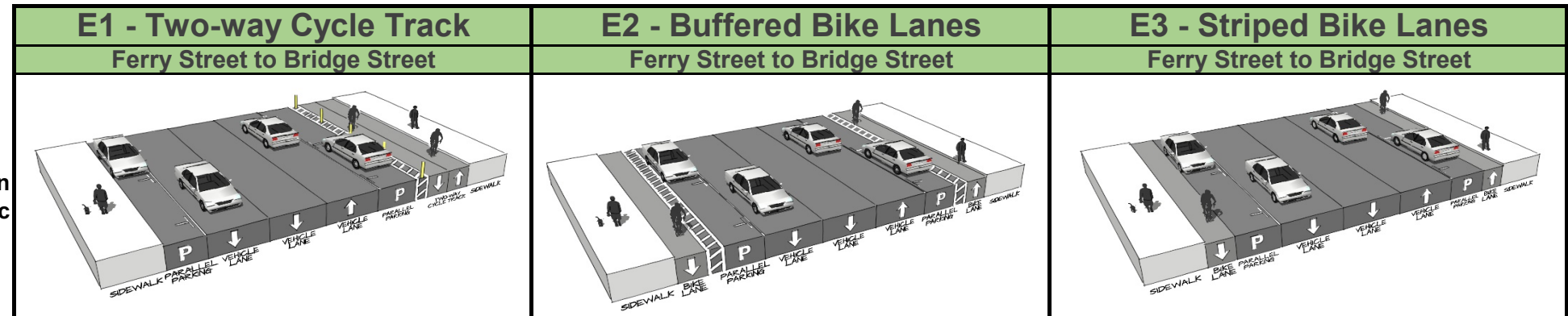


Appendix D: Detailed Alternatives Analysis

S Wenatchee Avenue Alternatives Analysis - Evaluation Matrix



			E1 - Two-way Cycle Track Ferry Street to Bridge Street		E2 - Buffered Bike Lanes Ferry Street to Bridge Street		E3 - Striped Bike Lanes Ferry Street to Bridge Street	
Cross-section Graphic								
Description of Active Mode Improvements			Two-way cycle track separated with a painted buffer north of Ferry Street, and NB bus stop island at Bridge Street.		Buffered bike lanes along curb and inside of on-street parking. Bus stop islands at Bridge Street.		Same as E2, but the bicycle lane is next to the travel lane and not against the curb.	
Description of Roadway Modifications			Reduction in one travel lane north of Ferry Street. On-Street parking at curb in SB direction from Bridge Street to Ferry Street, and between travel lane and cycle-track in NB direction from Bridge Street to Benton Street.		Reduction in one travel lane north of Ferry Street. On-Street parking outside of bike lane from Bridge Street to Benton Street.		Reduction in one travel lane north of Ferry Street. On-Street parking at curb from Bridge Street to Benton Street.	
Evaluation Criteria			Benefits / Impacts		Benefits / Impacts		Benefits / Impacts	
Criteria	Measure	Description of Measure		Score ¹		Score ¹		Score ¹
Safety	Cyclists	What are the safety benefits for cyclists based on the interaction with driveways, on-street parking, modified lane configurations, and intersection treatments?	Some benefit with protected cycle-track, but intersections could present some challenges.	▲	More benefit with designated bicycle lanes on corridor and on-street parking on outside of lane.	▲▲	Some benefit with a buffered bicycle lane, but on-street parking would conflict with cyclists.	▲
	Pedestrians	Are there safety impacts to pedestrians such as crossing a two-way bicycle facility or sharing a multi-use pathway with cyclists?	No negative or positive impacts.	—	No negative or positive impacts.	—	No negative or positive impacts.	—
Facility Comfort	Separation from Travel Lane	To what degree does the alternative provide improved separation from vehicle traffic, both in distance and by physical barriers?	Good separation from the vehicle travel lanes along the entire segment.	▲▲	Good separation from the vehicle travel lanes along the entire segment.	▲▲	Little separation from the vehicle travel lanes.	—
	Potential Lane Incursion	Is there potential for incursion in the bicycle facility by vehicles to access parallel parking, unintentional or intentional driving in bike lanes, using a bike facility as a turn lane or to get around turning or stopped vehicles, or by errant parked vehicles not within the marked parking lanes?	Vehicles should not cross the cycle-track to access parking, however there may be some confusion at intersections without proper treatment to prevent vehicles from using the cycle track.	▲	Vehicles should not cross the buffered striped area to access parking, however there may be some confusion at intersections without proper treatment to prevent vehicles from using the bike lane as a turn lane.	▲	Vehicles will be using the bike lane to access on-street parking.	▼
Transit	Impacts to Traffic Flow	Are there bus pull-outs or stops that are in-lane and impact through traffic progression?	In-lane bus stop in NB direction at Bridge Street	▼	In-lane bus stop in NB and SB directions at Bridge Street.	▼▼	No in-lane bus stops.	—
	Access to Bus Stop	Is access to existing bus stops improved or impacted based on ADA considerations and nearest crossing location?	Some impact as transit users must cross the cycle track to access the bus stop.	▼	Same as E1	▼	No change from today.	—

