City of West Linn
22500 Salamo Road #600
West Linn Oregon 97068

STAFF REPORT
FOR THE PLANNING COMMISSION

FILE NUMBER: PLN-11-01

HEARING DATE: October 16, 2013

REQUEST: Recommend adoption of "West Linn Trails Plan: A 50-year Vision for the Future" and associated amendments to West Linn Comprehensive Plan

APPROVAL CRITERIA: Community Development Code Section 98.100

STAFF REPORT PREPARED BY: Ken Worcester, Parks Director and Zach Pelz, Associate Planner

EXECUTIVE SUMMARY

The October 16, 2013, public hearing regarding this proposal is a continuation of a public hearing which began June 15, 2011, and which received considerable opposition from participants at the public hearings. At the request of West Linn staff, adoption of the Plan was suspended in 2011, to facilitate additional discussion with residents and opponents in an effort to resolve concerns raised throughout the initial hearing phase.

As the City of West Linn nears completion of its vision for parks and open space facilities, the West Linn Parks and Recreation Department is preparing to implement the next phase of the parks and recreation strategy; focusing heavily on the development of a citywide network of pedestrian and bicycle trails.

In 2009, at the direction of the City Council, the West Linn Parks and Recreation Department set out to develop a formal plan for identifying and prioritizing trails throughout the City. The 2013 West Linn Trails Plan: A 50-year Vision for the Future is the culmination of this effort. It is proposed for adoption as a supporting plan to the West Linn Comprehensive Plan. In addition, related amendments to the Comprehensive Plan are proposed to facilitate implementation of the Trails Plan. The Trails Plan identifies routes that connect neighborhoods with parks, open space, important community destinations

and other important destinations throughout the area. It also sets forth a method for prioritizing the design and construction of these trail facilities.

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GENERAL INFORMATION

APPLICANT: West Linn Parks and Recreation
22500 Salamo Road
West Linn, OR 97068

REPRESENTATIVE: Ken Worcester
Parks and Recreation Director
22500 Salamo Road
West Linn, OR 97068

SITE LOCATION: City-wide

LEGAL DESCRIPTION: N/A

SITE SIZE: City-wide

ZONING: All

COMP PLAN DESIGNATION: All

120-DAY PERIOD: N/A

PUBLIC NOTICE: Notice was provided to the State Department of Land Conservation and Development on April 29, 2011 and to other affected government agencies on May 26, 2011. Public notice was published in the West Linn Tidings on October 3, 2013. The notice requirements have been satisfied.

BACKGROUND

Prior Approvals. The West Linn City Council has approved Parks, Recreation and Open Space Plans since the mid-1970s that discuss the need for a well developed system of trails throughout the City.

Project Description. The Trails Plan refines recommendations from the 2007 Plan and proposes new alignments and design typologies based on changing regulatory circumstances and public desires. Amendments to the West Linn Comprehensive Plan include references to the Trails Plan to support future regulatory updates to the City's Community Development Code, Transportation System Plan and Public Works Standards.

Public comments. Public comment collected during plan development is documented in Appendix C of the Trails Plan, the June 30, 2011 memo from Zach Pelz to the Planning Commission regarding additional public testimony and in Appendix D (notes from July 23, 2013 Trails Master Plan open house). Public testimony following the June 15, 2011, public hearing is compiled in Exhibit PC-1.

Comments from outside agencies. The Oregon Department of Transportation submitted a letter in support of the Trails Plan on June 15, 2011. This letter is included in the public testimony packet from the June 2011 round of hearings on this project and can be accessed at http://westlinnoregon.gov/planning/comprehensive-trails-master-plan.

ANALYSIS

The Trails Plan serves as a guide for future decision-making regarding the location, design and relative priority of new trails in West Linn. The Plan advances parks planning efforts beginning in the mid-1970s and refines many of the previously approved recommendations through substantial public outreach. The Plan satisfies the guidance established in State Planning Goal 8: Parks and Recreation, and Goal 12: Transportation, and directly addresses policies and action measures in the Comprehensive Plan regarding these topic areas. The Trails Plan is also directly in-line with Comprehensive Plan policies from Goals 5, 13, and 15.

Proposed amendments to Goals 8, 12 and 15 of the Comprehensive Plan are contained in Exhibit PC-3.

RECOMMENDATION

Staff recommends that the Planning Commission recommend to the City Council that they adopt the 2013 West Linn Trails Plan: A 50-year Vision for the Future, and associated Comprehensive Plan amendments.

APPLICABLE REGULATIONS AND ASSOCIATED SUPPLEMENTAL FINDINGS

APPROVAL CRITERIA

CHAPTER 98, PROCEDURES FOR DECISION-MAKING: LEGISLATIVE

98.100 STANDARDS FOR DECISION

A. The recommendation of the Planning Commission and the decision by the City Council shall be based on consideration of the following factors:

1. The Statewide planning goals and rules adopted under Chapter 197 ORS and other applicable State statutes;

2. Any federal or State statutes or rules found applicable; and

3. Applicable plans and rules adopted by the Metropolitan Service District.

4. The applicable Comprehensive Plan policies and map; and

5. The applicable provisions of the implementing ordinances.

B. Consideration may also be given to:

1. A mistake or inconsistency in the Comprehensive Plan or implementing ordinance as it relates to the property which is the subject of the proposal; and

2. Factual oral testimony or written statements from the parties, other persons and other governmental agencies relevant to the existing conditions or factors in subsection A or (B)(1) of this section. (Ord. 1226, 1988; Ord. 1474, 2001)

Applicable standards from CDC Section 98.100 are addressed in the four findings that follow.

FINDING NO. 1

Trails for pedestrians, bicyclists, and other non-motorized users serve dual functions as recreation and transportation facilities and therefore, amendments to local comprehensive plans regarding trail development are subject to the planning and implementation guidance established in State Planning Goals 8 and 12, which pertain to parks and recreation, and transportation, respectively.

State Land Use Planning Goal 8 – Parks and Recreation. Goal 8 – Parks and Recreation, obligates cities to inventory recreation needs based upon adequate research and public desires. The analytical foundation of the Trails Plan is based on a thorough analysis of the City's existing trails inventory (see Chapter 3 of proposed Trails Plan) as identified during public outreach and as contained in the City's trails system geographic database.

A key finding during the development of the 2007 Parks, Recreation and Open Space Plan (PROS Plan) was the continued desire for more and better connected trails throughout West Linn. During the current planning effort, Parks Department staff, in coordination with their consultant, conducted extensive public outreach (outlined in Chapter 2 and documented in Appendix C of the proposed Trails Plan) at public workshops, through interactive on-line surveys, and through ongoing discussions with the Trails Plan Technical Working Group (TWG) and Parks and Recreation Advisory Board to identify desired trail locations.

Statewide Goal 8 also requires coordinated recreational planning with regional and state agencies. The TWG was comprised of members representing the Oregon Department of Transportation (ODOT), the United States Forest Service (USFS), Oregon Anglers Association, the West Linn Utility Advisory Board (UAB), West Linn Planning Commission, West Linn Transportation Advisory Board (TAB), West Linn Parks Advisory Board (PAB), West Linn Sustainability Advisory Board (SAB) and staff from the City's Planning and Parks and Recreation departments.

In addition to broad community and agency input, the Plan recommendations were developed in consideration of State Planning Goal 5 – Open Space; the Metro 2040 Regional Framework Plan; the Metro 2004 Regional Transportation Plan; the Clackamas County Comprehensive Plan; the West Linn Comprehensive Plan and Imagine West Linn Vision; the 2007 West Linn PROS Plan; the City of West Linn Transportation System Plan and OR 43 Concept Plan; and eight individual neighborhood plans (see Appendix B).

Under Goal 8, the formulation of recreation plans must take into account their energy consequences and must strive to prioritize non-motorized types of recreational activities. Goal 8 further suggests that recreation facilities prioritize facilities that conserve energy both in the transportation of persons to the facility and in the recreational use itself.

The Trails Plan analysis revealed significant public support for improved pedestrian, bicycle and other non-motorized modes within existing City-owned rights-of-way. Nearly 73 percent (44.6 of 61.9 total new route miles) of the proposed routes in the Trails Plan exist along City streets or within the public right-of-way. Improved safety, access and convenience along these in-right-of-way routes will encourage the use of pedestrian, bicycle and other non-motorized modes not only for recreation but for many transportation-related trips as well. Increasing the share of non-motorized trips will result in reduced vehicle miles traveled, reduced fossil fuel consumption and lower greenhouse gas emissions.

Statewide Goal 8 also places a high priority on enhancing recreation opportunities on public water and along shorelands of the state. Since the mid-1970s, West Linn's Parks and Recreation Plans have identified trails along the City's frontage with the Willamette and Tualatin Rivers as important community access opportunities. These same plans have designated trails along the Willamette and Tualatin Rivers as regionally significant river access that provide important connections throughout the City.

Finally, Statewide Goal 8 suggests that plans for parks and recreation facilities provide for implementation techniques, such as easements, cluster development, preferential assessments, acquisition of development rights, and dedication, in addition to fee

acquisition, as appropriate to meet recreation requirements. The Trails Plan recommends implementing proposed trail segments through easements, and other similar vehicles for property acquisition, by requiring conformance with the Trails Plan during new and redevelopment review (West Linn Trails Plan, p.42).

State Land Use Planning Goal 12 – Transportation. State Land Use Goal 12 – Transportation, focuses on providing transportation systems which consider all travel modes, avoid principal reliance on one mode, conserve energy, meet the needs of the transportation disadvantaged, maximize the efficiency of existing facilities, and conform with local and regional comprehensive plans.

As proposed, the Trails Plan recommends more than 44 miles of new trail segments along existing streets or within public rights-of-way. Once constructed, these new non-motorized facilities will provide safe, accessible and convenient alternatives to vehicle trips for travel between residential neighborhoods, commercial and employment areas, parks and other recreation facilities and will therefore alleviate strain on the City's roadway network, reduce greenhouse gas emissions, and improve health and safety for the City's residents. A map of proposed trail routes is included in Chapter 4 (p.39) of the proposed Trails Plan in Exhibit PC-4. The criteria are met.

FINDING NO. 2

State and Federal statues and Metropolitan Service District rules beyond those being addressed in the Statewide Planning Goals do not apply to the City's proposal to adopt the Trails Plan and associated Comprehensive Plan amendments.

FINDING NO. 3

The West Linn Comprehensive Plan includes numerous policies that are relevant to the development and implementation of the Trails Plan. A discussion of these policies and their relevance to the proposed Trails Plan is included below:

Comprehensive Plan Goal 5 establishes policies and action measures which ensure the protection and preservation of important open spaces, scenic and historic areas and natural resources. Relevant Goal 5 policies include;

- *Coordinate with the state and county to establish scenic routes through West Linn; publicize route with directional markers, and advocate other promotional measures;*
- *Explore opportunities to acquire scenic vistas and preserve them for public use;*
- *Control activities and uses in [open space, habitat, and ecological/scientific areas] to maintain ecological values, while providing for compatible recreational and educational activities;*
- *Preserve natural resource areas through public acquisition and other methods such as conservation easements;*

- *Where practical, obtain dedication of wetlands and riparian areas to the City to assure protection and maintenance and to preserve locations for public facilities;*
- *Work with other jurisdictions to coordinate efforts related to river planning;*
- *Work with federal, state, and county agencies to establish nature trails and educational markers in significant natural areas.*

The Trails Plan recommends 61.9 miles of new trails in West Linn connecting parks and open space with residential neighborhoods, commercial areas and important community destinations. Through fee acquisition, dedication, easements and similar methods of property acquisition, the Trails Plan recommends establishing a City-wide trails network that preserves scenic vistas and open space for public use, maintains ecological values, and that promotes outdoor education. A well connected system of trails can ensure the protection of West Linn's significant natural areas and vistas by limiting development in these areas and by providing alternatives to higher impact modes of travel.

Comprehensive Plan Goal 8 expresses the City's commitment to a well developed system of parks and open spaces and emphasizes a need and public desire for a City-wide network of trails connecting parks and open space with important community destinations:

- *Provide all citizens with a range of recreational activities;*
- *Promote connections between parks and recreation areas throughout the City;*
- *Require land divisions and major developments to set aside or dedicate land based on standards that provide a link between existing public-owned parks or open space areas and/or rights-of-way;*
- *Provide a range of active/passive and structured/non-structured recreation experiences;*
- *Continue an aggressive program for acquisition and development of a park and open space system to provide an adequate supply of usable open space and recreational facilities, directly related to the specific needs of the local residents, based on the park classification systems and standards in the Park Plan;*
- *Create a comprehensive, City-wide pathway system that provides a variety of trail experiences and connects existing and future recreational facilities. When necessary, dedicate a portion of the pedestrian network, as outlined in the West Linn Transportation System Plan for recreational facilities where they form a vital link in the City's trail system, excepting greenway and other trails in the Parks, Recreation and Open Space Plan;*
- *Develop a plan for providing informative signs for the City's parks and trail system, including park accessways.*

The Trails Plan directly advances the policy to create a comprehensive, City-wide pathway system that promotes a variety of experiences and connections between recreational facilities. Consistent with this Goal, the Plan also suggests a means to preserve land for the provision of connections between community destinations. A City-wide system of trails will complement existing parks and open spaces and will broaden the range of recreational opportunities available to the public. Finally, the Trails Plan includes recommendations for trail design emphasizing the importance of education and awareness, such as trail signage and way-finding, to help users navigate confusing intersections or road crossings.

Comprehensive Plan Goal 12 policies indicate a need for a well-balanced transportation system capable of encouraging multiple modes of transportation and reducing the reliance on private automobiles. The full list of Goal 12 policies relevant to the Trails Plan is included below:

- *Provide a transportation system for the City of West Linn that:*
  - *Provides maximum mobility while encouraging modes of transportation other than the automobile,*
  - *Provides for connectivity within and between neighborhoods, developments and community centers, using new and existing transportation services,*
  - *Is safe, convenient and efficient;*
- *Provide a cost-effective balanced transportation system, incorporating all modes of transportation (including motor vehicle, bicycle, pedestrian, transit, and other modes);*
- *Develop transportation facilities that are accessible to all members of the community and minimize out of direction travel;*
- *Promote a comprehensive cohesive network of bicycle paths, lanes and routes that accomplishes the following:*
  - *Connects the four commercial centers in Willamette, Bolton, Robinwood, and Tanner Basin,*
  - *Integrates with regional bicycle routes that traverse West Linn,*
  - *Provides connections to schools, recreational facilities, community centers and transit facilities,*
- *Design new streets and retrofit older streets to enhance safety for cyclists using the roadways;*
- *Develop an education and communication program to promote use of bicycles for transportation purposes in West Linn;*
- *Adopt a bikeways network master plan and update as needed to reflect new or revised routes, connections, destinations and activity centers;*
- *Coordinate with Clackamas County, ODOT, TriMET, Metro and other jurisdictions and agencies to ensure that appropriate local and regional bikeway connections, for both on- and off-road bikeways, are planned, constructed and maintained;*
- *Use off-street pedestrian short-cut pathways to provide routes where physical constraints or existing development preclude the construction of streets with sidewalks;*
- *Eliminate gaps in the existing walkway network and provide pedestrian linkages between neighborhoods;*
- *Employ a variety of methods to promote safe and convenient pedestrian access in addition to, or instead of, sidewalks in older developed areas of West Linn without sidewalks;*
- *Where parks and recreation trails are coterminous with sidewalks, their design shall be enhanced to serve both transportation and recreational purposes.*

As proposed, upon final build-out the West Linn Trails System will include more than 87 miles of non-motorized routes in West Linn connecting homes with businesses, jobs and recreational opportunities. During the Plan's development, the public recommended that more than 70 percent of the newly proposed routes occur along existing public streets or in public rights-of-way. By encouraging travel through non-motorized means, these new routes directly implement the City's transportation policies and provide more direct, economical, safer, more healthy and more sustainable alternatives to private automobiles.

The Plan analysis was developed in light of policies and projects from the West Linn TSP and contains individual cross-sections which reflect the unique function of trails facilities in public rights-of-way that serve both recreation and transportation purposes. By including a recreation-oriented perspective in the evaluation of its transportation network, the City will ensure that: existing facilities are being utilized to their maximum potential; routes are direct and eliminate gaps; and, are accessible to all members of the community.

Comprehensive Plan Goal 13 includes priorities for reducing the City's impact on the environment, specifically as it regards the use of energy. Goal 13, Policy Number 7, pertains to reducing energy consumption from the transportation sector:

- *Encourage the construction and maintenance of sidewalks and bike paths/ways to promote alternative modes of transportation.*

Providing safe, convenient and direct pedestrian and bicycle routes encourages the use of these and other non-motorized modes for frequent short trips between residences and important community destinations. Increasing the share of non-motorized trips will reduce total vehicle miles traveled by West Linn residents and will therefore reduce consumption of fossil fuels and lower the City's output of greenhouse gas emissions.

Comprehensive Plan Goal 15 policies include direction for ensuring the preservation of public access along the Willamette River:

- *Continue to improve public access and recreation opportunities along the Willamette River Greenway;*
- *Promote the creation of a Willamette River Greenway trail paralleling the river through West Linn;*
- *Maintain a Willamette River Greenway zone as defined by the LCDC adopted Willamette River Greenway boundary to include the water area and islands, and adhere to the setback line designated within the zone;*
- *Inform the public through appropriate means that the state of Oregon and the City of West Linn Greenway program does not authorize the public use of private property within the Greenway boundary;*
- *Ensure that properties identified for public acquisition have the potential to serve the purposes of the Greenway, are suitable for permitting the enforcement of existing statutes relating to trespass and vandalism along the Greenway, and are suitable for allowing maintenance of the lands or interests acquired;*
- *Require a conditional use permit for any intensification of uses, changes in use, or developments within the Willamette River Greenway boundary except as otherwise provided by the Willamette River Greenway Zone, subject to the following:*
    - *Where feasible, provide the maximum landscaped area, open space, or vegetation between the activity and the river;*
    - *Where feasible, provide access to and along the river by appropriate legal means*
- *Apply the following criteria where recreational uses are proposed:*
    - *That local, regional, and state recreational needs are consistent with the carrying capacity of the land;*

    - *That public recreation uses are buffered to the greatest extent practicable to minimize disturbances and to prohibit trespassing onto adjacent private lands*
- *Require adequate public access to the river as part of the development of public land*
- *Preserve identified scenic qualities and views*
- *Protect the natural vegetative fringe along the river*
- *Undertake efforts to make existing points of public access more accessible and usable through signing and maintenance*
- *Consider acquisition of properties or easement that would enhance the Willamette River Greenway within the City consistent with the West Linn Park, Recreation, and Open Space Plan, 1998, which is a supporting document of the Comprehensive Plan.*

Since the mid-1970s the community has indicated its desire for trails and multi-use pathways along the Willamette River; support for these trails continued into the current planning effort. The 2011 Trails Plan recommends a primary route along the Willamette River intended to provide a continuous connection throughout the City and to the greater region.

This proposed trail directly implements the Goal 15 policies above while respecting the rights of existing property owners along the river. The Plan recommends that during new or redevelopment of property along the Willamette River, the City request easements, dedication or similar means of property acquisition to preserve the necessary rights-of-way for the future development of this facility.

West Linn Community Development Code (CDC) Chapter 28 further exhibits the City's commitment to and desire for the development of a Willamette River Greenway trail and includes the following standards for implementing Goal 15 policies:

The purposes of the Willamette and Tualatin River Protection Area are the following:

A. Protect, conserve, enhance, and maintain the natural, scenic, historical, economic, and recreational qualities of lands along the Willamette and Tualatin Rivers.
B. Implement the policies of the West Linn Comprehensive Plan and the State of Oregon's Willamette River Greenway program.
C. Establish standards and requirements for the existing and future use of lands within the Willamette and Tualatin River Protection Areas.
D. Provide for the review of any intensification of use, change of use, or development within the Willamette and Tualatin River Protection Areas.
E. Encourage local stewardship of the Willamette and Tualatin River Protection Areas.
F. Protect, preserve and expand legal public use and access to and along the shoreline and river, while recognizing and preserving private property rights.
G. Create incentives to direct development to areas where it is most appropriate.
H. Protect and enhance riparian habitat for native flora, fish, and wildlife within the Willamette and Tualatin Rivers and along their banks. (Ord. 1576, 2008)
…

Chapter 28 Approval Standards. No application for development on property within the protection area shall be approved unless the decision-making authority finds that the following standards have been met or can be met by conditions of approval. The development shall comply with the following criteria as applicable:

F. Access and property rights.

5. Legal access to, and along, the riverfront in single-family residential zoned areas shall be encouraged and pursued especially when there are reasonable expectations that a continuous trail system can be facilitated. The City recognizes the potential need for compensation where nexus and proportionality tests are not met. Fee simple ownership by the City shall be preferred. The trail should be dimensioned and designed appropriate to the terrain it traverses and the user group(s) it can reasonably expect to attract. The City shall be responsible for signing the trail and delineating the boundary between private and public lands or access easements.

…

G. Incentives to encourage access in industrial, multi-family, mixed use, commercial, office, public and non-single-family residential zoned areas.

1. For all industrial, multi-family, mixed use, commercial, office, public and other non-single-family residential zones, this section encourages the dedication or establishment of access easements to allow legal public access to, and along, the river. Support for access may be found in the Parks Master Plan, a neighborhood plan or any applicable adopted sub-area plans. The emphasis will be upon locating paths where there is a reasonable expectation that the path can be extended to adjacent properties to form a connective trail system in the future, and/or where the trail will provide opportunities for appreciation of, and access to, the river.

