TECHNICAL MEMORANDUM #7

ALTERNATIVES ANALYSIS

Date: 10/14/2025

To: Oregon Department of Transportation, Region 3

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Subject: I-5 Exits 124/125 Interchange Area Management Plan & Garden Valley Corridor Plan

This memorandum presents draft alternatives developed to address constraints and concerns in the study areas for the Interchange Area Management Plan (IAMP) at I-5 Exits 124 and 125, and the Garden Valley Corridor Plan (GVCP). The alternatives are meant to help achieve the goals and objectives set forth for this project, while addressing identified constraints for all modes.

This memorandum reviews potential alternatives for the two subareas (see Figure 1):

- I-5 Exits 124/125 Interchange (IAMP) Subarea: Includes roads/accesses within a ¼-mile of each interchange's ramp terminals and the merge, diverge and weaving area of the I-5 mainline.
    - Subarea on Harvard Avenue: generally, between Harrison Street and Madrone Street.
    - Subarea on Garden Valley: generally, between Estelle Street and railroad crossing
- Garden Valley Corridor (GVCP) Subarea: Garden Valley Boulevard between and including the intersections with Stewart Parkway and Stephens Street.
    - For alternatives development, the GVCP subarea was further refined into three segments, as shown in Figure 2.

SUMMARY OF CONSTRAINTS

Each alternative was developed to address specific challenges, safety, or access concerns. These concepts were developed based upon available standards, warrants, perceived need, safety data, traffic operations, and community livability.

This section is organized by subarea and summarizes the key constraints, as determined through the inventory and analysis documented in *Technical Memoranda #2 (Study Area Inventory), #5 (Existing Conditions) and #6 (Future Conditions):*

- I-5 Exit 124: Harvard Interchange
- I-5 Exit 125: Garden Valley Interchange
- Garden Valley Corridor

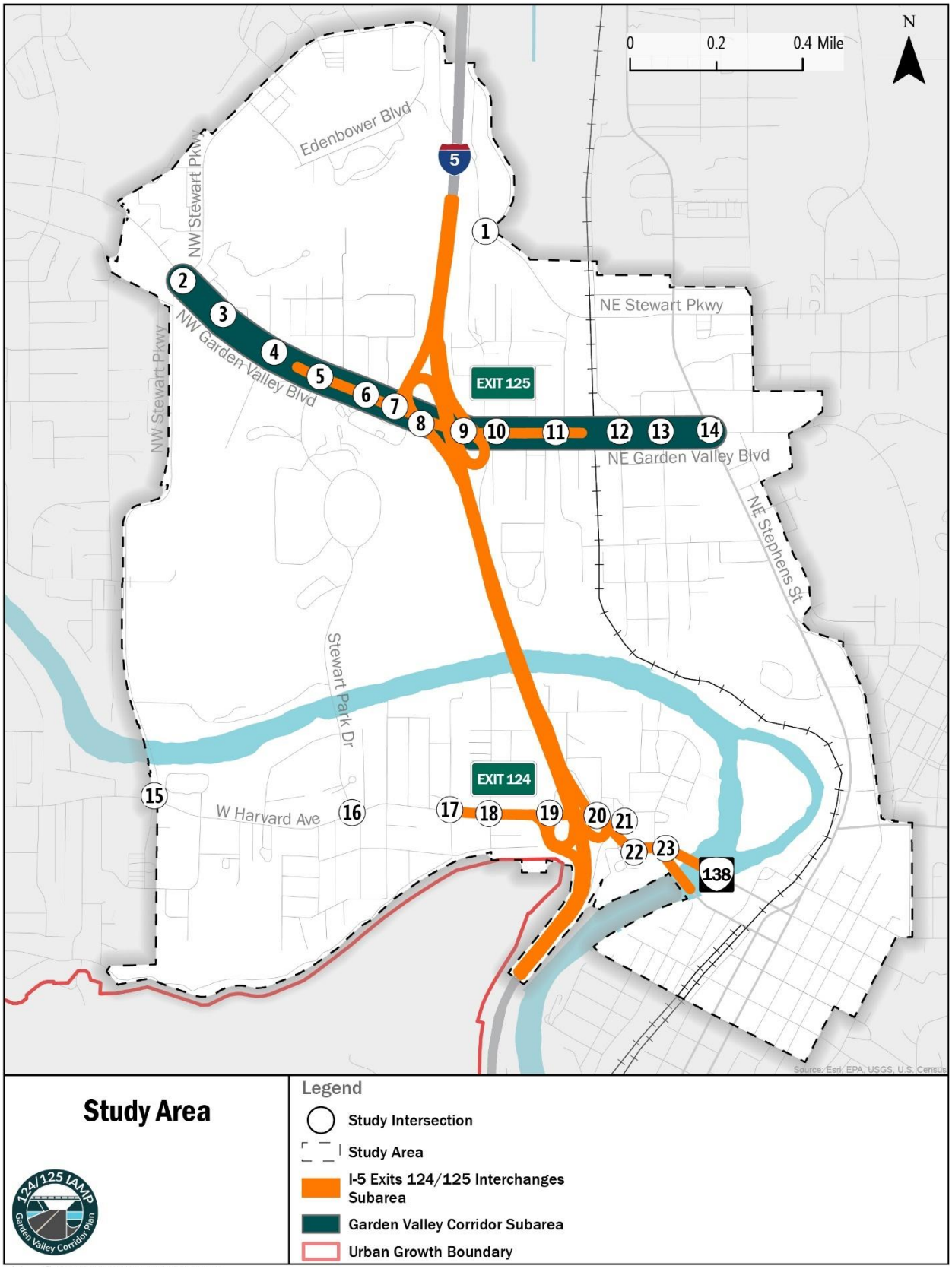


FIGURE 1. IAMP 124/125 AND GARDEN VALLEY BOULEVARD CORRIDOR STUDY AREA

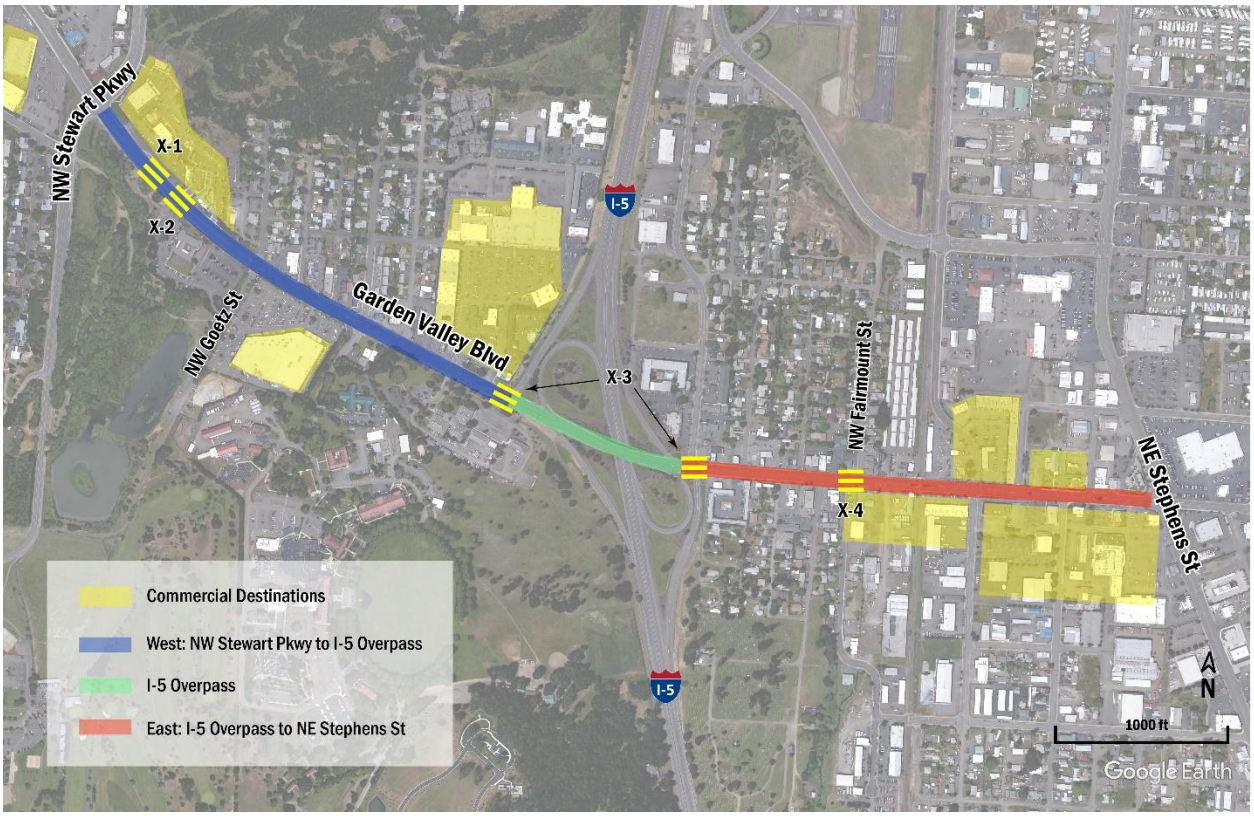


FIGURE 2. GARDEN VALLEY CORRIDOR STUDY AREA

I-5 EXIT 124: HARVARD INTERCHANGE

The Exit 124 interchange provides a direct connection to Harvard Avenue and OR 138. The land uses within the interchange management area (¼-mile distance from the interchange along the crossroad) include important community resources such as Roseburg High School (RHS) and the Department of Human Services (DHS). This stretch of roadway is a gateway to the City's historic downtown area and its services. There are challenges with access spacing, multimodal connectivity, safety, and local circulation. Right-of-way (ROW) and geographic constraints present notable challenges.

TABLE 1. SUMMARY OF CONSTRAINTS FOR I-5 EXIT 124: HARVARD INTERCHANGE

ISSUE	DISCUSSION
Access Spacing	• Public and private accesses fall short of meeting interchange spacing per Oregon Administrative Rule 734, Division 51 and the Oregon Highway Plan (OHP); there are 26 private and nine public access points within the interchange influence area where State policy dictates there should be none. • Driveways do not meet the 500-foot spacing per Roseburg Land Use and Development Regulations (LUDR) Section 12.06.020.A.6.
Pedestrian	• Sidewalks along Harvard Avenue / OR 138 are only buffered from vehicular traffic by a 5-foot bike lane, creating a stressful environment for pedestrians between Intersection #18 (Umpqua Street) and Intersection #23 (Madrone Street), resulting in pedestrian level of stress (PLTS) 3. • The highest pedestrian volumes in the study area are at the northbound ramp terminal intersection with RHS, which also connects the I-5 Route of the Umpqua River Trail across Harvard Avenue. Sidewalk connection on east leg is needed to serve City-permitted houseless camp between eastbound and westbound bridge structure. • A serious-injury crash involving a pedestrian occurred in 2021 at Intersection #23 (Madrone Street).
Bicycle	• Two bicycle-involved crashes occurred on Harvard Avenue in 2020 at or near Intersection #20 (I-5 westbound to northbound on-ramp) and in 2018 at Intersection #22 (Corey Court). The causes were not yielding the right of way. • There are no dedicated bicycle facilities on Harvard Avenue west of Intersection #18 (Umpqua Street), resulting in BLTS 4. At and east of the southbound ramp terminal, bike lanes are only about 5 feet where they should be 6-8 feet, per the City's Transportation System Plan (TSP).
Traffic	• Intersection #17 (Harrison Street) exceeds applicable City mobility targets during the PM Peak Hour (year 2024: v/c 0.44, LOS F; year 2045: v/c 0.82, LOS F). • Peak congestion coincides with RHS morning, lunch and afternoon arrivals and departures. • Eastbound queues at Intersection #21 (Northbound Ramp Terminal) block access to the eastbound to northbound loop on-ramp at Intersection #20. • Westbound queues at Intersection #21 (Southbound Ramp Terminal) are projected to spill back to Intersection #22 (Corey Court) and through to Intersection #23 (Madrone Street).

TABLE 1. SUMMARY OF CONSTRAINTS FOR I-5 EXIT 124: HARVARD INTERCHANGE

ISSUE	DISCUSSION
Safety	• I-5 mainline segment crash rates for northbound and southbound traffic traveling through interchange 124 exceed the comparable Table II crash rate for urban interstate freeways. • The deceleration length for the southbound off-ramp approaching Intersection #19 (opposite Bellows Street) is non-standard length, compromising safety.
Geometry	• Bicycle/pedestrian crossing of free-flowing on-ramps. • Limited acceleration and merging distance (approximately 900 feet) on I-5 on the northbound loop on-ramp. • Limited sight distance and acceleration distance (approximately 800 feet) along the southbound on-ramp due to topography, such as Mt. Nebo and the South Umpqua River. • Limited stopping sight distance at southbound off-ramp. • Off-ramps connect directly across from public streets (Intersection #19 at Bellows Street and Intersection #20 at RHS).

I-5 EXIT 125: GARDEN VALLEY INTERCHANGE

The Exit 125 interchange provides a direct connection to Garden Valley Boulevard. The land uses within the interchange management area (¼-mile distance from the interchange along the crossroad) include important community resources such as the Bureau of Land Management (BLM), the United States Veterans Affairs (VA) Department, and a neighborhood commercial center. There are challenges with access spacing, multimodal connectivity, and safety, as outlined in Table 2. Right-of-way constraints present notable challenges.

TABLE 2. SUMMARY OF CONSTRAINTS FOR I-5 EXIT 125: GARDEN VALLEY INTERCHANGE

ISSUE	DISCUSSION
Access Spacing	• Public and private accesses fall short of meeting interchange spacing per Oregon Administrative Rule 734, Division 51 and the Oregon Highway Plan (OHP); there are 24 private and 12 public access points within the interchange influence area where State policy dictates there should be none. • Driveways do not meet the 500-foot spacing per Roseburg Land Use and Development Regulations (LUDR) Section 12.06.020.A.6.
Pedestrian	• Sidewalks along Garden Valley Boulevard are 6 feet with no shoulder, creating a high-stress environment for pedestrians, thereby resulting in PLTS-3 west of Intersection #7 and a lack of pedestrian facilities east of Intersection #7, resulting in PLTS-4. • High pedestrian volumes at Intersection #5 (Estelle Street/Veterans Way) and Intersection #12 (Airport Road/Cedar Street) .
Bicycle	• There are no dedicated bicycle facilities east of Intersection #7 (Southbound Ramp Terminal), resulting in BLTS-4. The City standard is minimum 6-foot bike lanes.

TABLE 2. SUMMARY OF CONSTRAINTS FOR I-5 EXIT 125: GARDEN VALLEY INTERCHANGE

ISSUE	DISCUSSION
Traffic	• Intersection #10 (Northbound Off-Ramp/NW Mulholland Drive) exceeds ODOT mobility targets (year 2024: v/c 0.87; year 2045: v/c 1.11). • Queuing during the design hour (PM peak hour) is most significant in the westbound direction approaching Intersection #6 (Garden Valley Shopping Center access) and Intersection #9 (Northbound Ramp Terminal), particularly the outside lane. • Future queuing at Intersection #10 (Northbound Off-Ramp) could extend into the I-5 mainline. • Queuing vehicles, particularly for southbound left-turns from the Garden Valley Shopping Center, lead to signal timing and coordination issues on Garden Valley Boulevard.
Safety	• Intersection #10 (Northbound Off-Ramp / NW Mulholland Dr) is the study intersection with the most crashes at 47 crashes between years 2018 and 2022 and Intersection #7 (Southbound Off-Ramp) is the third highest with a recorded 24 crashes between years 2018 and 2022. • Intersection #10 (Northbound Off-Ramp/Mulholland Drive) exceeds the critical crash rate for 4-legged signalized study intersections. • I-5 mainline segment crash rates for northbound and southbound traffic traveling through interchange 125 exceed the comparable Table II crash rate for urban interstate freeways.
Geometry	• Bicycle/pedestrian crossing of free-flowing on-ramps. • Limited acceleration and merging distance (about 500 feet) on I-5 on the northbound loop on-ramp. • Limited sight distance and acceleration distance (about 600 feet) along the southbound on-ramps. • The Northbound Off-Ramp at Intersection #10 connects directly across from Mulholland Drive, a public street.

GARDEN VALLEY CORRIDOR

The Garden Valley Corridor is an important arterial road for Roseburg's transportation system, connecting the city to I-5 and other key roadways such as NW Stewart Parkway and NE Stephens Street. It is one of the only east-west arterial corridors in Roseburg and is the main access point for several key destinations including major commercial retail and service developments, medical and government facilities, a Veterans Affairs service center, parks, and natural areas. In general, this stretch of roadway is a gateway to the City's historic downtown area and its services. A number of challenges are present on Garden Valley Boulevard, as identified in Technical Memorandum #5 – Existing Conditions, that limit the ability for people to access destinations on and near the corridor, especially by walking or bicycling. These are outlined in Table 3.

TABLE 3. SUMMARY OF CONSTRAINTS FOR THE GARDEN VALLEY CORRIDOR

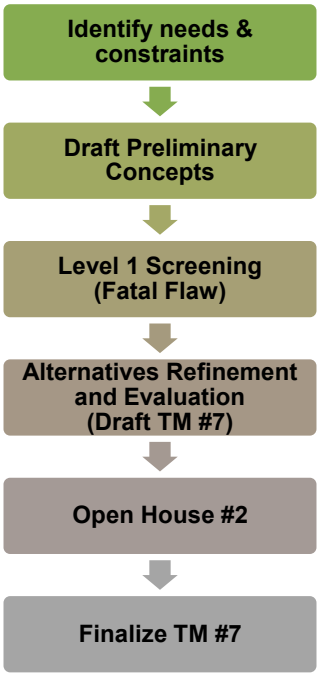
ISSUE	DISCUSSION
Access Spacing	• Public and private accesses fall short of meeting interchange spacing per Oregon Administrative Rule 734, Division 51 and the Oregon Highway Plan (OHP); there are 24 private and 12 public access points within the interchange influence area where State policy dictates there should be none. • Driveways do not meet the 500-foot spacing per Roseburg Land Use and Development Regulations (LUDR) Section 12.06.020.A.6.
Pedestrian	• Sidewalks along Garden Valley Boulevard are approximately 6 feet wide with no buffer from vehicular traffic, creating a high-stress environment for pedestrians, resulting in PLTS3 or 4. • High pedestrian volumes at Intersection #5 (Estelle Street/Veterans Way) and Intersection #12 (Airport Road/Cedar Street) lead to conflicts with vehicles. • Crashes involving pedestrians occurred at Intersections # 2 (Stewart Parkway), #4 (Goetz Street/Duck Pond Street), and #10 (I-5 Northbound Off-Ramp/NW Mulholland Drive).
Bicycle	• A lack of dedicated bicycle facilities create a high bicycle level of stress throughout the corridor, and bicycles using the sidewalk conflict with pedestrians. The City's standards require minimum 6-foot bike lanes.
Transit	• Nominal transit schedules reduce travel options for people traveling to destinations on and through Garden Valley Boulevard. • Lack of transit amenities and wayfinding make it challenging and uncomfortable to use transit.
Traffic	• Intersection #10 (I-5 Northbound Off-Ramp/NW Mulholland Drive) exceeds applicable mobility targets during the PM peak hour. • Queuing during the PM peak hour can be significant in the westbound direction approaching Intersection #8 (Garden Valley Shopping Center) and in the eastbound direction approaching Intersection #9 (Mulholland Street). • The at-grade railroad crossing west of Intersection #12 (NE Airport Road) can lead to vehicle congestion.
Safety	• Intersection #2 (Stewart Parkway) and Intersection # 10 (I-5 Northbound Off-Ramp/NW Mulholland Drive) both exceed the critical crash rate for four-legged signalized study intersections. • During the 2018-2022 study period, five (5) fatal crashes and 49 serious injury crashes were recorded.
Geometry	• Limited ROW east of I-5; the travel way that is needed to meet minimum standards to serve all modes exceeds available ROW. • National Highway System route designation east of I-5. • At-grade railroad crossing (between Intersection #11 and Intersection #12) impacts mobility for all of Roseburg during train crossings.

