

Wagner Creek Greenway Connection Plan



May 2007



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EXECUTIVE SUMMARY

The City of Talent has identified Wagner Creek as a greenway corridor and a key means to connect the downtown to the existing Bear Creek Trail for pedestrians and bicyclists. A portion of the Wagner Creek Greenway Trail has been constructed. The entire completed trail will be approximately 1.5 miles long. Oregon Highway 99 and West Valley View Road present challenges to creating a continuous, creek-adjacent trail.

The Wagner Creek Greenway Plan included participation by the Wagner Creek Greenway Advisory Committee, preparation of base maps reflecting existing conditions, and opportunities and constraints analysis, a review of regulatory requirements, a technical analysis of Oregon Highway 99 West and West Valley View Road, conceptual trail alternatives analysis, public review of trail alignment options and trail design features, and preparation of planning-level cost estimates and trail implementation plan.

Alternative trail alignments were evaluated based on the following criteria: connectivity; roadway crossing safety and comfort; costs/technical difficulty; private property impacts; user experience; and environmental impacts.

A number of greenway development alternatives were evaluated. The recommended alternatives are shown in Figure 1, and include:

- Highway 99 Crossing. Short-term recommendation: signage requiring cyclists to turn right and use the bike lane to access the signalized intersections at Rapp Road and Valley View Road. Long term recommendation: Mid-block crossing with a center refuge island.
- Between Highway 99 & W. Valley View Rd. Within the 50-foot riparian setback along the west side of Wagner Creek when Oak Valley Drive is constructed.
- Crossing W. Valley View Rd. Short-term recommendation: Divert cyclists to existing sidewalk to Hinkley Road signal. Long-term: A mid-block crossing with a center refuge island.
- Between W. Valley View Rd & Bear Creek Greenway. Short-term: use the existing dirt road to access future city park and pond. Long-term: Create detailed plans for crossing Bear Creek and connecting to the Bear Creek Greenway.

Trail Design Elements include recommended materials, cross-sections, amenities, and signage. Roadway crossings treatments are described. The Plan also describes safety and maintenance considerations. The Plan also describes a proposed implementation process, including phasing, preliminary cost estimates, funding options, regulatory requirements. Finally, the Plan includes recommended Comprehensive Plan and Code updates.

WAGNER CREEK GREENWAY CONNECTION CONCEPTUAL PLAN

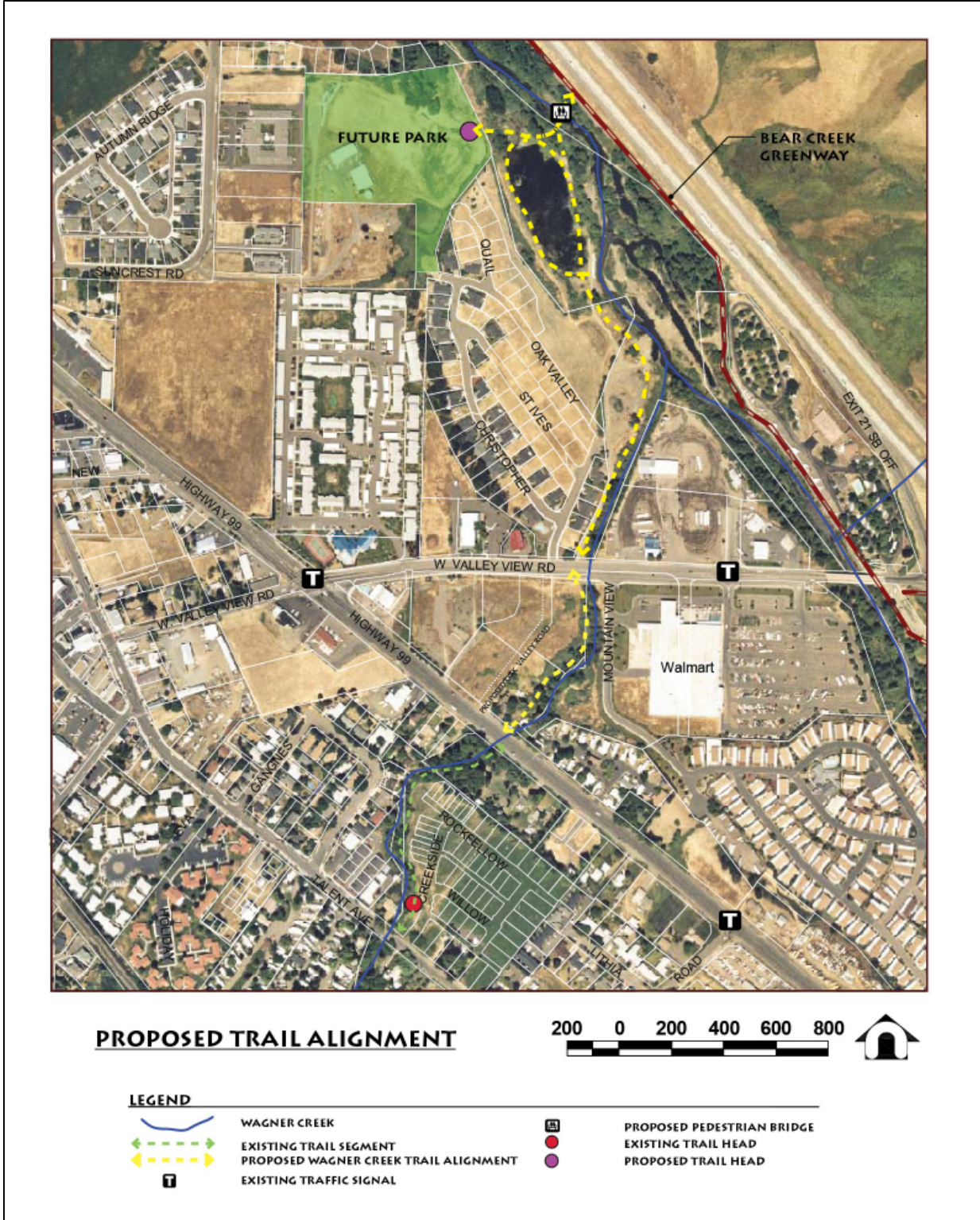


Figure 1

SECTION 1. INTRODUCTION

1.1 PROJECT BACKGROUND & PURPOSE

The City of Talent is centered around its primary transportation facilities, which are Interstate 5, Oregon Highway 99, and Valley View Road. As the town grows, the areas between Talent's downtown and primary transportation facilities are filling in with residential and commercial development. It is important and timely for the City to plan for alternatives to motorized vehicles for local trips.

Wagner Creek enters Talent at the southwest end of the City and travels approximately 4,800 feet to its confluence with Bear Creek in the northeast section of the City, providing an excellent alignment for a greenway trail. The City has for many years identified Wagner Creek as a desirable greenway corridor in the Greenways Master Plan, Comprehensive Plan, and Zoning Ordinance. The City has consistently recognized the Wagner Creek Greenway as a key means to protect the floodplain and riparian habitat, as well as to connect the downtown to Bear Creek and provide an alternative to the automobile.

The City's efforts have led to the construction of a portion of the Greenway trail, from an existing trail head located at Talent Avenue and Creekside Way to Highway 99. The identified corridor continues along Wagner Creek to the point where it intersects with Bear Creek. When completed, the Greenway trail will be approximately 1.5 miles long, connecting a number of neighborhoods and districts. However, there are some notable obstacles, such as Oregon Highway 99 and West Valley View Road, which present challenges to creating a continuous, creek-adjacent trail.

In an effort to bring the Wagner Creek Greenway closer to reality, the City of Talent has received a Transportation and Growth Management Program grant to complete a conceptual plan for the trail. The result of that effort is this Wagner Creek Greenway Conceptual Plan (Plan).

The Plan identifies access points and a preferred alignment for the Wagner Creek Greenway. The Plan evaluates the major obstacles and recommends solutions. The Plan evaluates key road crossing options, establishes trail technical standards and design elements, and addresses regulatory requirements, constraints and opportunities, and alternative route options. Finally, the Plan provides preliminary project cost estimates and potential sources of funding.

The Plan will be adopted as a refinement to Talent's Transportation System Plan (TSP).

1.2 WAGNER CREEK GREENWAY VISION

Greenways are undeveloped linear corridors, often located along streams or similar open spaces that are reserved for non-motorized uses and environmental preservation. Greenways can provide more direct or pleasant connections for pedestrians and bicyclists to other parts of the transportation networks such as bicycle lanes and sidewalks on roadways. Greenways are the most effective when they connect to parks and open spaces, schools, neighborhoods, commercial districts and other desirable destinations. The Wagner Creek Greenway has the potential to accomplish these greenway objectives.

The City of Talent's vision for the Wagner Creek Greenway is that it will be a multi-use trail providing a non-motorized travel alternative for community residents and visitors while protect-

ing and enhancing the biological, cultural, and historic resources of the corridor. Article 8-3H.2 of the Talent Zoning Code identifies the intent of the greenway designation to:

“...to support the continued improvement and maintenance of the Bear Creek Greenway, to continue to develop the Wagner Creek Greenway, and to eventually connect the two for an integrated greenway system. Greenway development shall combine pedestrian access with natural features in a way that protects natural areas and wildlife habitat in and around the greenway.”

1.3 TRANSPORTATION CONNECTION

In Talent, the Wagner Creek Greenway will be an integral component of the City’s multi-modal transportation system. The location of the Greenway will enable it to serve as a kind of “backbone” for non-motorized transportation in the City. The Greenway will transect a portion of the City where there are a diversity of land uses ranging from services, retail, and a mix of residential neighborhood types, including new single family home subdivisions, retirement communities, and older manufactured home parks. The trail could potentially serve an equally wide range of users, including children heading to and from school and parks, shoppers, exercisers, commuters, walkers, and nature watchers.

The Greenway will extend from near the downtown, where many of the City’s services are situated. The Talent Elementary and Middle Schools are located just south and west of the downtown. The big box retail shopping center (currently a Wal-Mart) is located along the proposed trail alignment. Although that business is reportedly relocating, it is expected that another large retailer will take over the building. The Greenway would provide convenient access to the big box retail location.

The City owns property located at the north end of the Greenway, just south of the existing Bear Creek Greenway trail. That land is slated for development as a City park and will be a primary destination for children and families.

The Wagner Creek Greenway’s ultimate connection would be to the Bear Creek Greenway, which links the communities of Ashland and Medford, about 14 miles apart. The Bear Creek trail has been quite successful as both a local and regional trail. Talent is located about 5 miles from Ashland and 9 miles from Medford. These distances are attractive to many recreational bicyclists who may use Talent as a destination from either City or as an intermediate rest stop on longer rides.

