TOOLE DESIGN

PACIFIC AVENUE NEIGHBORHOOD GREENWAY: PHASE 2 ALIGNMENT ALTERNATIVES

August 2024 | Final Report

The information contained in this document is for planning purposes and should not be relied upon for final design of any project. Readers are cautioned that this is a preliminary report and that all results, recommendations, concept drawings, cost opinions, and commentary contained herein are based on limited data available at the time of preparation. Further engineering analysis and design are necessary prior to implementing any of the recommendations contained herein.

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1.0 INTRODUCTION

The goal of the Pacific Avenue Neighborhood Greenway Project is to install a low stress east-west connection for people walking and bicycling from downtown across the N Hamilton St/I-90 interchange. The project is divided into two phases: Phase 1 extends from W 2nd Ave and S Howard St to Pacific Ave and S Sherman St, and Phase 2 extends from E Pacific Ave and S Sherman St to S Perry St and E 1st Ave. Phase 1 is in early stages of final design. This memo will focus on examining existing conditions, analyzing alternatives, and providing recommendations for the route for Phase 2, especially how to navigate the challenging topography around the N Hamilton St/I-90 interchange. The project area is shown in **Figure 1** below.

Figure 1: Project Area, Phases 1 and 2

2.0 PROJECT ALIGNMENTS

Because of the changing contexts along the Phase 2 route, the Phase 2 project alignments are divided into two segments, West and East, with multiple alternatives per segment. The alternatives were based on an analysis of the street grid, including several site visits, to identify possible routes and creative solutions to cross the N Hamilton St/I-90 interchange. The chosen alternatives for analysis are listed below:

- **West Segment** – E Pacific Ave, S Sherman St to S Scott St
  - **Alternative 1:** Bike Lanes
  - **Alternative 2:** Shared Lane Markings
- **East Segment** – E Pacific Ave and S Scott St to E 1st Avenue and S Perry St
  - **Alternative 1**: Sprague Avenue Shared Use Path
  - **Alternative 2:** N Sprague Way Shared Use Path
  - **Alternative 3:** S Sprague Way Shared Use Path

These segments are explored in further detail within the following sections and the alternatives concept drawings can be found in **Appendix A**.

WEST SEGMENT

The West segment of Phase 2 begins at S Sherman Street (see **Figure 2** below) and continues for 3 blocks before terminating at S Scott St. E Pacific Ave has stop control at its intersections with S Sherman St and S Scott St, but no stop control at S Sheridan St and S Hatch St. At the S Sheridan St and S Hatch St intersections, formalized stop control could be a viable strategy to reduce the risk of modal conflict at these intersections. This will be assessed during final design.

Figure 2: E Pacific Ave at S Sherman St, facing West (from Google Street View)

In the existing condition, this roadway section contains a ~50' paved vehicle zone without existing centerline striping or parking striping. This width is bounded by curbs on the north and south edges of the roadway, where parallel parking is permitted along the curb line.

Beyond the curb line are discontinuous landscaping strips and sidewalk segments, along with several driveways that serve adjacent private property. The properties adjacent to this greenway segment are in a commercial/industrial context, and these driveways serve as loading areas and access points for commercial vehicles. The presence of conflict points between commercial vehicles and other users at these driveways necessitate a design strategy to maintain sight lines between travel modes to provide safe interactions along this segment. An image of the E Pacific Ave cross section is shown in **Figure 3** below.

Figure 3: E Pacific Ave between S Sheridan St and S Hatch St, facing East (from Google Street View)

West Alternative 1 – Bike Lanes

Alternative 1 proposes to revise the existing 50' curb-to-curb width of E Pacific Ave between S Sherman St and S Scott St to include signing and striping that delineates an 8' parallel parking lane, a 6' bicycle lane, and an 11' vehicle lane in each direction of travel, as shown in **Figures 4 and 5** below. This would provide traffic calming by reducing the width of space available to vehicles and formalize the separation between vehicle and bicycle modes within this portion of the project. The bike lane striping would also include conflict markings and signs at driveways to inform cyclists of potential conflict points from vehicles entering and exiting the adjacent properties.

In addition to signing and striping treatments, this alternative would provide concrete curb extensions at each intersection between S Sherman St and S Scott St to reduce vehicle turning speeds, provide an enhanced demarcation of the parking lanes along the curb, and provide shorter crossing distances and high visibility for pedestrian crossings in this area. Midblock curb extensions could also be installed that would further narrow the street and provided space for landscaping. Gaps in the sidewalk network would be filled in to provide a continuous ADA-compliant connection for pedestrians walking through the area.

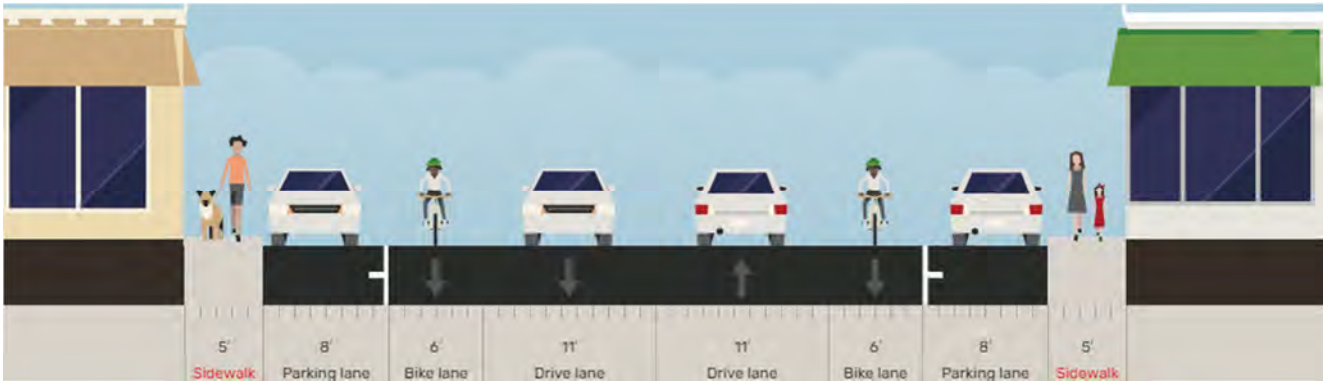


Figure 4: West Alternative 1 – Bike Lanes, Cross Section

Figure 5: West Alternative 1 – Bike Lanes, Plan View

West Alternative 2 – Shared Lanes

Alternative 2 proposes installing shared lane markings and signage to formalize the shared nature of the street between bicyclists and vehicles in this segment of the project, shown in **Figures 6 and 7** below.

In addition to signing and striping treatments, this alternative would also provide concrete curb extensions at each intersection between S Sherman St and S Scott St to reduce vehicle turning speeds, provide an enhanced demarcation of the parking lanes along the curb, and provide shorter crossing distances and high visibility for pedestrian crossings in this area. Midblock curb extensions could also be installed that would further narrow the street and provided space for landscaping. Gaps in the sidewalk network would be filled in to provide a continuous ADA-compliant connection for pedestrians walking through the area.

Figure 6: West Alternative 2 – Shared Lanes, Cross Section

Figure 7: West Alternative 2 – Shared Lanes, Plan View

East Segment

The East Segment begins at the intersection of E Pacific Ave and S Scott St and extends across the E Hamilton Avenue/I-90 interchange until it joins with the existing Neighborhood Greenway on E 1st Avenue at S Perry St. After extensive site visits and analysis of potential route options, the three East Alternatives shown in **Figure 8** below were identified. These alternatives are further described in the following sections.

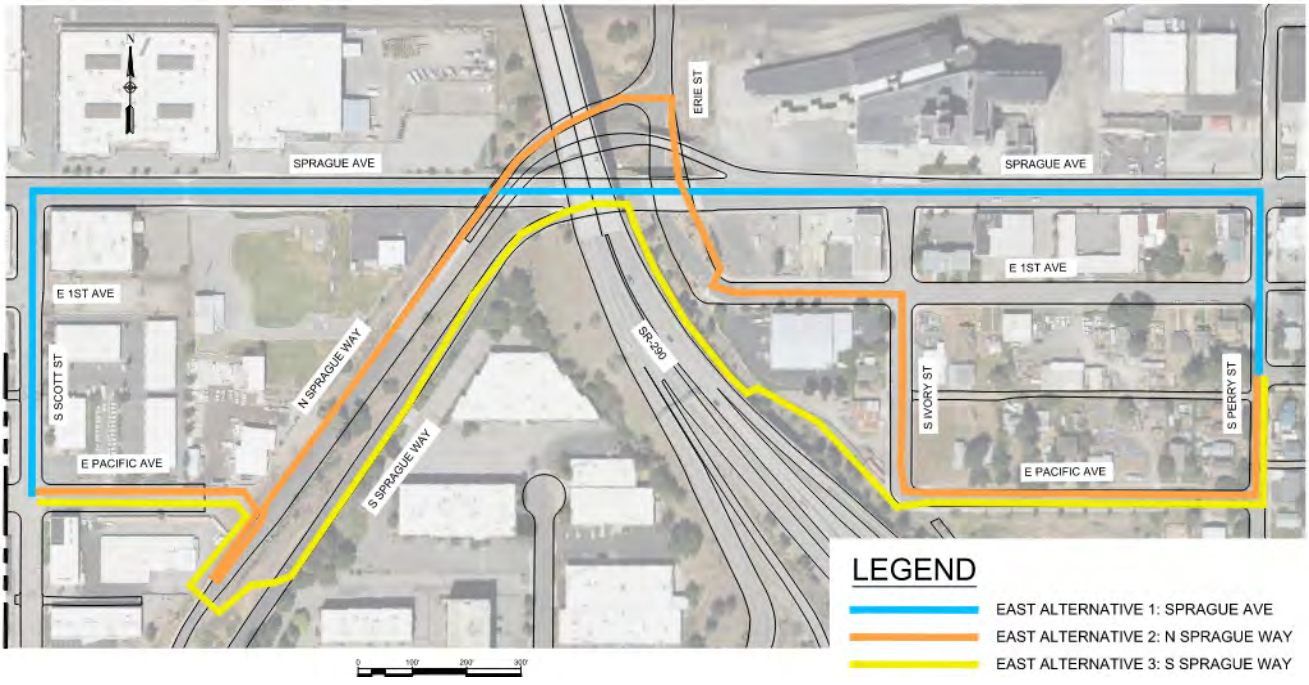


Figure 8: East Segment Alternatives

Alternatives that were ruled out due to high construction costs include a tunnel underneath the E Hamilton Avenue/I-90 interchange, and a bridge across N Sprague Way to S Sprague Way. In addition to construction costs, a tunnel under the E Hamilton Ave/I-90 interchanges posed design challenges in regard to providing lighting, accommodating passing zones, and meeting Crime Prevention Through Environmental Design principles due to the potential extended length of the tunnel.

East Alternative 1 – Sprague Avenue Shared Use Path

The East Alternative 1 route (shown with the blue line in **Figure 8** above) involves shared lane markings on S Scott St up to Sprague Ave, a shared use path on the south side of Sprague Avenue to S Perry St, and shared lane markings on S Perry St to E 1st Avenue, as shown in **Figure 9** below.

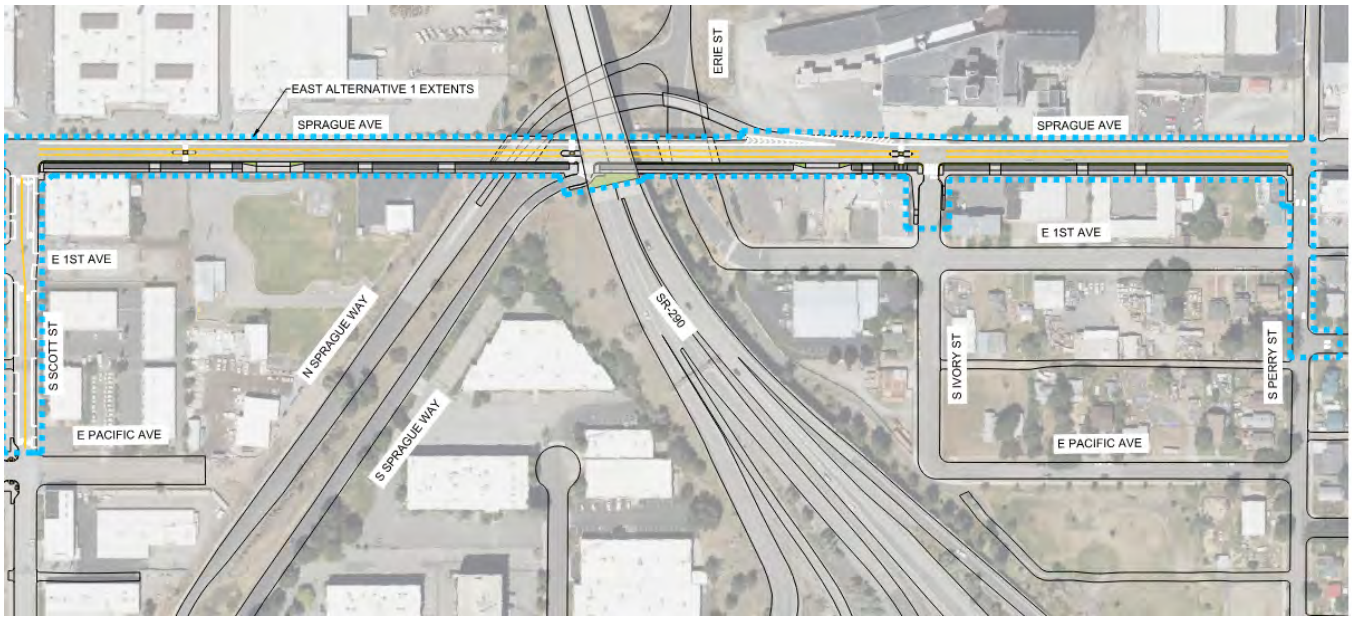


Figure 9: East Alternative 1 Plan View

S Scott Street

S Scott Street, as seen in **Figure 10** below, is a curbed north/south roadway with no centerline, parallel parking along each curb line, sidewalks, and driveways for access to commercial buildings and parking lots adjacent to S Scott St. The curb-to-curb width on S Scott St is roughly 40' between E Pacific Ave and E 1st Ave. North of E 1st Ave, the curb lines taper and expand to around 50' width before reaching the intersection at Sprague Ave and proceeding east along it.

Figure 10: S Scott St at E 1st Ave, facing North (from Google Street View)

Proposed improvements to S Scott Street could include adding a double yellow centerline, shared lane markings, and striped parking areas parallel to curb to create a travel lane and parking lane in each direction of travel. Between E 1st Ave and Sprague Ave, the lane markings could taper to also provide a northbound left turn lane. Additional analyses would be required as the City does not typically have centerline striping on Local streets and a left turn lane at Sprague Ave may not be warranted based on low volumes.

Sprague Avenue

Sprague Ave, as seen in **Figures 11-14** below, is a Principal arterial with about ~50' between curb lines. There are 3 vehicle travel lanes, including a two-way left turn lane, striped parallel parking at curb lines, along with fully built-out sidewalks and driveways for business access on either side of Sprague Ave. In addition, there are curbside bus stops which serve both directions of travel along Sprague Ave, accompanied by adjacent mid-block curb extensions and crossing islands to facilitate the safe passage of people walking across Sprague Ave. There is an off-ramp to the north that directs westbound vehicles onto N Sprague Way, and an on-ramp directing vehicles from S Sprague Way onto Sprague Ave.

Figure 11: Sprague Ave at Mid-block crossing, facing East (from Google Street View)

Figure 12: Sprague Ave, east of SR-290, at overpass of Erie St, looking East (from Google Street View)

Figure 13: Sprague Ave at S Ivory St crossing, looking West (From Google Street View)

Figure 14: Sprague Ave at S Perry St, looking East (From Google Street View)

This alternative involves adding a shared use path on the south side of Sprague Avenue. The facility would require the removal of the parking lane on the south curb line to accommodate the facility cross section. While the parking study referenced later in this memo showed low parking utilization, the loss of parking was brought up as a concern by local businesses. This new channelization would maintain the same lane configuration as existing, two travel lanes, a two-way left turn lane, and a parking lane along the north curb line, as seen in **Figure 15** below.

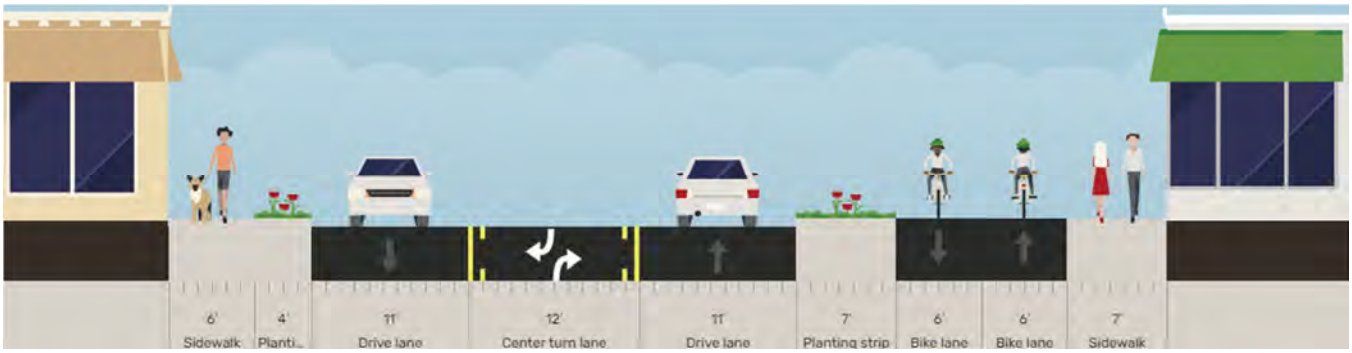


Figure 15: Sprague Avenue Proposed Cross Section (dimensions are approximate)

The pedestrian crossing islands between S Scott St and S Perry St would need to be reconstructed to fit within the new two-way left turn lane width, and driveways along the new bicycle/pedestrian facility would also need to be reconstructed. The existing bus stops along the south curb line of Sprague Ave would be designed to taper the bicycle and pedestrian facility behind it to match the current best practices for bus stop design where a bicycle facility is present.

At the intersection with N Sprague Way, the geometry would be “squared up” to improve visibility between all modes of travel, and slow down vehicle speeds at this conflict point.

The facility provides curb extensions across S Ivory St, reducing the crossing distance, formalizing the parking lanes on S Ivory St, and improving sightlines between northbound vehicles and walking, bicycling, and rolling with adaptive devices. The improved sightlines are critical at this location, due to the steep existing grade on S Ivory St. The path will continue further with the same design features until reaching S Perry St.

S Perry Street

The route turns south onto S Perry St before turning east onto E 1st St at the eastern limits of the project area. Existing shared lane markings on S Perry Street (see **Figure 16**) would be maintained and new shared lane markings would be added where needed.

