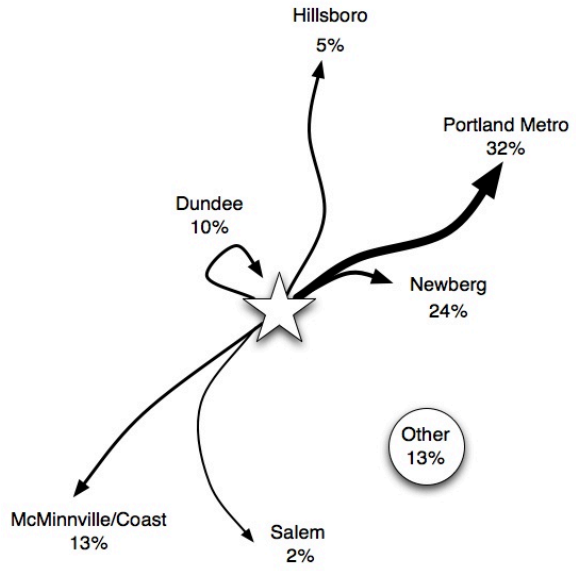


Figure 2: Dundee Commute Patterns

While driving may be the predominant mode choice for work trips in Dundee, trips to other activity generators like schools, recreation, and shopping tend to be much shorter. Non-motor vehicle modes are more feasible for these shorter trips.

Transportation Modes

Planning for an effective transportation system means understanding how Dundee residents choose to travel to and from destinations, whether by foot, bicycle, public transportation, motor vehicle, or other mode. Understanding mode choice includes assessing existing travel patterns and activity levels and looking at the underlying factors particular to Dundee that inform mode choice.

Walking and Biking

Because Dundee is small and compact, most of the City's destinations are within reasonable walking or bicycling range of just about any residence. Even so, pedestrian and bicycle activity in Dundee is currently moderate to low.

Many streets lack pedestrian and bicycle facilities, and Highway 99W creates a barrier through the middle of town that likely discourage walking and biking for some residents. West of 99W the City rises into the Dundee Hills, which may also present a deterrent to walking and biking.

Transit

Transit service in Dundee is provided by Yamhill County Transit Area (YCTA), which provides two fixed bus routes connecting Dundee to destinations along the 99W corridor, including McMinnville, Newberg, Sherwood, and Tigard.

Route 44, which runs from McMinnville to Tigard Transit Center with one stop in Dundee, runs at one-hour frequencies during the peak hour and two-hour frequencies midday between 6:00 a.m. and 7:00 p.m. This line also provides four trips per day between 8:00 a.m. and 7:00 p.m. on Saturdays.

Route 4, which provides bus service within Newberg and Dundee, provides service at one-hour frequencies between 7:00 a.m. and 7:00 p.m.

Motor Vehicle

Highway 99W is by far the busiest street in Dundee, with daily volumes of ranging from 25,000 to 30,000 vehicles at the north end of the City. 99W is the main roadway residents use to connect to locations outside the City, and it is the roadway that visitors use to reach and travel through Dundee.

Capacity analysis indicates that intersections on 99W perform poorly on the north end of Dundee. The intersection of 99W/Fox Farm Road exceeds the ODOT mobility target. Stop-controlled intersections at 1st, 7th, and 9th Streets experience high delays and exceed City Level of Service (LOS) standard. Of these intersections, the eastbound 7th Street approach has the most delay with an average wait time of 45 seconds for a vehicle to make a left turn onto 99W.

The signalized intersection at 99W/5th Street meets the ODOT mobility target. However, field observations reveal long southbound queues leading up to this intersection in the p.m. peak hour, typically extending past the intersection of 1st Street. This results in vehicles often waiting through multiple cycles to advance through the 5th Street signal.

Less than a mile upstream of the 5th Street intersection, the two southbound lanes on 99W merge into a single lane. Vehicles must sort themselves into the single lane, which creates unstable flow at the bottleneck. This compounds the driver's perception of queuing and delay, and disrupts flow to the 5th Street intersection. The net effect is that the vehicle carrying capacity of this segment is less than the capacity at the 5th Street intersection, and forms a bottleneck, which restricts traffic flow.

Dundee also has a network of local and collector streets connecting neighborhoods to 99W. Capacity analysis indicates that all of the study intersections on Dundee's local and collector streets are currently meeting mobility targets.

Freight

ODOT classifies Highway 99W as a Statewide Freight Route through Dundee. The percentage of heavy trucks in mid-day off-peak hours (9:00 a.m. to 4:00 p.m.) is generally 11-13% of all traffic on 99W.

Rail

The Willamette & Pacific Railroad (WPRR) operates a rail line that runs parallel to 99W through Dundee. The line is used for freight movement, and has one train operating daily in each direction. There are no passenger rail services near the City.

Air

No public airports are located within Dundee. The closest airport is Sportsman Airpark in Newberg, four miles north of Dundee. McMinnville has a larger airport located eight miles to the south of Dundee.

Dundee in 2035

Today, Dundee is home to over 3,100 residents, but only 200 jobs. Between now and 2035, population is expected to grow to approximately 5,000 residents and 1,050 jobs. With more people and more jobs in Dundee, the transportation network will face increased local demand through 2035. The increase in people and jobs in Dundee, together with the effects of the Newberg-Dundee bypass, will change the travel patterns between 2012 and 2035.

While the overall number of trips on through Dundee is expected to increase, these trips will be split between 99W and the Phase 1 Bypass. At this time, because of likely funding constraints, only the Phase 1 Bypass is assumed to be constructed by 2035. After the Phase 1 Bypass opens in 2016, traffic volumes on 99W are expected to decrease by approximately 40% compared to 2015 volumes. By 2035, southbound traffic on 99W is expected to remain slightly below current levels because of the additional capacity provided by the Phase 1 bypass, while northbound traffic on 99W is expected to return to pre-bypass levels.

Internal trips within Dundee are also expected to increase due to employment growth in the Riverside area.

Population and Employment Growth

Much of the population and employment growth in Dundee is expected to occur in the Riverside area, as shown in Figure 3. This is the result of the City of Dundee's recent effort to create more employment lands in the Riverside growth area between Highway 99W and the Willamette River. See the Riverside Master Plan for more details. Development of the area as planned is expected to improve the City's jobs-housing balance.