ALTERNATIVES DEVELOPMENT

PROCESS

The alternatives development process follows the steps outlined below:

1. Identify needs and constraints through feedback from Open House #1 and findings from Technical Memoranda.
2. Develop list of preliminary concepts.
3. Screen preliminary concepts for fatal flaws (such as significant environmental impacts, cost, or other constraints). (February 26, 2025 meeting with Consultant team and ODOT)
4. Refine, analyze, and evaluate alternatives (*Technical Memorandum #7: Alternatives Analysis*).
5. Share draft *Technical Memorandum #7: Alternatives Analysis* findings with Advisory Committee, Stakeholders and Public (Open House #2).
6. Still to be completed: Incorporate feedback and finalize *Technical Memorandum #7: Alternatives Analysis.*



The findings of this memorandum will be carried forward and refined to prepare a set of phased improvements needed to implement a preferred alternative for the study area.

ANALYSIS

For the IAMPs, the project team analyzed each alternative's effectiveness of addressing identified constraints. For each alternative, the following aspects of the analysis are included:

- Future volumes (if different from No Build)
- Operational results
- Comparison of future year results to solutions results
- Identification of any remaining constraints
- Impacts to multimodal system
- Impacts to safety
- Determination of whether access, intersection and interchange spacing meets or improves over existing conditions when compared to the OHP spacing requirements.

Volume Projection Procedures

For most alternatives, the project team relied on Future No Build traffic volume forecasts that were developed using the Roseburg travel demand model forecasting, as summarized in *Technical Memorandum #6: Future Conditions* and in Figure 3.

Where alternatives impact the turning movement volumes, volumes were hand reassigned and presented within the analysis summary of the applicable alternative.

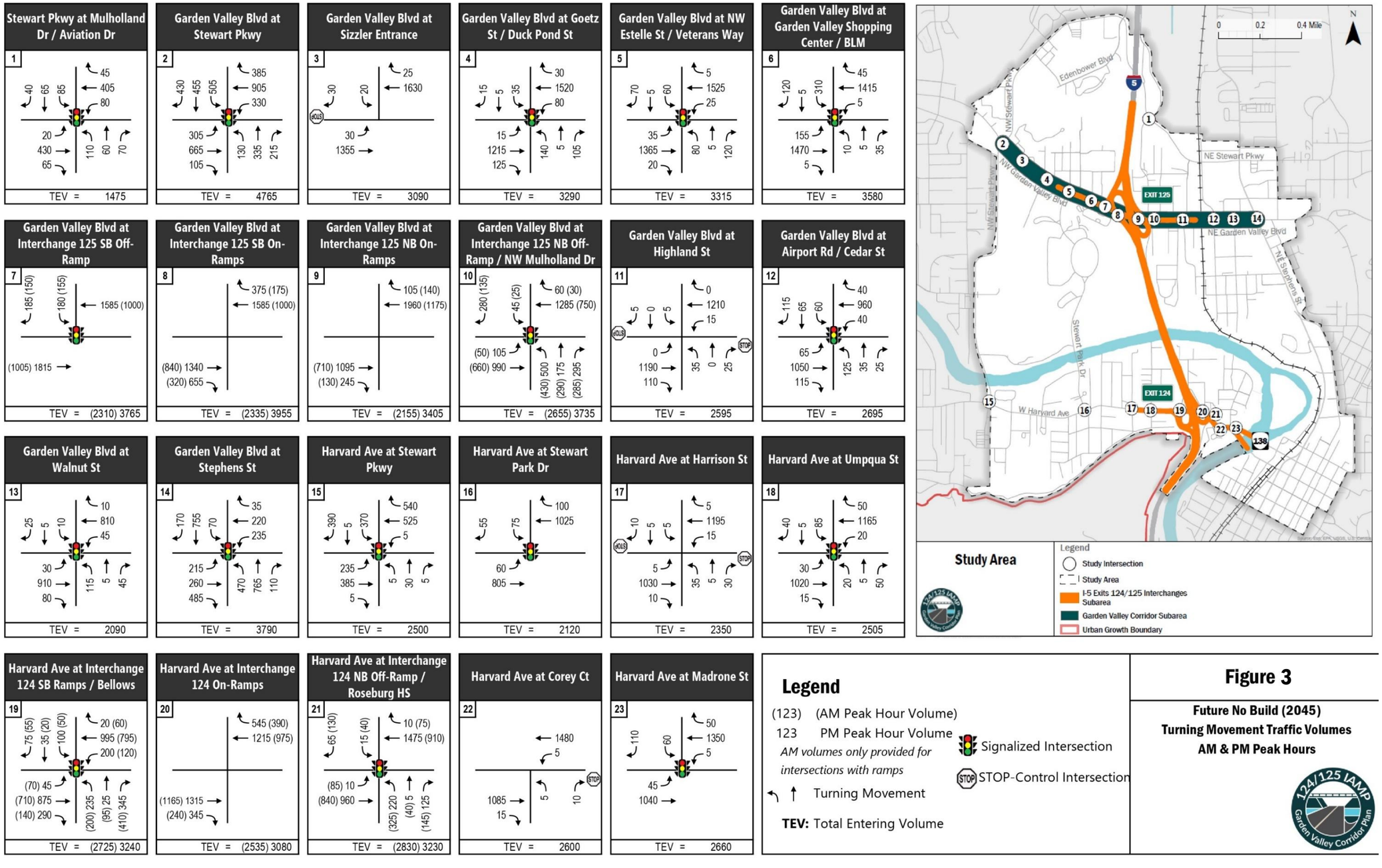


FIGURE 3. FUTURE (YEAR 2045) NO BUILD TURNING MOVEMENT VOLUMES

EVALUATION CRITERIA

The project team assessed each of the alternatives according to the goals and evaluation criteria described in *Technical Memorandum #1*. For the Garden Valley Corridor, alternatives for each of the three corridor segments (West, I-5 Overpass, and East) were evaluated based on the total score across the five GVCP goals. Alternatives were assessed according to the rating method developed as part of the evaluation criteria, shown in Table 4.

● **Most Desirable (+1):** The concept addresses the criterion and/or makes substantial improvements in the criteria category.

◎ **No Effect (0):** The criterion does not apply to the concept or the concept has no influence on the criterion.

○ **Least Desirable (-1):** The concept does not support the intent of and/or negatively impacts the criteria category.

TABLE 4. GOALS AND EVALUATION CRITERIA

IAMP GOALS	GVCP GOALS	EVALUATION CRITERIA
Goal 1: Safety, Mobility and Accessibility Protect the functional operations of the interchanges at 124 and 125 and their intersecting crossroads during the 20-year planning horizon.	**Goal 1: Safety, Mobility and Accessibility** Provide a comfortable, reliable, and accessible transportation corridor that ensures safety and mobility for all users.	• Does the concept comply with the roadway functional classification? • Does the concept meet operational performance measures? • Does the concept move in the direction of meeting access spacing standards? • Does the concept address a documented safety concern? • *IAMP: Does concept meet the guidelines under the HDM based on urban context?*
Goal 2: Vibrant Community Create an integrated multimodal transportation system that enhances community livability and prioritizes safety.		• Does the concept provide or improve multimodal connections? • Does the concept reduce the level of stress experienced by vulnerable road users and/or provide them with safer, convenient, and direct routes? • Does the concept address a crash history with fatal/serious injuries or with vulnerable users?
Goal 3: Transportation Options Provide for a multimodal transportation system that enhances connectivity.		• Does the concept provide "active" modal options and reduce reliance on single-occupancy vehicle trips? • Does the concept increase alternatives to traveling along Garden Valley Boulevard / through the interchange by vehicle?

TABLE 4. GOALS AND EVALUATION CRITERIA

IAMP GOALS	GVCP GOALS	EVALUATION CRITERIA
Goal 4: Economic Vitality Advance regional sustainability by providing a transportation system that improves economic vitality and facilitates the local and regional movement of people, goods, and services.		• Does the concept promote the movement of freight? • Are there right-of-way impacts by the concept that reduce the economic vitality of the area? • Does the concept encourage tourism and/or development of desired land uses and activities?
Goal 5: Implementation Provide a sustainable transportation system through responsible stewardship of financial and environmental resources.		• Does the concept have the ability to be implemented over time? • To what degree does the concept leverage a positive return on investment?

Other Considerations and Limitations

Garden Valley Corridor

Each alternative includes a range of possible solutions such as protected bike lanes, reduced number of vehicle travel lanes, and separated shared-use paths to enact the GVCP vision of developing formal bicycle facilities and meeting accessibility standards. All alternatives were rated according to the plan's evaluation criteria, but other key factors were important considerations in the analysis:

Local Support. Alternatives reflected in locally adopted plans and policies were considered preferentially. West-5 and East-3 (see Table 19) are referenced in the Roseburg Bike Routes Plan (June 2023)[1], and West-1, West-5, X-3, and X-4 (included in the *Other Concepts* section) are included in the Roseburg TSP.

Limited Right-of-Way (ROW). Alternatives such as West-3 and East-3, which require ROW expansion, may be difficult to implement due to the high costs and challenges associated with land acquisition. In the next phase of evaluation, the project team will conduct a high-level assessment of potential ROW impacts using assessor data, if available, and evaluate access impacts and management needs. Since no survey was conducted for this project, existing ROW data may be imprecise. However, an aerial imagery review suggests limited ROW availability. Future design phases should include additional data collection to accurately determine the available ROW.

Access Management. Access management requirements may limit the feasibility of building separated medians and certain bicycle and pedestrian facilities. East-4 and East-5 would introduce major access management changes on Garden Valley Boulevard that require additional study and alignment with City policies and regulations. Access management including driveway consolidation, alternative accesses, or access closures could be considered corridor-wide, especially in the East segment, in addition to proposed alternatives.

[1] https://www.cityofroseburg.org/storage/app/media/CDD/Documents/Plans/Roseburg_BRP_FINAL.pdf

Minimum Lane Widths. Some alternatives may require narrowing lanes below the 11-foot standard width and may, therefore, require a local deign exception from City-adopted standards. If advanced, some alternatives may need to be modified to accommodate the retention of 11-foot travel lanes.

Traffic Volumes. Certain alternatives may be less feasible because of the high vehicle traffic volumes. *Technical Memorandum #5 – Existing Conditions Summary* includes annual average daily traffic (AADT) volumes for all segments of Garden Valley Boulevard and intersections in the study area. As several roadway segments and intersections within the study area currently exceed acceptable level of service (LOS) standards, alternatives that require removal of existing travel lanes could pose challenges for mitigating vehicle congestion.

SUMMARY OF PRELIMINARY CONCEPT EVALUATION FOR THE INTERCHANGES

Initial concepts for improving the interchanges were developed by the Consultant team and reviewed ODOT and City staff. These ideas aim to address both current and anticipated future geometric, traffic operations, multimodal, and safety issues. The Consultant team met with ODOT technical staff on February 26, 2025 to discuss fatal flaws and design considerations, such as rough order of magnitude costs and ROW limitations. After the meeting, the project team refined the concepts into alternatives included in this memorandum. Table 5 presents a summary of this screening process.

TABLE 5. PRELIMINARY SCREENING RESULTS FOR INTERCHANGE CONCEPTS

CONCEPT	CONSTRAINT ADDRESSED	RECOMMENDED FURTHER EVALUATION?	COMMENTS / JUSTIFICATION & CONSIDERATIONS FOR TM #8
I-5 Exit 124: Harvard Interchange			
124-A: Improved Bike/Ped Connectivity – Improve bicycle and pedestrian connectivity through interchange area.	Decreases level of traffic stress for bikes and pedestrians	Yes	Needs refinement to address modal conflicts at on-ramps. Consider pedestrian bridge. Preliminary concept expanded to provide 3 options: Option 1: Bicycle lanes on Harvard Ave west of the southbound ramp terminal. Option 2: Improve visibility for pedestrians crossing the ramps at the interchange and Roseburg High School (RHS) entrance. Option 3: East-west pedestrian bridge to grade separate pedestrians from free-flowing ramps.
124-B: Limit Turning Movements at Harrison Street – Limit to right-in/right-out for the south leg of the intersection and improve connection / provide access to Umpqua Street traffic signal.	Maintains intersection operations within City's mobility standard	Maybe	Military Avenue connection has topo and ROW constraints. Consider as part of Access Management Plan to monitor signal warrants.

TABLE 5. PRELIMINARY SCREENING RESULTS FOR INTERCHANGE CONCEPTS

CONCEPT	CONSTRAINT ADDRESSED	RECOMMENDED FURTHER EVALUATION?	COMMENTS / JUSTIFICATION & CONSIDERATIONS FOR TM #8
124-C: Umpqua Street Connection – Provide road connection from RHS to Umpqua Street on the north side of Harvard Avenue.	Provides "relief valve" to congestion from RHS on Harvard Avenue	Yes	Rerouting school traffic away from ramp terminal intersection is a good idea. Refine to avoid reconstruction of I-5. Will require significant ROW investment. Preliminary concept expanded to provide 2 options: Option 1: Construct local street connection north of Department of Human Services. Option 2: Extend Princeton Avenue east under I-5.
124-D: Single-Point Urban Interchange ("SPUI")	Improves geometry impacting sight and acceleration distances	No	New interchange not required to address capacity; focus on local connection across I-5. Could be considered beyond 20-year planning horizon as it may impact I-5 Veteran's Memorial Bridge.
124-E: Extend Mainline SB Deceleration Lane	Increases stopping distance to improve safety	Yes	Consider improved advance signage as a low-cost alternative.
124-F: Local street connectivity *Option 1: RHS Local Connection* – Connect RHS to Madrone Street via Laurelwood Ct with pedestrian crossing on Madrone; limit access on Harvard to right turns. *Option 2: Portland Avenue Bridge* – Connect Interchange at Exit 123 to OR 99 to the east	Option 1: Relieves congestion at Intersection # I-5 off-ramp	Option 1: Maybe Option 2: Yes, as pedestrian bridge. There is no need for analysis; it is in the Roseburg TSP.	Option 1: Historic neighborhood impacts. May want to consider as part of Access Management Plan but recognize local opposition. Option 2: Vehicular bridge not feasible due to ROW, railroad, and topography. Recommend bike/ped bridge instead; does not address vehicular congestion. Project is already in Roseburg TSP and does not need further evaluation.
I-5 Exit 125: Garden Valley Interchange			
125-A: Dual NB Left Turn Lanes – Provide dual left-turn lanes onto Garden Valley Boulevard from I-5 Northbound Off-Ramp	Maintains intersection operations within ODOT's mobility standard	Yes	Need to understand ROW impacts and degree of operational benefit.

TABLE 5. PRELIMINARY SCREENING RESULTS FOR INTERCHANGE CONCEPTS

CONCEPT	CONSTRAINT ADDRESSED	RECOMMENDED FURTHER EVALUATION?	COMMENTS / JUSTIFICATION & CONSIDERATIONS FOR TM #8
125-B: Add westbound right-turn lane at Garden Valley Shopping Center. *Option A: Add westbound right-turn only lane from signalized Garden Valley Shopping Center entrance to westbound-to-southbound loop on-ramp. Close right-in/right-out driveway.* *Option B: Add westbound right-turn only lane from signalized Garden Valley Shopping Center entrance to Mullholland Drive. Close right-in/right-out driveway.*	Reduces westbound queue spillback to interchange	Option 1: Yes, with modifications Option 2: No	Option A: Need to understand traffic impacts of closing existing RIRO. Option B: Would require reconstruction of structure over I-5, at which point it is more practical to rebuild the interchange with a preferred system solution. Replace options A and B with one option to provide a dedicated right-turn lane at Estelle Street and modify east Garden Valley Shopping entrance to a right-in only turn with further local street network improvements within the VA.
125-C: Single-Point Urban Interchange ("SPUI")	Improves future operations to meet ODOT mobility target of 0.85 v/c	Yes	Consider realigning Garden Valley Boulevard to travel under I-5. Determine best interchange configuration and *then* determine phasing/other network improvements.
125-D: Diverging Diamond Interchange ("DDI")	Improves future operations to meet ODOT mobility target of 0.85 v/c	No	Likely to have ROW impacts on both sides of I-5 and potential for 4(f) impacts. This interchange configuration can be difficult for corridor progression.

TABLE 5. PRELIMINARY SCREENING RESULTS FOR INTERCHANGE CONCEPTS

CONCEPT	CONSTRAINT ADDRESSED	RECOMMENDED FURTHER EVALUATION?	COMMENTS / JUSTIFICATION & CONSIDERATIONS FOR TM #8
125-E: Local-street connectivity *Extend Hill Avenue east to Mulholland Drive*	Alternative routes to: 1) Provide east-west bike/ped connectivity and 2) Decrease congestion/ queuing on GVB for motor vehicles	Option 1: Yes Option 2: No Option 3: No Option 4: No	Local street connectivity will be determined by preferred interchange configuration and access impacts. Mulholland Drive will likely need to be closed with preferred interchange design. *The following configurations will be evaluated as part of the snalysis of the interchange redesign:* *Option 1: Extend Hill Avenue east to Mulholland Drive* *Option 2: One-way Mullholland Dr. from Garden Valley Boulevard to Bethel Avenue.* *Option 3: Realign Mulholland Drive opposite Highland Street.* *Option 4: Realign Highland Street to Fairmount Street.*
Mainline-1: Southbound Auxiliary Lane (between Exit 124 and Exit 125)	Improve safety on mainline by decreasing friction	Yes	Recommendation of the I-5 Bottleneck Study.
Mainline-2: Northbound Exit 125 Off-Ramp 2-Lane Diverge	Increases capacity to decrease queue spillback to mainline	Yes	Can it be designed to avoid Section 4(f) resources? Consider as part of SPUI layout.

I-5 EXIT 124: HARVARD INTERCHANGE – ALTERNATIVES ANALYSIS SUMMARY

This section summarizes the alternatives for I-5 Exit 124 (Harvard Interchange):

- 124-A (multiple options): Improved Bike & Ped Connectivity
- 124-B: Limit Turning Movements at Harrison St
- 124-C: Umpqua Street Connection
- 124-D: Single-Point Urban Interchange (SPUI)
- 124-E: Extend Deceleration Lane
- 124-F (multiple options): Local Street Connections

The alternatives listed above for the I-5 Exit 124 interchange and the surrounding Harvard Avenue influence area are reviewed in this section.