Figure 16: S Perry St at E 1st Ave, eastern end of project, looking South (From Google Street View)

East Alternative 2 – N Sprague Way Shared Use Path

The East Alternative 2: N Sprague Way route (shown with the orange line in **Figure 8** above) involves shared lane markings on E Pacific Avenue, a ramp down to N Sprague Way, a shared use path on the northwest side of N Sprague Way until Erie St, a connection to the Ben Burr Trail down to E 1st Avenue, and shared lane markings on E 1st Avenue, S Scott St, E Pacific Avenue, and S Perry Street until the termination of the route at E 1st Avenue, as shown in **Figure 17** below.

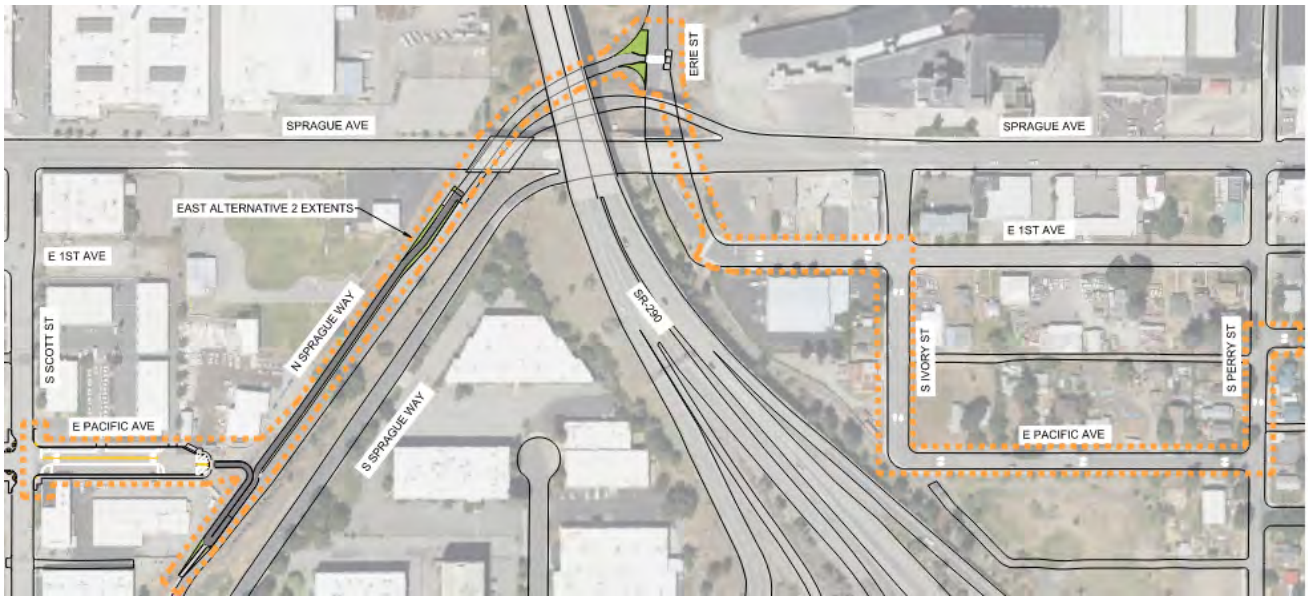


Figure 17: East Alternative 2 - N Sprague Way Proposed Layout

E Pacific Avenue

E Pacific Avenue terminates at a natural rock wall about 15' above the surface of N Sprague Way. This portion of E Pacific Ave consists of gravel surfacing in poor condition along the vehicle zone, with curbing along most of the northern edge and along a small segment of the southern edge, shown in **Figure 18** below. Parallel parking is currently allowed along the northern edge of the vehicle zone, while perpendicular parking is allowed on the southern edge. The public right-of-way is separated from the adjacent private property via fencing, with driveways on E Pacific Ave allowing vehicle access to the businesses on these private properties.

Figure 18: S Pacific Ave, facing West (from Google Street View)

Improvements on this segment would include paving the street, adding sidewalks and driveway aprons, installing curb extensions at S Scott Street, and formalizing the on-street parking to accommodate parallel parking on the north side of the street and perpendicular parking on the south. At the end of the street a vehicle turnaround area would be provided.

N Sprague Way

N Sprague Way is a one-way road with a curb-to-curb width of 35'. Adjacent to the vehicle zone and curb is a 4' wide sidewalk abutting the natural rock wall on the west, and landscaping to the east, shown in **Figure 19** below.

Figure 19: N Sprague Way, facing North (from Google Street View)

To descend the 15' elevation difference between E Pacific Street and N Sprague Way, a ramp not to exceed a longitudinal slope of 5% would be required. Due to the steep roadway slope to the northeast, a ramp on the northwest side of N Sprague way that extends to the northeast would not be able to meet this slope. This necessitates a switch-back where the path would turn south, then north before proceeding along the northwestern edge of N Sprague Way. After the switch back, the path proceeds north with the cross section shown in **Figure 20** below.

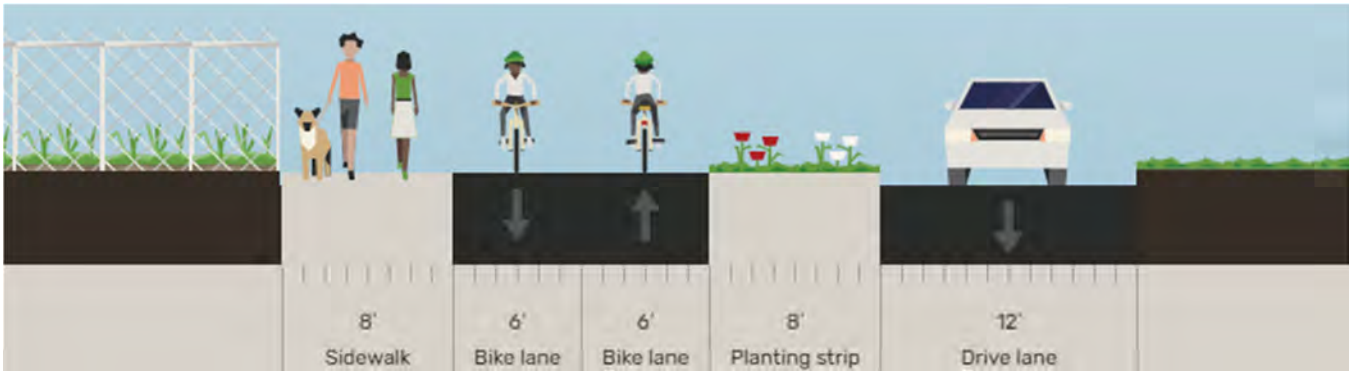


Figure 20: N Sprague Way Proposed Cross Section (dimensions are approximate)

N Sprague Way forks into two separate tunnels under Sprague Avenue: N Sprague Way, which serves as an offramp from westbound Sprague Avenue, and N Sprague Access Way (shown below in **Figure 21**), which provides a connection from Erie Street.

Figure 21: N Sprague Access Way, at Sprague Ave Overpass, facing North (from Google Street View)

Since the width of the tunnel is only about 18' wide and is not wide enough for both a vehicle lane and a shared use path, this alternative involves the closure of N Sprague Access Way at S Erie Street to vehicles (see intersection in **Figure 22** below). At the intersection, an access control treatment will be installed to prevent motor vehicle turns onto N Sprague Access Way, while allowing safe access for people walking and bicycling. This involves the installation of curbing, landscape, ADA ramps on each side of Erie St, and signage to clearly indicate that only pedestrian and bicycle modes are allowed through the proposed facility.

Figure 22: Erie St/Ben Burr Trail at N Sprague Access Way, facing South (from Google Street View)

E 1st Avenue/S Ivory Street/E Pacific Avenue/S Perry Street

This route proceeds south along the Ben Burr Trail until it crosses Erie St/ E 1st Ave, before turning east onto E 1st Ave and using the existing roadway in a shared lane condition (shown in **Figures 23-25** below). The route continues as shared lanes south onto S Ivory St, east onto E Pacific Avenue, and north on S Perry Street until it reaches the existing neighborhood greenway at E 1st Avenue. During design refinement the route east of the Ben Burr Trail should be assessed for the following potential improvements: infill of missing sidewalks, repair of sidewalks in poor condition, curb extensions at intersection and mid-block, and ADA ramp improvements.

Figure 23: E 1st Ave, looking East towards S Ivory St (From Google Street View)

Figure 24: S Ivory St, looking South towards E Pacific Ave (From Google Street View)

Figure 25: E Pacific Ave, looking East towards S Perry St (From Google Street View)

East Alternative 3 – S Sprague Way Shared Use Path

The S Sprague Way route (shown with the yellow line in **Figure 8** above) involves shared lane markings on E Pacific Avenue, a ramp down to N Sprague Way, a crossing of N Sprague Way to the planted median between N Sprague Way and S Sprague Way, a shared use path segment across the median, a shared use path segment on the NW side of S Sprague Way, a crossing of S Sprague Way, a shared use path segment on the SE side of S Sprague Way, a shared use path segment on the south side of Sprague Avenue, a ramp down to the Ben Burr Trail, and shared lane markings on E Pacific Avenue and S Perry Street until the termination of the route at E 1st Avenue, as shown in **Figure 26** below.

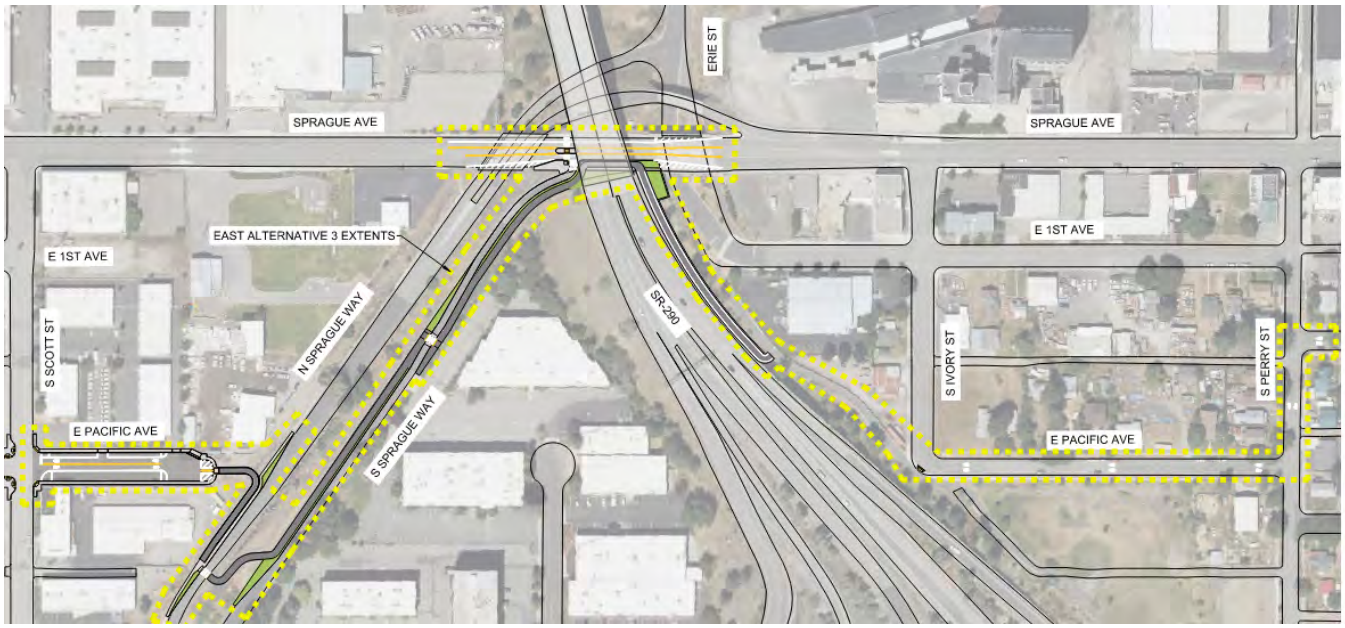


Figure 26: East Alternative 3 S Sprague Way Proposed Layout

E Pacific Avenue

E Pacific Avenue terminates at a natural rock wall about 15' above the surface of N Sprague Way. This portion of E Pacific Ave consists of gravel surfacing in poor condition along the vehicle zone, with curbing along most of the northern edge and along a small segment of the southern edge, shown in **Figure 27** below. Parallel parking is currently allowed along the northern edge of the vehicle zone, while perpendicular parking is allowed on the southern edge. The public right-of-way is separated from the adjacent private property via fencing, with driveways on E Pacific Ave allowing vehicle access to the businesses on these private properties.

Figure 27: S Pacific Ave, facing West (from Google Street View)

Improvements on this segment would include paving the street, adding sidewalks and driveway aprons, installing curb extensions at S Scott Street, and formalizing the on-street parking to accommodate parallel parking on the north side of the street and perpendicular parking on the south. At the end of the street a vehicle turnaround area would be provided.

S Sprague Way

To descend the 15' elevation difference between E Pacific Street and N Sprague Way, a ramp not to exceed a longitudinal slope of 5% would be required. Similar to Alternative 2, due to the steep roadway slope to the northeast, a ramp down to the southwest is necessary. To get up to S Sprague Way, this alternative involves a crossing of N Sprague Way to a shared use path that ramps up the slope between N Sprague Way and S Sprague Way (see **Figure 28** below).

Figure 28: N Sprague Way at Existing Gravel Trail, facing North (from Google Street View)

S Sprague Way is a one-way road with a curb-to-curb width of 28', a guardrail on the west side, and a 4' wide sidewalk on the east side, shown in **Figure 29** below.

Figure 29: S Sprague Way at Commercial Driveway, facing North (from Google Street View)

A shared use path is proposed on the west side of S Sprague Way until just north of the driveway to the office park, after which a raised crossing will be provided over to the east side (see **Figures 30 and 31** below for typical cross sections) to provide a better connection to Sprague Avenue.

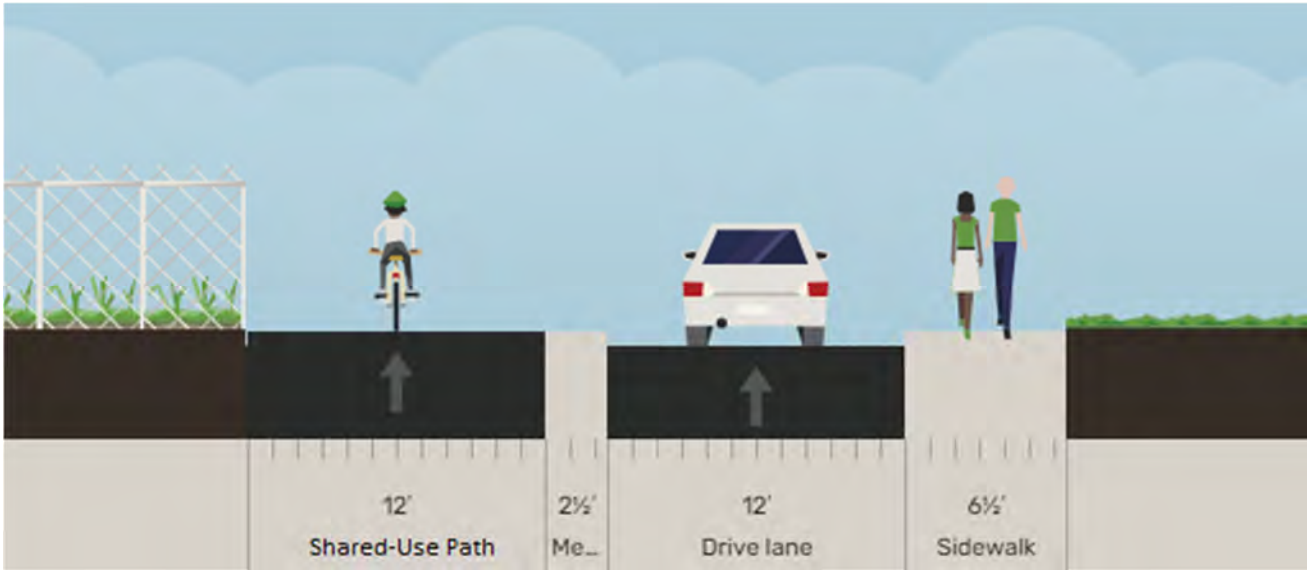


Figure 30: S Sprague Way Proposed Cross Section, South of Crossing (dimensions are approximate)

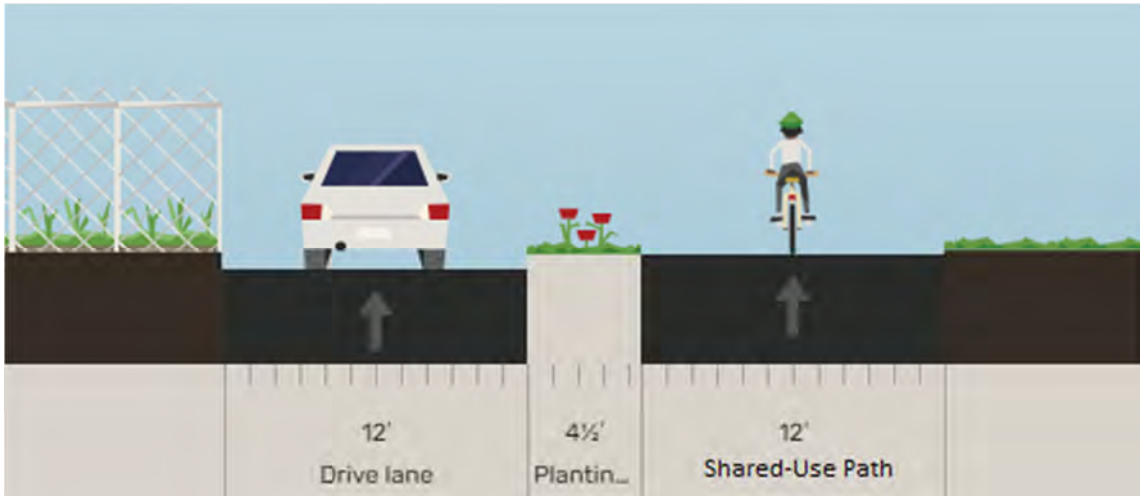


Figure 31: S Sprague Way Proposed Cross Section, North of Crossin (dimensions are approximate)

At the intersection with Sprague Avenue (shown in **Figure 32** below) the crossing geometry will be "squared up" to provide improved sightlines between modes, along with a reduction of the crossing distance across S Sprague Way. The crossing island on Sprague Ave will need to be rebuilt to account for the space needed for the shared use path.

Figure 32: S Sprague Way at Intersection with Sprague Ave, facing Northeast (from Google Street View)

Ramp to Ben Burr Trail

The shared use path continues east on the south side of Sprague Avenue under the SR-290 Overpass before ramping down an existing vegetated slope adjacent to the SR-290 overpass retaining wall to reach the Ben Burr Trail. This new ramp will need to be about 420 feet long to accommodate a max slope of 5%, and will require modifications to the Sprague Avenue wing wall shown in **Figure 33** below. Initial discussions with WSDOT indicate this would be feasible, but additional coordination would be required regarding access control, construction on WSDOT property, and maintenance.

