

The I-5 interchange improvements will include the replacement of Porter Way Bridge over I-5, construction of two new bridges over the relocated Hylebos Creek, widening two bridges over West Hylebos Creek, and installation of a bridge or box culvert over Surprise Lake Drain at the 20th Street East crossing. Two temporary crossings over Hylebos Creek will likely be installed for use during the construction activities. A temporary work trestle will be needed for the bridge replacements.

Realignment of 20th Street East and 70th Avenue East is required to allow 20th Street East to remain at grade through the interchange (Figure 2-5). Realigned 70th Avenue East remains at grade and passes underneath the northbound I-5 to northbound SR 167 ramp and then under all lanes of SR 167. It then elevates to pass over realigned 20th Street East and I-5, and then descends to pass underneath the southbound I-5 to southbound SR 167 ramp. The intersection of 70th Avenue East and SR 99 will remain at grade at its present location. The intersection of 20th Street East and 70th Avenue East is revised to include a roundabout for traffic control. The realignment of 20th Street East has been further refined since the DEIS, at the request of and in coordination with the city of Fife, moving the proposed relocated Surprise Lake Drain to the west of the realigned 20th Street East curve.

Pedestrians and bicyclists will be restricted from using SR 167 in the I-5 interchange area. Route continuity will be maintained with connections of SR 99 and 20th Street East.

The mainline continues on fill from 70th Avenue East to the proposed interchange with Valley Avenue. In this segment, the mainline consists of two general purpose lanes in each direction and one HOV lane in each direction. At the Valley Avenue interchange, three design options were developed and are presented below. With each design option, a bridge will carry the mainline over Wapato Creek, Valley Avenue, Freeman Road, and the Union Pacific Railroad (UPRR) before touching down to grade on a raised embankment. A park and ride facility will be constructed east of the SR 167 mainline. Four new structures will be constructed over Wapato Creek on the southbound 167 on and off ramps. Two temporary crossing structures may also be required over Wapato Creek during construction activities.

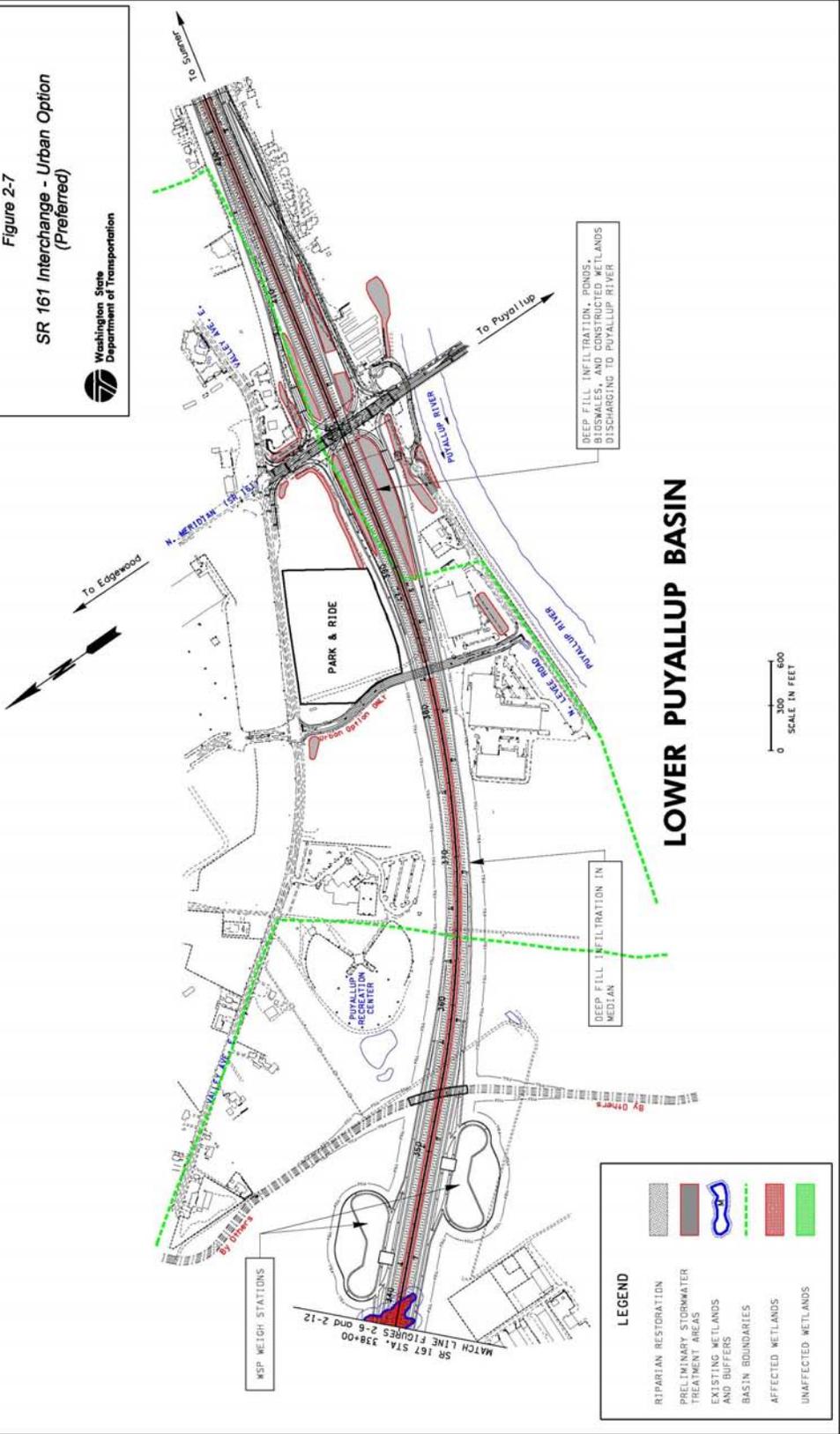
Riparian restoration, part of the project's conceptual stormwater treatment plan, is proposed along Wapato Creek at Valley Avenue Interchange (Figure 2-6). Restoration activities include riparian plantings, fill removal, impervious surface removal from the floodplain, and the potential removal of six undersized crossing structures (four to the north and two to the south of the SR 167 mainline).

