West Marginal Way SW

Seattle Freight Advisory Board

Seattle Freight Advisory Board
Heather Marx and Brad Topol
1/19/2021 Department of Transportation

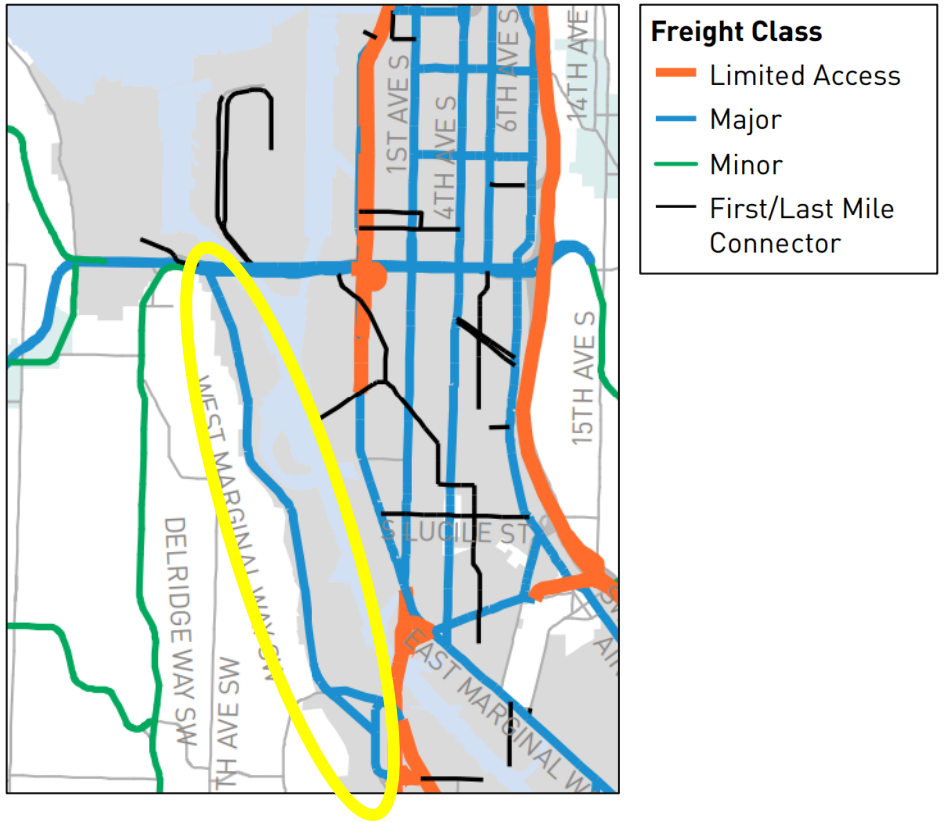
City of Seattle

Agenda

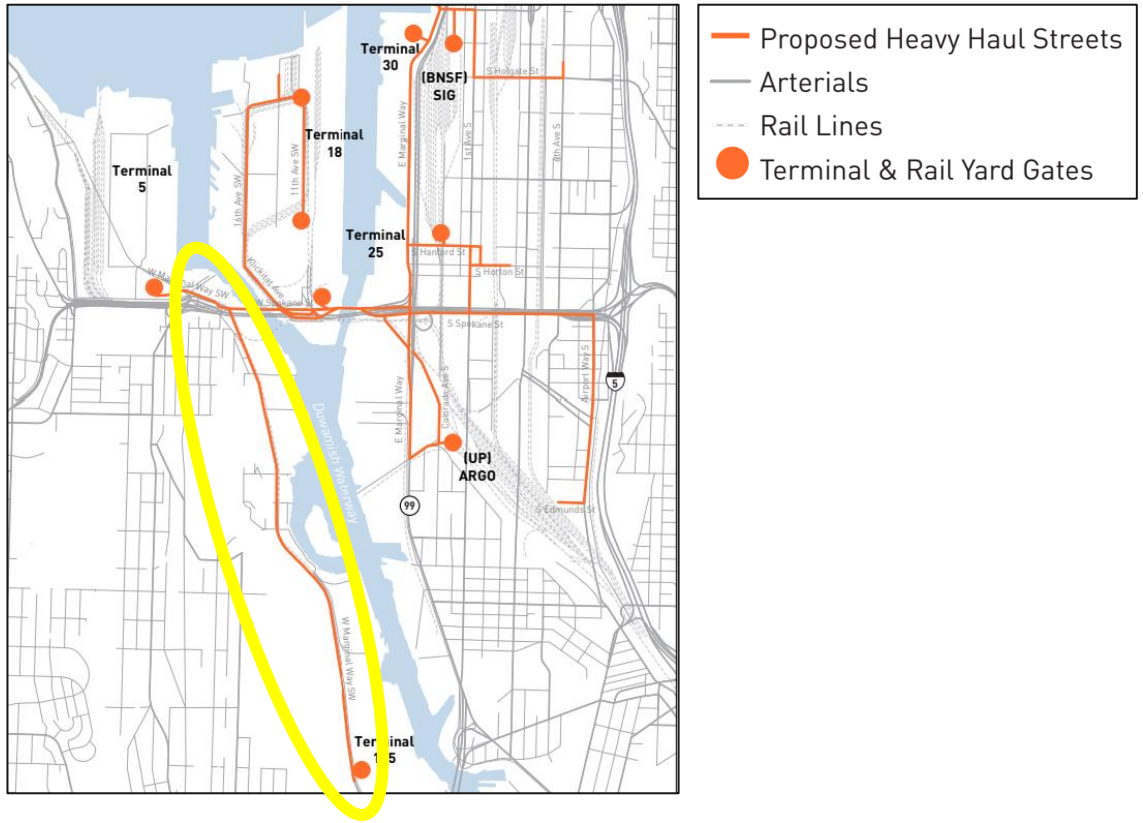
- W Marginal Way SW (WMW) context and background
- 2021 construction projects
- 2019/2020 installed projects
- Proposed designs for the southbound curb lane
- Analysis of data and constraints
- SDOT preferred design options and assessment
- Public/stakeholder engagement and final decision timeline