The City of Talent has worked hard to provide facilities for pedestrians and bicyclists on most of its major roadways. There are bicycle lanes and sidewalks on all of the roadways that intersect with the Greenway (Valley View Road, Highway 99, and Talent Avenue). The recent development at the south end of the Greenway, Old Bridge, has constructed the access to the Greenway with streets that comfortably accommodate non-motorized users with slow traffic speeds and sidewalks.

The biggest connectivity challenges for the Wagner Creek Greenway are the crossings of Valley View Road and Highway 99. There are signals at Valley View and Highway 99, and at Valley View and Hinkely Road and Highway 99 and Rapp Road which can be utilized for the trail in the short term. However, none of the signals are particularly conducive to use by non-motorized traffic because of long crossing distances that leave the crosswalk user exposed to fairly high speed turning movements. Longer term solutions are explored within this report.

1.4 PLAN DEVELOPMENT PROCESS

The Wagner Creek Greenway Plan was completed through the following steps:

- Establishment of the Wagner Creek Greenway Advisory Committee to provide feedback during the master planning process.
- Preparation of base maps reflecting existing conditions, including natural features, historical features and land uses, photo documentation of the corridor, and review of existing plans and other relevant documents.
- Opportunities and constraints analysis for a trail alignment in the Wagner Creek corridor.
- Technical analysis of standards, regulations, and permitting requirements.
- Technical analysis of OR 99W and West Valley View Road and potential crossing sites.
- Conceptual trail alternatives analysis.
- Public review of trail alignment options and trail design features.
- Preparation of planning-level cost estimates and trail implementation plan.



SECTION 2. OPPORTUNITIES & CONSTRAINTS

2.1 OPPORTUNITIES

2.1.1 Success of the Bear Creek Greenway

The success of Bear Creek Greenway has established a precedent for trails through the area. It also provides a supply of potential users, especially cyclists traveling the Bear Creek Greenway between Ashland and Medford, who may seek the services available in downtown Talent.

2.1.2 Wagner Creek Greenway Recognized in Local Plans

The Wagner Creek Greenway is a component of the Talent Comprehensive Plan. The Talent Transportation System Plan and Parks Master Plan both acknowledge the Wagner Creek Greenway as a part of the transportation and open space systems of the City. In a similar fashion, the Talent Zoning Code supports the development of the greenway in Article 8-3H.2 (Natural Areas, Parks and Floodplains), and provides supporting standards in Article 8-3J.6 (Street Access and Circulation, Pedestrian Access and Circulation, Street Improvements, Dedication and Setbacks).

2.1.3 Wagner Creek Greenway is Partially Built or Committed

Because of the City's plans, the developer of the Old Bridge project constructed the trail section between Talent Avenue, with parking provided, almost to Highway 99 to the north. The remaining section of trail will be built as a part of a mixed-use development along the highway. This trail section establishes a visible example for the residents of Talent to experience, and begins to raise expectations for the continuation of the trail.

2.1.4 Limited Number of Property Owners

The section of Wagner Creek Greenway between Highway 99 and Bear Creek is in three separate ownerships, which simplifies the process of acquiring property or easements.

2.1.5 Potential for Riparian Habitat Enhancement

Along the northern segment of Wagner Creek between Bear Creek and West Valley View Road, the riparian habitat along the creek has been disrupted by flood control modifications and a gravel quarry operation. There is an opportunity to restore the creek along with constructing the trail. These linked activities may provide additional funding opportunities.

The central portion of Wagner Creek between Highway 99 and West Valley View Road is severely over-run with blackberry. Blackberries replace native riparian vegetation and reduce diversity. In addition, the banks are very steep through this area. As part of the trail construction, reconfiguration of the banks to a more gentle slope, replanting the area with native vegetation (similar to that being accomplished along the Old Bridge greenway section), and actively removing invasive species would greatly improve riparian habitat along this section of the creek.

2.1.6 Planned City Park near Bear Creek Greenway

The City of Talent owns approximately 0.75 acre of land east of the junction of Wagner Creek and Bear Creek. Once developed, the Wagner Creek Park will bring people into the area and possibly anchor an early phase of the Wagner Creek Greenway project. If restrooms and picnic

facilities are included, the park could become a destination for trail users coming from Ashland or Medford.

2.1.7 Existing Traffic Signals

On Highway 99, there is a traffic signal at the intersection of Highway 99 and West Valley View Road and a second signal is at the intersection of Highway 99 and Rapp Road. On West Valley View Road, there is an existing signal at Hinkley Road. These signals may provide interim connectivity between trail segments if road crossing provisions cannot be made. Even if the signals are not used as an interim connection between trail segments, the addition of the signal at Rapp Road may slow traffic speeds on this stretch of highway, improving conditions for both the existing on-highway bike lanes (east-west) and the potential trail crossing (north-south).

2.2 CONSTRAINTS

2.2.1 Highway 99 Crossing

Highway 99 is a relatively high speed highway that has recently been reconstructed in the Wagner Creek Greenway area to five lanes (four travel lanes and a center turn lane). The speed and width of the Highway create a substantial challenge to trail users who will need to cross the highway between trail segments. Potential approaches include a grade-separated crossing, a median-protected mid-block crossing, or directing trail users to an existing signalized intersection.

2.2.2 West Valley View Crossing

Similar to Highway 99, West Valley View Road is a wide, multi-lane, relatively high speed arterial. It also creates a substantial challenge to trail users who will need to cross the highway between trail segments. The potential approaches are the same as those listed for Highway 99.

2.2.3 Unknown Engineering Constraints

It is difficult to identify the potential engineering constraints of the trail segment between Highway 99 and West Valley View. The creek banks appear to be very steep but the topography is unclear due to a thick layer of blackberries. There may also be floodplain and wetland constraints associated with this section of trail. These constraints would be reduced or eliminated if the City extends Oak Valley Drive between Highway 99 and West Valley View Road, as planned.

2.2.4 Bridge Across Bear Creek

To establish a connection between the Wagner Creek and Bear Creek greenways, a bridge over Bear Creek will be required. The area in which the bridge would be located includes wetlands and flood control elements that may pose challenges to construction. A wetland determination and floodplain analysis will be needed to determine the optimum placement and design of the trail and bridge in this area.

2.2.5 Land Acquisition & Project Construction Costs

The costs of trail construction may be a constraint on its development. This is particularly true if grade-separated crossings of Highway 99 or West Valley View are determined to be required. Funding for trails and related facilities such as bridges is highly competitive and will take a long-term commitment on the part of the community.

SECTION 3: ALTERNATIVES ANALYSIS

This chapter includes several sections. The first summarizes the factors that were used to evaluate the alternatives. Following that, the various alternatives are discussed, including the recommendation for each alternative.

3.1 EVALUATION CRITERIA

3.1.1 *Connectivity*

Evaluates the usefulness of an alternative to users seeking access to other trails (particularly the Bear Creek Greenway), streets with sidewalks and bike lanes (or with the potential to add these facilities), and to destinations such as schools, parks, commercial, or employment areas. The highest ranking is given to alignments that offer the best connectivity, taking into consideration the existing and planned conditions in the study area.

3.1.2 *Roadway Crossings*

Evaluates roadway crossings based on existing treatments, the potential for future treatments, roadway traffic speeds and other characteristics such as traffic gaps, sight visibility, volume, etc. Alternatives with the best potential for effective (safe and comfortable) roadway crossings are given the highest ranking.

3.1.3 *Cost/Technical Difficulty*

Evaluates the relative cost for alignments, including land acquisition, design, engineering, and construction, especially where crossing improvements or other infrastructure improvements would be necessary. This criterion also takes into consideration ODOT and City policy and support. Alternatives with the lowest anticipated costs and highest compliance with existing policy are given the highest ranking.

3.1.4 *Private Property Impacts*

Evaluates where property easements or land acquisitions are required. Willingness of property owners to grant easements was taken into consideration. This criterion also takes into account opportunities to add to the greenway through the land development process by requiring dedication and/or construction of right-of-way as part of project approval. In general, the fewer the acquisitions or easements needed, the more favorably the alignment was rated.

3.1.5 *User Experience*

Measures the quality of the proposed greenway from the perspective of the user. It considers views, proximity to the creek, shade, and other characteristics such as noise and air quality. The criterion also includes an evaluation of user safety (i.e., are there “eyes on the trail,” potential for use by transients, etc.) The more positive the potential user experience, the higher the ranking.

3.1.6 *Environmental Impacts*

Evaluates potential environmental impacts that development and use of the greenway could have on the creek corridor. Alignments that travel through an environmentally sensitive area will be scored lower than alignments that use an existing disturbed area or avoids sensitive areas. The environmental issues include flooding potential, wetlands, wildlife habitat, mature trees, and

creek crossings. Alternatives with the fewest potential environmental impacts will be given the highest ranking.

3.2 GREENWAY DEVELOPMENT ALTERNATIVES

The goal of the Wagner Creek Greenway is for a linear park and trail to follow Wagner Creek. However, existing development creates some constraints for the trail alignment. In particular, the crossing of the major barriers presented by Highway 99, West Valley View Road, and Bear Creek are a challenge to the Greenway alignment. For the purpose of discussing alternative concepts, the project is broken into the following sections:

1. Crossing Highway 99
2. Between Highway 99 and West Valley View Road
3. Crossing West Valley View Road
4. Between West Valley View Road and Bear Creek Greenway

This discussion evaluates each alternative against the criteria listed in Section 3, and makes a recommendation to the City.

3.2.1 Crossing Highway 99

Wagner Creek intersects Highway 99 approximately midway between the intersections of West Valley View Road and Rapp Road. The intersection of Highway 99 with West Valley View Road is currently signalized. The intersection of the highway with Rapp Road has recently been signalized as part of a modernization project on Highway 99. Upon completion of the current construction project, Highway 99 will be a five-lane facility with bicycle lanes and sidewalks. The posted speed is 40 mph at Wagner Creek Bridge. Crossing options for the trail at Highway 99 include:

- Constructing a grade-separated crossing,
- Directing users to a nearby signalized intersection crossing at either West Valley View Road or Rapp Road through signage or with a separated trail segment,
- Installing a signalized mid-block crossing, or
- Installing an un-signalized mid-block crossing.

Each of these is discussed below.