The mainline continues to the southeast parallel with Valley Avenue with two general purpose lanes in each direction and one HOV lane in each direction (Figures 2-7 and 2-8). Washington State Patrol truck weigh station facilities are proposed for each direction of travel east of the Valley Avenue interchange. East of the weigh stations, a developer is proposing a connection across SR 167 via an overpass. FHWA and WSDOT are not proposing to construct this connection, but have shown it on the design plans for disclosure purposes. The developer will be responsible for all environmental review on the proposed connection.

SR 167 - Puyallup to SR 509 Tier II FEIS

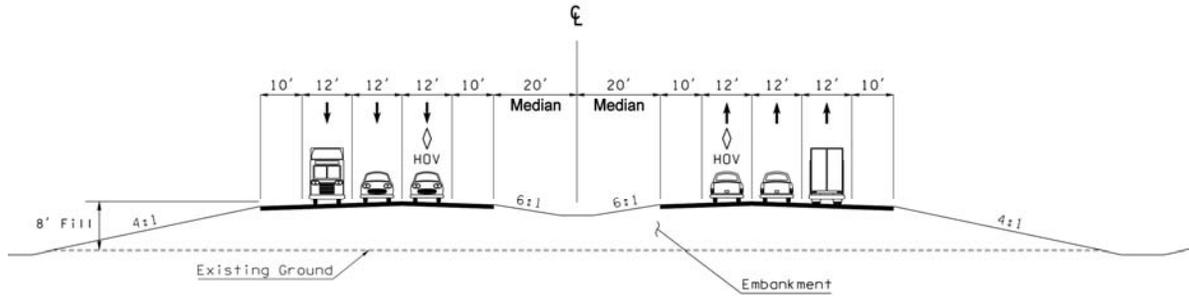
Figure 2-7

SR 161 Interchange - Urban Option
(Preferred)



FHWA and WSDOT are proposing another cross connection under the SR 167 mainline with the preferred Urban interchange option. A park and ride lot will be located east of this crossing (Figure 2-7). Three design options have been developed for consideration at this interchange and are presented in section 2.5.3. The mainline continues towards the terminus at the existing SR 161/SR 167 interchange.

Figure 2-8: SR 167 on Fill between Valley Avenue Interchange and SR 161



There are two existing bridges over the Puyallup River that carry SR 161 traffic. The southbound traffic travels over a concrete structure constructed in 1971. The northbound traffic travels over a steel structure constructed in 1951. The concrete bridge has a pier within the ordinary high watermark of the river while the steel bridge spans the river. The steel bridge is approximately 3 feet lower than the concrete bridge.

As part of the SR 161/SR 167 interchange improvements, the steel bridge will be removed and replaced with a bridge that may span the Puyallup River. The project currently estimates a maximum of four piers for the new bridge to be located within the ordinary high water mark of the river. The concrete bridge will be widened approximately seven feet to provide shoulders and a bike lane. Figure 2-9 illustrates a cross section view of the bridges and Figure 2-10 shows a profile of the new bridge.

Figure 2-9: Cross Section of the Puyallup River Bridge (North Meridian)

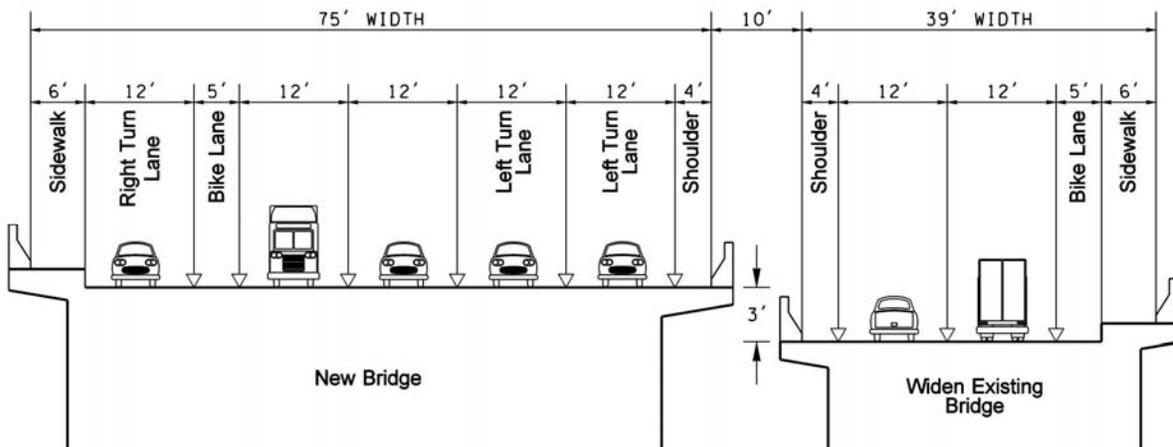
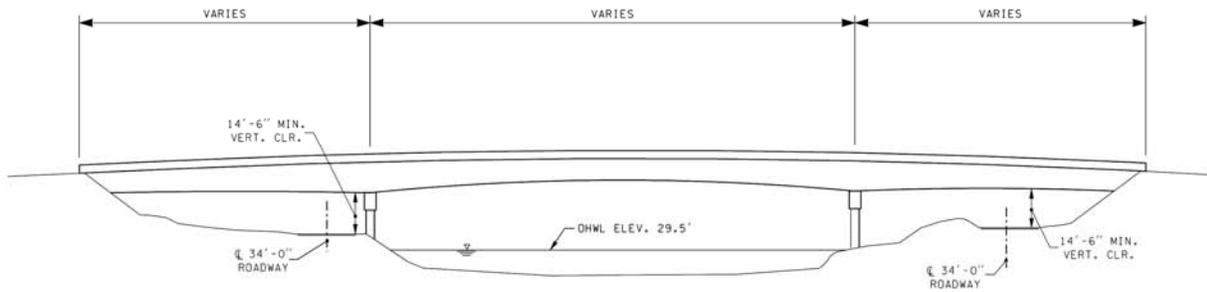


Figure 2-10: Preliminary Profile of Puyallup River Bridge (North Meridian)



2.5.3 Interchange Design Options in the Build Alternative

There are three interchanges with multiple design options under consideration. They are at 54th Avenue East, Valley Avenue, and SR 161 (North Meridian). The I-5 interchange had only one design option that was previously described on page 2-17 and is not listed below.

54th Avenue East Partial Interchange

There are two options for the partial interchange at this location. In both options, the ramps are single lane and provide only southbound off and northbound on access to SR 167. Connections will be provided for bicycle route continuity.