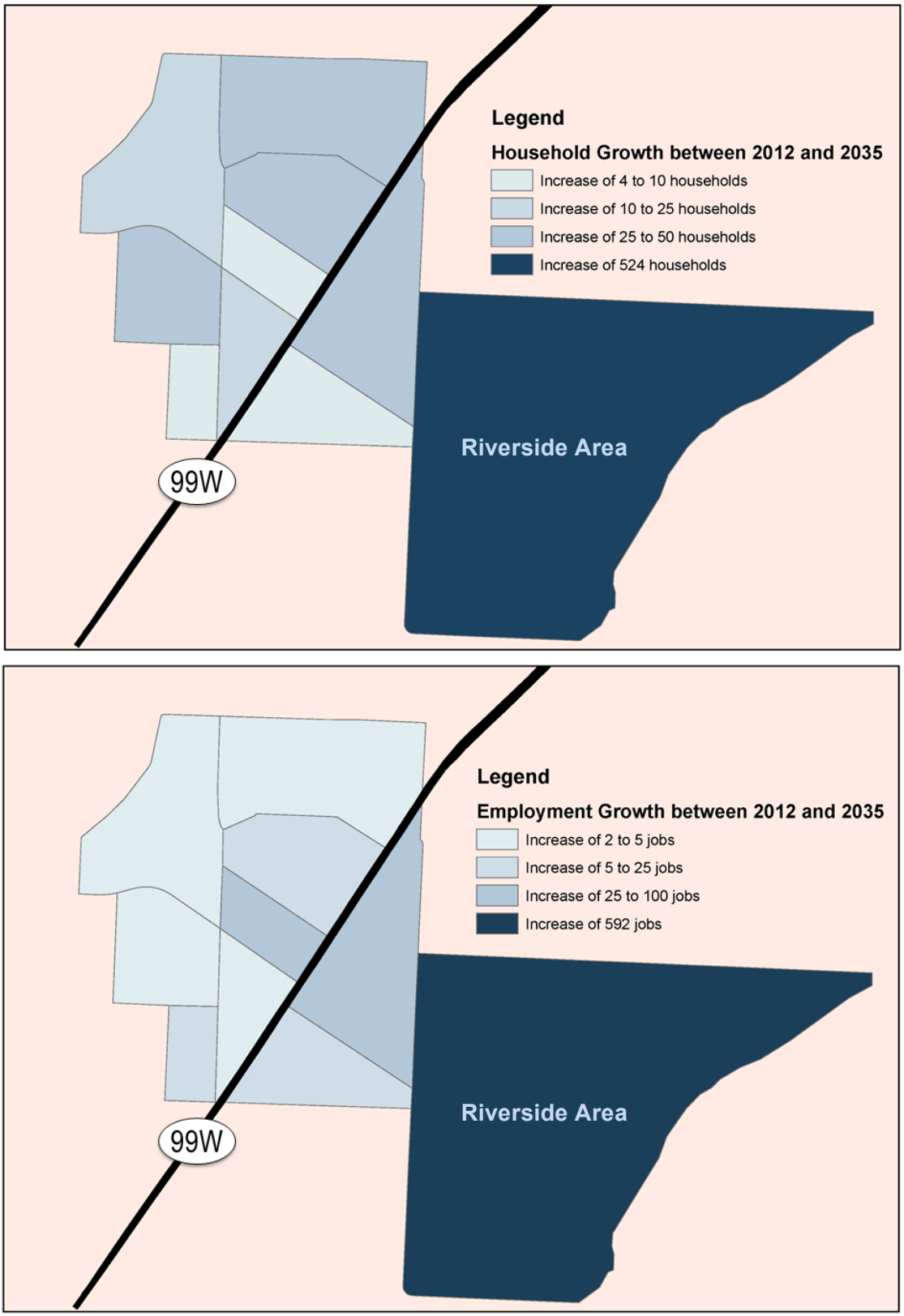


Figure 3: Household and Employment Growth

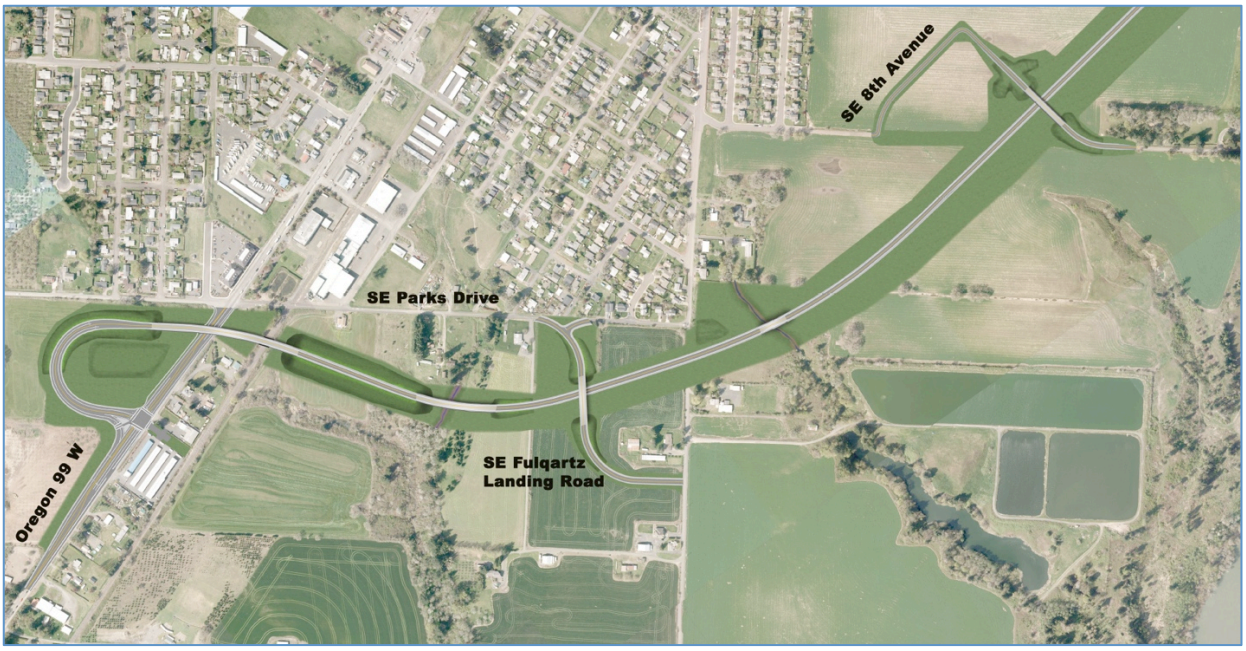


Figure 4: Newberg-Dundee Bypass Alignment

Newberg-Dundee Bypass

With the forecast increase in population and employment in Dundee and the surrounding region, the transportation infrastructure needed to support growth is significant. The programmed Phase 1 Newberg-Dundee Bypass shown in Figure 4 is a key improvement that will serve much of the traffic currently passing through the Newberg-Dundee area on Highway 99W.

Although local traffic in Dundee is expected to increase, the Newberg-Dundee Bypass is expected to reduce some of the traffic going through Dundee on Highway 99W. The overall effect of the increased local traffic on Highway 99W resulting from higher population and employment in Dundee is largely offset by the decrease in through traffic due to the Bypass.

Future Needs

Despite the reduction in traffic along Highway 99W that will initially occur after Phase 1 of the bypass is opened, traffic on Highway 99W is expected to grow back to near current volumes by the end of the planning horizon if no additional bypass phases are constructed. Similar conditions to those seen today with long southbound queues leading up to the 5th Street intersection and vehicles waiting through multiple cycles to get through the intersection are likely to return.

Dundee's transportation system will need some improvements to accommodate new growth and shifts in travel patterns and modes.

Connectivity

The ability to travel between different parts of the city conveniently is an important part of system planning. The following issues may need to be addressed in Dundee in the future:

- Dundee will require better connections from Highway 99W to the Riverside area. It will be important to provide a relatively direct route that minimizes traffic impacts on local residential streets.

- Highway 99W (and soon the Newberg-Dundee Bypass) is the only facility that serves trips between Dundee and destinations to the north. Additional connections, particularly for non-motorized travel, will become more important as Dundee grows.
- 5th Street and Niederberger Road/Parks Drive are currently the only streets that offer a direct connection between east and west Dundee.

Safety

Highway 99W through Dundee has a higher collision rate than the statewide average for similar facilities. Due to the bypass, traffic volumes on 99W are expected to drop by about 40% when Phase 1 of the bypass opens in 2016 and then grow back to near current levels by 2035. However, due to local growth, traffic on the side streets is expected to increase. It is likely that the initially decreased traffic volumes on 99W may lead to larger and more frequent gaps in traffic, improving safety conditions for vehicles attempting to cross the highway or turn left and reducing congestion-related rear-end collisions. However, increased traffic volume on side streets may temper this effect. Improved bike and pedestrian facilities that will be built in 2015 and 2016 as part of the Highway 99W 1st Street to Parks Drive Streetscape Project should also improve safety along the Highway 99W corridor in Dundee.

Walking, Biking, and Transit Use

Currently, 80% of Dundee's residents commute to work in single occupancy vehicles despite the various travel options available. As employment grows in Dundee, walking, biking, and taking transit to work will likely become more viable options for some commuters.

Pedestrian activity in Dundee is expected to increase significantly as population and employment grows. Downtown Dundee will likely see an increase in pedestrian traffic as a result of the Highway 99W 1st Street to Parks Drive Streetscape Project. This project will provide a more comfortable pedestrian environment in downtown, aided by the initial reduction in non-local automobile traffic that diverts to the Phase 1 Bypass. As pedestrian activity increases, further improvement to the pedestrian network will become even more important. Pedestrian crossing improvements on 99W, in particular, are advisable and should be coordinated with Yamhill County Transit Area (YCTA) to ensure that transit riders have safe and convenient access to improved crossings.

As employment increases in the Dundee area, more residents are expected to live closer to work, which will likely result in more commuters biking and walking to work. Currently, about one in four Dundee residents who commute to another city for work are headed to Newberg. The commute to Newberg is a 2-to-4 mile trip, a distance that is appropriate for bicycle commuting. A proposed regional trail system connecting Newberg and Dundee would make bicycling between the cities more comfortable and accessible.

Providing improved transit service, especially to the Riverside area where both employment and households are expected to increase significantly, will also be important as Dundee grows.

Standards

With Dundee's vision and resulting transportation investment priorities established, this chapter sets out the standards and regulations that will ensure that future land development and redevelopment is consistent with this plan.

Sidewalk Policy

Dundee will work to improve and expand pedestrian facilities throughout the community. Sidewalks shall be included on both sides on all new streets, unless limited by topography or environmental constraints, such as steep grades or narrow right-of-way. New as well as existing collectors will be required to accommodate sidewalks on both sides of the street.

Bicycle Treatment Guidelines

Arterial and collector streets will be required to accommodate bicycle facilities such as striped bike lanes, shared-use paths, or shared lane markings. Local streets generally have low speeds and low traffic volumes, so bicycles will share the roadway in those areas without special markings unless the local street is part of a designated bike route or critical connection.

Bicycle Facility Treatment Guidelines

A network of family-friendly biking routes is envisioned to connect major destinations and neighborhoods in Dundee. These will include two different types of facilities, Parkway Collectors and Bicycle Boulevards.

Parkway Collectors will include either bike lanes or an adjacent shared-use path. Other Collector roads and local streets that are part of a designated bicycle route will be low-speed shared facilities, like that shown in Figure 5. These routes, sometimes referred to as Bicycle

Figure 5: Bicycle Boulevard with Sharrows

Boulevards, modify existing low volume, low speed streets to prioritize the through movement of bicyclists and pedestrians while maintaining local access for automobiles. Bicycle Boulevards typically include wayfinding signage and pavement markings called shared-lane markings (SLMs), or "sharrows," as well as traffic calming features that reduce motor vehicle speeds and volumes. Where these facilities cross major roadways it is important to provide safe and comfortable pedestrian and bicycle crossings.

Further enhancements may include "green street" features such as bio-swales and street trees, in addition to wider sidewalks and improved pedestrian amenities (e.g., benches and pedestrian-scale lighting). A network of bicycle boulevards helps encourage active transportation by providing comfortable, low-stress routes between neighborhoods and local parks, schools, and shopping areas. The bicycle boulevard network is generally off the main street system and is more attractive to less experienced walkers and bikers. It is generally envisioned to act like a linear park system linking parks, schools, jobs and other

destinations in the City through a network of on-street shared-use streets and off-street shared-use paths.

Functional Classification

Functional classification of roadways is a common practice in the United States. Traditionally, a roadway is classified based on the type of travel it is intended to serve (local versus through traffic). The functional classification of a roadway determines the level of mobility for all travel modes, defining its level of access and usage within the City and region. The street functional classification system recognizes that individual streets do not act independently of one another but instead form a network that works together to serve travel needs on a local and regional level.

From highest to lowest intended usage, the classifications are arterials, collectors, and local streets. Roadways with a higher intended usage generally have a classification and related standards that promote more efficient vehicle movement through the City, while roadways with lower intended usage are classified to provide greater access to local destinations such as businesses or residences.

- **Arterial Streets** in Dundee consist solely of Highway 99W, which is maintained and operated by ODOT and classified as Principal Arterial. It is also currently classified as a Statewide Freight Route and is part of the federal National Highway System (NHS). Highway 99W has the highest traffic volumes in Dundee. It is the roadway that residents use to connect to locations outside the City, and the roadway that visitors use to reach and travel through Dundee. The posted speed limit on Highway 99W was recently reduced to 30 miles per hour through Dundee.
- **Collector Streets** in Dundee connect the neighborhoods and major activity generators to arterial streets. These streets provide greater accessibility to neighborhoods than arterials, and provide efficient through movement for local traffic. 9th Street is an example of a collector street that connects popular wineries just outside the City as well as local neighborhoods to Highway 99W. Collectors have a posted speed of 25 miles per hour within Dundee.
- **Local Streets** provide direct access to residences in Dundee. These roadways are often lined with residences and are designed to serve lower volumes of traffic with posted speeds of 25 miles per hour.

Typical Roadway Standards and Cross-sections

Roadway standards and cross-sections depend on functional classification, and are refined further in this section.

Street Type

Dundee can further classify roadways within the City based on the neighborhoods they serve and their intended function for pedestrians, bicyclists, and transit riders. The street type of a roadway defines its cross-section characteristics and determines how users of a roadway interact with the surrounding land use. Since the type and intensity of adjacent land uses and zoning directly influence the level of use by pedestrians, bicyclists, and transit riders, the design of a street (including target speed, intersections, sidewalks, and travel lanes) should reflect its surroundings. The street types attempt to strike a balance between street functional classification, adjacent land use,

zoning designation and the competing travel needs by prioritizing various design elements.

- **Mixed-Use Streets** typically have a higher amount of pedestrian activity and are often on a transit route. These streets should emphasize a variety of travel choices such as pedestrian, bicycle and transit use to complement the development along the street. Since Mixed-Use Streets typically serve pedestrian-oriented land uses, walking should receive the highest priority of all the travel modes. They should be designed with features such as wider sidewalks, pedestrian amenities, transit amenities, attractive landscaping, on-street parking, pedestrian crossing enhancements and bicycle lanes.

- **Residential Streets** are generally surrounded by residential uses, although various small shops may be embedded within the neighborhood. These streets often connect neighborhoods to local parks, schools and mixed-use areas. They should be designed to emphasize walking, while still accommodating the needs of bicyclists and motor vehicles. A high priority should be given to design elements such as traffic calming, landscaped buffers, walkways/pathways/trails, on-street parking and pedestrian safety enhancements.

- **Commercial/Industrial Streets** are primarily lined with retail and large employment complexes, and often serve industrial areas. These uses serve customers throughout the City and region and may not have a direct relationship with nearby residential neighborhoods. Dundee's commercial code standards require buildings to be near the street and are meant to encourage pedestrian activity. Therefore, although commercial streets will be somewhat auto oriented, they should still accommodate pedestrians and bicyclists safely and comfortably. Roadway widths are typically wider to accommodate a high volume of large vehicles such as trucks, trailers and other delivery vehicles.