…

H. Partitions, subdivisions and incentives.

4. Incentives are available to encourage provision of public access to, and/or along, the river. By these means, planned unit developments shall be able to satisfy the shared outdoor recreation area requirements of CDC 55.100(F). Specifically, for every square foot of riverfront path, the applicant will receive credit for two square feet in calculating the required shared outdoor recreation area square footage. Applicants shall also be eligible for a density bonus under CDC 24.150(B). To be eligible to receive either of these incentives, applicants shall:

a. Provide a minimum 20-foot-wide all-weather public access path along the project's entire river frontage (reduced dimensions would only be permitted in response to physical site constraints such as rock outcroppings, significant trees, etc.); and

b. Provide a minimum 10-foot-wide all-weather public access path from an existing public right-of-way to that riverfront path or connect the riverfront path to an existing riverfront path on an adjoining property that accesses a public right-of-way;

…

L. Roads, driveways, utilities, or passive use recreation facilities. Roads, driveways, utilities, public paths, or passive use recreation facilities may be built in those portions of HCAs that include wetlands, riparian areas, and water resource

areas when no other practical alternative exists but shall use water-permeable materials unless City engineering standards do not allow that. Construction to the minimum dimensional standards for roads is required. Full mitigation and revegetation is required, with the applicant to submit a mitigation plan pursuant to CDC 32.070 and a revegetation plan pursuant to CDC 32.080. The maximum disturbance width for utility corridors is as follows:

1. *For utility facility connections to utility facilities, no greater than 10 feet wide.*
2. *For upgrade of existing utility facilities, no greater than 15 feet wide.*
3. *For new underground utility facilities, no greater than 25 feet wide, and disturbance of no more than 200 linear feet of water quality resource area, or 20 percent of the total linear feet of water quality resource area, whichever is greater.*

The Comprehensive Plan and CDC make clear the community's desire for trails along the Willamette River Greenway while respecting the rights of private property owners and the sensitivity of plant and wildlife habitat in this regionally significant corridor. The route design typologies proposed in the Trails Plan provide flexibility where physical and environmental constraints warrant a non-standard approach.

The Trails Plan implements Comprehensive Plan policies through improved connections between parks, residential neighborhoods and important community destinations; improved safety for non-motorized transportation and recreation, including improved connections for school-aged children; improving the effectiveness of the City's existing transportation infrastructure; eliminating gaps in the City's transportation network; broadening the range of recreational opportunities available to West Linn residents; and, reducing the City's overall energy consumption (a map of proposed trails is included on page 39 of the proposed Trail Plan in Exhibit PC-4). The criteria are met.

FINDING NO. 4

As previously noted, Parks Department staff, in coordination with their consultant, conducted extensive public outreach (outlined in Chapter 2 and documented in Appendix C of the proposed Trails Plan) at public workshops, through interactive on-line surveys, and through ongoing discussions with the Trails Plan Technical Working Group (TWG) to identify desired trail locations.

Public testimony received following notice of the June 15 Planning Commission hearing is included in Exhibit PC-1. No additional public testimony has been provided.

EXHIBIT PC-3
PROPOSED COMPREHENSIVE PLAN AMENDMENTS

FILE NO.: **PLN-11-01**

REQUEST: **Adopt "West Linn Trails Plan: A 50-year Vision" and minor amendments to West Linn Comprehensive Plan**

GOAL 8: PARKS AND RECREATION

BACKGROUND AND FINDINGS

…

Results from a survey conducted for the 1998 Park, Recreation and Open Space Plan noted that walking, jogging, nature walks, and hiking participation were rated higher among West Linn residents than the average in the Pacific Northwest. Currently, the City has trail systems within five major parks, but no pedestrian linkages between them. ~~Creation of a City-wide pathway system has strong support from residents and continues to be a top priority for the City's Parks and Recreation Department~~The 2013 West Linn Trails Plan: A 50 Year Vision for the Future, identifies gaps in the City's existing trails network and recommends solutions to eliminate these gaps.

…

GOALS, POLICIES, AND RECOMMENDED ACTION MEASURES

POLICIES

…

2. Develop and maintain the City's park system based on the following classification system:

   linear parks and trails

   mini-parks

   neighborhood parks

   community parks

   regional parks

   special use areas

   natural areas/greenways

   landscaped areas

…

5. Provide for specialized recreation needs such as soccer fields, baseball diamonds, tennis courts, swimming pools, senior centers, and other facilities that have City-wide demand, based on the ~~1998~~ 2007 Parks, Recreation and Open Space Plan and the 2013 West Linn Trails Plan.

…

RECOMMENDED ACTION MEASURES

1. Continue an aggressive program for acquisition and development of a park and open space system to provide an adequate supply of usable open space and recreational facilities, directly related to the specific needs of the local residents, based on the park classification system and standards in the 2007 Parks, Recreation and Open Space Plan and the 2013 West Linn Trails.

…

3. Update the City's Community Development Code to ensure implementation of the 2007 Parks, Recreation and Open Space Plan and the 2013 West Linn Trails Plan, consistent with industry best practices.

4. Integrate those trail recommendations from the 2013 West Linn Trails Plan that occur within the public right-of-way or that serve primarily a transportation function, into the analysis and evaluation of pedestrian, bicycle, transit and other non-motor vehicle alternatives in the City's Transportation System Plan.

~~Create a comprehensive, City-wide pathway system that provides a variety of trail experiences and connects existing and future recreational facilities. When necessary, dedicate a portion of the pedestrian network, as outlined in the West Linn Transportation System Plan (TSP) adopted November 1998, for recreational facilities where they form a vital link in the City's trail system, excepting greenway and other trails in the Parks, Recreation and Open Space Plan. All of these plans are supporting documents of the Comprehensive Plan.~~

~~…~~

GOAL 12: TRANSPORTATION

BACKGROUND AND FINDINGS

The City of West Linn is served by two major regional transportation facilities; Interstate 205, a freeway running east-west, and State Highway 43 (Willamette Drive) running north-south. Interstate 205, when constructed, considerably altered the physical appearance of West Linn. It eliminated much of the historic center of West Linn near Willamette Falls and the Old Oregon City Bridge, and divided the Willamette neighborhood to the west from the rest of the city. I-205 currently reaches or exceeds its carrying capacity during peak commuting times, and traffic is expected to increase further, resulting in significant deterioration in service.

…

GOALS, POLICIES, AND RECOMMENDED ACTION MEASURES
GOALS

1. Provide a transportation system for the City of West Linn that:
   a. Provides for maximum mobility while encouraging modes of transportation other than the automobile.
   b. Provides for connectivity within and between neighborhoods, developments and community centers, using new and existing transportation services ~~that is~~ consistent with Metro's street and walkway spacing standards, the 2008 West Linn Transportation System Plan and the 2013 West Linn Trails Plan.
   …

GENERAL POLICIES AND ACTION MEASURES
…
ACTION MEASURES
…

BICYCLES
POLICIES
…
Provide striped and signed bicycle lanes on all arterial and collector roadways consistent with the policies of the Transportation System Plan and the 2013 West Linn Trails Plan.

ACTION MEASURES
…
Adopt a Bikeways Network Master Plan, consistent with the Transportation System Plan and 2013 West Linn Trails Plan, and update as needed, to reflect new or revised routes, connections, destinations and activity centers.

…
PEDESTRIAN POLICIES
…
Promote a comprehensive cohesive network of pedestrian paths, lanes, and routes that accomplishes the following objectives:

…

6. Implements the recommendations in the City's Transportation System Plan and 2013 West Linn Trails Plan

…

…

GOAL 15: WILLAMETTE RIVER GREENWAY

…

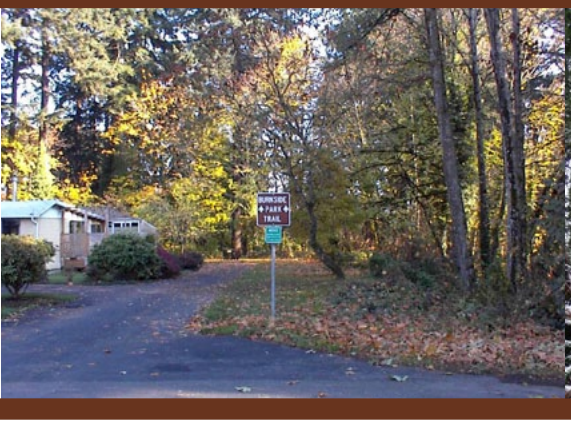
Recommended Action Measures

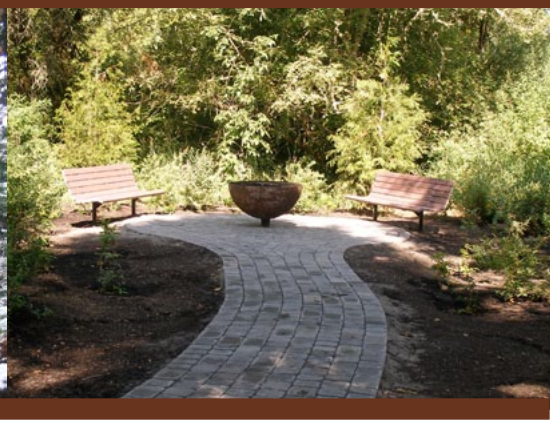
3. Consider acquisition of properties or easements that would enhance the Willamette River Greenway within the City consistent with the 2007 West Linn Parks, Recreation, and Open Space Plan~~, 1998,~~ and the 2013 West Linn Trails Plan which ~~is~~are ~~a~~ supporting documents of the Comprehensive Plan.

EXHIBIT PC-4
APPLICANT SUBMITTAL

FILE NO.: **PLN-11-01**

REQUEST: **Adopt "West Linn Trails Plan: A 50-year Vision" and minor amendments to West Linn Comprehensive Plan**





City of West Linn

2013 West Linn Trails Plan: A 50-year Vision for the Future

City of West Linn

Draft Report
October 16, 2013

City of West Linn

2013 West Linn Trails Plan: A 50-year Vision for the Future

City of West Linn
Parks and Recreation Department
22500 Salamo Road
West Linn, OR 97068
503.657.0331

acknowledgements

Special thanks are owed to the citizens and neighborhood associations of West Linn who participated in and provided feedback for the 2013 West Linn Trails Plan: A 50-year Vision for the Future, through community events, online engagement, and public meetings.

CITY OF WEST LINN PARKS & RECREATION ADVISORY BOARD PARTICIPANTS

Parris Chargois	John Linman
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The City of West Linn has envisioned a well developed network of trails since the mid-1970s. There are currently 25.6 miles of trails in West Linn, existing primarily within parks and open spaces, that provide little connectivity between neighborhoods, commercial areas and other important community destinations.

The 2013 Trails Plan proposes nearly 62 miles of new trail routes, via a combination of on- and off-street facilities, that will connect residents with important destinations in West Linn and throughout the region. Synchronizing on-street facilities with off-street facilities provides recreation and transportation benefits to the City and its residents and supports the City's efforts to maximize the effectiveness of its existing infrastructure, reduces the City's reliance on fossil fuels and lowers greenhouse gas contributions, promotes healthier transportation alternatives, improves safety for children walking and biking to school, and broadens the range of available recreation opportunities.

Public input was critical to the Plan's development. A project website kept residents informed about the Plan's status, news and events. Residents and other interested parties proposed and provided comments on individual trail segments through an interactive online forum. Community intercept events informed the public, early on, of the purpose of the project and time of project events. Public workshops and neighborhood meetings provided opportunities to gather additional input from residents throughout the City, a Technical Working Group, comprised of City Staff, representatives from the City's advisory boards and Planning Commission, and State and Federal agencies, met at key project milestones to review project status and elicit feedback.

Finally, two public hearings before the Planning Commission helped to identify three "pinch points" in the initial draft Plan. Following the initial hearings, staff, with help from members of the Parks and Recreation Advisory Board and concerned citizens, met to identify ways to resolve issues around these pinch points. The Plan reflects the work of these sub-committees to resolve citizens' concerns regarding trails along the Willamette and Tualatin Rivers and along Interstate 205.

The 2013 Trails Plan refines the trail concepts from the 2007 Parks, Recreation and Open Space Plan by establishing a system of route typologies not bound to rigid design specifications. Flexible design standards will enable the City to take advantage of land development opportunities as they arise and will ensure thoughtful and considerate approaches when addressing physical, environmental and other such constraints.

"...assure all eleven neighborhoods, schools, city parks, neighborhood centers and the Willamette Falls Center are all interconnected by safe pedestrian and bicycle pathways."

-Imagine West Linn

I. INTRODUCTION

West Linn residents are now ready to implement their vision for a city-wide trail system. Over the past three decades, residents have articulated their desires for a city-wide trail system during the development of a number of adopted parks and recreation plans.

The Trails Plan presents a set of proposals resulting from extensive public input and analysis of existing opportunities and challenges of the existing West Linn trails system. Based on citizen input, we have created a vision for our community which aligns parks and recreation, transportation and future development. The plan was developed around the priorities of safety, access and cooperation.

The West Linn Trails Plan provides a range of options for the City Planners and property owners by promoting flexibility and creativity in the design and development of trails to achieve the prioritized alignments.

The West Linn Trails Plan (Trails Plan) is the next step in advancing the policies and recommendations set forth in past planning efforts. The Trails Plan describes how to make West Linn's trail system come to fruition through actual projects and proposed alignments, based on a strong foundation of public input and planning.

PLANNING FOUNDATION

The 1998 PROS Plan refined the City's vision for a city-wide trail system initially developed in the mid-1970s. With the adoption of the 2007 PROS Plan, the City reaffirmed the desire for a city-wide trails network as an integral part of making West Linn a livable city, and as a key contributor to the health and wellness of its community members.

A major recommendation of the PROS Plan is the development of a regional, community wide and riverfront trail system. The PROS Plan calls for a system of trails with a goal of "[providing] convenient access to the network of passive-oriented parks, which are linked by a trail system." The Plan also identifies the need to "link parks, provide riverfront recreation opportunities and connect parks to other destinations in the city." Based on these values, the PROS Plan includes trail classifications for three types of trails.

In addition to the recommendations called out in the two PROS Plans, the Trails Plan aims to integrate goals and objectives set forth in the City's

Comprehensive Plan and Imagine West Linn described below.

The City of West Linn is located along the Willamette and Tualatin Rivers in Clackamas County.

Comprehensive Plan

- Provide a transportation system that encourages modes of transportation other than the automobile and is convenient, safe and efficient;
- Develop and implement measures to connect service areas, neighborhoods, and subdivisions via all practical modes of travel;
- Provide interconnections for pedestrian pathways and other means; and
- Promote connections between parks and recreation areas.

Imagine West Linn

- Implement the Trails Plan to assure that neighborhoods, schools, and parks are all interconnected by safe pedestrian and bicycle pathways;
- Require dedication of trail corridors especially trails along Willamette and Tualatin Rivers;
- Improve the planning and design of streets, trails and buildings to promote alternative modes of transportation; and
- Build on the network of parks, natural areas, walkways and bike paths in the community; and
- Create a river walkway and greenway connections.

ELEMENTS OF A SUCCESSFUL TRAIL SYSTEM

A successful trail system is functional, safe and fun, and has the long term support of the city and its users. To achieve such a trail system, the Trails Plan process relied on a comprehensive approach, based on a four tiered model shown in Figure 1.

Public Support and Unified Vision

At the foundation of a successful trail system is public support and a unified vision. The trail system should uphold the values of West Linn residents that have been expressed through the City's unified vision (Imagine West Linn) and other planning documents. Public involvement opportunities discussed in Chapter 2 describe the outreach effort that was an integral part of the Trails Plan.

The City of West Linn is comprised of a number of close knit neighborhoods.

Comprehensive Planning and Design

Consideration of a range of factors is necessary to develop trails that are well used while limiting the negative impact of trails on the surrounding environment. The sustainable model of trail planning and design is the most effective way of ensuring success. As defined by the National Park Service, a sustainable trail system is one that:

- Protects the environment;
- Meets the needs of users while minimizing conflict between different user groups; and

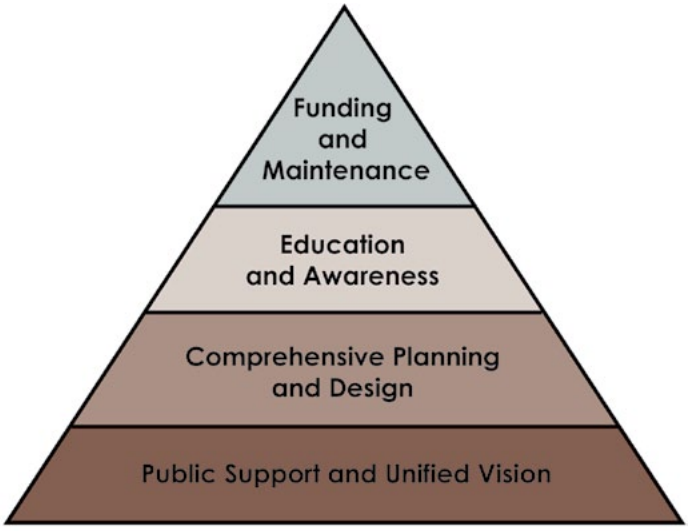


Figure 1: Elements of a Successful Trail System

- Requires little maintenance.

Education and Awareness

Education about and awareness of the trail system help make it easy to find and use trails and can promote user safety and responsibility. A deliberate community-wide trail education and awareness campaign is also crucial to leverage trail funding and continued support for future trail projects.

Funding and Maintenance

Implementation of the Trails Plan will require adequate funding to construct and maintain trails. After development, periodic trail monitoring and routine maintenance keep trails functioning properly while helping to protect investments and extend resources.

PLANNING PROCESS

West Linn previously identified a need for trails and already developed a trail system concept through past planning efforts. Beginning with the PROS Plan trails concept, the Trails Plan process refined the envisioned trail system through extensive public involvement, evaluation of existing trails and data analysis. This targeted planning process aimed to move from the visioning and concept development of past planning efforts to the identification and prioritization of specific alignments.

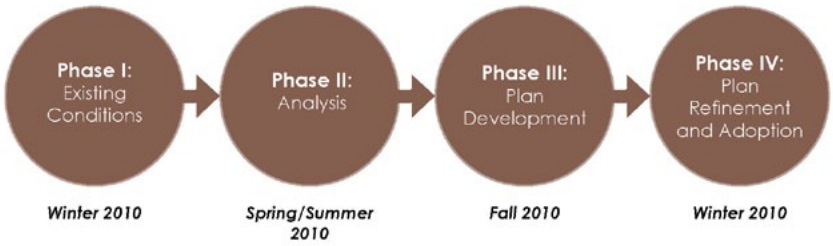


Figure 2: The Planning Process

The process for developing the Trails Plan involved four phases, beginning in Winter 2010 with a review of existing conditions and ending with the plan adoption in Winter 2013 (Figure 2).

Phase I: Existing Conditions

The planning team established baseline data and knowledge for the plan during Phase 1, resulting in a solid foundation for later analysis. During this phase, the planning team introduced the project website (www.westlinntrailsplan.org): a major component of the public outreach and a tool for two-way interaction between the planning team and the community. Also during this phase, the review of existing conditions included an inventory of existing and planned trails as well as on-street bicycle routes; a review of earlier plans, policies and operations; and identification of opportunities, issues, and challenges to consider during the planning process. Information gathered during Phase I was documented in the Existing Conditions Report.

Phase II: Analysis

This phase incorporated a detailed technical analysis of the trail system and the development of alternative alignments and routings that would achieve the visions put forward in past planning efforts. During this phase, the planning team held a variety of public involvement activities to get feedback from the community including use of an interactive, online map to solicit input for potential routing. The analysis also helped form a set of criteria to identify alternative route systems, and to evaluate routes against their concurrency with existing plans, potential to encounter environmental constraints and the routes ability to create and enhance connections throughout the city. The results of the analysis phase led directly to the creation of the Trails Plan.

Phase III: Plan Development

The third phase of the process consolidated results from the previous phases into a draft plan format. During Phase III, the planning team organized existing conditions and trail analysis data to build components of the final plan, including recommendations and strategies for implementation and trail development.

Phase IV: Plan Refinement & Adoption

Phase IV included preparation of a full draft of the West Linn Trails Plan, incorporating the refined trails concept developed and reviewed during Phase III. A key step of this phase consisted of a community-wide open house to present and test the draft plan to the public. Following this step, the final phase allowed for a formal review and adoption process by City officials, including the Parks Board, Transportation Advisory Board, Planning Commission and City Council.

PLAN OVERVIEW

The Trails Plan is organized into the following five chapters and three appendices.

A Introduction. This chapter provides an overview of the plan and its purpose, the planning process and organization of the Plan.

B Public Involvement. The second chapter summarizes the public outreach opportunities used throughout the planning process and presents key findings used to guide the direction of the conceptual trail system.

C Existing Conditions. This chapter describes the existing characteristics of West Linn, including the natural environment, land use and transportation system. Included is a summary of the existing trail system.

D Trail System Plan. Chapter four describes the envisioned trail system plan. The chapter begins with an overview of the trail system, and summarizes the analysis process used to determine the concept.

E Recommendations. The final chapter provides recommendations to implement the plan and prioritize trail development. This chapter includes recommendations related to trail design and support programs as well as a summary of planning level costs.

Appendix A: Trail Analysis includes maps which visually depict the various stages of the trail selection and prioritization methodology.

Appendix B: Regulations and Standards summarizes relevant policies for implementing the Plan.

Appendix C: Public Outreach Documentation includes the workshop summaries, agendas and maps, the website comments archive and other public materials used to develop the Plan.

II. PUBLIC INVOLVEMENT

A successful trail system relies on public support and a unified vision. To develop a solid foundation for the Plan and ensure a high level of project transparency, the City of West Linn gathered feedback from as many residents and stakeholders as possible. The planning team used a variety of activities to ensure participation from all of West Linn's neighborhoods, including various age groups and diverse interests.

PUBLIC INVOLVEMENT STRATEGY

With the need for trails already established through previous planning efforts, the West Linn Trails Plan focused on trail analysis and potential alignments. The comprehensive vision of a city-wide trails system expressed in the Imagine West Linn vision update outlined several objectives for future trail planning. In addition, the 2007 Parks, Recreation and Open Space Plan included a needs assessment, during which the City gauged public interest and provided additional information about the needed trail system.

With this groundwork in place, the public involvement strategy for the Trails Plan was designed to move to the next level of trails planning by engaging the public in further defining specific trail alignments and identifying local conditions affecting the design and development of the trail system. Most importantly, the strategy was designed to elicit feedback regarding priorities and preferred alternatives, resulting in a trail system that is well designed and well used.

Refining the Trail System Concept

The Trails Plan relied on a multi-faceted and continuous public involvement strategy that occurred throughout the planning process. One of the primary outcomes of this effort is a plan that reflects the unique needs and desires of West Linn residents. Yet another key result of this effort led to the refinement of the PROS trail concept, into a buildable trail system.

Early on in the process, feedback from residents indicated that slight changes to the PROS Plan concept were needed based on a closer look at potential alignments. Tools such as the interactive web based map allowed those using the website to identify specific areas of the City and comment on potential challenges and opportunities. Mapping exercises at the public workshops gave participants a similar opportunity, also allowing for discussion with other residents. This allowed for the discovery of new ideas and served to build community buy-in and support.