WMW Context - Freight Master Plan

Major truck street



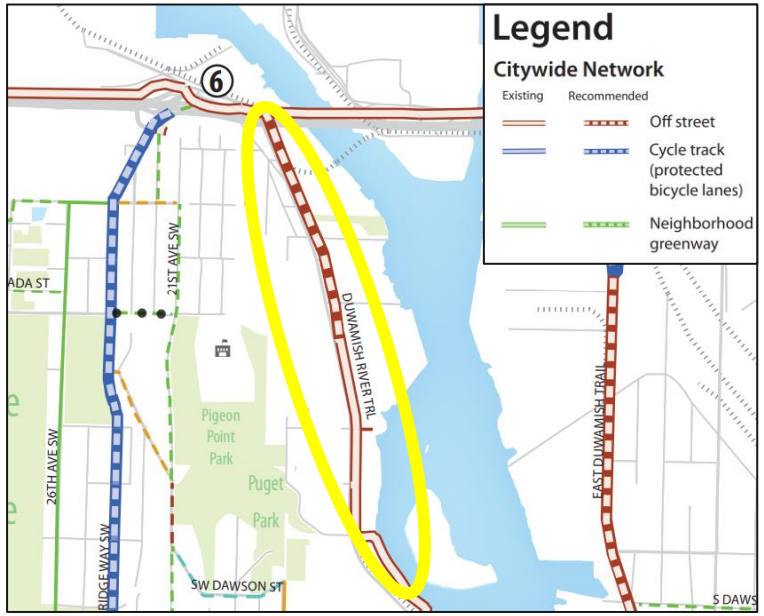
Heavy haul street



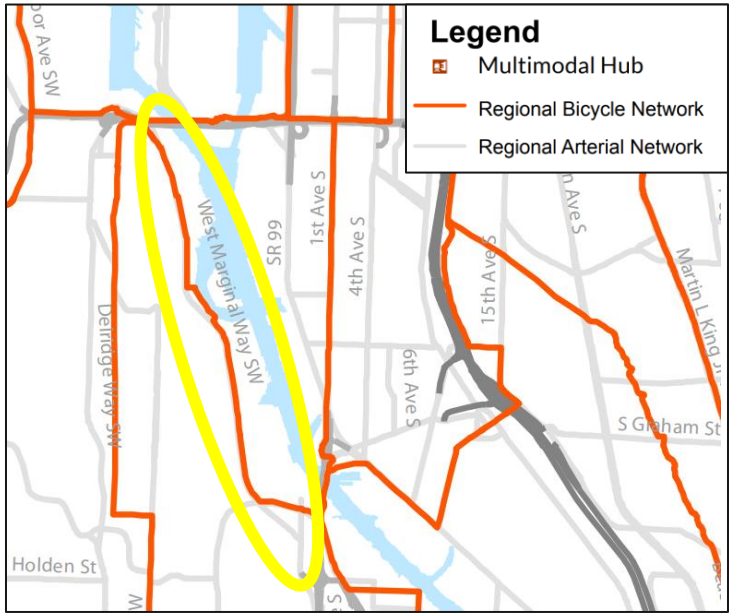
City of Seattle

WMW Context - Bike Master Plan and Reconnect West Seattle survey and goals

Recommended off street facility



Regional bicycle network



Reconnect West Seattle survey

- W Marginal Way bike-related improvements ranked as the #4 most popular bike project
- Bike mode share for 2021 is 10%
- To meet the Reconnect West Seattle mobility goals, 940 additional bike trips would need to be made in the AM peak hour

City of Seattle

WMW context - Seattle complete streets ordinance

- Section 1. SDOT will plan for, design and construct all new projects to provide safe and appropriate accommodation for pedestrians, bicyclists, transit riders, and persons of all abilities

- Section 3. Because freight is important to the basic economy of the City and has unique right-of-way needs to support that role, freight will be the major priority on streets classified as Major Truck Streets. Complete Street improvements that are consistent with freight mobility but also support other modes may be considered on these streets

City of Seattle

Context - Area of focus: SW Marginal Pl to SW Alaska St

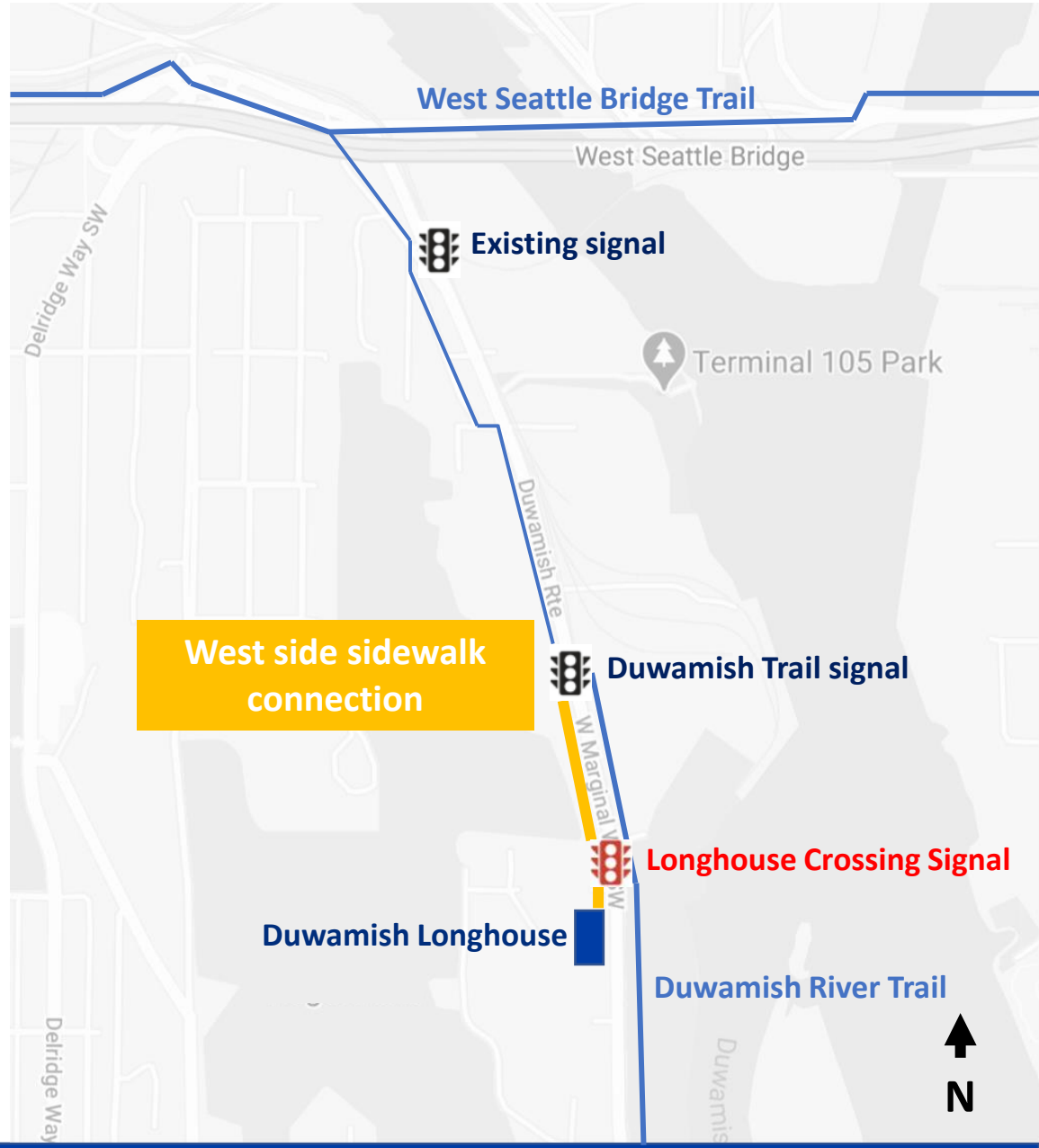
- SDOT is proposing designs in Sections 1 and 2 for multimodal travel and safety
- Most design elements are within the southbound curb lane so the data presented will focus primarily on southbound movements
- No changes are proposed at this time for northbound movements and continue to work with adjacent businesses

City of Seattle

2021 Construction projects

2021 construction

- Longhouse interim crossing signal 2021 installation
  - Permanent installation in 2022 and beyond pending BNSF coordination
- West side sidewalk connection Spring 2021 installation
  - Placed between trees and property line (replaces dirt path)



City of Seattle

2019/2020 installed projects

Traffic calming measures

The issues

- High speeds and volumes make it difficult to access the Longhouse
- April 2020: 50% of people driving are traveling above 42 mph