Loop Ramp Option - Preferred

This option provides a southbound diamond off ramp and a northbound loop on ramp (Figure 2-2). The off ramp descends SR 167 on fill and connects with 54th Avenue East at grade approximately 600 feet north of 8th Street East. The loop on ramp starts from 54th Avenue East across from 8th Street East at grade, ascending to an elevated mainline.

Half Diamond Option

This option provides for a southbound diamond off ramp at the same location as the loop ramp option (Figure 2-11). The northbound on ramp would be a diamond ramp which departs from 8th Street East (approximately 1,000 feet east of 54th Avenue East) at grade then begins to ascend matching into elevated northbound SR 167.

Valley Avenue Interchange

Three design options were developed for this interchange location. For each, the SR 167 mainline is elevated over Valley Avenue, UPRR, Wapato Creek, and Freeman Road. Under all three options, WSDOT will widen Valley Avenue from two lanes to five lanes from the northbound off ramp to the intersection of Freeman Road East.

Valley Avenue Option - Preferred

In this option, the northbound off ramp leaves SR 167 at grade and stays at grade until it matches into Valley Avenue (Figure 2-6). The northbound on ramp leaves Valley Avenue at grade then elevates to go over the railroad and connects to elevated SR 167. All ramps would be single lane.

The southbound off ramp leaves SR 167 while elevated and passes over Valley Avenue. The ramp then begins to descend, enters a right hand loop back to Valley Avenue, crossing over Wapato Creek on structure, then matches the existing grade. The southbound on ramp leaves Valley Avenue, crosses over Wapato Creek, then stays at grade until it matches into SR 167. All ramps will be a single lane.

Freeman Road Option

Figure 2-12 illustrates this option. The configuration for northbound off and on ramp remains the same as the previous option. The southbound off ramp leaves SR 167 while elevated and passes over the railroad and Valley Avenue. The ramp then begins to descend and enters a right hand curve to Freeman Road. It then matches the existing grade at Freeman Road. The southbound on ramp leaves Freeman Road, matching at grade. The ramp stays at grade until it matches into SR 167. All ramps would be single lane.

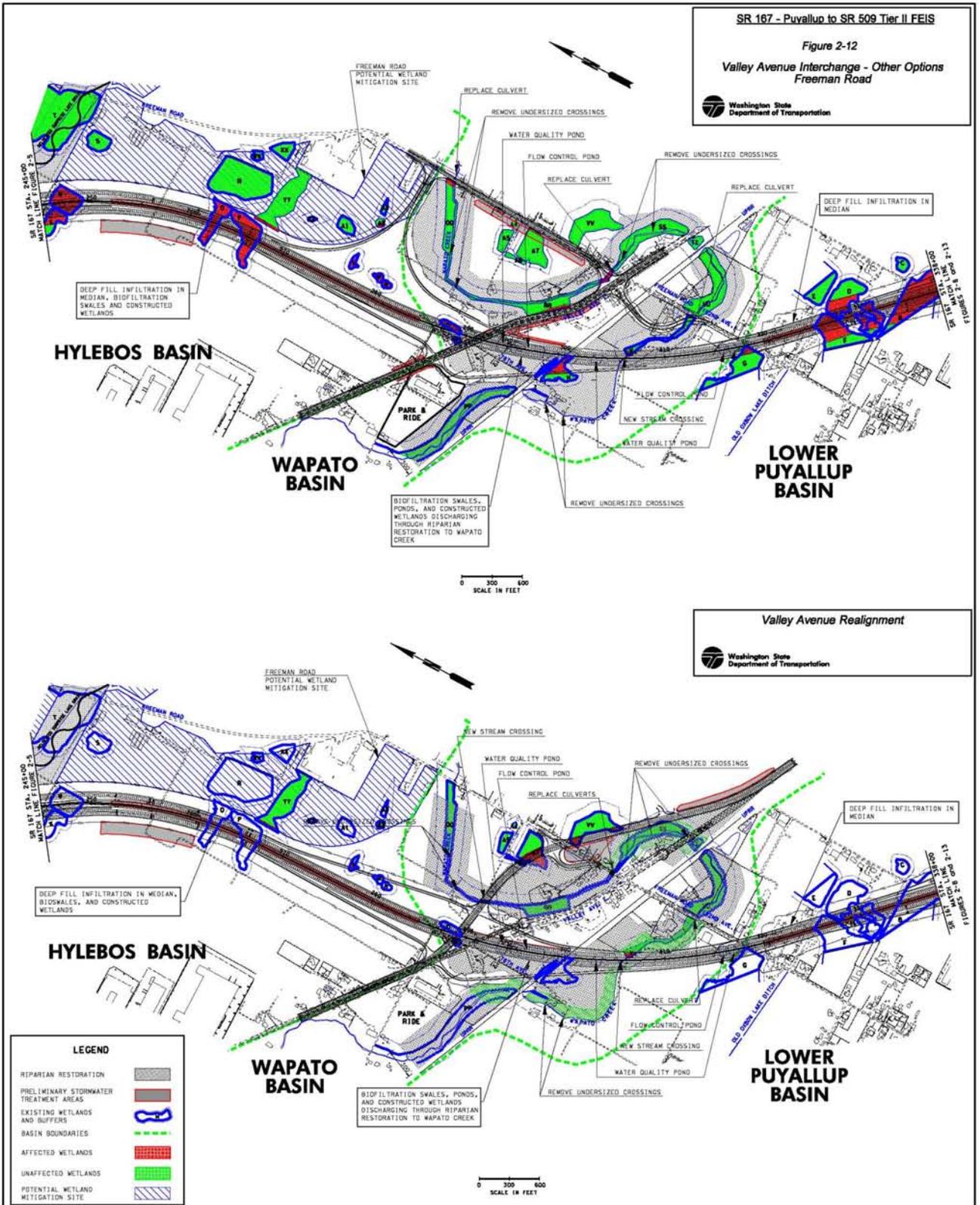
Freeman Road would be widened from the on/off ramp connections to Valley Avenue, while maintaining the existing grade. South of Valley Avenue the road would be realigned to improve the intersection angle with Valley Avenue and the at-grade railroad crossing.