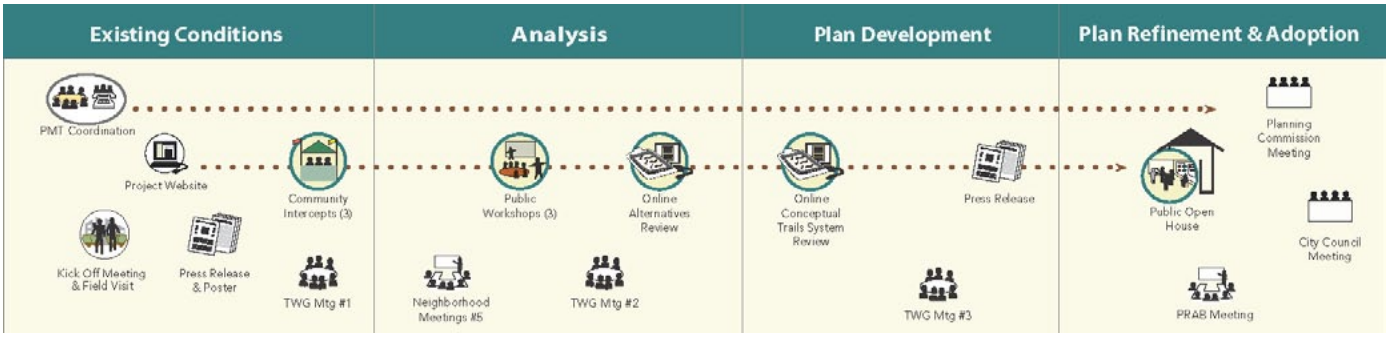
While participation in the planning process was key to refining the trail system concept, the future success of the trail system will require continued education and awareness of the trail system, trail etiquette and future support. Chapter 5 outlines further outreach and education recommendations as part of the trail support program.

Public Outreach Opportunities

The Trails Plan relied on public participation throughout each phase of the plan process. While the project website and online public commenting tools allowed the public to weigh in throughout the entire process, other activities (such as the community intercept events) occurred at key points in the planning process. The initial phases had the most opportunities for involvement to allow for an adequate assessment of the existing system and to gather extensive feedback regarding on-the-ground conditions. Figure 3 illustrates the different types of public outreach opportunities that occurred at different phases of the plan.

A complete summary of the public involvement results, as well as public involvement materials, can be found under separate cover in Appendix C: Public Outreach Documentation.

Figure 3: Public Involvement in the Plan Process



public involvement

Project Management Team

The Project Management Team (PMT) worked collaboratively during the entire plan process and consisted of the MIG Team and City staff. The PMT provided policy direction, evaluated process and timeline adjustments to accommodate community needs, and also served to organize events and meetings.

Comprehensive Trails Plan Website

The Comprehensive Trails Plan website served as the forum to facilitate interaction between the project team and the community during the planning process. The website allowed the project team to share information with the public throughout the plan process. The site kept the community up-to-date on events and news, and it also allowed the public to review documents and provide comments on the trail system. Together these functions ensured transparency during the planning process.

Online Public Comment

One of the most important components of the project website was the ability to use interactive, online commenting. Interactive mapping proved to be a valuable tool of the website, allowing the public to review documents on their own time. This was especially useful during the detailed review of existing, draft and final trail concept maps. Through this feature, reviewers indicated specific alignment preferences and could make comments directly on areas of the map that present challenges or opportunities.

THE PROJECT WEBSITE WAS AN IMPORTANT TOOL THROUGHOUT THE PLAN PROCESS

Community Intercept Events

During the first phase of the project, the planning team participated in three different citywide events to publicize the planning effort, gather public input and promote the project website. During the events, the planning team was on hand to discuss West Linn's trail resources through informational displays and handouts, while allowing the public to become familiar with the project, ask questions and provide feedback. The interactive displays included a trail map to inform residents about their trail resources and allow them to identify opportunities and constraints, as well as community needs and priorities. The intercept events occurred at the following dates and locations:

"A total of 100 people signed-in to hear the presentation and participate in the group discussion about trail users and trail system elements."

- Saturday, December 5th, 2009 at 6:00 PM at West Linn Central Village;
- Saturday, December 12th, 2009 at 10:00 AM at Willamette Falls Drive; and
- Sunday, December 13th, 2009 from 10:30 AM to 2:00 PM at West Linn High School.

Public Workshops

There were three public workshops held in each of the City's planning areas. At the meetings, the planning team presented an overview of the planning process and the work done to date. A total of 100 people signed in to hear the presentation and participate in the group discussion about trail users and trail system elements. The second half of the meeting was dedicated to a small group mapping exercise, in which participants indicated the types of preferred routes and linkages different types of trail users would use. The exercise also allowed participants to draw their own route preferences and note other opportunities and challenges. The public workshops occurred at the following dates and locations:

- February 16th, 2010 from 7:00 PM to 9:00 PM at Cedar oak Primary School;
- February 22nd, 2010 from 7:00 PM to 9:00 PM at Willamette Primary School; and
- February 24th, 2010 from 7:00 PM to 9:00 PM at Bolton Primary School.

Neighborhood Meetings

City staff met with the public at several neighborhood meetings throughout the City. At these meetings, City staff provided information on upcoming events, shared information regarding the project website, public workshops and intercept events. The meetings provided an opportunity for neighborhood residents to learn about the trail plan and provide input on their preferences.

The Technical Working Group (TWG)

The TWG met at key milestones to provide review, technical advice and input on plan directions. The group included City staff from the Parks and Recreation and Planning departments, representatives from the Planning Commission and City advisory boards and other agency and organization representatives.

Following the initial public hearings before the Planning Commission, staff met with members of the Parks and Recreation Advisory Board and concerned citizens to develop solutions to concerns that were raised regarding trails along the Willamette River, Tualatin River and along Interstate 205.

The revised draft was presented before the Parks and Recreation Advisory Board and Transportation Advisory Board before it was resubmitted to the Planning Commission for their recommendation.

KEY FINDINGS

West Linn residents shared many ideas about the City's existing trails network and its links to open space and natural areas. Based on feedback gathered from the planning process, there are several opportunities and challenges that can be addressed through the Trails Plan.

Throughout the public involvement process, participants expressed ideas that shifted from the previous PROS Plan trail concept. A closer look at existing conditions revealed a list of challenges, making the trail concept contrast to land use and development patterns and natural resource constraints. West Linn is almost entirely built-out, with few undeveloped areas that could provide potential for new trails. Hillsides also pose a challenge in West Linn.

However, findings from the public involvement activities also presented a range of opportunities from which to build on. Many residents discussed their use of West Linn's quiet streets for walking. While there are several streets lacking sidewalks, some of these have low vehicle traffic volumes and are the only areas available for walking and biking. When combined with off-street trails, the use of on-street routes could serve to complete the system of trails. The public's interest in on-street trail connections shifted the focus

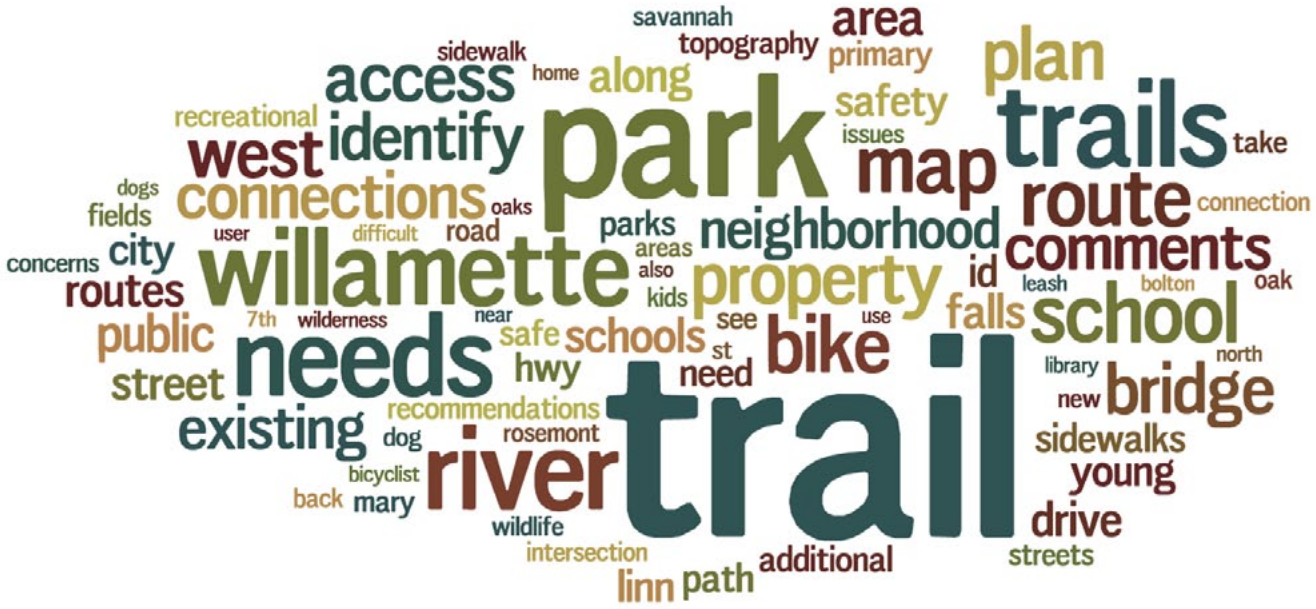
of the trails concept from off-street trails to on-street connections, and the need for this Plan to inform the non-motorized transportation element of the next update to the City's Transportation System Plan (TSP).

A visual method of presenting major themes that emerged from the public involvement opportunities is through a word cloud (Figure 4). This image was generated using public comments gathered during the planning process and depicts the most frequently mentioned words (the larger words represent more frequently used words). As shown by Figure 4, the words "trail" and "park" are the most common, while "Willamette," "river," "needs," "school" and "property" are also common.

Making connections

The steep slopes and existing development pattern in West Linn make getting around difficult. There are limited routes that connect businesses or parks with homes, leading to an increased reliance on driving to local destinations. While no two neighborhoods are alike, a lack of connectivity throughout the city is

Figure 4: Public Input Word Cloud



a common issue. Many of West Linn's neighborhoods are fragmented due to steep topography, busy streets and limited access. Major barriers include Hwy 43 and I-205. Participants indicated a need for safe connections that link the

Willamette Falls neighborhood and commercial center across to central West Linn.

Areas such as Mary S. Young Park are popular and access to the Willamette River is important to many residents. Yet many of West Linn's parks and natural areas also lack connections. Many participants emphasized the need for a continuous trail that connects along the Willamette River to provide opportunities to experience nature and for recreation as well as transportation.

Perhaps most important are safe routes for children to get to local schools. The lack of safe and convenient connections to city schools surfaced through almost all public involvement activities as a major challenge. There are also many destinations in and around West Linn that are visited by local and neighboring residents and commuters. Commercial centers are dispersed throughout the city with limited opportunities to access these areas by biking or walking. Bordering the city to the north, Marylhurst University is connected by Hwy 43, and the City of Lake Oswego is primarily connected to West Linn by Hwy 43 and Rosemont Road. Both streets have busy traffic and can be uninviting to pedestrians and bicyclists.

The integration of the trail system with other transportation modes was also noted by participants. Transit stops and parking areas are destinations that can be connected with the trail system. In some cases, trail users can use one mode of transportation such as public transportation or a personal vehicle, then walk or bike on the trail system.

Minimizing impacts

A common issue voiced by the public is impacts to the environment and surrounding property. The City's steep slopes and wet weather present greater potential for erosion. Other sensitive environmental areas include the Willamette and Tualatin Rivers, open space and wildlife habitat including trees and smaller tributaries. Perceived impacts to adjacent homes and development are also a concern. While there are many opportunities for trail routes to keep needed distance from homes, existing development patterns makes connecting these routes a challenge.

Providing safe routes to schools

Safe routes to local schools are lacking. Children not living next to schools have a lack of choice when getting to school. There is no school bus service for children that live within a mile radius of their school, making it difficult for all but the closest neighbors to walk or bike safely. These routes are shown as provided by the West Linn/ Wilsonville School District.

Using sidewalks and bike lanes

While much of the city is built-out, leaving limited potential for building off-street trails, sidewalks and bike lanes can fill gaps in trail routes, and are a preferred type of facility for many residents. Yet many streets do not have consistent sidewalks and bike lanes, or lack these facilities entirely. There is no need for land acquisition or use negotiation as street rights-of-way are already within the city's inventory in most areas of the city.

Promoting safety

Safety is an overarching concern within the existing trail system, not only for trail users, but for residents as well. The lack of safe connections and pedestrian and bicyclist facilities creates conflict with motorists, as well as other trail users. While the level grade and relatively good shoulders along Hwy 43 make the route a popular one for pedestrians and cyclists, the corridor remains relatively uncomfortable for these users. Traffic and speed are common concerns of those walking, running or bicycling along Hwy 43 and other busy roads in the city. A lack of signage, informing users where to access trails or the rules and regulations that keep trails safe, and poor design and limited lighting also serve to limit the attractiveness of existing trails.

Increasing maintenance

Existing trail routes are in different conditions, ranging from poor to excellent. While it will be important for new trails to be adequately maintained, the existing network has several issues ranging from potholes in bike lanes, to broken sidewalks and eroded trails. To pay for maintenance, it will be necessary to secure funding that can support the existing and future system.

public involvement

Creating opportunities for all

Access to city destinations is important to all users, regardless of age or ability. While trails are important for transportation purposes, the recreational opportunities that trails provide are also important. Currently, there aren't many opportunities for beginning or novice bicyclists or skaters in West Linn. The hilly topography can make routes unwelcoming, while stairs and other obstacles are challenging for some users. Yet challenging routes are desired by other users. There are currently limited opportunities for activities such as mountain bike single track.

Providing outreach and education

There is currently limited information about trails in West Linn. While safe routes exist, they wind through the city with no clear route identification or signage. Many residents are concerned about how future trails and trail users will affect homes and property. While there is support for a trail system, the development of new trails will require a deliberate outreach effort with affected property owners to resolve concerns. The trail system will also need the continued support of the public to ensure long term funding and maintenance. Education efforts should also provide opportunities to learn proper trail etiquette and stewardship.

III. EXISTING CONDITIONS

The context for trail planning in West Linn is characterized by a variety of opportunities and challenges. Existing homes, limited access and development patterns, steep slopes and environmentally sensitive areas and busy streets and highways all limit where trails can be located. But the use of existing rights-of-way and the potential use of undeveloped natural areas serve as opportunities for developing the trail system.

To understand existing conditions and set the stage for the Trails Plan, the planning team relied on public input and a review of relevant planning documents. While public meetings shed light on pressing issues, a review of the City's neighborhood plans identified key concepts and recommendations for local areas within West Linn. Further, a review of City plans such as the Comprehensive Plan and Transportation System Plan provided an understanding of important planning goals and requirements related to land use and transportation. County and regional plans such as the Clackamas County Comprehensive Plan and Metro 2035 Regional Transportation Plan also contain goals and policies that affect West Linn. A complete summary of existing plans is provided in Appendix B: Regulations & Standards.

Growth, Land Use and Transportation

Some of the most significant factors that influence trails planning are population growth, land use and transportation. Together, these three factors point to existing and future challenges and opportunities and must be considered in the proposed trail system design.

Growth

The needs of existing residents, as well as future growth impacts, establish parameters for planning future trails. According to the most recent population estimates, West Linn had 24,455 residents in 2010. By 2017, West Linn's Comprehensive Plan anticipates a population of 31,723 with an average annual growth rate of 1.8%.

Land Use

A review of land uses helps determine the types of destinations that the trail system can connect with. West Linn is a City of several neighborhoods. There are eleven officially recognized neighborhood associations that assist with planning and land uses within their neighborhood boundaries. A list of neighborhood plans is provided in Appendix B.

Land use and development in the city is bound by the Urban Growth Boundary (UGB). The City of West Linn is responsible for planning and providing urban services within this boundary. The Portland metropolitan area UGB forms the western boundary of West Linn's urban area. While the majority of land within the city's UGB is developed, the city is surrounded by extensive undeveloped and unincorporated Clackamas County land. However, any planning and development outside of West Linn's UGB requires close coordination with the County, Metro and state agencies.

"...EXISTING DEVELOPMENT PATTERNS AND ENVIRONMENTAL CONSTRAINTS AFFECT WHERE NEW TRAILS CAN BE BUILT."

Development in West Linn is predominately residential, with single family houses accounting for about 75% of residential zoning. Multi-family and more intensive residential uses are located along Highway 43, Santa Anita Drive and Salamo Road in central West Linn, and Blankenship Road along I-205. An area of the Willamette neighborhood is also designated as a historic district on the National Register of Historic Places.

West Linn does not have a singular downtown center or central business district. Instead, commercial areas are concentrated at four sites: to the south along I-205; west, along Salamo Road; east, along Highway 43; and north, along Hidden Springs Road. The City's industrial land is located along Willamette Falls Drive. Portland Metro identifies two urban centers in West Linn: south, along I-205; and east, along Highway 43.

Transportation

The physical layout of the City's transportation system greatly influences where trails can be located and where trails are needed. While some city neighborhoods have sidewalks and convenient access to bike routes, other parts of the city are isolated, lacking pedestrian or bicycle amenities. Many local streets end in cul-de-sacs or do not connect to adjacent development. This can result in an increase in traffic on existing through streets and an increased reliance on driving for local trips.

Along southern West Linn, I-205 serves as a barrier between areas north of the highway, and the Willamette neighborhood and Willamette River. There are two I-205 on-ramps that provide access to West Linn: at the intersection of Highway 43 to the east and at the 10th Street intersection to the west. Six under and overpasses crossing Highway I-205 provide safe opportunities for pedestrians and bicyclists.

Highway 43 – also known as Willamette Drive – connects West Linn to Lake Oswego to the north and Oregon City to the south. The Highway connects to the historic Oregon City-West Linn Bridge that spans the Willamette River. This bridge serves as West Linn's only pedestrian and bicycle access to cross the Willamette River. According to the Transportation System Plan, the highway is a designated bikeway. However, bikeways are not required to have sidewalks and they are lacking on one or both sides of the street for pedestrians in most areas.

To the west, Rosemont Road provides the City's primary local access to destinations west of the city. The street is a designated bike route however, the route contains horizontal and vertical curves and blind entrances as well as narrow travel ways, which present challenges to cyclists. Another designated bike route is Willamette Falls Drive which parallels the Willamette River and I-205. Along with Tualatin Avenue to the south, the street provides access across the Tualatin River.

Current commuting habits in West Linn are similar to the statewide data, with the majority of West Linn residents commuting to work by driving alone (73.8%). However, this number has decreased from 78.5% in 2000. While the percentage of commuters driving alone has decreased, the percentage of commuters walking to work has increased, from 1.4% in 2000 to 3% in 2006-2008. As the City's population continues to grow, the City's trail system can serve the community by reducing vehicle traffic and congestion, providing more convenient transportation options and safe routes to school, increasing access to recreation and promoting healthier lifestyles.

NATURAL ENVIRONMENT

The City of West Linn is situated along the western bank of the Willamette River and is bordered to the southwest by the Tualatin River.

Climate

Climate influences trail use and trail design. The area's mild temperatures allow residents to pursue outdoor activities throughout the year: the average temperature in January is 40°F, and in July is 68°F. Average precipitation is 48" per year, with most of rain falling from October through late spring. The extensive rainfall poses a significant challenge for trail design. Runoff from trail development and use causes soil erosion and potentially causes water pollution. However, with proper design techniques, most trails can be built to minimize erosion and be used during wet weather.

Vegetation

Vegetation and trees require protection from trail construction and trail use impacts. Most of the City's intact tree canopy is located within parks and open spaces; in particular at Mary S. Young Park and Wilderness Park. Other forested areas can be found on the hillsides along the west side of Highway 43, and along smaller Willamette River drainages. West Linn's tree ordinance provides specific guidelines for retaining, maintaining and removing trees.

Topography

The Willamette and Tualatin Rivers and adjacent bluffs are important physical features that contribute to West Linn's character and define its pattern of growth. Portions of the city are located on a relatively level shelf above the two rivers, and at the base of steep hillsides. However, some neighborhoods are built on top of or alongside these slopes, making access difficult for pedestrians and bicyclists.

The elevation of the lower parts of the City average between 100' and 140' above sea level, while the ridge tops average 550' in elevation. According to the Comprehensive Plan, there are 804 acres of land in the City on steep hillsides (slopes greater than 25%) or in the floodplain.

Geology and Soils

West Linn contains a variety of soil types, some of which are challenging for trail development. Some of the most limited areas for building trails in West

Linn are areas with silt loam soils on steep slopes, which are prone to water erosion. Other areas of silty clay loam are more suitable for building trails.

Another geologic factor influencing trail development is seismic activity. The Comprehensive Plan indicates the location of a fault line through West Linn in a northwest to southeast direction parallel to Highway 43 and the Willamette River, with several smaller fault lines branching to the southwest. Soils in these fault areas have the potential to liquefy as a result of seismic activity.

Water Resources and Hydrology

West Linn is surrounded by water, creating many opportunities for scenic trails and river access. However, existing development patterns and environmental constraints affect where new trails can be built. Drainage patterns factor into the engineering and construction of trails. Flooding, irrigation, and runoff from trails and support facilities can impact shorelines, riparian areas and habitat corridors.

Many narrow drainage corridors cross the City, carrying storm runoff to the rivers. West Linn's Comprehensive Plan identifies areas in the City prone to flooding. Due to the area's topography, most of the river shorelines are within the 100-year flood plain. The plan also identifies several small patches of wetlands throughout the city.

One of the most notable features along West Linn's Willamette River frontage is Willamette Falls, and the historic locks built to traverse the falls. Located on the City's side of the river, the Willamette Falls Locks were built between 1868 and 1873 and are on the National Register of Historic Places.

Fish and Wildlife

There are a variety of fish and wildlife in West Linn that depend on clean water, safe corridors, and sufficient and protected habitat. The Wildlife Habitat Inventory of the Comprehensive Plan shows the location of important habitat areas within West Linn. Most of these areas follow creeks and riverbanks, as well as hillsides, parks and open spaces.

The Willamette River and its tributaries provide significant habitat for Upper Willamette River Chinook Salmon and Steelhead: both listed as threatened species. The 26-acre Camassia Natural Preserve is also a sanctuary for many plant and animal species.

There are about 25.6 miles of existing trails in West Linn. The majority of existing trails are located in City parks.

EXISTING TRAILS SYSTEM

There are approximately 25.6 miles of existing trails and easements within the City. Existing trails in West Linn are dispersed throughout the city; located in parks, connecting to subdivisions, and along the Tualatin and Willamette Rivers (Map 1: Existing Trails System on page 26). This section provides an overview of the City's existing trail system. The Existing Trails System map on page 26 depicts the developed trails within West Linn.

