

Scriber Creek Trail Improvement Project—Phase 1 Pre-Design/Alternatives Analysis Report

Prepared for
City of Lynnwood



March 2019

Prepared by
Parametrix

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Prepared for

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CITATION

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ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ADT	average daily traffic
City	City of Lynnwood
mph	miles per hour
Sound Transit	Central Puget Sound Regional Transit Authority

1. INTRODUCTION

The City of Lynnwood (City) is proposing to improve the Scriber Creek Trail to provide a regional, shared use trail that would improve recreation within and between City parks. The trail would also create a nonmotorized transportation connection among neighborhoods, SWIFT bus rapid transit routes on 196th Street SW, the City Center, Lynnwood Transit Center, the future Lynnwood Link light rail station, and the Interurban Trail. The purpose of this report is to describe the process the City applied to identifying and evaluating alternatives for meeting project objectives.

Improvements are necessary because the current trail does not accommodate the variety or volume of intended uses due to its existing condition (described further below). The trail traverses a very auto-oriented area of Lynnwood that is highly developed and experiences some of the highest traffic congestion, volumes, and collisions in the city. Thus, those commuting through this area view this as a barrier and choose to use vehicles in lieu of walking or cycling to their destinations.

The scope of this Phase I project is to complete approximately 4,000 linear feet of shared use trail from Wilcox Park at the intersection of 196th Street SW/52nd Avenue W to the southwest corner of the Lynnwood Transit Center, where it will connect via a trail being constructed by Sound Transit to the Interurban Trail (Figure 1-1). The project will redevelop the existing trail system into a regionally serving and safe alternative transportation route, connecting multiple transit modes and corridors as well as employment centers, and regionally serving trail systems through enhanced pedestrian and bicycle mobility. This project is the first phase of a much larger project, which will eventually extend Scriber Creek Trail from Wilcox Park to Lund’s Gulch and Meadowdale Beach Park.

The trail will generally feature a hard, smooth surface that is 10 to 12 feet wide with 2-foot soft shoulders. In a few wetland and stream areas, the trail will be constructed on an elevated boardwalk with a durable and slip-resistant surface.



Existing trail in Scriber Lake Park inundated following March 2018 rainfall events

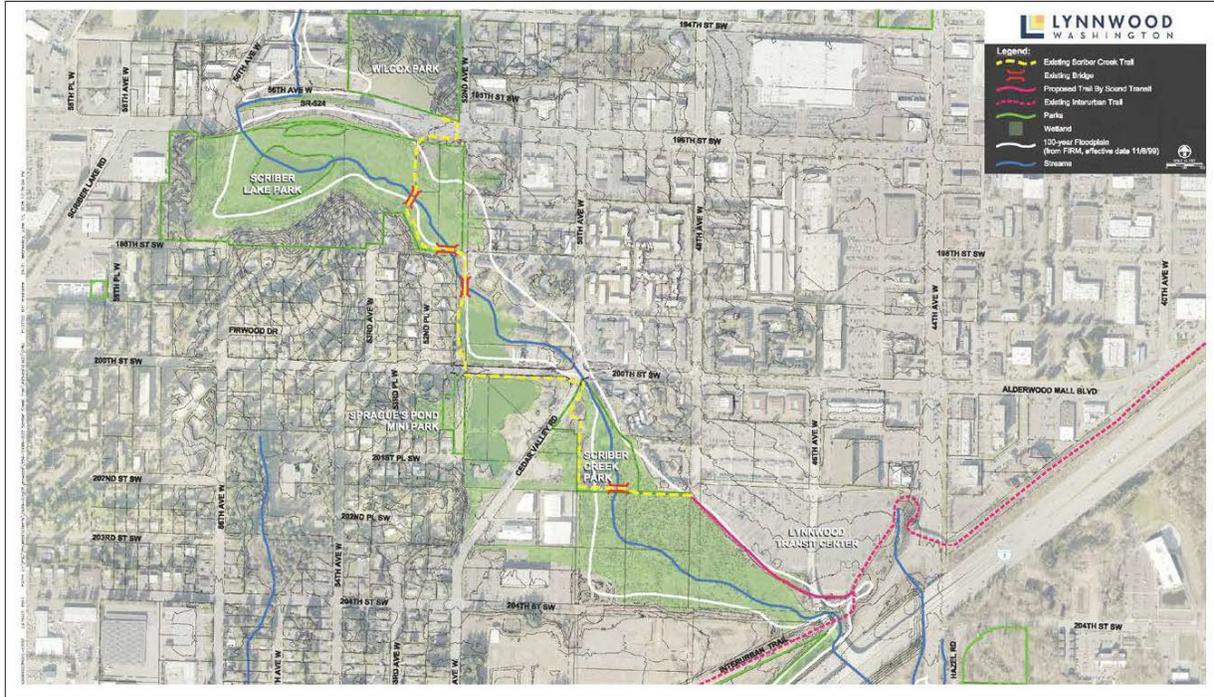


Figure 1-1. Vicinity Map Scriber Creek Trail

2. EXISTING CONDITIONS

Currently, the nonmotorized connection from Wilcox Park to the Lynnwood Transit Center consists of a combination of existing paths, bicycle lanes, and sidewalks. In assessing conditions and opportunities, three segments were identified:

- Segment 1—Scriber Lake Park: includes Wilcox Park and Scriber Lake Park south to 200th Street SW
- Segment 2—Connecting Segment: includes the connection from 200th Street SW crossing to the southern portion of Scriber Creek Park
- Segment 3—Scriber Creek Park: includes the southern portion of Scriber Creek Park east to the southwest corner of the transit center

The condition of each existing segment is described below from northwest to southeast.

2.1 Segment 1—Scriber Lake Park

Wilcox Park is the northern terminus of the project. In 1961, Eugene Wilcox (from a family of settlers) turned over the lease on the land to Snohomish County, who deeded it to the City of Lynnwood in the 1970s, creating the park bearing his name (David Evans and Associates 2005). This park encompasses 7 acres and includes parking, a restroom facility, and play equipment.

From the parking lot at Wilcox Park, an existing path connects to the traffic signal at 52nd Avenue W. The path is approximately 4 to 5 feet wide, and the surface is in poor condition due to apparent root damage from adjacent trees. There is a push-button crosswalk for access across 196th Street SW.



Existing path from parking lot to signalized intersection



Pavement condition of path from Wilcox Park

Near the trail crossing, 196th Street SW is a principal arterial and carries four lanes of through traffic with an eastbound left-turn lane onto 52nd Avenue W. Average daily traffic (ADT) near this intersection is around 33,400. The posted speed of the roadway is 35 miles per hour (mph). Vehicular speeds and volumes on 196th Street SW are high and create undesirable conditions for pedestrian and bicycle travel along the arterial. The existing signalized intersection at 52nd Avenue SW is the best opportunity for safe access across this street.



Existing signalized intersection and crosswalk across 196th Street SW

A 5-foot-wide sidewalk connects from the signalized intersection west approximately 200 feet to the entrance to Scriber Lake Park. As described in the master plan for the park: “Scriber Lake Park is a cool green oasis in the heart of downtown Lynnwood. With 22 acres of wetlands, lakes, streams, trails, and hillsides, Scriber Lake Park provides a haven for wildlife, and a respite from the urban environment for the visitors to the park” (David Evans and Associates 2005).



North entrance to Scriber Lake Park along 196th Street SW

From the entrance, there is an existing 5- to 8-foot-wide trail that winds through Scriber Lake Park. This route is part of a diverse trail network in the park. The main route connecting to the south is shown in Figure 2-1. The surface of the existing trail varies from pavement to wood chips to the wood bridges that cross Scriber Creek in two places. The trail is severely degraded due to damage caused by stormwater flooding and natural impacts such as soil settlement, tree root heaving, and watershed fluctuation. The trail takes several sharp turns that limit a trail user's ability to see conditions on the trail ahead.



Looking south through Scriber Lake Park

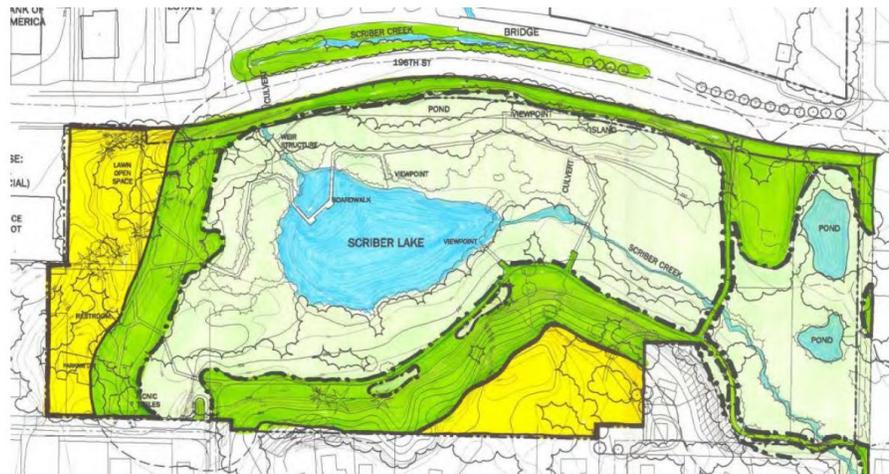


One of the existing trail bridges in Scriber Lake Park



Surface material transition in Scriber Lake Park

The park topography consists of the lake, stream channel, and wetlands, surrounded by slopes on all four sides of the park (David Evans and Associates 2005). The wetland/stream complex at Scriber Lake Park contains dense stands of willow and other native plants that provide a unique habitat feature within an urbanizing landscape. Deep organic soils occur in many areas, augmenting the site's ability to absorb and store rainwater and runoff.