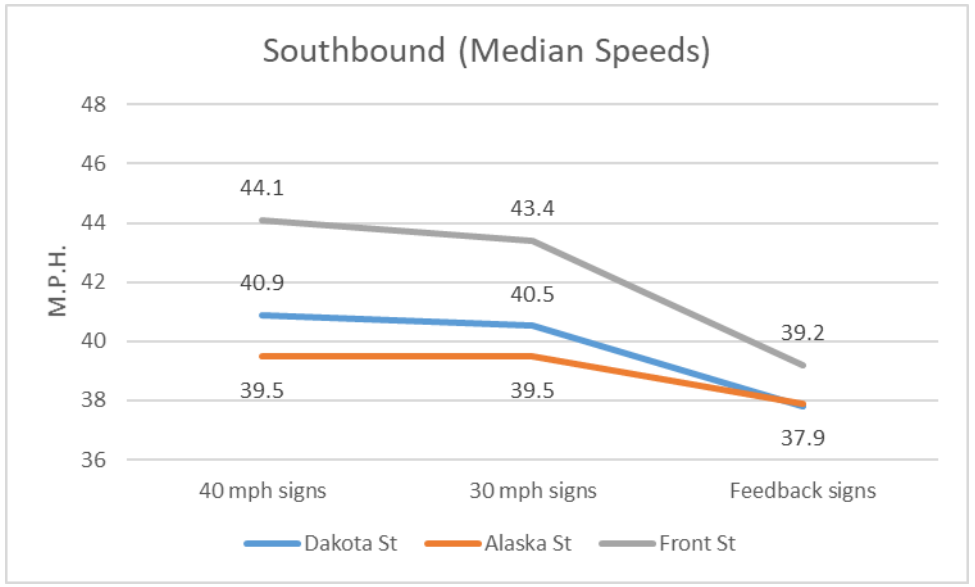
What we did

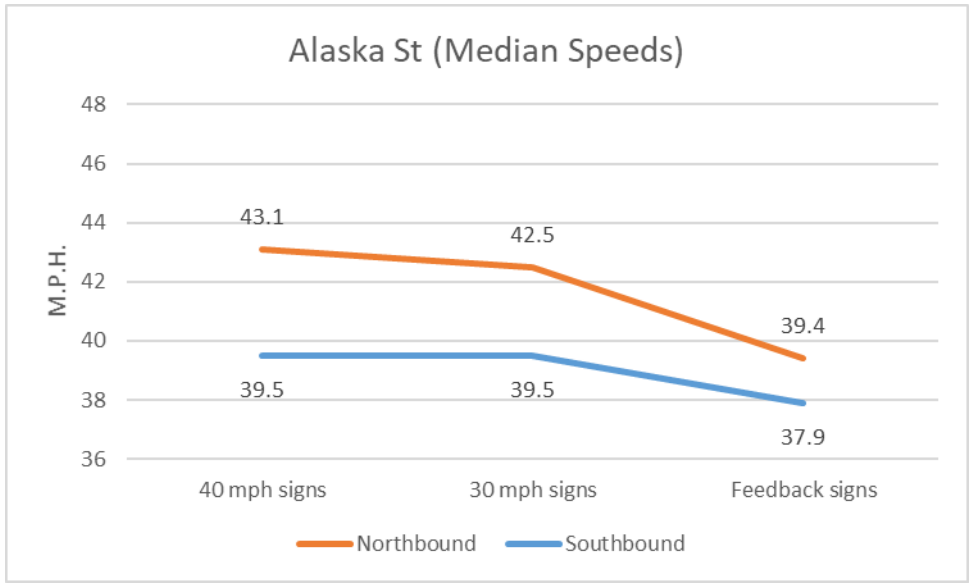
- May 2020: Speed limit signs changed from 40 mph to 30 mph
- September 2020: 6 radar feedback signs installed

City of Seattle

Traffic calming results

- Lowered speed limit signs to 30 mph
  - Reduced speeds by 1-2%
- Installed radar feedback signs
  - Reduced speeds by 4-11%
- Slower southbound speeds observed where most people driving travel single file





City of Seattle

Longhouse lane drop

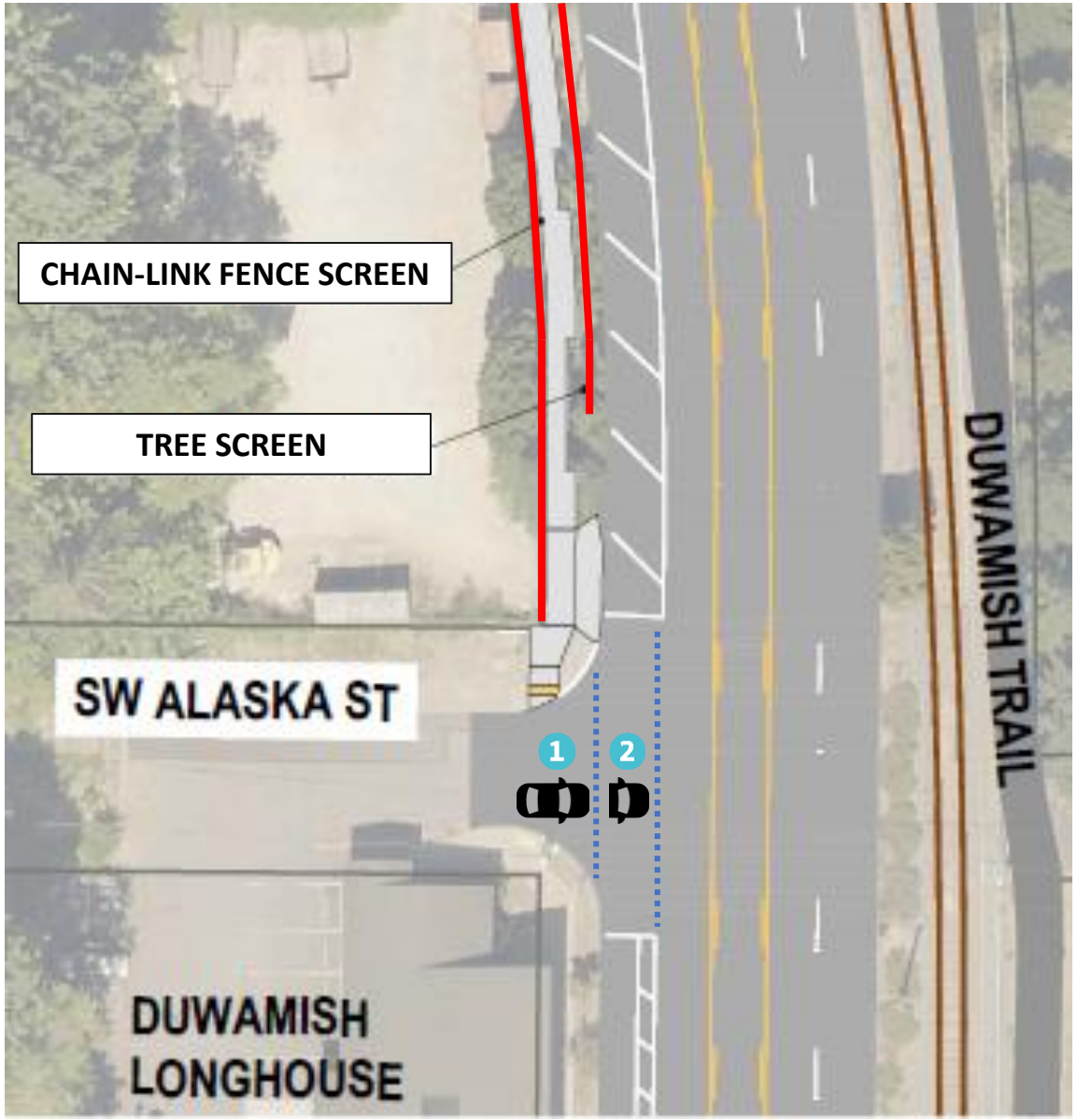
- October 2019: lane drop installed
- Improved sightlines for people entering West Marginal Way from Alaska St
- On-street parking allows for safe and direct curbside access for people driving to Duwamish Longhouse

Longhouse lane drop - Alaska St sight lines

- Two screen lines (fence and trees) make it difficult to see approaching southbound drivers

- Position 1 – Stopped at curb edge
  - Assumes two southbound lanes open and lane drop removed