  Design features should include sidewalks, on-street parking, and pedestrian crossing enhancements. Bicycles should be accommodated through shared-lane markings and plentiful bicycle parking. Sidewalks should be constructed in accordance with the commercial design guidelines in the Dundee Development Code.

- **Constrained streets.** Any street type located in steep, environmentally sensitive, rural, historic, or development-limited areas of the City may be considered a constrained street. These streets may require different design elements that may not be to scale with the adjacent land use. Constrained elements may include narrower or limited travel lanes, changes to pedestrian and bicycle facilities, or accommodations that generally match those provided by the surrounding developed land uses. To the extent possible, pedestrian and bicycle accommodations should be provided on an adjacent roadway, via a shared-use path, or with a low-speed shared roadway.

Multi-Modal Roadway Cross Sections

Design of the streets in Dundee requires attention to many elements of the public right-of-way and considers how the street interacts with the adjoining properties. Four zones

comprise the cross-section of streets in Dundee, including the context zone, walking zone, biking/on-street parking zone, and driving zone. The design of these zones varies based on the functional classification and street type.

- **Context Zone:** The context zone is the point at which the sidewalk interacts with the adjacent buildings or private property. The purpose of this zone is to provide a buffer for land use adjacent to the street and to ensure that all street users have safe interactions.

- **Walking Zone:** This is the zone in which pedestrians travel. The walking zone is determined by the street type and should be a high priority in mixed-use and residential areas. It includes a minimum five foot clear throughway for walking, an area for street furnishings or landscaping (e.g. benches, transit stops and/or plantings) and a clearance distance between curbside on-street parking and the street furnishing area or landscape strip (so parking vehicles or opening doors do not interfere with street furnishings and/or landscaping). Streets located along a transit route should incorporate furnishings to support transit ridership, such as transit shelters and benches, into the furnishings/landscape strip adjacent to the biking/on-street parking zone.

- **Biking/On-Street Parking Zone:** This is the zone for biking and on-street parking, and is the location where users will access transit. The biking/on-street parking zone is determined by the street type and should be a high priority in mixed-use and residential areas.

- **Driving Zone:** This is the throughway zone for drivers, including cars, buses and trucks and should be a high priority in commercial/ employment and industrial areas. The functional classification of the street generally determines the number of through lanes, lane widths, and median and left-turn lane requirements. However, the route designations (such as transit street or freight route) take precedence when determining the appropriate lane width in spite of the functional classification. Wider lanes (between 13 to 14 feet) should only be used for short distances as needed to help buses and trucks negotiate right-turns without encroaching into adjacent or opposing travel lanes. Streets that require a raised median should include a minimum 6 foot wide pedestrian refuge at marked crossings. Otherwise, the median can be reduced to a minimum of 4 feet at midblock locations, before widening at intersections for left-turn lanes (where required or needed).

Figure 6 shows the proposed classifications of new and existing roadways in Dundee. Figure 7 through Figure 13 illustrate the different typical roadway classification cross sections. There is no cross section for arterial streets since the only arterial street is Highway 99W, which is subject to design criteria in the Oregon Highway Plan and ODOT Highway Design Manual, not Dundee City standards. The roadway cross sections shown are the typical standards, but variations may be granted through consultation and approval of the city engineer and in accordance with the adopted Public Works Design Standards.

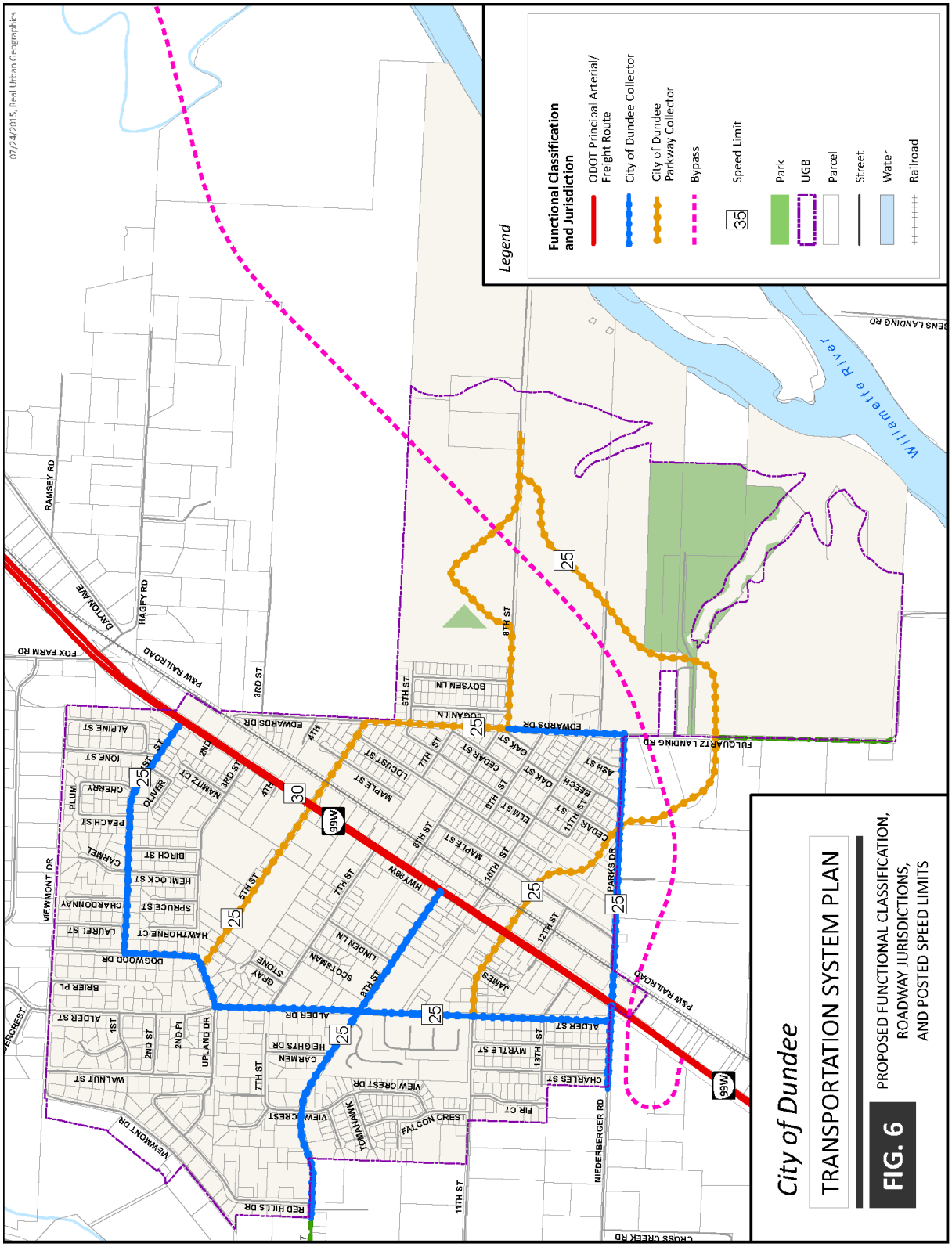


Figure 6: Functional Classification

There are two types of collector streets allowed under Dundee's design standards, Collector and Parkway Collector. The Collector street is Dundee's preferred design approach.

Figure 7: Collector - Two Travel Lanes with Parking on Both Sides and Sharrows

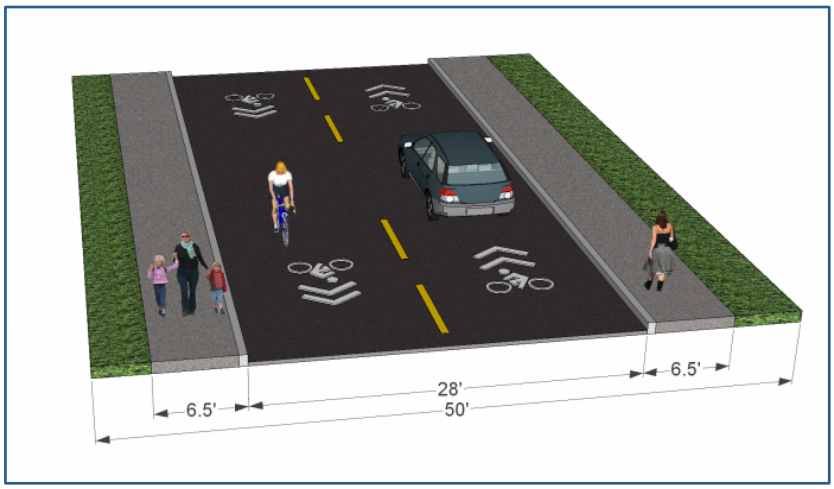


Figure 8: Constrained Collector

Collector

The Collector cross-section shown in Figure 7 is the design standard primarily used in Dundee. This collector street consists of two travel lanes with on-street parking. The travel lanes should be designated as shared space for both motor vehicle and bicycle traffic by using sharrows. In commercial and industrial areas, the planter strip may be omitted in favor of curb tight sidewalks.

Outside the Riverside District, the planter strip and street trees may be omitted due to utility conflicts, right-of-way constraints, or geographic constraints.

Constrained Collector

The Constrained Collector is intended for streets with narrow right-of-way, geographic constraints, or both. Parking and bike lanes are omitted. The two 14' travel lanes must be designated as shared space for motor vehicles and bicycles with sharrows. The Constrained Collector include sidewalks on both sides, but the City Engineer may approve construction of sidewalks on only one side in very constrained areas.

Parkway Collector

The Parkway Collector standard shown in Figure 9 will be used in the Riverside District to help establish and reinforce the special character of the District, and to connect the Riverside District with downtown Dundee. This standard uses the same amount of right of way as a regular Collector street, but does not include on-street parking or Sharrows.

The new north-south collector in the Riverside district should include a twelve-foot shared-use path on one side and regular six-foot sidewalk on the other side.

All other Parkway Collectors, including Fulquartz Landing, 11th Street, 5th Street, and Edwards Drive should include bike lanes as shown in Figure 10.

The Parkway Collector standard should be used on streets connecting downtown Dundee with the Riverside area, including the new north-south collector in Riverside, Fulquartz Landing, 11th Street, Edwards Drive, and 5th Street. Parkway Collector roadways may include either bike lanes or a twelve-foot shared-use path on one side. On-street parking is not allowed on Parkway Collector roadways.

Figure 9: Parkway Collector with Shared-Use Path

Figure 10: Parkway Collector with Bike Lanes

There are two types of local streets allowed under Dundee's design standards. Local I, the City's preferred design, and Local II, which must be built if Local I requirements cannot be met.

Figure 11: Local Street I - Two Travel Lanes with On-Street Parking on Both Sides

Figure 12: Local Street II - Two Travel Lanes with Courtesy Queuing

Local I

The Local I design standard shown in Figure 11 includes on-street parking on both sides of the street. Sharrows can be used on a Local I street if it is part of a designated bike route, but they are not required.

Outside the Riverside District the street trees and planter strip may be omitted due to utility conflicts, right-of-way needs, or geographical constraints.