Figure 33: Vegetated Slope Parallel to Sr-290, from Erie St , facing Northwest (from Google Street View)

After connecting with the Ben Burr Trail, the route proceeds southeast until reaching the intersection of the trail and S Ivory St/ E Pacific Ave, shown in **Figure 34** below.

Figure 34: The Ben Burr Trail at S Ivory St/E Pacific Ave, facing West (from Google Street View)

E Pacific Avenue/S Perry Street

The route continues east along E Pacific Ave and S Perry Street in a shared lane condition (shown in **Figures 35 and 36** below). Once the route reaches the intersection with E 1st Ave, this route turns east and merges with the existing greenway on E 1st Ave, reaching the end of this project area. During design refinement the route east of the Ben Burr Trail should be assessed for the following potential improvements: infill of missing sidewalks, repair of sidewalks in poor condition, curb extensions at intersection and mid-block, and ADA ramp improvements.

Figure 35: E Pacific Ave, looking East towards S Perry St (From Google Street View)

Figure 36: S Perry St, looking North towards E 1st Ave (From Google Street View)

GEOTECHNICAL CONSIDERATIONS

A preliminary geotechnical evaluation was prepared in June 2024. It contains a review and summary of previous geotechnical evaluations in the project vicinity as well as preliminary geotechnical conclusions and recommendations regarding subsurface soils and groundwater conditions. The evaluation did not identify any major differences in geotechnical considerations between alternatives. The evaluation will be used to further and develop the preferred alternative. The full Preliminary Geotechnical Evaluation can be found in **Appendix B**.

PARKING STUDY

In June 2024 a parking utilization study was performed along all routes to assist in understanding the impact of loss of parking space in East Alternative 1: Sprague Avenue. Other alternatives have minimal to no parking loss. The parking study counted parking utilization on Pacific Ave and Sprague Ave on Tuesday, Wednesday, and Thursday the weeks on June 11 and June 18, 2024, at 8AM, 12PM, and 5PM. A summary of parking utilization is below, and the full parking study can be found in **Appendix C**. This information is most relevant to East Alternative 1 – Sprague Avenue Shared-Use Path, which would require removal of on-street parking on sections of Sprague Avenue between Ivory and Perry Street.

Table 1: Average Parking Utilization Per Block

	8AM	12PM	5PM
Pacific Ave			
S Sherman St to S Sheridan St	43%	29%	5%
S Sheridan St to S Hatch St	54%	51%	9%
S Hatch St to S Scott St	29%	30%	0%
Sprague Ave			
S Scott to N Sprague Way	0%	0%	2%
N Sprague Way to S Ivory St (no parking)	n/a	n/a	n/a
S Ivory St to S Perry St	0%	1%	5%

3.0 OUTREACH

ALTERNATIVES DEVELOPMENT PHASE

Between March 2024 and May 2024, City staff attended several outreach events as the alternatives were developed.

Below is a summary of outreach events conducted as the alternatives were being developed.

East Central Neighborhood Council – May Meeting

Date: Tuesday March 19

Location: Liberty Park Library

Audience: Neighborhood Residents and Business Owners

Approximate Number of Attendees: 18

Bicycle Advisory Board

Date: Tuesday February 20, 2024 – 6pm

Location: Spokane City Hall

Audience: People who ride bicycles for daily travel and transportation

Approximate Number of Attendees:12

Agenda: https://static.spokanecity.org/documents/bcc/boards/bicycle-advisory-board/agendas/2024/02/bab-agenda-2024-02-20.pdf

Plan Commission Transportation Subcommittee

Date: February 6, 2024 – 9am

Location: Spokane City Hall

Audience: Neighborhood council representatives, transportation agency representatives

Approximate Number of Attendees: 14

Agenda: https://static.spokanecity.org/documents/bcc/commissions/plan-commission/transportation-subcommittee/agendas/2024/02/pcts-agenda-2024-02-06.pdf

Pop-Up Open House – South University District Gateway Bridge

Date: Thursday, May 16 – 4pm-6pm

Location: South University District Gateway Bridge – South Landing

Audience: Students and bicycle commuters

Approximate Number of Attendees: 8

ALTERNATIVES SELECTION

The alternatives were finalized in May 2024 and the City conducted additional outreach. This included pop-up events on Bike to Work Day as well as an online open house/survey in June 2024.

Bike to Work Day – Energizer Station & Pop-Up Open House

Date: Friday, May 17 – 7am-10am

Location: Riverfront Park – North Entrance

Audience: Bicycle Commuters and Spokane Bicycle Club members

Approximate Number of Attendees: 30

Survey Summary

An online open house and survey was published and live in May and June of 2024. After explaining the alternatives, the survey asked respondents to score the alternatives based on safety, comfort, directness, and connectivity as well as select a preferred alternative for both the East and West segments. The survey also allowed respondents to provide text comments for each of the alternatives.

The survey received approximately 100 responses and results indicate respondents preferred West Alternative 2: Shared Lane Markings and East Alternative 3: South Sprague Way. **Figures 37 and 38**, below, show how the breakdown of respondents preferred alternatives and **Appendix D** includes full survey results.

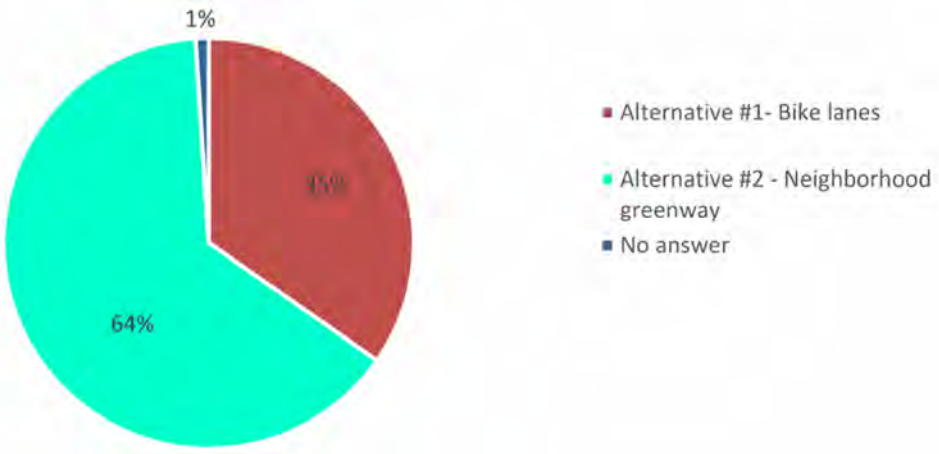


Figure 37: Survey Preference for West Alternative 2

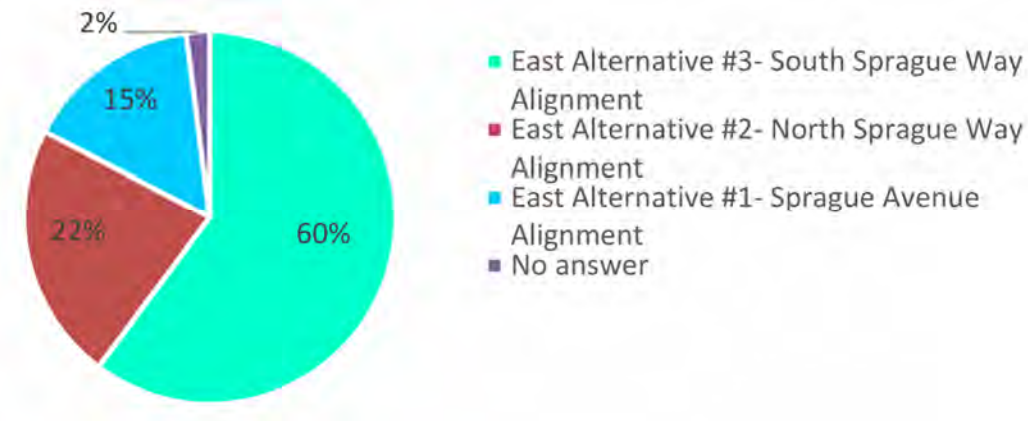


Figure 38: Survey Preference for East Alternative 3

4.0 ASSESSMENT

CRITERIA

The following criteria categories were selected to perform an assessment of the alternatives and to assist in the selection of a preferred alternative for the West and East segments of the Pacific Avenue Neighborhood Greenway. Sub-criteria were developed for each category.

Connectivity was measured by connections the alternative makes to bike facilities, businesses, and other destinations, and to transit.

Directness was measured by the overall length of the facility, how easy the route is to follow, and the overall elevation change.

Comfort was measured by the average Level of Traffic Stress[1] of the facilities, the visibility of the facility to users and those nearby, the maximum slope of the facility, and the number of driveway crossings.

Feasibility was measured by the needed embankments (fill volume, retaining wall area), parking impacts, ROW impacts, electrical impacts, stormwater impacts, and overall cost.

SCORING

Tables 2 and 3 show the scoring of the alternatives according to the four assessment categories identified above. The East Alternatives are ranked either 1st (green), 2nd (yellow) or 3rd (red) for each of the criteria shown in the table. The West alternatives are ranked either 1st (green) or 2nd (yellow). The scores for each criteria category are averaged to determine a total ranking for each of the four assessment areas.

As described in Section 3 of this report, the outreach survey asked respondent to score each alternative by connectivity, directness, comfort and safety. The scoring table combines the outreach scoring for safety and comfort under the Comfort category. Safety and comfort are often used interchangeably when speaking about transportation infrastructure and could both refer to perceived and measurable safety and comfort.

The final rank for each alternative is calculated by weighting the connectivity, directness, comfort, feasibility, and outreach preference for a total weight of 100%. The outreach preference is weighted slightly higher than the other criteria.

[1] Level of Traffic Stress was calculated based on the methodology outlined in WSDOT's Designing for Level of Traffic Stress Bulletin: https://wsdot.wa.gov/sites/default/files/2022-06/DesignBulletin2022-01.pdf

Table 2: West Alternatives Scoring Criteria and Ranking

		West Alternative 1: Bike Lanes	West Alternative 2: Shared Lane Markings
Scoring Criteria	Weight	Rank (1-2)	Rank (1-2)
Connectivity	**0%**		
Overall		Both alternatives connect similar destinations.	
Directness	**0%**		
Overall		Both alternatives follow same route.	
Comfort	**30%**	**1**	**2**
Level of Traffic Stress (average)	-	No volumes available, 25 MPH, bike lanes	No volumes available, 25 MPH, shared lanes
Visibility	-	Higher visibility with bike lane markings	Moderate visibility with shared lane markings
Slope (maximum)	-	Both alternatives have same slope.	
Number of Driveway Crossings	-	Both alternatives cross the same number of driveways.	
Feasibility	**30%**	**2**	**1**
Embankment (fill volume, retaining wall area)	-	Both alternatives require similar amounts of cut/fill.	
Parking impacts	-	Both alternatives have minimal parking impacts.	
ROW impacts	-	Both alternatives have similar ROW impacts.	
Electrical impacts	-	Both alternatives have similar electrical impacts.	
Stormwater impacts	-	Relocate/add catch basins at curb extensions	Relocate/add catch basins at curb extensions
Maintenance	-	Bike lane pavement markings would require more maintenance	Shared lane pavement markings would require less maintenance
Cost	-	$	$
Outreach Ranking	**40%**	**2**	**1**
Survey results	-	35 votes	64 votes
Overall Ranking	**100%**	**2**	**1**
Weighted Score (Lower is better)	-	1.7	1.3

Table 3: East Alternatives Scoring Criteria and Ranking

		East Alternative 1: Sprague Ave	East Alternative 2: N Sprague Way	East Alternative 3: S Sprague Way
Scoring Criteria	Weight	Rank (1-3)	Rank (1-3)	Rank (1-3)
Connectivity	**18%**	**1**	**3**	**2**
Outreach Results (higher is positive)	-	3.1	2.9	3.6
Bike Facilities	-	No bike facility connections	Connects to trail up to MLK bike lanes, connects to Ben Burr Trail	Connects to Ben Burr Trail
Businesses/Destinations	-	Connects to businesses along Sprague	No businesses connections	Connects to business park between S Sprague Way, 2nd Ave, and SR-290
Transit	-	Connects to bus stops on Sprague	No connections to transit	Could connect to bus stop at Sprague/Ivory
Directness	**18%**	**1**	**3**	**2**
Outreach Results (higher is positive)	-	3.2	2.6	3.2
Length of Facility	-	3130 ft (0.59 miles)	3875 ft (0.73 miles)	3465 ft (0.66 miles)
Clarity	-	Easy to follow	Multiple underpasses, switchback ramp	Multiple ramps and midblock crossings
Elevation Change	-	40 ft	90ft	90 ft
Comfort	**18%**	**3**	**2**	**1**
Outreach Results (higher is positive)	-	2.1	3.0	3.5
Level of Traffic Stress (average)	-	LTS 2 (Scott: No volumes available, Sprague: 11,000 AADT, 30 MPH)	LTS 1 (N Sprague Way: 1,100 AADT, 30 MPH, Erie St: 550 AADT, 25 MPH)	LTS 1 (S Sprague Way: 2,650 AADT, 30 MPH)
Visibility	-	Shared Use Path next to sidewalk	Trail under both Sprague Ave and SR-290 overpasses	Trail under SR-290 overpass
Slope, Maximum	-	7%	6%	8%
Slope, Average		2.2%	2.5%	3.4%
Number of Driveway Crossings	-	20	2	3
Feasibility	**18%**	**2**	**1**	**3**

Embankment (fill volume, retaining wall area)	-	None	700 CY embankment, 2,250 SF retaining wall	2,050 CY embankment, 9,750 SF retaining wall
Parking impacts	-	34 spots removed	None	None
ROW impacts	-	Construction below SR-290 overpass	Construction below SR-290 overpass	Construction below SR-290 overpass, embankment in SR-290 ROW
Electrical impacts	-	Relocation of RRFB assemblies at midblock crossings and of utility poles along south side of Sprague Avenue	None identified	None identified
Stormwater impacts	-	New curbline on Sprague Avenue would require new storm lines and catch basins	New storm lines and catch basins on E Pacific Avenue; new curbline on S Sprague Way would require new storm lines and catch basins	New storm lines and catch basins on E Pacific Avenue; new curblines on S and N Sprague Way would require new storm lines and catch basins
Geotechnical considerations	-	Limited cut and fill	Moderate cut/fill quantities and retaining walls	Moderate cut/fill quantities and retaining walls
Maintenance	-	2,200 LF of new shared-use path to snow plow	1,050 LF of new shared-use path to snow plow	1,850 LF of new shared-use path to snow plow
Cost	-	$$	$$	$$$
Outreach Ranking	**28%**	**3**	**2**	**1**
Survey results	-	15 votes	22 votes	60 votes
Overall Ranking	**100%**	**2**	**3**	**1**
Weighted Score (Lower is better)	-	2.1	2.5	1.7

5.0 RECOMMENDATIONS

WEST SEGMENT

The preferred alternative for the west segment is West Alternative 2: Shared Lanes. 64% of survey respondents preferred West Alternative 2. West Alternative 2 scored highest for Feasibility while West Alternative 1 scored highest for Comfort. Because both alternatives are on the same streets, Connectivity and Directness were not determined to be differentiating factors.

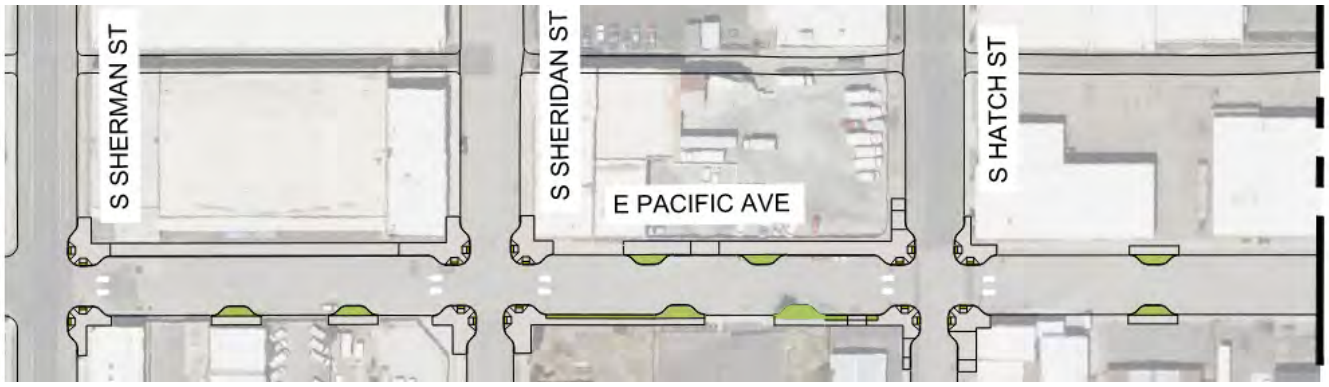


Figure 38: West Alternative 2 – Shared Lanes, Plan View

EAST SEGMENT

The preferred alternative for the east segment is East Alternative 3: S Sprague Way. 60% of survey respondents preferred East Alternative 3. East Alternative 3 scored highest for Comfort, second for Connectivity and Directness, and 3rd for feasibility. The lower Feasibility score is primarily due to construction of the embankment and wall in WSDOT right-of-way.