Valley Avenue Realignment Option

Figure 2-12 also shows the Valley Avenue Realignment option. As in the previous two options, the configuration for northbound off and on ramp remains the same. The southbound off ramp leaves SR 167 while elevated and passes over the UPRR tracks. The ramp then begins to descend where it matches the grade on realigned Valley Avenue. The southbound on ramp rises from the realigned Valley Avenue, to the elevated mainline. The ramp stays at grade until it connects to SR 167. All ramps would be single lane.

At the west end, Valley Avenue would begin realignment to the north at the northbound on/off ramp termini. The road would stay at grade the length of the realignment. Valley Avenue would then match into the original alignment at the existing railroad over-crossing east of the project. A short section of Freeman Road must be realigned to attain the proper intersection angle with the realigned Valley Avenue. The realigned Valley Avenue would be a five-lane roadway.

Two sections of the existing Valley Avenue would be removed. One portion is under the footprint of SR 167, and the other at the crossing of Wapato Creek to the east. Cul-de-sacs would be placed at the end of the remaining section of Valley Avenue to maintain access to homes and businesses.



SR 161/SR 167 Interchange

An existing connection here provides the southern terminus for the freeway segment of SR 167 between Puyallup and Renton. With the proposed SR 167, this connection will become a full interchange. Three design options have been developed. In each design option, the SR 167 mainline will be elevated over SR 161 (North Meridian).

In all three options, the existing steel bridge over the Puyallup River (northbound SR 161) will be replaced and the existing concrete bridge (southbound SR 161) will be widened.

Urban Interchange Option - Preferred

The southbound off ramp leaves elevated SR 167 and intersects SR 161 at grade (Figure 2-8). The two-lane off ramp will widen into two left-turn lanes southbound and one right turn lane northbound at SR 161. The northbound on ramp leaves SR 161 at grade then stays on grade until matching into SR 167. This ramp will be two lanes. WSDOT will also construct a connection across SR 167 just west of the new interchange. This cross connection will facilitate traffic movements eliminated by the new interchange at the east terminus of North Levee Road. SR 167 will be on structure over the cross connection. The connection will allow access to SR 161 (North Meridian) via Valley Avenue for homes and businesses along North Levee Road.

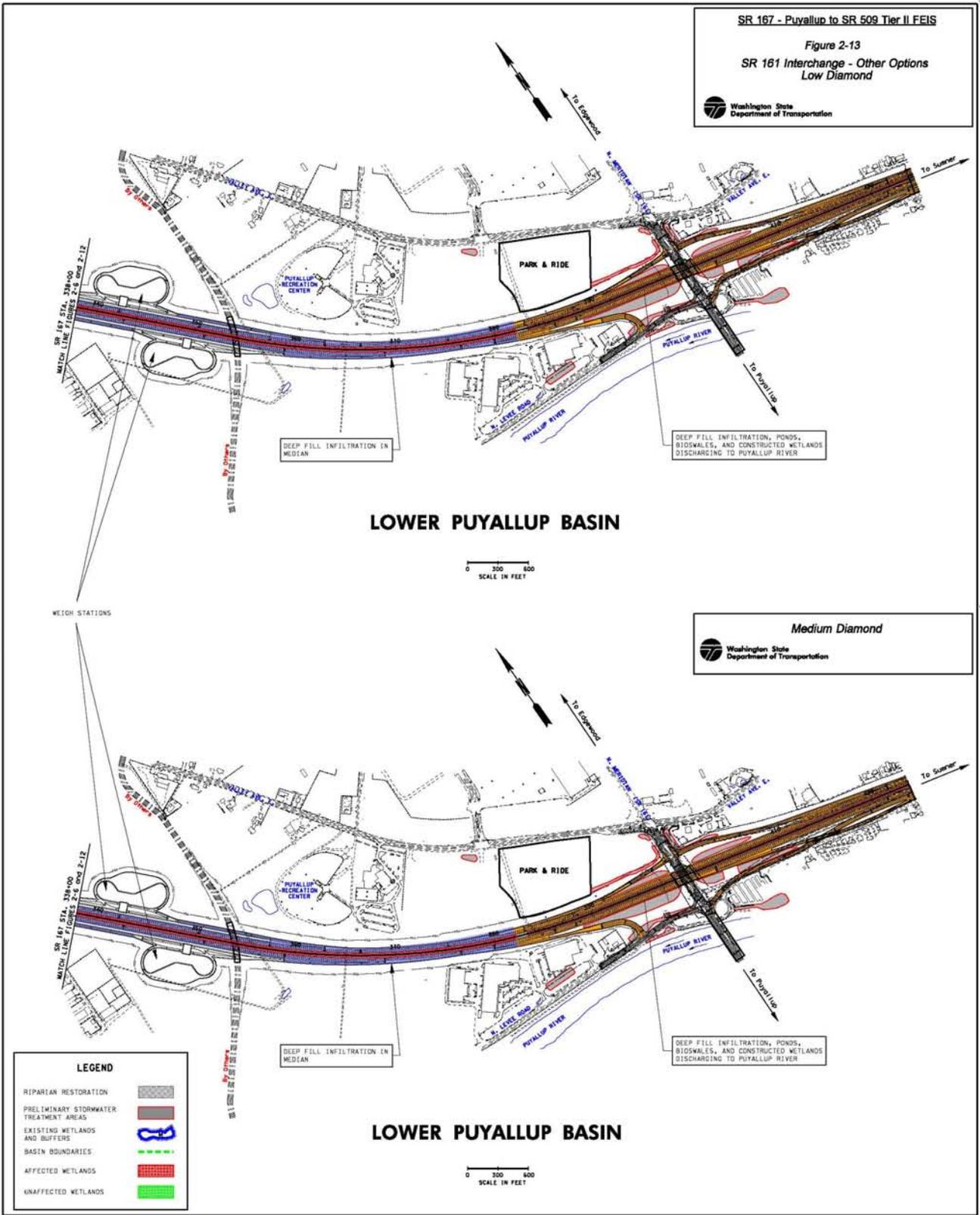
The northbound off ramp leaves SR 167 at grade and intersects SR 161. The single-lane off ramp will widen to two northbound lanes and one southbound lane at SR 161. The southbound on ramp leaves SR 161 at grade and elevates to match SR 167. Two lanes will merge to one lane on the ramp.

The SR 512 off ramp exits SR 167 east of the SR 161 over crossing. It then crosses over the SR 167 northbound on ramp before merging onto SR 512. It will be a single lane ramp.