Existing Trail Corridor Types

Trail corridors describe the characteristics of trails and the adjacent land that they parallel. There are several distinctive types of trail corridors found in West Linn, as well as unimproved rights-of-way with potential for new trails. Understanding these trail corridor types helps determine how trails are designed and permitted.

TYPES OF TRAIL CORRIDORS

- **THROUGH PARKS**
- **ALONG EASEMENTS**
- **THROUGH CITY PROPERTY**
- **RESIDENTIAL LINKAGES**
- **UNIMPROVED RIGHT-OF-WAY**

- **Trails through parks** pass through city-owned parks and may lead to surrounding neighborhoods and uses. There are also several trails that loop within a park and do not provide connections outside the park. The Community Development Code (CDC) allows these trails to be paved or unpaved, with a width ranging from 3' to 10'.
- **Trails through open spaces** pass through city-owned open spaces and connect to surrounding neighborhoods and uses. There are also trails through open spaces that stay entirely within the open space boundary. These trails can be paved or unpaved with a width ranging from 3' to 10'.
- **Trails along easements.** These trail types are distinctive from other trail types as they are able to connect between multiple property types and land uses. There are many types of easements that must be closely examined to determine if public access is legal. According to the CDC, the design of these trail segments varies depending on location and site characteristics.
- **Trails through City property** are other city trails on public land outside of parks and open space, including trails dedicated to the City as a condition of development approval. Based on the CDC, the design of these trails depends on specific location and site characteristics.
- **Trail linkages** connect between subdivisions. The City requires new

subdivisions to provide trail linkages to connect between streets and to adjacent uses. Based on the CDC, trail linkages have a width between six feet to eight feet with a paved, all weather surface.

- **Unimproved right-of-way trails** are city-owned areas with potential for trail development. These potential trail corridors follow local streets, or are along city-owned open spaces.

Existing Trails Inventory

Existing trails in West Linn primarily serve recreational purposes and are of insufficient width and construction quality to accommodate different trail users. Map 1: Existing Trails System also shows that the majority of existing trails do not connect to one another, or to other neighborhoods. The existing system is therefore not designed as envisioned by the Comprehensive Plan and Imagine West Linn. Nevertheless, the 25.6 miles of trails provide opportunities to explore parks and open spaces, as well as the City's river frontages (Table 1).

Table 1: West Linn's Existing Trails Inventory Summary

Trail Type	Total (mi.)	Percent
Trails along easements, city property, residential linkages and unimproved ROW	7.4	29%
Trails through parks or open space	18.2	71%
Total Existing Trails	25.6	100%

Of existing trails, there are approximately 7.4 miles (29% of the total) that are along easements, unimproved rights-of-way and city property, or that link residential areas. All of these trails are off-street. Many of these trails are discreet, short segments (less than 100 feet) that provide connections between land uses.

An additional 18.2 miles (71%) of existing trails are located in City parks and open spaces and are off-street. Parks such as Mary S. Young and Wilderness Park contain multiple trail options and loops. There are also several trails along the Willamette and Tualatin Rivers including Cedar Island Park, Burnside Park, West Bridge Park, Willamette Park and Fields Bridge Community Park.

Figure 5: Existing Trails System

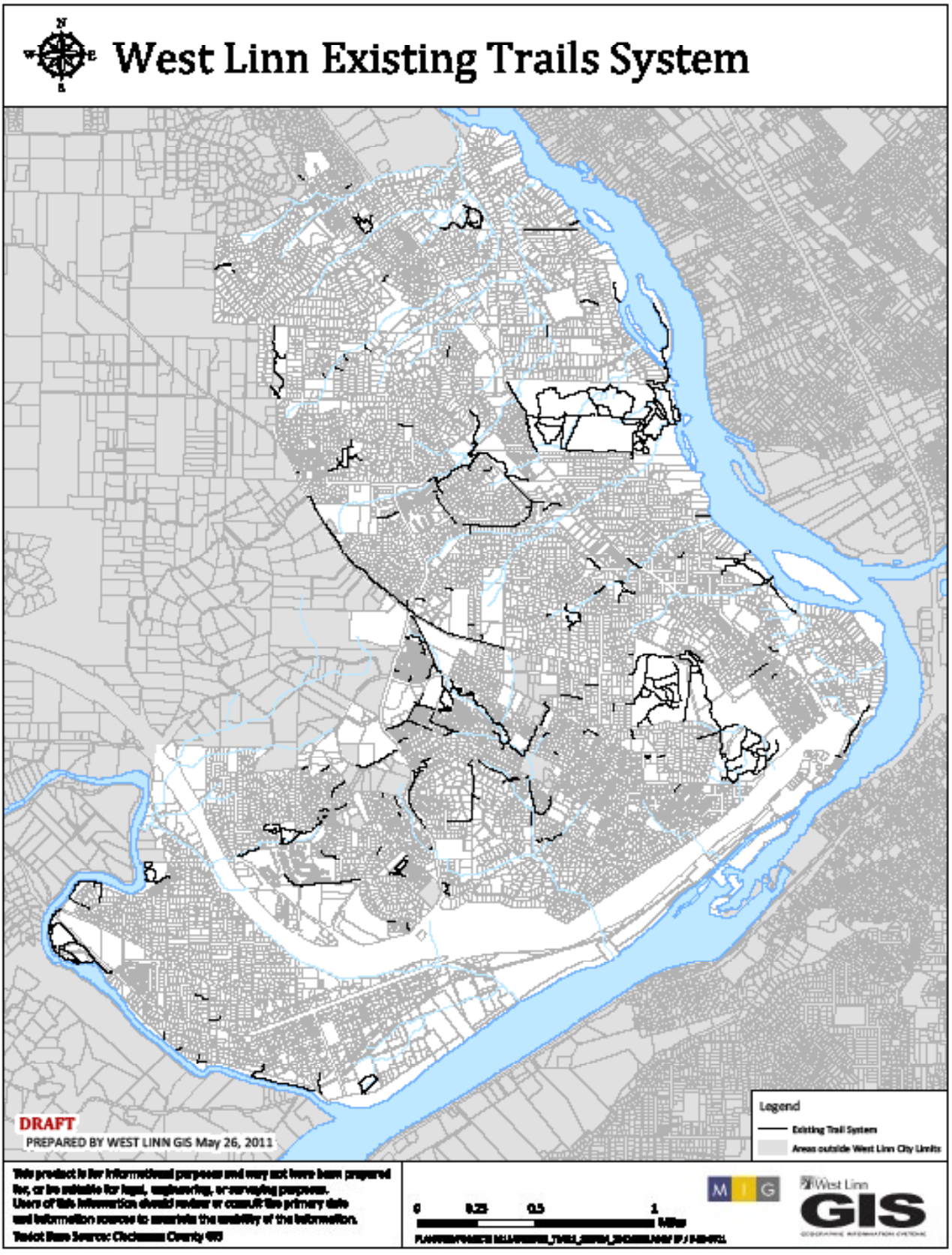


Table 2: Existing Trail Characteristics

Bold italic indicates trail approximately follows 2007 PROS Trail Concept

EXISTING TRAIL ROUTES*	STATUS	TYPE	MILES
Primary Route			
Rosemont Rd./Walnut St.	Existing	Off-street	0.41
Rosemont Trail	***Existing***	***Off-street***	***0.68***
Salamano Rd/Willamette Falls	Existing	Off-street	0.53
Tualatin River Greenway	***Existing***	***Off-street***	***0.56***
Willamette River Greenway	***Existing***	***Off-street***	***1.09***
Willamette River Greenway (In right-of-way alt.)	***Existing***	***Off-street***	***0.40***
Unnamed Easement	Easement	Off-street	0.10
		Subtotal	*3.78*
Secondary Route			
Hill Top Loop Trail	***Existing***	***Off-street***	***0.28***
Neighbor Trail	***Existing***	***Off-street***	***0.81***
Neighbor Trail - New Secondary D	***Existing***	***Off-street***	***0.11***
Neighbor Trail - New Secondary E	***Existing***	***Off-street***	***0.10***
New Secondary B	Existing	Off-street	0.41
New Secondary B2	Existing	Off-street	0.08
New Secondary C2	Existing	Off-street	0.37
New Secondary D3	Existing	Off-street	0.32
New Secondary D5 - Hidden Springs Trail	***Existing***	***Off-street***	***0.43***
New Secondary H1	Existing	Off-street	0.08
New Secondary Mary S Young A	***Existing***	***Off-street***	***1.05***
New Secondary Mary S Young B	***Existing***	***Off-street***	***0.42***
New Secondary S-J	Existing	Off-street	0.62
New Secondary S-J1	Existing	Off-street	0.14
New Secondary S-J2	Existing	Off-street	0.11
Willamette River Greenway (In right-of-way alt.) C	***Existing***	***Off-street***	***0.04***
		Subtotal	*5.34*
Local Route			
Beaver Trail	Existing	Off-street	0.08
Burnside Park	Existing	Off-street	0.10
Camassia Nature Area Preserve	Existing	Off-street	1.43
Cedar Island Park Trails	Existing	Off-street	0.24
City Hall Pathways	Existing	Off-street	0.26
Crown Ct to Windsor Ter (so. of Wildnerness)	Existing	Off-street	0.06
Deer Foot Trail	Existing	Off-street	0.16
Douglas Park Property Trail	Existing	Off-street	0.01
Fern Trail	Existing	Off-street	0.16
Fields Bridge Park Trails	Existing	Off-street	0.68
Hall Street Open Space Trail	Existing	Off-street	0.03
Heron Creek Loop Trail	Existing	Off-street	0.66
Hidden Springs #4 City PropertyTrail	Existing	Off-street	0.09
Hidden Springs Open Space Trail	Existing	Off-street	0.02
Hidden Springs Trail	***Existing***	***Off-street***	***0.12***
Hill Top Loop Trail	***Existing***	***Off-street***	***0.41***
Ibach Hillclimb Trail	***Existing***	***Off-street***	***0.17***
Ibach Nature Park Trail	Existing	Off-street	0.01

Table 2: Existing Trail Characteristics

Bold italic indicates trail approximately follows 2007 PROS Trail Concept

EXISTING TRAIL ROUTES*	STATUS	TYPE	MILES
Library Pathway	Existing	Off-street	0.04
Link - Ridge Ln. to Summit St.	Existing	Off-street	0.05
Link - 19th St to High Touch St	Existing	Off-street	0.06
Link - Alpine Dr to Bland Cir	Existing	Off-street	0.03
Link - Alpine Dr. to St. Moritz Loop	Existing	Off-street	0.04
Link - Bellevue Way to Benski Park	Existing	Off-street	0.02
Link - Bexhill and 19th	Existing	Off-street	0.07
Link - Calaroga Ct to Willametter River	Existing	Off-street	0.04
Link - Cedaroak Dr. to Island View Terr.	Existing	Off-street	0.08
Link - Cedaroak Dr. to Kenthorpe Way	Existing	Off-street	0.04
Link - Club House Ct to Palomino Park	Existing	Off-street	0.02
Link - College Hill Pl. to Marylcreek Dr.	Existing	Off-street	0.02
Link - Crescent Dr to Neighbor Trail	Existing	Off-street	0.26
Link - Furlong Ct to Rosemont Trail	Existing	Off-street	0.03
Link - Haverhill Ct	Existing	Off-street	0.03
Link - Ireland Ln to Coho Ln	Existing	Off-street	0.04
Link - Knox St To Bonnet Dr	Existing	Off-street	0.03
Link - Lorinda to Local Rte ID 5332-006	Existing	Off-street	0.03
Link - Lucerne Pl to St Moritz Loop	Existing	Off-street	0.02
Link - Oak St to Walden St	Existing	Off-street	0.03
Link - Oregon City Blvd (south of Wilderness)	Existing	Off-street	0.04
Link - Parker Rd to City Property UID262	Existing	Off-street	0.13
Link - Parker Rd to Noble Ln	Existing	Off-street	0.02
Link - Reed St to Landis St	Existing	Off-street	0.06
Link - Salamo Rd to Noble Ln	Existing	Off-street	0.02
Link - Santa Anita to Haverhill	Existing	Off-street	0.03
Link - Territorial Dr to Willamette River)	Existing	Off-street	0.02
Link - Viewpoint Rd to Parker Rd	Existing	Off-street	0.04
Link - White Salmon Ct to Oxford St	Existing	Off-street	0.06
Link - Wilderness Dr. to Forest Ct.	Existing	Off-street	0.04
Link - Willamette Dr (Barlow St. to Atkins)	Existing	Off-street	0.07
Link - Winkel Rd to Parker Rd (east)	Existing	Off-street	0.02
Link - Winkel Way to Parker Rd	Existing	Off-street	0.02
Mary S. Young Park	Existing	Off-street	1.14
Marylhurst Heights Park	Existing	Off-street	0.40
Nature Trail	Existing	Off-street	0.08
Neighbor Trail	***Existing***	***Off-street***	***0.47***
NO-001 - trail linkage	Existing	Off-street	0.22
NO-002 - city open space - Wildwood Trail	***Existing***	***Off-street***	***0.04***
NO-003 - city open space - Wildwood Trail	***Existing***	***Off-street***	***0.03***
NO-004 - city open space - Wildwood Trail	***Existing***	***Off-street***	***0.03***
NO-005 - city open space - Wildwood Trail	***Existing***	***Off-street***	***0.02***
NO-007 - city open space	Existing	Off-street	0.04

Table 2: Existing Trail Characteristics

Bold italic indicates trail approximately follows 2007 PROS Trail Concept

EXISTING TRAIL ROUTES*	STATUS	TYPE	MILES
NO-010 - city property	Existing	Off-street	0.04
NO-011 - trail linkage	Existing	Off-street	0.06
NO-014 - trail linkage	Existing	Off-street	0.02
NO-015 - city property	Existing	Off-street	0.03
NO-016 - trail linkage	Existing	Off-street	0.02
NO-019 - city property	Existing	Off-street	0.02
NO-020 - city property	Existing	Off-street	0.10
NO-021 - trail linkage	Existing	Off-street	0.04
North Willamette Park Trails	Existing	Off-street	0.49
North Willamette Trail	Existing	Off-street	0.13
Open Space from Chelan Dr to Salamo Rd	Existing	Off-street	0.04
Open Space from Chelan Lp to Belknap Dr	Existing	Off-street	0.06
Railroad Trail	Existing	Off-street	0.12
Ridgeview Estates: Bland Cir to Crestview	Existing	Off-street	0.10
Ridgeview Estates: Crestview Dr.	Existing	Off-street	0.03
River Bluff Open Space	Existing	Off-street	0.09
Riverside Loop Trail	Existing	Off-street	0.14
Robinwood Park Trails	Existing	Off-street	0.08
Rosemont Trail	***Existing***	***Off-street***	***0.01***
Sahallie Illahee Park Trails	Existing	Off-street	0.17
Salamo Road Trail	Existing	Off-street	0.07
Sunburst Park Trails	Existing	Off-street	0.40
Sunset Park Trails	Existing	Off-street	0.10
Swiftshore OS to Swiftshore Dr (east)	Existing	Off-street	0.03
Swiftshore OS to Swiftshore Dr (west)	Existing	Off-street	0.03
Swiftshores Open Space Trail	Existing	Off-street	0.03
Tanner Creek Open Space Trails	Existing	Off-street	0.34
Tanner Creek Park Trails	Existing	Off-street	0.25
Tanner Creek Trail	Existing	Off-street	0.37
Trillium Trail	Existing	Off-street	0.13
Tualatin River Greenway	Existing	Off-street	0.41
Tualatin River Open Space	Existing	Off-street	0.26
Tualatin River OS	Existing	Off-street	0.19
Umpqua Heights: Bland Cir to Kensington Ct	Existing	Off-street	0.07
Unnamed Open Space (Pimlico Terr. to Pimlico)	Existing	Off-street	0.09
Unnamed Open Space (Snowberry to Summerlin)	Existing	Off-street	0.09
Weatherhill	Existing	Off-street	0.19
Wilderness Park	Existing	Off-street	2.30
Wilderness Park linkage	Existing	Off-street	0.08
Willamette Park Trails	Existing	Off-street	0.26
Willamette River Greenway	Existing	Off-street	0.14
Windsor Ter to Camassia Nature Preserve Trail	Existing	Off-street	0.03
Unnamed Easement	Easement	Off-street	0.13
		Subtotal	*16.45*
		Total All Existing Trail Routes	**25.57**

*while this inventory includes all existing trails known to the City of West Linn at the time of plan adoption, it is likely that trails exist which are unknown to the City.

IV. TRAIL SYSTEM PLAN

IN THIS CHAPTER:

1. Trail System Overview
2. Trail Analysis
3. Conceptual Trail System

This chapter presents the envisioned trail system for West Linn. The formation of the proposed trails system is centered on public input and review, as well as technical analysis and refinement of the public's preferred trail system. The review of West Linn's physical characteristics and its planning context discussed in the previous chapter resulted in a number of important considerations that influenced the methodology for prioritizing trails. Specific guidance on implementing this system, including trail design considerations, is provided in Chapter 5.

TRAIL SYSTEM OVERVIEW

The proposed trail system accomplishes the objectives and overall vision set forth in previous citywide planning efforts. It is the result of an extensive public outreach effort, allowing the entire community, as well as stakeholders and trail users, to weigh in on the specific alignments and trade-offs.

The trail system connects opposite ends of the City, provides access to parks and rivers, connects neighborhoods and increases opportunities to walk or bike. These are the destinations the public emphasized throughout the planning process. The initial and broad-brush alignments identified in previous planning efforts have been refined into a set of trail routes supported by the community and further revised through a set of prioritization criteria. This process has also resulted in the refinement of the trail route classification system described below.

Trail Route Classifications

Initial classification of West Linn's trail system stemmed from the PROS Plan (both the 1998 plan and 2007 update) that described three trail types consisting of off-street paved or unpaved trails. However, input from multiple public meetings received during the first phase of the trail planning process indicated that the 2007 PROS Plan trail classification system needed further refinement to accurately reflect the constraints and trail conditions found in West Linn.

While the need for off-street trails still exists in West Linn, residents suggested that on-street routes including separate trails within rights-of-way as well

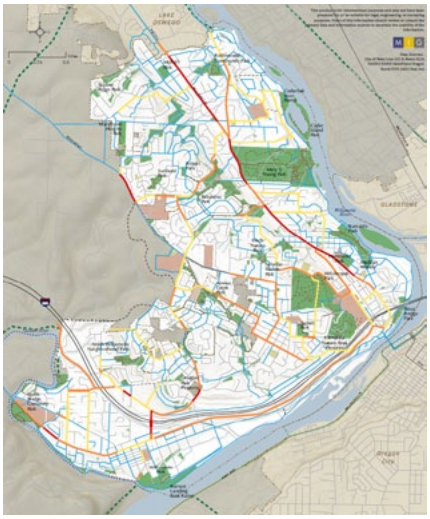
as sidewalks and narrow (low traffic volume) shared streets should be a major element of the comprehensive trail system, as a response to the topographical and property ownership constraints in West Linn.

As a result of the public input, the planning team refined the classification scheme from the PROS Plan. Several terms are used to describe the trail system. These are defined below:

A trail route identifies a trail alignment that makes a complete connection through the city, neighborhood or within a subarea of the city. A trail route can cross through a variety of corridors. The type of connection created determines the classification of the trail route (primary, secondary or local).

A trail segment is a portion (segment) of a trail route. For the purposes of this plan, a trail segment was determined where the trail route intersected another physical feature: road, natural area, water feature, etc. Trail segments can also be discrete local trails that make a connection from one local area to another but are not part a trail route.

The trail route definitions are intended to describe the purpose, function and intended use of each route type: primary, secondary and local routes.



Primary Routes have Citywide and regional significance and provide continuous connections throughout the City to key destinations and the region. Primary routes can have access to transit and are intended to serve the needs of the maximum number of users of varying modes (on foot and bicycle), abilities (including the elderly, young children and mobility device users) and purposes (i.e., transportation and recreation). Primary routes are likely to be paved but may be unpaved due to environmental constraints. They may be on- or off-street facilities and can pass through a variety of land uses.

Secondary Routes provide connections within the community, linking neighborhoods with the primary route network, schools and parks. These routes support the primary route network and serve smaller residential, commercial and employment areas. They also provide alternative connections to key destinations. Where possible, these routes avoid on-street connections on major arterials and state highways with speeds greater then 40 mph. Secondary routes can be paved or unpaved, be located on- or off-street and may pass through a variety of land use corridors.

Local Routes are located within individual developments, parks and neighborhoods and typically cover a short distance. Local routes can serve several purposes. They can provide connection to the community wide trail system of primary and secondary routes, create discrete links or provide a local recreational loop. Local routes are mostly off-street and are primarily unpaved, with paved segments used where necessary. These trail types are mostly found in residential areas, at schools or in parks and open spaces.

The shift in the classification system from trail types to trail routes helps clarify the role of a trail system in West Linn's non-motorized transportation and recreation system. Trail routes better fit the existing characteristics in West Linn and respond to the need to connect to a variety of destinations within the City, while allowing for flexibility in determining the type of trail design most appropriate for a given segment of trail. As individual trail segments move forward to implementation, specific design considerations (presented in Chapter 5) should be applied to determine the most appropriate and context-sensitive treatment for the segment, with the involvement of the public.

ROUTE TYPES

PRIMARY

Through routes that connect the city and the region.

SECONDARY

Routes that connect between neighborhoods.

LOCAL

Routes within neighborhoods.

TRAIL ANALYSIS

Bicycle and pedestrian trip generation methods are less standardized than automobile use, making it more challenging to quantify need and demand. In addition, West Linn's existing trails make trail user counts an ineffective tool. However, as noted in Chapter 1, the results of public involvement for planning efforts over the past 10+ years have consistently indicated that trails are needed or are highly prioritized.

The analysis for refining the routes and defining the comprehensive trail system relied heavily on public input, following a three step process:

- Restructuring the PROS Plan trail concept through public review and input;
- Screening the public's preferred trail system through a series of criteria; and
- Review and refinement of the resulting trail system concept by the public.

STEP 1: REVISING THE PROS PLAN TRAIL CONCEPT THROUGH PUBLIC REVIEW.

Step 1: Revised Trail System Concept

The first step of the analysis centered on engaging the residents of West Linn in a review of the existing PROS trail concept, and collecting input based on

the public's preferred system of trails. This step employed online interactive trail maps available on the project website (www.westlinntrailsplan.org), combined with face-to-face interaction at public workshops and intercept events to collect the opinions and ideas of West Linn residents.