- Position 2 – Stopped at lane drop edge
  - Assumes lane drop is in place



City of Seattle

Longhouse lane drop - Alaska St sight lines

Position 1

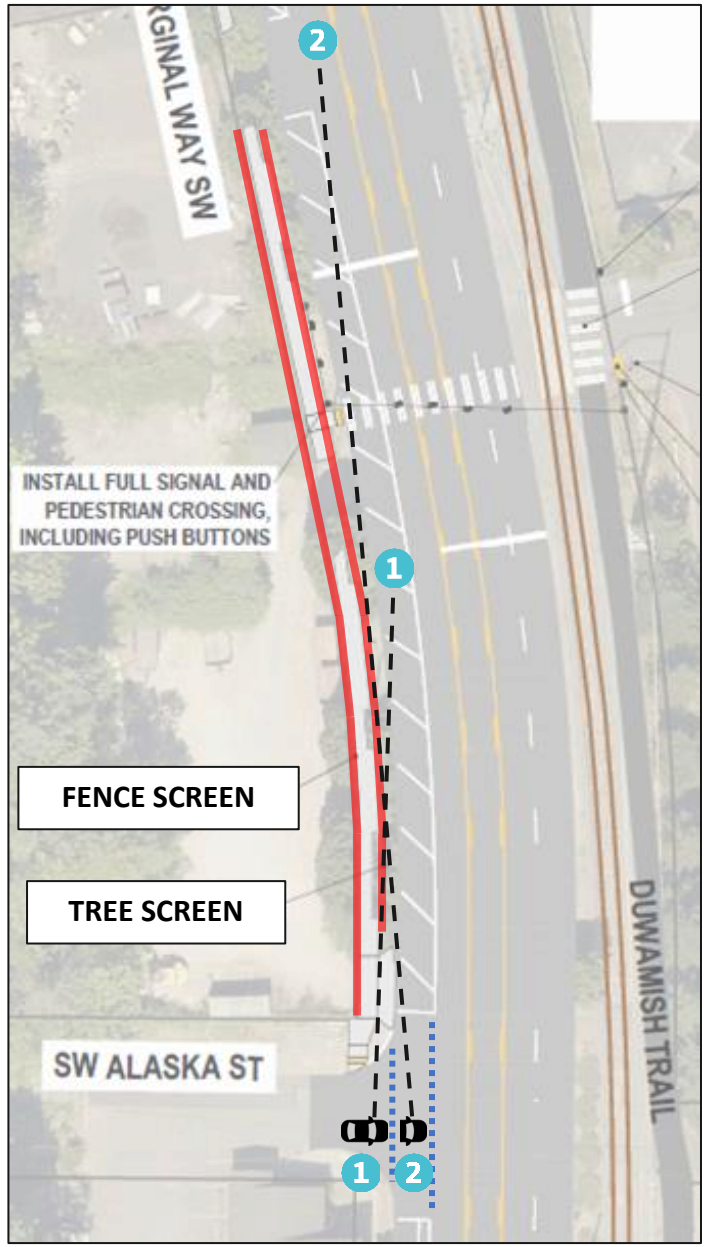
Position 2

City of Seattle

Longhouse lane drop - Alaska St sight lines

- Position 1 – 170’ stopping sight distance
  - Southbound drivers must travel at 27 mph to safely stop
  - 3% of people drive 27 mph or slower

- Position 2 – 340’ stopping sight distance
  - Southbound drivers must travel at 43 mph to safely stop
  - 85% of people drive 43 mph or slower



City of Seattle

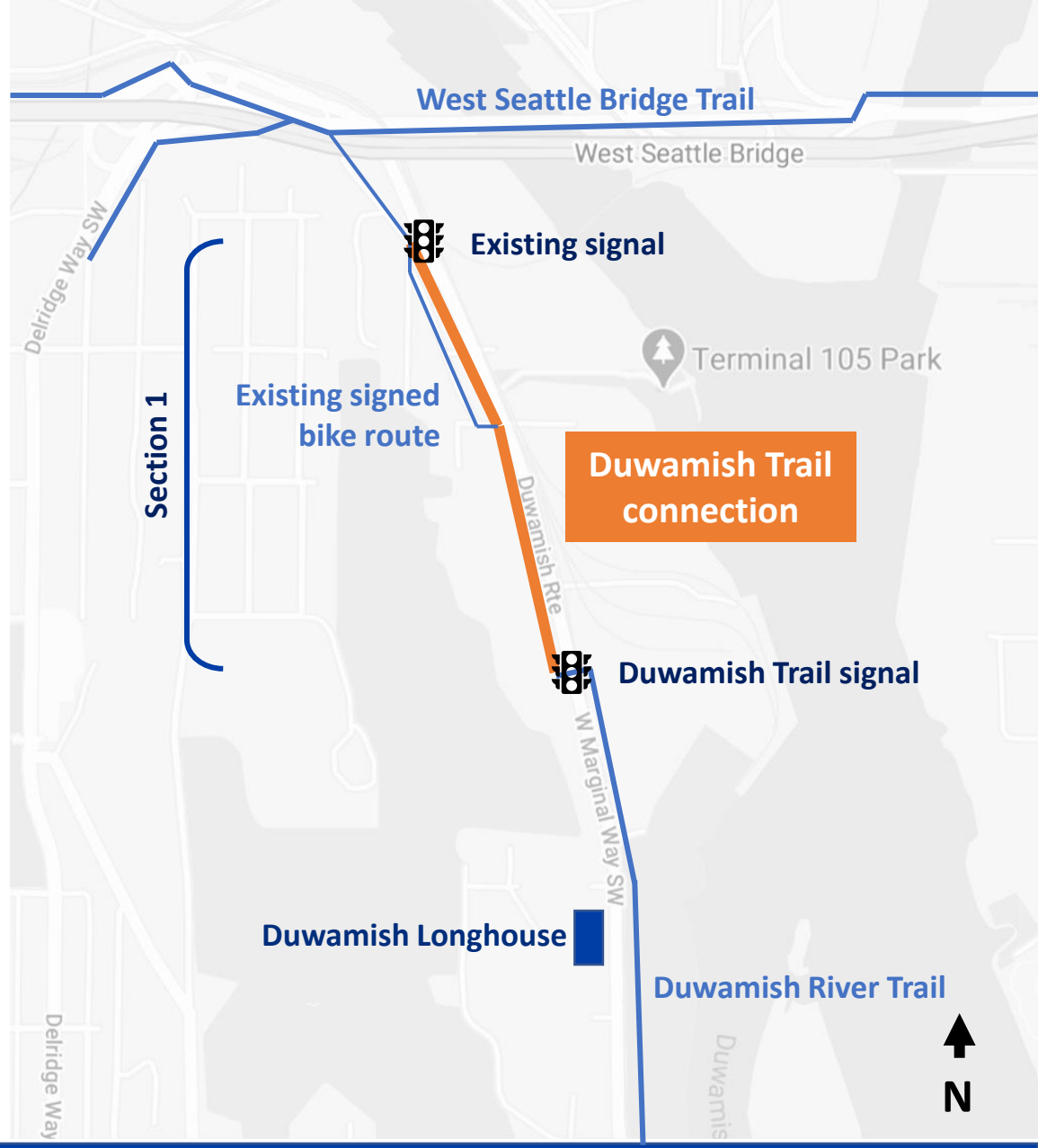
Longhouse lane drop - Alaska St sight lines

City of Seattle

Proposed designs for southbound curb lane

Section 1: Duwamish Trail connection

- Option 1: No build option
  - Maintain existing conditions
- Option 2: Convert southbound curb lane into a two-way protected bike lane
  - We analyzed 4 alternatives to fill the Duwamish River Trail gap and increase multimodal travel options as a part of Reconnect West Seattle