3.2.1.1 Highway 99 Grade-Separated Crossing

The *Oregon Bicycle and Pedestrian Plan* states that: “At-grade crossings introduce conflict points, and grade separations should be sought, as most path users expect continued separation from traffic.” It is true that a grade-separated crossing (in this case, a bridge, since there is inadequate clearance under the roadway) would remove conflicts between pedestrians or bicyclists and vehicular traffic at the crossing location. However, grade separations are very expensive and, even if cost issues are ignored, other serious design and operational issues would need to be resolved for a crossing at this location on West Valley View Road.

The main limitation for a Greenway bridge at Highway 99 is that grade separations must necessarily begin at considerable distance from the crossing point to achieve the relatively gentle

grades required by the Americans with Disabilities Act (ADA). This is particularly true at the Highway 99 Crossing because of the grade differences between the creek south of the Highway and the roadway itself. This extra distance would require the bridge to begin approximately 550 feet back from the roadway crossing, if constructed as a straight ramp. If the bridge entrance were to be “switch-backed” or cork-screwed, considerable land acquisition would be needed. South of Highway 99, the land is being developed as a residential and commercial project and would not be available for constructing a bridge entrance.

Recommendation: This alternative was not recommended because of the need for significant amounts of private property in order to reach ADA-compliant grades, construction costs, and potential environmental compliance issues. Although this alternative was attractive to the Committee and to the public because of its perceived safety benefits, the practical considerations of a grade separated crossing eliminated it as a preferred alternative.

3.2.1.2 Highway 99 Diversion to Signal at W Valley View Rd & Rapp Rd¹

The advantage of directing trail users to an existing signalized intersection on Highway 99 is that the signal provides a somewhat protected crossing movement at such locations. Vehicle speeds are typically lower at a signalized intersection than on open section of roadway. In addition, there are existing sidewalks and bike lanes on both sides of the highway.

There are some disadvantages to diverting trail users to either the signalized intersection at West Valley View Road or the future Rapp Road signal. The first is that this necessitates considerable out-of-direction travel of approximately 1,000 feet (about a ¼ mile) to either signal. Because of this, user compliance may be low – in other words, trail users are likely to attempt to cross at an unmarked, undesignated location rather than travel to the signal.

For pedestrians, who are legally able to use a sidewalk to travel in both directions on each side of the road, the diversion to the nearest traffic signal is an inconvenience and deterrent (most transportation planners agree that a ¼ mile is about as far as most pedestrians are willing to walk).

For bicyclists, however, a diversion to either signalized intersection is more problematic, even though cyclists are typically more likely to travel slightly out of direction than pedestrians. When a diversion to a signal requires the bicyclist to execute a right turn, the cyclist can use the marked on-street bicycle lane, moving with traffic as required by law. However, where the diversion to a nearby signal requires a left turn, the bicyclist is faced with several choices, some of which are dangerous or illegal.

The cyclist who is directed to proceed to a nearby signal to the left is faced with the choice of using a sidewalk or traveling the wrong direction, facing traffic, in the bicycle lane. A wrong-way rider is in violation of the vehicle code, is a danger to other cyclists proceeding with traffic and is at high risk for a collision with motorists. A cyclist riding on the sidewalk may or may not

¹ It should be noted that Oak Valley Drive will be constructed between West Valley View and Highway 99 at some point in the future. If either of the new intersections (Oak Valley Drive/West Valley View or Oak Valley Drive/Highway 99) were to be signalized, then that intersection would become the preferred crossing point for the Wagner Creek Greenway trail.

be in violation of the law (depending on local codes), but creates a hazard to pedestrians and is at a high risk for motorists, particularly at driveways or intersecting streets.

For Highway 99, there are two potential solutions to this problem: (1) direct cyclists through signage, to always turn right; or (2) create a two-way multi-use path on both sides of the street.

Because the two signals are almost equidistant from the trail crossing of Highway 99, there is no distance advantage for cyclists to use one signal over the other. Because of this, it may be effective to direct cyclists to always turn to the right through signage.

However, the existing intersection of West Valley View Road and Highway 99 has very large crossing distances and is not conducive to pedestrian or bicyclist use. The signal at Rapp Road is slightly more conducive to bicyclist and pedestrian use because the crossing distances are shorter and are not skewed. In addition, a pedestrian refuge median is provided on the east side of the intersection.

The following figure illustrates the concept of diverting Greenway users to a signal on Highway 99.



PLAN VIEW - USE EXISTING SIDEWALKS AND BIKE LANES TO SIGNALS
SHORT TERM RECOMMENDATION

LEGEND

-  WAGNER CREEK
-  EXISTING TRAIL SEGMENT
-  PROPOSED WAGNER CREEK TRAIL ALIGNMENT
-  PROPOSED ROUTE TO CROSSING
-  EXISTING TRAFFIC SIGNAL
-  BICYCLE SIGNAGE

The City could also create a 10-foot wide multi-use path on both sides of Highway 99, well-separated from the roadway, to one of the two signalized intersections. Trail designers strongly recommend against the development of pathways that are immediately adjacent to roadways because they encourage wrong-way riding (a leading cause of bicycle-motor vehicle crashes) and set up conflicts at every driveway or intersection along a roadway. However, the separated multi-use path concept works best when there is a significant advantage to funneling users to a particular signal, either because it is closer to the trail or because the intersection has some other benefit such as a center median.

Recommendation: Requiring cyclists to turn right and use the bike lane to access the signalized intersections is the **preferred interim alternative**. Although it is expected that enforcing com-

pliance by trail users may be a challenge, this alternative may be functional because the two intersections are equidistant. This is also a low cost alternative, since the main cost would be signage.

3.2.1.3 Highway 99 Mid-Block Unsignalized Crossing

A mid-block crossing without a signal but with other traffic control devices (crosswalk, center refuge, warning signage) requires pedestrians or bicyclists to evaluate on-coming traffic to determine an acceptable gap to cross the street.

Highway 99 is a State-owned facility. It is ODOT's general practice to avoid installing unsignalized mid-block pedestrian crossings where the posted speed exceeds 35 miles per hour or where average daily traffic (ADT) exceeds 10,000 vehicles per day. Recent counts indicate that ADT on Highway 99 is approximately 10,700 vehicles per day. The posted speed is 40 mph at the Wagner Creek Bridge. Therefore, an unsignalized mid-block crossing would not meet ODOT's general practices.

In spite of ODOT's general practice, a preliminary analysis of traffic gaps was performed to determine the actual viability of an unsignalized mid-block crossing as part of this study. The ongoing construction on Highway 99 precluded a traffic study and measurements of gaps. However, some estimates can be based on the average daily traffic (ADT) volumes on Highway 99. Since recent counts indicate that the ADT is approximately 10,700 vehicles per day, assuming the peak hour accounts for 10% of daily volume, approximately 1,070 peak hour vehicles are present. Assuming uniform arrivals of vehicles, this would translate into an average gap of 3.4 seconds for the full highway (both directions of travel) during the peak hour. Using a standard walking speed of 4 feet per second, a pedestrian requires about 18 seconds to cross five 12-foot lanes of traffic and two 6-foot bike lanes.

It is not realistic to expect uniform arrivals, especially given the presence of signals at both West Valley View Road and Rapp Road. Regardless, gaps of 18 seconds or greater will be infrequent during the peak period and many other times of the day. In year 2026, the ADT is projected to increase to 15,630, reducing the average gap time to 2.3 seconds.

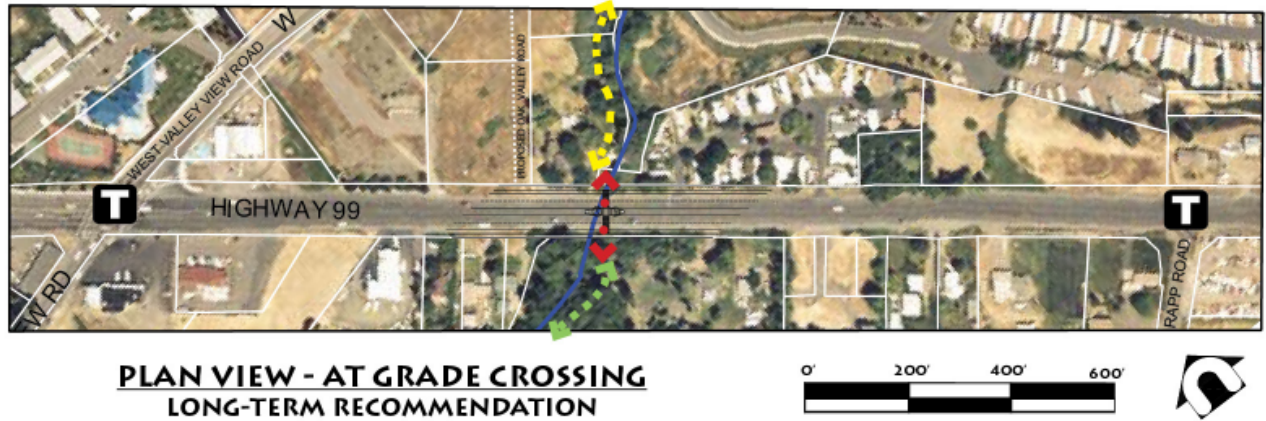
The calculation of average gap times does not take into account the effect of platooning of vehicles that are generated by signalized intersections at Rapp Road and West Valley View Road. The traffic signals create some platoons of vehicles with longer gaps caused by the yellow and all-red portions of the signal cycle. However, it is not guaranteed that the gaps created in the southbound traffic stream by the signal at West Valley View Road will correspond with gaps in the northbound traffic stream by the signal at Rapp Road.

The addition of a center refuge island reduces the crossing distance, allowing the gaps needed by pedestrians to be shorter duration, and increases the frequency of adequate gaps, because each section of road can be crossed independently. With a center refuge, a pedestrian will need to cross two 12-foot lanes of traffic and one 6 foot bike lane) before reaching the center refuge island, where the safety of crossing the second half of the highway can be reassessed by the user.

For either northbound or southbound traffic streams, the average gap is calculated to be 6.7 seconds during the current peak period. Gaps of 7.5 seconds will occur fairly frequently. Based on this calculation, the center turn refuge island would allow pedestrians to safely cross traffic in one direction and wait for a gap to cross the rest of the way.

In year 2026 ADT is projected to increase to 15,630, reducing the average gap time during the peak hour to 4.6 seconds. The occurrences of 7.5 second gaps will be less frequent than in year 2006, but will still occur with some regularity. As discussed above, this gap calculation does not take into account the effect of platooning between the signalized intersections of Rapp Road and West Valley View Road. Upon completion of the current construction project, a formal gap study could be conducted to verify the gaps available and the occurrences of 7.5 second gaps.