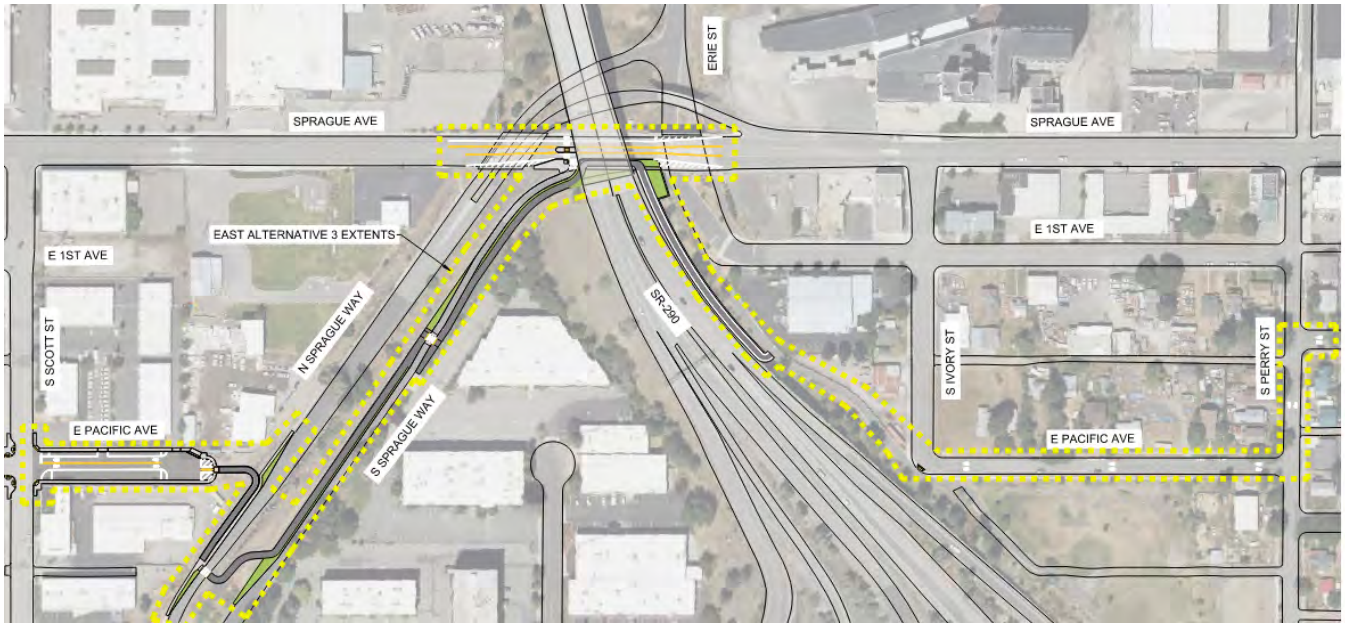


Figure 39: East Alternative 3 - S Sprague Way Proposed Layout

NEXT STEPS

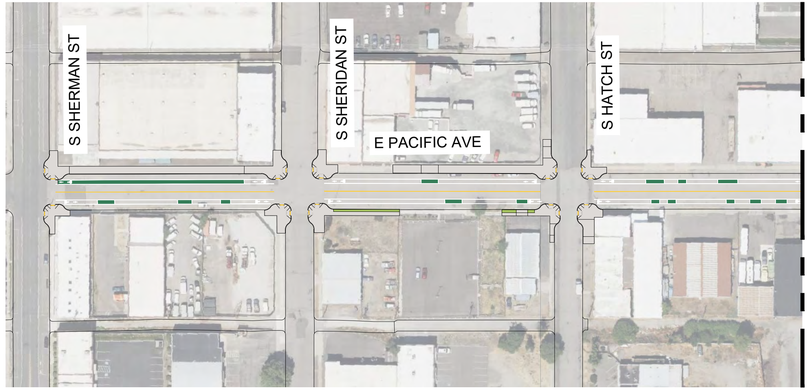
In the fall and winter of 2024, the consultant team will be further developing and refining West Alternative 2 – Shared Lanes and East Alternative 3 – S Sprague Way. Coordination with WSDOT will continue as the design are further refined and a second round of public outreach will occur once drafts of the preferred alternative refined concepts have been developed.

6.0 APPENDICES

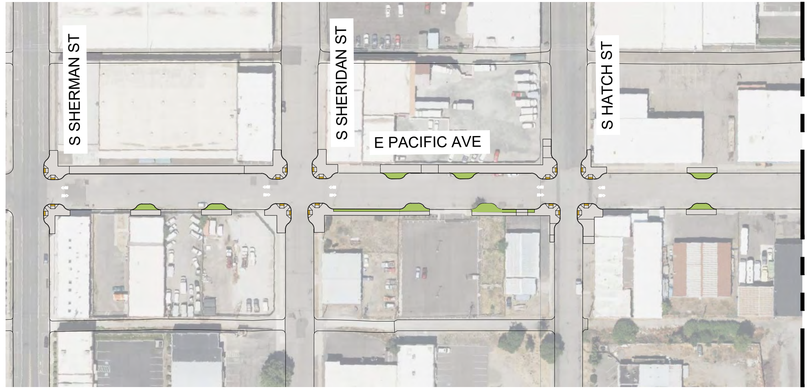
Appendices A through D are on the following pages.

APPENDIX A: ALTERNATIVE CONCEPT DRAWINGS

WEST SEGMENT, ALTERNATIVE 1: BIKE LANES



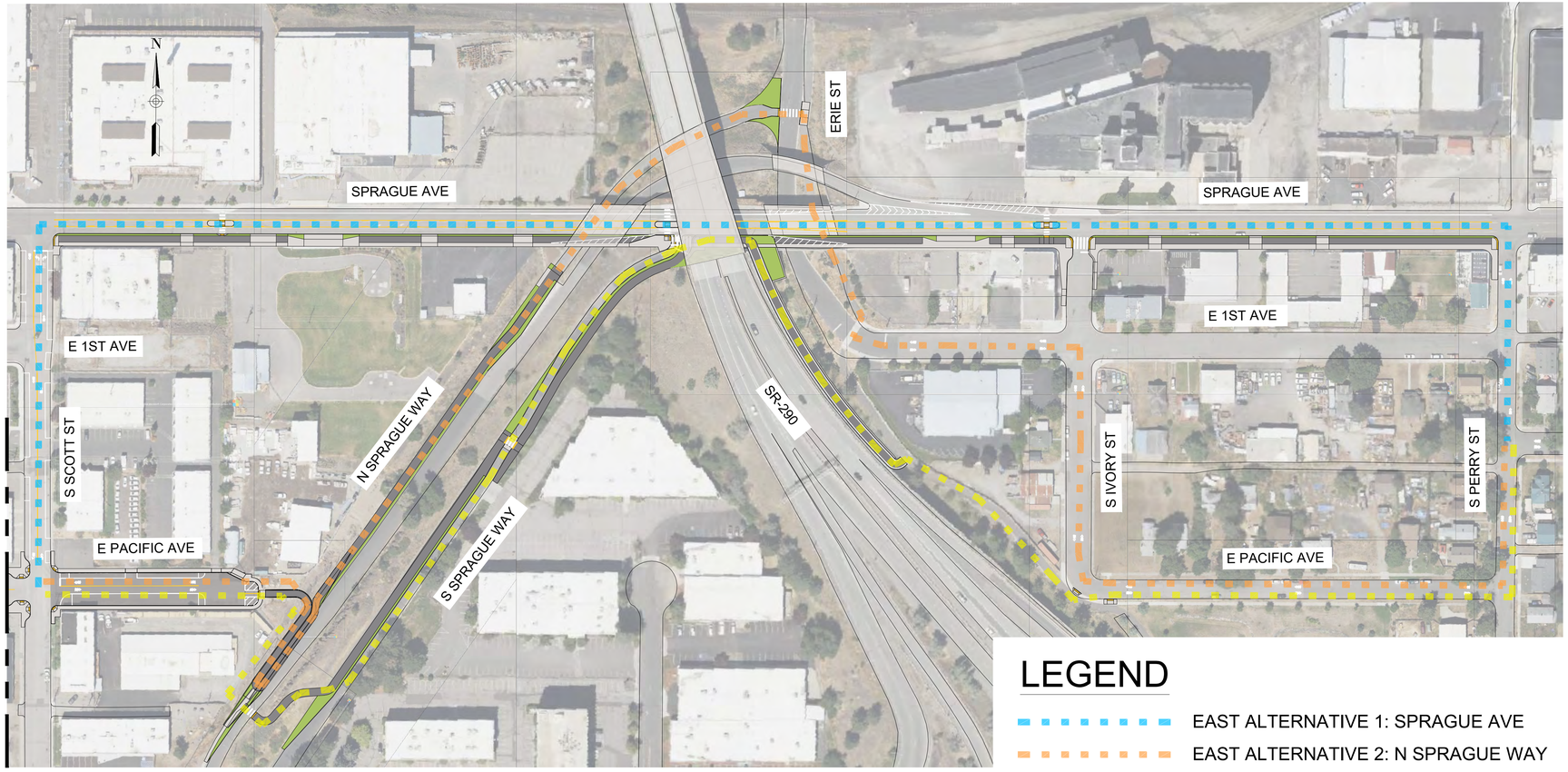
WEST SEGMENT, ALTERNATIVE 2: NEIGHBORHOOD GREENWAY



MATCHLINE- SEE BELOW RIGHT

MATCHLINE

EAST SEGMENT ALTERNATIVES



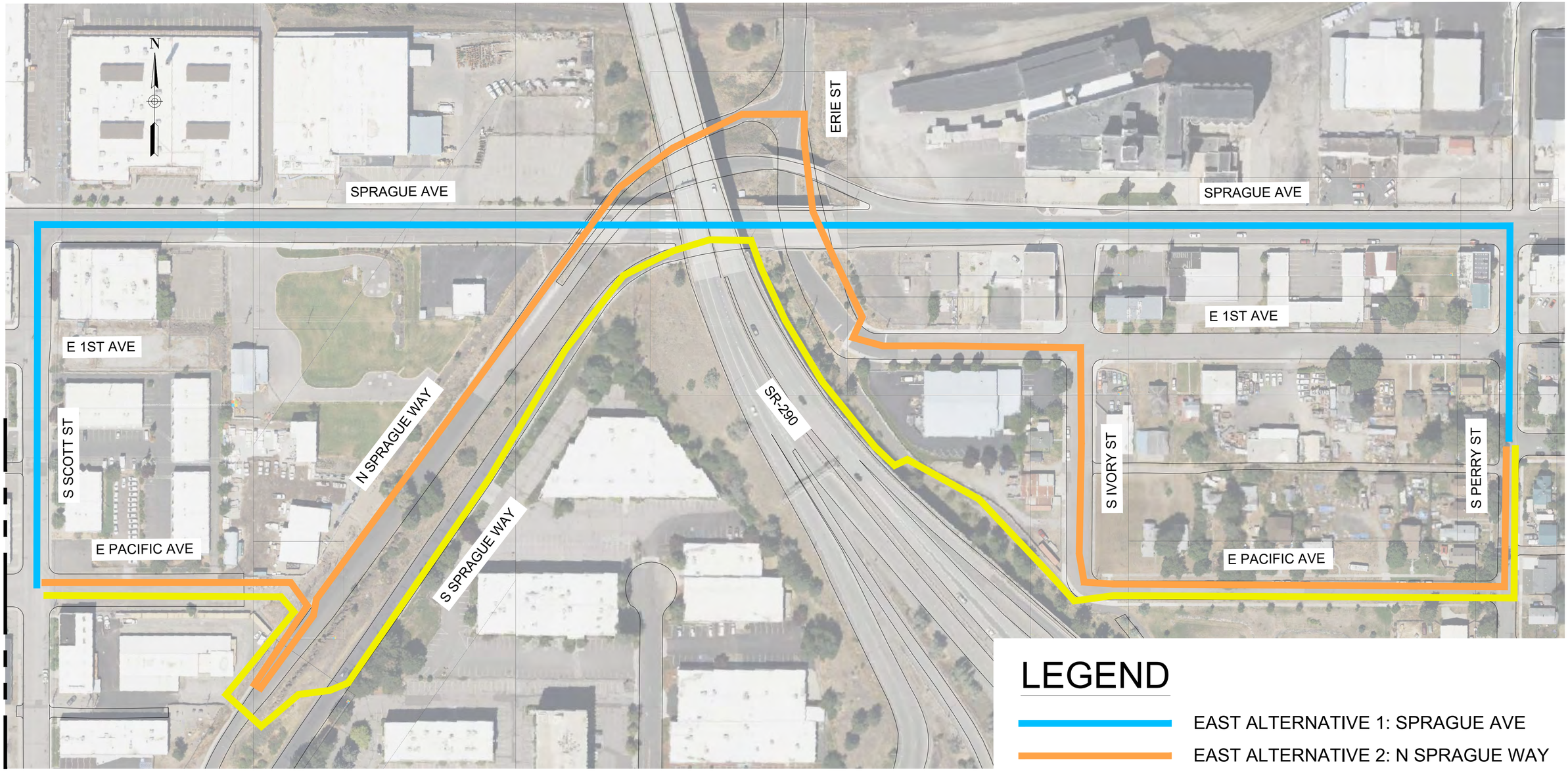
LEGEND

- EAST ALTERNATIVE 1: SPRAGUE AVE
- EAST ALTERNATIVE 2: N SPRAGUE WAY
- EAST ALTERNATIVE 3: S SPRAGUE WAY

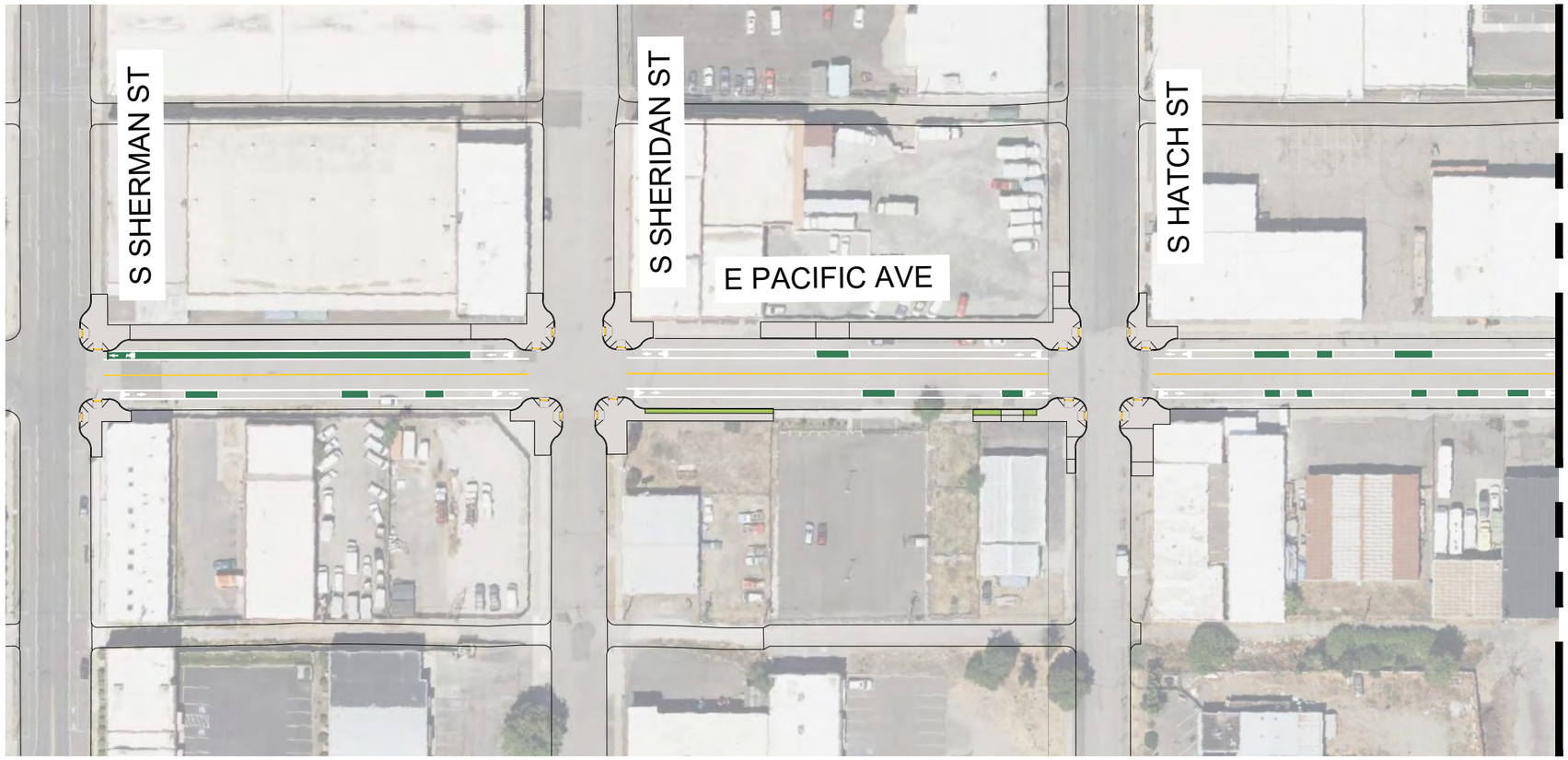
0 100' 200' 300'