City of Seattle

Section 1: Duwamish Trail alternatives

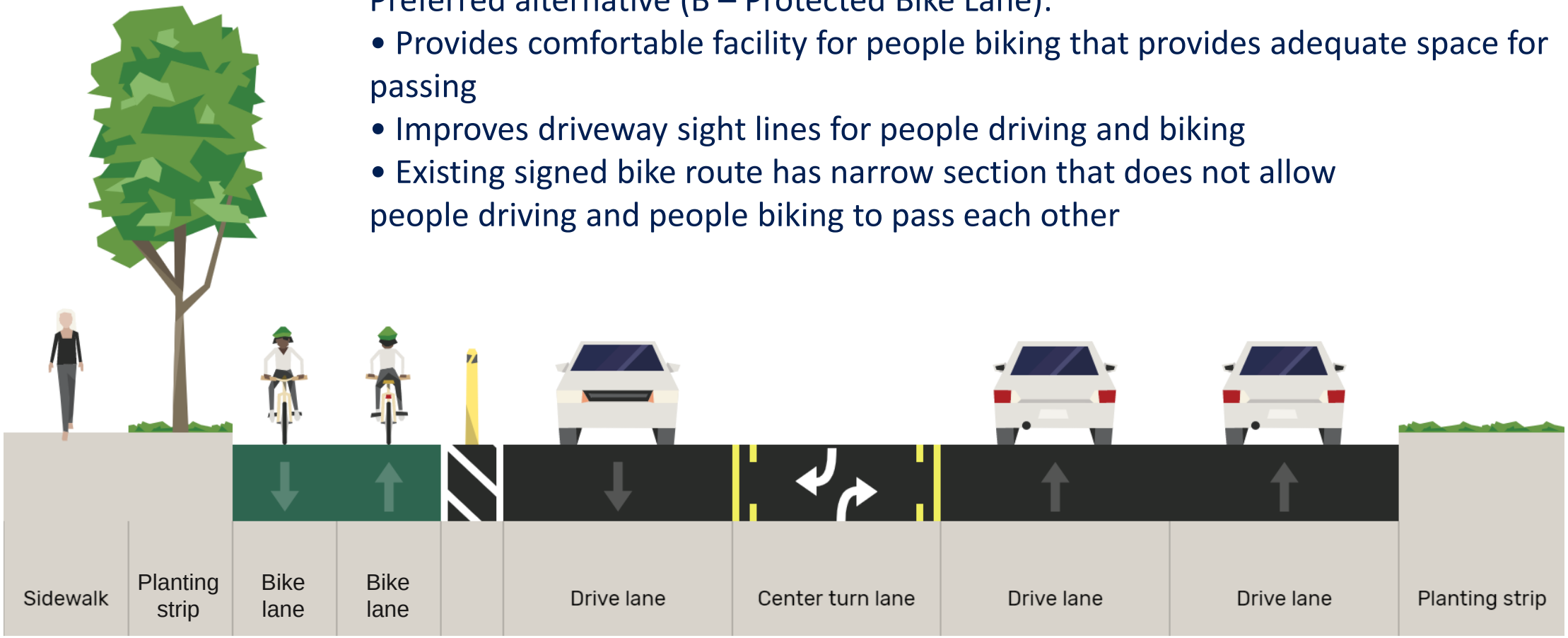
A – Shared space	B – Protected Bike Lane (PBL) [preferred]	C – Protected Bike Lane (PBL)	D – Off-street trail
• Would require removal of all trees • Narrow buffer	• Can fit with desired widths • Improved driveway sightlines	• North end point has no space to cross • Current curb lane queueing during peak periods	• Requires railroad acquisition • Prohibitively expensive

City of Seattle

Section 1: Duwamish Trail connection

Preferred alternative (B – Protected Bike Lane):

- Provides comfortable facility for people biking that provides adequate space for passing
- Improves driveway sight lines for people driving and biking
- Existing signed bike route has narrow section that does not allow people driving and people biking to pass each other



City of Seattle

Section 2: Curb lane design options

- If Duwamish Trail connection is installed there are several design options for the curb lane south of the Duwamish Trail signal
- Potential to maintain or remove the existing lane drop

City of Seattle

Section 2: Curb lane design options

- Option 1: Extend Duwamish Trail connection south to Longhouse crossing signal, maintain on-street parking in front of Longhouse
- Option 2: Extend existing on-street parking north to Duwamish Trail signal
- Option 3: Remove lane drop, remove on-street parking in front of Longhouse

City of Seattle

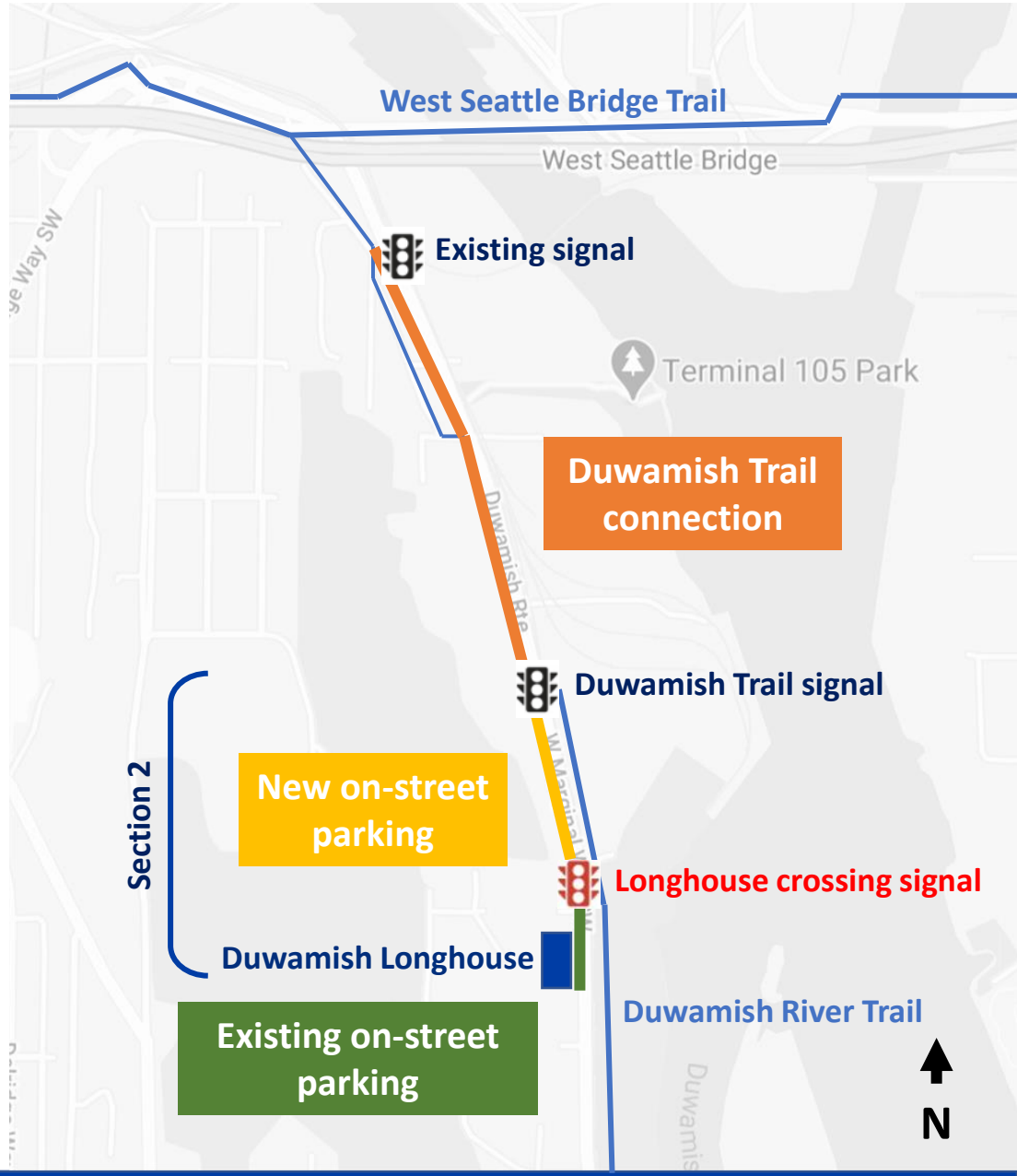
Section 2: Option 1 - Extend Duwamish Trail connection