The following figure illustrates the locations and potential design of a mid-block crossing on Highway 99.



Recommendation: Because the posted speed on the highway is currently 45 mph (although the installation of the signal at Rapp Road will likely reduce the travel speed)² and the current volumes of the highway exceed 10,000 vehicles per day, installing an unsignalized mid-block crossing would not be in accordance with ODOT’s general practices.

However, because of the expected traffic gaps, a mid-block crossing with a center refuge island is a potential solution for the trail crossing of Highway 99 and may have a less disruptive effect on the existing traffic signals than adding a signalized mid-block crossing (discussed below).

Assuming further study of the traffic gaps, alignment of the signal timing at Rapp Road and West Valley View Road to provide platooning, and approval of the State Highway Engineer, this alternative is **recommended as the long-term alternative** to crossing Highway 99.

² The Greenway Advisory Committee has suggested that the City request a consideration of a reduction of the posted travel speeds on Highway 99 through this section, now that the signal at Rapp is in operation.

3.2.1.4 Highway 99 Mid-block Signalized Crossing

A signalized mid-block crossing is another option that can be used for trail crossings of major roadways. Warrants governing the installation of traffic signals are specified in the *Manual on Uniform Traffic Control Devices (MUTCD)*. For installation on state highways, the State Traffic Engineer must approve the project.

MUTCD Warrant 4, Pedestrian Volume is warrant for installation of traffic signal to specifically accommodate pedestrian activity. The warrant requires two criteria to be met: (1) a lack of adequate gaps in the traffic stream that would allow pedestrians to cross, and (2) a certain volume of users. The on-going construction project precluded conducting a traffic study and gap analysis. It is likely, however, that the criterion for an absence of adequate gaps would be met. The MUTCD volume criterion requires at least 190 pedestrians per hour or 100 for four consecutive hours. At the present time, the Wagner trail is largely unbuilt, so there would not be sufficient volumes of pedestrians and bicyclists to meet the volume criterion. The State Highway Engineer would have review and approval authority over a signalized crossing. ODOT has indicated that there is very little likelihood of approval for a mid-block signalized crossing at this location.

Recommendation: Although a pedestrian activated signal is an effective method for mid-block crossings, it can have adverse effects on the function of existing signalized intersections. For this reason, ODOT has indicated that there is very little likelihood of approval for a pedestrian signal at this location. Because of this, a mid-block signalized crossing is **not recommended** at this location.

3.2.2 Between Highway 99 & West Valley View Rd

The section of Greenway alignment between Highway 99 and West Valley View Road is relatively narrow and is overgrown with blackberries. The banks of the creek are very steep. It appears from field observation that the most appropriate location for the trail would be along the east side of the creek, which would involve obtaining right of way or easement from a single property owner. Alternatively, the trail could be located on the west side, which would impact two property owners. Further engineering, floodplain, and wetland evaluations will be needed to determine if this is actually the best location.

The City of Talent has proposed the extension of Oak Valley Drive south of its current intersection with West Valley View Road, connecting Highway 99 and Valley View Road. At some point in the future, there may be a signal at Oak Valley Drive at either or both Highway 99 and West Valley View Road. A signalized intersection would make this trail alignment even more desirable.

Recommendation: The best alternative for this section of trail is to locate it within the 50-foot riparian setback along the west side of Wagner Creek when Oak Valley Drive is constructed. This is the **recommended alternative** for this section.

3.2.3 Crossing West Valley View Rd

Wagner Creek intersects West Valley View Road about 1000 feet east of the signalized intersection with Highway 99 and about 550 feet west of the signalized entrance to the big box retail. West Valley View Road is a 4- to 5-lane facility (depending on location) with bike lanes and sidewalks on both sides. The roadway is under the jurisdiction of the City of Talent. The posted

speed on West Valley View Road is 40 mph. Crossing options for the trail at West Valley View Road include:

- Constructing a grade-separated crossing,
- Directing users to a signalized intersection crossing at Highway 99 or the big box retail entrance,
- Installing a signalized mid-block crossing, or
- Installing an un-signalized mid-block crossing, with or without a center refuge median.

Each option is discussed below.

3.2.3.1 W. Valley View Rd Grade Separated Crossing

The *Oregon Bicycle and Pedestrian Plan* states that: “At-grade crossings introduce conflict points, and grade separations should be sought, as most path users expect continued separation from traffic.” It is true that a grade-separated crossing (in this case, a bridge, since there is inadequate clearance under the roadway) would remove conflicts between pedestrians or bicyclists and vehicular traffic at the crossing location. However, grade separations are very expensive and, even if cost issues are ignored, other serious design and operational issues would need to be resolved for a crossing at this location on West Valley View Road.

The main limitation for a Greenway bridge at West Valley View is that grade separations must necessarily begin at considerable distance from the crossing point to achieve the relatively gentle grades required by the Americans with Disabilities Act (ADA). This extra distance would require the bridge to begin approximately 200 feet back from the roadway crossing, if constructed as a straight ramp. If the bridge entrance were to be “switch-backed” or cork-screwed, considerable land acquisition would be needed.

Recommendation: This alternative was **not recommended** because of the need for significant amounts of private property in order to reach ADA-compliant grades, construction costs, and potential environmental compliance issues. Although this alternative was attractive to the Committee and to the public because of its perceived safety benefits, the practical considerations of a grade separated crossing eliminated it as a preferred alternative.

3.2.3.2 W. Valley View Rd Diversion to Signal at Highway 99 & Hinkely Road³

The advantage of directing trail users to an existing signalized intersection on West Valley View is that the signal provides a somewhat protected crossing movement at such locations. Vehicle speeds are typically lower at a signalized intersection than on open section of roadway. In addition, there are existing sidewalks and bike lanes on both sides of the roadway.

There are some disadvantages to diverting trail users to either signalized the intersection at Highway 99 or at the big box retail entrance. The first is that this necessitates considerable out-

³ It should be noted that Oak Valley Drive between West Valley View and Highway 99 will be constructed at some point in the future. If either of the new intersections (Oak Valley Drive/West Valley View or Oak Valley Drive/Highway 99) were to be signalized, then that intersection would become the preferred crossing point for the Wagner Creek Greenway trail.

of-direction travel of approximately 1,000 feet (about a ¼ mile) to the Highway 99 intersection, with a shorter distance of 550 feet to the big box retail entrance. Because of this, user compliance may be low – in other words, trail users are likely to attempt to cross at an unmarked, undesignated location rather than travel to the signal.

For pedestrians, who are legally able to use a sidewalk to travel in both directions on each side of the road, the diversion to the Hinkley Road signal would be a minor inconvenience. For bicyclists, however, a diversion to signalized intersections is more problematic. When a diversion to a signal requires the bicyclist to execute a right turn, the cyclist can use the marked on-street bicycle lane, moving with traffic as required by law. However, where the diversion to a signal requires a left turn, the bicyclist is faced with several choices, some of which may be dangerous or illegal. The cyclist who is directed to proceed to a nearby signal to the left is faced with the choice of using a sidewalk or traveling the wrong direction, facing traffic, in the bicycle lane. A wrong-way rider is in violation of the vehicle code, is a danger to other cyclists proceeding with traffic and is at high risk for a collision with motorists. A cyclist riding on the sidewalk may or may not be in violation of the law (depending on local codes), but creates a hazard to pedestrians and is at a high risk for motorists, particularly at driveways or intersecting streets.

For Highway 99, there are two potential solutions to this problem: (1) direct cyclists through signage, to always turn right; or (2) create a two-way multi-use path on both sides of the street.

Because there are two existing signals (Highway 99/West Valley View and Hinkley Road/West Valley View), it may be feasible to direct cyclists to always turn to the right through signage. However, compliance may be low because the Hinkley Road signal is half the distance from the trail crossing as the Highway 99/West Valley View intersection. The Hinkley road signal is also more conducive to bicycle use because the crossing distances are shorter. Therefore, there may be more difficulties with cyclist compliance on West Valley View Road than on Highway 99.

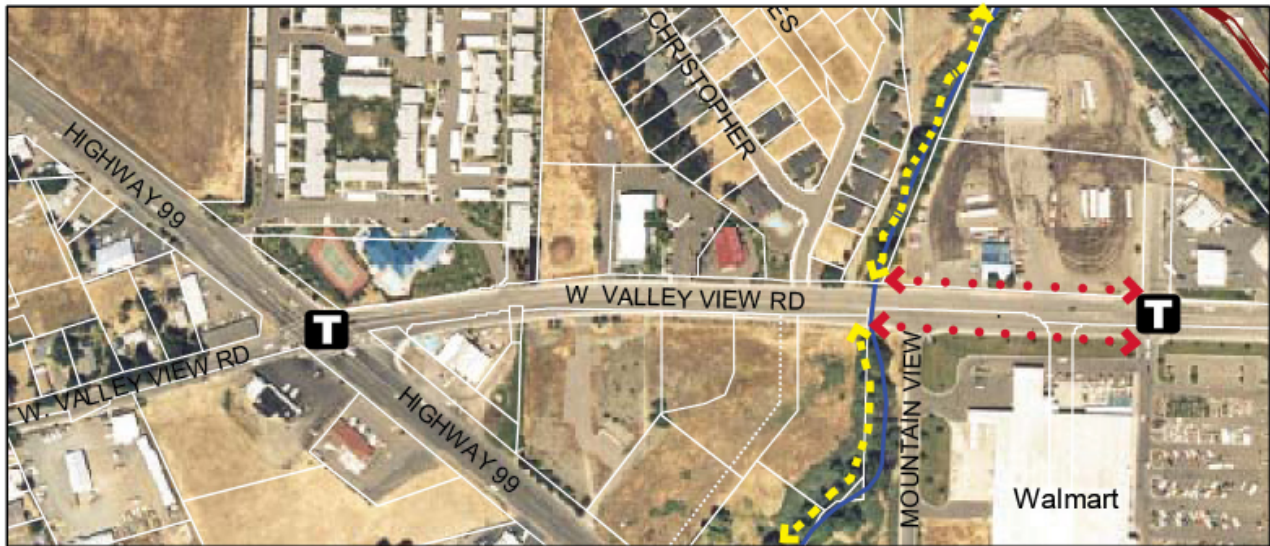
Alternatively, the City could create a 10-foot wide multi-use path on both side of West Valley View, well-separated from the roadway, to the Hinkley Road intersection. Trail designers strongly recommend against the development of pathways that are immediately adjacent to roadways because they encourage wrong-way riding (a leading cause of bicycle-motor vehicle crashes) and set up conflicts at every driveway or intersection along a roadway⁴. However, with the proper separations and careful design, a path running parallel to a roadway may be an option. The minimum separations recommended are 5 feet of horizontal separation, or 42 inches of vertical separation (provided by a barrier or railing).