			E1 - Two-way Cycle Track Ferry Street to Bridge Street		E2 - Buffered Bike Lanes Ferry Street to Bridge Street		E3 - Striped Bike Lanes Ferry Street to Bridge Street		
Cross-section Graphic									
			Description of Active Mode Improvements		Two-way cycle track separated with a painted buffer north of Ferry Street, and NB bus stop island at Bridge Street.		Buffered bike lanes along curb and inside of on-street parking. Bus stop islands at Bridge Street.		
			Description of Roadway Modifications		Reduction in one travel lane north of Ferry Street. On-Street parking at curb in SB direction from Bridge Street to Ferry Street, and between travel lane and cycle-track in NB direction from Bridge Street to Benton Street.		Reduction in one travel lane north of Ferry Street. On-Street parking outside of bike lane from Bridge Street to Benton Street.		
Implementation	Traffic Operations	Intersection & Corridor Capacity	Are the number of travel lanes reduced, to what degree, and are there any impacts on intersection LOS and corridor delay?	One lane in the NB direction north of Ferry Street is to be converted into a bike facility. More complex traffic operations at intersections. No significant intersection or corridor delays.	▼	One lane in the NB direction north of Ferry Street is to be converted into a bike facility. No significant intersection or corridor delays.	—	Outside lane in the NB direction north of Ferry Street transitions to one lane. No significant intersection or corridor delays.	—
		Compatibility with Other Projects	How compatible is the alternative with existing and planned active transportation facilities and connections?	The design focuses cyclists to the east side of the corridor, and may be a difficult concept to implement for the entire corridor	▼	Bicyclists will be traveling in the same direction as vehicles, which is generally consistent with other facilities in the City.	▲	Same as E2.	▲
		Cost & Complexity	Does the alternative minimize costs and stay within existing curb-to-curb width of the corridor to reduce overall complexity?	There are minimal hardscape costs as the project maintains curb-to-curb widths, with only a few complexities at the intersections.	▲	There are minimal hardscape costs or complexities as the project maintains curb-to-curb widths.	▲▲	There are minimal hardscape costs or complexities as the project maintains curb-to-curb widths.	▲▲
	Public Support	Is there general support of the alternative noted through various community and stakeholder outreach processes?	The two-way cycle track received favorable public feedback.	▲	Public feedback was strongest for buffered bicycle lanes.	▲▲	Striped bicycle lanes were the least favorable alternative.	▼	
OVERALL SCORE					▲ 2		▲ 7		▲ 2

¹ Scoring Methodology

- ▲▲ = High benefit
- ▲ = Some benefit
- = no benefit / impact
- ▼ = Some impact
- ▼▼ = High impact