- Provides direct access for people biking to the Longhouse
- Maintains on-street parking in front of Longhouse
- Duplicative of east side Duwamish River Trail

City of Seattle

Section 2: Option 2 - Extend parking

- Extend existing on-street parking north to Duwamish Trail signal
- Provides 30 additional on-street parking spaces
- Complements new west side sidewalk
- Use for Longhouse access, overnight freight parking, and Herring's House Park overflow
- Potentially underutilized if low demand for overnight freight parking or Herring's House Park overflow



City of Seattle

Section 2: Option 3 - Remove lane drop

- Reintroduces Alaska St sightline issue
- Removes on-street parking in front of Longhouse
- Likely to increase vehicle speeds adjacent to Longhouse
- Negligible change to southbound travel times

City of Seattle

Analysis of data and constraints

Average daily traffic

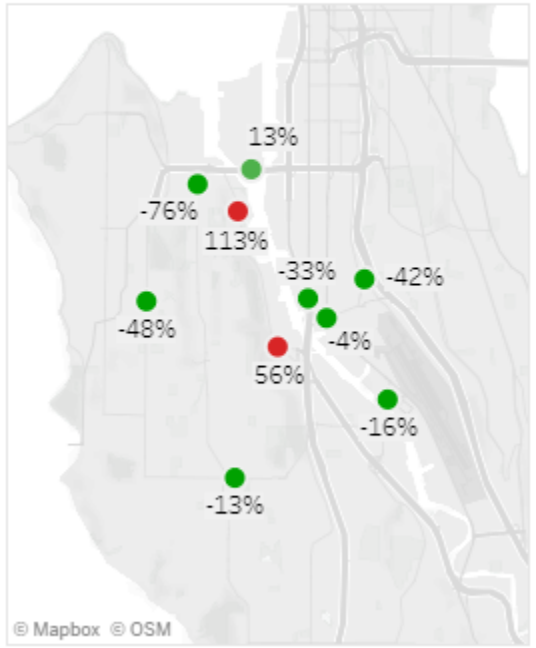
- Volumes have increased on West Marginal Way by 113%
- Carries 7th highest traffic out of 12 corridors being monitored

Weekly Bridge Traffic Monitoring Report

Week ending on 1/1/2021

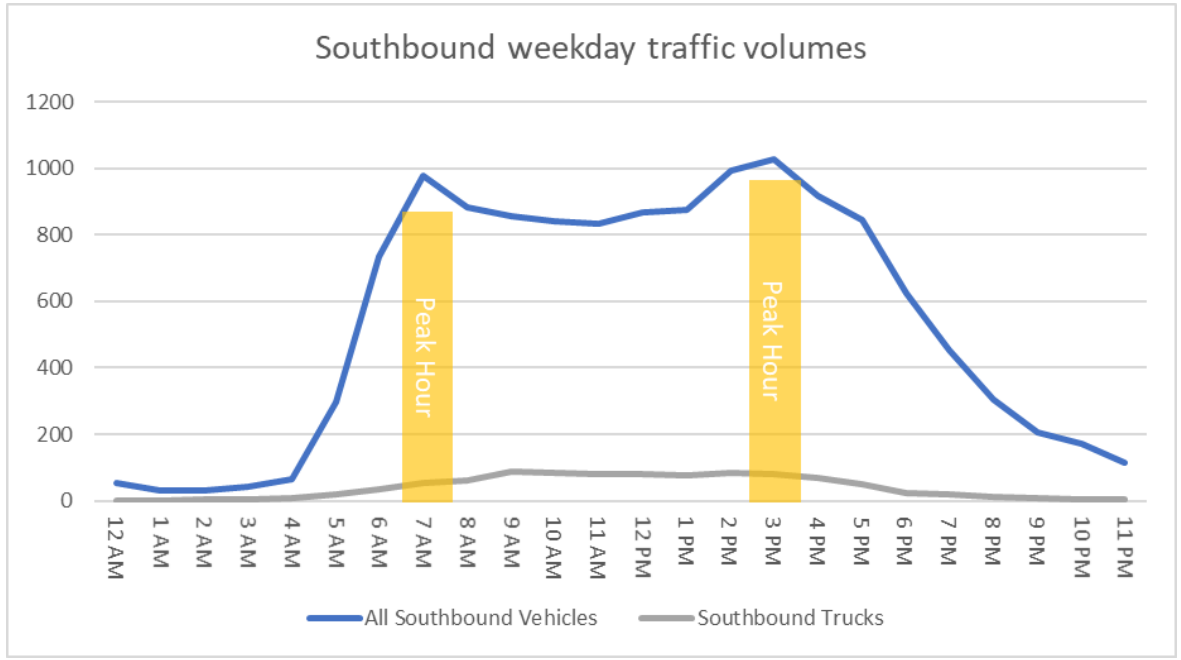
Vehicle Volumes

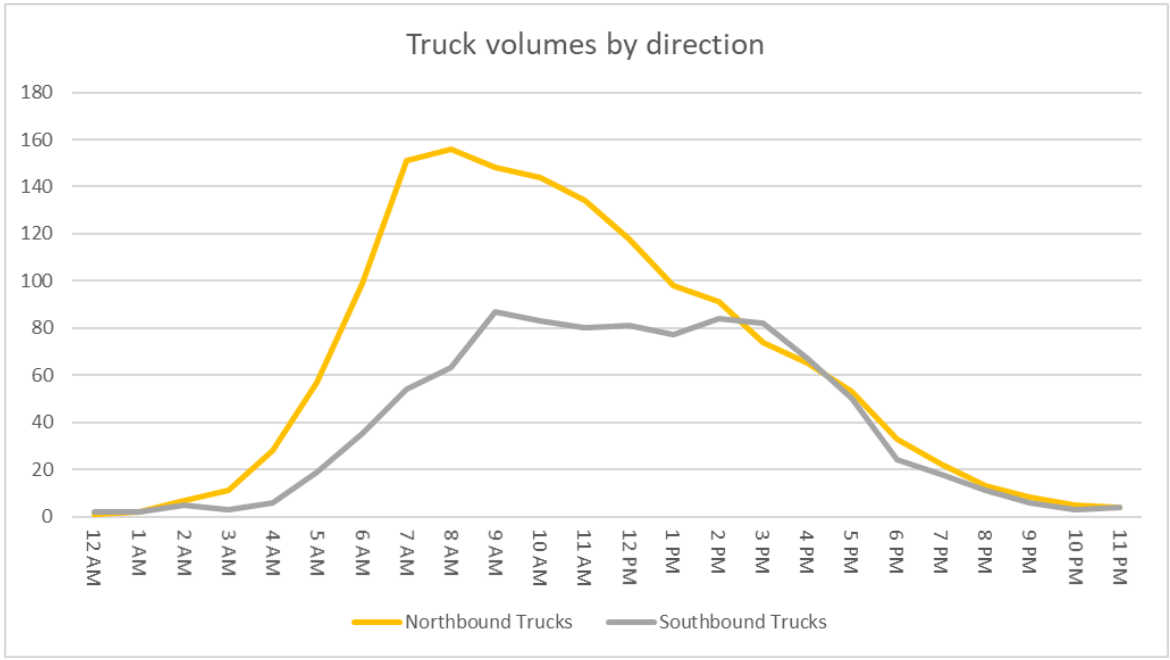
Location	Average Weekday Volume	Baseline Volume (Feb 2020)	Chan
Spokane St Low Bridge	9,450	8,340	13%
E Marginal Way at 1st Ave S	37,950	56,950	-33%
35th Ave SW at SW Raymond St	13,040	25,260	-48%
West Marginal Way SW at Duwamish River Trail	20,610	9,680	113%
Delridge Way SW at SW Andover St	5,520	23,400	-76%
South Park Bridge	13,120	15,640	-16%
Highland Park Way SW at West Marginal Way SW	29,570	18,920	56%
SW Roxbury St at 15th Ave SW	21,960	25,360	-13%
Airport Way S & Corson Ave S	10,260	17,720	-42%
S Michigan St at 4th Ave S	34,980	36,410	-4%
1st Ave S Br	83,600	96,370	-13%
SR 99 at S Lander St	30,150	70,940	-58%