North Levee Road will end in a cul-de-sac approximately 400 to 500 feet west of SR 161. The existing access road under the Puyallup River bridges will remain for access to the property in the southeast quadrant of the SR 161/SR 167 interchange. Existing connections from North Levee Road and the access road with SR 161 will be eliminated.

Low Diamond Option

The northbound off ramp leaves elevated SR 167 and stays at grade until it intersects with the North Levee Road. The single lane off ramp would widen to two eastbound lanes and one westbound lane at North Levee Road. The northbound on ramp leaves SR 161 at grade then stays on grade until intersecting SR 167. The ramp curves around the existing storage facility office building in the southeast quadrant of the SR 167/SR 161 interchange. This ramp would be a two-lane ramp (Figure 2-13).



The southbound off ramp leaves SR 167 at grade and matches into SR 161. The two-lane off ramp would widen to two southbound lanes and one northbound lane at SR 161. The southbound on ramp leaves SR 161, matching at grade. The ramp stays at grade until it matches into SR 167. Two lanes on the ramp would merge to one lane. The SR 512 off ramp and Puyallup River bridges would be the same as the previous Urban interchange option.

North Levee Road would be widened to the east and west of the terminus of the northbound off ramp. North Levee Road would terminate at its present location at SR 161 with a one-lane connection both northbound and southbound on SR 161. The existing access road under the Puyallup River bridges would remain for access to the storage facility in the southeast quadrant of the SR 167/SR 161 interchange. This access road would terminate in a cul-de-sac at the storage facility entrance. No access to the SR 167 on ramp would be allowed.

Medium Diamond Option

The northbound on ramp has a smoother curve and would impact the existing storage facility office building in the southeast quadrant of the SR 167/SR 161 interchange (Figure 2-13).

2.6 Preferred Alternative and Options

2.6.1 Build Alternative (Preferred)

The Build Alternative is preferred because it best meets the purpose and need for the project while incorporating reasonable measures to avoid or mitigate environmental impacts. It will improve regional mobility of the transportation system, reduce congestion and improve safety, provide improved system continuity between the SR 167 corridor and I-5, maintain or improve air quality, and serve multimodal local and port freight movement and passenger movement.

The relocations of Hylebos Creek and Surprise Lake Drain are necessary due to fill placement associated with the Build Alternative. However, the riparian restoration proposed along Hylebos Creek and Surprise Lake Drain will reestablish riparian buffers, increase channel lengths and capacity by adding meanders, reestablish channel migration zones for future channel meanders, remove roads, fill, and structures from the floodplain, and restore floodplain functions. Restoration activities will also include riparian plantings, fill removal, and undersized crossing removals on Wapato Creek. Riparian restoration will result in improved fish habitat and reestablish wildlife corridors.

Table 2-6 summarizes the structures (bridges and culverts) that will cross waterbodies in the Preferred Alternative.

Table 2-6: Structure Work (total number) Over Water Bodies in Project Area

Activity	Hylebos Creek	Puyallup River	Surprise Lake Drain	Wapato Creek
Culvert replacement w/bridge or 3-sided culvert	1	0	0	2
Bridge demolition (falsework)	0	1	0	0
Bridge widening	2	1	0	0
New bridge/culvert installation	6	0	3	4
Bridge replacement	1	1	0	0
Undersized bridge/culvert removal/abandon	3	0	2	6
Temporary crossing	6	3	1	1

Note: If multiple structures cross at the same location, only the lowest structure was counted.

As in the Tier I ROD, the No Build Alternative was not selected because it:

- Does not meet the purpose and need for the project;
- Results in intolerable congestion on existing roads and streets;
- Worsens traffic safety, because of congestion;
- Increases air pollution, because of congestion;
- Does not contribute to improved freight mobility.

2.6.2 Selection Process for Preferred Options

The environmental screening criteria and associated weighting factors approved by the Signatory Agency Committee (SAC) (Table 2-4) during SAC Concurrence Point 1 in May of 2000 were used to evaluate the interchange options described in Section 2.5.3. For each criterion the calculated impacts, both unweighted and weighted, were compared for the design options at each of the three interchanges.

A subjective rating of 1 (best), 2 (better), or 3 (good) was then assigned to each criterion for each option. Ratings for all 22 criteria were summed to produce a total score for each option. Lower total scores suggested less impact than higher scores.

In addition to total scores, careful consideration was given to criteria considered of special importance. Avoiding and minimizing wetland impacts was given highest consideration, consistent with the wetland permitting mandate for the Least Environmentally Damaging Practicable Alternative (LEDPA)¹. Effects on species protected under the Endangered Species Act were likewise given the highest consideration, but no differences were found between options at the three interchanges.

¹ See Section 4.2 for more information about the LEDPA analysis.

High consideration was given to minimizing displacements of current residences and businesses and to avoiding impacts to cultural resources, including sites of tribal importance. Special consideration was given to avoiding floodplains and the relative opportunities associated with the interchange options to improve and restore aquatic and riparian habitats. Details on differences among options for these factors are provided in the respective sections of the Tier II FEIS.

Factors other than environmental were also considered in selecting the preferred options. Preferences of Pierce County, jurisdictional cities, Port of Tacoma, the Puyallup Tribe of Indians, FHWA, and WSDOT were evaluated. Factors such as estimated construction costs, costs for ROW acquisition, and operation and maintenance requirements were also considered.

Based on the screening criteria and other important factors, the following preferred interchange options were chosen:

- Loop Ramp Option for the 54th Avenue East Partial Interchange
- Valley Avenue Option for the Valley Avenue Interchange
- Urban Interchange Option for the SR 161/SR 167 Interchange

2.6.3 Preferred 54th Avenue East Interchange Option

Table 2-7 summarizes the environmental criteria scoring of the two options at the 54th Avenue East Interchange during SAC Concurrence Point 3. The Loop Ramp Option scored better overall than the Half Diamond Option (33 versus 38). For wetland criteria, the Loop Ramp Option will impact less area of Category III wetlands (0.38 versus 0.81 acre) and associated wetland buffers (0.47 versus 0.76 acre). In terms of floodplains, less floodplain is impacted for the Loop Ramp Option (0.52 acre versus 2.03 acres).

The Loop Ramp Option will impact fewer acres of wildlife habitat (1.62 acres versus 1.88 acres for the Half Diamond Option). The Loop Ramp Option also has lower costs associated with hazardous waste site cleanup. The two options were equal in all other environmental criteria used to select the preferred option.