The project website allowed the public to review and comment on the existing trail system through the interactive mapping tool, document library, general comments page and email. The interactive map tool was designed so that website visitors could draw on the maps and make comments. All comments made using the interactive map were available for other users to view.

The information collected at public workshops and community intercept events on paper maps was digitally transcribed and combined with the information collected online. The resulting maps and proposed system information was then posted online for any project website visitor to review. These maps are included in Appendix A: Trail Analysis.

Map 2: Public Input - Desired Trail Routes map illustrates all of the collected public comments on the desired trails system. The resulting dataset was then assessed to identify the trail alignments that received the most attention as opportunities or challenge areas.

Map 3: Public Input - Intensity of Interest illustrates the trail alignments that received the most attention over the public input comment period. Appendix C (under separate cover) includes as summary of the public outreach materials and each of the public workshops.

Step 2: Screening Criteria

In the second stage of the trails analysis, the planning team consolidated and ranked the frequency of public responses for a preferred trail system, then developed a series of criteria for screening the potential trail routes. The criteria were applied to the Step 1 preferred trail alignments to assess each against a variety of considerations to ensure routes identified by the public met citywide and regulatory objectives. Collectively, the criteria allowed the planning team to analyze the conceptual trail system through an examination of existing opportunities and challenges to determine which trails were the most feasible for future development.

The first step of the analysis determined whether potential trail sections were on- or off-street. This characteristic was not scored but noted for future reference and consideration. Trail alignments were then examined using GIS to determine whether the preferred routes met each criterion. After this step, trail segments were either assigned a score of one, for trails that passed the screen, or zero, for trails that did not pass the screen. As a result, each segment of trail could potentially receive a maximum score of 11 and minimum score of zero.

The screening criteria involved an application of concurrent planning, environmental and connectivity factors that cover a range of considerations facing West Linn. Because the cost of a trail project will depend on the specific design and on-the-ground conditions, cost was not used in the analysis. However, cost can be used as an additional criterion to screen trail projects once detailed design and price information is prepared as part of the design development process.

STEP 2: SCREENING TRAIL ROUTES THAT DO NOT MEET CRITERIA.

The three criteria used to screen potential trail routes include:

Concurrency. Routes that are in-line with other land use and planning efforts have the potential benefit of developing in conjunction with the other projects. Based on information from the City's Transportation System Plan (TSP), routes already identified as a priority by the City received a higher score. Map 4: TSP - Pedestrian & Bicycle Projects illustrates the non-motorized priority projects of the TSP. This criterion also referenced concurrency with the existing trails system concept presented in the 2007 PROS Plan. Map 5: Trail Screening – Concurrency on the following page illustrates the alignments that meet one to three planning objectives.

Environment. The environmental criterion are one of the primary factors determining where trails can or cannot be developed within West Linn. Data used for the analysis is based on existing Oregon Statewide Planning Goal 5 inventory data which includes the identification of open space, habitat, riparian and wetland areas, along with other environmental factors such as topography and flood potential. Each alignment was screened using GIS as to whether some segment of the alignment intersected a habitat area, significant riparian area, wetland, an area of 15% or greater rise, an open space, or the two year FEMA flood zone. Map 6: Trail Screening - Environment illustrates the results of the environmental scoring. Route segments crossing through existing open spaces, and that avoided wildlife habitat, wetland and riparian areas, steep slopes and flood zones received a higher score.

Connectivity. The connectivity criterion evaluated a route's potential to link with other routes and community destinations and this influenced a route's classification as primary, secondary or local. Connectivity is especially important in areas that are auto-oriented or are bound by busy streets. As part of the analysis, the alignments that fell within the school district's designated walking zones received a higher ranking; routes that create connections within school walking zones is depicted in Map 7: Trail Screening – Connectivity. Primary school walking service areas were assessed at one mile and the middle schools at a 1.5 mile service area reach along the roadway network.

Step 3: Route Refinement

Step 3: Refining Trail routes based on public review.

During the final step of the methodology, the planning team invited feedback on the draft system on an interactive online map. The map was available from August to October 2010 on the project website. Based on public comments during the initial outreach phase and during the Planning Commission public hearings and comments from advisory boards, the trail system was refined further as depicted in Map 8: Trails System Concept. A complete list of comments generated from the refinement process is provided in Appendix C (under separate cover).

As the trail improvements are implemented and the trail system in West Linn is further developed, future opportunities for other trails not already identified in this Trails Plan may present themselves. The criteria developed as part of this Trails Plan can be used to evaluate these trail opportunities. However, screening of trails does not commit the City to develop these routes in any particular order. Similarly, it is possible that some routes with lower screening scores may become prioritized in the future based on changing conditions and needs. The specific design and alignment of a given trail or trail segment will be developed as these projects approach development.

CONCEPTUAL TRAIL SYSTEM

The trail analysis process resulted in the conceptual trail system, consisting of primary, secondary and local routes (some proposed and others already existing). When completed, the conceptual trail system will provide a total of 87.5 miles of on- and off-street trail routes. This includes 25.5 miles of existing trails and 61.9 miles of new trail route mileage. Of the new trail

mileage proposed, 72 percent are proposed as on-street routes that will be integrated with the City's next TSP Update. The wide ranging benefits of this system are discussed in Chapter 2.

Table 2 provides a summary of the proposed system. Figure 6 and Table 4 provide a complete inventory of the conceptual trail system.

Currently, all existing trail mileage is off-street. Of the existing off-street trails, 3.8 miles (4% of the total) can be designated as primary, 5.3 miles (6%) as secondary, and 16.4 miles (19%) as local routes.

Table 3: West Linn's Proposed Off-street Trails System Summary

Route Type	Distance (miles)		Total (mi.)	Percent of Total Off-street Trail System
	Existing	Proposed		
Primary	3.8	12.2	16	37%
Secondary	5.3	5.1	10.4	24%
Local	16.4	0.01	16.4	38%
Total	25.5	17.3	42.8	100%

The proposed network of off-street trails would expand the City's off-street trail mileage by nearly 68 percent and would better balance the distribution of primary, secondary and local routes (Map 9).

The Plan also proposes more than 44.6 miles of on-street trails, designated almost exclusively as primary and secondary routes. Taken together, the conceptual on- and off-street route network comprises more than 87 miles of pedestrian and bicycle connections throughout West Linn.

Table 3a: West Linn's Proposed On-street Trails System Summary

Route Type	Distance (miles)		Total (mi.)	Percent of Total On-street Trail System
	Existing	Proposed		
Primary	0.0	23.6	23.6	53%
Secondary	0.0	20.9	20.9	47%
Local	0.0	0.1	0.1	0.02%
Total	0.0	44.6	44.6	100%

When completed, the conceptual trail system will provide a total of 42.8 miles of off-street routes and 44.6 miles of on-street routes.

Primary Routes

The majority of proposed off-street trail routes (71%) are designated as primary routes. North of I-205, there are two primary routes that follow a north-south direction. All primary routes will connect with one another. The primary route furthest west generally follows Rosemont Rd. and connects to Salamo Rd., branching off west along the Urban Growth Boundary. A second primary route follows along Hwy 43.

South of I-205, there is one primary route. Closest to I-205, the primary route connects across I-205 at six existing highway over/underpasses. This route will generally follow along Willamette Falls Drive.

Secondary Routes

Twenty-nine percent of the proposed off-street trail system will be secondary routes. Compare this with 47% of the proposed on-street trail network as secondary routes. Proposed secondary routes are mostly located north of I-205, connecting between the city's northern primary route systems. Several of these routes will run along existing natural areas and open space corridors, while others will be located on-street. These routes will use the city's abundance of undeveloped hillside, where there is the greatest potential for connectivity between neighborhoods and primary trail routes.

Ultimately the secondary route furthest east will be a combination of on- and off- street, and possibly in-river, segments that follow along the Willamette River. This route will serve to connect destinations north of West Linn with

destinations to the south of the city including I-205, the Willamette River and Oregon City via the Oregon City-West Linn Bridge. This route will also create opportunities for watercraft rental facilities for in-water recreation. South of this route, a secondary route will follow the direction of the Willamette and Tualatin Rivers via on- and off-street segments.

Local Routes

Local routes constitute the smallest portion of proposed routes, and are mostly off-street. When combined with existing routes, there are 16.6 miles of local trail routes. Of local routes, almost all (99% of local routes) will be off-street. Proposed local trails will be a combination of on- and off-street segments that fill in existing gaps to connect secondary and primary trails.

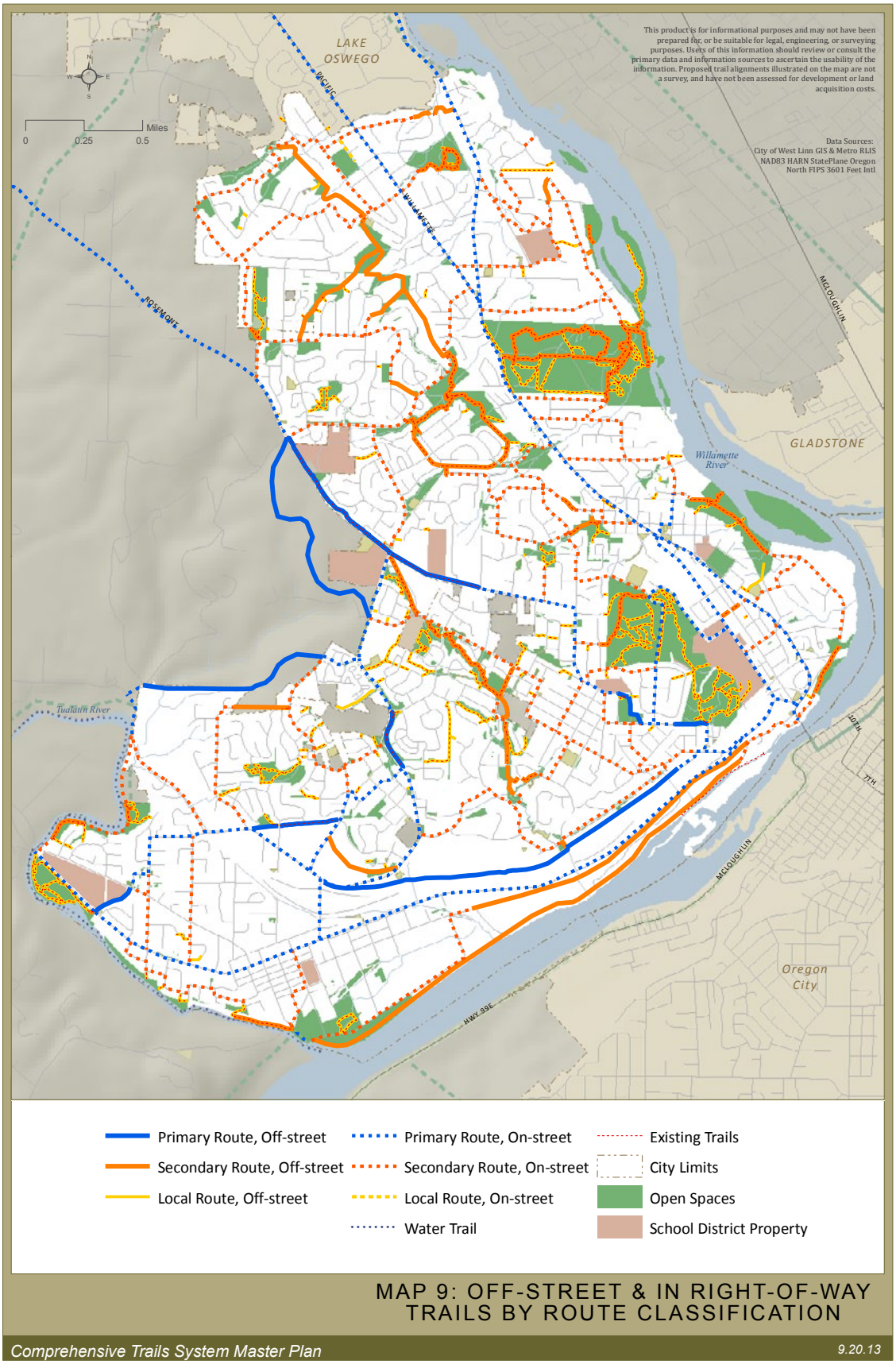


Figure 6: Trails System Concept Plan

V. RECOMMENDATIONS

This chapter provides recommendations to achieve the envisioned trail system over time. Implementing and sustaining the trail system will require the continuation of a strong working relationship with the public, as well as clear trail project prioritization criteria, design guidelines and implementation policies to make the best use of staff, technology and available funding.

The intent of the Trails Plan is to guide development of a consistent system of trails for multiple users in the City of West Linn, while incorporating and respecting the distinct settings and experiences that residents value. Building trust with the public and elevating awareness of the West Linn trails system will be an important step in maximizing the value of the investment in trail development.

IN THIS CHAPTER:

IMPLEMENTATION AND PHASING

Protecting existing trail connections and reserving planned trail connections throughout the City will be necessary to successfully implement the Trails Plan. While the Plan prioritizes the use of existing public lands and rights-of-way, implementation is likely to require acquisition of (or easements for) new corridors in some cases. Acquisition and easements will be negotiated with willing sellers in accordance with City policy regarding property acquisition.

To preserve land for future trail connections, the City will consult this Plan during the review of future new- or re-development applications (see Appendix for an explanation of the land use review process). Where this Plan indicates a trail connection in a location proposed for new- or re-development, the City will pursue acquisition of an easement or purchase of property where appropriate.

Consistent with state law, residents will be invited to participate during plan implementation. A more in-depth review of trail-related regulations and standards is provided in Appendix B.

Coordination with the Transportation System Plan (TSP)

The City of West Linn is preparing to update its TSP in 2013-14. The complete set of on-street recommendations shown in Map 9 will be the basis for the analysis regarding the non-motorized modes during the TSP Update. Including on-street routes in this plan helps to ensure close coordination between on- and off-street transportation facilities and maximizes the efficiency of the City's transportation network. Along with the trail system, the design guidelines and recommendations of this Plan should be carried forward and be included within the TSP update. The TSP should also include updates to West Linn's street standards to incorporate the in right-of-way trail concepts provided later in this chapter. In addition, new and improved street sections should be designed around trail heads and crossings. Finally, in addition to advancing the trail routes that form the trail system, the TSP should include goals, policies, and standards that encourage and accommodate multiple modes safely and in a context-sensitive manner throughout West Linn.

Funding

The trails system defined in this Plan is comprised of routes that will occur on bike lanes and sidewalks within public street rights-of-way (on-street routes) as well as routes that will occur on public lands and easements outside of improved public street rights-of-way (off-street routes). As such, this Plan is an integral part of West Linn's transportation system. On-street routes and intersection improvements in this plan could be eligible for transportation funding and could be included as part of the City's Transportation Systems Capital Improvement Program. Like all transportation improvements, on-street trail routes included in this Plan could also be eligible for funding through the City's systems development charges (SDC) program. As with other public improvements, alternative sources of funding, such as bond measures and grants could also be considered as a means to fund trails improvements.

Route Prioritization

Implementation of the trail system will be phased over time. To maximize the usability and connectedness of the system, routes and segments will be prioritized. During the CIP process, routes and individual segments should be ranked based on existing conditions and available funding.

The 2007 PROS Plan established a four-tiered set of trail implementation priorities. Generally, alignments under public ownership should receive the highest priority for development while alignments not under public ownership

(or under private ownership) receive the lowest priority.

- Highest priority: Alignments passing through City-owned property and within public rights-of way;
- Second highest priority: Alignments on City-owned and publicly owned property, including easements;
- Third highest priority: Missing links connecting existing segments, regardless of ownership; and
- Longer term priority: Alignments under non-public ownership that are not missing links.

After this initial screen, trail projects can be further ranked using the screening process developed for the trails analysis (described in Chapter 4). For prioritizing design and construction, cost and or funding opportunities (e.g., Federal, State and regional grants) should also be included as a criterion.

As shown in Figure 7, five criteria can be used to guide the prioritization and gradual development of trails. With this matrix, each trail project is evaluated on whether it meets the criteria through three broad scoring categories: the project is negative or lacking information, neutral or positive. After evaluating the trail against the criteria, projects with a greater number of positive scores are prioritized over projects that receive more neutral or negative scores. The outcome of this screening process will be a prioritized list of projects that should be included within the transportation CIP.

Rank	Route	Section	Proposed Improvements	Environment	Connectivity	Cost	Concurrency	Land Use and Destinations
1	T1	1	10' paved, multi-use trail	●	●	●	●	●
2	T1	12	5' sidewalks, one side	○	◎	●	◎	●
3	T4	3	10' paved, multi-use trail	●	○	◎	○	◎
4	T11	2	4' trail	○	○	○	◎	○

○ = Negative or lacking information ◎ = Neutral ● = Positive

Figure 7: Route and Segment Prioritization Sample

DESIGN CONSIDERATIONS

Once trail right-of-way is acquired, there are a number of trail design considerations to address location, intended users, and environmental constraints. Trail designs must also conform to specific local, state, and federal guidelines and standards.

Trail Users

Trail users have different preferences and should greatly influence trail design. As a result, proper trail design can reduce user conflict. While road cyclists and skaters need a paved surface that is free from irregularities, joggers might prefer a softer or unpaved surface. User characteristics related to speed and ability should also be considered to limit conflict and create trails that are safe for all. A wide, straight and flat trail will lead to faster speeds, while a trail with different widths, curves and grade changes at strategic locations (known as control points) will require users to take more caution. Designing to control for conflict should not limit the function of the trail. Design elements should be practical while also adding an element of visual interest or fun into using the trail.

There are four major types of trail users, and a fifth type when water trails are considered (non-motorized watercraft).

- Pedestrians include walkers, hikers, joggers and runners. Pedestrians also include people with disabilities who may be dependent on wheelchairs or other mobility devices. Pedestrians typically travel at slower speeds and may travel side-by-side. This has important implications when considering other users that share the trail such as bicyclists who generally travel at faster speeds. Other design considerations include users with baby strollers who need a smoother surface, and pedestrians with pets that need additional width. Some pedestrians prefer softer surfaces that have less impact on legs and feet, while others prefer to walk or run on harder surfaces.
- **In-line skaters and skateboarders** need a smooth, mostly level paved surface. Skaters typically travel at higher speed and require a trail with adequate width to allow for side-to-side skating movement.
- **Road cyclists** may use paved trails for commuting, recreation, and touring. Cyclists traveling along roadways will vary in riding confidence and skill, especially when mixed with automobile traffic. Designing for cyclists should address the safety of the rider as well as other trail users. Like pedestrians, road cyclists may also travel side-by-side or single file. Because cyclists can reach higher speeds, the design for these users should include a wider trail width.
- **Mountain bikers** ride on a range of surfaces and trails, both on and off road. Yet, mountain bikers need the same design considerations as road cyclists when using roadway or paved trails. For off road riding, mountain bikers typically prefer narrower single track trails composed of natural/compacted earth. Unpaved trail sections should be designed to prevent erosion and reduce speed, especially around corners or at trail intersections. Reducing user conflict on these trails is especially important when natural surface trails are used by cyclists and pedestrians.
- **Non-motorized watercraft users** (water trail users) include canoes, kayaks and other small, non-motorized watercraft that are suitable for use on the Willamette and Tualatin rivers. Water trail users require safe beach or dock landings and launch sites, access to support facilities such as restrooms, staging and parking areas.

TRAIL USERS

- **PEDESTRIANS**
- **IN-LINE SKATERS & SKATEBOARDERS**
- **ROAD CYCLISTS**
- **MOUNTAIN BIKERS**
- **NON-MOTORIZED WATERCRAFT**

Off-street trails should be sustainably designed; a trail that is fun to use and that minimizes impacts to the natural and built environment.

Accessibility

Public trails should be designed to accommodate all users. The Americans with Disabilities Act (ADA) establishes design requirements for the construction and alteration of facilities in the private and public sectors. These requirements are known as the ADA Accessibility Guidelines or "ADAAG." ADAAG guidelines are comprehensive and include consideration of a variety of factors.

Refer to the Access Board for a complete list of requirements (www.access-board.gov). A summarized list of important considerations includes:

- A slope of 5% or less for any distance, with the exception of greater slopes for limited distances;
- Resting spaces;
- A stable and firm trail surface;
- Adequate width and height clearance; and
- Adequate signage that is also accessible to users with vision impairments.

Environmental Impacts

Impacts to the surrounding environment should be carefully considered when determining trail design. This includes potential impacts to vegetation, fish and wildlife habitat, creeks and rivers as well as private property. New trails should avoid impacts to fish and wildlife habitat, with alignments located at habitat edges, through elevated boardwalks, pervious trail materials and by avoiding stream, wetland and floodplain crossings when possible.

To minimize runoff and erosion, designs should consider trail grade, cross-slope and trail surface type and width. Impervious trail surfaces will create concentrated run-off, while pervious surfaces such as gravel, compacted earth or pervious asphalt will allow storm water to percolate. Equally important, trail design and materials should be selected with the consideration of long term maintenance needs.

Vegetated buffers, signage and fencing can also be used to separate users from sensitive habitat areas and provide privacy for adjacent neighbors. Pedestrian scale lighting, surveillance of the trail from the street and other Crime Prevention Through Environmental Design (CPTED) techniques can also

be used to increase safety and limit unwanted trail activity.

TRAIL ROUTE DESIGN GUIDELINES

After considering the characteristics of intended users, route type and location, trails can either be designed for shared-use or single-use, or be located on- or off-street. Each type of trail has its own specific advantages and disadvantages that should be weighed carefully during individual project planning and design. The following presents design guidelines for off-street and in right-of-way trails. The location of these routes is illustrated in Figure 6: Trails System Concept Plan on page 39.

Off-street Trails

Off-street routes include different designs for primary, secondary and local trail routes.

Primary route off-street trails are segments that accommodate the needs of most users. This in turn leads to a greater number that can use and enjoy the trail, promoting a larger degree of trail stewardship and support for trail system funding. Primary routes are considered shared-use trails and can be paved (Figure 8) or unpaved (Figure 9).

Specific design features for off-street primary route trails should include:

- Minimum 10' width unless constraints are present; preferred 12' wide surface with 2' shoulders, and adequate shy distance next to the shoulders, with additional area provided for slope, fill and landscape maintenance;
- Vegetation height should be below 3' and above a12' height clearance to the first tree-limb, guy-wire or other object;
- Hard-surface trails should be constructed of porous paving with soft surface unpaved shoulders; in some instances porous paving may not be suitable and the use of impervious surfacing should be considered;
- Limited sight-distance sections should be striped for two-way travel lanes;
- Unpaved trails should have a compacted, natural surface that meets ADA requirements;
- Signs, mileage markers, fences, benches and other placed features should

be located outside of the shoulders; and

- Placement of benches, trash receptacles, drinking fountains and other trail amenities should allow for machine maintenance of the vegetation with at least 8' of clearance around any feature.