TABLE 6. PRELIMINARY SCREENING RESULTS FOR EXIT 124 INTERCHANGE CONCEPTS

INTERSECTION/ HIGHWAY SEGMENT	MOBILITY TARGET	NO BUILD V/C (LOS)	BUILD V/C (LOS)
Alternative 124-A			
	No Change		
Alternative 124-B			
Harvard Ave at Harrison St	0.95 (LOS E)	0.82 (LOS F)	0.09 (LOS C)
Harvard Ave at Umpqua St	0.95 (LOS E)	0.50 (LOS B)	0.52 (LOS B)
Alternative 124-C			
Harvard Ave at Umpqua St	0.95 (LOS E)	0.50 (LOS B)	0.39 (LOS A)
Harvard Ave at Southbound Ramps/Bellows St	0.85	0.76	0.71
Harvard Ave at Northbound Ramps/Roseburg High School	0.85	0.76	0.76
Alternative 124-D			
Not recommended for further evaluation; not evaluated.			
Alternative 124-E			
I-5 Southbound Exit 124 Diverge, Mainline	0.80	0.65	0.43
I-5 Southbound Exit 124 Diverge, Ramp	0.85	0.38	0.38
Alternative 124-F			
Not recommended for further evaluation; not evaluated.			

ALTERNATIVE 124-A: IMPROVED BICYCLE AND PEDESTRIAN CONNECTIVITY

This project provides expanded and enhanced bicycle and pedestrian facilities through the interchange area to increase multimodal connectivity between RHS and adjacent neighborhoods.

Option A: Pedestrian bridge over Harvard – Add a pedestrian bridge over Harvard Avenue to connect multiuse path and close at-grade crossing.

Option B: Bike lane on Harvard Avenue – Add bicycle lane on Harvard Avenue west of the southbound ramp terminal. Buffered bike lanes were considered on Harvard Avenue between Umpqua Street and Madrone Street, however the benefit-to-cost of ROW acquisition is too low.

Additional considerations: Additional improvements such as buffered bike lanes on Bellows Street, closing and/or modifying existing crosswalks on Harvard Avenue, geometric modifications to roadway and/or landscaping, and additional signage will be reviewed as part of TM #8.

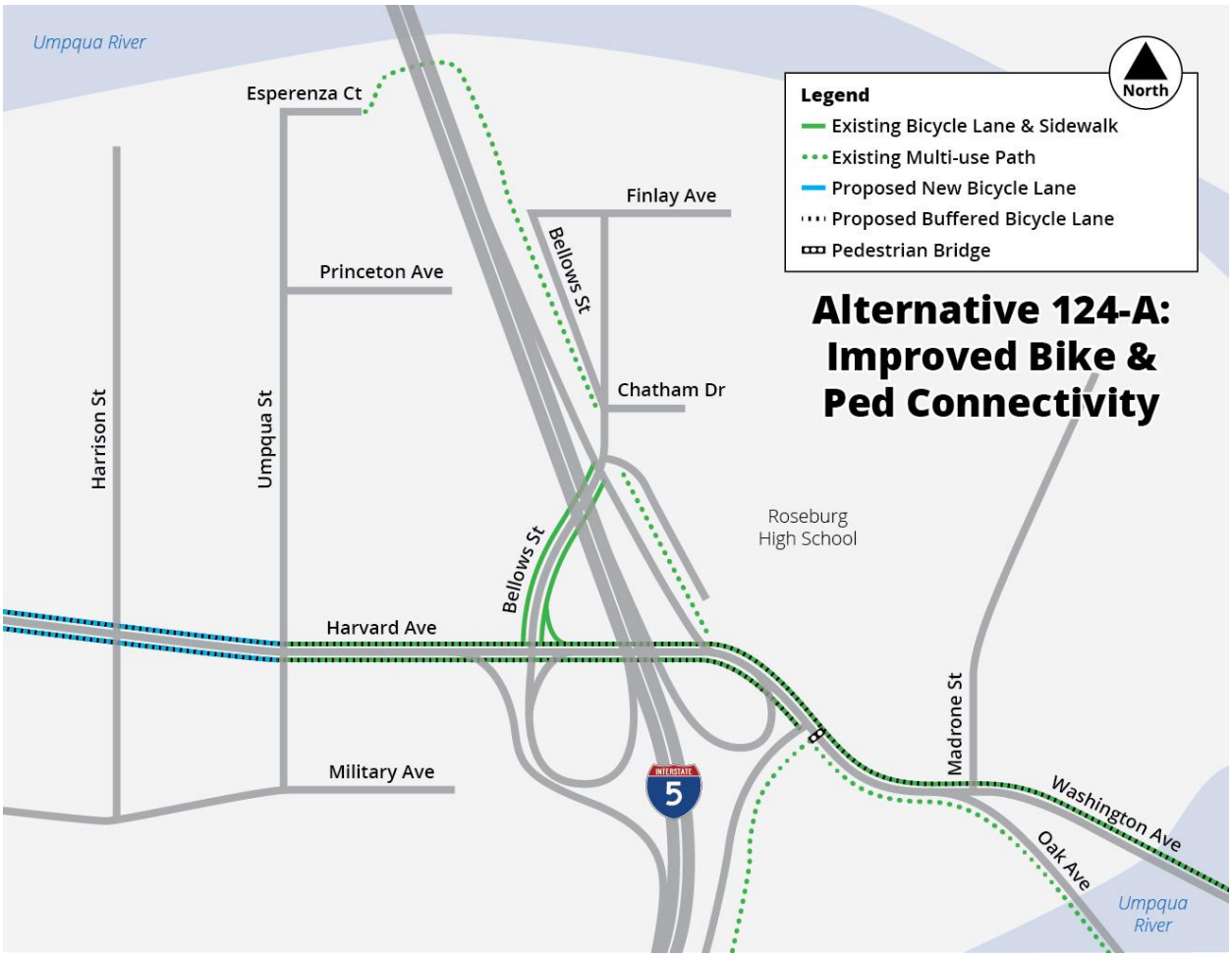


FIGURE 4. ALTERNATIVE 124-A: IMPROVED BIKE & PED CONNECTIVITY

Analysis results for Option A and Option B are summarized in Table 7.

TABLE 7. 124-A ALTERNATIVES ANALYSIS SUMMARY

	OPTION A Pedestrian bridge over Harvard	OPTION B Bike lane on Harvard Avenue and Bellows Street
FUTURE VOLUMES	No change.	No change.
TRAFFIC OPERATIONS	Improve queuing and operations at northbound ramp terminal due to elimination of pedestrian phase by push button.	No change.
REMAINING CONCERNS	Does not address pedestrian crossings at free-flow on-ramps.	Additional ROW needed for protected/buffered bike lanes.
MULTIMODAL	Reduces conflicts with vehicles.	Adds facilities where none exist and improves bicycle level of traffic stress from existing.
SAFETY	Reduces conflicts with vehicles.	Delineates space for bicyclists.
ACCESS SPACING	No change.	No change.

ALTERNATIVE 124-B: LIMIT TURNING MOVEMENTS AT HARRISON STREET

This project would restrict movements for the south leg of Harrison Street at Harvard Avenue to right-in/right-out and improve the connection from Harrison Street to Umpqua Street along Military Avenue so that westbound traffic can cross or turn left onto Harvard Avenue at a signalized intersection.

FIGURE 5. ALTERNATIVE 124-B: LIMIT TURNING MOVEMENTS AT HARRISON STREET

TABLE 8. 124-B ALTERNATIVES ANALYSIS SUMMARY

FUTURE VOLUMES	Decrease at Harrison Street, increase at Umpqua Street
TRAFFIC OPERATIONS	Meets operations standards at both Harrison Street and Umpqua Street
REMAINING CONCERNS	Additional impact to Military Avenue, which is unimproved and has sight distance limitations.
MULTIMODAL	Reduces conflicts with vehicles.
SAFETY	Reduces conflicts with vehicles.
ACCESS SPACING	No change.

Additional considerations: Routing vehicles to Balff Street via Brown Avenue was considered but there is a lack of sight distance availability to the west on Harvard Avenue from Balff Street. If Benefit-to-Cost ratio of improvements is too high for this concept, the City could adopt an alternative mobility standard for two-way stop-controlled intersections on major arterials for approaches where fewer than 100 trips exist during peak hour; the intersection is not likely to meet signal warrants with projected volumes.

ALTERNATIVE 124-C: UMPQUA STREET TO BELLOWS STREET CONNECTION

This alternative provides a connection between Umpqua Street and Bellows Street to provide increased connectivity to RHS and an alternate east-west multimodal connection to Harvard Avenue. Table 9 summarizes the analysis results.

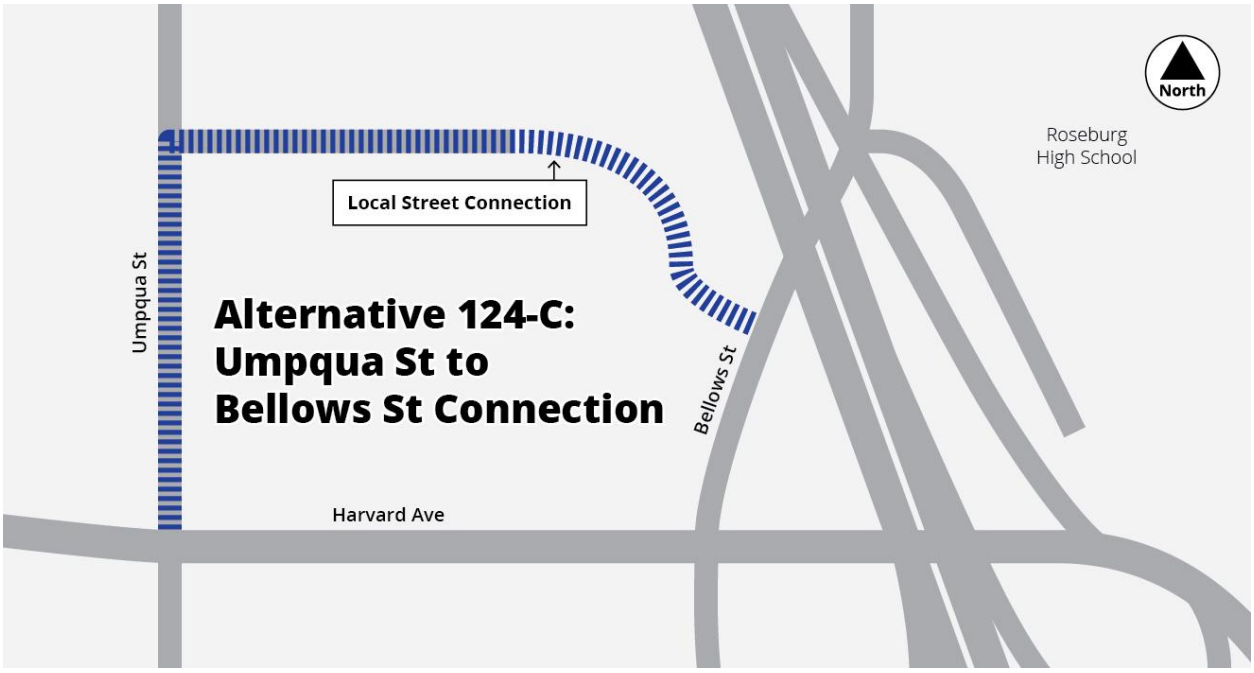


FIGURE 6. ALTERNATIVE 124-C: UMPQUA STREET TO BELLOWS STREET CONNECTION

TABLE 9. 124-C ALTERNATIVES ANALYSIS SUMMARY

FUTURE VOLUMES	New connection is expected to draw some PM peak hour trips from Harvard Avenue, particularly the southbound right turns from Bellows Street and from RHS onto Harvard Avenue.
TRAFFIC OPERATIONS	Could alleviate congestion through the interchange area during peak hours, particularly the southbound right turns from Bellows Street and from RHS onto Harvard Avenue.
REMAINING CONCERNS	Does not address limited sight distance along Harvard Avenue westbound from Madrone Street and eastbound between the ramp terminals. Will require substantial ROW investment.
MULTIMODAL	Increased east-west connectivity to and from RHS in lieu of utilizing Harvard Avenue which lacks buffered sidewalks or buffered bike lanes and has high traffic volumes and travel speeds.
SAFETY	Could reduce number of pedestrians traveling on Harvard Avenue, however may increase traffic on local street network.
ACCESS SPACING	Could facilitate access management along Harvard Avenue by providing alternative route.

Additional considerations: Two alignments can be further evaluated in Tech Memo #8: Option 1: between Princeton Avenue and Harvard Avenue; and Option 2: at Princeton Avenue. Both options will review intersection improvements as needed.

ALTERNATIVE 124-D: SINGLE POINT URBAN INTERCHANGE (SPUI)

This project would replace the interchange with a single point urban interchange design under I-5.

Since traffic operations are expected to meet ODOT mobility targets in the future (year 2045), the preliminary screening of this concept determined the Benefit-to-Cost ratio of improvements is too low and so a detailed analysis was not prepared.

ODOT could consider this alternative with a reconstruction of the interchange beyond the planning horizon to move in the direction of access management.

FIGURE 7. ALTERNATIVE 124-D: SINGLE POINT URBAN INTERCHANGE (SPUI)

ALTERNATIVE 124-E: I-5 SOUTHBOUND DECELERATION LANE IMPROVEMENTS FOR EXIT 124

This alternative provides a connection between Umpqua Street and Bellows Street. Table 10 summarizes the analysis results.

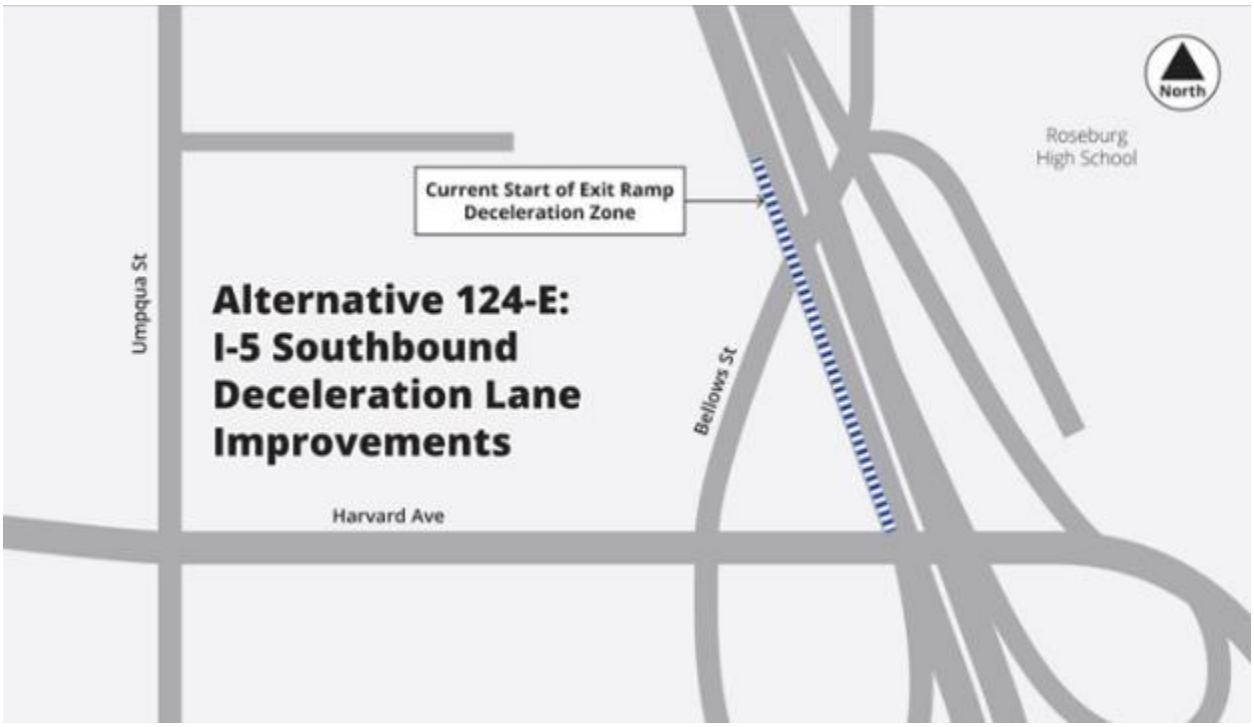


FIGURE 8. ALTERNATIVE 124-E: I-5 SOUTHBOUND DECELERATION LANE IMPROVEMENTS

TABLE 10. 124-E ALTERNATIVES ANALYSIS SUMMARY

FUTURE VOLUMES	No change. (705 during the AM peak hour and 605 during the PM peak hour)
TRAFFIC OPERATIONS	The Highway Capacity Software (HCS) volume-to-capacity (v/c) is expected to decrease from 0.65 to 0.43 for the mainline just north of Exit 124 in the PM Peak Hour.
REMAINING CONCERNS	Does not address queuing at the ramp terminal. An extension of the southbound deceleration lane requires widening of the mainline, which may have structural impacts.
MULTIMODAL	No change.
SAFETY	Reduces chances of queuing backing up into I-5 mainline traffic.
ACCESS SPACING	No change.

Additional considerations: TM #8 will further explore how the extension of the southbound deceleration lane can tie into a future auxiliary lane from Exit 125 to Exit 124.

ALTERNATIVE 124-F: LOCAL STREET CONNECTIVITY (EAST OF I-5)

This improvement reviews potential options for providing additional east-west connectivity on the local street system.

Option 1: RHS Local Connection – Connect RHS to Madrone Street via Laurelwood Court with pedestrian crossing on Madrone; limit access on Harvard Avenue to right turns.

Option 2: Portland Avenue Bridge – Connect Interchange at Exit 123 to OR 99 to the east

Option 1 would modify access at the north leg of the RHS intersection and provide an alternate connection to Madrone Street via Laurelwood Court. This would help to improve traffic flow at the northbound ramp terminal and bring the interchange closer to current design standards.

Historically, there has been significant public opposition to any additional traffic or connections to the Laurelwood neighborhood, so a detailed analysis was not prepared. This local connection may be needed beyond the planning horizon if the interchange is reconstructed.

FIGURE 9. ALTERNATIVE 124-F: MADRONE STREET CONNECTION

Option 2 is a recommendation from the Roseburg Transportation System Plan (TSP), but should be considered as a pedestrian bridge only; there are perceived fatal flaws to constructing a vehicular bridge due to the existing topography and presence of the railroad. A detailed analysis was not prepared for this option given its presence in an adopted plan.

I-5 EXIT 125: GARDEN VALLEY INTERCHANGE – ALTERNATIVES ANALYSIS SUMMARY

The following is a list of alternatives reviewed for the Garden Valley Boulevard interchange:

- 125-A: Dual Northbound Left-Turn Lanes
- 125-B: Westbound Auxiliary-to-Right Turn Lane
- 125-C: Single-Point Urban Interchange (SPUI)
- 125-D: Diverging Diamond Interchange (DDI)
- 125-E: Local-street connectivity (multiple options)

The alternatives listed above for the I-5 Exit 125 interchange and the surrounding Garden Valley Boulevard influence area are reviewed in this section.