Scriber Lake Park - Site Suitability Map

Source: Scriber Lake Park Master Plan

Figure 2-1. Scriber Lake Park Site Suitability Map

The trail emerges from the main park into the unopened right-of-way of 52nd Avenue SW. The route



skirts the neighborhood to the southwest, continuing south between the neighborhood and the pond to the east to connect to an existing uncontrolled crosswalk across 200th Street SW. This pond provides some habitat for waterfowl and aquatic animals, but overall has relatively narrow buffers of native vegetation separating them from the surrounding development, thereby limiting habitat value.

Looking south with neighborhood to the right and pond to the left

2.2 Segment 2—Connecting Segment

Near the trail crossing, 200th Street SW is an arterial roadway with two through lanes and a two-way left-turn lane with bicycle lanes and sidewalks on both sides. The ADT of the street in the project vicinity is about 16,900 and the posted speed is 30 mph. An existing crosswalk crosses on the west side of the driveway entrance to the Sprague’s Pond Mini Park. In addition to serving the park, this entrance also provides access to at least one residence southwest of the parking lot.



Looking southwest at existing crosswalk from the north side of 200th Street SW

From the south side of 200th Street SW, trail users can continue east along the street by using the sidewalk or bicycle lane. The sidewalk is 4 feet wide and separated from the road by a curb and planter strip that is 2 feet wide. A chain link fence on the south side of the sidewalk provides separation from the relatively steep slope to Sprague’s Pond. The pond is surrounded on all sides by roads or development. As such, and due to the narrow buffers, the habitat value provided by this feature is limited primarily to waterfowl and aquatic animals.



Looking east along the south side of 200th Street SW from the mini park

At the signalized intersection of 200th Street SW with Cedar Valley Road, both bicyclists and pedestrians can continue east across Cedar Valley Road to the sidewalk on the east side. The sidewalk along Cedar Valley Road is 5 feet wide with only a curb as separation from the adjacent travel lane. Bicyclists must either use the sidewalk or ride in traffic. Cedar Valley Road is an arterial roadway with two through lanes and a two-way left-turn lane or left-turn lane with bicycle lanes and sidewalks on both sides. The ADT of the street in the project vicinity is about 9,900 and posted speed is 30 mph. Trail users then use the driveway entrance to the Scriber Creek Trail parking lot to make the next connection.



Looking east across the south leg of intersection with Cedar Valley Road



Looking south from signalized intersection along the east side of Cedar Valley Road

2.3 Segment 3—Scriber Creek Park

Scriber Creek Park is a passive park that includes forested wetlands, wildlife habitat, nature trails, benches, picnic tables, and a parking lot near the northwest corner. From the southeast corner of the Scriber Creek Trail parking lot, an existing trail travels south before taking a 90-degree turn to the east. The trail varies from 5 to 8 feet in width with variable surfacing. For the last 300 feet before connecting to the southwest corner of the transit center, the trail is on a 10-foot-wide easement. Multi-family housing is located north of the trail.

The existing trail continues along the edge of the transit center to connect to the Interurban Trail. However, this trail segment is being improved by Sound Transit in conjunction with light rail development.



Looking south along the existing trail through Scriber Creek Park



Looking east along existing trail through Scriber Creek Park



Looking west from near the transit center along the existing trail

3. IDENTIFICATION OF ALTERNATIVES

In considering how to meet the project objectives, the project team did not limit their analysis only to improvements to the trail in its existing alignment, but also considered alternative alignments. The purpose of evaluating multiple alignments was to determine if the trail user experience could be improved or ecological impacts reduced. To improve trail user experience, alignments outside of road right-of-way were considered. To reduce ecological impacts, more direct alignments through critical areas were considered. Figure 3-1 shows all of the alignments described below.

3.1 Segment 1—Scriber Lake Park

The area around this segment is characterized by stream crossings, wetlands, undisturbed forest, and floodplain. The existing trail (Alternative 1.1) traverses the heart of these areas via a winding route. In an effort to potentially avoid and minimize ecological impacts, an alignment (Alternative 1.2) was identified that is more direct and located toward the edge of the park area with potentially less ecological impacts.

To improve trail user experience, an alignment (Alternative 1.3) was also identified that diverges the trail from 196th Street SW soon after the signalized intersection. Other potential advantages of this alignment are making the turn into the park gentler and flatter and taking advantage of more upland areas to locate the trail.

3.2 Segment 2—Connecting Segment

As previously described, the trail traverses an area with some of the highest traffic congestion, volumes, and collisions in the city. A shared-use path along 200th Street SW and Cedar Valley Road would be separated from motor vehicular traffic by a planter strip and trail shoulder (5 feet total). This configuration is also known as a “sidepath.” The width of the trail would be the standard 12 feet of pavement with shoulders. Because the trail footprint is wide, options for the trail on both the north and south side of 200th Street SW were considered to see if there were distinctive differences in impacts. These alternatives became Alternative 2.1A (north side) and Alternative 2.1B (south side).

Even though a trail along 200th Street SW would be separated from vehicular traffic, the trail experience would still be affected by the proximity of the road. To improve trail user experience, alternative alignments were identified that, after crossing 200th Street SW, would continue south through the Sprague’s Pond Mini Park before taking different paths through private property and across Cedar Valley Road and then connecting into Scriber Creek Park. These off-road alternatives became Alternative 2.2A (northern route) and Alternative 2.2B (southern route).

A third off-road alternative (Alternative 2.3) was added during the preliminary screening process, based on public and staff input. This alternative follows the same alignment as Alternatives 2.2A and 2.2B through Sprague’s Pond Mini Park but turns easterly to cross the pond before connecting into Scriber Creek Park.

3.3 Segment 3—Scriber Creek Park

Scriber Creek Park is characterized by large wetland areas, the stream, forested areas, and floodplain. The existing trail (Alternative 3.1) traverses through the heart of these areas. In an effort to potentially avoid and reduce impacts to ecological resources, the project team identified an alignment that crosses the stream north of the open water area and then hugs the eastern boundary of the park. This route became Alternative 3.2.

4. PRELIMINARY PUBLIC INVOLVEMENT

The identification of alternative alignments was informed by two public involvement activities that occurred April through June 2018: an online survey and focused outreach consisting of several small group meetings with stakeholders.

4.1 Online Survey

Concurrent with the initial identification and evaluation of alternatives, the City of Lynnwood invited interested citizens to participate in an online survey from April 1 to April 15, 2018 for Scriber Creek Trail improvements. The invitation was distributed to over 1,400 households within a certain area around the study area for the trail. Information provided in the postcard and on the project website included the City of Lynnwood’s vision of the trail:

- A shared-use transportation and recreation facility with multimodal connections among homes, businesses, parks, the Interurban Trail, the transit center, the future light rail station, and future bus-rapid transit routes.
- An improvement to the existing trails in Scriber Lake Park and Scriber Creek Park with the creation of a new connection between them.

The project website also included a map showing possible routes (Figure 3-1) and explained that the results of the online survey would inform the alternatives analysis. The postcard provided a timeline (summer 2018) for alternative selection that will be advanced for design and environmental review. The mailer encouraged prospective participants to let the City of Lynnwood know what is important to them as it relates to trail improvements. A total of 40 residents participated in the survey.

The survey asked if and how participants would use the trail, what was important from a context-sensitive design perspective, concerns about siting a trail through parks and near neighborhoods, and what was important to improve the trail user experience.

The results of the online survey helped inform the preliminary screening of alternatives, described in Section 5 of this report. A detailed summary of the responses is provided as Appendix A.

4.2 Focused Outreach

In June 2018, the City held two focused outreach meetings. The first invited interested participants in the online survey to discuss the alternatives still under consideration in more detail. The participants were primarily residents living near the trail alignments. The second invited other stakeholder groups, such as Planning Commission members and trail user groups. The results of the focused outreach helped inform the preliminary screening of alternatives, described in Section 5 of this report.

Summary of First Meeting

In general, key ideas expressed by many of the attendees were:

- Attendees liked the idea of improving the existing trails through Scriber Lake Park and Scriber Creek Park by opening up lines of sight and elevating the trail above areas that are frequently inundated.
- Many expressed concerns with crime levels and current criminal activities in the parks and how the trail location may be affected by these activities.

- Neighbors along 201st Street SW were concerned about people using their dead-end street to access the trail and other impacts to neighborhood character due to vegetation loss and more people in the area.

Summary of Second Meeting

Much of the conversation at the second meeting was focused on changes occurring in the project vicinity with the Sound Transit and City Center developments, and how people may travel to get to these destinations and other transit stops.

5. PRELIMINARY SCREENING OF ALTERNATIVES

The various alternatives for each segment were compared qualitatively by identifying pros and cons and assigning planning-level opinion of costs for construction. The planning-level opinion of costs conservatively assume that the trail will be located on an elevated structure within areas identified as wetlands and at stream crossings. The results of the screening are described below.

5.1 Segment 1—Scriber Lake Park

The advantages of Alternative 1.1 (improving the existing trail) relative to Alternative 1.2 (direct perimeter route) are:

- The area is already cleared and generally graded.
- Although the improved trail would be wider than the existing trail, it has less critical area impacts than Alternative 1.2, and avoids open water features to the east.
- Improving the existing trail would benefit both park public access and park use.
- Development of a regional trail on this alignment would improve the "usability" of a trail that is otherwise frequently inundated and characterized by some users as "scary."
- It avoids a fill mound in the northeastern portion of the park that is characterized in the Scriber Lake Trail Master Plan as one of the most significant slopes.
- A shorter segment of the trail is within the 100-year floodplain.
- The alignment is farther from adjacent private properties.

The relative advantages of Alternative 1.2 are:

- The route is shorter, straighter, and more direct.
- The route crosses Scriber Creek once rather than three times.