SCALE IN FEET

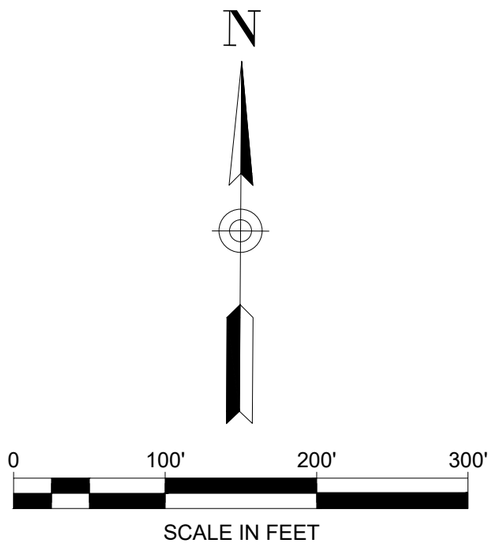
EAST SEGMENT ALTERNATIVES



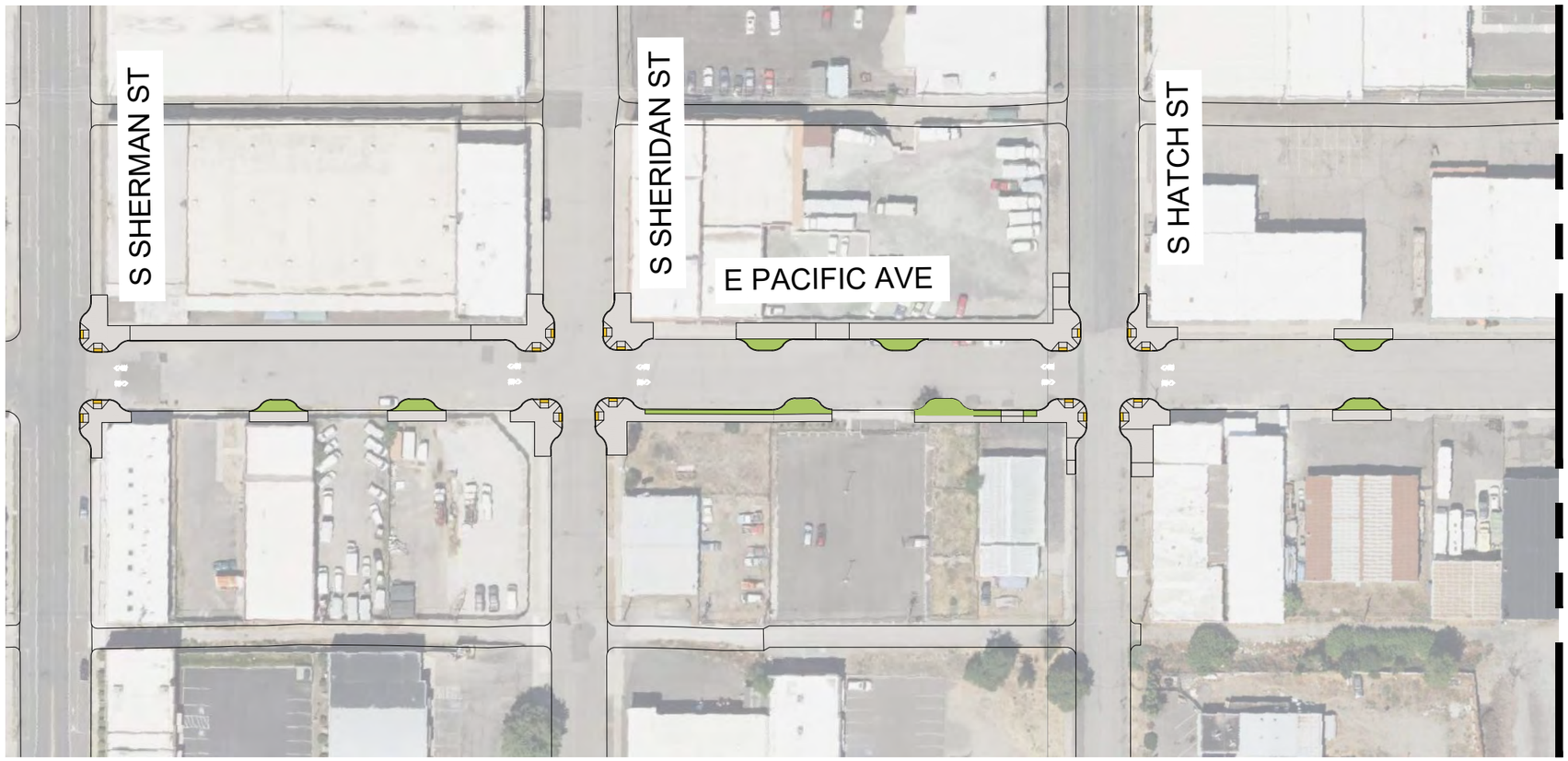
WEST SEGMENT, ALTERNATIVE 1: BIKE LANES



MATCHLINE- SEE EAST ALTERNATIVES

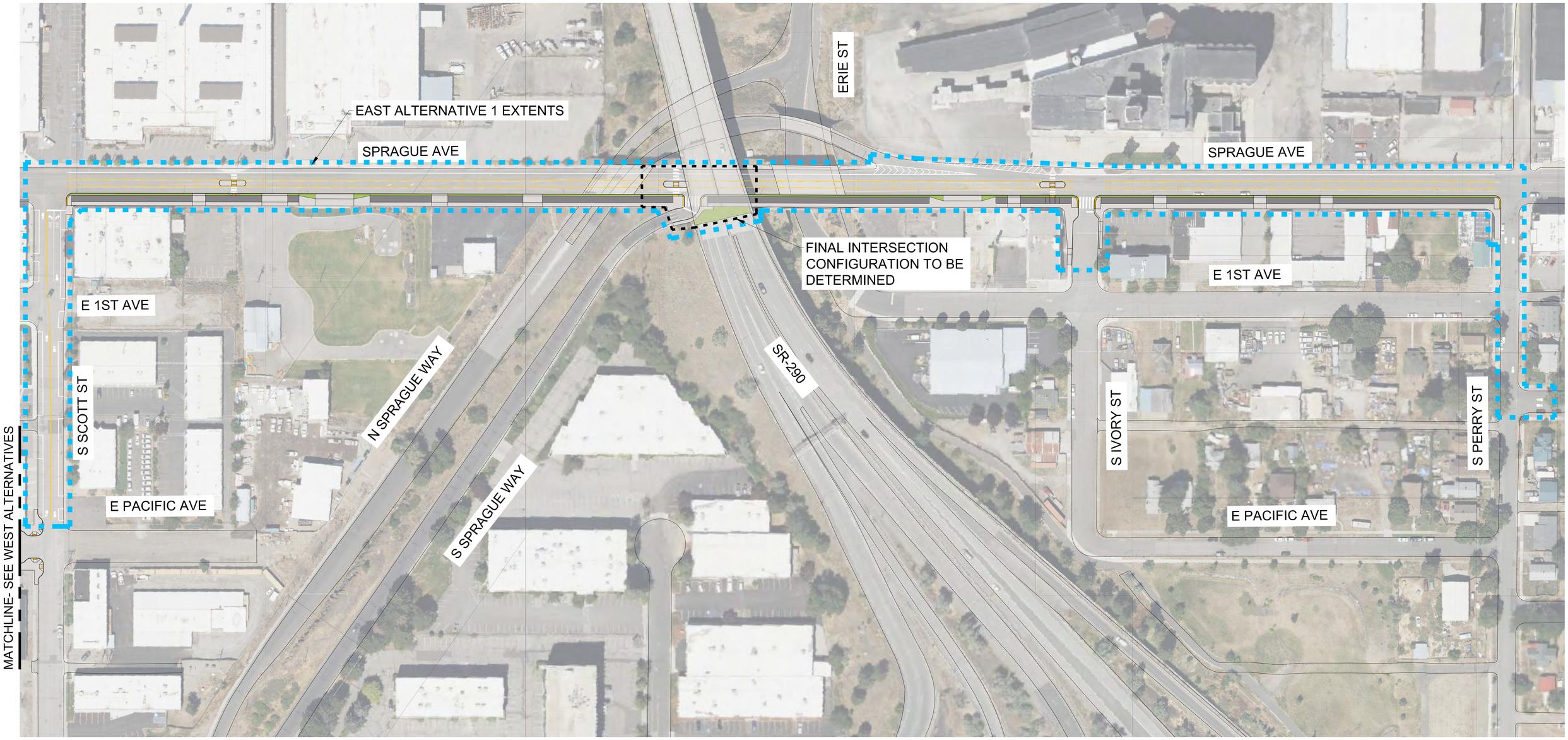


WEST SEGMENT, ALTERNATIVE 2: NEIGHBORHOOD GREENWAY



MATCHLINE- SEE EAST ALTERNATIVES

EAST ALTERNATIVE 1: SPRAGUE AVE

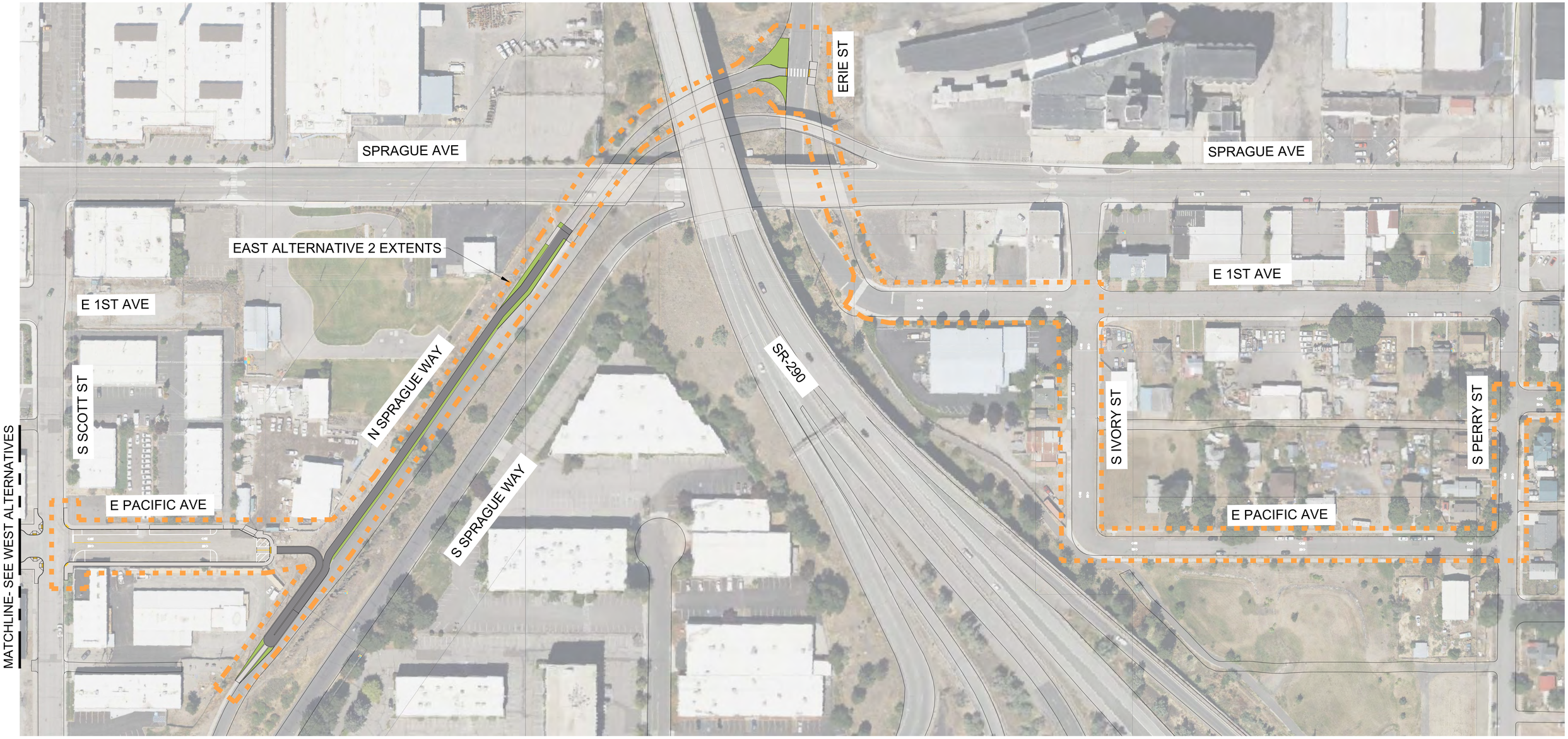


N

0 70' 140' 210'

SCALE IN FEET

EAST ALTERNATIVE 2: N SPRAGUE WAY



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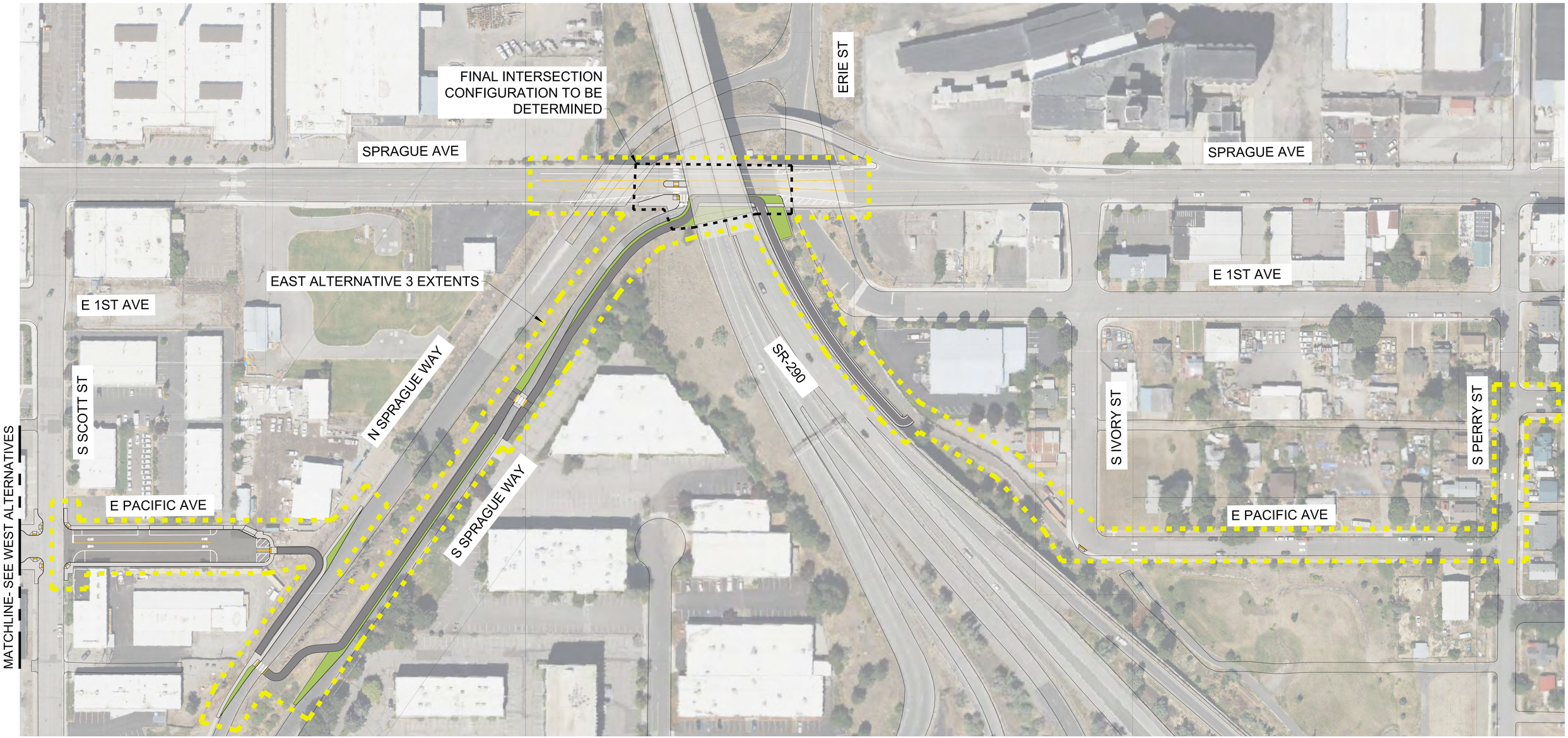
SCALE IN FEET

EAST ALTERNATIVE 3: S SPRAGUE WAY



N

0 70' 140' 210'

SCALE IN FEET

APPENDIX B: GEOTECHNICAL MEMO

Preliminary Geotechnical Evaluation

Proposed Pacific Avenue Greenway Project
Phase II – Sherman Street to Perry Street
Spokane, Washington

for
Toole Design Group

June 19, 2024

523 East Second Avenue
Spokane, Washington 99202
509.363.3125

GeoEngineers

Preliminary Geotechnical Evaluation

Proposed Pacific Avenue Greenway Project
Phase II – Sherman Street to Perry Street
Spokane, Washington

File No. 0110-206-00
June 19, 2024

Prepared for:

Toole Design Group
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Portland, Oregon 97204

Attention: Dustin DeKoekkoek

Prepared by:

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Principal Engineer

TAD:lmm

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1.0 Introduction

This report presents the results of our preliminary geotechnical evaluation completed as part of the initial concept study for the proposed Pacific Avenue Greenway Project in Spokane, Washington. The approximate location of the proposed corridor is shown on the Vicinity Map, Figure 1.

The purpose of the Pacific Avenue Neighborhood Greenway is to provide a safe, legible, and comfortable facility for pedestrians and bicyclists from Downtown Spokane through the South University District and provide connections to other bicycle facilities including the Ben Burr Trail. Design and construction of the Pacific Avenue Greenway is divided into two phases: 1) Howard Street to Sherman Street; and 2) Sherman Street to Perry Street. This report focuses on the Phase II alignment.

The results of this preliminary geotechnical evaluation will be used, in part, during development of initial conceptual improvements at the site based on subsurface soil, rock and groundwater conditions along the project corridor. Following selection of the preferred design improvements, GeoEngineers will complete site-specific subsurface exploration and laboratory testing as a basis for final geotechnical engineering recommendations, as necessary.

2.0 Scope of Services

The purpose of our preliminary evaluation was to provide an initial assessment of subsurface conditions and options for future grade changes based on a review of readily available information for nearby projects and properties. Our specific scope of services included:

1. Review of previous geotechnical evaluations in our files for projects along the Pacific Avenue and Sprague corridors, approximately between Sherman Street and Perry Street, the geologic literature, soil surveys and other readily available geotechnical information from the City of Spokane, the Washington State Department of Transportation (WSDOT), and the Washington State Department of Ecology (Ecology) regarding subsurface soil, rock and groundwater conditions in the vicinity of the project.
2. Preliminary geotechnical conclusions and recommendations regarding subsurface soil and groundwater conditions at the site including: estimated depth to basalt in the project vicinity; a summary of the depth to perched groundwater based on surrounding site information; surficial soil conditions encountered in the project vicinity and described on geologic maps; and preliminary grading recommendations based on the anticipated soil and rock conditions, and proposed trail routes provided by Toole Design Group.

3.0 Site Conditions

3.1 SURFACE CONDITIONS

The proposed Pacific Avenue Greenway Project is located north and south of the Spokane River on the east end of Spokane's central business district and downtown area. As stated above, the project corridor includes: Pacific Avenue, between Sherman Street and Perry Street.

- Pacific Avenue between Sherman Street and Scott Street supports two-way, eastbound and westbound traffic. Pacific Avenue supports a single lane of traffic in each direction and is generally bounded by curbs, curbs and sidewalks, and curbs, sidewalks and landscape strips. Between Sherman and Scott Streets, the majority of the property is developed and includes commercial businesses.

Approximately 380 feet east of Scott Street, Pacific Avenue terminates, and the right-of-way is bisected by East Sprague Way and Interstate 90 (I-90) on-ramps and off-ramps. Pacific Avenue begins again east of the I-90 on/off-ramps at Ivory Street and continues to the end of the project area at Perry Street.

- East Sprague Way consists of two separate streets divided by basalt outcrops. A one-way, northbound roadway connects East 3rd Avenue to Sprague Avenue, and one-way, southbound roadway connecting East 2nd Avenue to Sprague Avenue. Both streets include single lanes of traffic. Northbound Sprague Way includes a curb on the east side of the roadway and curb and sidewalk on the west side of the roadway. Southbound Sprague Way is bounded by curb on west side of the roadway and curb and sidewalk on the east side of the roadway. Additionally, northbound East Sprague Way declines in elevation from south to north as it extends from East 2nd Avenue towards the Spokane River. The alignment is depressed below adjacent streets and southbound East Sprague Way and is bounded on both sides by basalt outcrops. Southbound East Sprague Way is constructed on the top of the basalt outcrops and although inclining to the south, maintains grade with the adjacent side streets.
- The I-90 on-ramps and off-ramps across the Pacific Avenue right-of-way are elevated structures supported on embankment fills and retaining walls. The ramps span over Sprague Avenue.

Pacific Avenue is disrupted between Scott Street and Ivory Street with the nearest alternate access route via Sprague Avenue to the south. Pacific Avenue restarts east of Ivory Street to the project termination on Perry Street.

- Within this section of the alignment, Pacific Avenue supports two-way, eastbound and westbound traffic and is generally bounded by curbs, sidewalks and landscape strips. Development includes a commercial business, residential housing and undeveloped lots.

3.2 LITERATURE REVIEW

3.2.1 General

As part of our preliminary geotechnical evaluation, we completed a geotechnical records review of: Washington State Department of Natural Resources (DNR) geologic maps; in-house geotechnical and environmental reports; reports provided by WSDOT through a records request; and available water well reports on file at Ecology.

3.2.2 Geologic Literature Review

Geologic mapping completed by Derkey, Hamilton and Stradling indicates that the majority of the project corridor is located on a northwest trending, basalt rock ridge. The basalt is classified as Grande Ronde Basalt (Mgr) of the Columbia River Basalt Group. Grande Ronde Basalt typically consists of dark gray, fine-grained basalt of irregular thickness.