TABLE 11. PRELIMINARY SCREENING RESULTS FOR EXIT 124 INTERCHANGE CONCEPTS

INTERSECTION/ HIGHWAY SEGMENT	MOBILITY TARGET	NO BUILD V/C (LOS)	BUILD V/C (LOS)
Alternative 125-A			
Garden Valley Blvd at Northbound Ramps/ Mulholland Dr	0.85	1.11	0.97
Alternative 125-B			
Garden Valley Blvd at Garden Valley Shopping Center/Bureau of Land Management	0.95 (LOS E)	0.84 (LOS C)	0.91 (LOS C)
Garden Valley Blvd at Southbound Exit Ramp	0.85	0.74	0.79
Alternative 125-C			
Garden Valley Blvd at Southbound Exit Ramp	0.85	0.74	-
Garden Valley Blvd at Northbound Ramps/ Mulholland Dr	0.85	0.76	-
Garden Valley Blvd at Proposed SPUI Signal	0.75	-	0.68
Alternative 125-D			
Not evaluated			
Alternative 125-E			
Stewart Pkwy at Mulholland Dr	0.95 (LOS E)	0.32 (LOS B)	0.45 (LOS B)
Garden Valley Blvd at Estelle St	0.95 (LOS E)	0.62 (LOS D)	0.61 (LOS C)
Garden Valley Blvd at Garden Valley Shopping Center/Bureau of Land Management	0.95 (LOS E)	0.84 (LOS C)	0.82 (LOS C)
Garden Valley Blvd at Northbound Ramps/ Mulholland Dr	0.85	1.11	1.11

ALTERNATIVE 125-A: DUAL NORTHBOUND LEFT-TURN LANES AT OFF-RAMP

This alternative reduces the potential for queuing onto the mainline by widening the northbound off-ramp to provide a second northbound left-turn lane from the ramp to Garden Valley Boulevard. For this alternative, restriction of southbound left turns from Mulholland Drive was assumed. Note this option is projected to decrease queue spillback to the mainline, but does not necessarily address the mobility target of a 0.85 v/c. Therefore, additional configurations will be evaluated in Tech Memo #8. Table 12 summarizes the analysis results.

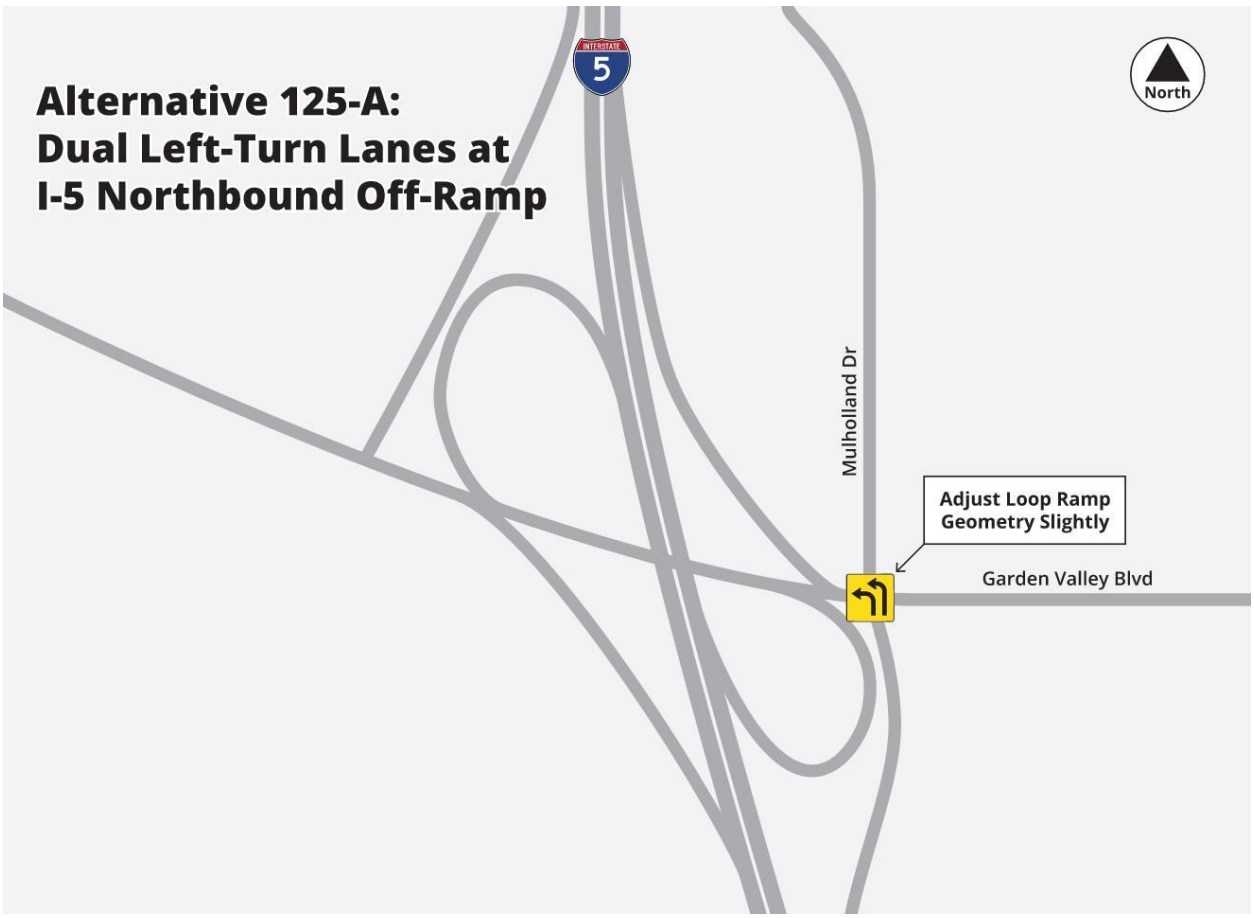
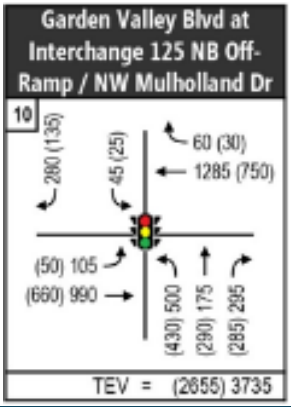


FIGURE 10. ALTERNATIVE 125-A: DUAL NORTHBOUND LEFT-TURN LANES AT OFF-RAMP

TABLE 12. 125-A ALTERNATIVES ANALYSIS SUMMARY

FUTURE VOLUMES		Future volumes are not expected to change with the addition of a second northbound left-turn lane.
TRAFFIC OPERATIONS	Build operations assume the addition of the second left-turn lane and accompanying optimization in signal timing. Operations for Intersection #10 are expected to improve from a No Build v/c of 1.11 to a Build v/c of 0.97 during the PM peak hour. Queuing on the off-ramp could decrease from over 1,000 feet to 200 feet.	
REMAINING CONCERNS	Operations still do not meet the ODOT mobility target of 0.85 for freeway ramp terminals. Queuing along Garden Valley Boulevard is not significantly improved.	
MULTIMODAL	increases the crossing distance for pedestrians across the south leg crosswalk.	
SAFETY	Reduces potential for northbound queue spillback at Intersection #10 onto I-5 mainline.	
ACCESS SPACING	Could require modifications to access and driveway in southeast quadrant of intersection that could move in the direction of access spacing standards.	

ALTERNATIVE 125-B: WESTBOUND RIGHT-TURN LANE AT GARDEN VALLEY SHOPPING CENTER

This alternative includes two options to add westbound capacity to Garden Valley Boulevard by adding a westbound right-turn lane at Garden Valley Shopping Center:

> Option A: Add westbound right-turn only lane from signalized Garden Valley Shopping Center entrance to westbound-to-southbound loop on-ramp. Close right-in/right-out driveway.
>
> Option B: Add westbound right-turn only lane from signalized Garden Valley Shopping Center entrance to Mullholland Drive. Close right-in/right-out driveway. This option would require rebuilding the structure over I-5; the Benefit-to-Cost ratio of improvements is too high and so a detailed analysis was not prepared.

Option B is not a desirable configuration as it requires reconstruction of the I-5 interchange. Table 13 summarizes the analysis results for Option A.

FIGURE 11. ALTERNATIVE 125-B: WESTBOUND RIGHT-TURN LANE AT GARDEN VALLEY SHOPPING CENTER

TABLE 13. 125-B (OPTION A) ALTERNATIVES ANALYSIS SUMMARY

FUTURE VOLUMES	Traffic counts are not available at the right-in/right-out driveway, however volumes at the intersections on either side suggest there are approximately 300-400 PM peak hour trips accessing the right-in/right-out driveway on the north side of Garden Valley Boulevard.
TRAFFIC OPERATIONS	Build operations assume the addition of the dedicated westbound right-turn lane and accompanying optimization in signal timing. Operations for Intersection #6 are expected to improve from a No Build v/c of 0.92 to a Build v/c of 0.91 during the PM peak hour. Queuing at the Garden Valley shopping center signal could decrease from approximately 500 feet to 250 feet.
REMAINING CONCERNS	This alternative creates a trap lane for vehicles turning right from the southbound off-ramp.
MULTIMODAL	Increases the crossing distance of Garden Valley Boulevard for pedestrians and increasing traffic stress for bicycles in the segment west of the southbound ramp terminal.
SAFETY	Does not address a known safety concern and may create friction with lane changing maneuvers in the trap lane.
ACCESS SPACING	Closing the right-in/right-out driveway to the Garden Valley Shopping Center moves in the direction of access management.

Additional Considerations: Preliminary analysis of the options suggest the options as described are not palatable due to potential for trap lane for traffic exiting I-5 southbound to travel west. A revised version of this alternative would replace the options and provide a dedicated right-turn lane at Estelle Street and modify east Garden Valley Shopping entrance to a right-in only turn while also exploring further local street network improvements within the VA.

ALTERNATIVE 125-C: SINGLE POINT URBAN INTERCHANGE (SPUI)

This project would replace the interchange with a single point urban interchange design:

Option A: Garden Valley Boulevard travels over I-5 (same as existing condition).

Option B: Garden Valley Boulevard travels under I-5.

Additional Considerations: The intersection operations for the SPUI option were only reviewed for this intersection and not adjacent intersections that may be affected by this configuration. Additional evaluation will be conducted in Tech Memo #8. Table 14 summarizes the analysis results.

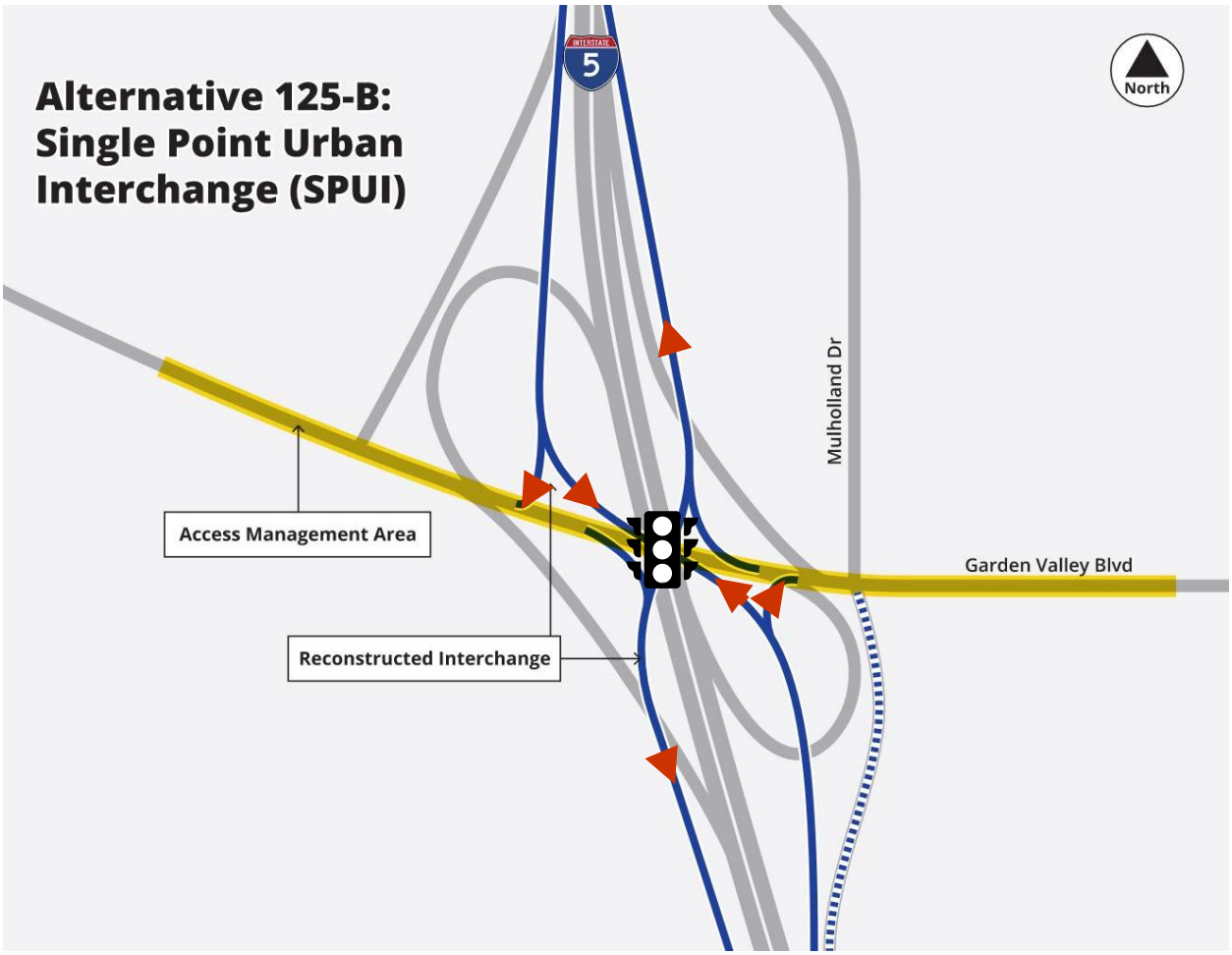


FIGURE 12. ALTERNATIVE 125-C: SINGLE POINT URBAN INTERCHANGE (SPUI)

TABLE 14. 125-C ALTERNATIVES ANALYSIS SUMMARY

	Option A GVB Over I-5	Option B GVB Under I-5
FUTURE VOLUMES	Traffic counts are not available at the right-in/right-out driveway immediately east of Intersection #6. However, volumes at the intersections on either side suggest there are approximately 300-400 vehicles accessing this driveway in the peak hour.	
TRAFFIC OPERATIONS	Alleviates major westbound queuing on Garden Valley Boulevard to the east of the interchange. Intersection #10 expected to improve from a projected overall 1.11 v/c under No Build conditions to a projected 0.68 v/c as a SPUI.	
REMAINING CONCERNS	Trips to and from Mulholland Drive and other accesses will need to be rerouted through the local street network.	
MULTIMODAL	Creates bicycle and pedestrian connectivity across I-5, but requires additional time for motor vehicles to traverse interchange.	
SAFETY	Free-flow loop ramp traffic becomes left-turn traffic at single point (SP) signal, creating new turning movement conflicts for vehicles, but improving crossings for pedestrians.	
ACCESS SPACING	Moves in the right direction of access management due to required access consolidation from profile changes on Garden Valley Boulevard. Could have significant impact to accesses east of BLM entrance to Beacon Street due to road profile.	
OTHER CONSIDERATIONS	Larger and more complex GVB structure may be required. Allows for staged construction.	Standard structure for I-5. Could require closure of GVB during construction.

ALTERNATIVE 125-D: DIVERGING DIAMOND INTERCHANGE (DDI)

This project would replace the interchange with a diverging diamond interchange (DDI) design over I-5.

The preliminary screening of this concept determined the SPUI better fits with signal spacing along the corridor and less ROW impacts on the west side and so a detailed analysis of a DDI for this interchange was not prepared.

FIGURE 13. 125-D: DIVERGING DIAMOND INTERCHANGE (DDI)

ALTERNATIVE 125-E: LOCAL STREET CONNECTIVITY

This improvement would provide an alternate east-west local street connection by extending Hill Avenue east to Mulholland Drive over I-5 (Option 1). Table 15 summarizes the analysis results for Option 1.

FIGURE 14. 125-E: NW HILL AVENUE OVERPASS

TABLE 15. 125-E (OPTION 1) ALTERNATIVE ANALYSIS SUMMARY

FUTURE VOLUMES	Some shift in local traffic volumes from adjacent streets are expected, with about 100-200 PM peak hour trips expected on this local connection.
TRAFFIC OPERATIONS	Changes in local traffic volumes are not expected to be significant enough to impact operations at study intersections along Garden Valley Boulevard.
REMAINING CONCERNS	Improvements would be needed along NW Hill Ave to the north of the Garden Valley Shopping Center and along NW Estelle St from Garden Valley Blvd to NW Hill Ave. The necessary improvements would be continuous sidewalks and bike lanes to complete the multimodal route that the overpass would open up.
MULTIMODAL	This overpass would provide a new low stress connection from the northeast portion of Roseburg to the Garden Valley Shopping Center.
SAFETY	Potential to reduce multimodal conflicts on Garden Valley Boulevard over I-5.
ACCESS SPACING	No change.

Additional considerations: Additional options that may be further reviewed in Tech Memo #8 include: Option 2: One-way Mullholland Dr. from Garden Valley Boulevard to Bethel Avenue; Option 3: Realign Mulholland Drive opposite Highland Street; and Option 4: Realign Highland Street to Fairmount Street.

ALTERNATIVE ML-1: I-5 SOUTHBOUND AUXILIARY LANE

This alternative is a recommendation of the *2019 I-5 Bottleneck Study* and would provide a southbound auxiliary lane between Garden Valley Boulevard eastbound to southbound on-ramp and the Harvard Interchange off-ramp. Table 16 and Table 17 summarize the analysis results.

FIGURE 15. ML-1: I-5 SOUTHBOUND AUXILIARY LANE

TABLE 16. ML-1 ALTERNATIVES ANALYSIS SUMMARY

FUTURE VOLUMES	Minor shift in local traffic volumes (<100 PM peak hour trips) from adjacent streets are expected.
TRAFFIC OPERATIONS	See Table 17. V/C improves south of the merge areas. V/C upstream of the merge areas see a slight increase in v/c due to geometric impacts.
REMAINING CONCERNS	None.
MULTIMODAL	No change.
SAFETY	Potential to reduce conflicts at the merge and diverge segments on I-5, creates new weaving segment.
ACCESS SPACING	No change.

The I-5 southbound operations are expected to change as follows in Table 17.

TABLE 17. I-5 SOUTHBOUND OPERATIONS WITH AND WITHOUT AN AUXILIARY LANE (ML-1)

Direction (Location)	Mile Point		V/C Ratio[1]	
	Begin	End	No Build	Build
Mainline North of Exit 125	126.00	125.36	0.46	0.49
Diverge: Southbound Exit 125 Off-Ramp			0.47	0.49
Mainline South of Exit 125 Off-Ramp (Garden Valley Blvd)	125.36	125.10	0.36	0.38
Merge: Exit 125 Southbound Loop On-Ramp			0.46	0.32
Merge: Exit 125 Southbound On-Ramp			0.63	-
Mainline South of Exit 125 On-Ramp / Weaving	124.87	124.14	0.64	0.47
Diverge: Southbound Exit 124 Loop Off-Ramp			0.65	-
Mainline South of Exit 124 Loop Off-Ramp (W Harvard Ave)	124.14	123.91	0.47	-
Merge: Southbound Exit 124 On-Ramp			0.62	0.49
Mainline South of Exit 124 On-Ramp	123.91	123.50	0.62	0.64

ALTERNATIVE ML-2: NORTHBOUND EXIT 125 TWO-LANE EXIT

This alternative adds a second lane to the entire length of the northbound Exit 125 off-ramp, creating a mainline I-5 lane choice lane. This along with the auxiliary lane diverging creates a two-lane diverge.