On West Valley View Road, the most likely location for the multi-use trail would be along the south and north sides of the road between Wagner Creek and the Hinkley Road signal. However, this would most likely require the acquisition of a minimum of 15 feet of right-of-way by the City outside of the existing right-of-way. At the intersection, the path would have to be carefully designed to reduce motorist/bicyclist conflicts.

An alternative to the separated multi-use path is to allow cyclists to ride on the sidewalk when turning left to the signal, to avoid wrong-way riding in the bicycle lane on the street.

The figure below illustrates the concept of diverting Greenway users to a signal on West Valley View Road.

⁴ This is the reason that allowing bicycles to use the sidewalk should only be considered as a short-term solution.



PLAN VIEW - CYCLISTS USE SIDEWALKS TO SIGNAL
SHORT-TERM RECOMMENDATION



LEGEND

-  WAGNER CREEK
-  EXISTING TRAIL SEGMENT
-  PROPOSED WAGNER CREEK TRAIL ALIGNMENT
-  MULTI-USE SEPARATED PATH TO SIGNAL
-  EXISTING TRAFFIC SIGNAL

Recommendation: At this crossing, the Highway 99 signal is significantly further from the trail crossing than the Hinkley Road signal, making it more likely that cyclists will ignore signs and ride against traffic to reach the closer signal. Therefore, diversion through signage is **not recommended**.

The unequal distance between signals makes it important to accommodate cyclists turning left to the signal without encouraging wrong-way riding in the bicycle lane. This can be accomplished either with a separated multi-use path or by allowing cyclists to ride on the section of sidewalk between the trail and the Hinkley Road signal. The sidewalk alternative is more feasible because it would limit the need for the City to acquire new right of way. Signage would be necessary to warn pedestrians of cyclists on the sidewalk and to remind cyclists to yield to pedestrians. It may also be appropriate to consider widening the sidewalks where required to a minimum of 10 feet. Diverting cyclists to the signal on the sidewalk at Hinkley Road is the **recommended near-term alternative**.

3.2.3.3 W Valley View Rd Mid-Block Unsignalized Crossing

A mid-block unsignalized crossing can be constructed either with or without a center refuge island. In either case, pedestrians or bicyclists must evaluate on-coming traffic to determine an acceptable gap to cross the street. Some agencies have additional restrictions on placement of mid-block pedestrian crossings. For example, as discussed above, it is ODOT’s general practice not to install mid-block pedestrian crossings where the posted speed exceeds 35 miles per hour

or where average daily traffic volume exceeds 10,000 vehicles per day. Currently, the posted speed on West Valley View Road is 40 mph⁵. The existing traffic volumes are less than 10,000 but are projected to grow above that number. Nonetheless, West Valley View Road is not an ODOT facility and the City or County may chose to provide a mid-block crossing.

Using the standard walking speed of 4 feet per second, a pedestrian would require 15 seconds to cross four 12-foot lanes of traffic and two-6 foot bike lanes. A gap analysis was conducted at this location. As indicated above, the two-hour gap study identified 69 gaps of 15 seconds or more during the periods of highest vehicular volume. This equates to approximately 35 gaps of adequate duration during a single hour.

On average, a person attempting to cross West Valley View Road would experience an adequate gap approximately every two minutes during the peak hour. This may be an acceptable condition as it is roughly the same amount of time a that would be needed to walk to the nearest signalized intersection. During the non-peak remainder of the day, vehicular volumes are lower and there will be more frequent gaps of adequate duration and less waiting time between such gaps.

In year 2026, ADT on West Valley View Road is projected to increase by about 45%, from 8,680 to 12,620. This would result in fewer gaps of adequate duration and an increase in average wait time to approximately 2.5 minutes between adequate gaps during the peak period. Although a slight increase in wait time, it is still quicker than traveling to the nearby signalized intersection and waiting to cross.

Under current conditions, a mid-block unsignalized crossing without a center refuge would provide reasonable opportunities to cross West Valley View Road, though the waiting time for gaps may be longer than desirable during periods of high vehicular volume. However, traffic is projected to increase and could result in pedestrians and bicyclists attempting to use inadequate gaps and waiting in the middle of the roadway for a break in on-coming traffic to finish crossing the roadway.

The addition of a center refuge island reduces the crossing distance, allowing the gaps needed by pedestrians to be shorter duration, and increases the frequency of adequate gaps, because each section of road can be crossed independently. With a center refuge, a pedestrian would need to cross two 12-foot lanes of traffic and one-6 foot bike lane. Assuming the average walking speed of 4 feet per second, 7.5 seconds would be needed to safely cross either westbound or eastbound West Valley View Road.

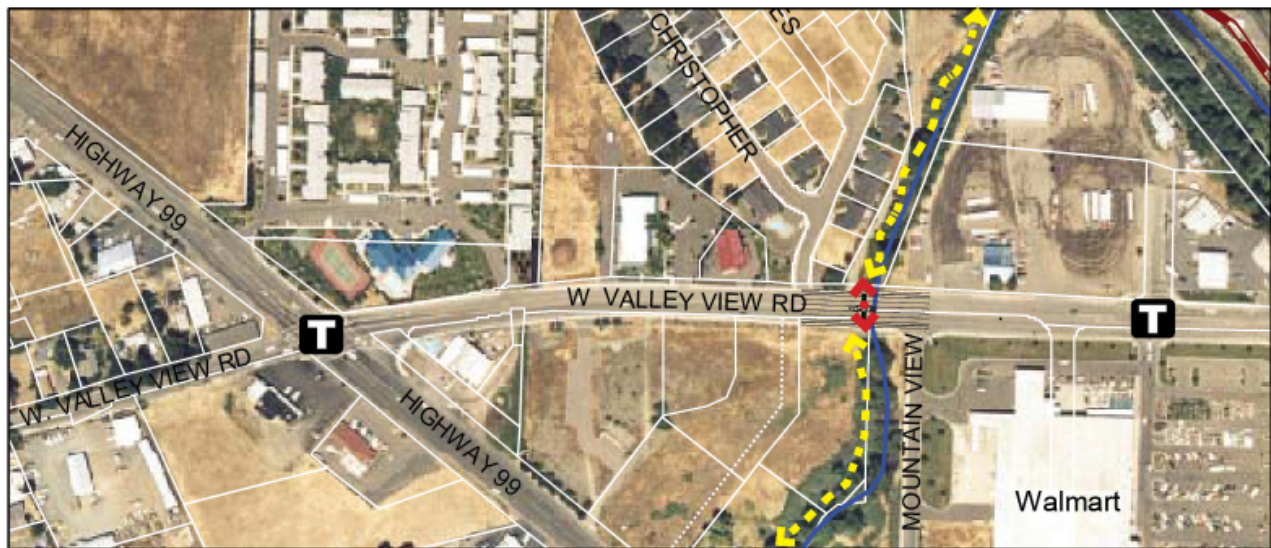
The two-hour gap study identified 145 gaps of 10 seconds or longer duration for the entire roadway. The availability of gaps for eastbound and westbound traffic separately is at least twice as that for the entire roadway. If a mid-block refuge available, many gaps would be available even during periods of high vehicular volume and the waiting time between 7.5 second gaps would be very short.

⁵ The Greenway Advisory Committee has suggested that the City request a consideration of a reduction of the posted travel speeds on Highway 99 through this section.

In year 2026, ADT is projected to increase 12,620 vehicles per day. Gaps of adequate duration would be less frequent, but very short waiting times would be necessary even during the peak hour.

At the point where West Valley View Road bridges Wagner Creek, there is a center lane of approximately 10-12 feet in width. The center lane eventually becomes a left turn lane at the big box retail (Hinckley Road) signal. In the vicinity of the bridge, however, there do not appear to be driveways or other accesses requiring the use of the center lane by turning vehicles. This center lane could potentially be converted to a center refuge island for a trail crossing. There is a distance of approximately 680 feet between Hinckley Road and Oak Valley Drive.

The figure below illustrates the locations and potential design of a mid-block crossing on West Valley View Road.



**PLAN VIEW - AT GRADE CROSSING
LONG TERM RECOMMENDATION**



Recommendation: Because of the traffic volumes and expected traffic gaps, a mid-block crossing with a center refuge island is a potential solution for the trail crossing of West Valley View. Since there appears to be sufficient width and length in the existing painted center lane in this location, a permanent center refuge and mid-block crossing is the **recommended as the long-term alternative** to crossing West Valley View.

3.2.3.4 West Valley View Rd Mid-block Signalized Crossing

A signalized mid-block crossing is another option that can be used for trail crossings of major roadways. Warrants governing the installation of traffic signals are specified in the *Manual on Uniform Traffic Control Devices (MUTCD)*. MUTCD Warrant 4, Pedestrian Volume is warrant

for installation of traffic signal to specifically accommodate pedestrian activity. The warrant requires two criteria to be met: (1) a lack of adequate gaps in the traffic stream that would allow pedestrians to cross, and (2) a certain volume of users.

A gap study was conducted on West Valley View Road in the vicinity of Wagner Creek (see DEA Technical Memorandum 3). In that study, 69 gaps in excess of 15 seconds were measured during the two-hour period corresponding to highest vehicular volume. Thus, it appears that the criterion for an absence of adequate gaps would be met for the peak hour.

The MUTCD volume criterion requires at least 190 pedestrians per hour or 100 for four consecutive hours. At the present time, the Wagner Creek trail is largely unbuilt, so there would not be sufficient volumes of pedestrians and bicyclists to meet the volume criterion.

Signal installation practices by some agencies are more restrictive than those specified in the MUTCD. ODOT's practice is to avoid installation of mid-block pedestrian signals because of concerns that it compromises operations at nearby signalized intersections. ODOT has expressed concern that a signal at this location might impact the operation of the existing signal at the intersection of Highway 99 and West Valley View Road. It is also likely that a mid-block signal at this location could impact the operation of the signal at Hinkley Road.

A signalized pedestrian crossing at this location would require further assessment of the potential impact on signals operated by other agencies, including ODOT.

Recommendation: Although a pedestrian activated signal is an effective method for mid-block crossings, it can have adverse effects on the function of existing signalized intersections, particularly since the signal at Hinkley Road is relatively close to the trail crossing. Because of this, a mid-block signalized crossing is **not recommended**.