Local II

The Local II standard shown in Figure 12 has the following requirements:

- The street shall connect with other streets and not terminate in a cul-de-sac.
- Subdivisions and other developments shall have a max block length of 400 feet.
- The street grade shall not exceed four percent.
- The street layout must be capable of accommodating the largest emergency vehicle in the fire department.
- The narrower street shall not be used to extend existing streets that contain wider rights-of-way or improvements.

A typical Local II street does not include bicycle lanes, and parking is allowed on both sides. Due to the narrow cross section, cars will need to pull aside and wait for opposing traffic if there are cars parked on both sides. sharrows can be used on a Local II street if it is part of a designated bike route, but they are not required.

Outside the Riverside District the street trees and planter strip may be omitted due to utility conflicts, right-of-way needs, or

SW 8th Street Parking

The parking cross-section for SW 8th Street is a special case. The street is intended primarily as parking for downtown attractions and businesses, not as a through or access street.

A unique cross section was developed for the proposed SW 8th Street parking project, and may be appropriate to be utilized on SW 10th Street and SW 13th Street. This cross section is still in the planning stages and may include different elements from those depicted in Figure 13. 8th Street should be a one-way, low traffic, and low speed street primarily intended for parking and bicycle and pedestrian access.

Figure 13: Parking - SW 8th Street

Shared-Use Paths

Shared-use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and general travel needs. Widths should provide ample space for both walking and biking and should also be able to accommodate maintenance vehicles. The design criteria for shared-use paths can be seen in Figure 14. The City may reduce the width of the paved shared-use path as necessary in constrained areas located in steep, environmentally sensitive, rural, historic, or development-limited areas of the City. In areas with significant walking or biking demand, the paved shared-use path should be 16 feet. In addition, a variety of amenities can make a path inviting to the user. These could include features such as interpretive signs, water fountains, benches, lighting, maps, art, and shelters.

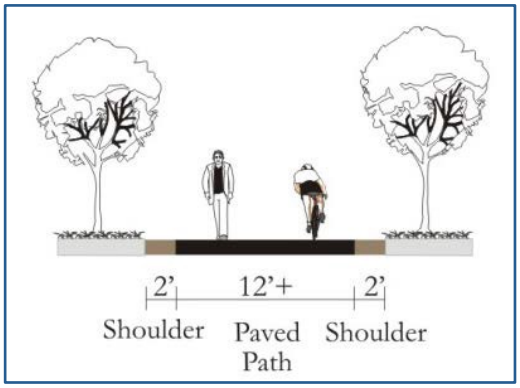


Figure 14: Design Criteria for Shared-Use Paths

Mobility Standards

Motor vehicle mobility is measured by Level of Service (LOS). The City of Dundee requires Level of Service (LOS) "D" as the minimum acceptable performance standard for City streets. This standard applies to all of the streets in Dundee except Highway 99W, which is a state facility with a mobility target set by the Oregon Transportation Commission (OTC) in the Oregon Highway Plan (OHP).

The ODOT mobility target for Highway 99W is a volume to capacity (v/c) ratio of 0.85.

In 2035, all of the study intersections in Dundee area expected to meet these mobility targets except for Highway 99W/Fox Farm Road and Highway 99W/5th Street. The Highway 99W/Fox Farm Road intersection is under Yamhill County and ODOT jurisdiction, and is expected to be addressed under the Yamhill County TSP. It is expected that the 5th Street intersection could meet mobility targets if improved by the Highway 99W/5th Street right turn lane project identified in the reasonably likely funded scenario. However, long queues and long wait times at the Highway 99W/5th Street signal are likely to return by 2035 as traffic rebounds to present-day levels along Highway 99W.

Design and Analysis Guidelines

Design and analysis guidelines allow cities to shape the character and functionality of the transportation system. In Dundee, these guidelines are used to provide standards for connectivity, access spacing, traffic impact analysis, neighborhood traffic management, intelligent transportation systems coordination, bicycle facilities, enhanced pedestrian crossings, and on-street parking treatments.

Local Street Connectivity

Local street connectivity in Dundee is managed through circulation and connectivity standards. New developments are required to provide a circulation system that accommodates vehicle and pedestrian traffic as follows. In new developments, a street or driveway intersection that provides multi-modal connectivity and

circulation for pedestrians, bicyclists, and automobiles must be provided at least once every 600 linear feet of street frontage. The exception is along Highway 99W where state access spacing requirements apply. In places where it is not practical to provide a street connection every 600 feet due to topography, existing development, or other constraints, the city shall approve a pedestrian pathway within an access easement through the subject lot or tract instead.[1]

Collector streets shall be located wherever necessary to carry traffic volumes higher than local street standards, or where the street provides primary access to Highway 99W. In general, collectors are spaced at least ¼ mile apart.

Roadway and Access Spacing

Access spacing along Dundee streets is managed through access spacing standards. Access management is a broad set of techniques that balance the need to provide efficient, safe, and timely travel with the ability to allow access to individual destinations. Proper implementation of access management techniques will promote reduced congestion and accident rates, and may lessen the need for additional highway capacity.

Table 1 identifies the minimum access spacing standards for streets in Dundee. Within developed areas of the City, streets not complying with these standards could be improved with strategies that include shared access points, access restrictions (through the use of a median or channelization islands) or closed access points as feasible. New streets or redeveloping properties must comply with these standards, to the extent practical (as determined by the City)

Table 1: Access Spacing Standards

Facility	Minimum Access Spacing
ODOT Statewide Highway (Urban)[2]	500 feet
City of Dundee Collectors	75 feet
City of Dundee Local Streets[3]	15 feet
Yamhill County public roads[4]	500 feet

Traffic Impact Analysis (TIA) Requirements

A TIA is a study to assess the impacts of a land use action or proposed development on the transportation system and identify mitigation for any capacity or safety deficiencies. Submission of a TIA to the City shall be required with a land use application if the proposal is expected to involve one or more of the following:

- The proposed development generates 40 or more PM peak-hour trips. This requirement may be waived by the city engineer if:
  - A previous traffic study adequately addresses the proposal
  - Already completed off-site and frontage improvements adequately mitigate traffic impacts
  - The proposed use is not adjacent to an intersection that is functioning at a poor level of service
- The proposed development would generate less than 40 PM peak-hour trips, but the

[1] Dundee Development Code, Chapter 17.301 Access and Circulation

[2] Table 4 in Oregon Administrative Rules 734-51, http://www.oregon.gov/ODOT/HWY/ACCESSMGT/docs/pdf/734-051.pdf

[3] Dundee Development Code, Chapter 17.301 Access and Circulation

[4] Yamhill County TSP, Access Management Policy 8

proposed development is immediately adjacent to an intersection that is functioning at a poor level of service.
- An increase in use of any direct property approach road to Highway 99W by 10 vehicles or more per day that exceed 20,000 pounds gross vehicle weight.
- A new direct property approach road to Highway 99W is proposed.
- A development or land use action that the road authority states may contribute to operational or safety concerns on its facility(ies).
- An amendment to the Dundee Comprehensive Plan or Zoning Map.

Neighborhood Traffic Management Tools

Traffic calming is a form of neighborhood traffic management that can be used to create safe, slow streets (primarily in residential and mixed-use areas) without significantly changing vehicle capacity. Traffic calming can mitigate the impacts of traffic on neighborhoods and business districts where a greater balance between safety and mobility is desired. It seeks to influence driver behavior through physical and psychological means, resulting in lower vehicle speeds or through traffic volumes. Physical traffic calming techniques include:

- Narrowing the street by providing curb extensions or bulbouts, or mid-block pedestrian refuge islands
- Deflecting the vehicle path vertically by installing speed humps, speed tables, or raised intersections
- Deflecting the vehicle path horizontally with chicanes, roundabouts, or mini-roundabouts

Narrowing travel lanes and providing visual cues such as placing buildings, street trees, on-street parking, and landscaping next to the street also creates a sense of enclosure that prompts drivers to reduce vehicle speeds.

Traffic calming measures must balance the need to manage vehicle speeds and volumes with the need to maintain mobility, circulation, and function for service providers (e.g. emergency response). Table 2 lists common traffic calming applications and suggests which devices may be appropriate along various streets in the City. Any traffic calming project should include coordination with local emergency response agency staff to ensure public safety is not compromised.

Table 2: Traffic Calming Measures by Street Functional Classification

Traffic Calming Measure	Is Measure Appropriate? (per Roadway Classification)**	
	Collector *	Local Street*
Narrowing travel lanes	Yes	Calming measures are generally appropriate on local streets that are infrequent emergency response routes and have more than one way in and out
Placing buildings, street trees, on-street parking, and landscaping next to the street	Yes	
Curb Extensions or Bulbouts	Yes	
Roundabouts	Yes	
Mini-Roundabouts	Yes	
Medians and Pedestrian Islands	Yes	
Pavement Texture	Yes	
Speed Hump or Speed Table	No	
Raised Intersection or Crosswalk	No	
Speed Cushion (provides emergency pass-through with no vertical deflection)	Yes	
Choker	No	
Traffic Circle	No	
Diverter (with emergency vehicle pass through)	Yes	
Chicanes	No	

*Any traffic calming project should include coordination with emergency agency staff to ensure public safety is not compromised.
** Traffic calming may be considered for state highways but would be required to meet ODOT standards, including any ODOT approved design exceptions.

ITS Coordination Guidelines

Intelligent Transportation System (ITS) planning and coordination is important for Dundee to consider. The City should follow the Oregon Statewide ITS Plan.

On-Street Parking

On-street parking should be a high priority along Mixed-Use or Residential streets (in mixed-use and residential areas). The design criteria for collector streets in mixed-use and residential areas (see Figure 7) calls for on-street parking on both sides of the street if bike lanes are not present. On-street parking is generally discouraged along Commercial/Industrial streets, although it may be allowed if the adjacent land use would benefit from it and adequate right-of-way is available. On Local streets, on-street parking is generally provided on both sides of the street, although on-street parking can be reduced to one side if the roadway is narrowed through specific project approval. The City may eliminate on-street parking from one or both sides along streets located in constrained areas located in steep, environmentally sensitive, rural, historic, or limited development areas of the City.

Table 3: On-Street Parking Standards

	Mixed-Use Streets	Residential Streets	Commercial /Industrial Streets
Typical Parking Stall Width	8 feet	7 feet	8 feet
Typical Parking Stall Length	20 feet	20 feet	20 feet

The width of on-street parking should typically be eight feet, except along Residential streets where parking turn-over is not as frequent (as shown in Table 3). Along Residential streets, the width of on-street parking can be reduced to seven feet. The typical length of the on-street parking stall should be 20 feet, but may be reduced if additional maneuvering area is available (as determined by the City).

Enhanced Pedestrian Crossing Treatments and Guidelines

Enhanced street crossings are generally required on roadways with high traffic volumes and/or speeds in areas with nearby transit stops, residential uses, schools, parks, shopping, and employment destinations. These crossings should include treatments such as marked crosswalks, high visibility crossings, and curb extensions to improve the safety and convenience of street crossings. If the maximum block size is exceeded, mid-block pedestrian and bicycle accessways should be provided at a spacing of approximately 330 feet, unless the connection is impractical due to inadequate sight distance, high vehicle travel speeds, or other factors that may prevent the crossing (as determined by the City). Otherwise, crossings should be provided consistent with the connectivity standards.[5]

Figure 15: Pedestrian Refuge Island in Vancouver, Washington

[5] This requirement is a proposed amendment to City code.