The Loop Ramp Option is preferred by the city of Fife, Port of Tacoma, FHWA, and WSDOT, further reinforcing the results for the environmental criteria. NOAA National Marine Fisheries Service prefers the Half Diamond Option, but the rationale provided is inconsistent with their choice.

The Loop Ramp Option was selected as the preferred option for the 54th Avenue East partial interchange, based on full consideration of environmental and other factors.

Table 2-7: Summary of Scores for Design Options at the 54th Avenue East Interchange

Screening/Selection Criteria	Impact Units	Loop Ramp			Half Diamond		
		Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating
1. Meets Purpose and Need		Yes	Yes	1	Yes	Yes	1
2. Category I & II Wetlands	acres	0	0	1	0	0	1
3. All Wetlands	acres	0.38	0.57	1	0.81	1.22	2
4. All Wetland Buffers	acres	0.47	0.94	1	0.76	1.52	2
5. Threatened and Endangered Species	number	5	9	2	5	9	2
6. Aquatic Priority Habitats and Life	acres	0	0	1	0	0	1
7. Wildlife Habitat	acres	1.62	3.24	1	1.88	3.76	2
8. Prime and Unique Farmlands	acres	0	0	1	0	0	1
9. All Farmland	acres	0	0	1	0	0	1
10. Floodplain	acres	0.52	2.60	2	2.03	10.15	3
11. Noise (Design Year)	sites	NA	NA	1	NA	NA	1
12. Air Quality (Design Year)	+ current			2			2
13. NRHP-eligible Cultural Resources	sites	0	0	1	0	0	1
14. All Cultural Resource Properties	sites	0	0	1	0	0	1
15. Environmental Justice Populations	parcels	3	3	3	3	3	3
16. Displacements	parcels	22	22	3	19-22	19-22	3
17. Tribal Trust Lands	parcels	3	3	3	3	3	3
18. Visual Quality (General Views)	+ current	blocked	blocked	2	blocked	blocked	2
19. Stormwater Treatment Capability	Table 3.2-1			1			1
20. High Cost Hazardous Waste Sites	dollars	w/i Superfund	boundary	1	w/i Superfund	boundary	1
21. All Hazardous Waste Sites	dollars			2			3
22. Pedestrian and Bicycle Access	Table 3.2-1	1	1	1	1	1	1
Total Score				33			38

Ratings: 1 = best, 2 = better, 3 = good

Note: These scores were used in the SAC concurrence described in Chapter 4.

2.6.4 Preferred Valley Avenue Interchange Option

Total scores for the Valley Avenue Options were very similar: 40 for the Valley Avenue Option, 44 for the Freeman Road Option, and 38 for the Valley Avenue Realignment Option. Table 2-8 summarizes the scoring of all criteria for the three options at the Valley Avenue Interchange during the SAC Concurrence Point 3.

The Valley Avenue Realignment Option received the lowest screening score due to the avoidance of aquatic priority habitat impacts, wildlife habitat impacts, and floodplain impacts. As stated above, avoidance of wetland impacts and displacements is a high priority. The Valley Avenue Realignment Option has the most wetland impacts. More importantly, this option would require 32 to 63 relocations, 18 to 49 more displacements than the Valley Avenue Option.

The Freeman Road Option will have the least wetland impact. This option fails to minimize impacts to wetland buffers, aquatic priority habitat, wildlife habitat, and floodplains. In addition, this option will impact a hazardous materials site avoided by the other two options.

Table 2-8: Summary of Scores for Design Options at the Valley Avenue Interchange

Screening / Selection Criteria	Impact Units	Valley Avenue			Freeman Road			Valley Ave Realignment		
		Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating
1. Meets Purpose and Need		Yes	Yes	1	Yes	Yes	1	Yes	Yes	1
2. Category I & II Wetlands	acres	0	0	1	0	0	1	0	0	1
3. All Wetlands	acres	1.67	2.51	2	1.56	2.34	1	1.91	2.87	3
4. All Wetland Buffers	acres	6.14	12.28	1	7.58	15.16	3	7.03	14.06	2
5. Threatened and Endangered Species	number	5	9	2	5	9	2	5	9	2
6. Aquatic Priority Habitats and Life	acres	0.57	2.85	2	0.72	3.60	3	0.34	1.70	1
7. Wildlife Habitat	acres	19.3	38.6	3	16.5	33.0	2	12.5	25.0	1
8. Prime and Unique Farmlands	acres	40.5	40.5	3	34.1	34.1	2	16.2	16.2	1
9. All Farmland	acres	40.5	40.5	3	34.1	34.1	2	16.2	16.2	1
10. Floodplain	acres	0.70	3.50	2	1.01	5.05	3	0.35	1.75	1
11. Noise (Design Year)	sites	NA	NA	1	NA	NA	1	NA	NA	1
12. Air Quality (Design Year)	+ current			2			2			2
13. NRHP-eligible Cultural Resources	sites	1	2	2	1	2	2	1	2	2
14. All Cultural Resource Properties	sites	5	5	1	14	18	3	7	11	3
15. Environmental Justice Populations	parcels	3	3	3	3	3	3	3	3	3
16. Displacements	parcels	14	14	1	17-20	17-20	2	32-63	32-63	3
17. Tribal Trust Lands	parcels	3	3	3	3	3	3	3	3	3
18. Visual Quality (General Views)	+ current	blocked	blocked	2	blocked	blocked	2	blocked	blocked	2
19. Stormwater Treatment Capability	Table 3.2-1			1			1			1
20. High Cost Hazardous Waste Sites	dollars			1			1			1
21. All Hazardous Waste Sites	dollars			1			2			1
22. Pedestrian and Bicycle Access	Table 3.2-1	1	1	2	1	1	2	1	1	2
Total Score				40			44			38

Ratings: 1 = best, 2 = better, 3 = good

Note: These scores were used in the SAC concurrence described in Chapter 4.

The Valley Avenue Option will have the least impacts to wetland buffers. Although this option does not have the least amount of wetland impacts, the 0.11-acre variance is not statistically meaningful. Future development of the area due to the commercial/industrial zoning of agricultural lands has the potential to change the wetland impact analysis. A reevaluation of wetland impacts prior to start of construction should capture land use changes that will affect current delineated wetlands within the project area.