The planning-level opinion of probable construction cost for Alternative 1.1 is \$2.6 to \$3.4 million. Because the route is circuitous and has more elevated structures, this cost is higher than that estimated for Alternative 1.2, which is estimated at \$2.0 to \$2.8 million.

Alternative 1.3 is a variation of Alternative 1.1 in which the horizontal and vertical geometry for transitioning from 196th Street SW into Scriber Lake Park is softened. Although it would remove more vegetation, most of the vegetation consists of mowed grass and Himalayan blackberries. Depending on how the alignment is refined during design, some street trees may be affected, and a utility pole may need to be relocated. The planning-level opinion of probable construction cost is \$2.5 to \$3.3 million, slightly lower than Alternative 1.1 because the route is slightly shorter.

Based on the preliminary screening, Alternative 1.2 was eliminated. Alternative 1.3 (the variation of Alternative 1.1) will be advanced for further evaluation. Primary drivers for this decision were:

- About 25 percent of participants in the online survey wanted to avoid trail development in areas that had not been disturbed. This also reduces ecological impacts from trail development.
- Alternative 1.2 misses the opportunity to improve the functionality of the existing trail and park access, which is part of the objectives for the project.

5.2 Segment 2—Connecting Segment

The relative advantages of the on-road (side path) alternatives (2.1A and 2.1B) are that the trail is an expansion of an existing road right-of-way, and trail users may feel more secure being in a more visible area. The on-road alternatives are also farther from residential neighborhoods. The relative advantages of the off-road alternatives (2.2A, 2.2B, and 2.3) are that the trail experience would be better farther away from motor vehicles, and public access to and use of Sprague’s Pond Mini Park may be enhanced. All the alternatives would require right-of-way acquisition. The objective of preliminary screening for this connecting segment was to narrow the range of alternatives, but still carry at least one on-road and one off-road alignment for comparison. Specific analysis of the alternatives is provided below.

On-Road Alternatives

Alternative 2.1A is located on the north side of 200th Street SW and Alternative 2.1B is located on the south side of the street. Rights of entry were granted by some of the adjacent property owners, allowing project staff better access to understand the potential opportunities and constraints described below.

The relative advantages of Alternative 2.1A (north side) are:

- It avoids a midblock crossing of 200th Street SW.
- Impact to the adjacent pond is expected to be less because the alignment next to the pond is a shorter distance.
- It may affect the less adjacent parking area.

The relative advantages of Alternative 2.1B (south side) are:

- It crosses few driveways.
- No bus stops are available on the south side of the road that could be affected by trail development.
- The alignment is farther from adjacent buildings.
- The south side of the road has few overhead utilities and poles.
- It traverses only two corners (rather than three for Alternative 2.1A) of the intersection of 200th Street SW and Cedar Valley Road—an intersection with very complicated utilities and property ownership, and a fish passable culvert conveying Scriber Creek from the northwest corner to the southeast corner of the intersection.
- The amount of right-of-way acquisition needed is expected to be slightly less than Alternative 2.1A.
- The midblock crossing of 200th Street SW provides better access from the trail to the Sprague’s Pond Mini Park.

The planning-level opinion of probable construction cost is \$1.5 to \$1.9 million for Alternative 2.1A and \$1.4 to \$1.8 million for Alternative 2.1B.

Based on the preliminary screening, Alternative 2.1A (north side) was eliminated, and Alternative 2.1B (south side) was advanced for further evaluation. The primary driver in making this decision was the complexity of the intersection of 200th Street SW and Cedar Valley Road and a desire to avoid affecting three corners of the intersection.

Off-Road Alternatives

The preliminary screening was focused on comparing Alternative 2.2A with Alternative 2.2B. Rights of entry were granted by the property owner south of Sprague’s pond and east of Cedar Valley Road (location of Stoneway Electric). Project staff walked the southern portion of both private properties to better understand the opportunities and constraints identified below.

Based on the preliminary screening, Alternative 2.2B was quickly eliminated. The primary advantages of Alternative 2.2A compared to Alternative 2.2B are that it is a more direct route with less right-of-way acquisition and less critical area impact. The planning-level opinion of probable construction cost is \$1.4 to \$2.2 million for Alternative 2.2A and \$2.0 to \$3.4 million for Alternative 2.2B. The location of the midblock crossing of Cedar Valley Road also has better sight distances than the Alternative 2.2B crossing location.

However, the alignment for Alternative 2.2A is challenged by proximity to the residential neighborhood to the west and a relatively steep slope between the neighborhood and commercial properties to the east that would require an engineered solution and removal of much vegetation in that area. The neighborhood residents expressed concerns about this alignment through the public involvement process. As a result, the City decided to:

- Advance Alternative 2.2A for further evaluation, including a closer look at geotechnical challenges and opportunities to refine the alignment to reduce costs and impacts.
- Add a new off-road alternative that would be aligned farther from the residential neighborhood and avoid the relatively steep slope. Alternative 2.3 traverses Sprague’s Pond, crossing the parking area near the boundary between two private properties before crossing Cedar Valley Road. This alternative is described in more detail in Section 6 of this report.

5.3 Segment 3—Scriber Creek Park

The advantages of Alternative 3.1 (improving the existing trail) relative to Alternative 3.2 (perimeter route) are:

- The area is already cleared and generally graded through critical areas.
- Although the improved trail would be wider than the existing trail, it has less critical area impacts than Alternative 3.2, and avoids open water features to the east.
- A grassy upland area could be used to soften the horizontal geometry near the 90-degree turn at the southwest corner of the park and potentially allow for some ecological restoration along the current alignment.
- The alignment is farther from residential properties to the east.

The relative advantages of Alternative 3.2 are that it would cross the floodplain at a narrower point. However, it does not appear to reduce critical area impacts relative to Alternative 3.1.

Both alternatives would use the existing easement just west of the transit center connection, although Alternative 3.1 would use it for a slightly greater distance. The existing easement is just 10 feet wide; therefore, right-of-way acquisition is necessary to develop the improved trail. Although the project team reached out to the adjacent property owner to pursue a right of entry to investigate site conditions, no response was received.

Both alternatives would tie into the segment of trail being constructed by Sound Transit from the southwest corner of the transit center to the Interurban Trail.

The planning-level opinion of probable cost is \$1.0 to \$1.5 million for Alternative 3.1 and \$1.1 to \$1.6 million for Alternative 3.2.

Based on the preliminary screening, Alternative 3.2 was eliminated. Alternative 3.1 will be advanced for further evaluation. Primary drivers for this decision were:

- About 25 percent of participants in the online survey wanted to avoid trail development in areas that had not been disturbed. This also reduces ecological impacts from trail development.
- Alternative 3.2 misses the opportunity to improve the functionality of the existing trail and park access, which is part of the objectives for the project.

5.4 Summary

The results of the preliminary screening are shown on Figure 5-1.

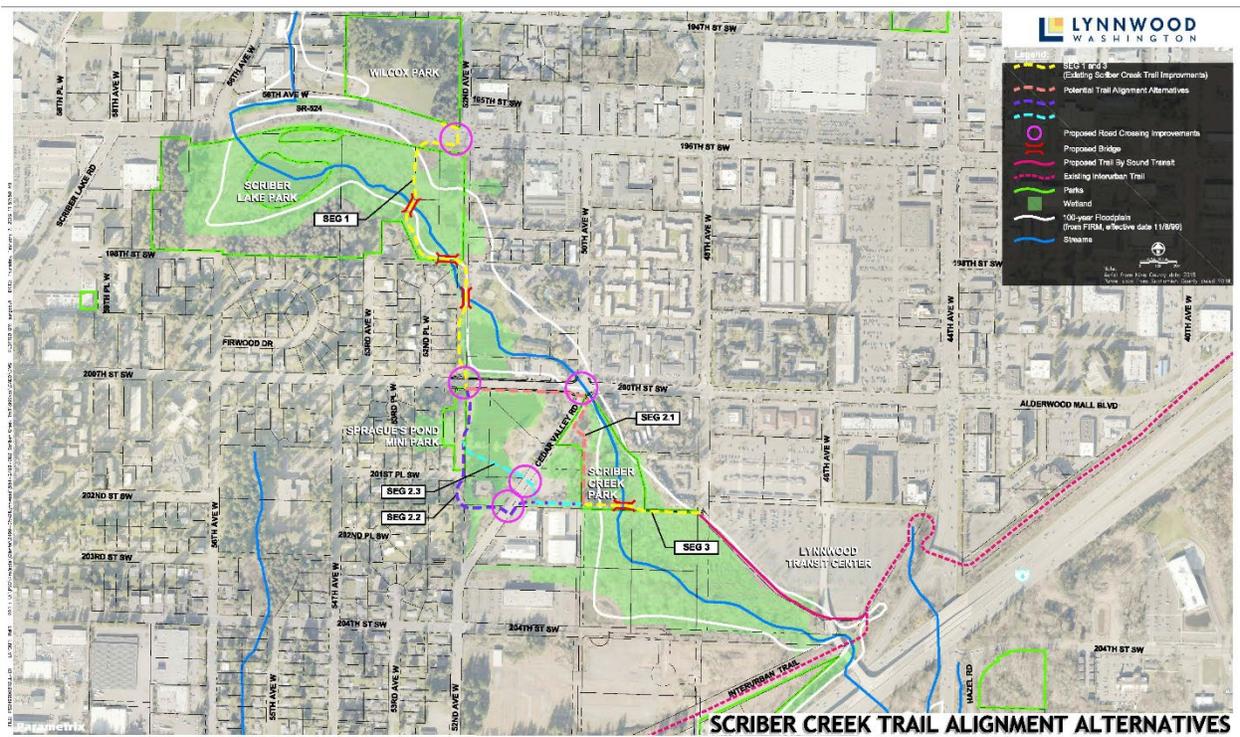


Figure 5-1. Alternative Alignments for Secondary Screening

6. FINAL EVALUATION AND SELECTION OF A PREFERRED ALIGNMENT

To inform a more detailed evaluation, the conceptual alignments for alternatives still under consideration were laid out in AutoCAD. Then the alternatives were considered based on length, cost, right-of-way acquisition needs, critical area impacts, stream crossings, trail user experience, and trail visibility. Table 6-1 summarizes the results of the final evaluation. Because the alignments through Scriber Lake Park and Scriber Creek Park had already been selected during preliminary screening, the results for each of the connecting alternatives incorporate these alignments. In other words, Alternatives 1.3 and 3.1 are no longer shown separately but incorporated into the comparative analysis for the connecting segment.