FIGURE 16. ML-2: NORTHBOUND EXIT 125 TWO-LANE EXIT

TABLE 18. ML-2 ALTERNATIVES ANALYSIS SUMMARY

FUTURE VOLUMES	No change; future volumes on the northbound Exit 125 off-ramp are projected to be 1,005 during the AM peak hour and 970 during the PM peak hour.
TRAFFIC OPERATIONS	Future 2045 V/C is expected to decrease from 0.73 to 0.55 for the weave segment.
REMAINING CONCERNS	Does not address congestion at the ramp terminal intersection with Garden Valley Boulevard.
MULTIMODAL	No change.
SAFETY	No change.
ACCESS SPACING	No change.

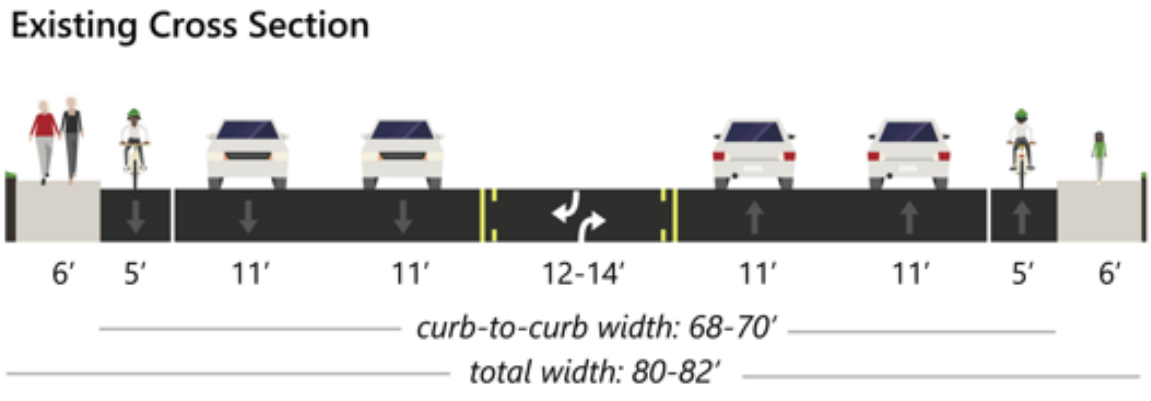
GARDEN VALLEY CORRIDOR – ALTERNATIVES ANALYSIS SUMMARY

This section summarizes the alternatives for the three GVCP segments, as well as other concepts for the corridor as prepared by Parametrix. The project team assessed the alternatives and assigned a score for each of the 14 evaluation criteria, with consideration for the limitations described above. Alternatives with the highest scores for each of the three segments are recommended to advance.

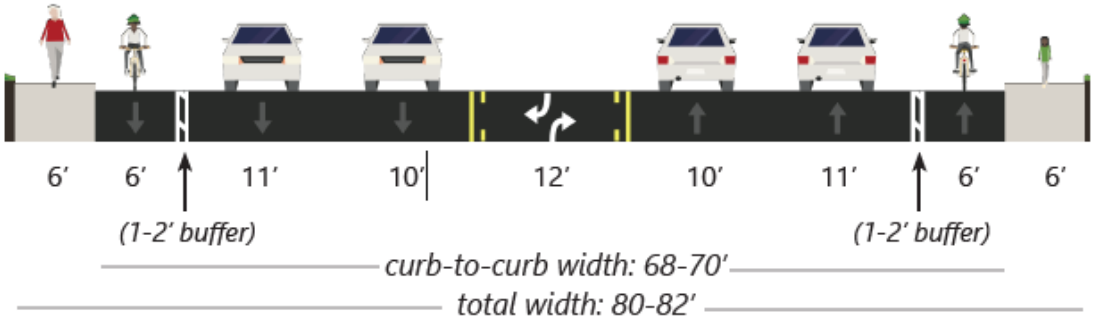
Determining final alternatives for the West and East segments of Garden Valley Boulevard will require coordination with the Garden Valley IAMP and likely depend on the preferred alternatives for the I-5 overpass and interchange and their resulting effects and improvements to the surrounding local street network. The corridor is constrained, especially east of I-5, with limited right-of-way available (as well as multiple access and structures abutting the right-of-way), making it difficult to meet relevant roadway standards. However, if the preferred alternative for the IAMP includes a new I-5 overpass and interchange, there may be also an opportunity to rebuild Garden Valley Boulevard and expand the right-of-way, providing more space and enabling adherence to relevant state and local design standards.

WEST: NW STEWART PARKWAY TO I-5 OVERPASS

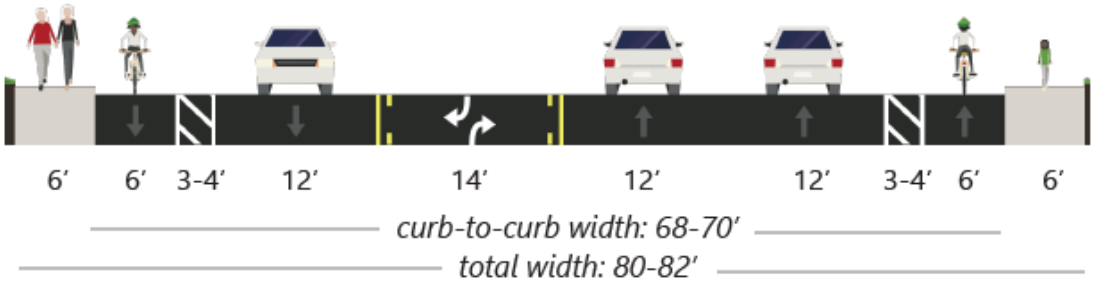
Table 19 summarizes each alternative and its considerations for implementation for the West segment. Cross sections are shown in Figure 17. Alternatives West-1, West-2, West-4, and West-5 are intended to work within the existing curb-to-curb and total right-of-way width or require a small expansion. Alternatives West-3a and West-3b would require a significant expansion of the total right-of-way. The preferred alternative for this segment will depend on the preferred alternative for the Garden Valley Boulevard IAMP. If a new I-5 overpass and interchange is recommended, the project team recommends moving forward with West-3a and West-3b for further analysis. Both 3a and 3b include full corridor redevelopments, with 3a specifying a buffered shared-use path, and 3b specifying on-street bike lanes with a buffered sidewalk. In the absence of a new I-5 overpass, the project team recommends moving forward with West-1 and West-3.



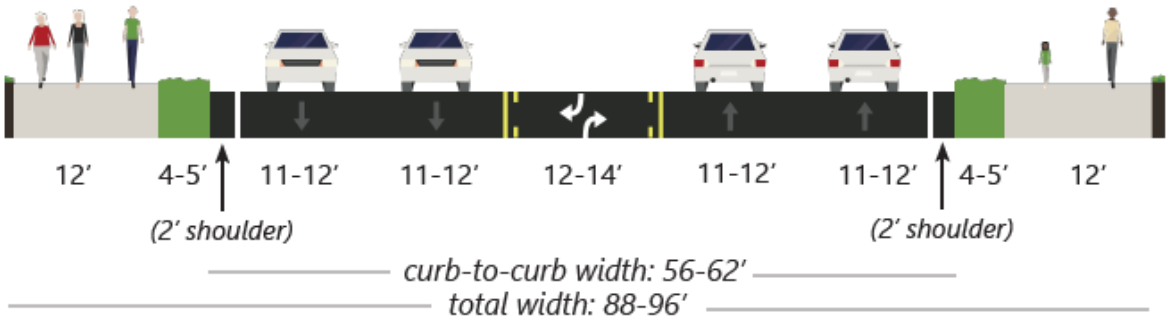
West-1: Protected Bike Lanes



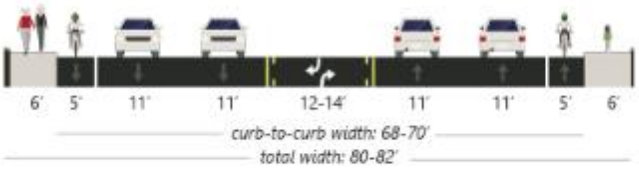
West-2: Lane Reconfiguration - Remove one lane in one direction (EB or WB)



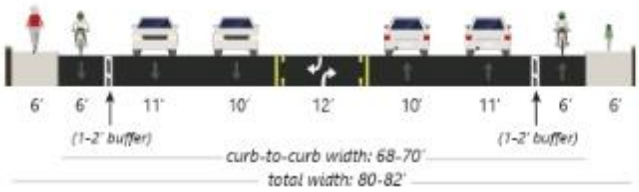
West-3a: Full Corridor Reconstruction - Separated SUPs



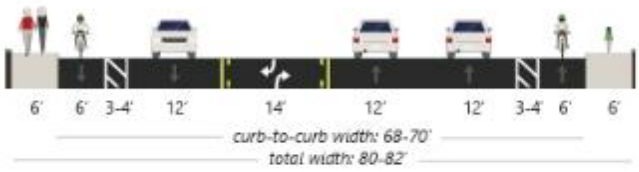
Existing



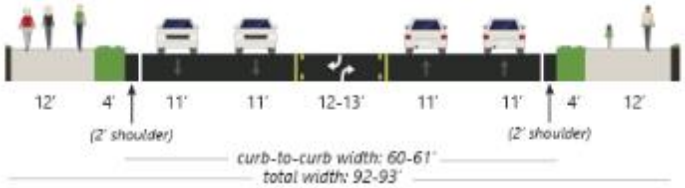
West-1: Protected Bike Lanes



West-2: Lane Reconfiguration - Remove one lane in one direction (EB or WB)



West-3: Full Corridor Reconstruction - Separated SUPs



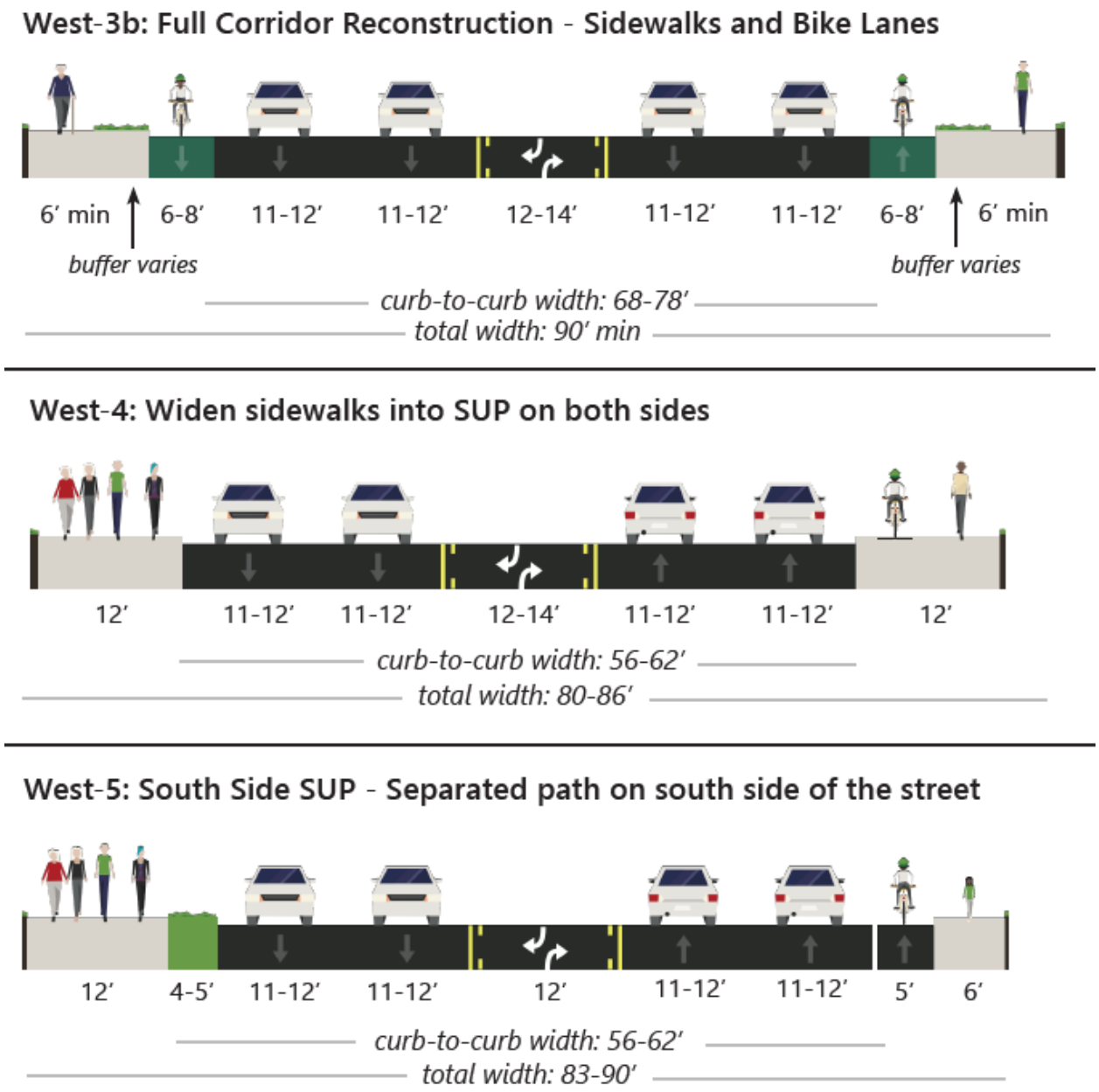


FIGURE 17. ALTERNATIVE CROSS SECTIONS – WEST: NW STEWART PARKWAY TO I-5 OVERPASS

All dimensions are approximate.

TABLE 19. GARDEN VALLEY CORRIDOR PLAN ALTERNATIVES ANALYSIS SUMMARY – WEST: NW STEWART PARKWAY TO I-5 OVERPASS

Evaluation Criterion	**West-1: Buffered Bike Lanes:** Narrow vehicular travel lane widths west of I-5 (within IAMP influence area) to increase the width of bicycle lanes on Garden Valley Blvd. ▪ 6-ft bike lanes with 1–2-ft buffer ▪ 11-ft outer travel lanes ▪ 10-ft inner travel lanes ▪ 12-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**West-2: Lane Reconfiguration:** Remove one travel lane in one direction (EB or WB), add wider bike lanes with buffer. ▪ 6-ft bike lanes with 3–4-ft buffer ▪ 12-ft travel lanes ▪ 14-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**West-3: Full Corridor Reconstruction:** 3a: Separated SUP. Off-street path on both sides of the roadway. 3b: Sidewalks and Bike Lanes on both sides of the roadway ▪ 12-ft SUP with 4-ft buffer OR 6-ft bike lanes and 6-ft sidewalk with buffer ▪ 2-ft shoulder ▪ 11-12-ft travel lanes ▪ 12–14-ft TWLTL ▪ **Significant right-of-way expansion**	**West-4: SUP on Both Sides:** Widen sidewalks out into existing roadway or adjacent properties, creating SUPs on both sides of Garden Valley Blvd. ▪ 12-ft SUP on both sides ▪ 11-ft travel lanes ▪ 12–13-ft TWLTL ▪ **May maintain current right-of-way width**	**West-5: South-Side SUP:** SUP on south side of Garden Valley Blvd. ▪ 12-ft SUP on south side with 4-ft buffer ▪ 5-ft bike lane remains on north side ▪ 11-ft outer travel lanes ▪ 10.5-ft inner travel lanes ▪ 12-ft TWLTL ▪ **May maintain current right-of-way width or require small expansion**
1.1. Does the concept comply with the roadway functional classification?	◎ ▪ Reduced inside travel lanes may not be feasible with a requirement for 11-ft minimum travel lanes. Travel lanes may need to be retained as they are, which would provide minimal additional buffer for bike lanes.	◎ ▪ Removal of a vehicle travel lane would need to be assessed for compatibility with the functional classification standard for arterials.	● ▪ Complies with design standards for the roadway functional classification.	○ ▪ Lack of buffer for SUP and reduced TWLTL width may require a design exception. An 11-ft lane next to a curb with no buffer may not be acceptable.	● ▪ Reduced inside travel lanes may not be feasible with requirement for 11-ft minimum travel lanes. ▪ Potential to reduce TWLTL to 12 ft to accommodate retaining 11-ft travel lanes. ▪ Potential to acquire additional ROW to accommodate retaining 11-ft travel lanes.
1.2. Does the concept meet operational performance measures?	◎ ▪ Operational performance would function the same as today and therefore would not impact traffic mobility relative to standards.	○ ▪ Would substantially impact operational performance. V/C > 1.0. ▪ Would require intersection and signal modifications.	◎ ▪ Operational performance would function the same as today and therefore would not impact traffic mobility relative to standards. ▪ Maintaining acceptable cross- and running-slopes for ADA may be difficult due to the number of driveways	○ ▪ Operational performance may impact traffic mobility relative to standards due to narrowing of the median.	◎ ▪ Operational performance would function the same as today and therefore would not impact traffic mobility relative to standards.
1.3. Does the concept move in the direction of meeting access spacing standards?	◎ ▪ Maintains access as is in the corridor; does not align with access spacing standards.	◎ ▪ Maintains access as is in the corridor; does not align with access spacing standards.	◎ ▪ Access management impacts are undetermined for this concept. A full corridor reconstruction would require a comprehensive assessment of access management impacts.	◎ ▪ Access management impacts are undetermined for this concept.	◎ ▪ Access management impacts are undetermined for this concept. Adding SUPs would require a comprehensive assessment of access management impacts.
1.4. Does the concept address a documented safety concern?	◎ ▪ Buffer may enhance bicycle safety.	● ▪ Wider buffer may enhance bicycle safety. ▪ Potentially enhances vehicle safety.	● ▪ Separated facility may enhance bicycle and pedestrian safety	◎ ▪ Moderately improves safety but includes no buffer for SUP.	● ▪ Separated facility may enhance bicycle and pedestrian safety.
2.1. Does the concept provide or improve multimodal connections?	● ▪ Provides buffered bicycle lanes in both directions.	● ▪ Provides buffered bicycle lanes in both directions.	● ▪ Provides buffered SUPs in both directions.	● ▪ Provides SUPs in both directions.	● ▪ Provides SUP on south side and maintains north side bike lane.