City of Seattle

Average daily traffic (southbound)

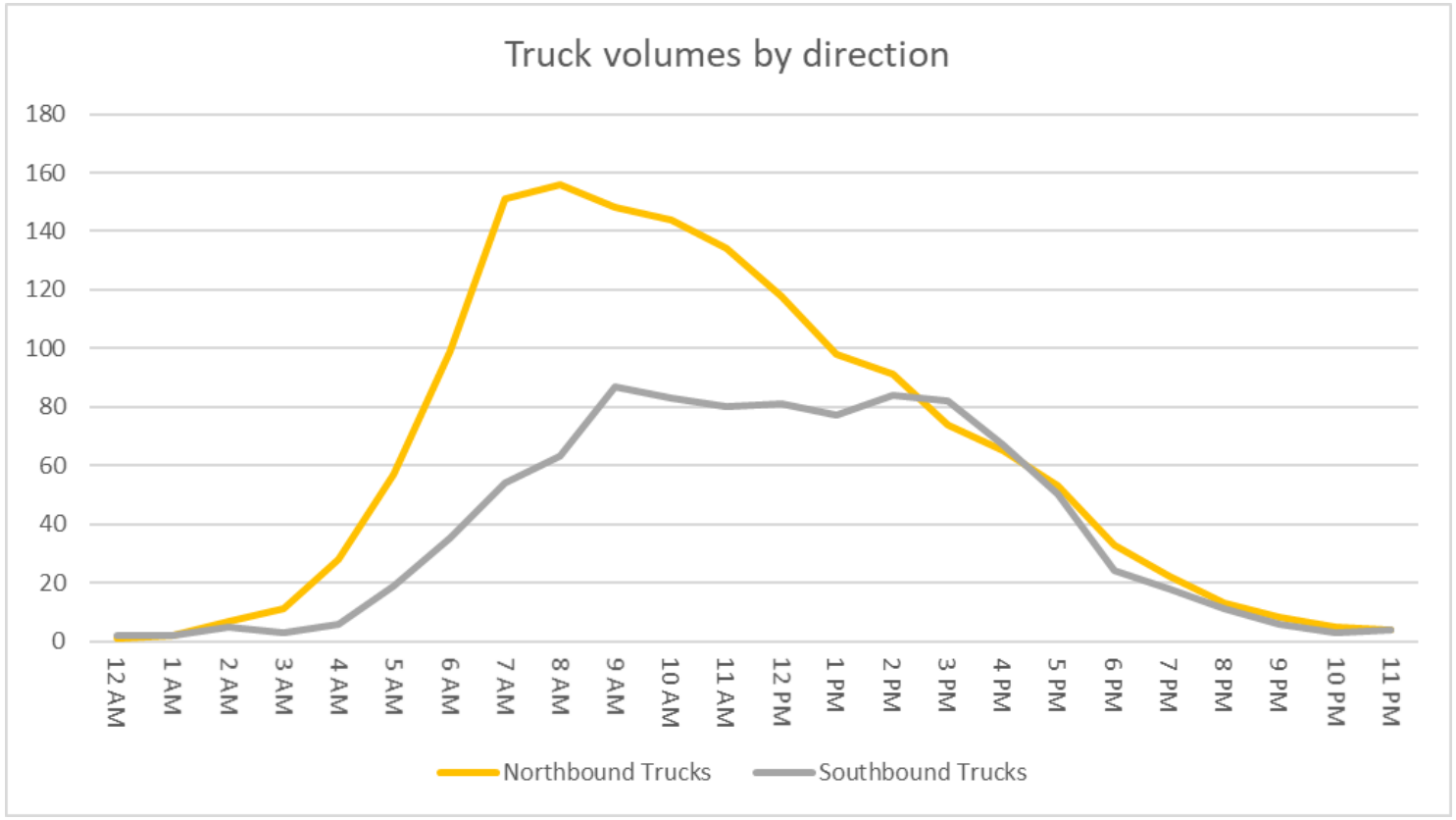




*Data collected 11/5/20 to 11/11/20 at SW Dakota St

City of Seattle

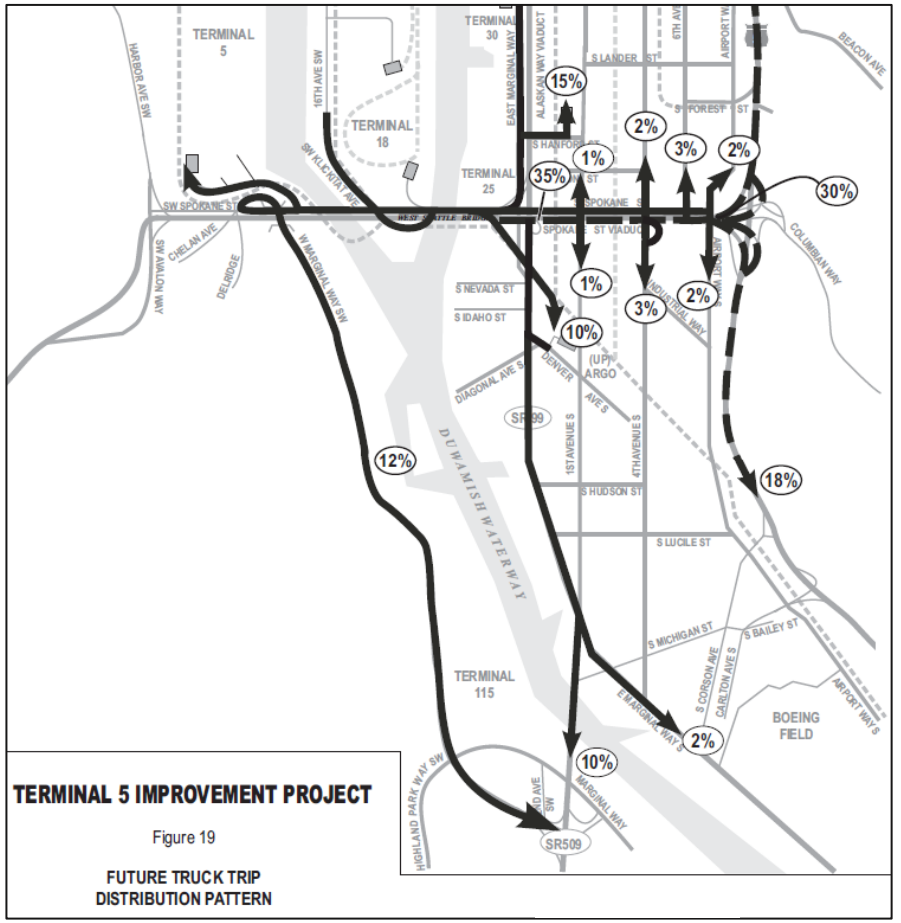
Average daily truck traffic



*Data collected 11/5/20 to 11/11/20 at SW Dakota St

Terminal 5 impacts: Average daily traffic

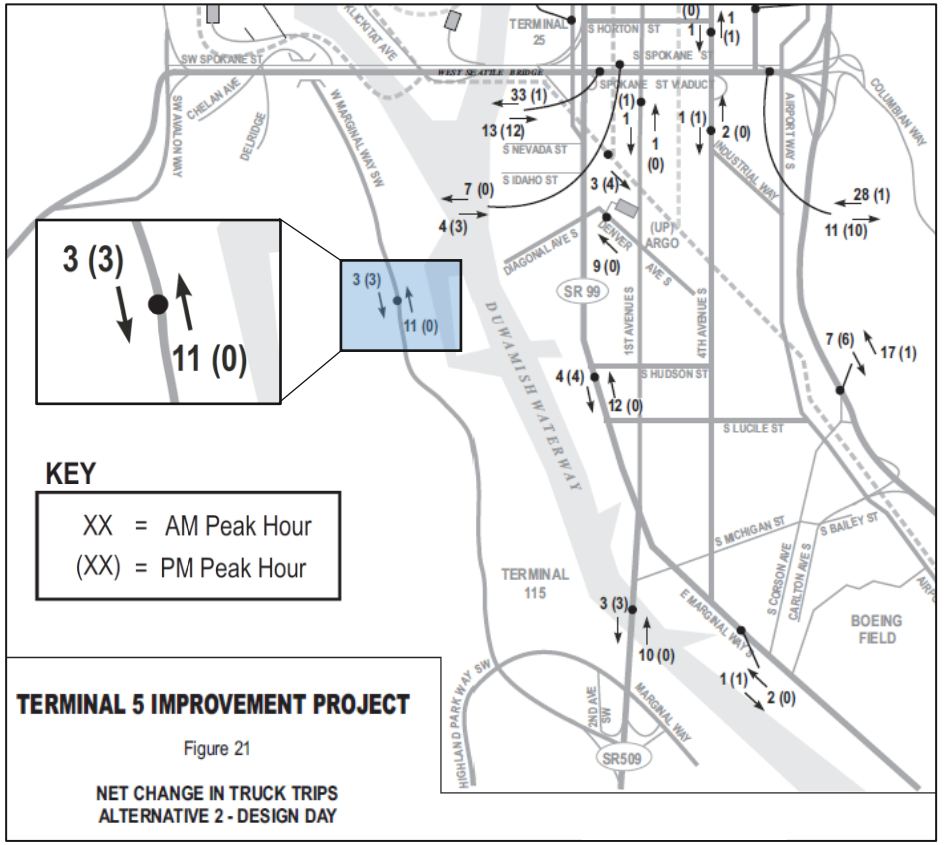
- Existing southbound Terminal 5 trucks
  - 10 trucks in AM peak hour
  - 8 trucks in PM peak hour
- West Seattle High Bridge reopening in 2022
- Terminal 5 to open with partial capacity in April 2021 and full capacity in 2023



City of Seattle

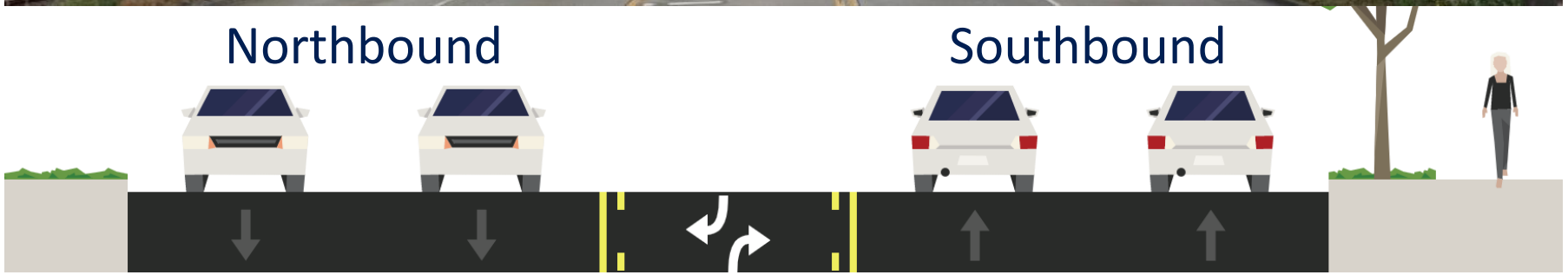
Terminal 5 impacts: Net change in truck trips

- Environmental impact statement:
  - **Lists 3 additional southbound trucks in both AM and PM peak hours**
  - Constitutes **0.3% increase** of existing peak period volumes



City of Seattle

Lane utilization (PM peak hours)



By direction:	64%	36%	**80%**	**20%**
All lanes:	28%	15%	45%	12%

*Data collected 7/23/20 (3pm-6pm) at SW Dakota St

City of Seattle

Travel times

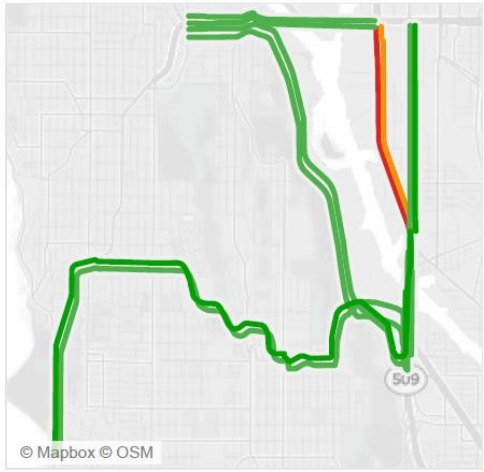