3.2.3 Greenway Section Between West Valley View Rd & Bear Creek Greenway

From West Valley View Road to Bear Creek, there are several opportunities for trail alignment. An existing well-graded unpaved road leads into the aggregate extraction area, and creates an obvious alignment for a trail. However, an approximately 8 to 10-foot high berm between Wagner Creek and the roadway blocks access to and views of the creek from the unpaved roadway. The berm was reportedly created as part of a flood control project in the 1960s or '70s. It may be feasible to recontour the berm, revegetate the riparian habitat, and align the trail closer to the creek. It will be critical to conduct engineering and flood control studies before altering the berm in any way.

There is an existing residential subdivision on the west side of the unpaved roadway. The subdivision is separated from the roadway by a 6-foot tall wooden fence. Both residents and trail users may prefer that the trail be set back from the fence with some landscaping. It is important that the trail design avoid a feeling of seclusion from casual observation.

Other options for the trail in this segment include creating a loop around the pond on the way to the future City park and the location of a bridge over Bear Creek to connect the Wagner Creek Greenway with the Bear Creek Greenway at the future City park location⁶. Additional wetland

⁶ There is an existing easement in the Willow Springs development, between Tax Lots 381W23AC1100 and 381W23AC1200 that will connect that neighborhood to the future City park and to the Wagner Creek Greenway.

and floodplain evaluations must be conducted to determine the best location and final design of the trail and footbridge through this area. The option shown locates the bridge in an area that appears, from casual field observation and examination of aerial photographs, to require the shortest bridge span for crossing Bear Creek.

There would be a single property owner involved in this alignment.

Recommendation: Because the existing road is graded and could readily be converted into a trail, use of the existing road is the **near term recommendation**. It is recommended that the City continue to explore opportunities along this section to restore Wagner Creek. The **long-term recommendation** for this alternative, once the City park is developed, is to create more detailed plans for crossing Bear Creek and connecting to the Bear Creek Greenway.

Table 1 summarizes the evaluation of the alternatives agreed to by the Committee and the public. For simplicity, alternatives meeting the project goal were assigned a +1, those that were neutral received a 0, and those that failed to meet the project goal were assigned -1.

TABLE 1: EVALUATION OF ALTERNATIVES

Alternative	Connectivity	Roadway Crossings	Cost/Technical Difficulty	Private Property Impacts	User Experience	Environmental Impacts	Total Score
Hwy 99 Crossing							
1. Grade separated	1	1	-1	-1	0	-1	-1
2. Diversion to signal							
2.A. Cyclists turn right	0	0	1	0	-1	1	1 ¹
2.B Path/Sidewalk to signal	0	0	0	-1	-1	0	-2
3. Mid-Block Crossing							
3A. Unsignalized (w/refuge)	1	0	-1	1	-1	1	1 ²
3B. Signalized	1	1	-1	1	0	1	3
Between Highway 99 & Valley View Road							
1. Along east side of creek	1	0	0	0	1	-1	1
2. W side of creek (Oak Rd ROW)	1	0	1	1	1	1	5 ^{1,2}
Valley View Road Crossing							
1. Grade separated	0	1	-1	-1	0	-1	-2
2. Diversion to signal							
2.A. Cyclists turn right	-1	0	0	0	0	1	0
2.B Sidewalk to signal	1	0	0	0	0	0	1
3. Mid-block crossing							
3A. Unsignalized (w/refuge)	1	0	0	1	-1	1	2 ²
3B. Signalized	1	1	-1	1	0	1	3
Between Valley View Road & Bear Creek Greenway							
1. On existing road	1	0	1	1	1	1	5 ^{1,2}
2. Recontouring berm	1	0	-1	1	1	1	3
Notes:							
1. Recommended Near Term Alternative							
2. Recommended Long Term Alternative							

SECTION 4: TRAIL DESIGN ELEMENTS

4.1 TRAIL DESIGN ELEMENTS

4.1.2 *Materials*

The existing section of the Wagner Creek Greenway trail is constructed of concrete. This is a good trail surface. It is less prone to buckling from tree roots or sub-grade subsidence, and the edges are less likely to crumble or allow plants to invade the surface. Concrete surfaces have a longer life span and require less frequent maintenance than other surfaces, such as asphalt.

However, initial site preparation and materials costs are lower with asphalt. If properly maintained, asphalt is an appropriate surface for trails.



CONCRETE TRAIL
(EXISTING SECTION OF WAGNER CREEK TRAIL)



ASPHALT TRAIL
(EXISTING SECTION OF BEAR CREEK TRAIL)

TRAIL SURFACING OPTIONS

Lastly, soft surfaces such as crushed gravel or wood shavings can be useful interim materials that can be used to get a trail established and invite use by the public. Soft surface materials are reasonable choices where the surface is temporary (until funding is available for a more permanent surface), or use is expected to be very low. Wood shavings or crushed gravel are also suitable materials for shoulders along a paved trail. These materials will need to be regularly replenished to prevent trail damage.

4.1.3 *Cross Sections*

The recommended trail width is a minimum of 10 feet. It appears that this width is feasible along the recommended alternatives. The City of Talent requires this as the minimum width for public multi-use pathways.

Two-foot wide soft-surface shoulders should be provided on both sides of the trail. This provides a shy distance and helps prevent plant encroachment into the trail area. Some trail users,

such as runners or equestrians, prefer to use the soft shoulder. Vertical clearance should be 10 feet.

4.1.4 Construction

The Wagner Creek Greenway trail should be constructed in a manner similar to a local roadway for asphalt trails and to a sidewalk for concrete trails. Sub-base thickness should be determined by soil conditions.

The recommended maximum trail grade is 5%. Since the Wagner Creek grade is fairly flat, this is not expected to be a challenge except for road crossings, especially at Highway 99, where the roadway is slightly elevated above the creek. It may also be difficult to bridge Bear Creek with a 5% grade, since the Bear Creek Trail is significantly elevated above the confluence of Bear Creek and Wagner Creek. Steeper slopes are acceptable for short distances.

Table 2 summarizes the recommended trail design elements.

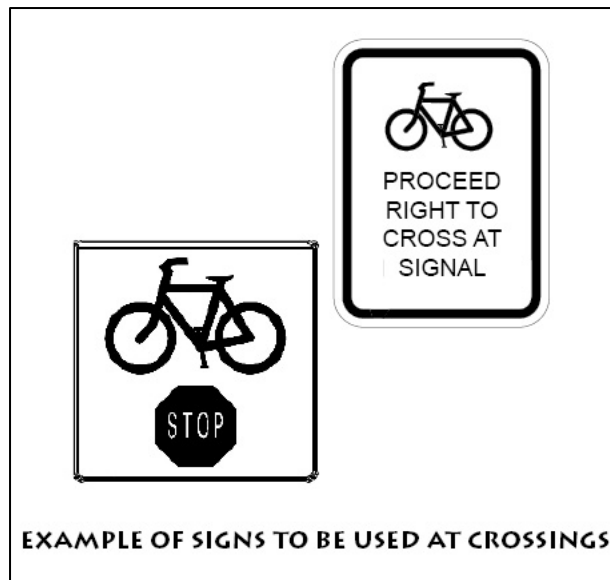
Table 2. Wagner Creek Trail Design Elements

Width	10 feet
Surface	Temporary: Wood shavings, crushed gravel Permanent: Concrete, asphalt
Shoulder	Wood shavings, crushed gravel
Horizontal Clearance	2 feet
Vertical Clearance	10 feet
Maximum slope	5% (short distances can exceed this)
Maximum cross slope	2 %

4.2 ROADWAY CROSSINGS

Wagner Creek crosses two major roadways. The proposed crossing treatments in this Plan are based on established standards, the traffic data, and experience on other, similar facilities.

The short-term recommendation for both crossings is to divert trail users to existing signals. However, mid-block at-grade crossings are the long-term recommendation for both crossings because of the out-of-direction travel required to access the signals.



Mid-block roadway crossings are difficult to accomplish. Motorists do not expect to see bicyclists and pedestrians at unprotected crossings. This is particularly challenging when volumes and speeds are relatively high, as they are on both Highway 99 and West Valley View. To some extent, these circumstances can be mitigated with pavement markings, signage for trail users and motorists, and lighting.

Pavement markings should be in conformance with the Oregon Bicycle and Pedestrian Plan’s guidance for marked crosswalks. Signage would include MUTCD regulatory warning motorists of the upcoming trail crossing, and

trail signage indicated to trail users that they must stop and wait for a gap before crossing to the center refuge.

4.3 AMENITIES

There are a number of amenities that could be added to the Wagner Creek Greenway to increase its attractiveness to users. Recommended amenities to consider include:

- Benches made from vandal resistant materials, located at trail heads and scenic viewpoints.
- Bike racks.
- Mile post markers increase trail use by exercisers who enjoy keeping track of distances.
- Garbage cans: These should be provided at trail heads and serviced regularly.
- Dog waste stations: These include plastic bag dispensers and a sign reminding people to clean up after their animals.
- Information kiosks: These can provide information about trail length, destinations, rules, and local history.



SECTION 5: SAFETY & MAINTENANCE CONSIDERATIONS

5.1 SAFETY

Trail safety is a concern for both trail users and adjacent property owners. Creating a safe trail environment goes beyond design and law enforcement, and should involve the entire community.

Multi-use paths should be designed with personal security in mind. Illumination and clear sight distances improve visibility. Location markers, mileage posts and directional signing help users know where they are. Frequent accesses improve response time by emergency vehicles.

The most effective and most visible deterrent to increasing the sense of personal security and minimizing illegal activity on the Wagner Creek Greenway is the presence of legitimate trail users. Having “eyes on the trail” is a key deterrent to undesirable activity in the Wagner Creek Greenway. There are several components to accomplishing this, as outlined below:

5.1.2 *Visibility*

Neighbors adjacent to the trail can potentially provide 24-hour surveillance of the trail and can become an ally to the cities’ police departments. Though some screening and setback of the trail may be needed for privacy of adjacent neighbors, complete blocking of the trail from neighborhood view should be discouraged. This eliminates the potential of neighbors’ “eyes on the trail.”

5.1.3 *Events and Projects to Build Community Ownership*

Community events along the Wagner Creek Greenway will help increase public awareness and thereby attract more people to use the trail. Civic organizations can help organize public events along the trail which will increase support for the trail. The support generated by the Wagner Creek Greenway can be enhanced by involving neighbors and “friends of the trail” in a community project. Ideas for community projects include volunteer clean up, planting events, art projects, or even interpretive research projects.