These results were informed by the additional outreach discussed below, as well as technical analysis.

Table 6-1. Secondary Screening Matrix

Criteria	Alternative 2.1 200th Street SW to Cedar Valley Road	Alternative 2.2 West of Sprague’s Pond	Alternative 2.3 Across Sprague’s Pond
Cost Factors			
Construction and Right-of-Way Costs	\$4.9 to \$6.65 Million	\$5.6 to \$7.65 Million	\$5.0 to \$8.1 Million
Right-of-Way Acquisition (square feet)	12,800	50,250	26,500
Right-of-Way Acquisition (number of parcels)	5	9	5
Trail User Experience			
Length (linear feet)/Directness	4,090	3,985	3,770
Nature/Recreation Experience	Moderate	Moderate	Best
Number of Road and Driveway Crossings	4	3	3
Traffic Congestion (vehicle delay)	Most	Moderate	Moderate
Road Crossing Safety	Good	Better	Best
Separation from Traffic	Not Separated	Separated	Separated
Trail Visibility	Best	Least	Moderate
Potential Impacts			
Parking Removal	2 stalls	None	2 stalls
Amount of Vegetation Removal	Most	Most	Moderate
Visual Impact	Moderate	Moderate	Moderate
Geotechnical Challenge	Moderate	Most	Moderate
Scriber Creek Impacts (connecting segment only)	Yes	None	None
Sprague’s Pond Impacts	Yes (more bank impacts)	None	Yes (more open water impacts)

6.1 Additional Outreach

Because Alternative 2.3 traverses private property to cross the pond, the City developed several visual simulations of what the structure could look like (Figures 6-1 and 6-2) and reached out to several commercial property owners in the vicinity of the off-road alternatives. Through this outreach, some of the adjacent property owners expressed the following concerns with the pond crossing:

- The fish and wildlife that occur in the pond may be adversely affected.
- The natural setting enjoyed by adjacent property owners would be adversely affected.
- The bridge or boardwalk would attract people who would park illegally on private property.
- The bridge or boardwalk would create nuisance noise, litter, and liability.

The City also held an open house in January 2019 to discuss the alternatives. Key feedback from the open house included:

- Adjacent property owners, both residential and commercial, generally preferred the on-road alternative (Alternative 2.1).
- Support for the pond crossing alternative (Alternative 2.3) came from community members who do not live in the immediate vicinity.
- Little support was voiced for the alternative that comes closest to the neighborhood along 201 Place SW (Alternative 2.2).

The City also reached out to several permitting agencies, including the U.S. Army Corps of Engineers and Washington Department of Fish and Wildlife, to understand any requirements and concerns pertaining to the pond and Scriber Creek.

6.2 Technical Analyses and Recommendation

According to the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities (AASHTO 2019), it is generally preferable to select path alignment in an independent right-of-way unless the right-of-way and other physical constraints dictate a location adjacent to a road. Trail user experience is much better, and more people of all ages and abilities may use the trail, when the trail is not located next to a busy road. Being off road has one less driveway/road crossing compared to the on-road alternative and would avoid potential conflicts with utilities located in the road right-of-way.

By design, none of the criteria in the evaluation were weighted, as shown in Table 6-1. All three alternatives are feasible and would be a substantial improvement, and all three have disadvantages. However, because of continued concerns about proximity to the adjacent neighborhood and traversing a relatively steep slope, Alternative 2.2 was eliminated. In considering the tradeoffs between the two remaining alternatives, the project team (consultant and City staff) considered trail user experience as one of the most important criteria, consistent with the recommendations in the AASHTO Guide. On January 22, 2019, the project team presented a preliminary recommendation to the City Council that Alternative 2.3 be selected and advanced for design. After discussion and consideration, some City Council members were still concerned about the right-of-way and physical constraints presented by any off-road alternative.

Upon review of the City Council concerns, the project team revised its direction and recommended moving forward with Alternative 2.1, the on-road alternative. While a portion of this alternative is located along roads, it will be designed to provide either some separation from the road using a

landscape strip or a barrier, which will be a substantial improvement over the narrow sidewalk serving the road today.



Figure 6-1. Bird’s Eye Simulation of Boardwalk



Figure 6-2. Ground Level Simulation of Boardwalk

7. NEXT STEPS

Design of the preferred alternative (Alternative 2.1) for Scriber Creek Trail will begin in late winter/early spring 2019. Design criteria that will be applied are provided in Appendix B. Permitting requirements that may apply to this project are provided in Appendix C.

The City will reach out to immediate neighbors as needed to inform the preliminary design. When completed, the 30-percent design will be available on the project website and additional outreach activities will be offered.

8. REFERENCES

AASHTO (American Association of State Highway and Transportation Officials). 2019. AASHTO Guide for the Development of Bicycle Facilities, 2019. Washington, DC.

David Evans and Associates. 2005. Scriber Lake Park Master Plan. Prepared for the City of Lynnwood, Washington. March 2005.

Appendix A

Survey Responses



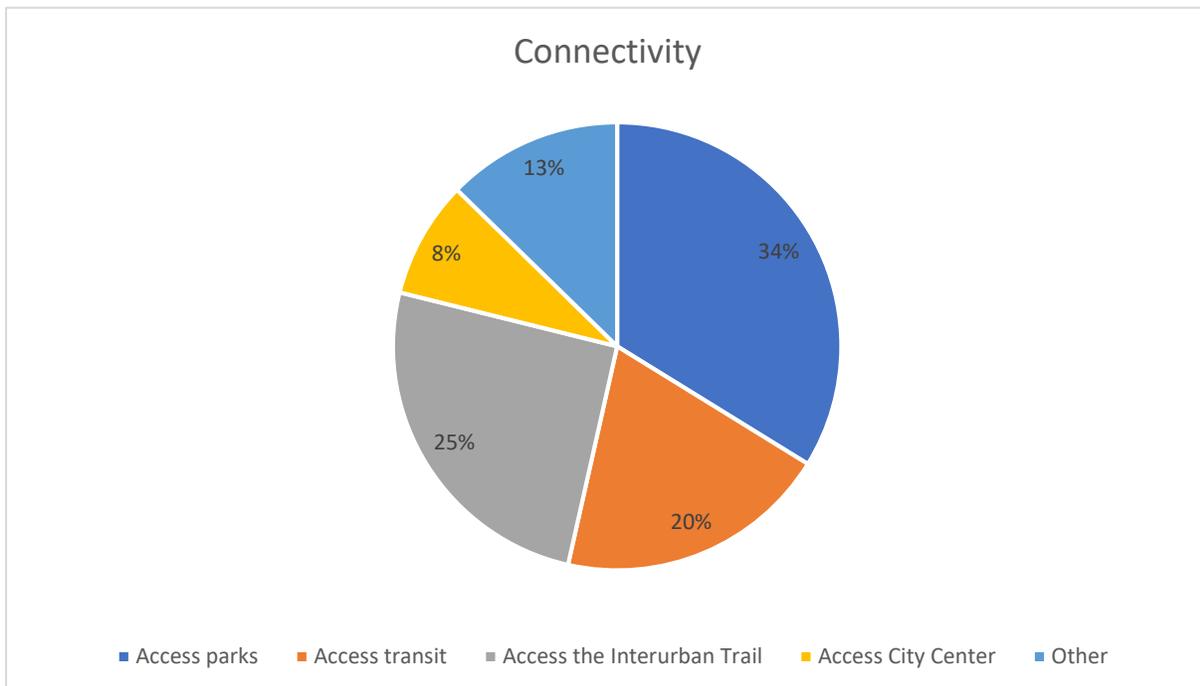


The City of Lynnwood invited interested citizens and businesses to participate in an online survey from April 1 to April 15, 2018 for Scriber Creek Trail improvements. The invitation was distributed to over 1,400 households within a certain area around the study area for the trail. Information provided in the postcard and on the project website included the City of Lynnwood’s vision of the trail:

- A shared-use transportation and recreation facility with multi-modal connections between homes, businesses, parks, the Interurban Trail, the transit center, the future light rail station, and future bus-rapid transit routes.
- An improvement to the existing trails in Scriber Lake Park and Scriber Creek Park with the creation of a new connection between them.

The project website also included a map showing possible routes and explains that the results of the online survey will inform the alternatives analysis. The postcard provided a timeline (summer 2018) for alternative selection that will be advanced for design and environmental review. The mailer encouraged would-be participants to let the City of Lynnwood know what is important to them as it relates to trail improvements. A total of 40 residents participated in the survey. The following provides an overview of the survey results.