TABLE 19. GARDEN VALLEY CORRIDOR PLAN ALTERNATIVES ANALYSIS SUMMARY – WEST: NW STEWART PARKWAY TO I-5 OVERPASS

Evaluation Criterion	**West-1: Buffered Bike Lanes:** Narrow vehicular travel lane widths west of I-5 (within IAMP influence area) to increase the width of bicycle lanes on Garden Valley Blvd. ▪ 6-ft bike lanes with 1–2-ft buffer ▪ 11-ft outer travel lanes ▪ 10-ft inner travel lanes ▪ 12-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**West-2: Lane Reconfiguration:** Remove one travel lane in one direction (EB or WB), add wider bike lanes with buffer. ▪ 6-ft bike lanes with 3–4-ft buffer ▪ 12-ft travel lanes ▪ 14-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**West-3: Full Corridor Reconstruction:** 3a: Separated SUP. Off-street path on both sides of the roadway. 3b: Sidewalks and Bike Lanes on both sides of the roadway ▪ 12-ft SUP with 4-ft buffer OR 6-ft bike lanes and 6-ft sidewalk with buffer ▪ 2-ft shoulder ▪ 11-12-ft travel lanes ▪ 12–14-ft TWLTL ▪ **Significant right-of-way expansion**	**West-4: SUP on Both Sides:** Widen sidewalks out into existing roadway or adjacent properties, creating SUPs on both sides of Garden Valley Blvd. ▪ 12-ft SUP on both sides ▪ 11-ft travel lanes ▪ 12–13-ft TWLTL ▪ **May maintain current right-of-way width**	**West-5: South-Side SUP:** SUP on south side of Garden Valley Blvd. ▪ 12-ft SUP on south side with 4-ft buffer ▪ 5-ft bike lane remains on north side ▪ 11-ft outer travel lanes ▪ 10.5-ft inner travel lanes ▪ 12-ft TWLTL ▪ **May maintain current right-of-way width or require small expansion**
2.2. Does the concept reduce the level of stress experienced by vulnerable road users and/or provide them with safer, convenient, and direct routes?	◎ ▪ Provides buffered bicycle lanes, though buffers are narrow and lack vertical delineation.	● ▪ Provides buffered bicycle lanes in both directions.	● ▪ Provides buffered SUPs in both directions.	◎ ▪ Provides SUPs in both directions, but with no buffer.	● ▪ Provides buffered SUP on south side, but north side bike lane is narrow and unprotected. Less-confident cyclists are expected to use SUP.
▪ **2.3. Does the concept address a crash history of fatal/serious-injuries or with vulnerable users?**	◎ ▪ No specific vehicle safety concerns addressed. Generally enhances bike/ped safety, though less so than protected/buffered alternatives.	◎ ▪ No specific vehicle safety concerns addressed, generally enhances bike/ped safety.	● ▪ No specific vehicle safety concerns addressed, significantly enhances bike/ped safety.	◎ ▪ No specific vehicle safety concerns addressed, generally enhances bike/ped safety.	● ▪ No specific vehicle safety concerns addressed, significantly enhances bike/ped safety by providing a buffered path.
3.1. Does the concept provide "active" modal options and reduce reliance on single-occupancy vehicle trips?	● ▪ Provides bicycle lanes in both directions.	● ▪ Provides bicycle lanes in both directions.	● ▪ Provides SUPs in both directions.	● ▪ Provides SUPs in both directions.	● ▪ Provides SUP in one direction and bicycle lane in another.
3.2. Does the concept increase alternatives to traveling along Garden Valley Boulevard by vehicle?	● ▪ Provides bicycle lanes in both directions.	● ▪ Provides bicycle lanes in both directions.	● ▪ Provides SUPs in both directions.	● ▪ Provides SUPs in both directions.	● ▪ Provides SUP in one direction and bicycle lane in another.
4.1. Does the concept promote the movement of freight?	○ ▪ Reducing travel lane width requires further analysis to understand impacts to freight.	○ ▪ Significantly impacts freight movement with lane reduction.	◎ ▪ No specific improvements to freight movement.	○ ▪ Reducing travel lane width requires further analysis to understand impacts to freight.	○ ▪ Reducing travel lane width requires further analysis to understand impacts to freight.
4.2. Are there right-of-way impacts by the concept that reduce the economic vitality of the area?	● ▪ No ROW impacts expected.	● ▪ No ROW impacts expected	○ ▪ Likely not feasible due to limited ROW on the north side and based on building frontages that would require assessment of available ROW.	◎ ▪ May require acquisition of additional ROW.	○ ▪ Will likely require acquisition of additional ROW on the south side. ▪ Will require ROW assessment to confirm.
4.3. Does the concept encourage tourism and/or development of desired land uses and activities?	◎ ▪ Bike/ped improvements would support/encourage mixed use development.	◎ ▪ Bike/ped improvements would support/encourage mixed use development.	◎ ▪ Bike/ped improvements would support/encourage mixed use development.	◎ ▪ Bike/ped improvements would support/encourage mixed use development.	◎ ▪ Bike/ped improvements would support/encourage mixed use development.

TABLE 19. GARDEN VALLEY CORRIDOR PLAN ALTERNATIVES ANALYSIS SUMMARY – WEST: NW STEWART PARKWAY TO I-5 OVERPASS

Evaluation Criterion	**West-1: Buffered Bike Lanes:** Narrow vehicular travel lane widths west of I-5 (within IAMP influence area) to increase the width of bicycle lanes on Garden Valley Blvd. ▪ 6-ft bike lanes with 1–2-ft buffer ▪ 11-ft outer travel lanes ▪ 10-ft inner travel lanes ▪ 12-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**West-2: Lane Reconfiguration:** Remove one travel lane in one direction (EB or WB), add wider bike lanes with buffer. ▪ 6-ft bike lanes with 3–4-ft buffer ▪ 12-ft travel lanes ▪ 14-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**West-3: Full Corridor Reconstruction:** 3a: Separated SUP. Off-street path on both sides of the roadway. 3b: Sidewalks and Bike Lanes on both sides of the roadway ▪ 12-ft SUP with 4-ft buffer OR 6-ft bike lanes and 6-ft sidewalk with buffer ▪ 2-ft shoulder ▪ 11-12-ft travel lanes ▪ 12–14-ft TWLTL ▪ **Significant right-of-way expansion**	**West-4: SUP on Both Sides:** Widen sidewalks out into existing roadway or adjacent properties, creating SUPs on both sides of Garden Valley Blvd. ▪ 12-ft SUP on both sides ▪ 11-ft travel lanes ▪ 12–13-ft TWLTL ▪ **May maintain current right-of-way width**	**West-5: South-Side SUP:** SUP on south side of Garden Valley Blvd. ▪ 12-ft SUP on south side with 4-ft buffer ▪ 5-ft bike lane remains on north side ▪ 11-ft outer travel lanes ▪ 10.5-ft inner travel lanes ▪ 12-ft TWLTL ▪ **May maintain current right-of-way width or require small expansion**
5.1. Does the concept element have the ability to be implemented over time?	● ▪ Does not require significant capital construction.	○ ▪ Shifting the centerline may require additional pavement work or reconstruction to accommodate drainage. The existing crown of the roadway would not be at the centerline with this alternative. ▪ Would need to confirm that restriping on existing pavement is possible.	◯ ▪ Requires significant capital construction, but may be carried out in conjunction with a new I-5 overpass.	◯ ▪ Requires significant capital construction to increase curb height and build new stormwater and drainage facilities.	○ ▪ Requires significant capital construction. ▪ Concept adopted as part of Roseburg TSP and Bike Routes Plan
5.2. To what degree does the concept leverage a positive return on investment?	● ▪ Cost-effective concept.	○ ▪ Cost-effective concept, though there may be moderate or little return on investment, considering impacts to traffic.	◯ ▪ Most costly alternative.	○ ▪ Not a cost-effective concept.	● ▪ Cost-effective concept considering benefits to people walking and cycling and minimal impacts on traffic.
Score	**5**	**4**	**4**	**-1**	**6**
Recommendation	**Recommended for further analysis in the scenario of no new I-5 overpass. Will require further assessment of existing travel lane widths to confirm if there is potential to increase bike lane widths and add bike lane buffers.**	Not recommended due to traffic and operational impacts directly adjacent to interchange area.	**Recommended for further analysis in the scenario of a new I-5 overpass.**	Not recommended due to high cost and infeasibility of expanding ROW.	**Recommended for further analysis in the scenario of no new I-5 overpass. Further analysis of available ROW on the south side will be required.**

Blvd. = boulevard; EB = eastbound; ft = feet; IAMP = interchange area management plan; SUP = shared-use path; TWLTL = two-way left-turn lane; WB = westbound

● Most Desirable (+1); ○ No Effect (0); ◯ Least Desirable (-1):

I-5 OVERPASS

Table 20 summarizes each alternative and its implementation considerations for improving bicycle and pedestrian facilities on the Garden Valley Boulevard I-5 overpass. All proposed alternatives consider both pedestrian and bicycle facilities. The project team used an abbreviated, higher-level analysis, as these alternatives will largely depend on the selected alternative in the IAMP. If the IAMP selects an alternative that maintains the existing interchange, alternatives OP-1 and OP-2 are intended to be compatible. OP-3 is intended to be compatible with a new interchange. OP-4 and OP-5 propose a new, separated parallel bicycle and pedestrian crossing of I-5 in proximity to Garden Valley Boulevard that may be feasible for any alternative proposed in the IAMP.

TABLE 20. GARDEN VALLEY CORRIDOR PLAN BICYCLE AND PEDESTRIAN ALTERNATIVES ANALYSIS SUMMARY: I-5 OVERPASS

Alternative	Considerations	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Score	Preliminary Technical Recommendation
OP-1: Existing Interchange: Widen sidewalk.	▪ Maintains existing interchange and ROW. ▪ Requires rebuilding sidewalks.	○	○	○	○	○	0	**Recommended for further analysis.**
OP-2: Existing Interchange: Add sharrows.	▪ Minimal or nonexistent bike/ped safety improvements. ▪ Cost-effective, no major infrastructure work required.	○	○	○	○	●	-2	Not recommended for further analysis.
OP-3: Rebuild Interchange: Buffered bike lanes or SUP on the I-5 overpass in the event that the overpass is reconstructed.	▪ Costly – requires rebuilding interchange.	●	●	●	●	○	4	**Recommended for further analysis.**
OP-4: New bike/ped I-5 crossing North: North side alternative to GVB along NW Hill St from Stewart Pkwy to Mulholland Dr. More direct bypass to using Stewart Pkwy. Requires crossing of I-5 (bridge/tunnel).	▪ Costly – requires new I-5 crossing.	●	●	●	●	○	3	**Recommended for further analysis.**
OP-5: New bike/ped I-5 crossing South: South side alternative to GVB between path on west side of I-5 and Munson Ct. Requires crossing of I-5 (bridge/tunnel).	▪ Costly – requires new I-5 crossing.	●	●	●	●	○	3	**Recommended for further analysis.**

Goal 1: Safety, Mobility and Accessibility
Goal 2: Vibrant Community
Goal 3: Transportation Options
Goal 4: Economic Vitality
Goal 5: Implementation
Ct = court; Dr = drive; ft = feet; GVB = Garden Valley Boulevard; Pkwy = parkway; ROW = right-of-way; St = street; SUP = shared-use path

EAST: I-5 OVERPASS TO NE STEPHENS STREET

Table 21 summarizes each alternative and its considerations for implementation for Garden Valley Boulevard from the I-5 overpass to Stephens Street. Cross Sections are shown in Figure 18. Alternatives East-1 and East-2 are intended to work within the existing total right-of-way width, while East-3, East-4, and East-5 would require a small expansion. East-6 would require a significant expansion. The preferred alternative for this segment will depend on the preferred alternative for the Garden Valley Boulevard IAMP. If a new I-5 overpass and interchange is recommended, the project team recommends moving forward with East-6. In the absence of a new I-5 overpass, the project team recommends moving forward with East-3 and East-5.

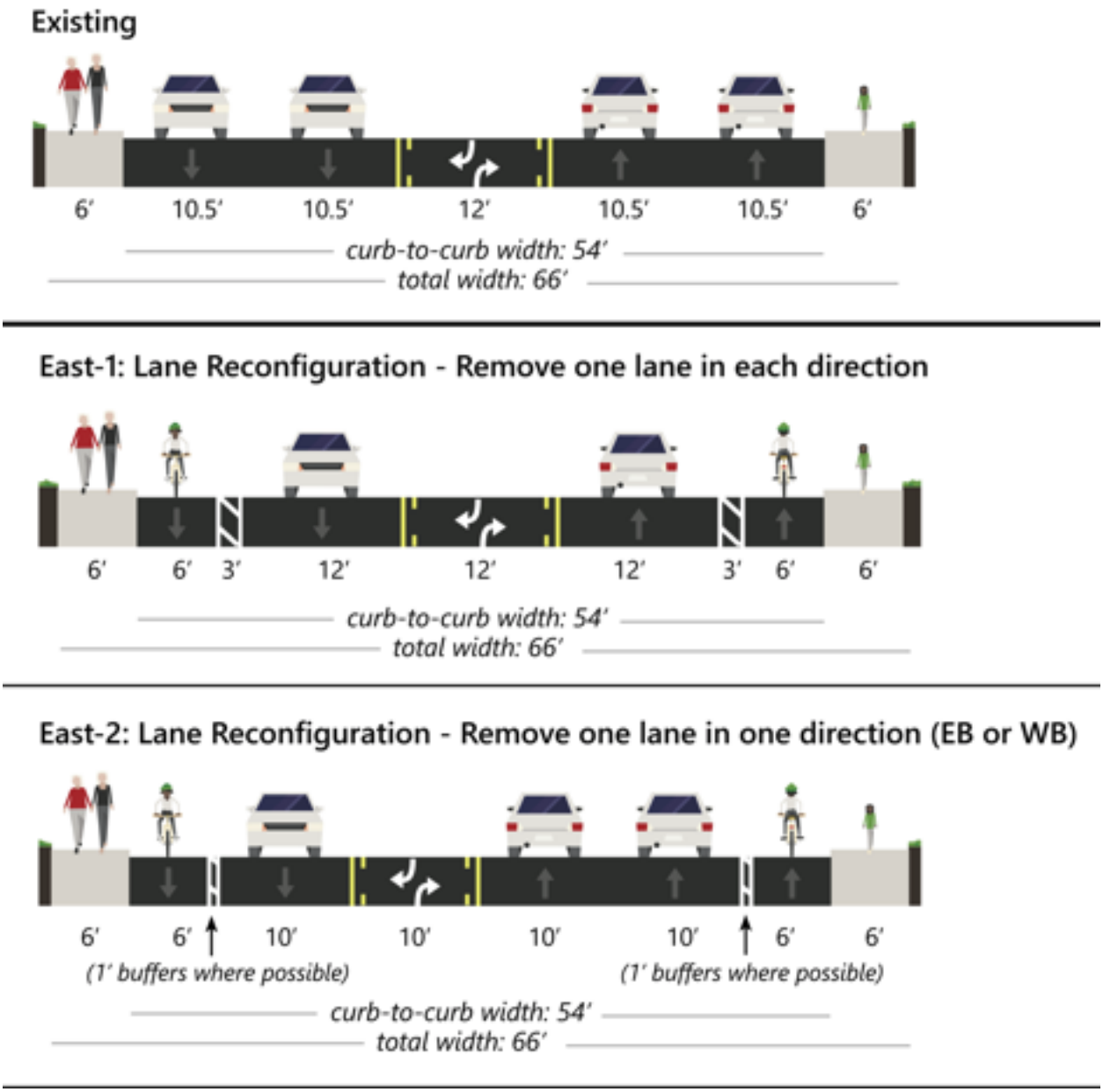


FIGURE 18. ALTERNATIVE CROSS SECTIONS – EAST: I-5 OVERPASS TO STEPHENS STREET

All dimensions are approximate.

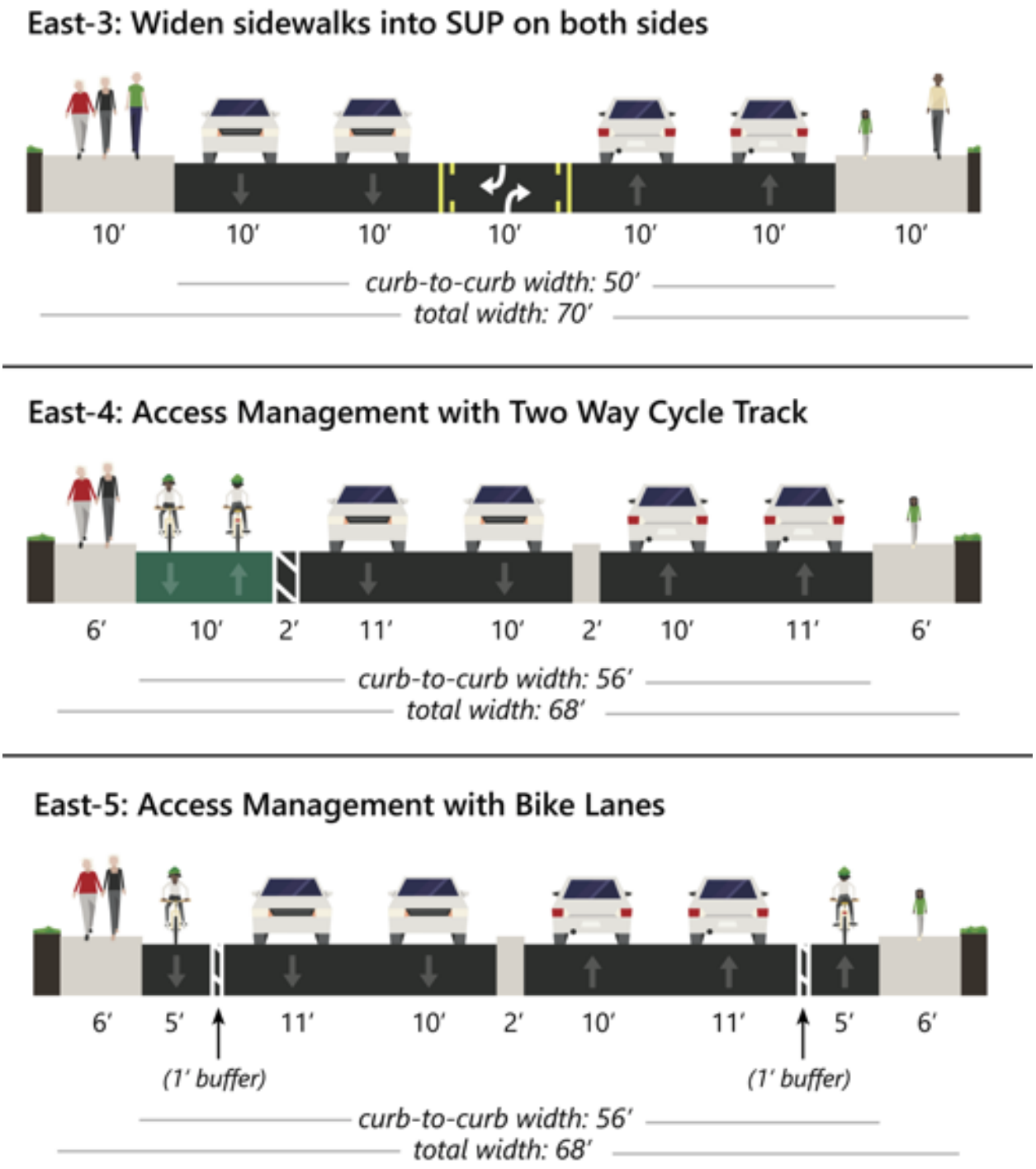


FIGURE 18. ALTERNATIVE CROSS SECTIONS – EAST: I-5 OVERPASS TO STEPHENS STREET

All dimensions are approximate.

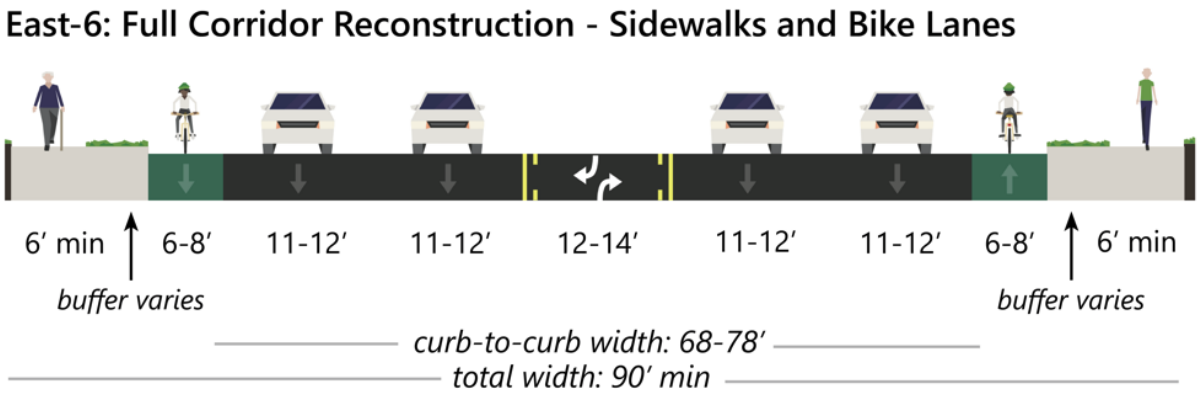


FIGURE 18. ALTERNATIVE CROSS SECTIONS – EAST: I-5 OVERPASS TO STEPHENS STREET

All dimensions are approximate.