Taking community projects to the next level, Talent may want to create an “Adopt-a-Trail” program. Nearby businesses, community institutions, and residential neighborhoods often see the benefit of their involvement in the trail development and maintenance. Businesses and developers may view the trail as an integral piece of their site planning and be willing to take on some level of responsibility for the trail. Service organizations such as the Rotary Club are often seeking this kind of community-oriented project to foster civic pride.

It is particularly important to involve Talent’s youth in these projects. These community projects are the strongest means of creating a feeling of community ownership along the trail, and are perhaps the strongest single deterrent to undesirable activity along the trail.

A more formal Trail Watch program provides an opportunity for local residents to become actively involved in crime prevention along the trail. Similar to Neighborhood Watch programs, residents are brought together to get to know their neighbors and are educated on how to recognize and report suspicious activity.

5.1.4 Design Elements To Improve Trail Safety

Below are common trail safety concerns and ways in which thoughtful design treatments can prevent safety problems along the Wagner Creek Greenway:

5.1.4.1 Privacy of Adjacent Property Owners

- Fencing: Although the public often perceives fencing as a means of assuring safety by prevention of unwanted access, too much fencing can have the opposite effect by impairing informal trail surveillance. Inappropriate fencing can also degrade the experience of trail users, obscure views, and create a “tunnel” effect that makes users feel trapped. A fencing height of six feet is typically sufficient to provide security. Lower fencing of approximately four feet can also provide a barrier sufficient to denote private property or deter most access. Solid fencing that prevents visual access to the trail should be discouraged. Fencing that allows a balance between adjacent residents’ privacy and informal surveillance of the trail should be encouraged. If fencing is desired purely for privacy reasons, vegetative buffers are recommended.
- Lighting: Place lighting strategically, utilizing light shields to minimize unwanted light in adjacent homes. At a minimum, lighting should be placed at trail access points. This will help facilitate security surveillance of the trail from police vehicles. Light cut-offs should be used to minimize unwanted light onto private property and into the sky.
- Clearly mark trail access points.
- Post trail rules that encourage respect for private property.

5.1.4.2 Litter and Dumping

- Post trail rules encouraging “pack it in, pack it out” etiquette.
- Place garbage receptacles at trailheads (must be emptied regularly).
- Place “doggy bag” dispensers at the trailheads.
- Provide good visual access to the trail.
- Manage vegetation within the right-of-way to allow good visual surveillance of the trail from adjacent properties and from roadway/trail intersections.
- Provide a phone number for local residents to report incidents as soon as they occur.
- Remove illegal dumpsites as soon as possible.

5.1.4.3 Trespassing

- Clearly distinguish public trail right-of-way from private property through the use of vegetative buffers and appropriate fencing.
- Post trail rules that encourage respect for private property.
- Provide a phone number for local residents to report incidents as soon as they occur.

5.1.4.4 Crime

- Manage vegetation so that corridor can be visually surveyed from adjacent streets and residences.
- Select shrubs that grow below three feet in height and trees that branch out greater than six feet in height.
- Place lights strategically and as necessary.
- Place benches and other trail amenities at locations with good visual surveillance and high activity.
- Provide mileage markers at quarter-mile increments and clear directional signage for orientation.
- Create a “Trail Watch Program” involving local residents.
- Provide a phone number for local residents to report incidents as soon as they occur.
- Design the trail so that police cars or bicycles can access the corridor.

5.1.4.5 Intersection Safety

- Require all trail users to stop at roadway intersections through posting of stop signs.
- If mid-block crossings are chosen, provide crosswalk striping and trail crossing warning signs for vehicle drivers. Put Wagner Creek Greenway logo on warning signs.
- If diversion to signals is chosen, provide signage directing cyclists to turn right.
- If a separated path on one side of the intersection roadway is chosen, provide appropriate signage at trail junction and at the signalized intersection.
- Manage vegetation at intersections to allow clear vision for both trail users and motorists at crossings.

5.1.4.6 Vandalism

- Select benches, bollards, signage, and other site amenities that are durable, low maintenance, and vandal resistant.
- Respond through removal or replacement in rapid manner.
- Keep a photo record of all vandalism and turn over to local law enforcement.
- Encourage local residents to report vandalism. Provide a phone number for local residents to report incidents as soon as they occur.
- Create a trail watch program; maintain good surveillance of the corridor.
- Involve neighbors in trail projects to build a sense of ownership.
- Place amenities (benches, etc.) in well used and highly visible areas.

5.2 MAINTENANCE

A high level of trail maintenance is critical to the overall success and safety of the Wagner Creek Greenway. A successful maintenance program requires continuity and, often, a high level of citizen involvement. Regular, routine maintenance on a year-round basis will not only improve trail safety, but will also prolong the life of the trail. Maintenance activities required for safe trail operations should always receive top priority. The following should be part of the maintenance checklist:

5.2.1 Vegetation

In general, visibility between plantings at trailsides should be maintained so as to avoid creating the feeling of an enclosed space. This will also give trail users good, clear views of their surroundings, which enhances the aesthetic experience of trail users. Understory vegetation along the trail corridor shall not be allowed to grow higher than 36 inches. Tree species selection and placement should be made to minimize vegetative litter on the trail and root uplifting of pavement. Tree branching should be pruned up to a minimum of 10 feet.

A bi-annual mowing along both sides of the trail will prevent invasion of plants into the pavement area. Recommended time of year for mowing is in fall and in spring. Wherever possible, vegetation control should be accomplished by mechanical means or hand labor. Use of chemical sprays should be limited to use only on those plants that are harmful to the public such as poison oak. Effort should be made to eradicate invasive species found along Wagner Creek – particularly blackberry. Volunteer removal via hand labor is recommended.

Vertical clearance along the trail should be periodically checked and any overhanging branches over the trail should be pruned to a minimum vertical clearance of 10 feet.

5.2.2 Surfacing

Concrete or asphaltic concrete are the recommended surface materials for the Wagner Creek Greenway. Concrete is preferred for its low-maintenance characteristics and its ability to weather annual flood events. When properly cared for, concrete will last indefinitely. Asphalt is less expensive to pour but requires more upkeep.

The trail surface should be kept free of debris, especially broken glass and other sharp objects, loose gravel, leaves, and stray branches. Trail surfaces should be swept periodically.

5.2.3 Litter and Illegal Dumping

Staff or volunteers should regularly remove litter along the trail. Litter receptacles should be placed at access points such as trailheads. Litter should be picked up once a week and after any special events held on the trail.

Alternatively, the trail corridor could be signed “pack it in, pack it out.” This technique has had mixed results, but if maintenance funds are not available to meet trash pick-up needs, it is better to remove trash receptacles entirely.

Illegal dumping should be controlled by vehicle barriers, regulatory signage, and fines. When it does occur, it must be removed as soon as possible in order to discourage further dumping.

Neighborhood volunteers, “friends of the trail groups,” alternative community service crews, and inmate labor should be used in addition to maintenance staff.

5.2.4 Signage

Signage should be replaced along the trail on an as-needed basis. A monthly check on the status of signage should be performed with follow-up as necessary.

5.2.5 Flooding

Portions of the trail may be subject to flooding. Debris accumulated on the trail surface should be removed after each recession of water. In addition, debris should be periodically removed from the waterway under bridge structures.

Typical maintenance vehicles for the trail will be light pick-up trucks and occasionally heavy dump trucks and tractors. A mechanical sweeper is recommended to keep the trail clear of loose gravel and other debris. Care should be taken when operating heavier equipment on the trail to warn trail users and to avoid breaking the edge of the trail.

5.2.6 Inspections

Regular inspection of the trail and associated amenities should be conducted by Talent public works crews to identify and correct problems before they become an issue. A fallen tree or limb, for example, can be readily removed from the trail or coned off to divert trail users away from the hazard until such time as maintenance crews can remove the hazard. A written record of inspections is recommended. This will help create a database of information that can reveal safety trends and use patterns to assist the City with prioritizing maintenance dollars. Written records also can help protect the cities from potential liability, providing documentation of diligent maintenance practices targeted towards protection of the public. A typical inspection record should include:

- Monthly inspections of the entire trail to document the condition of the trail, and any potential hazards on the trail (cracks, erosion, overhead vegetation, etc.). Corrective actions should be integrated into the next 30-day work plan.
- Quarterly inspections should be made of all of the trail amenities such as trashcans, benches, signage, and lighting. Recommended corrective actions should be made and be integrated into a three-month maintenance work plan.

5.2.7 Closures

The Wagner Creek Greenway should be closed if heavy equipment is expected to use the trail during flooding events, or when any maintenance or construction activities are scheduled that could be injurious to the general public. The City should take appropriate measures to notify the public of closure of the segment of trail and arrange detours where appropriate.

SECTION 6: IMPLEMENTATION

6.1 PHASING

The Wagner Creek Greenway project can be considered as three phases:

- **Phase 1:** From W. Valley View Rd north to the proposed park. This section would be constructed by the City of Talent and would link W. Valley View to the new park and the existing pond. This phase would be relatively inexpensive and easy to construct because of the existing dirt road, and should be implemented concurrently with the proposed city park, if feasible.
- **Phase 2:** Between Highway 99 and W. Valley View Rd, including crossings of Highway 99 and W. Valley View Road. This section of the Greenway would most likely be constructed as part of a subdivision or other development along with the extension of Oak Valley Drive.
- **Phase 3:** Connecting the north end of the Wagner Creek Greenway trail to the Bear Creek Greenway trail. This connection will require further studies to determine wetlands and bridge design.

6.2 COSTS

6.2.1 Construction Cost estimates

The construction costs for the Wagner Creek Greenway trail will depend on a number of factors, most specifically, the final alignment and design of the trail segments.

Preliminary estimates for construction are based on unit costs and estimates needed for grading and paving a 10-foot-wide concrete trail. The estimated costs for the alternatives are shown in Table 3. These cost estimates do not include easement or property acquisition costs for greenway and trail development, final engineering design, or traffic management during construction (if needed). These numbers are rough estimates, meant to be used for “order of magnitude” comparison purposes only. Table 4 also provides “per unit” costs for typical trail amenities.