1. The Scriber Creek Trail will better connect homes, businesses, parks, transit opportunities, and trails. I am most interested in using the trail to (check all that apply):



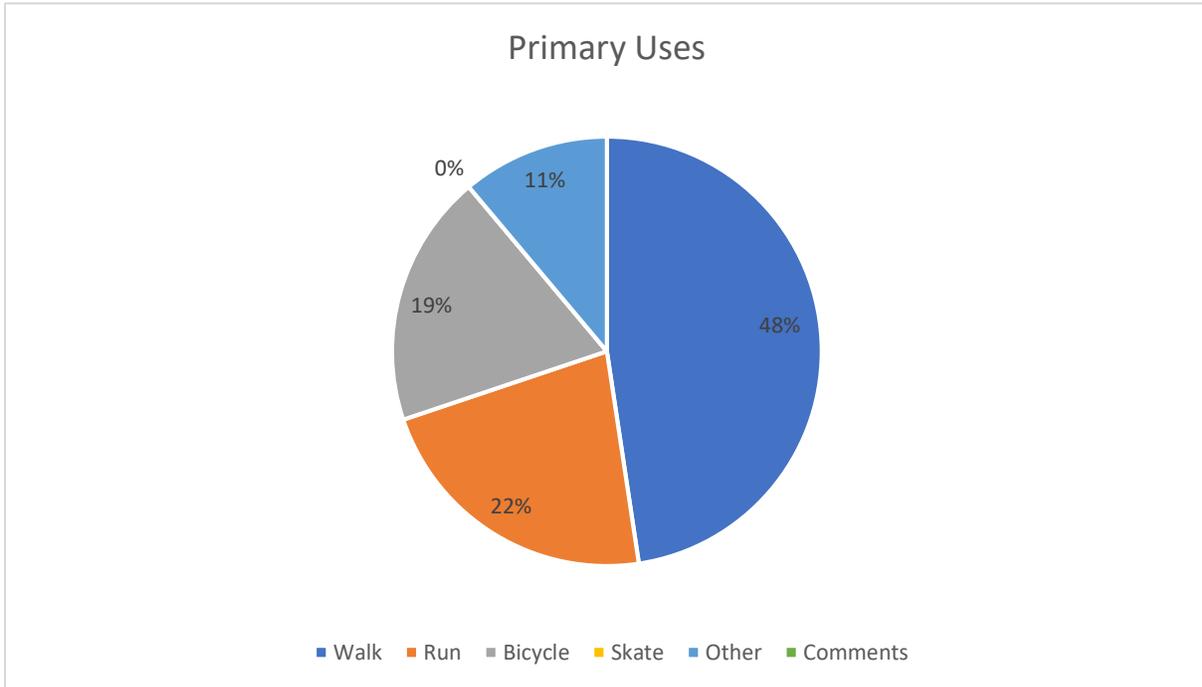
Trail Use and Connectivity	Response #
Access parks	24
Access transit	14
Access the Interurban Trail	18
Access City Center	6
Other	9

Comments:

Nine respondents provided comments categorized as “other.” Of the nine respondents, four stated they are not interested in using the trail due to feeling unsafe or threatened by other users including homeless encampments or illegal activities such as drug use. Two of the “other” respondents are generally not interested or do not support expansion or improvements. Two “other” respondents said they use the trail for recreation (i.e., walking, running) and another respondent has lived in the area since the early 60’s and would love to see the waterbody restored for salmon.

- *Recreation. I enjoy a trail when I can stay off the road. It's more peaceful; a nice walk on a nice day.*
- *My age is 88 - I live in the Carlyle condominium and welcome any plans you will be able to carry out for this project, Have lived in this area since 1961 and seen and (mostly) welcomed the changes. Good luck! When I first came here and lived on Locust Way salmon were swimming up Swamp Creek to spawn. Could you foresee restoring that? It was awesome.*
- *I am not interested in using the trail, it is wet, muddy and we have been startled by random folks camped out in the parks.*
- *Not Interested. Wont use it for any of these uses*
- *I doubt if I will use the trails. I consider them unsafe and dangerous due to drug use and homelessness in the area.*
- *I do not use the trail anymore, because of illegal activities along the trail.*
- *I run on that trail four or five days a week.*
- *I am not interested in the trail at all and I am against any improvements or expansion to Scriber Creek Trail*
- *I am not interested in using the trails in the wooded park areas where it's dangerous. I have lived here for 44 years and know about the dangers on these trails. There are people I know that have had issues with the trails through the parks and plenty of stories of people being attacked, raped, mugged, stabbed, homeless, approached by gangs or drug dealers. No thanks!*

2. The Scriber Creek Trail will be designed to handle a variety of uses. I am most interested in using the trail to (check all that apply):



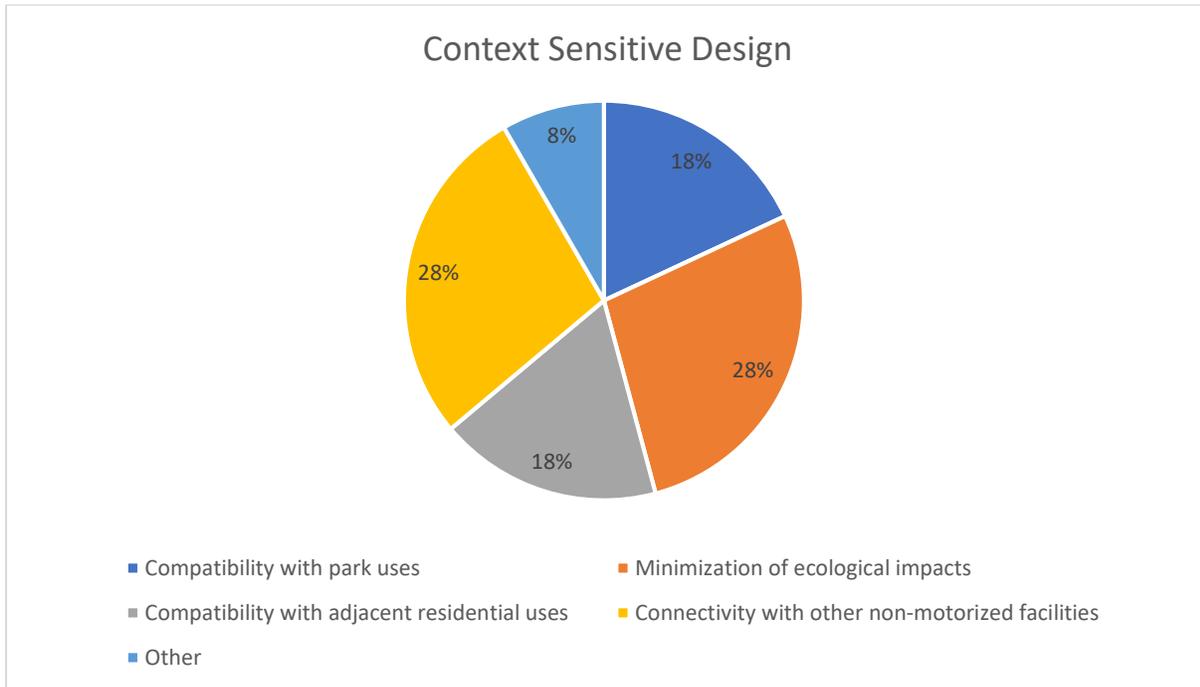
Trail Use	Response #
Walk	30
Run	14
Bicycle	12
Skate	0
Other	7

Comments:

Seven respondents provided comments categorized as “other.” Of the seven respondents, two stated their concerns regarding trail safety. One “other” respondent specified wheelchair use. One “other” respondent further defined “walk” as dog-related and one described that they won’t be using the trails, but instead would use the roadway. The remaining two comments were unrelated to use.

- *I do not use the trail anymore, because of illegal activities along the trail.*
- *I will not be using the trails, only the main road areas of 200th and Cedar Valley Rd.*
- *I won't be using this trail unless I'm with a huge group of people. I've lived here for over 4 decades and I am seeing more crime than ever and I feel that the neighborhood is becoming more dangerous. We used to walk around Scriber Lake in the 80's and then it became very sketchy and dangerous.*
- *"My name is Maria Naert - 19214-48th Ave W. Unit #104 Lynnwood, Wa. 425.776.1813"*
- *None*
- *Walk our dog.*
- *Wheelchairs*

3. Context sensitive design will be applied to the development of Scriber Creek Trail. Context Sensitive Design is a model for transportation project development. Proposed transportation projects must be planned not only for its physical aspects as a facility serving specific transportation objectives, but also for its effects on the aesthetic, social, economic and environmental values, needs, constraints and opportunities in a larger community setting. As design proceeds, I am most concerned about (check all that apply):



Context Sensitive Design Considerations	Response #
Compatibility with park uses	13
Minimization of ecological impacts	20
Compatibility with adjacent residential uses	13
Connectivity with other non-motorized facilities	20
Other	6