East-West Routes Alternatives Analysis - Evaluation Matrix

				A1 - Ferry Street	A2 - Ferry Street	B - Stevens Street	C - Lincoln Street	D - Marr Street				
Route map graphic												
Description of Active Mode Improvements				Two-way cycle track on the north side separated with a painted buffer and candlesticks, where feasible.	Two-way cycle track on the south side separated with a painted buffer and candlesticks, where feasible.	New shared-use pathway through Mission Street Park with a new at-grade protected crossing at Stevens Street. An alternative option is to route active users to Snohomish Street.	New cycle-track along north side of Marr Street, connecting to sharrows along Crescent Street and Snohomish Street, with a new at-grade protected crossing at Stevens Street.	New cycle-track along the south side of Marr Street, connecting to a new protected crossing and redesigned intersection at Mission Street.				
Description of Roadway Modifications				Reduction in one westbound travel lane on Ferry Street.	Reduction in one eastbound travel lane on Ferry Street between Mission Street and Crescent Street.	Few changes to roadways except to add a new at-grade pedestrian crossing to the south side of the Mission Street / SR 285 intersection.	Few changes to roadways except to restripe a portion of Marr Street. Marr Street currently is one-lane in each direction, but the lanes are wide enough for two vehicle to pass each other. Eliminates on-street parking.	Restripes Marr Street to eliminate on-street parking. Marr Street is currently one-lane in each direction, except at the Mission Street intersection where turn lanes are added.				
Evaluation Criteria												
Criteria	Measure	Description of Measure	Benefits / Impacts	Score ¹	Benefits / Impacts	Score ¹	Benefits / Impacts	Score ¹	Benefits / Impacts	Score ¹		
Safety	Cyclists	What are the safety benefits for cyclists based on the interaction with driveways, on-street parking, modified lane configurations, and intersection treatments?	Benefit with protected cycle-track along the north side, reduces conflicts along the corridor between cyclists and vehicles.	▲▲	Some benefit with protected cycle-track along the south side, reduces some conflicts along the corridor between cyclists and vehicles. Maintains more conflicts with higher volume movements.	▲	Provides a crossing for cyclists, but not in the most comfortable location due to high vehicle volumes and movements.	■	Provides a new, dedicated crossing for cyclists through the use of a HAWK signal at Lincoln Street, along with a new cycle-track along Marr Street.	▲	Provides a protected cycle-track along the south side.	▲
	Pedestrians	Are there safety impacts to pedestrians such as crossing a two-way bicycle facility or sharing a multi-use pathway with cyclists?	No negative or positive impacts.	■	No negative or positive impacts.	■	Provides a new crossing for pedestrians and extends the shared use pathway through Locomotive Park.	▲	Provides a new crossing along Mission Street for pedestrians.	▲	Improves the existing pedestrian crossing.	▲
Facility Comfort	Separation from Travel Lane	To what degree does the alternative provide improved separation from vehicle traffic, both in distance and by physical barriers?	Some separation from the vehicle travel lanes along the entire segment.	▲	Some separation from the vehicle travel lanes along the entire segment.	▲	Except for the crossing of Mission Street, provides high comfort facility through Locomotive Park	▲▲	Mostly requires shared vehicle and bicycle facilities.	■	Some separation from the vehicle travel lanes along the entire segment.	▲
	Route Directness & Network Connectivity	How direct is the connection to active transportation facilities and other generators? Do cyclists have to go out of their way to cross Mission Street?	Ideal connection between S Wenatchee Avenue and the neighborhoods, parks, and schools to the west of Mission Street.	▲▲	Ideal connection between S Wenatchee Avenue and the neighborhoods, parks, and schools to the west of Mission Street.	▲▲	Located centrally along the corridor so minimizes some out of direction travel. Continues west of study area to Wenatchee High School.	▲	Not a real direct route between S Wenatchee Avenue and the neighborhoods, parks, and schools to the west of Mission Street. Requires out of direction and circuitous travel.	▼	Good connection between S Wenatchee Avenue and the neighborhoods, parks, and Lincoln Elementary School.	▲
Traffic Operations	Corridor Capacity & Delay	Are the number of travel lanes reduced, to what degree, and are there any impacts on corridor delay?	One lane in the WB direction is to be converted into a bike facility. Loss of some vehicle capacity.	▼	One lane in the EB direction, east of Mission Street is to be converted into a bike facility. Loss of some vehicle capacity.	▼	There are no required lane removals, but the new crossing does reduce capacity of the Mission Street corridor.	▼	Reduces the lane widths along Marr Street with implementation of the cycle-track. The outside portion of the eastbound lane can no longer be used by right-turning vehicles at S Wenatchee Avenue.	▼	Reduces the lane widths along Marr Street with implementation of the cycle-track. The outside portion of the eastbound lane can no longer be used by right-turning vehicles at S Wenatchee Avenue.	▼
	Intersection Operations	Are there any impacts on intersection LOS?	More complex traffic operations at intersection with Mission Street. No significant intersection delays with reduction of vehicle lane.	■	More complex traffic operations at intersection with Mission Street. Additional intersection delays expected at Mission Street.	▼	Results in additional intersection delays at Mission Street / SR 285, but maintains LOS.	▼	Results in no additional intersection delays.	■	Results in no additional intersection delays.	■
Implementation	Compatibility with Other Projects	How compatible is the alternative with existing and planned active transportation facilities and connections?	The design focuses cyclists to the north side of the corridor for a consistent and compatible east-west facility.	▲	The design focuses cyclists to the south side of the corridor for a consistent and compatible east-west facility.	▲	Compatible with the existing shared-use pathway through Locomotive Park.	▲	Compatible with the existing shared-use pathway through Locomotive Park.	▲	Compatible with the existing shared-use pathway through Locomotive Park.	▲
	Cost & Complexity	Does the alternative minimize costs and stay within existing curb-to-curb width of the corridor to reduce overall complexity?	There are some costs due to intersection modifications, but no significant civil related improvements are anticipated.	▼	There are greater costs due to intersection modifications and corridor widening east of Crescent Street.	▼▼	There are greater costs due to intersection modifications and construction of the shared-use pathway.	▼▼	There are greater costs due to intersection modifications and WSDOT coordination.	▼	Some costs due to RRFB enhancements at Mission Street. Other striping-only improvements are relatively low cost	■
	Public Support	Is there general support of the alternative noted through various community and stakeholder outreach processes?	There was general support for a dedicated bicycle facility along this corridor.	▲	There will be greater concern with a loss of an eastbound vehicle lane due to higher volume movements.	■	This was the most desirable location for a new crossing.	▲▲	Public feedback not gathered	■	Not a favorable location based on input from the public.	▼▼
OVERALL SCORE				▲5	▲1	▲3	0	▲2				

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 ▲▲ = High benefit
 ▲ = Some benefit
 ■ = no benefit / impact
 ▼ = Some impact
 ▼▼ = High impact