The environmental factors prioritized as part of determining the preferred interchange option at Valley Avenue are shown in Table 2-9.

Table 2-9: Valley Avenue Interchange Priority Factors

Interchange Options	Freeman Road	Valley Avenue	Valley Avenue Realignment
Screening Criteria			
Wetland Impacts (acres)	1.56	1.67	1.91
Wetland Buffer Impacts (acres)	7.58	6.14	7.03
Aquatic Priority Habitat Impacts (acres)	0.72	0.57	0.34
Wildlife Habitat Impacts (acres)	16.5	19.3	12.5
Floodplain Impacts (acres)	1.01	0.70	0.35
Displacements	17 - 20	14	32 - 63

As shown in the above table, amount of displacements and wildlife habitat are the most clearly distinguishing criterion in terms of evaluating interchange option impacts. In an effort to further clarify extent of impacts, additional factors based on a qualitative assessment of wildlife habitat impacts and impervious surface were evaluated.

Important qualitative factors for determining wildlife habitat impacts are as follows:

- The road widening work at Freeman Road and Valley Avenue will contribute to habitat fragmentation between the forested slope to the east and the Riparian Restoration Proposal (RRP) areas associated with the Freeman Road option. This is due to the potential impediment to wildlife passage imposed by roads that are wider than two lanes and the position of Freeman Road relative to the forested slope and the Wapato RRP.
- The majority of impacted habitat at the Valley Avenue Interchange consists of agricultural fields, which have limited habitat connectivity value for the surrounding forested and riparian habitats. The best opportunity for habitat connectivity in the area is to provide habitat linkage in the riparian corridors, wetlands, and forested habitats. Such linkage would potentially benefit salmon, amphibians, some bat species (*Myotis*, spp.), forest/riparian birds, and small mammals.
- The project has also proposed a bridge at one of the two Wapato Creek crossings associated with the Valley Avenue Option. Bridging the creek at this location is possible because the roadway is elevated on fill. The bridge

will provide wildlife connectivity between the forested slope and the Wapato RRP.

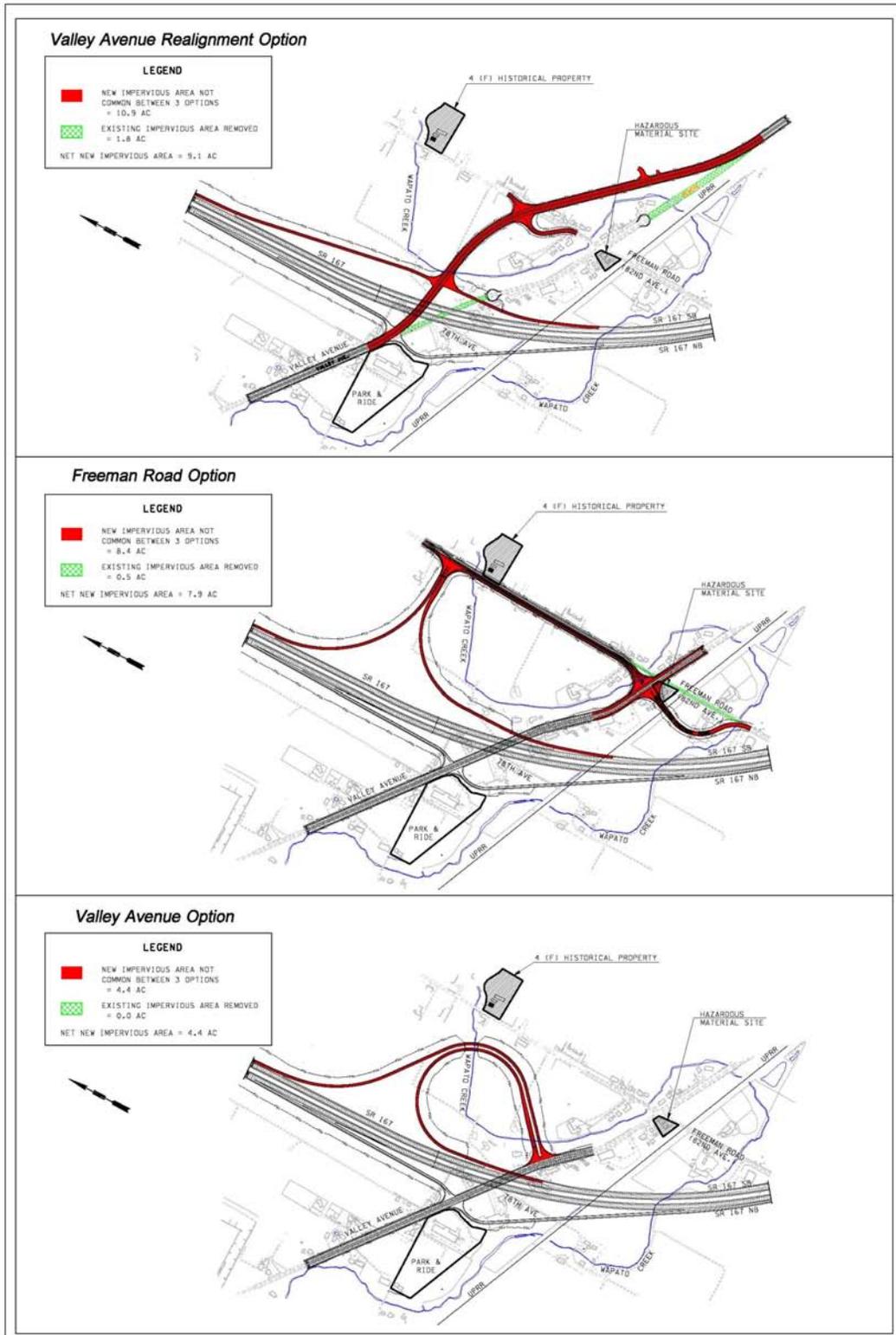
- The SR 167 Conceptual Mitigation Plan (CH2M HILL and MWG, 2005), identifies the Freeman Road Site as a potential mitigation site. The Freeman Road Mitigation Site would link the RRP area at Valley Avenue to the RRP area associated with Surprise Lake Drain. The Freeman Road Option would create a barrier between the Freeman Road Mitigation Site and the Wapato RRP due to road widening and off-ramp location.
- The indirect impacts to wildlife habitat associated with the Freeman Road Option will be potentially greater than the other two options. Indirect impacts are based on the potential for accelerated development at an interchange. Widening of Freeman Road will increase development in areas currently in agricultural use, reducing the amount of habitat available.