Along the eastern portion of Pacific Avenue (Ivory Street to Perry Street) and extending below the I-90 ramps, the basalt is overlain by glacial flood-channel deposits. The flood-channel deposits are

predominantly Pleistocene-age gravel and described as “thick-bedded to massive mixture of boulders, cobbles, gravel and sand that fill deep, ancestral channels of the Spokane and Little Spokane Rivers, which now form the Spokane Valley-Rathdrum Prairie aquifer”.

The approximate location of geologic mapped units with respect to the proposed path alternatives is presented on the Geologic Map, Figure 2.

3.2.2.1 IN-HOUSE AND LOCAL REPORT REVIEW

We evaluated possible subsurface conditions beneath the project area by reviewing in-house geotechnical and environmental reports by GeoEngineers, Gifford Consultants, Inc., and Shannon & Wilson. In addition, we reviewed geotechnical reports in our files and reports provided by the City of Spokane. The approximate locations of each geotechnical or environmental study area are presented on the Previous Exploration Locations, Figure 3. A summary of subsurface soil and groundwater at each site is provided in Summary of Previous Geotechnical Studies, Table 1.

3.2.2.2 WATER WELL REPORTS REVIEW

We reviewed select water well reports on file with Ecology for water supply and resource protection wells that are or were located in the vicinity of the project corridor. The water well reports typically were completed by well drilling companies and provide limited subsurface information, such as general soil, rock and groundwater conditions. The reports do not provide important geotechnical information such as conventional soil descriptions, relative density or material properties. However, the reports sometimes provide information to augment nearby geotechnical subsurface investigations and geologic descriptions.. A copy of each identified water well report is provided in Water Well Reports, Appendix A.

4.0 Preliminary Conclusions and Recommendations

Based on the results of our preliminary geotechnical evaluation, we believe the site is suitable for development of the proposed improvements which could include: grading and slope modifications including retaining walls; repaving; construction of pervious concrete sidewalks and rain gardens; and pedestrian tunnels. On the basis of our review of geologic and geotechnical literature and in-house and publically available files, subsurface conditions in the area generally consist of three major units including: fill; sand and gravel flood deposits; and basalt. Groundwater encountered during previous explorations typically includes zones of perched groundwater at or above the interface between basalt and the overburden soil units. These perched layers will be shallower on the west end of the alignment (Sherman Street to Sprague Way), where basalt is closer to the surface.

Previous evaluations in the vicinity of the project corridor encountered basalt at depths in the range of about 2 to greater than 20 feet below the ground surface. A summary of the depth based on previous exploration and well logs reports is presented in Table 2.

TABLE 2. ESTIMATED DEPTH TO ROCK

Location (North to South)	Depth to Rock (Literature Review)	Depth to Rock (Resource Well Logs)
Sherman Street to Sprague Way	<5 feet	<5 feet
Sprague Way to Ivory Street	12 feet to >50 feet	N.A.

Location (North to South)	Depth to Rock (Literature Review)	Depth to Rock (Resource Well Logs)
Ivory Street to Perry Street	>25 feet	N.A.

Additionally, fill soil was frequently encountered above the basalt at exploration locations. On this basis, over-excavation of fill soil and excavation into rock should be anticipated in support of foundations, grading and utility improvements, especially on the western portion of the alignment. Basalt, where present, is able to support heavier (greater than 4,000 psf) foundation loads and maintain cuts on the order of 1H:1V (horizontal to vertical) or steeper.

East of Sprague Way, subsurface conditions are more variable, both in terms of fill thickness and quality and natural soil conditions. Where natural soil conditions are present below pavements and stormwater management facilities, traditional construction methods should be anticipated. However, we recommend site specific explorations be completed to support the design and construction of retaining walls and pedestrian tunnels in these areas. For **preliminary** design purposes, bearing capacity for foundations could range for 2,500 to 4,000 psf, while temporary slopes should be estimated at 1.5H:1V.

The Spokane Regional Stormwater Manual requires a minimum 4-foot-separation between the bottom of a stormwater drywell and the underlying rock layer. Because of the variable, but generally shallow depth to rock on the western portion of the alignment, it is our opinion that drywells likely will not meet the minimum separation requirement. Instead, we recommend near surface infiltration trenches be considered for subsurface infiltration of stormwater along the western portion of the site.

East of Sprague Way, we estimate that the minimum separation criteria required can be met for single- and double-depth drywells based on the Spokane Regional Stormwater Manual criteria. For **preliminary** design purposes, we estimate allowable outflow rates of 0.3 cubic feet per second (cfs) and 1.0 cfs for single-depth and double-depth drywells, respectively, could be feasible. These rates are based on the assumption that drywells are hydraulically connected to the natural fluvial sand and gravel flood deposits.

On the basis of our literature review, it is our further opinion, that existing pavements and sidewalks may be reconstructed on existing site soil although removal of isolated and discontinuous pockets of fill should be expected. The final pavement thickness will depend, in part on future traffic information which was not provided as part of this initial evaluation.

4.1 RECOMMENDED ADDITIONAL STUDY

We recommend site-specific subsurface exploration be completed within the limits of the proposed improvements to better define the character of soil and rock underlying the subject site. Laboratory testing should be completed to establish physical and engineering characteristics of on-site soil and rock.

Based on results of the additional exploration and laboratory testing programs, we will provide specific and final recommendations for site preparation, foundation and pavement design, slope stability analysis and stormwater management. We also will address other geotechnical aspects of the project that should be addressed during design or construction.

5.0 Limitations

We have prepared this report for use by Toole Design Group, and their selected design consultants in support of preliminary design for Pacific Avenue Greenway Project – Phase II in Spokane, Washington.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix B titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

6.0 References

Derkey Robert, E., Hamilton Michael M. and Stradling Dale F., Geologic Map of the Spokane Northwest 7.5-minute Quadrangle, Spokane County, Washington, Washington Division of Geology and Earth Resources Open File Report 2004-3.

GeoEngineers, Inc. Geotechnical Engineering Evaluation, Proposed Apartments, 528 East Second Avenue, Spokane, Washington, GEI Project No. 25514-001-00, October 22, 2021.

GeoEngineers, Inc. Geotechnical Engineering Evaluation, Proposed CSO 33-2 Basin, Spokane, Washington, GEI Project No. 0110-109-00, February 24, 2011.

GeoEngineers, Inc. Geotechnical Engineering Evaluation Report, Gateway Office Building Settlement, Spokane, Washington, GEI Project No. 10841-002-00, February 23, 2007.

GeoEngineers, Inc. Geotechnical Engineering Evaluation Report, Proposed Sprague Avenue and Perry Street Development, Spokane, Washington, GEI Project No. 19097-002-00, March 9, 2011

Gifford Consultants, Inc. / Shannon & Wilson, Inc. Confirmation For Preliminary Foundation Exploration Work of Sprague Avenue Site, Spokane, Washington, Gifford Project Number No. E-0899-01, May 17, 1988.

Washington State Department of Ecology, Well Log Viewer. Available at http://apps.ecy.wa.gov/welllog/index.asp/. Accessed June 3, 2024.

Washington State Highway Commission Department of Highways - Spokane North - South Freeway. WSDOT Project No. Y-1115.

Tables

Table 1

Summary of Previous Geotechnical Studies

Proposed Pacific Avenue Greenway Project

Phase II - Sherman Street to Perry Street

Spokane, Washington

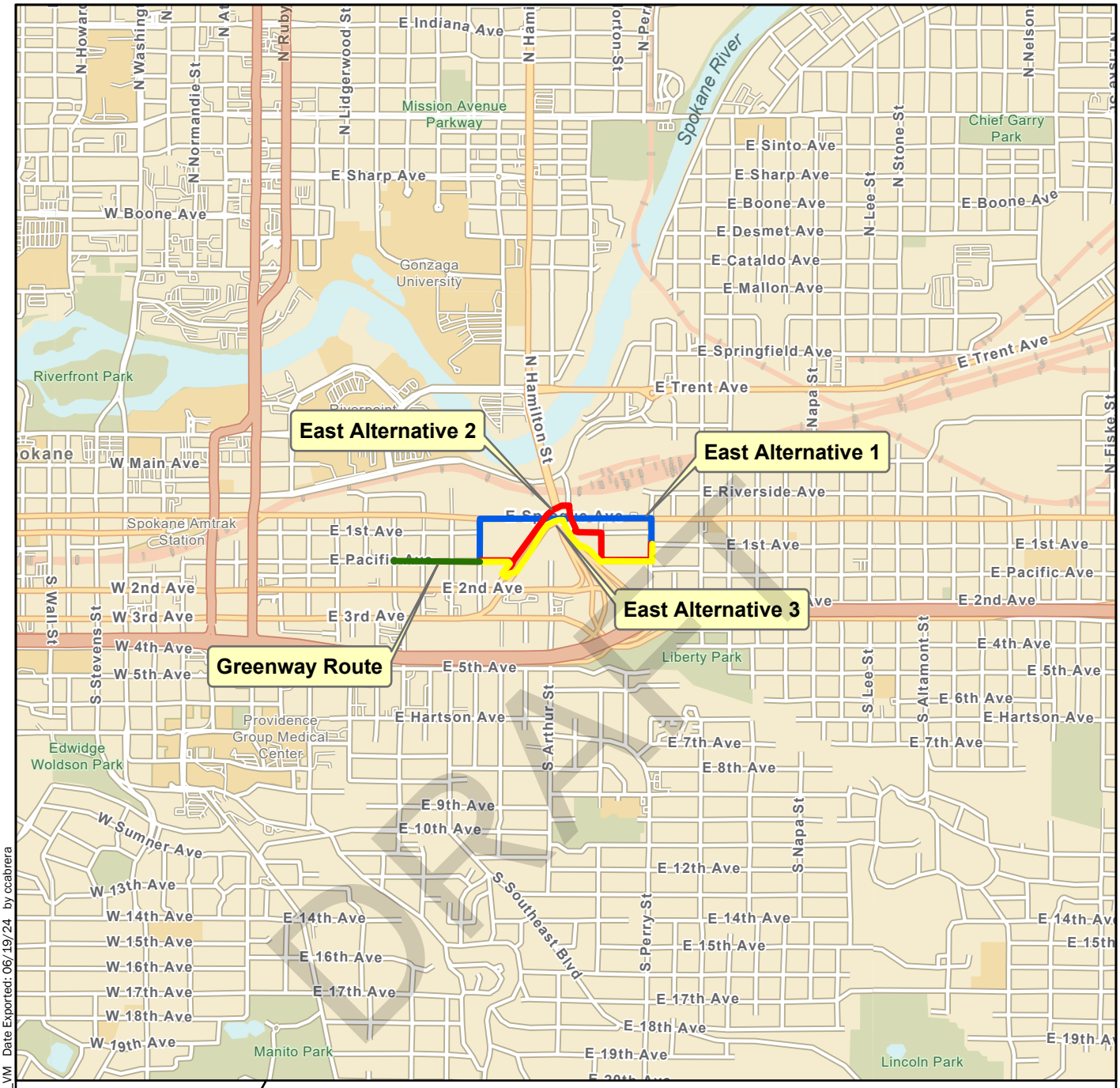
Site Number	Approximate Location	Depth to Basalt Rock	RQD / UCS / Shear Wave Velocity of Rock	Subsurface Soil Conditions Summary	Groundwater
1	Southwest of North Sprague Way and South of Sprague Avenue	3 to 7 feet bgs	RQD - 0 to 95 (average 67 percent) UCS - 15,200 to 39,900 psi	Fill - silty fine to coarse sand with cobbles Fill - fine to coarse gravel with sand, and cobbles with varying silt content	Not encountered
2	South of Sprague Avenue and East of Perry Street	Not encountered to depths of 25 feet		Fill - silty fine gravel with sand Fine to coarse gravel with silt and sand with occasional cobbles	Not encountered
3	South of Sprague Avenue and East of Sherman Street	3 to 10 feet bgs	Not tested	Fill - brown silty gravel with cobbles and boulders	Not encountered
4	I-90 Ramps to Hamilton Street	Not encountered to depths of 50 feet		Coarse sand with silt and cobbles Silty coarse sand with gravel and cobbles	Perched groundwater at interface between sand and basalt
5	North of Second Avenue and East of Arthur Street	12 feet near east end of site	Not tested	Fill - sand and gravel with large boulders Organic silt/peat between about 45 and 50 feet	Approximate 36 feet
6	528 East Second Avenue	2 to 4½ feet bgs	Not tested	Fill - silty gravel Silt	Not encountered

Notes:

RQD – Rock Quality Designation – length of recovered drill core pieces in excess of 4 inches relative to the total length core drilled, in percent.

UCS - Unconfined Compressive Strength of rock in pounds per square inch (psi); bgs – below ground surface; fps - feet per second; psi - pounds per square inch.

Figures



Vicinity Map

Proposed Pacific Avenue Greenway Project
Phase II - Sherman Street to Perry Street
Spokane, Washington

GeoEngineers

Figure 1

Source(s):
- ESRI

Coordinate System: NAD 1983 UTM Zone 11N

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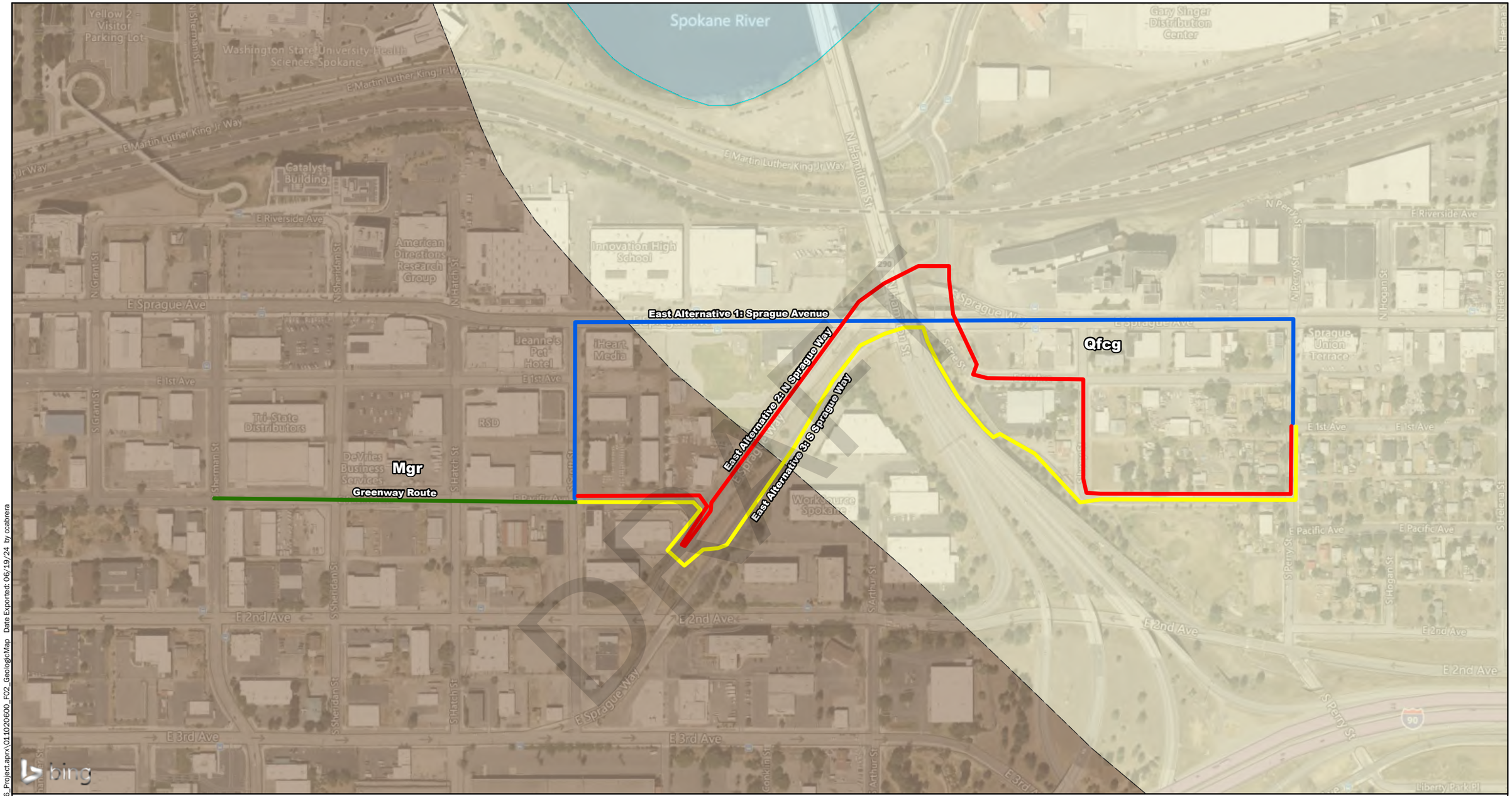

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Pleistocene outburst flood deposits

Tertiary volcanic rocks, Columbia River Basalt Group

Water

East Alternative 1: Sprague Avenue

East Alternative 2: N Sprague Way

East Alternative 3: S Sprague Way

Greenway Route

N

0 300

Feet

Source(s): WA DNR 24K Geologic Mapping.