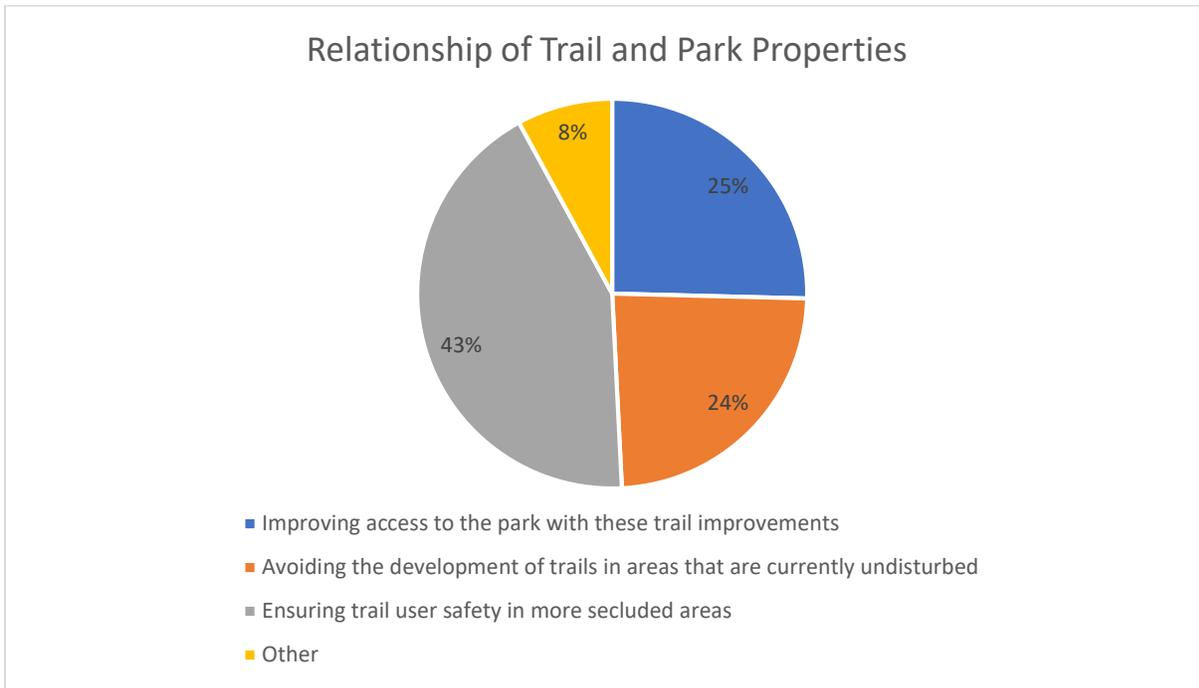
Six respondents provided comments categorized as “other.” Of the six respondents, two are concerned that a new trail will increase crime in their neighborhood. Conversely, one respondent thinks trail improvements would decrease crime. The three remaining “other” comments are related to taxation and costs, flooding concerns, and parking as it relates to Sound Transit light rail construction – street-side sidewalks and bicycle throughways would be much more useful than an incursion into wetlands.

- I am concerned about the possible negative impacts of trail traffic and crime in our neighborhood during the day/night. I find it interesting that the City of Lynnwood is even considering destroying wetland habitat when they supported and backed the community in the conservation of the wetland and park during the Sound Transit alignment and light rail*

maintenance station. The City of Lynnwood could see the negative impacts for the surrounding neighborhood and ecological environment just a short time ago. What's changed?"

- *I'm concerned about the type of people that this trail will bring on to our street. We are already experiencing drug dealings, needles, prostitution, stolen cars, vandalism to our property such as broken car windows gang activity and graffiti and breakins. All I can see is more crime coming to our street (201st Pl. S.W.) The house at the end of 201st Pl. S.W. has been broken into multiple times when the pathway was open in the 70's and 80's. We have had two cars stolen from our driveway, two broken into and multiple broken car windows and vandalism. How are you going to keep our street safe if you open it up with a trail so the thieves and drug heads have another way to get away quickly?????*
- *An improved trail will bring more people & a walk will feel more safe + not so isolated.*
- *costs, taxes*
- *The fact that every section of it floods for days if we get more than a quarter inch of rain in 24 hours.*
- *We are going to have a huge parking problem with the new light rail and it's associated construction. Street side sidewalks and bicycle throughways would be much more useful than an incursion into our wetlands.*

4. Where the trail traverses park properties. In these setting, I am most interested in (check all that apply):



Relationship of Trail and Park Properties	Response #
Improving access to the park with these trail improvements	16
Avoiding the development of trails in areas that are currently undisturbed	15

Ensuring trail user safety in more secluded areas	27
Other	5

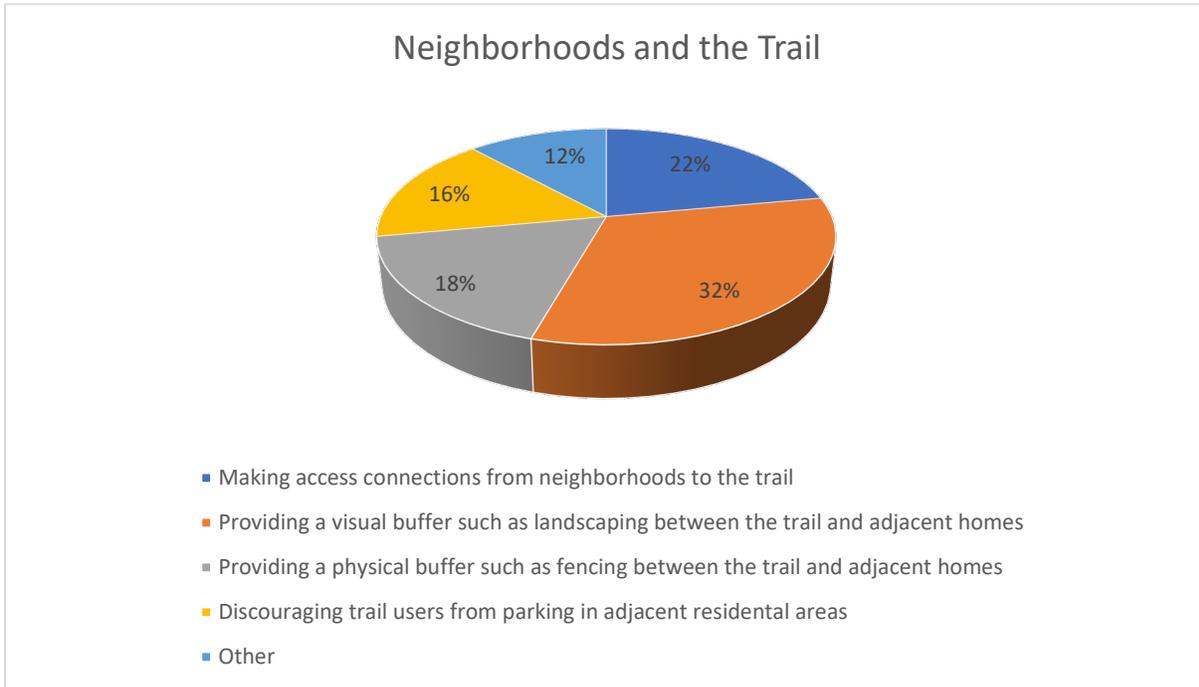
Five respondents selected the category “other.” Of the six respondents, two are concerned with trail safety. The other responses include concerns of trail condition and commuters using their neighborhood for parking. One respondent is not interested. The responses:

- *Safety: Besides bicycles dodging ducks, geese, and turtles on a possible trail through Sprague's mini park then you have children running around. How can you keep families safe with bicycles and even motorized bicycles zooming inches by them while they play and picnic. Parks close at dusk, even the current law and enforcement are not working to keep people out at night, so how will you keep people from utilizing the trails at night?*
- *Your existing trails are buckled and impassable to all but mountain bikes and flood out completely at the slightest hint of rain. Frankly, if you simply stopped neglecting what you have you'd be a world apart from the status quo.*
- *See examples above concerning safety of children and even adults and water foul from the ponds.*
- *Not interested. Won't use.*
- *We are going to have commuters parking all over our neighborhood. Let us not encourage this.*

Eight of those surveyed responded to the question asking what existing park uses they would like to see preserved. Park uses respondents were interested in preserving include:

- *Use of picnic areas, open grass space for sports such as volleyball*
- *Walking, bike riding, running.*
- *The Mini Park on Spragues Ponds: Children use this mini park and families have picnics there. There are small children playing and running around and they could get hurt from bicyclists speeding through the park. There is also a lot of water foul such as ducks and geese and during migration periods, there are pond turtles. This could be another problems for the bicyclists.*
- *The Sprague's pond mini park and playground with the ponds and open grass area for picnics, waterfowl, turtles, and frogs. This is a migratory area that is used by many animals that come from the park up 201st to lay eggs and build nests.*
- *Experiencing Nature, watching birds and amphibians*
- *More openings for picnic areas. Cut out some brush to let more light in.*
- *Walking through heavily wooded areas*
- *I would like to use the park safely.*

5. The Scriber Creek Trail travels in vicinity of neighborhoods. In these settings, I am most interested in (check all that apply):



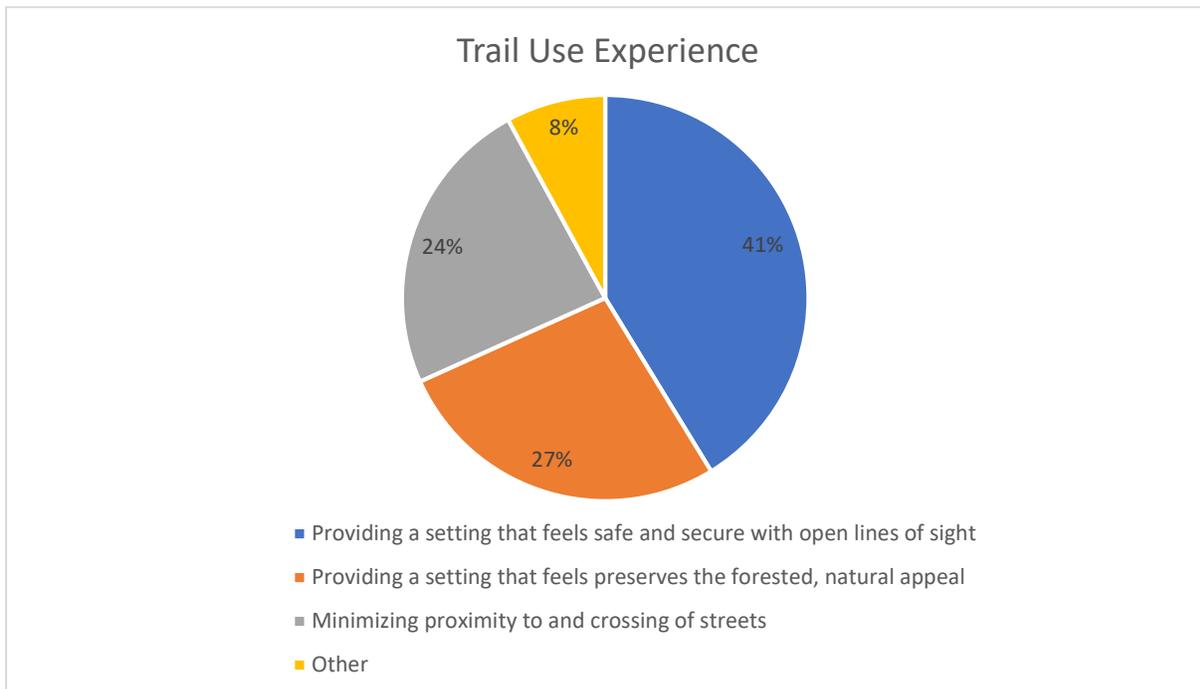
Relationship of Trail and Surround Neighborhood	Response #
Making access connections from neighborhoods to the trail	15
Providing a visual buffer such as landscaping between the trail and adjacent homes	22
Providing a physical buffer such as fencing between the trail and adjacent homes	12
Discouraging trail users from parking in adjacent residential areas	11
Other	8