Based on these additional qualitative factors, Valley Avenue Option would have less impacts to wildlife habitat than the Freeman Road Option. The Valley Avenue Option will also have the least amount of new impervious surface (4.4 acres versus 7.9 and 9.1 acres) as shown in Figure 2-14.

The following other factors were also applied in determining the preferred interchange option at Valley Avenue.

- The Valley Avenue Option also has the least number of displacements. Three to six additional parcels could be affected by the Freeman Road Option increasing project cost by approximately \$2.8 million. The 18 to 49 additional parcels potentially affected by the Valley Avenue Realignment Option would increase project costs proportionally.
- The purpose of the Valley Avenue interchange is to provide a direct route to and from Valley Avenue, a major arterial route which serves residential, commercial, and industrial sites within the Fife valley. The Freeman Road Option, although a viable option, routes all traffic through a residential area within the city of Edgewood in order to access the residential, commercial, and industrial sites along Valley Avenue. Concerns about impacts to a residential neighborhood in Edgewood led to WSDOT receiving petitions from 161 residents in this area in favor of the Valley Avenue Interchange Option.
- Another factor that was considered was the issue of limited access. Access onto Freeman Road from abutting properties is restricted per WAC 468-58-030 for a distance of 300 feet either side of the ramp terminus. This may impact a historical Section 4(f) resource (Craftsman style home) on Freeman Road, a resource that is avoided by the other interchange options.
- Valley Avenue Realignment Option would directly impact a cultural resource site of significance to the Puyallup Tribe of Indians. In addition, the Puyallup Tribe of Indians indicated that it preferred the Valley Avenue Option, as it appeared to have the least amount of impact to the site.

Figure 2-14: Impervious Surface for Valley Avenue Interchange Options



After careful consideration of the environmental criteria, opportunities for riparian restoration of Wapato Creek, and non-environmental factors, Valley Avenue Option was chosen as the preferred option.

2.6.5 Preferred SR 161/SR 167 Interchange Option

Table 2-10 summarizes the scoring of the three options at the SR 167/SR 161 (North Meridian) Interchange. All three options scored within one rating point of each other (range 26-27). None of the options will impact wetlands, wetland buffers, aquatic habitat, farmland, cultural resources of more than local significance, or Tribal Trust lands.

The Urban Interchange will not impact any wildlife habitat, whereas the other two options will impact 1.43 acres of forest habitat. Displacements were similar among options, but the Medium Diamond might displace one more single family residence and one more business than the other two options.

Factors other than the environmental criteria also did not provide much distinction between options. FHWA and WSDOT preferred the Urban Interchange because it will provide improved traffic operation.

The Urban Interchange was selected as the preferred option based on the advantages for traffic movement, combined with the slightly better score for environmental criteria.

Table 2-10: Summary of Scores for Design Options at the SR 161/SR 167 Interchange

Screening / Selection Criteria	Impact Units	Urban Interchange			Diamond Medium			Diamond Low		
		Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating	Impacts	Weighted Impacts	Rating
1. Meets Purpose and Need		Yes	Yes	1	Yes	Yes	1	Yes	Yes	1
2. Category I & II Wetlands	acres	0	0	1	0	0	1	0	0	1
3. All Wetlands	acres	0	0	1	0	0	1	0	0	1
4. All Wetland Buffers	acres	0	0	1	0	0	1	0	0	1
5. Threatened and Endangered Species	number	6	12	2	6	12	2	6	12	2
6. Aquatic Priority Habitats and Life	acres	0	0	1	0	0	1	0	0	1
7. Wildlife Habitat	acres	0.84	1.68	1	1.32	2.64	2	1.32	2.64	2
8. Prime and Unique Farmlands	acres	0	0	1	0	0	1	0	0	1
9. All Farmland	acres	0	0	1	0	0	1	0	0	1
10. Floodplain	acres	0	0	1	0	0	1	0	0	1
11. Noise (Design Year)	sites	NA	NA	1	NA	NA	1	NA	NA	1
12. Air Quality (Design Year)	+ current			2			2			2
13. NRHP-eligible Cultural Resources	sites	0	0	1	0	0	1	0	0	1
14. All Cultural Resource Properties	sites	3	3	1	3	3	1	3	3	1
15. Environmental Justice Populations	parcels	0	0	1	0	0	1	0	0	1
16. Displacements	parcels	5-7	5-7	2	6-8	6-8	2	5-7	5-7	2
17. Tribal Trust Lands	parcels	0	0	1	0	0	1	0	0	1
18. Visual Quality (General Views)	+ current	blocked	blocked	2	degraded	degraded	2	degraded	degraded	2
19. Stormwater Treatment Capability	Table 3.2-1			1			1			1
20. High Cost Hazardous Waste Sites	dollars			1			1			1
21. All Hazardous Waste Sites	dollars			1			1			1
22. Pedestrian and Bicycle Access	Table 3.2-1			1			1			1
Total Score				26			27			27

Ratings: 1 = best, 2 = better, 3 = good

Note: These scores were used in the SAC concurrence described in Chapter 4.

2.6.6 Conclusion

The Build Alternative is preferred because it best meets the purpose and need for the project while incorporating reasonable measures to avoid or mitigate environmental impacts. It will improve regional mobility of the transportation system, reduce congestion and improve safety, provide improved system continuity between the SR 167 corridor and I-5, maintain or improve air quality, and serve multimodal local and port freight movement and passenger movement.

The Preferred Build Alternative includes:

- Direct connection with SR 509;
- Partial interchange with 54th Avenue East, preferred Loop Option;
- Freeway to freeway connection with I-5, including proposed HOV lanes;
- Realignment of 20th Street East and 70th Avenue East;
- Relocation of Hylebos Creek and Surprise Lake Drain and associated riparian areas;
- Full interchange at Valley Avenue with associated Park and Ride and riparian areas in connection with Wapato Creek, preferred Valley Avenue Option;
- Washington State Patrol Weigh Stations;
- Full interchange with SR 161, North Meridian, and associated park and ride, preferred Urban Option;
- Replacement of steel bridge and widening of the existing concrete bridge over the Puyallup River;
- Direct connection with existing freeway portion of SR 167.