Coordinate System: NAD 1983 2011 UTM Zone 11N

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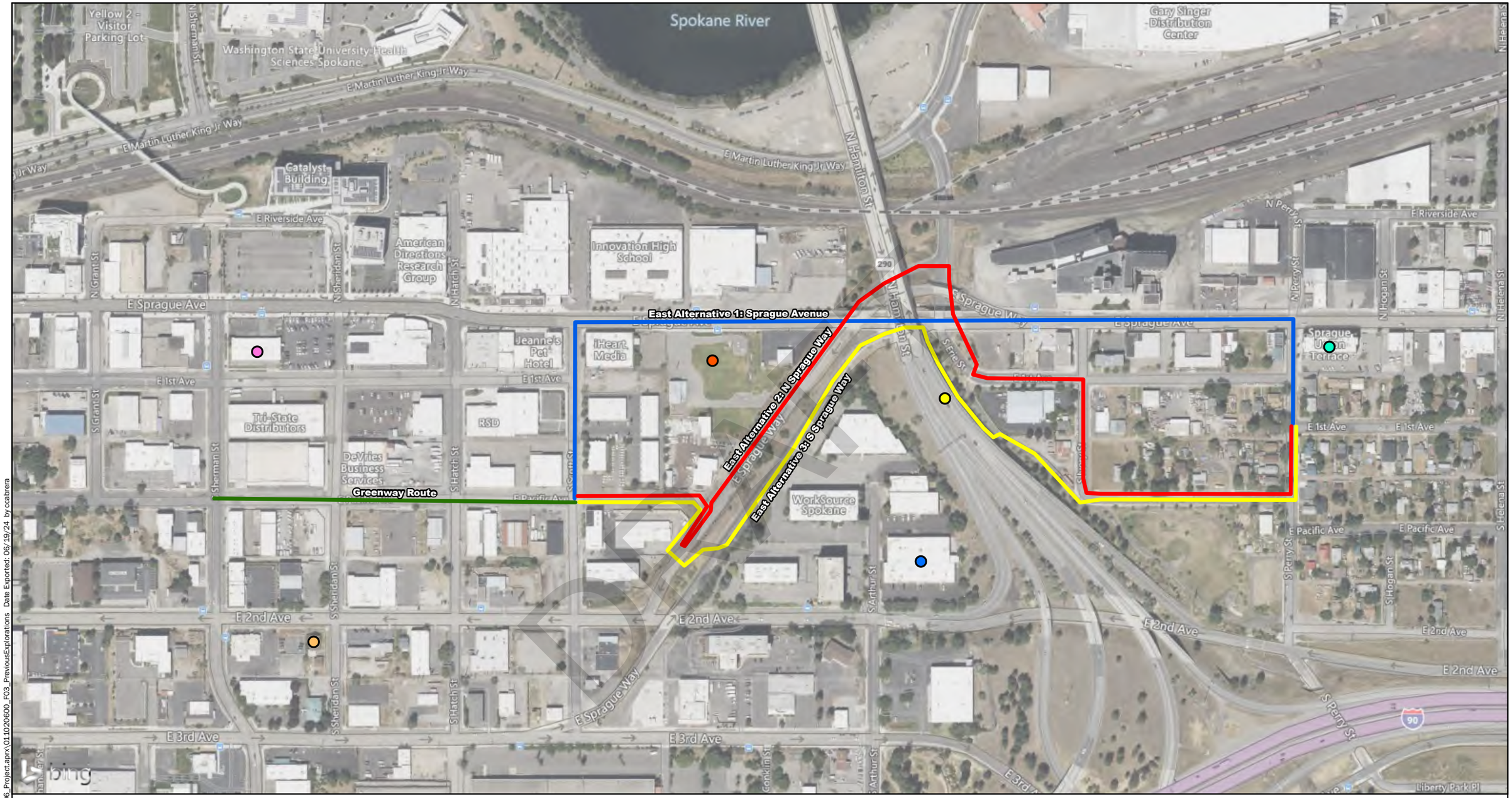
Geologic Map

Proposed Pacific Avenue Greenway Project
Phase II - Sherman Street to Perry Street
Spokane, Washington

GeoEngineers

Figure 2



P:\0\0110206\GIS\0110206_Project\0110206_Project.aprx\011020600_F03_PreviousExplorations Date Exported: 06/19/24 by:ccabrera

Source(s): WA DNR 24K Geologic Mapping.

Coordinate System: NAD 1983 2011 UTM Zone 11N

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

- East Alternative 1: Sprague Avenue
- East Alternative 2: N Sprague Way
- East Alternative 3: S Sprague Way
- Greenway Route

Previous Explorations

- WSDOT, 1968 (Y1115)
- GCI, 1988 (E-899-01)
- GEI, 2007 (10184-002-00)
- GEI, 2011 (0110-090-00)
- GEI, 2011 (19097-002-00)

N

0 300

Feet

Previous Exploration Locations

Proposed Pacific Avenue Greenway Project
Phase II - Sherman Street to Perry Street
Spokane, Washington

GeoEngineers

Figure 3

Appendices

Appendix A
Water Well Reports

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE09218

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

- [x] Construction
- [ ] Decommission

ORIGINAL INSTALLATION Notice of Intent Number: 405777

B-1

Consulting Firm Professional Service Industries, I

Unique Ecology Well IDTag No. _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee

Name (Print Last, First Name) Marc Shill

Driller/Engineer /Trainee Signature Marc Shill

Driller or Trainee License No. 2845

If trainee, licensed driller's Signature and License Number:

Type of Well ("x in box)

- [ ] Resource Protection
- [x] Geotech Soil Boring

Property Owner Carquest Auto Parts

Site Address 110 S. Sherman St.

City Spokane County Spokane

Location NE 1/4-1/4 NW 1/4 Sec 20 Twn 25 R 43E

EWM [x] or WWM [ ]

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

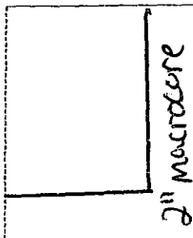
Long Deg _____ Min _____ Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter 2" Static Level _____

Work/Decommission Start Date 2-16-11

Work/Decommission Completed Date 2-16-11

Construction Design	Well Data	Formation Description
4' 	Geoprobe 5400 series 2" macrocore from 0-4' the backfilled to surface with 3/8 bentonite chips	0-4' silty gravel 4' bedrock

SCALE: 1"= 4' PAGE 1 OF 1

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

( ) Construction

( ) Decommission *ORIGINAL INSTALLATION Notice of Intent Number* # 4

CURRENT Notice of Intent No. GE 00504

Unique Ecology Well ID Tag No. BIT 205

Water Right Permit No.

Property Owner Name Avista Corp

Well Street Address 100 Block S Sheridan & Pacfic

City Spokane County Spokane

Location NE 1/4-1/4 NW 1/4 Sec 20 Twn 25N R 43E EWM or WWM (circle one)

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No.

PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☒ Other Cathodic Protection

TYPE OF WORK: Owner's number of well (if more than one)

☐ New well ☐ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 8" inches, drilled 327 ft.

Depth of completed well 327 ft.

CONSTRUCTION DETAILS

Casing installed: ☐ Welded ☐ Liner installed ☒ Threaded 1 1/4" Diam. from 0 ft. to 227 ft.

Perforations: ☐ Yes ☒ No

Type of perforator used

SIZE of perfs in. by in. and no. of perfs from ft. to ft.

Screens: ☒ Yes ☐ No ☐ K-Pac Location

Manufacturer's Name All Vent

Type PVC Model No.

Diam. 1 1/4" Slot size .006 from 227 ft. to 327 ft.

Diam. Slot size from ft. to ft.

Gravel/Filter packed: ☒ Yes ☐ No ☐ Size of gravel/sand Loresco SC 3

Materials placed from 207 ft. to 328 ft.

Surface Seal: ☒ Yes ☐ No To what depth? 207 ft.

Material used in seal Aqua Guard Grout Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? Depth of strata

Method of sealing strata off

PUMP: Manufacturer's Name

Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level ft.

Static level ft. below top of well Date

Artesian pressure lbs. per square inch Date

Artesian water is controlled by (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

Yield: gal./min. with ft. drawdown after hrs.

Yield: gal./min. with ft. drawdown after hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal./min. with ft. drawdown after hrs.

Airtest gal./min. with stem set at ft. for hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Blue Basalt	0	226
Brown clay silt	226	233
Brown dense clay	233	250
Dense blue clay	250	301
Tan clay	301	317
Tanish orange clayey sand	317	328
10 anodes on 5' centers	237	322

RECEIVED
AUG 13 2014
WA State Department of Ecology (SWRO)
Eastern Regional Office

Start Date 7-8-14 Completed Date 7-14-14

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller ☐ Engineer ☐ Trainee Name (Print) Joel Welsh

Driller/Engineer/Trainee Signature

Driller or trainee License No. 3037

Drilling Company Hansen Drilling Co. Inc.

Address 6711 NE 58th Ave.

City, State, Zip Vancouver, Wa 98661

Contractor's Registration No. HANSEDC947RJ Date July 22, 2014

TRAINEE,

Driller's Licensed No.

Driller's Signature

Ecology is an Equal Opportunity Employer.

ECY 050-1-20 (Rev 3/05) **The Department of Ecology does NOT warranty the Data and/or Information on this Well Report.**

Appendix B

Report Limitations and Guidelines for Use

APPENDIX B

REPORT LIMITATIONS AND GUIDELINES FOR USE[11]

This Appendix provides information to help you manage your risks with respect to the use of this report.

Geotechnical Services Are Performed For Specific Purposes, Persons and Projects

This report has been prepared for use by Toole Design Group and their selected design consultants. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, a geotechnical or geologic study conducted for a civil engineer or architect may not fulfill the needs of a construction contractor or even another civil engineer or architect that are involved in the same project. Because each geotechnical or geologic study is unique, each geotechnical engineering or geologic report is unique, prepared solely for the specific client and project site. No one except the Toole Design Group and their selected design consultants should rely on this report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

A Geotechnical Engineering or Geologic Report Is Based On a Unique Set of Project-Specific Factors

This report has been prepared for the proposed Pacific Avenue Greenway Project in Spokane, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

For example, changes that can affect the applicability of this report include those that affect:

- the function of the proposed structure;
- elevation, configuration, location, orientation or weight of the proposed structure;
- composition of the design team; or
- project ownership.

[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability or ground water fluctuations. Always contact GeoEngineers before applying a report to determine if it remains applicable.

Most Geotechnical and Geologic Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ, sometimes significantly, from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Geotechnical Engineering Report Recommendations Are Not Final

Do not over-rely on the preliminary construction recommendations included in this report. These recommendations are not final, because they were developed principally from GeoEngineers' professional judgment and opinion. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for this report's recommendations if we do not perform construction observation.

Sufficient monitoring, testing and consultation by GeoEngineers should be provided during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during the work differ from those anticipated, and to evaluate whether or not earthwork activities are completed in accordance with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective method of managing the risks associated with unanticipated conditions.

A Geotechnical Engineering or Geologic Report Could Be Subject To Misinterpretation

Misinterpretation of this report by other design team members can result in costly problems. You could lower that risk by having GeoEngineers confer with appropriate members of the design team after submitting the report. Also retain GeoEngineers to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering or geologic report. Reduce that risk by having GeoEngineers participate in pre-bid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical

engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

Give Contractors a Complete Report and Guidance

Some owners and design professionals believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering or geologic report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might an owner be in a position to give contractors the best information available, while requiring them to at least share the financial responsibilities stemming from unanticipated conditions. Further, a contingency for unanticipated conditions should be included in your project budget and schedule.

Contractors Are Responsible For Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and to adjacent properties.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering or geology) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

Geotechnical, Geologic and Environmental Reports Should Not Be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

APPENDIX C: PARKING STUDY

Pacific Ave Parking Study June 2024

	Average Parking Utilization		
	8AM	12PM	5PM
Pacific Ave			
S Sherman St to S Sheridan St	43%	29%	5%
S Sheridan St to S Hatch St	54%	51%	9%
S Hatch St to S Scott St	29%	30%	0%
Sprague Ave			
S Scott to N Sprague Way	0%	0%	2%
N Sprague Way to S Ivory St	n/a	n/a	n/a
S Ivory St to S Perry St	0%	1%	5%

Tuesday, June 11, 2024

8:00 AM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	1	**2**	7	**10**			50%	70%	60%
S Sheridan St to S Hatch St	5	**13**	9	**13**			38%	69%	54%
S Hatch St to S Scott St	4	**10**	0	**8**			40%	0%	20%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

12:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	8	**10**			0%	80%	40%
S Sheridan St to S Hatch St	4	**13**	9	**13**			31%	69%	50%
S Hatch St to S Scott St	6	**10**	1	**8**			60%	13%	36%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

5:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	1	**10**			0%	10%	5%
S Sheridan St to S Hatch St	1	**13**	1	**13**			8%	8%	8%
S Hatch St to S Scott St	0	**10**	0	**8**			0%	0%	0%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	1	**20**			0%	5%	3%

Wednesday, June 12, 2024

8:00 AM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	8	**10**			0%	80%	40%
S Sheridan St to S Hatch St	7	**13**	8	**13**			54%	62%	58%
S Hatch St to S Scott St	6	**10**	1	**8**			60%	13%	36%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

12:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	6	**10**			0%	60%	30%
S Sheridan St to S Hatch St	6	**13**	9	**13**			46%	69%	58%
S Hatch St to S Scott St	5	**10**	2	**8**			50%	25%	38%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

5:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	1	**10**			0%	10%	5%
S Sheridan St to S Hatch St	2	**13**	2	**13**			15%	15%	15%
S Hatch St to S Scott St	0	**10**	0	**8**			0%	0%	0%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	4	**20**			0%	20%	10%

Thursday, June 13, 2024

8:00 AM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	1	**2**	7	**10**			50%	70%	60%
S Sheridan St to S Hatch St	7	**13**	8	**13**			54%	62%	58%
S Hatch St to S Scott St	4	**10**	1	**8**			40%	13%	26%

	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

12:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	7	**10**			0%	70%	35%
S Sheridan St to S Hatch St	6	**13**	8	**13**			46%	62%	54%
S Hatch St to S Scott St	5	**10**	0	**8**			50%	0%	25%

	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	1	**20**			0%	5%	3%

5:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	0	**10**			0%	0%	0%
S Sheridan St to S Hatch St	1	**13**	1	**13**			8%	8%	8%
S Hatch St to S Scott St	0	**10**	0	**8**			0%	0%	0%

	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	2	**15**			n/a	13%	13%
N Sprague Way to S Ivory St	0	**0**	1	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	3	**20**			0%	15%	8%

Thursday, June 18, 2024

8:00 AM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	1	**2**	6	**10**			50%	60%	55%
S Sheridan St to S Hatch St	7	**13**	8	**13**			54%	62%	58%
S Hatch St to S Scott St	4	**10**	0	**8**			40%	0%	20%

	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

12:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	6	**10**			0%	60%	30%
S Sheridan St to S Hatch St	6	**13**	9	**13**			46%	69%	58%
S Hatch St to S Scott St	7	**10**	0	**8**			70%	0%	35%

	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	1	**20**			0%	5%	3%

5:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	2	**10**			0%	20%	10%
S Sheridan St to S Hatch St	0	**13**	0	**13**			0%	0%	0%
S Hatch St to S Scott St	0	**10**	0	**8**			0%	0%	0%

	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	3	**20**			0%	15%	8%

Wednesday, June 19, 2024

8:00 AM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	0	**10**			0%	0%	0%
S Sheridan St to S Hatch St	6	**13**	8	**13**			46%	62%	54%
S Hatch St to S Scott St	5	**10**	2	**8**			50%	25%	38%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

12:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	0	**10**			0%	0%	0%
S Sheridan St to S Hatch St	5	**13**	7	**13**			38%	54%	46%
S Hatch St to S Scott St	3	**10**	0	**8**			30%	0%	15%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

5:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	1	**10**			0%	10%	5%
S Sheridan St to S Hatch St	3	**13**	1	**13**			23%	8%	15%
S Hatch St to S Scott St	0	**10**	0	**8**			0%	0%	0%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

Thursday, June 20, 2024

8:00 AM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	1	**2**	3	**10**			50%	30%	40%
S Sheridan St to S Hatch St	4	**13**	7	**13**			31%	54%	42%
S Hatch St to S Scott St	5	**10**	1	**8**			50%	13%	31%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

12:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	1	**2**	3	**10**			50%	30%	40%
S Sheridan St to S Hatch St	3	**13**	7	**13**			23%	54%	38%
S Hatch St to S Scott St	6	**10**	0	**8**			60%	0%	30%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	0	**20**			0%	0%	0%

5:00 PM

	North Side		South Side				Parking Utilization		
Pacific Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Sherman St to S Sheridan St	0	**2**	1	**10**			0%	10%	5%
S Sheridan St to S Hatch St	2	**13**	0	**13**			15%	0%	8%
S Hatch St to S Scott St	0	**10**	0	**8**			0%	0%	0%
	North Side		South Side				Parking Utilization		
Sprague Ave	Occupied	Total Spots	Occupied	Total Spots	Approximate Parking Loss	Notes/Assumptions	North Side	South Side	Combined
S Scott to N Sprague Way	0	**0**	0	**15**			n/a	0%	0%
N Sprague Way to S Ivory St	0	**0**	0	**0**			n/a	n/a	n/a
S Ivory St to S Perry St	0	**9**	1	**20**			0%	5%	3%

APPENDIX D: FULL OUTREACH RESULTS

City of Spokane
Department of Planning and Economic Development
Results Summary for the Pacific Avenue Greenway Alignment (Phase II) Survey

The City of Spokane conducted an online survey for the Pacific Avenue Greenway Alignment (Phase II) Study between May 16th and June 30th, 2024. The purpose of the survey was to get public feedback on a preferred alignment for the greenway between Sherman Street and Perry Street. We received a total of 98 responses to the survey. The results are summarized below.

A. West segment alternatives

The west segment runs along Pacific Avenue from Sherman Street to Scott Street and will be designed to have either bike lanes or a neighborhood greenway.

Question 1: Which alternative do you prefer for the west segment between Sherman Street and Scott Street?

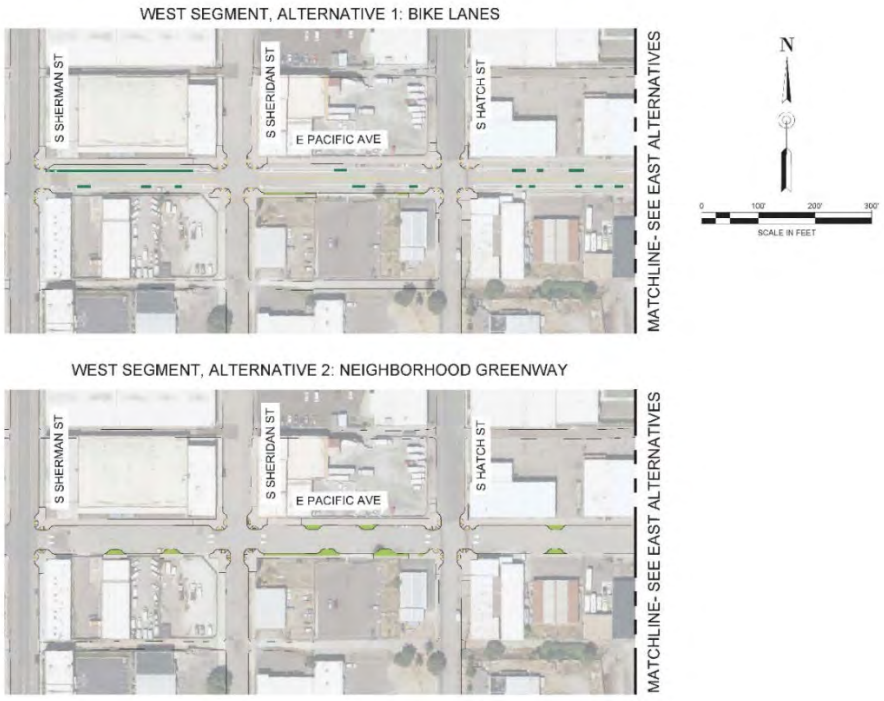


Figure 1: West Segment Alternatives

Results

Majority of respondents (64%) answered “Alternative #2 – Neighborhood greenway”.