Eight respondents provided comments categorized as “other.” Of the eight respondents, four respondents are concerned with safety and crime, two are concerned with the potential for increased traffic and parking, one respondent is concerned with the potential for increased presence of the homeless population, and one individual is concerned with the City’s ability to maintain the trail.

- *I don't want our whole street to become a parking lot for transit users and for the park & trail use.*
- *"I want to keep our neighborhood intact with minimal or no impacts on our residential properties including the parking on our residential roads. On 201st we have occasional problems with people parking in front of our houses and at the end of the road (even though there is a no parking sign) and walking to the park. The park has its own parking. I have concerns you are only opening up the trail to our neighborhood to funnel car traffic from the transit station. This would cause lots of traffic on our sheltered street where families and children play."*

- *Maintaining safety and security as a result of non-resident trail user presence in adjacent residential areas.*
- *Not having people setting up tents and campers. We seem to have a homeless problem creeping into our neighborhood.*
- *Not knowing all of the details of the proposed improvements, I am concerned with the additional foot traffic. We already get lots of foot traffic and I have had a car damaged in front of my house by someone trying to break into it,*
- *Opening it up so all the underbrush and lower branches are trimmed up for better visibility and safety*
- *Safety against assault, rape*
- *You know, none of this would be a problem if you actually maintained these trails as if you liked them. KEEP THE TRAILS ABOVE WATER LEVEL AND EVERYTHING ELSE WILL FALL INTO PLACE.*

6. When I think about the trail use experience, the concepts that are important to me are (check all that apply):



Relationship of Trail and Park Properties	Response #
Providing a setting that feels safe and secure with open lines of sight	26
Providing a setting that preserves the forested, natural appeal	17
Minimizing proximity to and crossing of streets	15
Other	5

Five respondents provided comments categorized as “other.” Of the five respondents, most comments are related to safety and security while other concerns include flooding issues and water quality.

- *Being able to use them without changing shoes more than three months out of the year*
- *Stay on a well lite walkway where there are roads and you have options if you do have to leave fast and with a trail you can only go forward or backward.*
- *When I go for walks or a run I use well traveled and lighted roads in sight of lots of people and vehicles. I notice that the sidewalks on 200th are very narrow and have not been widened. I end up on the grass part of the sidewalk or the bicycle lane on the road when trying to pass people. I would never use the trails that are in the wooded areas. It's not safe.*
- *Providing a setting that preserves the natural appeal of the trail, while taking into account the multi-use of the trail and the connectivity it envisions in an urban setting.*
- *"Scriber Lake Park is a great community resource. The main problems I see when I visit several times a week are*
 - 1. Security - I suggest foot patrol or bike police or community service officers with regular patrols.*
 - 2. The trail and bridge have continual water issues, is there a better fix for this, we keep just dumping fresh bark and it continually sinks and turns to mud. How about a long term trail solution on the North side of the park.*
 - 3. The water quality seems to be an issue, how can we better care for the water and run off. Maybe add a filter, have more community clean up projects to remove trash, any other ecological fixes that can counter balance pollution or help keep the water clean."*

In response to the question about “providing a direct route as possible between”, the following five were survey responses collected:

- *I like the route. Less street walking would be nice.*
- *Transit lines and transit center; esp with limited parking available at the center*
- *200th and 52nd and the bus transit station, stay on the existing trail and route.*
- *The transit station and 200th st. and 50th Ave W. by using the existing trail/route.*
- *Everything and the Interurban Trail*

7. Other Interests, ideas, and concerns do you have?

A total of 15 of those surveyed provided additional feedback.

- *I would love to see an elevated walkway to get over 196th. It's too busy a road to feel easy crossing, and it's between the transit center and the whole north side of Lynnwood (i.e. almost everything else)*
- *The park now has a high amount of homeless and people loitering. I would like a higher police presence and increased security.*
- *Commuter parking.*
- *Make sure that all trails are wheelchair accessible including the trails behind the library, pool, and fire station*

- *The aqua and purple alternative alignments create an additional crossing of Cedar Valley Road and therefore more traffic hazard for vehicles and pedestrians. A traffic light will be needed at 204th & 52nd and another crossing would add to the glut. Aqua also crosses at the curve of 52nd where sightlines are short and traffic turns to WorkSource and to homes across the street.*
- *Flooding- raising the trail where it floods.*
- *I do like the overall concept of connectivity between homes, businesses, parks, the Interurban Trail, and transit facilities that the Scriber Creek Trail redevelopment envisions, but at the same time I am also quite concerned with the potential for an increase in crime that that level of connectivity might bring, especially in those areas where the trail travels adjacent to, or in the vicinity of residential neighborhoods.*
- *As mentioned I would also be concerned about making sure the park and newly planned expansion is safe for everyone to use.*
- *keeping homeless people from setting up tents/camps in the park at night. That can lead to higher drug use and make the park unsafe and dirty.*
- *Putting a pathway or trail at the end of 201st Pl. S.W would compromise the hillside behind the house at the end of the street as well as the cul-de-sac behind us. This is one of the reasons they never put a road through the street. This hillside has been receding for many years. This could end up being a very expensive project. Various vehicles turn around at the end of our street such as garbage, recycling, postal service, emergency vehicles, UPS, Fed X etc. This could pose a problem with bicyclists speeding through our dead end street. We are concerned for our safety as it is now. By opening up the end of our street will only bring more crime and drug dealers and foot traffic from people we do not know. We get foot traffic through the mini park now and up the street and have had to deal with broken car windows, stolen cars, slashed tires, mail thrown in the pond, etc. etc. This only gives them a quick get away. We are also concerned about late hours and people walking through there late at night.*
- *The trail needs several cameras to deter illegal activities with better lighting.*
- *With property abutting possible pathways, obviously we are concerned about the impact it would have on us. At some point we saw a possible path crossing 52nd/Cedar Valley Rd at a non-designated crosswalk. With all the additional traffic from the new Edmonds bus garage, adding a pedestrian/cycle crossing of this arterial seems unwise.*
- *Bicycling through Lynnwood is not my favorite. I love to ride, but it is hard to get anywhere and feel safe. Anything you can do to improve biking will help. This will be a step in the right direction.*
- *The utter neglect the new trails are likely to receive and the fact that you're going to shut down what we have for multiple years so that you can make things worse*

Comments from one individual:

- *I would like to see our money go to improving the existing trail/route especially along 200th and repairing the old bridges and trails that are sinking into the bog. I know for myself I will never use the trails (unless I go with a group). I would rather see roads improved because the vast majority will use those not trails.*
- *The end of 201st is a turn around for small and large vehicles ie. garbage and recycle vehicles, postal/UPS, and emergency firetrucks and ambulances. Having a trail at the end of the street could block or be a hazard.*

- *I believe there is a bottled up spring at the end of 201st on the adjacent business property. Someone put a slab over it. This is one of the reasons I heard that 52nd was never put in as a thru road. You don't want to have the spring open up if it still is there.*
- *I believe in prevention. When I talked to a parks employee several years back about opening the old trail on 52nd to 201st and we told her about all the crime we had when we had a trail that now was closed up by bushes she responded, "just call the police." Like it's so easy and not her problem. This is a reactive response and not proactive or preventative.*
- *I think the Lynnwood police department and Snohomish county sheriff should be involved in further discussions about the trails since their resources will be used along and outside the trails.*
- *The trail on 201st and 52nd use to be open when I was a kid and I would use it with other kids to get to school. People called it "Marijuana Hill" because kids and dealers smoked weed up on the hill. Soon the house at the end of the street was broken into through the fence next to the trail. Vehicles and property stolen and vandalized by gangs and criminals. When the trail started to close up with bushes and trees the crime slowed down and I didn't worry when I got out of my car at night that someone would be lurking around near our home by the trail. The thought of the trail reopening makes me cringe and feel unsafe. Today we have more people in the area with homeless, drug problems, and gangs. I would only think the trail would attract more drug dealers to this particular area near our house with the proximity to the mini park near 201st. I have seen the drug dealers hang around the park area and people cruising our street to find a dealer. I have seen people taking tabs on the comings and goings of our neighbors. It is unsettling. Please don't make it worse for our neighborhood by making it a through fare, which have the most reported crimes.*

8. Would you be interested in potentially participating in a small group meeting in late spring or early summer? If so, please provide your name, address, and email address:

Eighteen (18) respondents are interested in potentially participating in a small group meeting in late spring or early summer and provided their names and addresses.