The Investments

The Dundee approach to developing transportation solutions placed more value on investments in smaller cost-effective solutions for the transportation system rather than larger, more costly ones. The approach helped to encourage multiple travel options, increase street connectivity and promote a more sustainable transportation system.

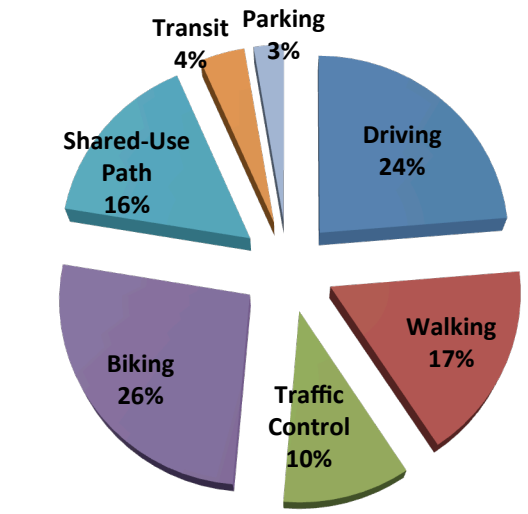
Taking the network approach to transportation system improvements, the projects in this plan fall within one of several categories:

- **Walking** projects for sidewalk infill, providing seamless connections for pedestrians throughout the City. Dundee identified 13 walking projects that will cost approximately $4.4 million to complete.
- **Biking** projects including an integrated network of bicycle lanes and marked on-street routes that facilitate convenient travel citywide. Dundee identified 20 biking projects that will cost approximately $140,000 to complete.
- **Shared-Use Path** projects providing local and regional off-street travel for pedestrians and bicyclists. The citywide shared-use path vision includes 13 projects that will cost approximately $3.6 million to complete.
- **Driving** projects to improve connectivity, safety, and capacity throughout the City. Dundee identified 18 driving projects that will cost approximately $26.1 million to complete. One of these projects is a package of several different street projects

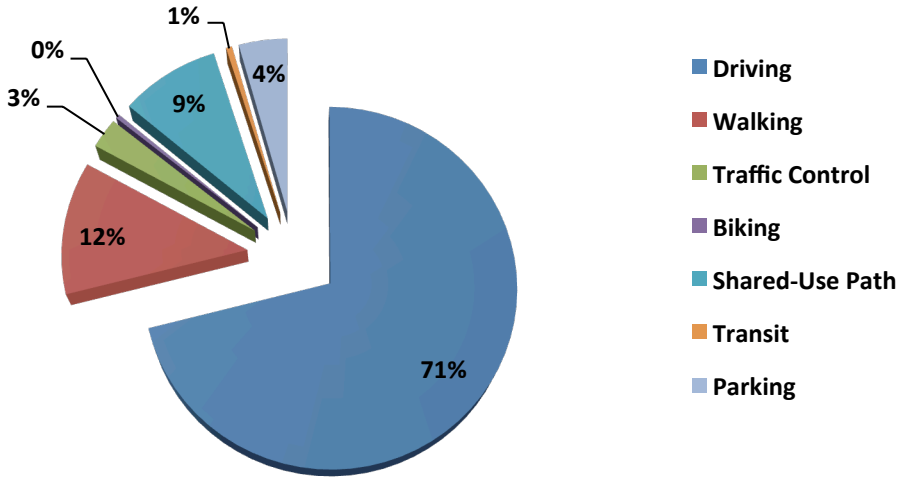
to provide a new connection from west Dundee to the Riverside area.

- **Traffic Control** projects to improve intersection safety and mobility, provide safer pedestrian crossings, and improve safety of at-grade railroad crossings. Dundee identified eight traffic control projects that will cost approximately $1 million to complete.
- **Transit** projects to enhance the quality and convenience of transit services for passengers. Dundee identified three transit projects that will cost approximately $200,000 to complete.
- **Parking** projects to help provide access to businesses in Dundee's growing downtown. Dundee identified two parking projects that will cost approximately $1.6 million to complete.

Overall, Dundee identified 76 transportation solutions, totaling an estimated $36.8 million worth of investments (see Figure 16).



Projects in TSP by Category Type



Projects in TSP by Category Expense

Figure 16: Total Percentage of TSP by Project Type and Project Expense

The Funding

With an estimated $36.8 million worth of transportation solutions identified, Dundee must make investment decisions to develop a set of transportation improvements that will likely be funded to meet identified needs through 2035. As shown in Figure 17, Dundee is expected to have approximately $1.15 million available for capital expenditures through 2035 with current funding sources and maintenance and operations expenditures.

Figure 17: City of Dundee Funding Expectations through 2035

In addition to Dundee funds, ODOT has determined that it is reasonable to assume that perhaps $1 to $2 million in state discretionary funds will be available to fund new projects in Dundee over the next 20 years[6]. Many of the identified transportation improvements are expected to be funded, at least in part, by new development. About $16.4 million (approximately half) of the identified projects would be development-led.

Funding Gap

Approximately $37 million worth of investments were identified by the City in the 2035 horizon plan. It was estimated that approximately $16.4 million of those improvements will be built through private

[6] ODOT has not committed any future funding for projects in Dundee. This estimate is based on assuming that Dundee will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

development, primarily the Riverside District area. That leaves $20.6 million of improvements to be funded through some combination of City, ODOT, or Yamhill County sources. Given the current funding programs, Dundee expects to have about $1.15 million in City funds and $1 to $2 million in ODOT funds to cover $20.6 million in public-share project costs. This leaves a $17 to $18 million project funding gap.

Additional Funding Sources

Dundee identified several additional funding sources that could be used to fund transportation improvements to help fill this gap. These include implementing transportation System Development Charges (SDC), a Transportation Utility Fee, an increase in Dundee's existing local fuel tax, and using lodging tax revenues for transportation projects.

SDC's are fees collected from new development and used as a funding source for projects that add capacity to the transportation system. The funds collected can be used to construct or improve portions of roadways impacted by development. The SDC is collected from new development as a one-time fee proportional to each land use's potential PM peak hour vehicle trip generation. Using a fee structure of $2,500 per peak hour trip for driving, and $500 per peak hour trip for walking and biking, Dundee could potentially collect an additional $3.6 million for general projects and $724,000 for walking and biking projects.

A transportation utility fee is a recurring monthly charge that is paid by all residences and businesses within the City and can be paid through the City's regular utility billing. Assuming a flat fee of $10.00 per month per water meter for both residential and commercial uses in the City, the City could collect an additional $3.4 million for transportation-related expenses through 2035.

Dundee currently has a local fuel tax of two cents per gallon. The City could increase the local gas tax or seasonably adjust the rate. Assuming Dundee increases its local gas tax to five cents per gallon during the summer months when more visitors are in town, the local gas tax could bring in an additional $7,500 per month during the summer, or $750,000 total through 2035.

Dundee's local hotel/lodging tax brings in approximately $33,000 per year. State law requires 70 percent of the hotel tax revenue be used for tourism facilities and promotion and the remaining 30 percent go to the general fund. The money allocated toward tourism facilities could potentially be used for transportation projects such as public parking or pedestrian improvements that benefit tourism.

Figure 18: Possible New Funding Sources

Using the potential new funding sources shown in Figure 18, up to $8.9 million in additional projects could be funded. More projects could be funded through other sources, such as mitigation for private development, state or federal grants, urban renewal districts, local improvement districts, and reallocating general fund revenue for transportation projects, but none of these funding sources are assured and should not be considered reasonably likely in the 20-year planning horizon.

The Plan

As detailed in the Funding section, the City is expected to have approximately $1.15 million in City funds and $1 to $2 million in ODOT funds to cover the public portion of project costs ($20.6 million) if no additional funding sources are developed. Therefore, most of the transportation solutions identified for the City are not reasonably likely to be funded through 2035. For this reason, the transportation solutions were divided into three categories:

- **Likely Funded** projects are those projects that the City and ODOT believe are reasonably likely to be funded during the 20-year planning horizon based on the funding threshold established through City and ODOT funding analysis.
- **Possibly Funded** projects are those projects that address an identified problem and are supported by the City and ODOT, but are not reasonably likely to be funded during the 20-year planning horizon unless the City utilizes the potential new funding sources identified in the Funding section.
- **Aspirational** projects include all identified projects for improving Dundee's transportation system that are not reasonably likely to be funded during the 20-year planning horizon, but do address an identified problem and are supported by the City and ODOT.

Identifying the Investments

Using the nine goals identified previously in the TSP, the transportation solutions were

evaluated and compared to one another. Greater value was placed on the projects stakeholders felt were most important to the community. The investment recommendations attempted to balance projects between different modes, selecting some of the highest rated projects from each mode. Complex and costly capital projects were disfavored compared with low cost projects that can have more immediate impact and can spread investment benefits Citywide.

The Likely Funded Plan

The Likely Funded Plan identifies the transportation solutions that are reasonably expected to be funded by 2035 and have the highest priority for implementation.

Approximately $5.3 million in investments are included in the Likely Funded Plan. As shown in Figure 19, approximately $1.7 million of the projects would be funded by the City, approximately $700,000 are assumed would be funded through ODOT programs, and approximately $2.8 million would be development-led. Planning level cost estimates and funding allocation is summarized in Table 4.

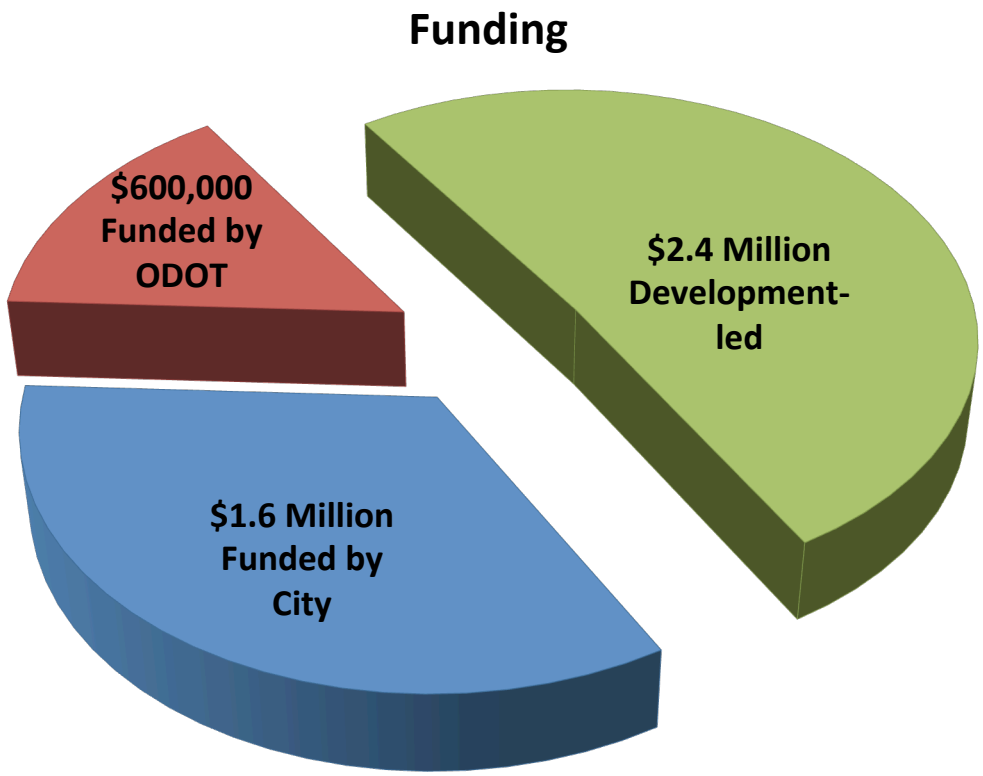


Figure 19: Funding for the Likely Funded Plan

Table 4: Likely Funded Plan

Project No.	Project	City Funds	Potential Additional Funds (source)	Total
DCO2	Downtown Connectivity – 11th Street Connection	$567,750	$2,838,750 (Dev) $378,500 (ODOT)*	$3,785,000
I6	5th Street Right Turn Lane	$320,000	$320,000 (ODOT)*	$640,000
W11	SE 10th Street Sidewalk infill between 99W and Edwards Drive	$840,000		$840,000
	Total	**$1,727,750**	**$3,537,250**	**$5,265,000**

*ODOT has not committed any future funding for these projects as of the writing of the TSP. The City will need to successfully compete for ODOT funding through one or more of the programs that make up the State Transportation Improvement Program (STIP).