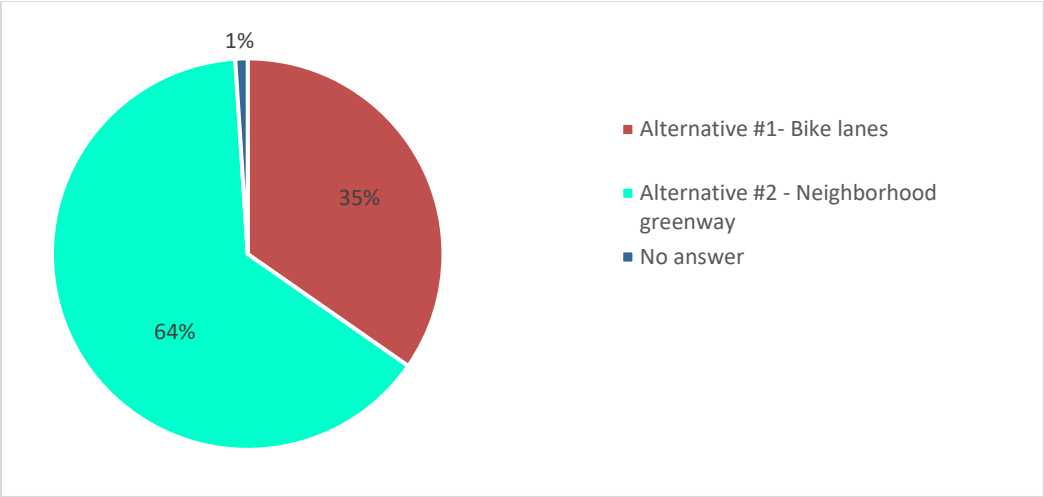


Figure 2: Results for preferred west segment alternative.

B. East Segments alternatives

The east segment runs from Scott Street to Perry Street and has three proposed alignment alternatives.

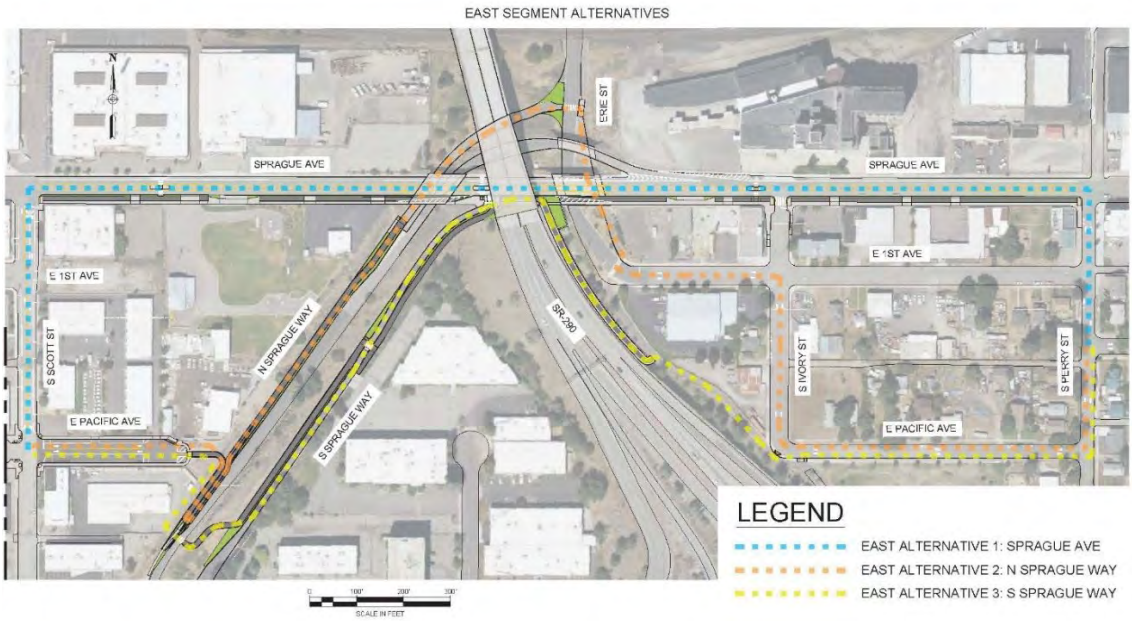


Figure 3: East Segment Alternatives

The next three questions asked survey takers to rate each of the 3 East segment alternatives on the criteria below:

Safety

- Would you feel safe riding, walking or rolling on the route?
- Does the level of interaction with motorized traffic on the route pose any safety issues to you personally?

Comfort

- Would the route be comfortable to ride, walk or roll on?
- Would the terrain/slope on this route be comfortable to ride, walk or roll on?

Directness

- Does the route minimize out of direct travel?

Connectivity

- Is access to other major destinations fairly easy on the route?
- Is access to other trails fairly easy on the route?
- Is transit access fairly easy along the route?

Question 2: On a scale of 1 to 5, with 1 being the lowest and 5 being the highest, please rate East Alternative #1 - Sprague Avenue Alignment on the criteria above.

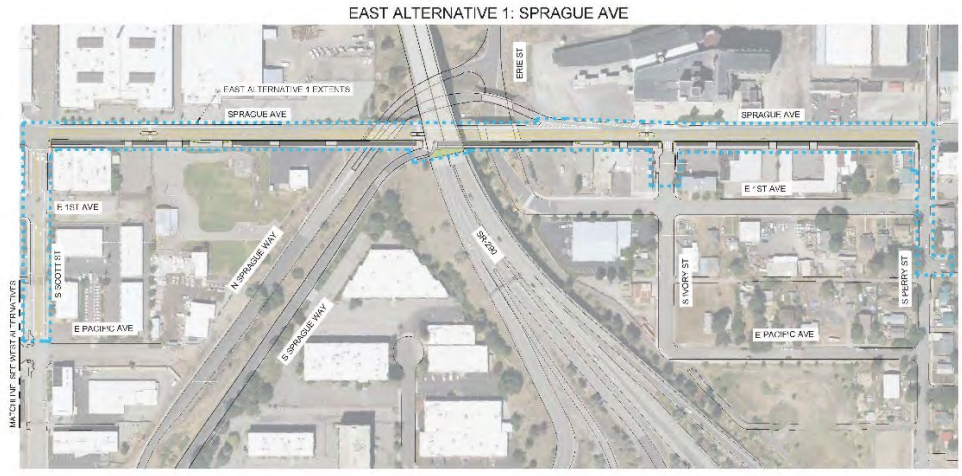


Figure 4: East alternative #1: Sprague Avenue

Results

This alternative received the highest average rating (3.2) on “Directness” and the lowest average rating (2.0) on “Safety”. The average rating for each criteria for East Alternative #1 is summarized as shown below.

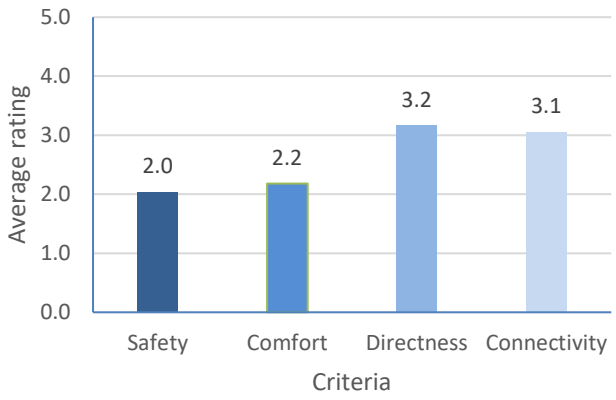


Figure 5: Average rating for each criteria for East alternative #1

In additional comments, respondents expressed concerns about high vehicle speeds along Sprague Avenue, excessive exposure to vehicle pollution and reduced parking for neighborhood businesses.

Question 3: On a scale of 1 to 5, with 1 being the lowest and 5 being the highest, please rate East Alternative #2 – North Sprague Way Alignment on the criteria above.

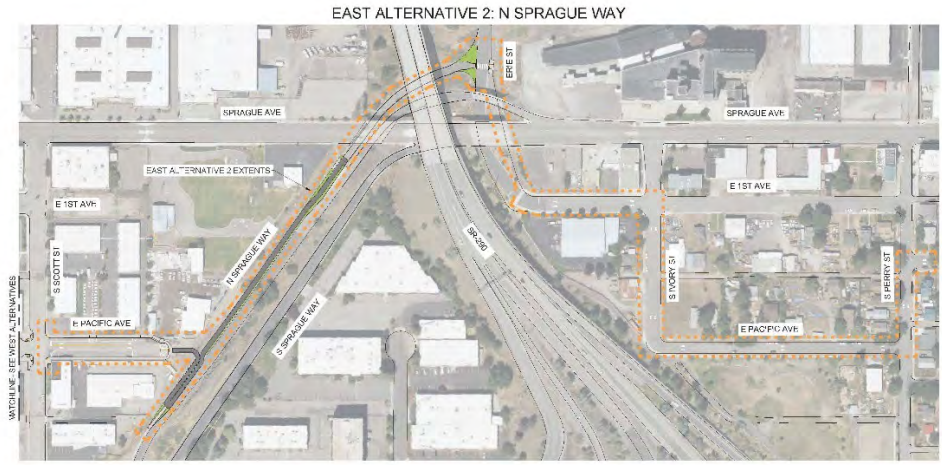


Figure 6: East alternative #2: North Sprague Way

Results

This alternative received the highest average rating (3.1) on “Safety” and the lowest average rating (2.6) on “Directness”. The average rating for each criteria for East Alternative #2 is summarized as shown below.

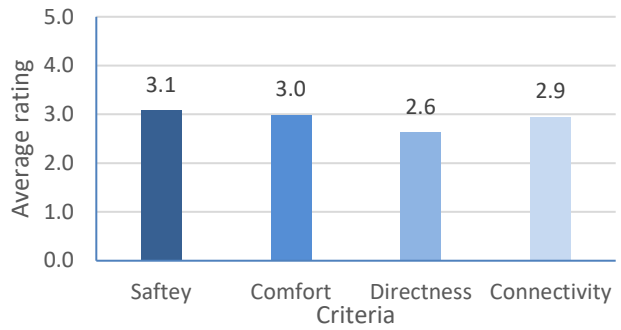


Figure 7: Average rating for each criteria for East alternative #2.

In additional comments, respondents expressed concerns about the elevation variation along the route, the large homeless population under the bridge at Erie Street, and the general indirectness of the route.

Question 4: On a scale of 1 to 5, with 1 being the lowest and 5 being the highest, please rate East Alternative #3 – South Sprague Way Alignment on the criteria above.

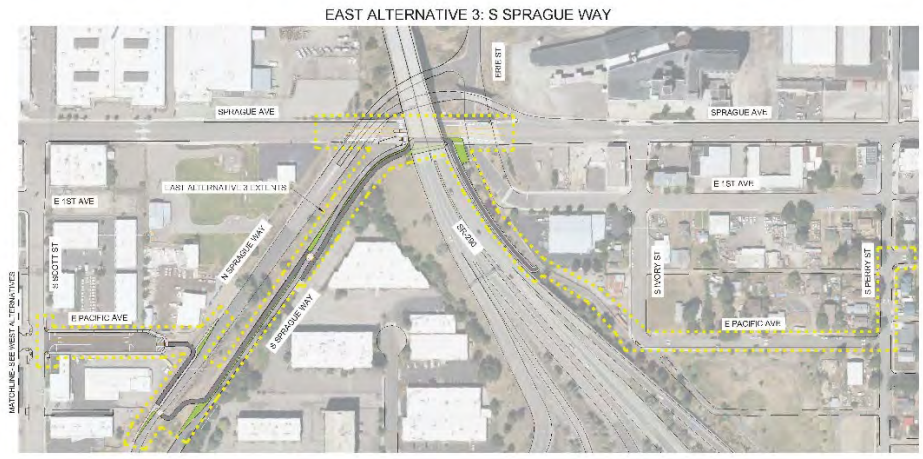


Figure 8: East alternative #3: South Sprague Way

Results

This alternative received the highest average rating (3.6) on both “Safety” and “Connectivity”, and the lowest average rating (3.2) on “Directness”. Overall, this alternative received the highest ratings across all criteria. The average rating for each criteria for East Alternative #3 is summarized as shown below.

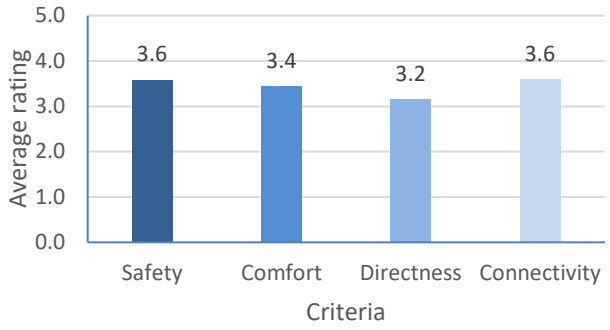


Figure 9: Average rating for each criteria for East alternative #3.

In additional comments, respondents were most concerned about vehicle speeds down South Sprague Way. Most respondents preferred this route for its connectivity to the Ben Burr Trail and its separation from traffic along Sprague Avenue.

Question 5: Which of the three East alternatives do you prefer overall?

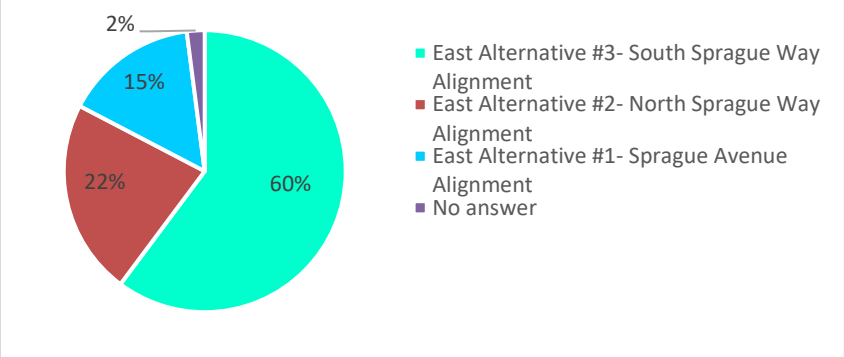


Figure 10: Results for preferred East segment alternative.

Question 6: For what purposes would you use the Pacific Avenue Greenway in the Future?

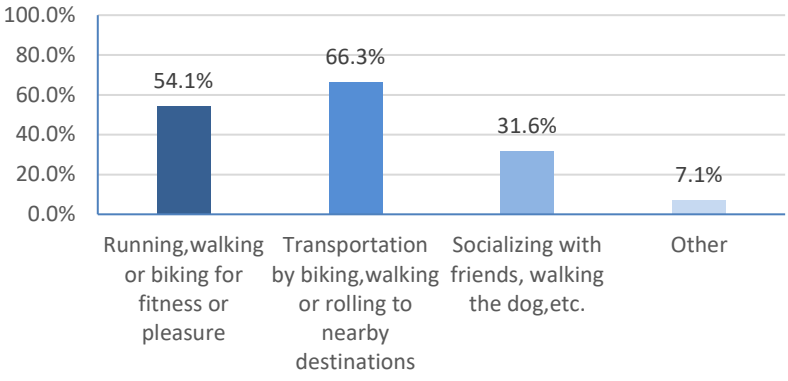


Figure 11: Results for what respondents would use the future greenway for.

Question 7: Please indicate your neighborhood.

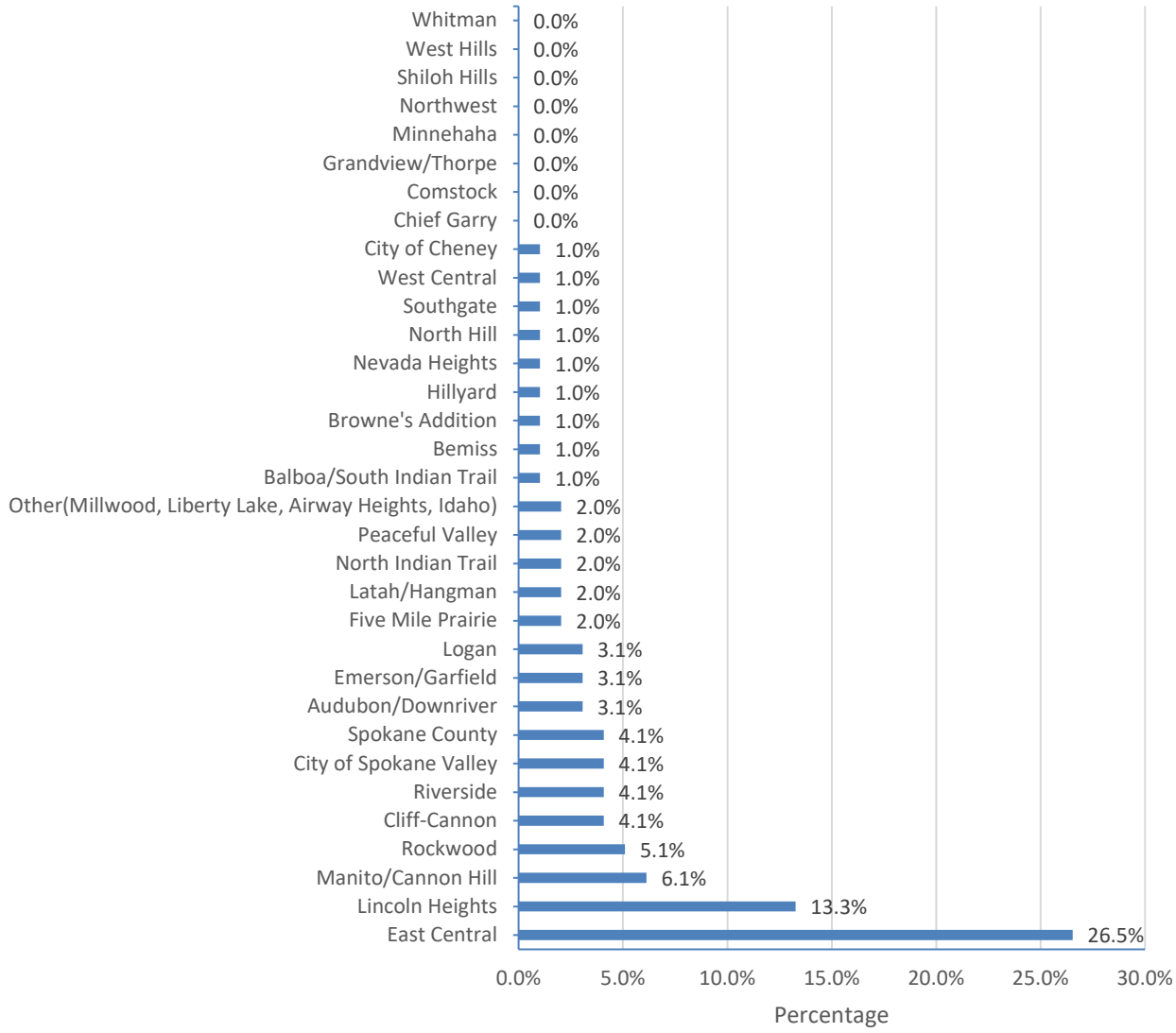


Figure 12: Summary showing what neighborhood respondents belong to.