Appendix B

Design Criteria



PROJECT DESIGN CRITERIA

PROJECT: SCRIBER CREEK TRAIL IMPROVEMENT PROJECT -PHASE 1

PROJECT LIMITS: FROM SCRIBER LAKE PARK TO LYNNWOOD TRANSIT CENTER

LAST UPDATED: 06-15-18

References:

DM: WASHINGTON DEPARTMENT OF TRANSPORTATION DESIGN MANUAL 2012 -CHAPTER 1515

[HTTP://WWW.WSDOT.WA.GOV/PUBLICATIONS/MANUALS/M22-01.HTM](http://www.wsdot.wa.gov/PUBLICATIONS/MANUALS/M22-01.HTM)

AASHTO: AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS GUIDE FOR DEVELOPMENT OF BICYCLE FACILITIES 2012

AASHTO GREENBOOK: A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS 2011

NACTO: NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS

PROWAG: PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES BY THE US DEPARTMENT OF JUSTICE

CITY OF LYNNWOOD PUBLIC WORKS STANDARD PLANS

[HTTP://WWW.LYNNWOODWA.GOV/CITY-SERVICES/ENGINEERING-SERVICES/STANDARD-PLANS-INDEX.HTM](http://www.lynnwoodwa.gov/CITY-SERVICES/ENGINEERING-SERVICES/STANDARD-PLANS-INDEX.HTM)

DESIGN CRITERIA

DESIGN ELEMENT	Standard Requirements	REFERENCE & REMARKS	DEVIATION, if any
General			
Type of Trail	2-way shared use path in a separated right of way or adjacent to roadway (sidepath)		
Design Speed of Trail	AASHTO: 18 mph for grade < 2% ; 30 mph for long downgrade > 6% DM : 20 mph for level or rolling in urban areas; 30 mph for long downgrade > 4%.	AASHTO P. 5-13 DM P.1515-3	
Posted Speed of Adjacent Road	35 mph for 196 th St SW 30 mph for 200 th St SW and Cedar Valley Rd	Based on site visit	
Design Speed of Adjacent Road	5 mph above posted speed; Not less than posted speed (if necessary)		
Average Daily Traffic	196 th St SW (33,400 ADT) 200 th St SW (16,900 ADT) Cedar Valley Rd (9,900 ADT)	Based on 2018 traffic count provided by the City	
Widths			
Two-Way Shared use in separated right of way	DM: 10' paved min, 12' paved desirable, with 2' shoulders on both sides. AASHTO: 10' paved, 11' to 14' for high volume, with 2' shoulders on both sides. Project Recommendation: 12' paved desirable, with 2' shoulders on both sides.	DM P. 1515-6 AASHTO P.5-3 and 5-4 (pavement and shoulder width)	
Two-Way Shared -	DM: 10' paved min, 12' paved desirable with 2'	DM P.1515-6	

DESIGN ELEMENT	Standard Requirements	REFERENCE & REMARKS	DEVIATION, if any
Use Sidepath	<p>shoulders and 3-foot min buffer from roadway AASHTO: 10' paved min, 11' to 14' for high volume path, 5-foot separation from face of curb to edge of the trail.</p> <p>Project Recommendation: 3-foot minimum separation from back of curb, 12-foot paved path with 2-foot clearance on both sides.</p>	<p>AASHTO P.5-3 and 5-4 (pavement and shoulder width) AASHTO P 5-11 (separation)</p>	
Grade separated structure	<p>DM: Same width as the approach paved shared-use path plus graded clear areas (shoulder) AASHTO: Same width as the approach paved shares-use path plus 2-foot of clearance on each side, may taper to the pathway paved width under constrained conditions.</p> <p>Project Recommendation: 12' with 2-foot clearance on both sides, rail to rail, unless constraints present.</p>	<p>DM: P. 1515-15 AASHTO P.5-26</p>	

DESIGN ELEMENT	Standard Requirements	REFERENCE & REMARKS	DEVIATION, if any
Barrier if Separation between roadway curb and trail < 5 feet	Min height of standard guard rail (min 2'-3") Min 42" when adjacent to limited access facility >35mph	AASHTO P. 5-11 DM Exhibit 1515-4c	
Barrier outside of structure or steep fill embankment	Min 42" high	DM Exhibit 1515-5 AASHTO P. 5-7 & 11	
Clear Zone to Obstructions for trail	2 feet from edge of paved surface to obstruction	DM P. 1515-8 AASHTO P. 5-5	
Horizontal Alignment			
Min. Curve Radius for trail	DM: 74' min for 20 mph 166' for 30 MPH AASHTO: 60' min for 18 mph; 74' min for 20 mph 166' for 30 MPH	DM P. 1515-3 AASHTO P.5-14	
Cross slope for trail	2% max. Recommend to design to 1.5% cross slope Cross slope for shoulders can be no steeper than 6H:1V, if necessary.	AASHTO P.5-15 DM Page 1515-5 PROWAG R302.6	
Stopping Sight Distance for trail	Depend on grade and design speed	DM Exhibit 1515-15 AASHTO P. 5-21	
Sight distance on Horizontal Curves for trail	Depend on curve radius and stopping sight distance	DM Exhibit 1515-14 AASHTO P.5-23	
Vertical Alignment			
Grade for trail	5% max Recommend to design to 4.5%	DM P. 1515-8 AASHTO P. 5-16	

DESIGN ELEMENT	Standard Requirements	REFERENCE & REMARKS	DEVIATION, if any
	Where a shared use path runs along a roadway with a grade that exceeds 5 % percent, the sidepath grade may exceed 5 percent but must be less than or equal to the roadway grade.		
Fill/Cut/Ditch Slopes			
Fill slope	DM: 6:1 desirable. NST 3H:1V typical AASHTO: If slope steeper than 3H:1V and ≤ 5 feet between back of path and top of the slope, fencing or barrier is required.	DM P. 1515-5, 1515-6 & P. 1515-8 AASHTO P. 5-7	
Cut slope	DM: 3H:1V typical. NST 2:1	DM P. 1515-6 & P. 1515-8	
Vertical Clearance			
Clearance from paved surface to overhead obstructions	DM: 10 feet min from pavement surface to overhead obstruction. AASHTO: 10 feet desirable. 8 feet min.	DM Page 1515-5 AASHTO P. 5-6	
Intersections with Roadway/Driveway			
Mid-Block Crossing Angle	DM & AASHTO: 90 degree desirable 60 degree min	DM Page 1515-11 & 1515-12 AASHTO P.5-32	
Commerical Driveway Width	24' min, 30' max, or as approved by City	City of Lynnwood Std Plan 3-12A, 3-12C, 3-12D or 3-12I	
Drainage Design			

Other specific project assumptions/design criteria/questions moving forward:

- 1) Assessor maps & GIS parcel lines both indicate the existing ADA ramps at Cedar Valley Rd/200th St intersection are outside the road ROW, however, the Scriber Creek culvert as-built appear to indicate the ramps are within ROW. Need further ROW research to confirm.**
- 2) Does WSDOT still have any authority over 196th St SW (was SR 524)? If so, general permit may be needed for the intersection improvement. Need to verify.**
- 3) Does City want to consider any rechannelization on 200th to minimize ROW take? Does City want to preserve a LT pocket into the Sprague's Pond Mini Park Parking lot?**
- 4) Lighting at strategic locations along the trail. Should consider lighting at midblock crossing location.**
- 5) For bridge and boardwalk structures, does City want to look at alternatives for types and surface materials? Need to find out the preferences. Recommend to use pre-fabricated structures.**
- 6) Does City have any APS policy?**
- 7) Mid-block crossing treatment –Pedestrian-activated warning beacon with enhanced refuge island, similar to 52nd/Interurban Trail crossing?**

Appendix C

Permitting Requirements



Potential Permit/Approval State Environmental Policy Act	Lead Agency City of Lynnwood	Documentation Expanded SEPA Checklist with supporting docs: <ul style="list-style-type: none"> - Wetland and stream delineations - Wetland and stream impacts and conceptual mitigation report - Floodplain delineation - Floodplain analysis report (level of detail TBD) - Preliminary geotechnical report - Database search for cultural resources - Approach to stormwater management - Arborist inventory - Priority species database research - Hazardous material database search - Conceptual illumination design
National Environmental Policy Act	Federal Highway Administration	Documented Categorical Exclusion
Endangered Species Act	Federal Highway Administration	Given interaction with Scriber Creek, likely a Biological Evaluation
National Historic Preservation Act	Federal Highway Administration	Area of Potential Effects to initiate Section 106 consultation Cultural Resource Report
Section 4(f)	Federal Highway Administration	Programmatic Evaluation - Transportation Project with Net Benefit
Section 6(f)	Federal Highway Administration	Correspondence confirming No Conversion
Clean Water Act Section 404	U.S. Army Corps of Engineers	TBD - Typically work toward avoiding permit or qualifying for Nationwide Permit #14
Clean Water Act Section 401	Washington Dept. of Ecology	TBD - depends on 404
Coastal Zone Certification	Washington Dept. of Ecology	TBD - Depends on 404
Hydraulic Project Approval	Washington Dept. of Fish & Wildlife	Joint Aquatic Resources Permit Application
General Construction NPDES	Washington Dept. of Ecology	Notice of Intent; stormwater pollution prevention plan
Critical Areas Approval	City of Lynnwood	Critical Areas Study incorporating... <ul style="list-style-type: none"> - Wetland and stream delineations - Wetland and stream impacts and conceptual mitigation report - Floodplain delineation - Floodplain analysis report (level of detail TBD) - Preliminary geotechnical report
Shoreline Substantial Development	City of Lynnwood	N/A?
Clearing and Grading Permit	City of Lynnwood	
Street Use/ROW Permit	City of Lynnwood	