TABLE 21. GARDEN VALLEY CORRIDOR PLAN ALTERNATIVES ANALYSIS SUMMARY – EAST: I-5 OVERPASS TO STEPHENS STREET

Evaluation Criterion	**East-1: Lane Reconfiguration:** Remove one travel lane in each direction, add buffered bike lanes. ▪ 6-ft bike lanes with 3-ft buffer ▪ 12-ft travel lanes ▪ 12-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**East-2: Lane Reconfiguration:** Remove one travel lane in one direction (EB or WB based on AADT), add bike lanes ▪ 6-ft bike lanes with 0–1-ft buffer ▪ 10-ft travel lanes ▪ 10-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**East-3: Widen sidewalk into SUP on Both Sides:** Widen sidewalks into 10-ft SUP on both sides of the street. ▪ 10-ft SUP ▪ 10-ft travel lanes ▪ 10-ft TWLTL ▪ **Small expansion of right-of-way width**	**East-4: Two-Way Cycle Track with Median Barrier:** Remove TWLTL, add median barrier, add two-way cycle track. ▪ 10-ft cycle track with 2-ft buffer ▪ 10-ft travel lanes ▪ No TWLTL ▪ Median barrier throughout entire corridor ▪ Retain 6-ft sidewalks ▪ **Small expansion of right-of-way width**	**East-5: Buffered Bike Lanes with Median Barrier:** Remove TWLTL, add median barrier, add bike lanes. ▪ 5-ft bike lanes with 1-ft buffer ▪ 10-ft travel lanes ▪ No TWLTL ▪ Median barrier throughout entire corridor ▪ Retain 6-ft sidewalks ▪ **Small expansion of right-of-way width**	**East-6: Full Corridor Reconstruction:** Sidewalks and Bike Lanes on both sides of the roadway ▪ 6-8-ft bike lanes ▪ 6-ft minimum sidewalk with variable buffer ▪ 11-12-ft travel lanes ▪ 12–14-ft TWLTL ▪ **Significant right-of-way expansion**
1.1. Does the concept comply with the roadway functional classification?	○ ▪ Requires removal of a vehicle travel lane in each direction.	○ ▪ Requires removal of a vehicle travel lane. ▪ 10-ft lanes may not meet design standards. However, existing lanes do not currently meet standards.	○ ▪ The Roseburg TSP calls for 12' lanes as preferred on freight routes, while allowing 11' to accommodate multi-modal facilities. The 10-ft lanes may not meet design standards as a result. ▪ This segment is on the NHS system, which calls for a minimum lane width of 11'.	○ ▪ 10-ft lanes without a shoulder/shy distance between a curb may not meet design standards. However, existing lanes do not currently meet standards. ▪ Requires removal of turning lane.	◎ ▪ Reduced inside travel lanes may not be feasible with requirement for 11-ft minimum travel lanes. However, existing lanes do not currently meet standards. ▪ Travel lanes may need to be retained as is, which would likely require acquisition of additional ROW.	● Complies with design standards for the roadway functional classification.
1.2. Does the concept meet operational performance measures?	○ ▪ Substantially impacts operational performance.	○ ▪ Substantially impacts operational performance.	◎ ▪ Reduced lane widths would have minor operational impacts.	○ ▪ Median barrier would require significant access changes that may impact operational performance.	○ ▪ Median barrier would require significant access changes that may impact operational performance.	◎ Operational performance would function the same as today and therefore would not impact traffic mobility relative to standards.
1.3. Does the concept move in the direction of meeting access spacing standards?	◎ ▪ Maintains access as-is in the corridor; does not align with access spacing standards.	◎ ▪ Maintains access as is in the corridor; does not align with access spacing standards.	◎ ▪ Maintains access as is in the corridor; does not align with access spacing standards.	● ▪ Replacing the two-way center turn lane with a median barrier could reduce access management conflicts in the corridor. ▪ Further review would be required to assess whether this concept would meet access spacing standards.	● ▪ Replacing the two-way center turn lane with a median barrier could reduce access management conflicts in the corridor. ▪ Further review will be required to assess whether this concept would meet access spacing standards.	◎ Maintains access as is in the corridor; does not align with access spacing standards.
1.4. Does the concept address a documented safety concern?	● ▪ Improves bicycle safety with dedicated buffered bike lanes.	○ ▪ Narrow and vertically constrained travel lanes may push vehicles into the bike lane. Speeds would likely need to be reduced.	● ▪ Likely to significantly improve bicycle and pedestrian safety with SUPs and provides space for bicycle users.	◎ ▪ Separated dedicated facility for bikes, though access changes and cycle track could introduce new conflicts between modes.	○ ▪ Narrow and vertically constrained travel lanes may push vehicles into the bike lane. Speeds would likely need to be reduced.	◎ Moderately improves safety but includes no buffer for bike lanes.
▪ 2.1. Does the concept provide or improve multimodal connections?	● ▪ Provides buffered bicycle lanes in both directions.	◎ ▪ Provides bicycle lanes in both directions but are high stress with minimal buffer.	● ▪ Provides protected bicycle facilities in each direction, shared with pedestrians and provides space for bicycle users.	◎ ▪ Provides cycle track in both directions. ▪ Cycle track would require crossings at either end of corridor to reconnect with bike lanes.	● ▪ Provides buffered bicycle lanes in both directions.	● Provides bike lanes in both directions.

TABLE 21. GARDEN VALLEY CORRIDOR PLAN ALTERNATIVES ANALYSIS SUMMARY – EAST: I-5 OVERPASS TO STEPHENS STREET

Evaluation Criterion	**East-1: Lane Reconfiguration:** Remove one travel lane in each direction, add buffered bike lanes. ▪ 6-ft bike lanes with 3-ft buffer ▪ 12-ft travel lanes ▪ 12-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**East-2: Lane Reconfiguration:** Remove one travel lane in one direction (EB or WB based on AADT), add bike lanes ▪ 6-ft bike lanes with 0–1-ft buffer ▪ 10-ft travel lanes ▪ 10-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**East-3: Widen sidewalk into SUP on Both Sides:** Widen sidewalks into 10-ft SUP on both sides of the street. ▪ 10-ft SUP ▪ 10-ft travel lanes ▪ 10-ft TWLTL ▪ **Small expansion of right-of-way width**	**East-4: Two-Way Cycle Track with Median Barrier:** Remove TWLTL, add median barrier, add two-way cycle track. ▪ 10-ft cycle track with 2-ft buffer ▪ 10-ft travel lanes ▪ No TWLTL ▪ Median barrier throughout entire corridor ▪ Retain 6-ft sidewalks ▪ **Small expansion of right-of-way width**	**East-5: Buffered Bike Lanes with Median Barrier:** Remove TWLTL, add median barrier, add bike lanes. ▪ 5-ft bike lanes with 1-ft buffer ▪ 10-ft travel lanes ▪ No TWLTL ▪ Median barrier throughout entire corridor ▪ Retain 6-ft sidewalks ▪ **Small expansion of right-of-way width**	**East-6: Full Corridor Reconstruction:** Sidewalks and Bike Lanes on both sides of the roadway ▪ 6-8-ft bike lanes ▪ 6-ft minimum sidewalk with variable buffer ▪ 11-12-ft travel lanes ▪ 12–14-ft TWLTL ▪ **Significant right-of-way expansion**
▪ **2.2. Does the concept reduce the level of stress experienced by vulnerable road users and/or provide them with safer, convenient, and direct routes?**	● ▪ Provides buffered bicycle lanes in both directions.	◐ ▪ Provides bicycle lanes in both directions where none currently exist but are high stress with minimal buffer.	● ▪ Provides protected bicycle facilities in each direction, though there would be no buffer from traffic and bikes would need to share space with pedestrians.	● ▪ Provides dedicated biking facilities and additional separation between pedestrians and traffic on the south side.	◐ ▪ Provides buffered bicycle lanes in both directions but bike lanes would be narrow and adjacent to narrow and vertically constrained travel lanes.	◐ Moderately improves safety but includes no buffer for bike lanes.
▪ **2.3. Does the concept address a crash history of fatal/serious-injuries or with vulnerable users?**	◐ ▪ No specific vehicle safety concerns addressed, generally enhances bike/ped safety.	◐ ▪ No specific vehicle safety concerns addressed, generally enhances bike/ped safety.	◐ ▪ No specific vehicle safety concerns addressed, generally enhances bike/ped safety.	○ ▪ Access management changes could reduce crash rates. ▪ Few (if any) examples of on-road cycle tracks in Roseburg; novel treatment can present risks for unfamiliar users and drivers.	◐ ▪ Access management changes could reduce crash rates. ▪ Narrow and vertically constrained travel lanes may push vehicles into the bike lane. ▪	◐ Moderately improves safety but includes no buffer for bike lanes.
▪ **3.1. Does the concept provide "active" modal options and reduce reliance on single-occupancy vehicle trips?**	● ▪ Provides bicycle lanes in both directions.	● ▪ Provides bicycle lanes in both directions.	◐ ▪ Provides shared-use path in both directions. ▪ Mixed impacts for bike/ped users - reduced lane widths may result in vehicles traveling closer to the curb and reducing bike/ped user comfort.	● ▪ Provides cycle track in both directions.	● ▪ Provides bicycle lanes in both directions.	● Provides bike lanes in both directions.
▪ **3.2. Does the concept increase alternatives to traveling along Garden Valley Boulevard by vehicle?**	● ▪ Provides bicycle lanes in both directions.	● ▪ Provides bicycle lanes in both directions.	◐ ▪ Provides shared-use path in both directions. ▪ Mixed impacts for bike/ped users - reduced lane widths may result in vehicles traveling closer to the curb and reducing bike/ped user comfort.	● ▪ Provides cycle track in both directions.	● ▪ Provides bicycle lanes in both directions.	● Provides bike lanes in both directions.
▪ **4.1. Does the concept promote the movement of freight?**	○ ▪ Significantly impacts freight movement with lane reductions.	○ ▪ Significantly impacts freight movement with lane reduction.	○ ▪ Reduced lane widths do not meet the TSP guidance on lane width for freight routes.	◐ ▪ Access management changes would impact freight movement.	◐ ▪ Access management changes would impact freight movement.	◐ No specific improvements to freight movement.

TABLE 21. GARDEN VALLEY CORRIDOR PLAN ALTERNATIVES ANALYSIS SUMMARY – EAST: I-5 OVERPASS TO STEPHENS STREET

Evaluation Criterion	**East-1: Lane Reconfiguration:** Remove one travel lane in each direction, add buffered bike lanes. ▪ 6-ft bike lanes with 3-ft buffer ▪ 12-ft travel lanes ▪ 12-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**East-2: Lane Reconfiguration:** Remove one travel lane in one direction (EB or WB based on AADT), add bike lanes ▪ 6-ft bike lanes with 0–1-ft buffer ▪ 10-ft travel lanes ▪ 10-ft TWLTL ▪ Retain 6-ft sidewalks ▪ **Maintains current right-of-way width**	**East-3: Widen sidewalk into SUP on Both Sides:** Widen sidewalks into 10-ft SUP on both sides of the street. ▪ 10-ft SUP ▪ 10-ft travel lanes ▪ 10-ft TWLTL ▪ **Small expansion of right-of-way width**	**East-4: Two-Way Cycle Track with Median Barrier:** Remove TWLTL, add median barrier, add two-way cycle track. ▪ 10-ft cycle track with 2-ft buffer ▪ 10-ft travel lanes ▪ No TWLTL ▪ Median barrier throughout entire corridor ▪ Retain 6-ft sidewalks ▪ **Small expansion of right-of-way width**	**East-5: Buffered Bike Lanes with Median Barrier:** Remove TWLTL, add median barrier, add bike lanes. ▪ 5-ft bike lanes with 1-ft buffer ▪ 10-ft travel lanes ▪ No TWLTL ▪ Median barrier throughout entire corridor ▪ Retain 6-ft sidewalks ▪ **Small expansion of right-of-way width**	**East-6: Full Corridor Reconstruction:** Sidewalks and Bike Lanes on both sides of the roadway ▪ 6-8-ft bike lanes ▪ 6-ft minimum sidewalk with variable buffer ▪ 11-12-ft travel lanes ▪ 12–14-ft TWLTL ▪ **Significant right-of-way expansion**
▪ **4.2. Are there right-of-way impacts by the concept that reduce the economic vitality of the area?**	● ▪ No ROW impacts expected.	● ▪ No ROW impacts expected.	○ ▪ Would require ROW and narrowing travel lanes to accommodate.	◎ ▪ Alternative is 2’ wider than existing ROW. Minor impacts expected.	◎ ▪ Alternative is 2’ wider than existing ROW. Minor impacts expected.	○ Likely not feasible due to severe right-of-way impacts from to expanded curb-to-curb and total width.
▪ **4.3. Does the concept encourage tourism and/or development of desired land uses and activities?**	○ ▪ Traffic impacts from lane reduction may discourage investment.	◎ ▪ No specific improvements to encourage tourism or land use.	◎ ▪ No specific improvements to encourage tourism or land use.	◎ ▪ No specific improvements to encourage tourism or land use.	◎ ▪ No specific improvements to encourage tourism or land use.	◎ Bike/ped improvements would support/encourage mixed use development.
▪ **5.1. Does the concept element have the ability to be implemented over time?**	◎ ▪ Low-cost alternative that could be implemented in a single phase ▪ Would need to confirm that restriping on existing pavement is possible.	◎ ▪ Shifting the centerline may require additional pavement work or reconstruction to accommodate drainage. The existing crown of the roadway would not be at the centerline with this alternative. ▪ Would require removing medians. Medians appear to be surface mounted, could be removed easily without impact.	● ▪ Concept has prior support, adopted as part of Roseburg TSP and Bike Routes Plan. ▪ Concept could be implemented without removing existing turn lanes or medians. ▪ Concept could be phased over time. ▪	◎ ▪ Would require removal of existing median islands, may be challenging to implement in phases. ▪ Medians appear to be surface mounted, could be removed easily without impact. ▪	◎ ▪ Would require removal of existing median islands, may be challenging to implement in phases. ▪ Medians appear to be surface mounted, could be removed easily without impact.	○ Likely not feasible due to severe right-of-way impacts from to expanded curb-to-curb and total width.
▪ **5.2. To what degree does the concept leverage a positive return on investment?**	○ ▪ Cost-effective concept, though return on investment may be low due to traffic impacts.	◎ ▪ Cost-effective concept, though return on investment may be low due to traffic impacts.	◎ ▪ Proximity of structures to existing back-of-walk means that this alternative is assumed to build into the existing curb-to-curb roadway and would require additional ROW, resulting in substantial costs. ▪ Mixed impacts for bike/ped users - reduced lane widths may result in vehicles traveling closer to the curb and reducing bike/ped user comfort.	◎ ▪ Moderate cost to develop this concept.	● ▪ Cost-effective concept.	○ ▪ Likely not feasible due to severe right-of-way impacts from to expanded curb-to-curb and total width. Would require significant property acquisition and redevelopment.
Score	**1**	**-1**	**14**	**10**	**3**	**1**
Recommendation	Not recommended due to traffic and operational impacts.	Not recommended due to traffic and operational impacts.	**Recommended for further analysis in the scenario of no new I-5 overpass.**	Not recommended due to traffic and operational impacts.	**Recommended for further analysis in the scenario of no new I-5 overpass.**	**Recommended for further analysis in the scenario of a new I-5 overpass.**

AADT = annual average daily traffic; EB = eastbound; ft = feet; ROW = right-of-way; TWLTL = two-way left-turn lane; WB = westbound

OTHER CONCEPTS

Other elements were considered for inclusion in the GVCP and are described in Table 22. Many of these elements are able to be implemented for multiple alternatives and serve to enhance bicycle and pedestrian access and improve safety. Figure 19 shows locations for the other concepts considered by the project team; Table 22 summarizes the evaluation and recommendations. Concepts X-1 and X-2 are considered for the segment from Stewart Parkway to the I-5 overpass, X-3 is considered for the I-5 overpass, X-4 is considered for the I-5 overpass to Stephens Street, and X-5 and X-6 are considered corridor-wide.

FIGURE 19. OTHER CONCEPTS

TABLE 22. OTHER CONCEPTS

Evaluation Criterion	X-1: Reopen tunnel connecting Stewart Park Natural Area across Garden Valley Boulevard to Sizzler ▪ Enhanced crossing treatments.	X-2: Midblock Crossing: Garden Valley Boulevard midway between Stewart Parkway and NW Goetz Street ▪ Enhanced pedestrian crossing with signage/striping. ▪ Improve street lighting.	X-3: Enhanced Crossings: I-5 ramp terminals ▪ Enhanced midblock crossing (HAWK, RRFB, median island, or other improvements).	X-4: Midblock Crossing: Garden Valley Boulevard at Fairmount Avenue/Highland Street ▪ Corridor-wide wayfinding. ▪ Signage for bicyclists.	X-5: Wayfinding and Signage ▪ Improved lighting throughout the corridor to improve visibility, safety, and comfort for all users. ▪ City-maintained landscaping enhancements to beautify and create a more inviting environment for bike/ped users and contribute to traffic calming.	X-6: Lighting and Landscaping ▪
1.1. Does the concept comply with the roadway functional classification?	○ ▪ Complies with design standards for the roadway functional classification.	○ ▪ Midblock crossing and enhanced treatments would need to comply with AADT and posted speed as stated in the ODOT Traffic Manual Table 310.3-A. ▪ Pedestrian hybrid beacon likely required.	● ▪ Complies with design standards for the roadway functional classification.	○ ▪ Midblock crossing and enhanced treatments would need to comply with AADT and posted speed as stated in the ODOT Traffic Manual Table 310.3-A. ▪ Pedestrian hybrid beacon likely required. ▪ Pedestrian refuge island likely required.	○ ▪ Complies with design standards for the roadway functional classification.	○ ▪ Complies with design standards for the roadway functional classification.
1.2. Does the concept meet operational performance measures?	○ ▪ Does not impact operational performance.	◯ ▪ May impact operational performance as a result of additional crossing location.	○ ▪ No significant changes to operational performance standards, concept would use existing traffic signals at I-5 ramp terminals.	◯ ▪ May impact operational performance as a result of additional crossing location.	○ ▪ No effect on operational performance.	○ ▪ No effect on operational performance.
1.3. Does the concept move in the direction of meeting access spacing standards?	○ ▪ Maintains existing access management standards.	○ ▪ A refuge island would likely be required for this concept. ▪ May require further review to determine access management impacts and solutions.	○ ▪ May require further review to determine access management impacts and solutions depending on enhancements.	○ ▪ A refuge island would likely be required for this concept. ▪ May require further review to determine access management impacts and solutions.	○ ▪ Maintains existing access management standards.	○ ▪ Maintains existing access management standards.
1.4. Does the concept address a documented safety concern?	● ▪ Improves bike/ped safety by restoring a grade-separated crossing of Garden Valley Blvd. ▪ Potential security and safety concerns with reopening the tunnel. Security concerns would need to be addressed.	● ▪ Provides a new safer and lower-stress crossing point.	● ▪ Enhances safety at existing crossing points.	● ▪ Provides a new safer and lower-stress crossing point.	● ▪ Enhances safety for people walking and biking by guiding them toward safer, more comfortable routes.	● ▪ Improved lighting enhances safety and comfort for all users.