Secondary route off-street trails are intended to accommodate the needs of fewer users than an off-street primary route trail. These routes can be paved or unpaved depending on environmental considerations and site context. Unpaved secondary route trails can be designed to provide the types of experiences desired by a specific user group such as walkers, joggers and hikers. Many of West Linn's existing facilities are unpaved off-street trails, and the City has standards in place for this type.

Specific design features should include:

- Minimum 6' width unless constraints are present; 8' preferred;
- Hard-surface trails should be constructed of porous paving with soft surface unpaved shoulders; in some instances porous paving may not be suitable and the use of impervious surfacing should be considered;
- Compacted, natural surface that meets ADA requirements; and
- Adequate shy distance.

Local route off-street trails accommodate a limited number of users. Their design can be paved or unpaved, and should serve a local function. Local route trails are commonly used by mountain bikers, hikers and wildlife watchers, with recreation as the primary purpose. These trail types may be more suitable for areas where alternative routes are popular and crowded, or where higher speeds can be accommodated without disturbing other trail user groups. Some local trails will serve only as connections within neighborhoods. Specific design features, such as trail surface, vary based on location and surrounding conditions but should include:

- Strategically placed "trail anchors" such as rocks and trees at corners of straight segments to slow users;
- Grade should not exceed half the grade of the hillside of sideslope (ex. A sideslope of 20% should result in a trail grade that does not exceed 10%);

and

- An overall trail grade of 10%, with opportunities for drainage.

In Right-of-Way Routes

In right-of-way route trails include different designs for cyclists and pedestrians and are designed to run parallel to streets in urban areas. More than striped bike lanes, in right-of-way trails provide a dedicated trail within the street right-of-way. These trails should be designed to accommodate a range of users.

In right-of-way trail designs are used for primary and secondary routes and can be broken into two categories: in right-of-way facilities for cyclists and in right-of-way facilities for pedestrians. Both designs should be based on the Average Daily Traffic (ADT) of the given roadway and speed of the vehicular traffic. The following design features should be considered when designing in right-of-way facilities.

In right-of-way facilities for cyclists include shared roadway treatments, traffic calming techniques, designated bicycle lanes and separated bike lanes.

- Shared right-of-way. Bicyclists can safely share the roadway with automobiles without roadway markings up to a range of 1,000 (preferred) to 2,000ADT.
- Traffic calming techniques. Roadways with an ADT over 1,000 but less than 3,000 ADT with no roadway markings should use traffic calming techniques to bring the ADT down to 1,000 (2,000 maximum) which is generally a safe and comfortable range to share the roadway.
- Bike Lane. Bike lanes create visual separation of cyclists from automobiles and clarify the use of the road right-of-way. When the ADT is 3,000 or greater a 5'-7' wide bike lane should added; creating separation between automobiles and cyclists.
- Separated Bike Lane. When posted speeds are greater than 35mph or ADT reaches 12,000 -15,000 heightened design considerations will be needed for safe travel. Design treatments should separate bicycle traffic from

automobiles using facilities including but not limited to: buffered bike lanes, cycle tracks and raised bike lanes:

- Buffered bike lanes create a space between the bicycle travel lane and automobile traffic or parked cars. Buffer width can vary between 20" to 32" creating room for bicyclists to pass without encroaching in the automobile travel lane and provides a greater shy distance from cyclists.
- Cycle tracks that provide a separated bicycle facility physically buffered from the adjacent roadway. Cycle tracks require a minimum width of 5.5' with a preferred width of 8', separated from pedestrian facilities with a curb.
- Raised bike lanes (Figure 10) are similar to cycle tracks in that the facility is separated from vehicular traffic, but instead of physical buffer, separation from automobile traffic is created by a change in grade. Raised bike lanes require 5' to 7' wide is lane for travel.

In right-of-way facilities for pedestrians include in-roadway, separated and shared pathway facilities (Figure 11).

- In roadway. When a roadway's ADT is less than 200, traffic is low enough that pedestrians should be able to safely walk within the road right-of-way.
- Separated pathway. When the ADT is greater than 200, separated pedestrian facilities are recommended.
- All sidewalks, if possible, should be separated from the street by 4'-6' wide vegetative buffer with a 6' sidewalk width.
- Shared pathway. In the situation that a primary route follows a roadway with speeds >35mph or the ADT reaches 12,000 - 15,000, and the width of the right-of-way is insufficient to accommodate pedestrian and bicycle facilities on both sides of the right-of-way, a shared use pathway is recommended.
- Minimum 10' wide; preferred 12' wide surface with 2' shoulders, adequate shy distance next to the shoulders, with additional area provided for slope, fill and landscape maintenance;
- Vegetation height should be below 3' or above a12' height clearance to the

first tree-limb, guy-wire or other object;

- Minimum 4' wide, preferred 6' wide vegetative buffer; and
- Signs, mileage markers, fences, benches and other placed features should be located outside of the shoulders.

OTHER DESIGN CONSIDERATIONS

Off-street routes

- Fencing may be needed to delineate the space between trail edge and trail corridor boundary. In addition, the need for screening can be identified during development review and permitting of individual trails.
- In some cases, the trail corridor may have sufficient width to contain other appropriate scale recreational and environmental-related uses such as community gardens, invasive vegetation removal and native tree planting. Such uses will require city approval on a case by case basis.
- Trail signage should include the posted speed limit on shared routes, as well as striping, painted marking or surface material change that cautions trail users of approaching stops, intersections, curves and other situations where speed should be reduced.
- The design of public street and trail intersections should allow for safe crossing of pedestrians and cyclists and meet accessibility guidelines.
- Trail design should respond to adjacent land uses and access. For example, routes adjacent to higher density development with a mix of land uses might merit wider than the minimum travel width to accommodate the higher volume of users.

In right-of-way routes

- Except in cases involving high demand, all facilities should be designed as shared pedestrian and bicycle travel ways.
- The design of public street and trail intersections should allow for safe crossing of pedestrians and cyclists and meet accessibility guidelines.
- Trails should be designed to minimize and/or limit curb cuts.

- Trail design should respond to adjacent land uses and access. For example, routes adjacent to higher density development with a mix of land uses might merit wider than the minimum travel width to accommodate the higher volume of users.
- Depending on the available width of the right-of-way, other facility design modifications should be considered such as reducing automobile travel lanes, on-street parking and other traffic calming techniques.
- Trail signage should include the posted speed limit on shared routes, as well as striping, painted marking or surface material change that cautions trail users of approaching stops, intersections, curves and other situations where speed should be reduced.

TRAIL SUPPORT PROGRAM

Development of a trail support program can serve to promote and protect the long-term investment of the trail system and fulfills the final step of the successful trail system foundation. The City can develop and implement such a program early to ensure that the location of new trails is well known by the community. The program consists of a city-wide trail system education and awareness campaign and long-term trail monitoring and maintenance.

Education and Awareness

Continued public involvement and awareness of the trail system can help foster trail stewardship and future support for trail funding. Outreach to volunteers and partnership building are also important elements of this campaign. The City can also help achieve its goal of increasing walking and biking through increased public education that promotes use of the trail system as an alternative to driving.

A comprehensive trail signage and way-finding system will help users find trails and navigate confusing intersections or road crossings. This can also include public safety information, park and trail rules, interpretive signs, displays and trailhead kiosks related to an area's unique history or environment. User conflict can be reduced by educating the community about proper trail etiquette. In an effort to promote use of the trail system, the City will explore development of a trail education and awareness campaign, including trail signage, in future phases of the trail development process.

Trail Monitoring and Maintenance

After trail development, periodic trail monitoring and routine maintenance keep trails functioning properly while helping to protect investments and extend resources. Trail users should have an easy and accessible resource to report trail issues or provide comments such as an online form that is monitored by park maintenance or public works staff.

City maintenance crews should perform routine trail maintenance through the guidance of a trail maintenance plan. Such a plan should outline specific roles and responsibilities of City staff related to trail maintenance. The plan should also include best practices for maintaining different types of trails and adjacent land areas. Future trail projects should be included in the City's Capital Improvement Plan (CIP) to secure appropriate resources for needed improvements.

TRAIL COSTS

Implementation of the Trails Plan will require adequate funding to construct and maintain trails. Costs for building trails are influenced by local conditions, the availability of land and a need to develop low-maintenance and long lasting trail facilities. Planning level costs incorporate pricing for higher quality building materials, but do not include cost assumptions regarding associated labor, professional fees and environmental mitigation requirements. A number of factors of will influence the final cost to implement specific trail segments, such as assistance from volunteer groups, implementation through other public and private projects, and the level of improvement of specific trail segments (i.e., improvements to many routes may consist only of wayfinding signage only).

Cost Summary

Trail costs are directly related to development challenges; the greater the challenge, the higher the cost. Determining relative costs also helped determine potential timing or phasing of trail development. This cost summary provides planning level estimates that should not be used to estimate actual costs for the design and build of specific projects, but for calculating linear feet and unit costs of trails and trailheads. Table 3 identifies the relative cost of different alignments to assist in decision-making. Lower relative cost route segments could be completed in the nearer term (0-5 years), while mid and higher cost projects could be completed as funding becomes available.

TRAIL SURFACE

Trail surfaces may vary depending on site conditions and constraints. Some sections of trail may require bridge crossings or boardwalks. Table 6 provides planning level cost estimates for trail surfaces. Estimates for asphalt and concrete both assume use of porous materials to minimize storm water run-off. The costs below provide general linear foot costs for typical trail construction.

Table 5: Trail Cost Considerations

Lower cost	Mid-level cost	Higher costs
Little to no trail development challenges are present.	Potential trail development challenges are present or are unknown.	Major trail development challenges.
Conditions may include a trail that: • Requires typical development tasks (grading, surface treatment, signage, fencing, driveway crossings, maintenance, etc.); or • Is within public R.O.W. or city-owned land.	Conditions may include a trail that: • Crosses a wetland or riparian area; • May require some public/property owner outreach; • Crosses a major arterial; • Likely triggers mitigation; • Requires retaining walls; or • May require some R.O.W. or land acquisition.	Conditions may include a trail that: • Requires land or R.O.W. acquisition; • Requires extensive public/property owner outreach; • Requires a bridge; or • Requires extensive permitting and approval.

Table 6: Trail Surface Cost Summary

Improvement	Units	Unit Price
Standard porous asphalt pathway (assume 16' wide)	LF	$ 112
Standard porous concrete pathway (assume 16' wide)	LF	$ 140
Stand non-porous asphalt pathway (assume 16' wide)	LF	$ 96
Crushed rock pathway (assume 10' wide)	LF	$ 50
Boardwalk (assume 12' wide) includes minimum impact footings	LF	$ 120
Bridge (assume 12' x 100' span) prefabricated including footings	LF	$ 2,000

Note: All costs in 2010 dollars. LF=Linear Foot.

Trailhead

A trailhead consists of a parking area, restroom, landscaping and other site amenities. The site feature costs presented in Table 7 include one bike rack, two benches, two trash receptacles, and signage. The size of parking area and amount of landscaping will vary the total cost for development. The costs below include an estimate based on a 10,000 square foot parking area and 2,500 square foot plaza.

Table 7: Trailhead Cost Summary

Improvement	Units	Unit Price
Restroom	EA	$150,000
Parking area	EA	$ 10,000
Plaza area	EA	$ 2,500
Site features	LS	$ 10,500
Plantings	LS	$ 10,000

Note: All costs in 2010 dollars. EA=each; LS=Lump Sum.

GLOSSARY

AASHTO: American Association of State Highways and Transportation Officials

ADA: American's with Disabilities Act

ADAAG: American's with Disability Act Accessibility Guidelines

ADT: Average Daily Traffic

CDC: City of West Linn Community Development Code

CDP: City of West Linn Construction and Design Policies

CWA: Clean Water Act

DEQ: Oregon Department of Environmental Quality

ESA: Endangered Species Act

FEMA: Federal Emergency Management Administration

FHWA: Federal Highway Administration

HCA: Habitat Conservation Areas

MS4: Municipal Separate Storm Sewers Systems (permit type)

NOAA: The National Oceanic Atmospheric Administration Marine Fisheries Service

NPDES: National Pollution Discharge Elimination System

ODOT: Oregon Department of Transportation

OHW: Ordinary High Water

ORS: Oregon Revised Statutes

PROS Plan: City of West Linn Park, Recreation and Open Space Plan (2007)

RTP: Portland Metro 2040 Regional Transportation Plan (2004)

TPR: Transportation Planning Rule (Used to guide jurisdictions to comply with statewide transportation goal)

TSP: West Linn Transportation System Plan

USFWS: U.S. Fish and Wildlife Service

WLMC: West Linn Municipal Code

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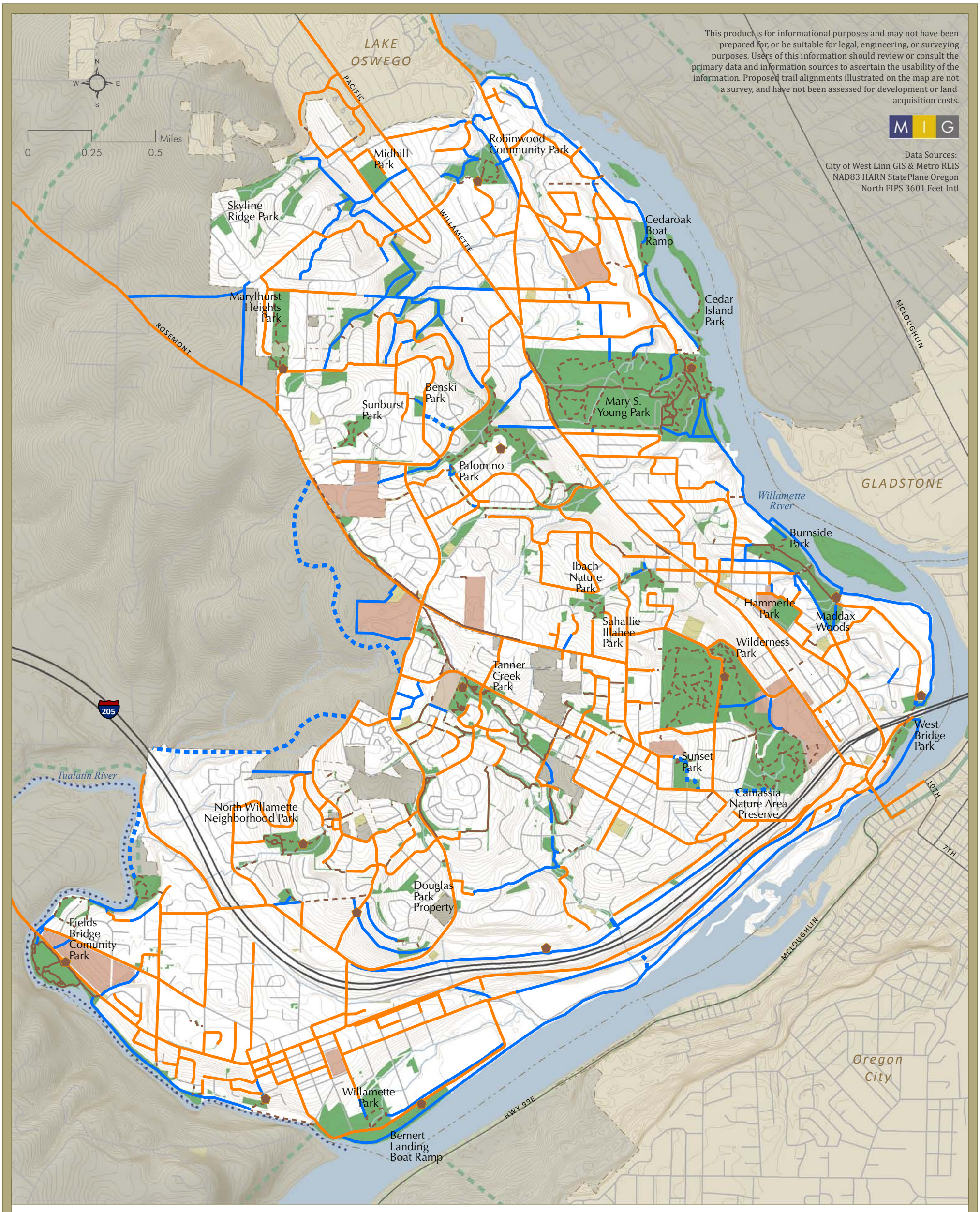
appendix A: trail analysis - map 2

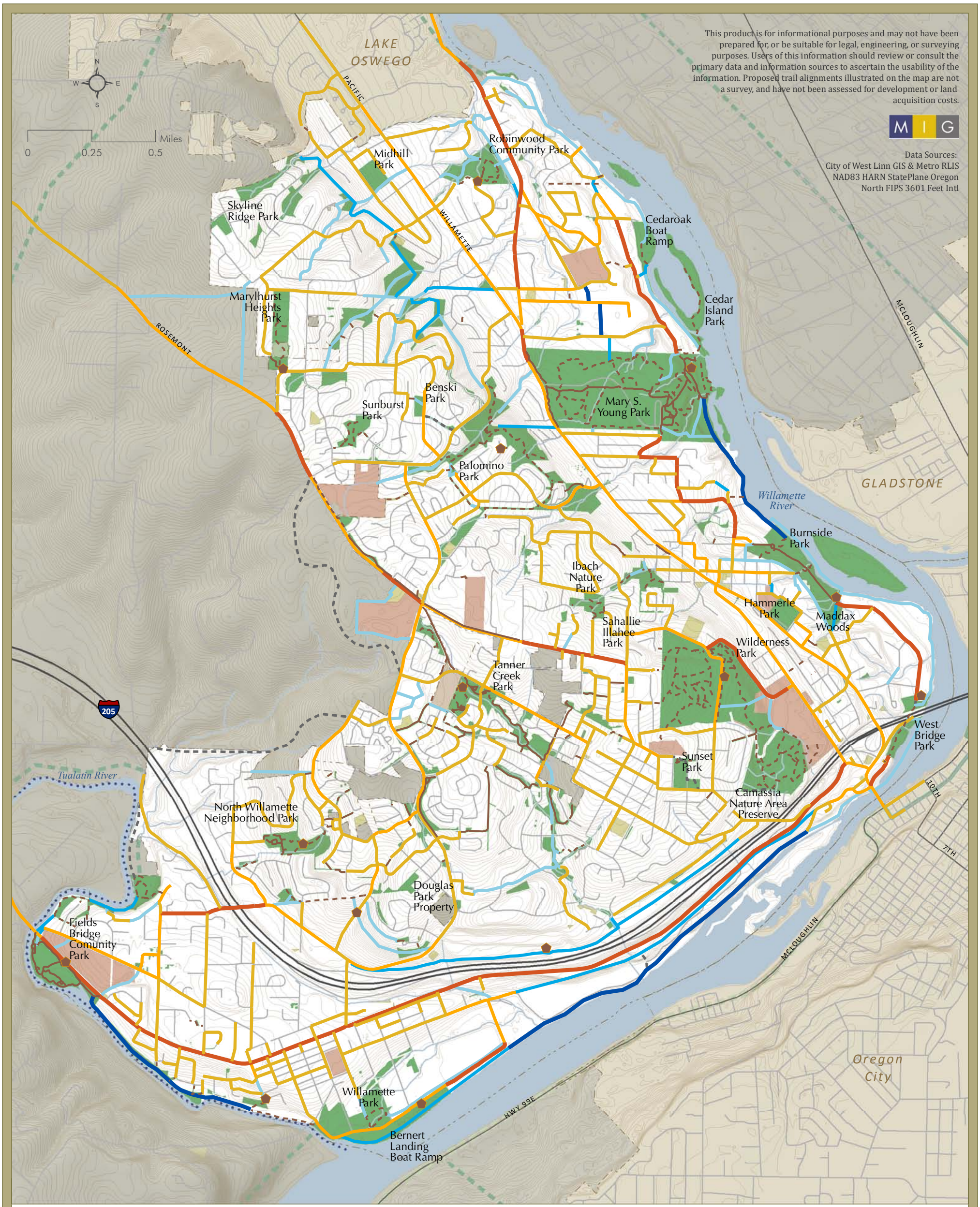


CITY OF West Linn

MAP 2: PUBLIC INPUT - DESIRED TRAIL ROUTES

appendix A: trail analysis

appendix A: trail analysis - map 3



CITY OF West Linn

MAP 3: PUBLIC INPUT - INTENSITY OF INTEREST

appendix A: trail analysis - map 4

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Proposed trail alignments illustrated on the map are not a survey, and have not been assessed for development or land acquisition costs.

Data Sources:
City of West Linn GIS & Metro RLIS
NAD83 HARN StatePlane Oregon
North FIPS 3601 Feet Intl

N W E S

0 0.25 0.5 Miles

LAKE OSWEGO
PACIFIC
ROSEMONT
WILLAMETTE
MCLOUGHLIN
GLADSTONE
Willamette River
Tualatin River
205
HWY 99E
10TH
7TH
Oregon City

Midhill Park
Robinwood Community Park
Skyline Ridge Park
Cedaroak Boat Ramp
Marylhurst Heights Park
Cedar Island Park
Benski Park
Sunburst Park
Mary S. Young Park
Palomino Park
Burnside Park
Ibach Nature Park
Hammerle Park
Maddax Woods
Sahalie Illahee Park
Wilderness Park
Tanner Creek Park
West Bridge Park
Sunset Park
Camassia Nature Area Preserve
North Willamette Neighborhood Park
Douglas Park Property
Fields Bridge Community Park
Willamette Park
Bernert Landing Boat Ramp

Bicycle Plan
- Existing Bicycle Facility
- Bicycle Lane - 1side
- Bicycle Lane - 2 side
- Bicycle Lane - Raised
- Bicycle Boulevard
- Shoulder Bikeway
- Proposed Off-Street Path

Pedestrian Plan
- Sidewalk Both Sides
- Sidewalk One Side

Existing Trails
- Paved Trail
- Unpaved Trail
- Trailhead

Regional Trails Plan
- Existing Trail
- Proposed Trail
- Proposed Greenway Corridor
- Water Trail

- City Park/Open Space
- School District Property
- City Property
- Water Feature

- City Limits
- Other City
- Highway
- Street
- 10' Contour

CITY OF West Linn

MAP 4: TSP - PEDESTRIAN & BICYCLE PROJECTS

appendix A: trail analysis - map 5

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. Proposed trail alignments illustrated on the map are not a survey, and have not been assessed for development or land acquisition costs.