Table 3: Preliminary Cost Estimates

ALIGNMENT ALTERNATIVE	Short-term	Long-term
Phase 1:		
On existing dirt road from W. Valley View Rd to proposed park		\$55,000
Phase 2:		
Between Hwy 99 & W. Valley View Rd, w of creek, with Oak Valley Rd		\$22,000
Hwy 99 Crossing:		
Diversion to signal (cyclists turn right)	\$1,000	
Mid-block unsignalized crossing w/refuge		\$10,000
Valley View Road Crossing:		
Diversion to signal on sidewalk	\$1,000	
Mid-block unsignalized crossing w/ refuge		\$10,000
Phase 3:		
Connection to Bear Creek Greenway (bridge)		\$100-150K
Total Estimate Cost	\$79,000	\$1,970,000

Table 4: Typical “Per Unit” Costs for Trail Amenities

Benches	\$700
Interpretive sign	\$1,000
Mileage bollard (wooden)	\$100
Lighting	\$500
Garbage can	\$400
Dog waste bag dispenser	\$500

6.2.2 Maintenance Costs

The total estimated annual maintenance for the Wagner Creek Greenway trail is about \$6,000, based on the estimated length of around one mile of trail and an industry standard of \$6,000 per mile of concrete bike path annually. Maintenance costs cover labor, supplies, and amortized equipment costs for weekly trash removal, monthly sweeping and bi-annual resurfacing. Repair patrols includes cleaning and patching the trail surface, trash removal, landscaping, underbrush and weed abatement (performed once in the late spring and again in mid- summer). These costs can be greatly reduced if volunteer crews are used or a local organization assumes some of the responsibilities.

6.3 FUNDING OPTIONS

The construction costs for the Wagner Creek Greenway will depend on a number of factors, most specifically, the final alignment and design of the trail segments. Preliminary estimates for construction are based on unit costs and estimates needed for grading and paving a 10-foot-wide concrete trail.

It is assumed that the central portion of the project between Highway 99 and West Valley View Road would be constructed at the time that the property is developed, by the developer as a con-

dition of the project. However, it is assumed that the City of Talent would be responsible for construction of the mid-block crossings of Highway 99 and West Valley View Road.

The total estimated cost for the preferred alignment of the Wagner Creek Greenway is approximately \$1 million in 2007 dollars. The costs for Wagner Creek do not include easement or property acquisition costs for greenway and trail development. They also do not include costs to retrofit local roads to meet ADA accessibility guidelines for alternative trail alignments. Trail amenities are also not included in the cost estimate, although a “per unit” typical cost is provided.

6.3.1 Federal & State Funding Sources

- Community Development Block Grants. Federal funds administered by the counties for areas with low and moderate income households. Bicycle and pedestrian projects are eligible.
- Land and Water Conservation Fund. Federal funds coordinated by Oregon State Parks. Funds can be used for construction. Biannual funding cycle.
- Measure 66 Funds. Funds from Oregon State Lottery coordinated by Oregon State Parks. Funds can be used for construction. Biannual funding cycle.
- Oregon Bicycle / Pedestrian Grants. Administered by ODOT’s Bicycle and Pedestrian Program. Project must be in a public right-of-way. Funding available every two years.
- Oregon Watershed Enhancement Board. Grants are available annually for projects in the following categories: Land Acquisition, Restoration, Water Acquisition, Monitoring, Assessment, Education and Outreach, Technical Assistance, and Small Grants.
- Recreational Trails Grants. Coordinated by Oregon State Parks. Funds can be used for construction. Annual funding cycle.
- Transportation Enhancement Projects. Funded by federal transportation dollars and administered by Oregon Department of Transportation (ODOT). No funding cycle, when funds are available.

6.3.2 Local Funding Sources

- System Development Charges. Funded by fees from new development and administered by the City.
- Urban Renewal Funds/Tax Increment Financing. Part of trail project must be located in an urban renewal district which meets certain economic criteria and is approved by a local governing body.
- Local/Regional Bond Measures approved by voters. Funds can be used for right-of-way acquisition, engineering, design, and trail construction.

6.3.3. Private Funding Sources

Local businesses can help defray some of the costs associated with trail and greenway development. Some examples include:

- Cash donations
- Donations of services, equipment, and labor

- Discounted materials
- Contribution of employee volunteer time

6.3.3.1 Foundations

Some trail elements, particularly if they are educationally, civically, or environmentally-related, can be funded through private foundations. Funding opportunities are better from local foundations and should be approached before national foundations. Some local foundations include the Ford Family Foundation and the Meyer Memorial Trust. It is important to keep in mind that many foundations only solicit grant proposals from registered 401c3 nonprofit organizations.

6.3.3.2 Land Trusts

Land Trusts are local, regional, or statewide nonprofit conservation organizations directly involved in helping protect natural, scenic, recreational, agricultural, historic, or cultural property. Land trusts work to preserve open land that is important to the communities and regions where they operate.

6.3.3.3 Service Clubs

Community organizations have been very successful holding fundraisers and providing volunteer labor for trail building and maintenance activities. Local examples include 4-H, Boy Scouts of America, Rotary Club, Western Oregon University service clubs, and others.

6.3.3.4 Individuals

Individuals, businesses, or corporations can contribute donations to sponsor sections of trail or project elements. Plaques or other forms of recognition are typically placed on constructed pieces in the trail corridor or at a prominent entry point. Sponsorship is a good way to fund trail elements such as benches, trash receptacles, and interpretive areas.

Sections of trail can also be sponsored through a “Buy a Foot” program. Community members can purchase a section of trail at a fixed cost per linear foot and have their names (or dedication) inscribed in the concrete or along the boardwalk.

6.4 REGULATORY REQUIREMENTS

The Federal, State, and Local regulations pertaining to the Wagner Creek Greenway are summarized below. The relevant regulations deal with the transportation aspects of the proposed greenway path along Wagner Creek, as well as floodplain and wetland regulations that could potentially affect the construction of elements of the pathway.

The regulations most likely to affect Wagner Creek Greenway trail include:

- Compliance with Flood Plain Hazard Zone and land use restrictions to minimize flood damage to properties. Trails and pathways are not typically considered as contributing significantly to flood hazard; however, structures such as bridges must comply with the local Flood Damage Prevention regulations (General Ordinance Ch. 8-5).
- The Army Corps of Engineers (Corps) Section 10 (33 U.S.C. 403) requires application for a permit for any fill or removal that could affect the course, location, condition, or capacity of "navigable waters."

- Oregon's Removal-Fill Law allows the Division of State Lands (DSL) to grant, by administrative rule, General Authorizations for removal and fill activities in certain water bodies. DSL will authorize projects that can be shown to cause minimal individual and cumulative environmental impacts to water resources of the state. General Authorizations are currently available for the following activities: DSL's removal-fill jurisdiction is typically determined by the proposed volume of material (over 50 cubic yards) and the location of the activity within the bed and banks or associated wetlands of a 'waters of the state.'" The waters of the state and the physical limits of removal-fill jurisdiction includes rivers, intermittent and perennial streams, lakes, ponds to the ordinary high water line; and associated wetlands. Since DSL and Corps jurisdiction frequently (but not always) overlap, a Joint Corps/DSL permit application has been developed.
- The Oregon Bicycle and Pedestrian Plan is an extensive and complete guideline for the provision of bicycle and pedestrian facilities.
- The ODOT Traffic Manual, Sections 6.3 and 6.6, deals with crosswalks and crossing strategies (including crosswalks at intersections and mid-block locations) which will need to be considered on this project. Specific engineering studies and State Traffic Engineer approval are required before establishing marked crosswalks at locations other than standard intersections.
- Talent Zoning Code Article 8-3H.2. Natural Areas, Parks And Floodplains. This Article sets minimum standards applicable to new development in or adjacent to areas designated as flood plains, greenways, wetlands, and riparian areas. Section 1 considers the Floodway/Parks/Greenway Overlay zone, as established in the Talent Comprehensive Plan, adopted in 1981. This section recognizes the potential for Wagner Creek to provide an important greenway in Talent:
- Talent Zoning Code Article 8-3J.6. Access Management and Improvements, Pedestrian Access and Circulation, Street Improvements, Dedication and Setbacks. Section 640 of this article addresses the standards for separated pathways.

SECTION 7: RECOMMENDED CODE & PLAN LANGUAGE CHANGES

7.1 TALENT COMPREHENSIVE PLAN, TRANSPORTATION ELEMENT

The City of Talent Transportation Systems Plan (TSP) identifies multi-modal connections as an important transportation element in the City. Connections to the regional Bear Creek Greenway are identified, including the linear corridor and greenway opportunity provided by Wagner Creek. The TSP also emphasizes the importance of connecting the multi-modal system to the on-street system of bike lanes and sidewalks.

Element D of the Comprehensive Plan summarizes the findings, goals and objectives of the Talent Transportation System Plan (TSP). On page 7-16 of the TSP and page 19 of Element D, the greenway connection is described as follows:

“Multi-Modal Connections to the Bear Creek Greenway: Three connections are proposed to the Bear Creek Greenway. The proposed northern connection is near Suncrest Road. The central connection is near the existing West Valley View Road bridge over Bear Creek. The southern connection is near Creel Road. Because of the sensitive environmental nature of these areas along Bear Creek, special efforts will be needed in the design of any facilities for these areas. The terrain and soil conditions will also be challenging. The connection to the Bear Creek Greenway path near West Valley View Road may involve modification of the existing bridge. For each of the proposed connections, the needs of both pedestrians and bicyclists will need to be considered. Due to environmental constraints or topography, connections for bicyclists may not be possible. In this case, only pedestrian access may be provided.”

This section of the Plan should be amended to read:

“Multi-Modal Connections to the Bear Creek Greenway: Three connections are proposed to the Bear Creek Greenway. The proposed northern connection is near Suncrest Road. The central connection is near the existing West Valley View Road bridge over Bear Creek. The southern connection is near Creel Road. Because of the sensitive environmental nature of these areas along Bear Creek, special efforts will be needed in the design of any facilities for these areas. The terrain and soil conditions will also be challenging. ~~The connection to the Bear Creek Greenway path near West Valley View Road may involve modification of the existing bridge. For each of the proposed connections, the needs of both pedestrians and bicyclists will need to be considered. Due to environmental constraints or topography, connections for bicyclists may not be possible. In this case, only pedestrian access may be provided.~~ The TSP adopts the recommendations of the Wagner Creek Greenway Connection Plan (2007) for the development of a shared use transportation and recreation path connecting the existing trail on the south side of Highway 99 to the existing Bear Creek Greenway. The City will follow the design guidelines of the Wagner Creek Greenway to Greenway Connection Plan. New developments planned along the Wagner Creek corridor should incorporate or connect to the trail as shown in the Plan.”

In the TSP, Table 7-5, Item 18 (Multi-modal Wagner Creek Greenway Path) should be amended to reflect the Phasing shown in Table 3 of this report.

7.2 TALENT ZONING CODE

No changes to the Talent Zone Code are recommended.