The Possibly Funded Plan

The Possibly Funded Plan identifies transportation solutions that could be funded if the City develops new revenue sources such as those summarized in Figure 18. These new funding sources could potentially fund the transportation solutions identified in the Possibly Funded Plan in Table 5.

The Possibly Funded Plan identified approximately $18 million worth of investments. Planning level cost estimates and funding allocations can be found in Table 5. As shown in Figure 20, approximately $8.2 million of the investments would be funded by the City, approximately $440,000 are assumed would be funded by ODOT, approximately $45,000 would be funded by the Yamhill County Transit Area (YCTA), and approximately $9.3 million would be development-led.

More projects could potentially be funded through other sources, such as state or federal grants, urban renewal districts, local improvement districts, and reallocating general fund and lodging tax revenues to transportation projects.

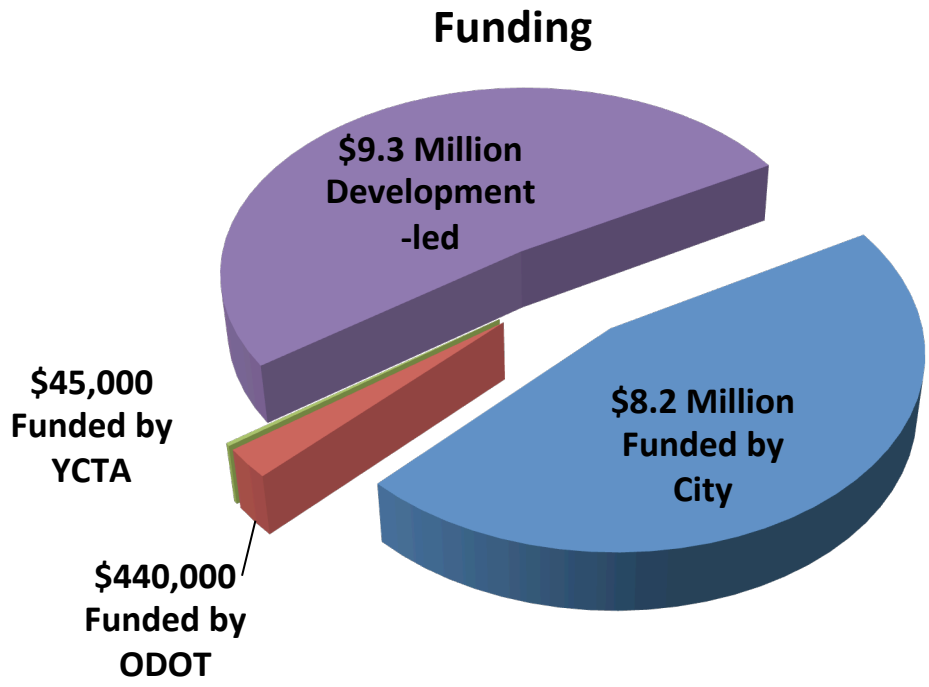


Figure 20: Funding for the Possibly Funded Plan

Table 5: Possibly Funded Plan

Project No.	Project	City Funds	Potential Additional Funds (source)	Total
D5	Alder Street Extension to 99W	$235,000	$470,000 (Dev)	$705,000
D9a	Alder Street Reconstruction between 7th Street and Upland Drive	$535,000		$535,000
D9b	Alder Street Reconstruction between 7th and 9th	$562,500	$187,500 (Dev)	$750,000
D11	8th Street Connection to Riverside	$264,000	$1,056,000 (Dev)	$1,320,000
D13	North-South Parkway along Bypass	$2,633,000	$5,267,000 (Dev)	$7,900,000
C1*	5th Street Midblock Crosswalk	$5,000		$5,000
C4*	Striped Crosswalk on 99W at 7th Street		$5,000 (ODOT) †	$5,000
C5*	Hwy 99W/9th Crosswalk		$5,000 (ODOT) †	$5,000
C6*	Striped Crosswalk on 99W at 11th Street		$5,000 (ODOT) †	$5,000
W2*	1st Street Sidewalk Infill between Dogwood and Birch of 99W	$120,000		$120,000
W3*	5th Street Sidewalk Infill from 99W to Dogwood Street	$235,000	$235,000 (Dev)	$470,000
W6*	9th Street Sidewalks	$982,500	$327,500 (Dev)	$1,310,000
W7*	Alder Street Sidewalks between 9th and 11th Street	$425,000		$425,000
W8*	Edwards Drive Sidewalks from 6th to 2nd	$505,000		$505,000
W9*	SE 5th Street Sidewalk infill between Maple Street and Edwards Drive		$75,000 (Dev)	$75,000
W10*	Edwards Street Sidewalks from 8th to Parks	$190,000	$190,000 (Dev)	$380,000
W13*	Niederberger Road Sidewalks	$205,000		$205,000
B5/B6*	SE 5th Street Bike Lanes or Shared Roadway	$5,000		$5,000
B8*	10th Street Shared Roadway	$5,000		$5,000
B9/B10*	Alder Street Bike Lanes or Shared Roadway	$15,000		$15,000
B12*	8th Street Bike Lanes	$3,333	$6,667 (Dev)	$10,000
B15*	11th Street Shared Roadway	$5,000		$5000
B18*	Edwards Dr Bike Lanes/Shared Roadway	$5,000		$5000
B21*	3rd Street Shared Roadway	$5,000		$5000
B22*	6th Street Shared Roadway	$5,000		$5000
S1*	6th Street Trail Ext to Riverside		$191,250 (Dev) $63,750 (ODOT) †	$255,000
S4*	8th Street Conversion to Off-street Path	$97,500	$97,500 (Dev)	$195,000

Project No.	Project	City Funds	Potential Additional Funds (source)	Total
S5*	13th Street Conversion to Off-street Path	$47,500	$47,500 (Dev)	$95,000
S7*	Bike/Ped Bypass Undercrossing at 10th Street	$265,000	$265,000 (ODOT)†	$530,000
S9*	SUP Connection to Subdivision		$110,000 (Dev)	$110,000
S10*	3rd Street SUP Connection to Upland Drive	$155,000		$155,000
S11*	7th to 5th Connection to School		$145,000 (Dev)	$145,000
S12*	Viewcrest to Parking Lot SUP Connection	$65,000		$65,000
S13	11th St SUP Connection to Fulquartz	$118,750	$356,250 (Dev)	$475,000
R1	Parks Road RR Crossing Gates	$100,000	$100,000 (Dev) $100,000 (ODOT) †	$300,000
T6	Transit Service to Riverside		$70,000 (Dev)	$70,000
T7	Transit Loop Service	$45,000	$45,000 (YCTA)	$90,000
P1	8th Street Parking	$375,000	$375,000 (Dev)	$750,000
	Total	**$8,214,000**	**$9,796,000**	**$18,010,000**

*Walking and biking project

† ODOT has not committed any future funding for these projects as of the writing of the TSP. The City will need to successfully compete for ODOT funding through one or more of the programs that make up the State Transportation Improvement Program (STIP).

The Aspirational Plan

The projects outlined within the Likely Funded and Possibly Funded Plans will significantly improve Dundee's transportation system. If the City is able to implement a majority of the Likely Funded and Possibly Funded plans, nearly two decades from now Dundee residents will have access to a safer, more balanced multimodal transportation network.

The Aspirational Plan identifies those transportation solutions that are not reasonably expected to be funded by 2035, but will remain very important to the transportation system and have City support if funding does become available.

The Aspirational Plan includes approximately $14 million worth of investments. Planning level cost estimates can be found in Table 6. Transportation solutions within the Aspirational Plan were divided into several different priority/time horizons:

- Long-term Phase 1: Projects with the highest priority for implementation beyond the projects included in the Likely Funded and Possibly Funded Plans should additional funding become available.
- Long-term Phase 2: Projects with the highest priority for implementation beyond the projects included in the Likely Funded, Possibly Funded, and Long-term Phase 1 Plans should additional funding become available.
- Long-term Phase 3: The last phase of projects to be implemented, should additional funding become available.

Table 6: Aspirational Projects

Project No.	Project	Project Cost	Phase
D1	7th St extension to Alder St	$165,000	Phase 1
D2	New street from 3rd St to 5th St	$345,000	Phase 3
D3	Maple St extension from 8th St to 7th St	$430,000	Phase 2
D4	13th St - new street from Alder St to Hwy 99W	$445,000	Phase 2
D8	Edwards Rd reconstruction between 2nd St and 5th St	$815,000*	Phase 2
D10	8th St reconstruction between railroad and Edwards Rd	$1,485,000	Phase 3
D12	New street from 5th St to 7th St	$1,245,000	Phase 3
D14	Improvement of Edwards to collector standards (8th-Parks)	$990,000*	Phase 1
D15	Improvement of Parks to collector standards (99W to Edwards)	$2,390,000	Phase 2
D16	5th St to 7th St Connection	$295,000	Phase 3
D17	Niederberger/Parks Safety Improvements	$760,000	Phase 1
D18	Maple St reconstruction	$820,000	Phase 1
W1	1st St - sidewalks between Hwy 99W and Ione St	$15,000	Phase 1
W4	Dogwood Dr - sidewalk infill	$865,000	Phase 2
W5	Upland Dr Sidewalk infill	$120,000	Phase 1
W12	Parks Rd Sidewalks	$1,130,000	Phase 2
B1	Bike lanes from Alder to 99W	$10,000	Phase 2
B11	1st Street shared roadway from Highway	$5,000	Phase 3
B13	7th Street shared roadway	$5,000	Phase 3
B14	Locust Street shared roadway	$5,000	Phase 3
B16	Redhills Drive shared roadway	$10,000	Phase 3
B17	Dogwood Drive shared roadway	$5,000	Phase 2
B19	1st Street shared roadway from Brier Pl to Walnut St	$5,000	Phase 3
B20	Brier Place shared roadway	$5,000	Phase 3
S6	Trail connection between Viewmont and Fox Farm Road	$350,000	Phase 2
S8	1st St SUP Connection	$220,000	Phase 3
S14	T Connection from Walnut to Viewmont and Red Hills	$660,000	Phase 3
S15	Viewmont SUP connection between Laurel and cemetery	$325,000	Phase 2
P2	10th Street Parking Capacity	$825,000	Phase 3

*Cost shown without sidewalks. Sidewalk construction costs accounted for in W8 and W10 in possibly funded plan.