MIG

Data Sources:
City of West Linn GIS & Metro RLIS
NAD83 HARN StatePlane Oregon
North FIPS 3601 Feet Intl

N W E S

0 0.25 0.5 Miles

LAKE OSWEGO
PACIFIC
WILLAMETTE
ROSEMONT
MCLOUGHLIN
GLADSTONE
Willamette River
Tualatin River
Oregon City
HWY 99E
10TH
7TH
205

Midhill Park
Robinwood Community Park
Skyline Ridge Park
Cedaroak Boat Ramp
Marylhurst Heights Park
Cedar Island Park
Benski Park
Sunburst Park
Mary S. Young Park
Palomino Park
Burnside Park
Ibach Nature Park
Hammerle Park
Maddax Woods
Sahallie Illahee Park
Wilderness Park
Tanner Creek Park
West Bridge Park
Sunset Park
Camassia Nature Area Preserve
North Willamette Neighborhood Park
Douglas Park Property
Fields Bridge Comunity Park
Willamette Park
Bernert Landing Boat Ramp

Concurrency
- Meets objectives of pedestrian and bicycle elements of TSP, and the 2007 PROS Plan.
- Meets two of the three planning objectives.
- Meets one of the three planning objectives.
- Public Input Alignment
- Off-Street PROS Plan

Existing Trails
- Paved Trail
- Unpaved Trail
- Trailhead

Regional Trails Plan
- Existing Trail
- Proposed Trail
- Proposed Greenway Corridor
- Water Trail

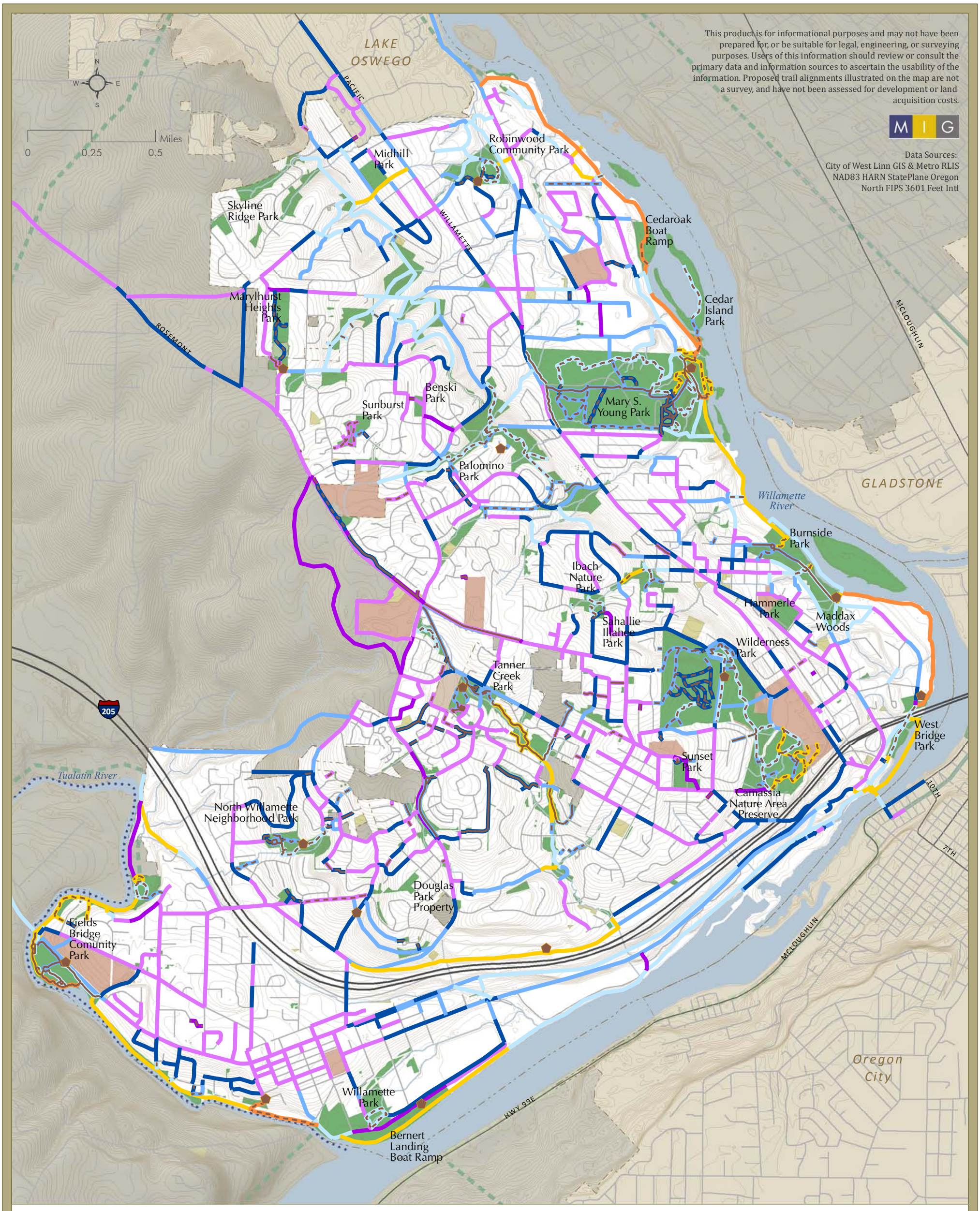
- City Park/Open Space
- School District Property
- City Property
- Water Feature

- City Limits
- Other City
- Highway
- Street
- 10' Contour

CITY OF West Linn

MAP 5: TRAIL SCREENING - CONCURRENCY

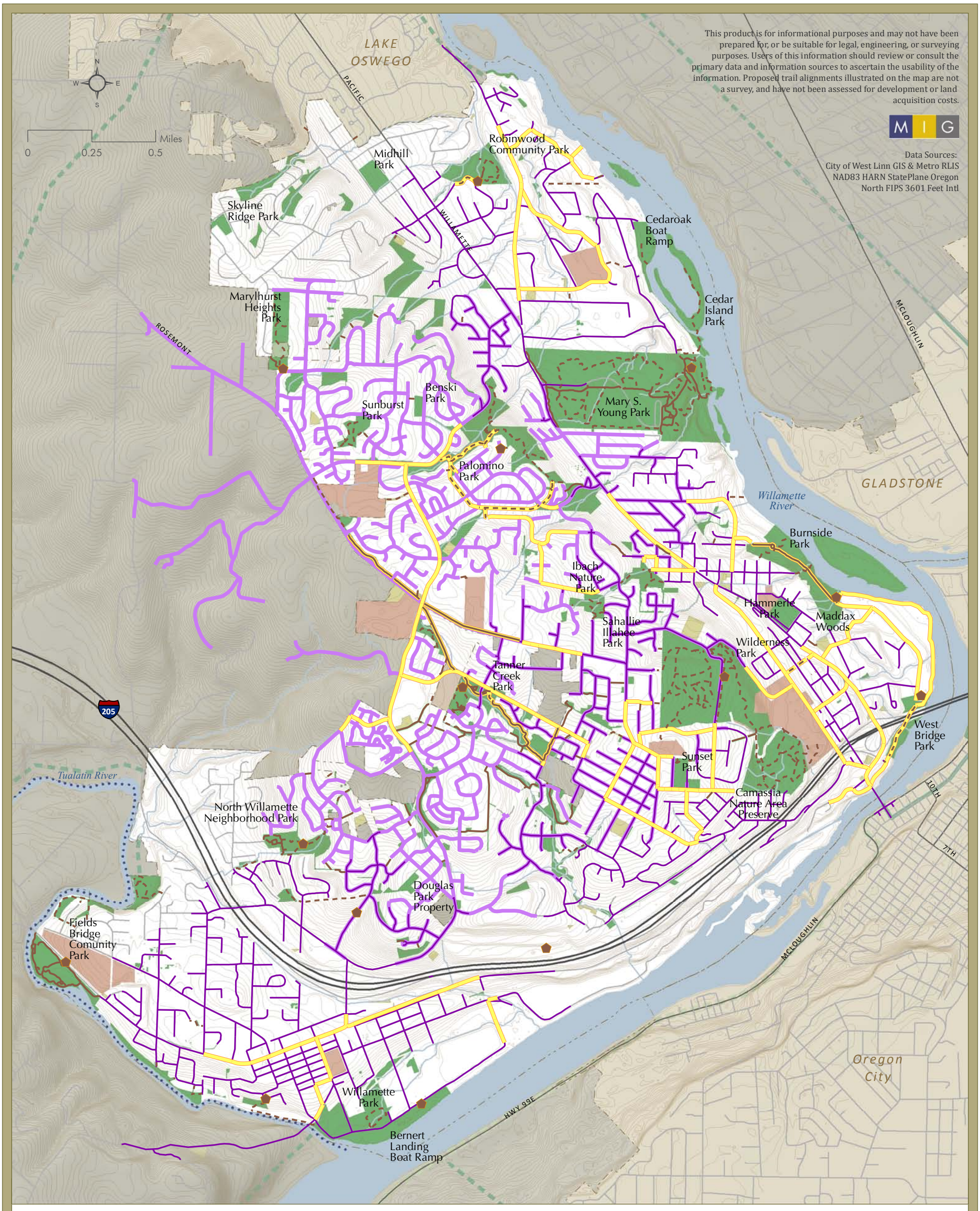
appendix A: trail analysis - map 6



CITY OF West Linn

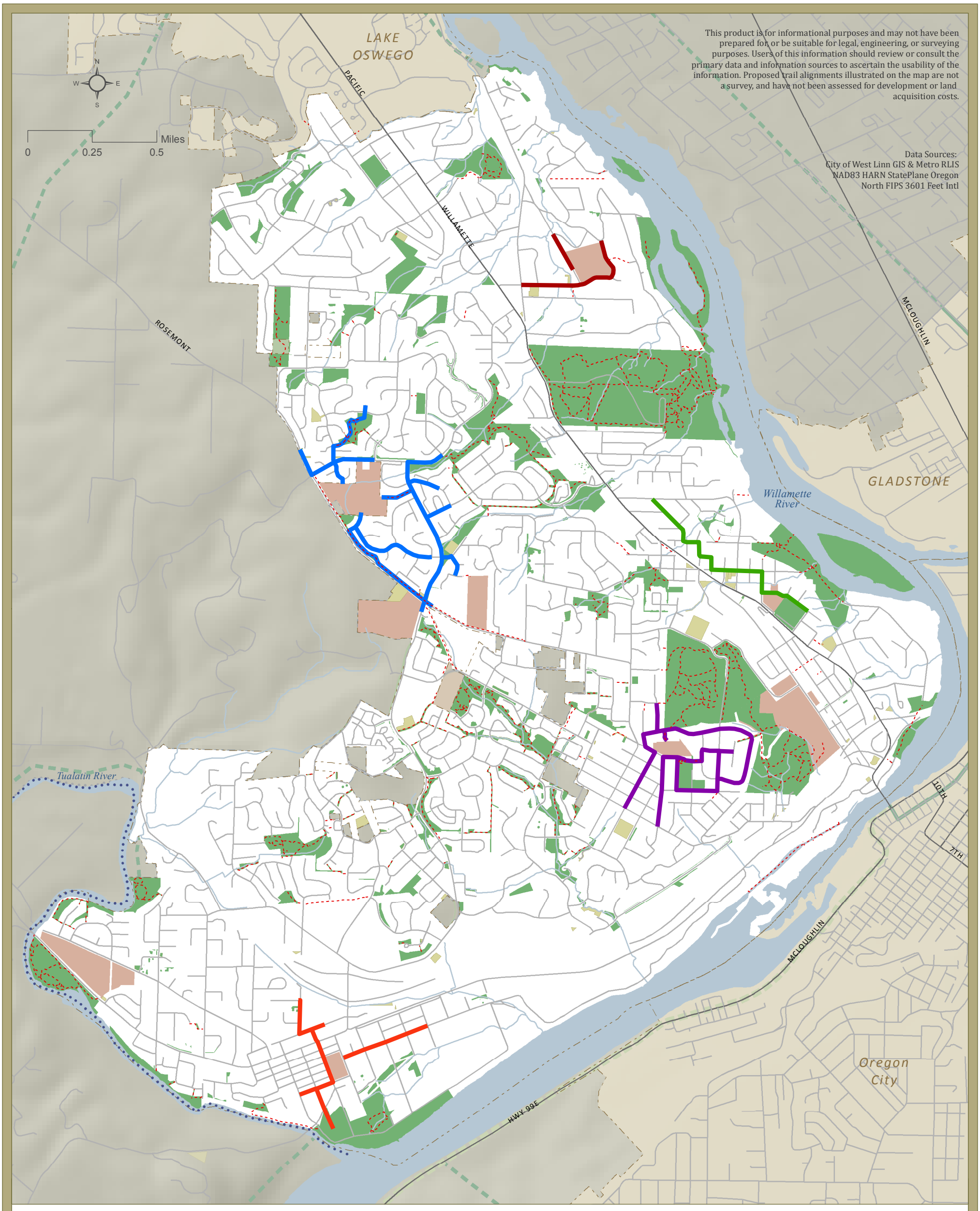
MAP 6: TRAIL SCREENING - ENVIRONMENT

appendix A: trail analysis - map 7



CITY OF West Linn

MAP 7: TRAIL SCREENING - CONNECTIVITY



MAP 10: SAFE ROUTES TO SCHOOLS

APPENDIX B: REGULATIONS & STANDARDS

RELEVANT PLANS AND POLICIES

There are multiple plans and policies that affect trail planning in West Linn. Along with city regulations and planning documents, trail planning and design in West Linn must comply with Clackamas County and Metro directives. West Linn's neighborhoods also develop their own plans. The following section provides an overview of relevant plans and policies and highlights key points that are especially relevant to trail planning.

IN THIS SECTION:

City of West Linn Comprehensive Plan

West Linn's Comprehensive Plan provides the basis for other plans, ordinances, and other implementing documents that set forth more detailed direction. The plan organizes different elements based on the Oregon State-wide Planning Goals; each chapter focuses on a different goal. While most of the plan chapters relate to trail planning, some of the most critical include: Goal 2, Land Use Planning; Goal 8, Parks and Recreation; and Goal12, Transportation.

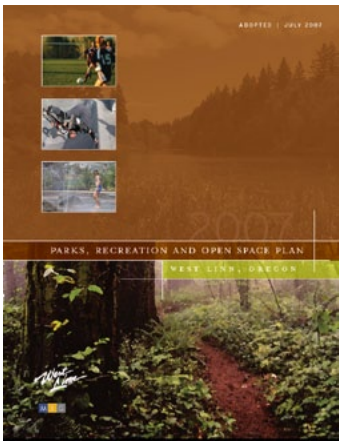
The Goal 5 chapter identifies the City's open spaces, scenic and historic areas, and natural resources including a flood management area map, water quality map, open space map, and wildlife habitat inventory map. Goals and policies related to the trail plan include:

- Providing a transportation system that encourages modes of transportation other than the automobile and is convenient, safe and efficient;
- Developing and implementing measures to connect service areas, neighborhoods, and subdivisions via all practical modes of travel;
- Providing interconnections for pedestrian pathways and other means; and
- Promoting connections between parks and recreation areas.

City of West Linn: Imagine West Linn, September 2008

Imagine West Linn is an update to the 1994 vision, reaffirming the City's commitment to a sustainable future and recognizing the City's community spirit and sense of place. The document is an amendment to the Comprehensive Plan and notes that alternative methods of transportation and opportunities for recreation will be needed in the future, because roadway congestion and use of existing resources will continue to increase. The document contains several guiding principles, growth concepts, and action items related to trails. These include:

- Implementing the Trails Plan to assure that neighborhoods, schools, and parks are all interconnected by safe pedestrian and bicycle pathways;
- Requiring dedication of trail corridors in an "aggressive" fashion; especially trails along Willamette and Tualatin Rivers;
- Improving the planning and design of streets, trails and buildings to promote alternative modes of transportation; and
- Building on the network of parks, natural areas, walkways and bike paths in the community; and
- Creating a river walkway, and greenway connections.



City of West Linn Parks, Recreation and Open Space Plan, June 2007

The primary impetus for the Trails Plan stems from the City's recent Parks, Recreation and Open Space (PROS) Plan. Adopted by the City in June 2007 as an update to the 1998 plan, the plan provides an analysis of West Linn's park system with recommendations for recreation programs, new parks, facilities, and open space sites, and trails. Public involvement included outreach booths, a community specific questionnaire, neighborhood association outreach, and Parks Board review.

One of the major recommendations identified in the plan is the development of a comprehensive trails plan to supplement the Transportation System Plan. Trail-related recommendations contained in the PROS Plan include:

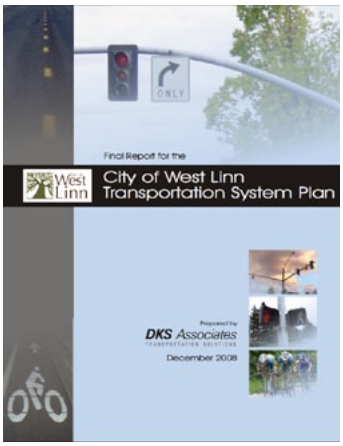
- Providing a comprehensive trail network composed of a hierarchy of different trail classifications;
- Developing specific trail project recommendations for each of the

classifications, as well as prioritization strategies for trail development;

- Identifying unimproved right-of-way opportunities, creating a trails map and brochure, and implementing a consistent trail signage program.
- Implementing a consistent signage program to direct users to trails at trailheads, along routes, and at parks.

City of West Linn Transportation System Plan, December 2008

The Transportation System Plan (TSP) fulfills the state Transportation Planning Rule (TPR) requirements for comprehensive transportation planning in the cities of Oregon. The plan presents the investments and priorities for the pedestrian, bicycle, transit, and motor vehicle systems along with new transportation programs to correct existing shortfalls and enhance critical services. The plan includes a master plan project map and list for each travel mode to support the City's transportation goals and policies.



- Pedestrians - The plan identifies gaps in the sidewalk network and provides a prioritized list of sidewalk projects. According to the plan, an important need for pedestrians in the city is the availability of and convenience for safe crossing locations on arterial streets and across large regional roadways. Appropriate improvements should provide for more direct, convenient, and safe bicycle or pedestrian travel within and between residential areas and neighborhood activity centers. Of the 82 pedestrian projects identified, only five are off-street access ways and are all low priority.
- Bicyclists – According to the TSP, the overall system of bike lanes provides very limited connectivity and there is no bikeway system on collector streets. The TSP recommends filling gaps in the existing network where bike corridors exist (arterials and collectors); connecting key bicycle corridors to schools, parks, and activity centers; improving crossing safety and connectivity; and providing appropriate facilities to secure bicycles. Of the 23 bicycle projects identified, only four are off-street and are low priority (the same projects identified in the pedestrian list).
- West Linn OR 43 Concept Plan - The concept plan for Highway 43 is an appendix of the TSP. The plan identifies inadequate sidewalks, pedestrian

refuges, and bike lanes and shoulders along the road. One specific area of concern is at Mapleton and Old River where there are existing automobile/bike conflicts as bicyclists attempt to access the Mary S. Young trail. According to the plan, there is neighborhood support for continuous, grade-separated sidewalks and/or shared off-street paths and trails that can be used by both cyclists and pedestrians.

Neighborhood Plans

West Linn has 11 neighborhoods, depicted in Figure C-1. Of these, there are eight West Linn neighborhoods with an adopted neighborhood plan. The purpose of these plans is to identify the unique issues facing each neighborhood, and to devise strategies for addressing these concerns.

Within each neighborhood plan, specific goals and policies supplement the West Linn Comprehensive Plan. The plans contain a vision, goals, specific actions, and a list of partners for implementation. The following provides a summary of neighborhood goals or policies that encourage safe connections to walk and/or bike.

Figure B-1: West Linn Neighborhoods

At the time of review, BHT (Barrington Heights, Hidden Creek Estates, Tanner Creek) neighborhood, Rosemont Summit neighborhood, and Skyline Ridge neighborhood did not have an adopted plan.

Bolton Neighborhood Plan

- Provide complete and safe facilities for pedestrians, bicyclists, and transit users along the entire width of Willamette Drive.
- Encourage pedestrian activity by giving pedestrians advantages over automobiles by use of pedestrian "shortcuts" between streets.
- Provide pedestrian links between Bolton and other neighborhoods.
- Encourage walking and bicycling by school students.
- Provide easy pedestrian connections between city parks and other services and uses, such as commercial

areas, bus stops, and schools.

Hidden Springs Neighborhood Plan

- Provide and maintain access to safe parks and trails.
- Develop and maintain safe places to walk, including sidewalks and other paths.

Marylhurst Neighborhood Plan

- Develop and maintain safe and convenient bicycle lanes and paths to provide connectivity throughout the city and surrounding communities.
- Develop and maintain safe and convenient places for pedestrians, including sidewalks and other paths.

Parker Crest Neighborhood Plan

- Facilitate safe and efficient pedestrian and bicycle transportation throughout the neighborhood.
- Provide linkages between surrounding neighborhoods and open spaces.

Robinwood Neighborhood Plan

- Provide continuous and wide pedestrian facilities on both sides of Willamette Drive.
- Use pedestrian shortcuts to connect existing streets.
- Provide better access from Robinwood Park to Mary S. Young Park.

Sunset Neighborhood Plan

- Provide safe and easy access to trails, parks and open spaces.
- Connect paths/trails throughout the neighborhood and City.
- Maintain paths/trails to ensure their accessibility for all, including seniors and individuals with disabilities.

Tanner Basin Neighborhood Plan

- Designate recreational areas and connect trails currently dispersed throughout the neighborhood.

Vision Statement and Action Plan for the Willamette Neighborhood of West Linn

- Maintain rivers, parks and connecting trails.
- Provide sidewalks and bike paths on major streets; accessing neighborhood destinations.
- Develop a trail system along the river.