TABLE 22. OTHER CONCEPTS

Evaluation Criterion	X-1: Reopen tunnel connecting Stewart Park Natural Area across Garden Valley Boulevard to Sizzler ▪ Enhanced crossing treatments.	X-2: Midblock Crossing: Garden Valley Boulevard midway between Stewart Parkway and NW Goetz Street ▪ Enhanced pedestrian crossing with signage/striping. ▪ Improve street lighting.	X-3: Enhanced Crossings: I-5 ramp terminals ▪ Enhanced midblock crossing (HAWK, RRFB, median island, or other improvements).	X-4: Midblock Crossing: Garden Valley Boulevard at Fairmount Avenue/Highland Street ▪ Corridor-wide wayfinding. ▪ Signage for bicyclists.	X-5: Wayfinding and Signage ▪ Improved lighting throughout the corridor to improve visibility, safety, and comfort for all users. ▪ City-maintained landscaping enhancements to beautify and create a more inviting environment for bike/ped users and contribute to traffic calming.	X-6: Lighting and Landscaping ▪
2.1. Does the concept provide or improve multimodal connections?	● ▪ Provides a safer and more convenient grade-separated crossing.	● ▪ Provides multimodal access to destinations on both sides of Garden Valley Blvd. ▪ Would address long crossing distance (>1,200 ft) between Stewart Pkwy and NW Goetz St.	○ ▪ Does not provide new multimodal connections, but makes existing ones lower stress.	● ▪ Would help formalize a north-south bike route on Fairmount Ave and Highland St.	● ▪ Improves connectivity for people walking and biking by offering clear guidance on optimal routes.	● ▪ Lighting enhancements improve connectivity by increasing safety and comfort for pedestrians and cyclists.
2.2. Does the concept reduce the level of stress experienced by vulnerable road users and/or provide them with safer, convenient, and direct routes?	● ▪ Provides a safer and more convenient grade-separated crossing.	● ▪ Provides a safer, more convenient, lower-stress, and direct multimodal connection.	● ▪ Adding enhancements would reduce stress for people using these crossings.	● ▪ Provides a safer, more convenient, lower-stress, and direct multimodal connection.	● ▪ Can reduce level of stress by providing clear guidance on optimal walking and biking routes.	● ▪ Lighting enhancements reduce the level of stress by increasing safety and comfort for pedestrians and cyclists.
2.3. Does the concept address a crash history of fatal/serious-injuries or with vulnerable users?	● ▪ Reduces conflicts between vehicles and bicycles and pedestrians.	● ▪ Improves multimodal safety.	● ▪ Could reduce conflicts between vehicles and users of these crossings.	● ▪ Improves multimodal safety.	● ▪ No clear effect on reducing vehicle crashes. ▪ May decrease likelihood of injury by directing people walking and biking to safer routes.	● ▪ Improved lighting may address crash rates within the corridor.
3.1. Does the concept provide "active" modal options and reduce reliance on single-occupancy vehicle trips?	● ▪ Provides safer and more convenient connection in both directions.	● ▪ Enhances multimodal access to destinations on both sides of Garden Valley Blvd.	○ ▪ May slightly encourage greater multimodal travel.	● ▪ Enhances multimodal access to destinations on both sides of Garden Valley Blvd.	● ▪ May encourage more walking and biking by making routes easier to navigate and understand.	● ▪ May encourage more walking and biking by making routes feel safer, more comfortable and pleasant.

TABLE 22. OTHER CONCEPTS

Evaluation Criterion	X-1: Reopen tunnel connecting Stewart Park Natural Area across Garden Valley Boulevard to Sizzler ▪ Enhanced crossing treatments.	X-2: Midblock Crossing: Garden Valley Boulevard midway between Stewart Parkway and NW Goetz Street ▪ Enhanced pedestrian crossing with signage/striping. ▪ Improve street lighting.	X-3: Enhanced Crossings: I-5 ramp terminals ▪ Enhanced midblock crossing (HAWK, RRFB, median island, or other improvements).	X-4: Midblock Crossing: Garden Valley Boulevard at Fairmount Avenue/Highland Street ▪ Corridor-wide wayfinding. ▪ Signage for bicyclists.	X-5: Wayfinding and Signage ▪ Improved lighting throughout the corridor to improve visibility, safety, and comfort for all users. ▪ City-maintained landscaping enhancements to beautify and create a more inviting environment for bike/ped users and contribute to traffic calming.	X-6: Lighting and Landscaping ▪
3.2. Does the concept increase alternatives to traveling along Garden Valley Boulevard by vehicle?	● ▪ Provides connection to destinations on either side of Garden Valley Blvd.	● ▪ Additional crossing locations encourages multimodal travel.	○ ▪ Does not meaningfully increase travel options.	● ▪ Additional crossing locations encourages multimodal travel.	● ▪ May remove barriers to walking and biking by making routes easier to navigate and understand.	● ▪ May remove barriers to walking and biking by making routes feel safer, more comfortable, and more pleasant.
4.1. Does the concept promote the movement of freight?	○ ▪ Does not impact freight mobility.	◯ ▪ May adversely impact freight movement.	○ ▪ No specific impacts to freight movement.	◯ ▪ May adversely impact freight movement.	○ ▪ Does not impact freight mobility.	○ ▪ Does not impact freight mobility.
4.2. Are there right-of-way impacts by the concept that reduce the economic vitality of the area?	● ▪ No ROW impacts; reopened tunnel could encourage greater access for people walking and biking.	○ ▪ No significant ROW impacts.	○ ▪ No significant ROW impacts.	○ ▪ No significant ROW impacts.	○ ▪ No significant ROW impacts.	○ ▪ Improved user experience within the corridor could increase economic vitality in the area. ▪ Landscaping improvements may require additional ROW.

TABLE 22. OTHER CONCEPTS

Evaluation Criterion	X-1: Reopen tunnel connecting Stewart Park Natural Area across Garden Valley Boulevard to Sizzler ▪ Enhanced crossing treatments.	X-2: Midblock Crossing: Garden Valley Boulevard midway between Stewart Parkway and NW Goetz Street ▪ Enhanced pedestrian crossing with signage/striping. ▪ Improve street lighting.	X-3: Enhanced Crossings: I-5 ramp terminals ▪ Enhanced midblock crossing (HAWK, RRFB, median island, or other improvements).	X-4: Midblock Crossing: Garden Valley Boulevard at Fairmount Avenue/Highland Street ▪ Corridor-wide wayfinding. ▪ Signage for bicyclists.	X-5: Wayfinding and Signage ▪ Improved lighting throughout the corridor to improve visibility, safety, and comfort for all users. ▪ City-maintained landscaping enhancements to beautify and create a more inviting environment for bike/ped users and contribute to traffic calming.	X-6: Lighting and Landscaping ▪
4.3. Does the concept encourage tourism and/or development of desired land uses and activities?	● ▪ Providing additional street crossing connections in an area with destinations such as restaurants, hotels, parks, and shopping can increase tourism and desired activities.	● ▪ Providing additional street crossing connections in an area with destinations such as restaurants, hotels, parks, and shopping can increase tourism and desired activities.	○ ▪ No specific improvements to encourage tourism or land use.	● ▪ Providing additional street crossing connections in an area with destinations such as restaurants, hotels, childcare, and places of worship can increase tourism and desired activities.	● ▪ Creating walking and biking routes that are easy to navigate and understand can encourage people to explore the area on foot or by bike, increasing economic vitality.	● ▪ Beautifying the corridor and improving lighting can encourage people to explore the area on foot or by bike, increasing tourism and economic vitality.
5.1. Does the concept element have the ability to be implemented over time?	● ▪ Tunnel could be restored to operational use easily. ▪ Community concerns regarding safety and security need to be addressed.	○ ▪ A midblock crossing in this area may require significant enhancements based on existing AADT, posted speed, and number of lanes.	● ▪ Included in the TSP as a recommended revision to previous IAMP recommendations.	○ ▪ A midblock crossing in this area may require significant enhancements based on existing AADT, posted speed, and number of lanes.	● ▪ Wayfinding and signage could be implemented in phases and is generally low-cost.	● ▪ Beautifying the corridor and improving lighting can easily be implemented in phases.
5.2. To what degree does the concept leverage a positive return on investment?	● ▪ Requires minimal physical repairs and low to moderate operational costs to reopen the tunnel.	○ ▪ Crossing location is close to tunnel concept (X-1); a crossing is not necessary if the tunnel is reopened.	● ▪ Cost-effective concept.	◎ ▪ Moderate cost to develop this concept.	● ▪ Cost-effective concept.	◎ ▪ Concept can be implemented in a cost-effective manner, though direct safety improvements may take precedence over beautification.
Score	**9**	**4**	**6**	**4**	**9**	**8**

TABLE 22. OTHER CONCEPTS

	X-1: Reopen tunnel connecting Stewart Park Natural Area across Garden Valley Boulevard to Sizzler	X-2: Midblock Crossing: Garden Valley Boulevard midway between Stewart Parkway and NW Goetz Street	X-3: Enhanced Crossings: I-5 ramp terminals	X-4: Midblock Crossing: Garden Valley Boulevard at Fairmount Avenue/Highland Street	X-5: Wayfinding and Signage	X-6: Lighting and Landscaping
Evaluation Criterion	▪ Enhanced crossing treatments.	▪ Enhanced pedestrian crossing with signage/striping. ▪ Improve street lighting.	▪ Enhanced midblock crossing (HAWK, RRFB, median island, or other improvements).	▪ Corridor-wide wayfinding. ▪ Signage for bicyclists.	▪ Improved lighting throughout the corridor to improve visibility, safety, and comfort for all users. ▪ City-maintained landscaping enhancements to beautify and create a more inviting environment for bike/ped users and contribute to traffic calming.	▪
Recommendation	**Recommended for further analysis.**	Scores moderately high, but is not recommended due to incompatibility with existing traffic and roadway conditions, and potential to reopen tunnel nearby.	**Recommended for further analysis.**	**Recommended for further analysis.**	**Recommended for further analysis.**	**Recommended for further analysis.**

AADT = annual average daily traffic; Ave = avenue; Blvd. = boulevard; HAWK = high-intensity activated crosswalk; IAMP = interchange access management plan; Pkwy = parkway; RRFB = rectangular rapid-flashing beacon; St = street; TSP = transportation system plan.

RECOMMENDED ALTERNATIVES

This section summarizes the recommendations for the improvements that would be considered for refinement as part of the preferred alternative for each IAMP and the GVCP.

I-5 EXIT 124: HARVARD INTERCHANGE

TABLE 23. I-5 EXIT 124 ALTERNATIVES FOR FURTHER ANALYSIS

RECOMMENDED ALTERNATIVE	CONSIDERATIONS
124-A: Improved Bike/Ped Connectivity Option 1: Bicycle lanes on Harvard Ave west of the southbound ramp terminal. Option 2: Improve visibility for pedestrians crossing the ramps at the interchange and Roseburg High School (RHS) entrance. Option 3: East-west pedestrian bridge to grade separate pedestrians from free-flowing ramps.	▪ Need to address bike/ped conflict points with vehicles at free-flowing ramps. ▪ Consider a ped signal at the free-flow NB on-ramp that is tied to the existing signal (#21). ▪ Reorient the crossing so that it is perpendicular to the ramp to shorten the crossing/exposure/actual crossing time (additional signage will be required).
124-C: Umpqua Street Connection – Provide road connection from RHS to Umpqua Street on the north side of Harvard Avenue. Option 1: Construct local street connection north of Department of Human Services. Option 2: Extend Princeton Avenue east under I-5.	▪ Rerouting school traffic away from ramp terminal intersection. ▪ Refine to avoid reconstruction of I-5. ▪ Will require significant ROW investment. ▪ Consider compact roundabout at intersection with Umpqua St. ▪ Understand impacts to intersection with Harvard Avenue. ▪ Road connection will be a city street.
124-E: Extend Mainline SB Deceleration Lane	▪ Lengthening the off-ramp should be considered a long term project. ▪ This project could tie into future auxiliary lane from Exit 125 Interchange southbound to Exit 124 Interchange but would require widening or relocation of the Bellows overcrossing. ▪ A new structure at Bellows could be coupled with the 124-C concept to provide a more direct connection to the high school via the Umpqua St. Route.
124-F: Local street connectivity ~~Option 1:~~ RHS Local Connection – Connect RHS to Madrone Street via Laurelwood Ct with pedestrian crossing on Madrone; limit access on Harvard to right turns.	▪ Needs to be further vetted with City for feasibility. ▪ Requires improvements to the local street network (update to current standards as local or minor collector). ▪ Understand traffic operational impacts to Madrone St at Harvard Ave. ▪ Consider right-in/right-out at RHS.

I-5 EXIT 125: GARDEN VALLEY INTERCHANGE

TABLE 24. I-5 EXIT 125 ALTERNATIVES FOR FURTHER ANALYSIS

RECOMMENDED ALTERNATIVE	CONSIDERATIONS
125-A: Dual NB Left Turn Lanes – Provide dual left-turn lanes onto Garden Valley Boulevard from I-5 Northbound Off-Ramp	▪ Need to understand benefit if restricting movements from Mulholland onto Garden Valley Blvd. ▪ Potential impact of access to local neighborhood in the southeast quadrant. ▪ Benefits queuing on the northbound off-ramp. ▪ Potential to pair with 125-E.
125-B: Intersection modifications to Garden Valley Shopping Center – Provide a dedicated right-turn lane at Estelle Street and modify east Garden Valley Shopping entrance to a right-in only turn with further local street network improvements within the VA.	▪ Fundamental issue is signal spacing and signal progression. ▪ Consider routing the BLM access through the VA to the VA Access at Estelle and re-route the shopping center to Estelle Street via Black Avenue. ▪ Benefits queuing along Garden Valley Blved west of I-5 southbound ramp terminal. ▪ Moves in the direction of access management.
125-C: Single-Point Urban Interchange (“SPUI”)	▪ Addresses operational v/c mobility targets. ▪ Moves in the direction of access management. ▪ Shift interchange to the west to avoid impacts to properties on the east of I-5. ▪ Determine whether I-5 should travel over or under Garden Valley Boulevard. ▪ I-5 over GV could allow for multi-modal access through the interchange via multi-use path.
125-E: Local-street connectivity Option 1: Extend Hill Avenue east to Mulholland Dr Option 2: One-way Mullholland Dr. from Garden Valley Blvd to Bethel Ave. Option 3: Realign Mulholland Dr opposite Highland St. Option 4: Realign Highland St to Fairmount St.	▪ Support the SPUI ▪ Provide east-west bicycle and pedestrian connectivity across I-5. ▪ Move in the direction of access management. ▪ Improve queuing operations.
Mainline-1: Southbound Auxiliary Lane (between Exit 124 and Exit 125)	▪ Recommendation of the I-5 Bottleneck Study. ▪ Analysis would focus on implementation/phasing with the preferred alternatives at both interchanges.
Mainline-2: Northbound Exit 125 Off-Ramp 2-Lane Diverge	▪ If the Exit 125 interchange is shifted to the west, there would be additional room for this improvement; should be considered as part of the SPUI layout. ▪ Can it be designed to avoid Section 4(f) resources? ▪ Consider how this alternative interacts with northbound ramp terminal interim and long-term improvements.

GARDEN VALLEY CORRIDOR

The project team recommends advancing the highest-scoring alternatives for each segment of Garden Valley Boulevard for further analysis, as described in Table 25. GVCP Alternatives for Further Analysis. The advancing alternatives will depend on whether the IAMP recommends rebuilding the I-5 overpass or updating the existing overpass and will be further vetted by the City, ODOT, and the public before determining final recommendations and inclusion in the Draft Garden Valley Corridor Plan. Public outreach will also contribute to selecting and refining the recommended alternatives.

TABLE 25. GVCP ALTERNATIVES FOR FURTHER ANALYSIS

GVCP SEGMENT	RECOMMENDED ALTERNATIVE	CONSIDERATIONS
West: NW Stewart Parkway to I-5 Overpass	West-1: Protected Bike Lanes	▪ Maintains existing accesses. ▪ Provides buffered bicycle lanes in each direction. ▪ This alternative may require narrowing lane widths below the 11-foot standard width and may, therefore, require a local design exception from City-adopted standards. ▪ Minimal infrastructure changes required.
	West-3: Full Corridor Reconstruction	▪ Requires significant expansion of ROW. ▪ Meets City-adopted roadway standards. ▪ Provides bicycle and pedestrian paths in each direction, with buffers in some cases. ▪ Recommended alternative in the scenario of the IAMP recommending a rebuilt I-5 overpass.
	West-5: South Side SUP	▪ Access management including driveway consolidation, alternative accesses, or access closures could be considered corridor-wide. ▪ Provides bicycle facilities in each direction, but north-side bike lane would be unprotected. ▪ Would likely require acquisition of additional ROW. ▪ This alternative would narrow travel lane widths below 11 feet. A design exception may be required to advance this alternative. If lane widths are maintained per standard, additional ROW and moving the existing curb line would be required, adding significant cost to this alternative.
I-5 Overpass	*Bicycle and pedestrian improvements will largely depend on the selected alternative in the Interchange Area Management Plan.*	
East: I-5 Overpass to NE Stephens Street	East-3: SUP on Both Sides	▪ Maintains existing accesses. ▪ Provides protected bicycle facilities in each direction shared with pedestrians. ▪ This alternative may require narrowing lane widths below the 11-foot standard width and may, therefore, require a local deign exception from City-adopted standards. ▪ Likely requires additional ROW.

TABLE 25. GVCP ALTERNATIVES FOR FURTHER ANALYSIS

GVCP SEGMENT	RECOMMENDED ALTERNATIVE	CONSIDERATIONS
	East-5: Buffered Bike Lanes with Median Barrier	▪ Adding a median barrier would modify access to properties in the west end of this segment and require further assessment to ensure adequate access to properties would be maintained. ▪ Provides buffered bicycle facilities in each direction. ▪ Does not require sidewalk expansion or acquisition of additional ROW.
	East-6: Full Corridor Reconstruction	▪ Requires significant expansion of ROW. ▪ Meets City-adopted roadway standards. ▪ Provides bicycle and pedestrian paths in each direction, with buffers in some cases. ▪ Recommended alternative in the scenario of the IAMP recommending a rebuilt I-5 overpass.

NEXT STEPS

Following this alternatives analysis, the project team will perform a second phase of in-depth reviews of the recommended alternatives. As the strategy is developed, its components will be refined to ensure they work together effectively. The in-depth review will consider findings from the future conditions analysis, feedback from the public and project partners, and compatibility with state and local regulations, policies, and plans.

The alternatives will ultimately be combined to form a comprehensive improvement strategy in *Technical Memorandum #8: Preferred Alternatives*. The preferred alternative for the study area will be used to develop a preliminary access management plan and implementation measures that will shape the potential phasing of the preferred alternative.