Outside Funded Projects

The City of Dundee expresses support for several projects that will help improve the transportation system in Dundee, but are located outside of Dundee City Limits, or are under the jurisdiction of other agencies.

Walking and Biking

The City of Dundee supports the construction of a shared-use path connection along the Edwards Street alignment between 3rd Street and Dayton Avenue/Hagey Road. The City also supports the addition of bicycle facilities on 9th Street/Worden Hill Road outside of City Limits. Both of these facilities are under the jurisdiction of Yamhill County.

Motor Vehicle System

The City will coordinate with ODOT and Yamhill County to monitor operations at the Highway 99W/Fox Farm Road intersection, as safety and operations here are an ongoing priority concern. The City and ODOT are currently working on a project at Highway 99W and 1st Street that is expected to have some positive benefit on the Fox Farm Road intersection. Also, because this is near the site of a planned (although not reasonably likely by 2035) future Bypass interchange (connection to 99W), no significant investments are being planned for the intersection.

Newberg-Dundee Bypass

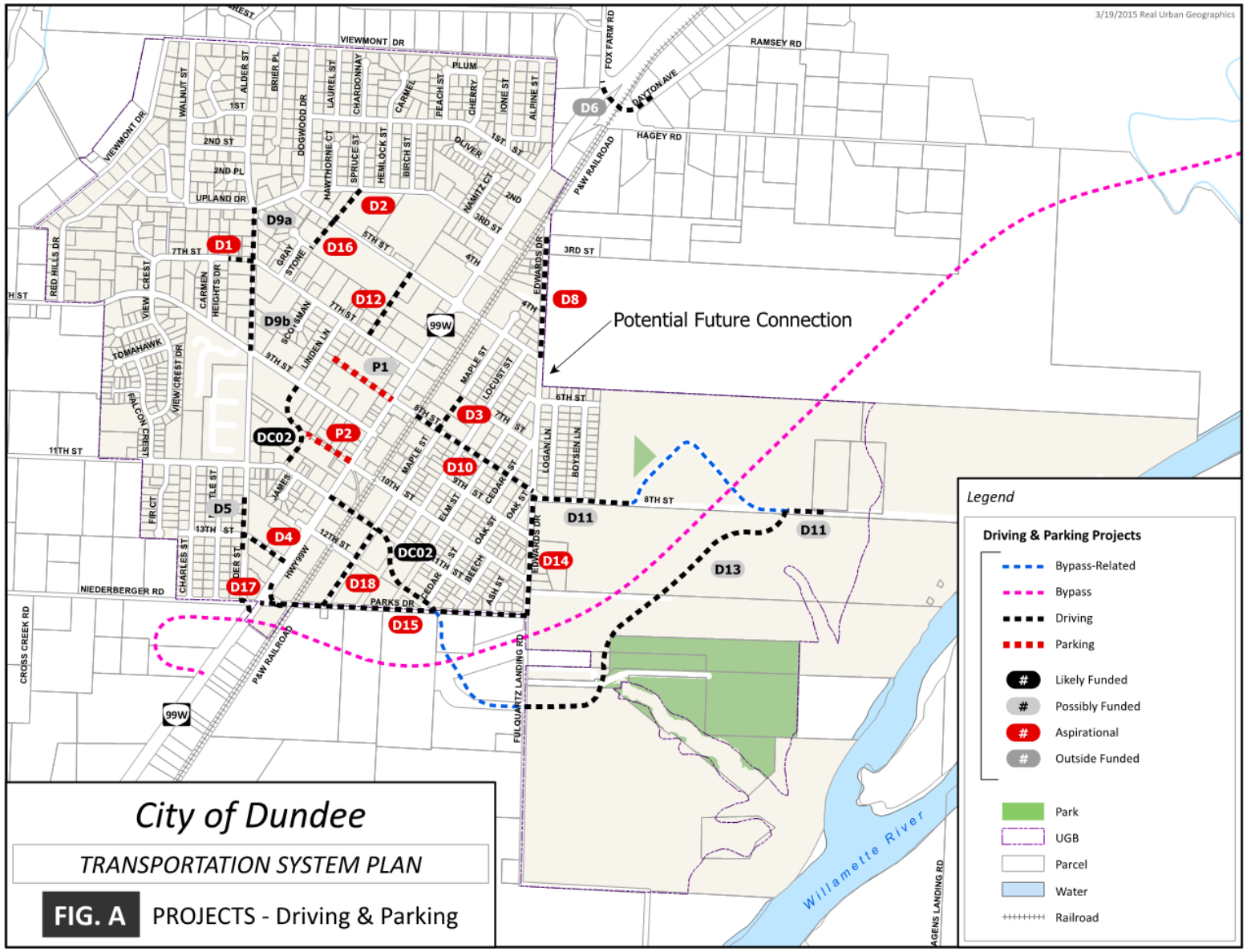
The City continues to support full implementation of the Newberg Dundee Bypass, as funding allows, in accordance with the approved Tier 2 Design-Level Environmental Impact Statement. The additional cost to implement the full Bypass beyond the currently funded Phase One is well over $500 million. The magnitude of remaining cost associated with this project is well beyond the scope of this TSP.

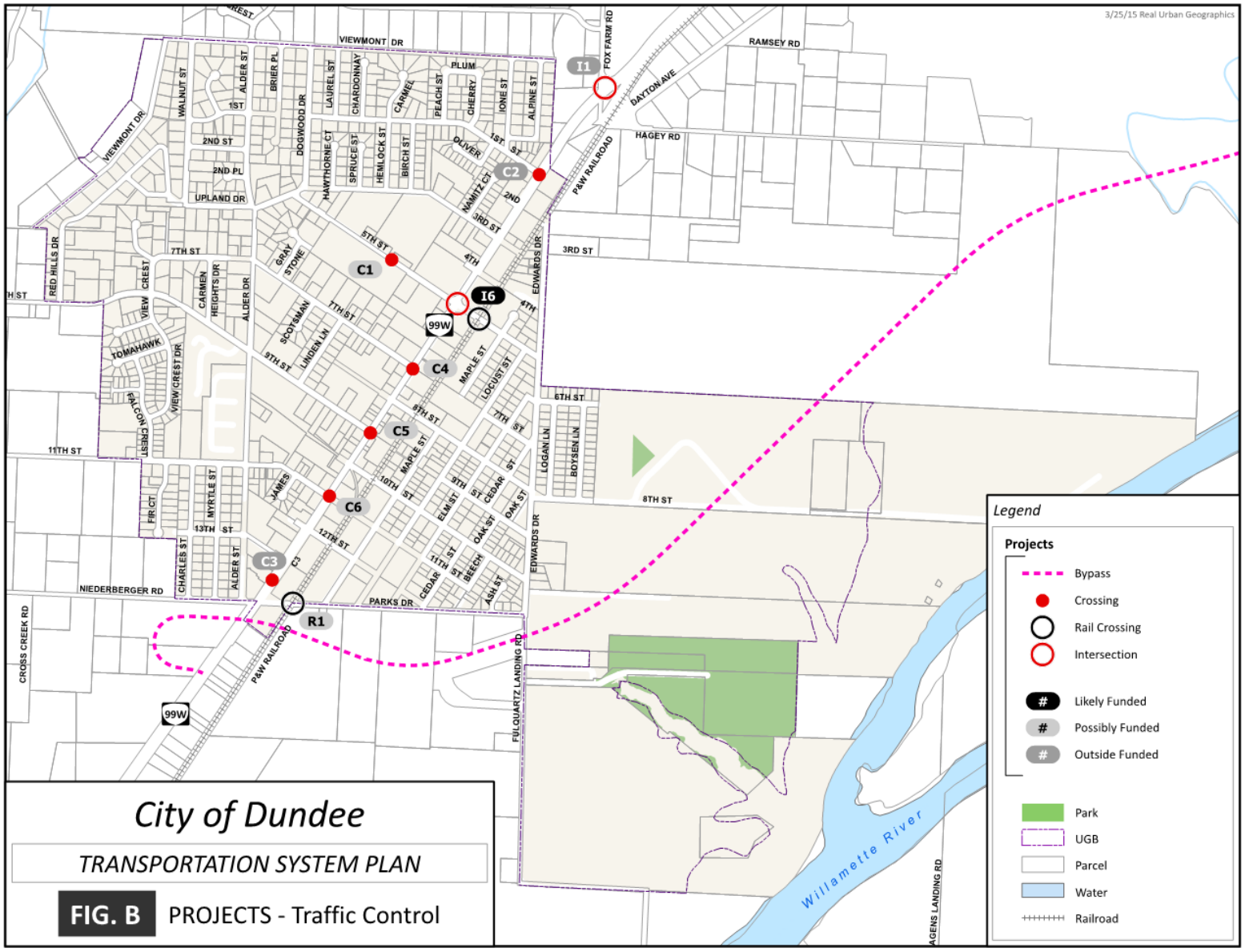
While also supporting its full implementation, ODOT cannot, at this time, regard construction of any additional phases of the Bypass as reasonably likely during the 20 + year planning horizon. Consequently, all transportation system performance assumptions in this TSP are predicated on the expectation that only Phase One of the Bypass will be constructed by the end of the 20 + year planning horizon.