Clackamas County Comprehensive Plan

The Clackamas County Comprehensive Plan guides land use, transportation, and development within Clackamas County which includes county owned rights-of-way in West Linn. Similar to the West Linn Comprehensive Plan, the county's comprehensive plan addresses goals and policies based on the Oregon State-wide Planning Goals. Major elements of the plan related to trail planning are included in Chapter 4, Land Use, and Chapter 5, Transportation. Included in the plan is the Planned Bikeway Network Map showing several proposed bike routes throughout the City. The plan outlines a host of policies that support walking and bicycling through greater connectivity. Specific policies include:

- Providing networked systems of walkways and bikeways connecting neighborhoods, transit stops, commercial areas, community centers, schools, parks, libraries, employment places, other major destinations, regional bikeways and walkways, and other transportation modes.
- Identifying walkway and bikeway improvements necessary to ensure direct and continuous networks of walkways and bikeways on the county road system.
- Supporting acquisition and development of multi-use paths on abandoned public and private rights-of-way.
- Encouraging bicycle and pedestrian access across rivers and other natural barriers.
- Promoting grid-street development patterns to provide direct routes from neighborhoods to destinations frequented by pedestrians and bicyclists.

appendix b: regulations and standards

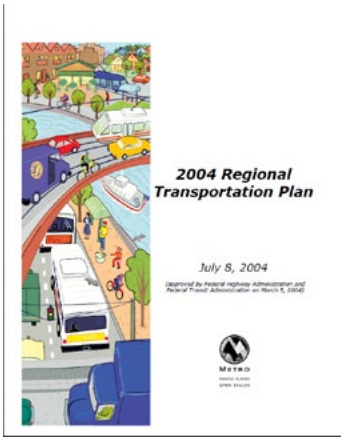
Metro 2040 Regional Framework Plan, December 2005

The Regional Framework Plan unites all of Metro's adopted land use planning policies and requirements based on the planning horizon through the year 2040. Under the Metro Charter and state law, cities and counties within Metro's boundaries are required to comply and be consistent with Metro's adopted plans and policies.

Metro 2004 Regional Transportation Plan, July 2004

The 2004 Regional Transportation Plan (RTP) lays out the 20-year priorities for road, transit, freight, bicycle and pedestrian improvements for the Portland Metro region. As a city under Metro's jurisdiction, West Linn's transportation system plan must conform with the goals and recommendations of the RTP. One of RTP's goals to be carried out by local jurisdictions is improving regional transit, bicycle, and pedestrian system improvements to improve mode split – or alternative transportation methods to decrease reliance on motorized vehicle travel.

The RTP includes a regional trail system map, and bicycle and pedestrian system maps. The maps show a regional bike route along West Linn's Willamette River water frontage, as well as a water trail along the Tualatin River. Based on the plan, bicycle routes follow along Highway 43, and Willamette Falls Drive.



REGULATORY REVIEW

Trail planning, design and development regulations ensure safe, standardized design of trails and trail facilities. Land use review and permitting enforce these regulations to prevent impacts to adjacent properties, land uses and the natural environment. This section provides a summary of the review and permitting process, as well as regulations that must be considered throughout the trail planning process: from concept, to development, to use and maintenance.

Prior to their construction, trails must be reviewed for conformance with local, state, and federal regulations. After receiving local review and approval, proposed trails must then be permitted for any necessary street right-of-way work and access, as well as environmental considerations.

Land Use Review

Proposed trails are first reviewed for conformance with the Community Development Code (CDC) for environmental impacts, zoning and design. CDC Chapters 28: Willamette and Tualatin River Protection, and 32: Water Resources, provide standards for development projects and protection of water resources. According to these code chapters, development and maintenance of permeable paths and trails are generally permitted in environmentally sensitive areas but must be constructed using low impact development techniques.

The CDC limits development in sensitive resource areas, inventoried and mapped by Portland Metro as Habitat Conservation Areas (HCAs). Based on this conservation status, these areas are to be avoided to the degree possible with development instead directed to the areas designated "Not Affected by Recommendation" or "Allow Development". The CDC also requires that new development is designed and located so that all significant trees – or heritage trees – are retained. To protect individual trees or tree groves, the code requires a tree conservation easement, measured 10 feet from the tree drip line (Sec. 55.100 (B)).

Development in floodplains also requires review. Chapter 27: Flood Management Areas, requires engineered plans for improvements to the floodplain or floodway. For stream crossings, the chapter requires bridges – as opposed to culverts – that are as perpendicular to the stream as practicable.

Trails are a permitted use in most of the City's zoning districts and may require design review depending on extent of the project. There are two types of design review for trail projects: Class I or Class II Design Review. Some projects may also be exempt from review. In general, the review type is heightened if the conceptual design will create a greater impact. While a Class I Design Review is reviewed by the Planning Director, a Class II Design Review is reviewed by a reviewing body and is therefore more discretionary. A Class II Design Review can also condition a project with elements such as screening (Section 56.100). The types of review and common trail related projects are defined below.

- Class I Design Review (56.020(C))
    - Trails, sidewalks, paths, walls and fences greater than 200' long; and projects within a natural resource area;

- Addition or elimination of a park facility;
- ADA compliance inside natural resources area; and
- Major landscape plan modification.

- Class II Design Review (56.020(D))
  - Development of a natural area, park or park facility; and
  - Program changes that result in park reclassification.

Water Resource Permitting

The National Pollution Discharge Elimination System (NPDES) program is a congressionally mandated program under the Clean Water Act (CWA). The program is implemented locally through the Oregon Department of Environmental Quality (DEQ). DEQ issues permits to applicable entities which participate in and/or oversee activities which are recognized as potential sources of pollutants. Municipal Separate Storm Sewers Systems (MS4), Industrial Activities and Construction Activities all potentially require an NPDES permit.

The City of West Linn obtained a permit under Phase 1 of the NPDES program in 1995. The City operates under a MS4 system whereby all storm water is collected and conveyed in a storm sewer system separate from the sanitary sewer system. As part of the permit the City has developed a Storm Water Management Plan that outlines Best Management Practices (BMPs) that the City will implement to improve and conserve water quality, as well as, prevent harmful pollutants from contaminating storm water runoff and entering the MS4.

Right of Way Permitting

Additional access points to local streets, or work within the City right-of-way requires a City approved right-of-way permit. Trail work within Oregon Department of Transportation (ODOT) right of way must comply with proper right-of-way acquisition procedures outlined by ODOT.

Erosion Control and Grading Permitting

Chapter 31 of the CDC, Erosion Control, requires all development to have an

erosion control permit and approved erosion control measures in place prior to site disturbance. Grading that takes place as part of the trail project requires a City approved grading permit. The State Department of Environmental Quality (DEQ) also requires a 1200-C Permit if there is more than an acre of site disturbance.

Federal Review and Permitting Types

Depending on individual trail projects and site specific conditions, federal review and permitting types can include the US Army Corps of Engineers and the Endangered Species Act (ESA). Archeological review can also be required at the federal, state and local levels. Army Corps of Engineers permitting is required anytime there is work in a water of the US (considered to be most wetlands, rivers, streams, and some drainage ditches).

ESA provides for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The National Oceanic Atmospheric Administration Marine Fisheries Service (NOAA Fisheries) and the U. S. Fish and Wildlife Service (USFWS) both have administrative authority and management responsibility for different species under the ESA. For species listed as threatened, section 4(d) of the ESA requires NOAA Fisheries or USFWS to put prohibitions in place, and approve programs for activities that contribute to conserving listed salmon and Steelhead. West Linn's Storm Water Management Plan addresses ESA requirements for development review.

Property ownership Considerations*

Property ownership is an important component of the Trails Plan. Without allowing public access, public trails cannot be built. The City's Park, Recreation and Open Space Plan specifies how new trail development is prioritized with city-owned trail alignments having the highest priority and alignments not under public ownership, and that are not missing links, identified as longer term priorities.

Once an alignment is under public ownership and a trail is ready for construction and use, three important considerations for trail users and adjacent property owners are encroachment, river access and liability.

*Note: The Comprehensive Trail System Master Plan provides an overview of existing property ownership considerations for informing further trail planning and development and is not to be used as legal advice.

- **Encroachment**, or unauthorized use of property, can occur on public or private property, and be both real and perceived. On public land, encroachment is common where private property abuts city-owned open space. Private property owners sometimes encroach onto open space through landscaping or other improvements. Adverse possession – or the transfer of property ownership through use of the land over time – is a more complex form of encroachment. However, publicly owned land cannot be taken by adverse possession.

- In order to develop the City's trail system, city-owned open space or rights-of-way may eventually be developed as trails. As trail development and use of open space occurs closer to property lines, there may be a perception of encroachment onto private property. To help define public and private spaces, the city requires fencing along the edge of the trail corridor when trails are developed with new subdivisions (Sec, 85.200(C)). In addition, the need for additional screening can be identified during development review and permitting of individual trails.

- **Public river access** is regulated through the state. The State of Oregon owns navigable rivers, allowing public access up to the Ordinary High Water (OHW). The CDC defines the OHW mark as, "the line on the bank or shore to which the water ordinarily rises in season." (CDC 28.020) Chapter 28 of West Linn's Community Development Code, Willamette and Tualatin River Protection, implements regulations on development within the Willamette and Tualatin River Protection Areas.

- Chapter 28 allows public paths, or passive use recreation facilities within Habitat Conservation Areas (HCA) that include wetlands, riparian areas, and water resource areas when no other practical alternative exists. According to the code, "legal access to, and along, the riverfront in single family residential zoned areas shall be encouraged and pursued especially when there are reasonable expectations that a continuous trail system can be facilitated." (CDC 28.110 (F)(5))

Liability

- **Liability** for injuries occurring on a city-owned trail, public property, or on adjacent private property is commonly brought up as a concern. However, it is important to note that liability works both ways. A jurisdiction can be

just as liable for not installing appropriate bikeways where the public has requested them and safety issues have been documented.

The Oregon Revised Statutes provide state-wide law related to the recreational use of trails and liability. ORS 105.682 states that land owners are not liable for any personal injury, death or property damage that arises out of the use of the land for recreational purposes when the owner of land either directly or indirectly permits any person to use the land for recreational purposes.

ORS 105.688 further states that immunity applies to public and private lands, rights of way, buildings, roads, water bodies, and machinery or equipment on these lands. The statute also specifies that immunity only applies if there is no charge for using the land, and the owner transfers an easement to a public body to use the land. ORS 105.696 furthers that users must still use care of land and 105.700 clarifies that public access is prohibited from accessing private land without owner's permission.

The courts have yet to determine whether immunity to liability also applies to transportation related use of public land. As such, use of public trails for transportation is not necessarily immune from liability. Nevertheless, West Linn is also exempted from any liability under its municipal code (WLMC 5.520).

EXISTING TRAIL STANDARDS

Trail design requirements specify all aspects of how a trail will be built and used. Along with trail design, other components of the trail system include street crossings, trailheads and signage. Trail location, width, slope, and surface are important components of trail design. In West Linn, trail design is based on the Parks, Recreation and Open Space Plan, Community Development Code, the City's Design and Construction Policies, as well as federal standards and guidelines.

Americans with Disabilities Act (ADA)

Public trails must be designed to accommodate all users. ADA establishes design requirements for the construction and alteration of facilities in the private and public sectors. These requirements are known as the ADA Accessibility Guidelines or "ADAAG."

appendix b: regulations and standards

Parks, Recreation and Open Space Plan

West Linn's Parks, Recreation and Open Space (PROS) Plan provides guidelines for planning and designing trails and pathways. The guidelines provide design considerations related to location and user characteristics. Specific trail guidelines addressed in the PROS Plan include:

- Wherever appropriate, recreation pathways and trails should not be part of a street roadway.
- Trail alignments should take into account soil conditions, steep slopes, surface drainage and other physical limitations. Routes should be located for construction and maintenance cost efficiency, while taking into account the need to provide a quality experience for the trail user.
- Trails should be developed in compliance with American's with Disability Act Accessibility Guidelines (ADAAG) on trail accessibility.
- Trails should be planned, sized, and designed for non-motorized multiple uses, except for dedicated nature trails, and/or areas that cannot be developed to the standard necessary to minimize potential user conflicts.

Community Development Code and Construction and Design Policies

West Linn also has standards for trails and pathways within the Community Development Code (CDC) and Construction and Design Policies (CDP). While the CDP provides specifics for bikeways, the CDC has multiple sections related to the planning of trails and pathways. Under the CDC and CDP, trails and pathways fall under four general categories: Trails and pathways within parks and open spaces; trails built with new subdivisions; trails along rivers; and bikeways.

- Trails in Parks and Open Spaces -There are multiple sections that define trail standards, and several trail and pathway types identified within the Community Development Code. Under Section 56.015, the code distinguishes between paved and unpaved trails within parks.
- Trails in Subdivisions - Trails required as a condition of subdivision approval (Section 85.200(C)) can be designed for either bicyclists or pedestrians. The design of these trails must also consider proximity to natural areas,

multifamily and commercial sites.

- Trails Along Rivers -The proximity of trails to water resources and other uses also requires design consideration. Trails must be set back from water resources.
- Bikeways - The Community Development Code requires that bikeways along state highways comply with Oregon Department of Transportation (ODOT) standards for highway bicycle path design. However, the CDP (Section 5) also provides standards for bikeways with a minimum width of 5′ to 6′, and a maximum grade of 5%.

Table B.1 provides an overview of the different City guidelines related to trail types and pathways, and widths and surfaces. Each of the trail types are based from West Linn's Community Development Code and the Construction and Design Policies.

Table B.1: West Linn Trail and Pathway Design Standards

Route Type	Document Location	Min. Width[1]	Max. Grade	Surface
Trails in parks and open spaces				
Paved trails	CDC 56.015	4-10′	---	Paved
Un-paved trails in parks	CDC 56.015	3-6′	---	Gravel
Path connections in parks	CDC 56.100(I)(1)	5-8′	5%	Paved
Paths linking to neighborhoods	CDC 56.100(I)(2)	5-8′	---	Paved
Reduced width paths	CDC 56.100(I)(3)	6′	---	Gravel or paved
Nature trails	CDC 56.100(I)(4)	3-6′	---	Gravel, packed earth
Disabled access paths	CDC 56.100(I)(5)	8′	ADA[2]	ADA
Paths linking parks to community or region	CDC 56.100(I)(6)	5-10′	---	Paved

Trails in or connecting subdivisions				
Bicycle trail	CDC 85.200(C)	8′	12-15%	All weather surface (paved)
Pedestrian trail	CDC 85.200(C)	6′	12-15%	All weather surface (paved)
Trails along rivers				
Multi use[3]	CDC 28.110	---	---	All weather surface
Bikeways				
Bikeway[4]	CDP Sec. 5	5-6′	5%	Asphalt/Concrete

[4] Narrower or reduced path widths may be allowed as required by topography, and to preserve trees.

[2] Trails must meet Americans with Disabilities Act (ADA) Design Guidelines.

[3] The City is in the process of updating the design of multi use trails along rivers.

[4] Based on AASHTO's Guide to Development of Bicycle Facilities; ODOT's Oregon Bicycle & Pedestrian Plan, latest edition; and the state Manual on Uniform Traffic Control Devices.

Street Crossings

Well designed street crossings ensure safer connections for trail users. In addition, crossing design treatments give drivers a visual warning to slow and stop for trail users. Street crossing considerations include traffic speeds, street width, traffic volumes (average daily traffic and peak hour), line of sight, and trail user.

Existing street crossing design is based on American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets (latest edition). Traffic control devices are based on the Manual on Uniform Traffic Control Devices for Streets and Highways, Federal Highway Administration, with Oregon Supplements, Oregon Department of Transportation (latest edition).

While the PROS Plan and CDC stress the importance of off-street routes, the CDC allows trails to be routed on existing streets. In these cases, both the PROS Plan and the CDC state that the trail or pathway should be designed to minimize potential conflicts between motorists and trail users.

Trailheads

Trailheads are the gateways to the trail system, letting users know where they can access a trail. By providing well defined public access points, trailheads can decrease tendencies to cut through private property or environmentally sensitive areas to access trails.

The CDC has limited design guidelines for trailheads. Chapter 55 requires trailhead parking spaces to be located away from the trail entrance, with design features to increase trail recognition. The code defines a trailhead as, "(providing) access to a trail and trail information, and (providing) parking for trail users that don't live in the immediate area of the trail, or choose to arrive by automobile." The PROS Plan calls for at least eight trailheads throughout the City.

Signage

Trail signage provides information on trail locations, trail use, rules, and safety information, and can also provide interpretive or informational displays. Signage is regulated by Section 52.300 of the CDC. According to the code, freestanding signs directed at pedestrians or cyclists within public parks are not limited in number or size. For these signs, the minimum setback is 5' from the edge of right-of-way. The code also allows illumination of these signs.

There are no design guidelines for the design of trail signage; however new parks require submittal of a sign plan indicating the dimension and location of new signs. In addition, Section 56.100 requires that all paths and trails are clearly identified with signs that attract use and discourage people from cutting across landscaped areas or impacting environmentally sensitive areas.

Table 4: Proposed Trail Characteristics

			Bold italic indicates trail approximately follows 2007 PROS Trail Concept
PROPOSED TRAIL ROUTES	**STATUS**	**TYPE**	**MILES**
Primary Route			
Alternative Willamette/Tualatin	Proposed	In r.o.w.	3.45
Failing St/West A St	Proposed	In r.o.w.	1.11
Hill Top Loop Trail	***Proposed***	***In r.o.w.***	***0.23***
Neighbor Trail	***Proposed***	***In r.o.w.***	***1.06***
Oak Savannah Trail	***Proposed***	***In r.o.w.***	***0.11***
Oak Savannah Trail	***Proposed***	***Off-street***	***1.68***
Old River Drive/Willamette Drive	Proposed	Off-street	0.02
Old River Drive/Willamette Drive	Proposed	In r.o.w.	3.95
Rosemont Rd./Walnut St.	Proposed	Off-street	0.34
Rosemont Rd./Walnut St.	Proposed	In r.o.w.	1.16
Rosemont Trail	***Proposed***	***Off-street***	***0.83***
Rosemont Trail	***Proposed***	***In r.o.w.***	***2.84***
Rosemont Trail - proposed off-street (alternative)	***Proposed***	***Off-street***	***1.06***
Salamano Rd/Willamette Falls	Proposed	Off-street	0.31
Salamano Rd/Willamette Falls	Proposed	In r.o.w.	3.13
Tualatin River Greenway	*Proposed*	*In r.o.w.*	*0.63*
Tualatin River Greenway	*Proposed*	*Off-street*	*1.44*
Willamette Drive (North)	Proposed	In r.o.w.	1.74
Willamette River Greenway	***Proposed***	***Off-street***	***5.02***
Willamette River Greenway (In right-of-way alt.)	***Proposed***	***Off-street***	***1.47***
Willamette River Greenway (In right-of-way alt.)	***Proposed***	***In r.o.w.***	***4.16***
		Subtotal	*35.73*
Secondary Route			
Hill Top Loop Trail	***Proposed***	***In r.o.w.***	***1.79***
Neighbor Trail	***Proposed***	***In r.o.w.***	***1.05***
Neighbor Trail	***Proposed***	***Off-street***	***1.45***
Wildwood Trail	***Proposed***	***Off-street***	***0.55***
Neighbor Trail - New Secondary B	***Proposed***	***In r.o.w.***	***0.09***
Neighbor Trail - New Secondary B	***Proposed***	***Off-street***	***0.19***
Neighbor Trail - New Secondary C	***Proposed***	***In r.o.w.***	***0.20***
Neighbor Trail - New Secondary D	***Proposed***	***In r.o.w.***	***0.94***
Neighbor Trail - New Secondary E	***Proposed***	***Off-street***	***0.08***
Neighbor Trail - New Secondary E	***Proposed***	***In r.o.w.***	***0.52***
New Secondary A - Skye Parkway Trail	***Proposed***	***Off-street***	***0.19***
New Secondary A - Skye Parkway Trail	***Proposed***	***In r.o.w.***	***1.54***
New Secondary A1	Proposed	In r.o.w.	0.33
New Secondary B	Proposed	Off-street	0.54
New Secondary B	Proposed	In r.o.w.	1.05
New Secondary B1	Proposed	Off-street	0.42
New Secondary B2	Proposed	In r.o.w.	0.33
New Secondary C	Proposed	Off-street	0.13
New Secondary C	Proposed	In r.o.w.	1.00
New Secondary C1	Proposed	In r.o.w.	0.14

Table 4: Proposed Trail Characteristics

			Bold italic indicates trail approximately follows 2007 PROS Trail Concept
PROPOSED TRAIL ROUTES	**STATUS**	**TYPE**	**MILES**
New Secondary C2	Proposed	In r.o.w.	0.10
New Secondary C3	Proposed	In r.o.w.	0.60
Secondary Route			
New Secondary C4	Proposed	In r.o.w.	0.29
New Secondary C5	Proposed	In r.o.w.	0.24
New Secondary D	Proposed	In r.o.w.	2.11
New Secondary D1	Proposed	In r.o.w.	0.39
New Secondary D2	Proposed	In r.o.w.	0.57
New Secondary D4	Proposed	In r.o.w.	0.59
New Secondary D5 - Hidden Springs Trails	Proposed	Off-street	0.07
New Secondary E	Proposed	In r.o.w.	0.38
New Secondary F	Proposed	In r.o.w.	0.23
New Secondary G	Proposed	In r.o.w.	0.27
New Secondary H	Proposed	In r.o.w.	0.32
New Secondary H1	Proposed	In r.o.w.	0.03
New Secondary I	Proposed	In r.o.w.	0.19
New Secondary L	Proposed	In r.o.w.	0.90
New Secondary L1	Proposed	In r.o.w.	0.12
New Secondary L2	Proposed	Off-street	0.24
New Secondary L2	Proposed	In r.o.w.	0.64
New Secondary L3	Proposed	Off-street	0.37
New Secondary M1	Proposed	In r.o.w.	0.41
New Secondary M2	Proposed	In r.o.w.	1.09
New Secondary N	Proposed	In r.o.w.	0.41
New Secondary S-J	Proposed	In r.o.w.	0.09
New Secondary S-J	Proposed	Off-street	0.34
New Secondary S-J1	Proposed	In r.o.w.	0.15
New Secondary S-J2	Proposed	Off-street	0.02
New Secondary S-J2	Proposed	In r.o.w.	0.23
New Secondary S-K	Proposed	Off-street	0.04
New Secondary S-K	Proposed	In r.o.w.	1.45
New Secondary S-N1	Proposed	Off-street	0.49
Willamette River Greenway (In right-of-way alt.) A	***Proposed***	***In r.o.w.***	***0.06***
Willamette River Greenway (In right-of-way alt.) B	***Proposed***	***In r.o.w.***	***0.01***
Willamette River Greenway (In right-of-way alt.) B	***Proposed***	***Off-street***	***0.03***
		Subtotal	*26.01*
Local Route			
Island View Ter.	Proposed	In r.o.w.	0.03
Lower Midhill Dr.	Proposed	In r.o.w.	0.12
Sunset Park Trails	Proposed	Off-street	0.01
		Subtotal	*0.16*
		Total All Proposed Routes	**61.90**