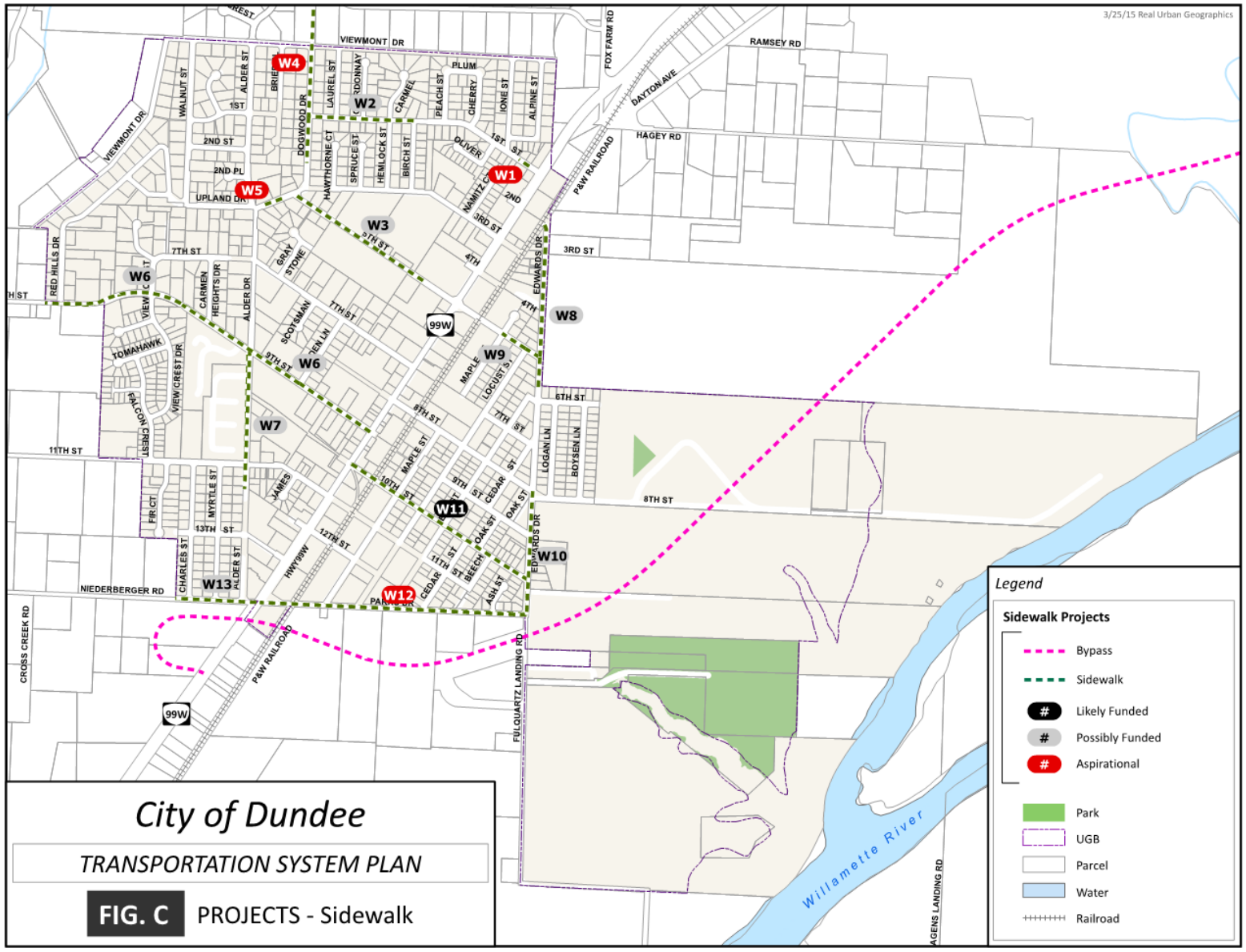
Mapping the Projects

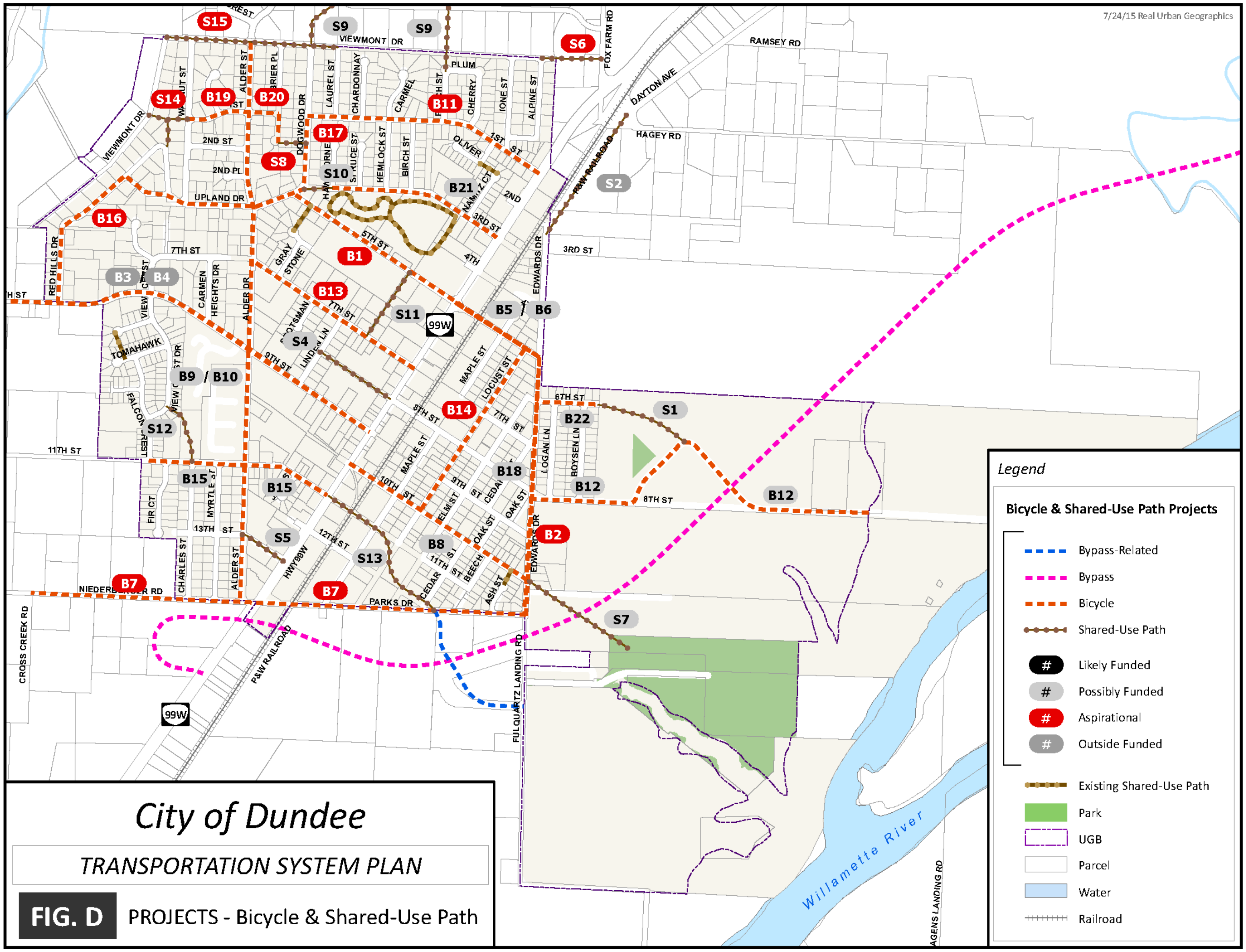
The proposed solutions are mapped in Figures A through D. The project numbers are denoted as follows:

- Driving (“D”)
- Walking (“W”)
- Biking (“B”)
- Shared-Use Path (“S”)
- Crossing (“C”)
- Rail (“R”)
- Intersection (“I”)
- Transit (“T”)


3/19/2015 Real Urban Geographics
Potential Future Connection
D1
D2
D3
D4
D5
D6
D8
D9a
D9b
D10
D11
D12
D13
D14
D15
D16
D17
D18
DC02
P1
P2
99W
Legend
Driving & Parking Projects
Bypass-Related
Bypass
Driving
Parking
Likely Funded
Possibly Funded
Aspirational
Outside Funded
Park
UGB
Parcel
Water
Railroad
Willamette River
City of Dundee
TRANSPORTATION SYSTEM PLAN
FIG. A PROJECTS - Driving & Parking


3/25/15 Real Urban Geographics
City of Dundee
TRANSPORTATION SYSTEM PLAN
FIG. B PROJECTS - Traffic Control
Legend
Projects
Bypass
Crossing
Rail Crossing
Intersection
Likely Funded
Possibly Funded
Outside Funded
Park
UGB
Parcel
Water
Railroad
I1
I6
C1
C2
C3
C4
C5
C6
R1
99W
VIEWMONT DR
RAMSEY RD
DAYTON AVE
HAGEY RD
FOX FARM RD
P&W RAILROAD
NIEDERBERGER RD
PARKS DR
CROSS CREEK RD
FULQUARTZ LANDING RD
EDWARDS DR
Willamette River


3/25/15 Real Urban Geographics
City of Dundee
TRANSPORTATION SYSTEM PLAN
FIG. C PROJECTS - Sidewalk
Legend
Sidewalk Projects
Bypass
Sidewalk
Likely Funded
Possibly Funded
Aspirational
Park
UGB
Parcel
Water
Railroad
W1
W2
W3
W4
W5
W6
W7
W8
W9
W10
W11
W12
W13
99W
VIEWMONT DR
RAMSEY RD
HAGEY RD
DAYTON AVE
FOX FARM RD
P&W RAILROAD
NIEDERBERGER RD
CROSS CREEK RD
FULQUARTZ LANDING RD
Willamette River


7/24/15 Real Urban Geographics
City of Dundee
TRANSPORTATION SYSTEM PLAN
FIG. D
PROJECTS - Bicycle & Shared-Use Path
Legend
Bicycle & Shared-Use Path Projects
Bypass-Related
Bypass
Bicycle
Shared-Use Path
Likely Funded
Possibly Funded
Aspirational
Outside Funded
Existing Shared-Use Path
Park
UGB
Parcel
Water
Railroad
Willamette River
S1
S2
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
B1
B2
B3
B4
B5
B6
B7
B8
B9 / B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
B20
B21
B22
99W
VIEWMONT DR
PLUM
RAMSEY RD
DAYTON AVE
HAGEY RD
FOX FARM RD
P&W RAILROAD
3RD ST
7TH ST
11TH ST
13TH ST
UPLAND DR
2ND ST
2ND PL
ALDER ST
ALDER DR
CARMEN
HEIGHTS DR
RED HILLS DR
TOMAHAWK
CHARLES ST
MYRTLE ST
FIR CT
NIEDERBERGER RD
PARKS DR
HWY99W
CROSS CREEK RD
FULQUARTZ LANDING RD
EDWARDS DR
LOGAN LN
BOYSEN LN
6TH ST
8TH ST
MAPLE ST
LOCUST ST
CEDAR
BEECH
ASH ST
OAK ST
ELM ST
HEMLOCK ST
BIRCH ST
LAUREL ST
CHARDONNAY
CARMEL
CHERRY
IONE ST
ALPINE ST
DOGWOOD DR
BRIER PL
OLIVER
GRAY STONE
LINDEN LN

The Outcome

How will this TSP's investment decisions, estimated at a total of $36.7 million, improve the performance of Dundee's transportation system? To answer this question, the Plan's investment decisions were evaluated against the future needs to identify long-term trends through 2035.

The Improved Transportation System

After reviewing the expected growth throughout Dundee and considering system gaps and deficiencies, locations needing improvement were identified to meet the expected travel demand. Through 2035, the following trends will be expected:

- **Improved motor vehicle intersection operations.** The system is expected to accommodate the expected travel demand through 2035.
- **Safer streets.** By adding turn lanes, improving intersection geometrics and traffic control, and managing travel speeds, streets will be safer.
- **More sidewalks and bike lanes.** More facilities means more residents and visitors will be able to walk and bike to destinations in Dundee.
- **Safer street crossings.** Investments in enhanced street crossings will reduce barriers for people walking and biking.

The Planning Horizon and Beyond

In addition to the investment decisions in this TSP, further issues will need to be explored through 2035 and beyond.

Geologic Hazards

All proposed new streets or street extensions included in the TSP are shown with conceptual alignments. These alignments represent a planning level illustration of the street connectivity enhancements that are needed in these areas. Before construction of any of the projects can begin, more detailed surveys will need to be undertaken to identify hydrologic, topographic, or other geologic constraints that could hinder the alignment of the planned streets. Final street alignments will be identified after these surveys have been completed.