- Southbound travel time change from high bridge closure
  - Increased 25% in the AM (2 min)
  - Increased 10% in the PM (1 min)

- Duwamish Trail connection expected to increase southbound travel times by 10 seconds at peak periods

Vehicle Travel Times (in min)

Route	...	Time Period	Typical Time Current	Typical Time Baseline (Feb 2020)
Spokane St - EB - Harbor Ave to East Marginal Way S		6-9 AM	3.7	4.1
		4-7 PM	4.1	4.0
Spokane St - WB - East Marginal Way S to Harbor ..		6-9 AM	3.6	3.5
		4-7 PM	4.2	3.7
Fauntleroy Way SW - EB - Ferry to 1 Ave Br		6-9 AM	15.4	14.6
		4-7 PM	17.3	16.1
Fauntleroy Way SW - WB - 1 Ave Br to Ferry		6-9 AM	13.4	18.9
		4-7 PM	16.9	19.9
1 Ave S - NB - 1 Ave Br to S Spokane S		6-9 AM	2.8	3.1
		4-7 PM	3.0	3.0
1 Ave S - SB - S Spokane St to 1 Ave Br		6-9 AM	3.2	3.3
		4-7 PM	3.3	3.6
E Marginal Way S - NB - 1 Ave Br to S Spokane S		6-9 AM	3.6	3.1
		4-7 PM	3.6	3.1
E Marginal Way S - SB - S Spokane St to 1 Ave Br		6-9 AM	3.1	2.9
		4-7 PM	3.6	2.9
W Marginal Way SW - SEB - Harbor Ave SW to 1 Ave Br		6-9 AM	10.8	7.8
		4-7 PM	10.7	9.6
W Marginal Way SW - NWB - 1 Ave Br to Harbor Ave SW		6-9 AM	8.4	7.2
		4-7 PM	10.5	7.9

4 - 7 PM Planning Time

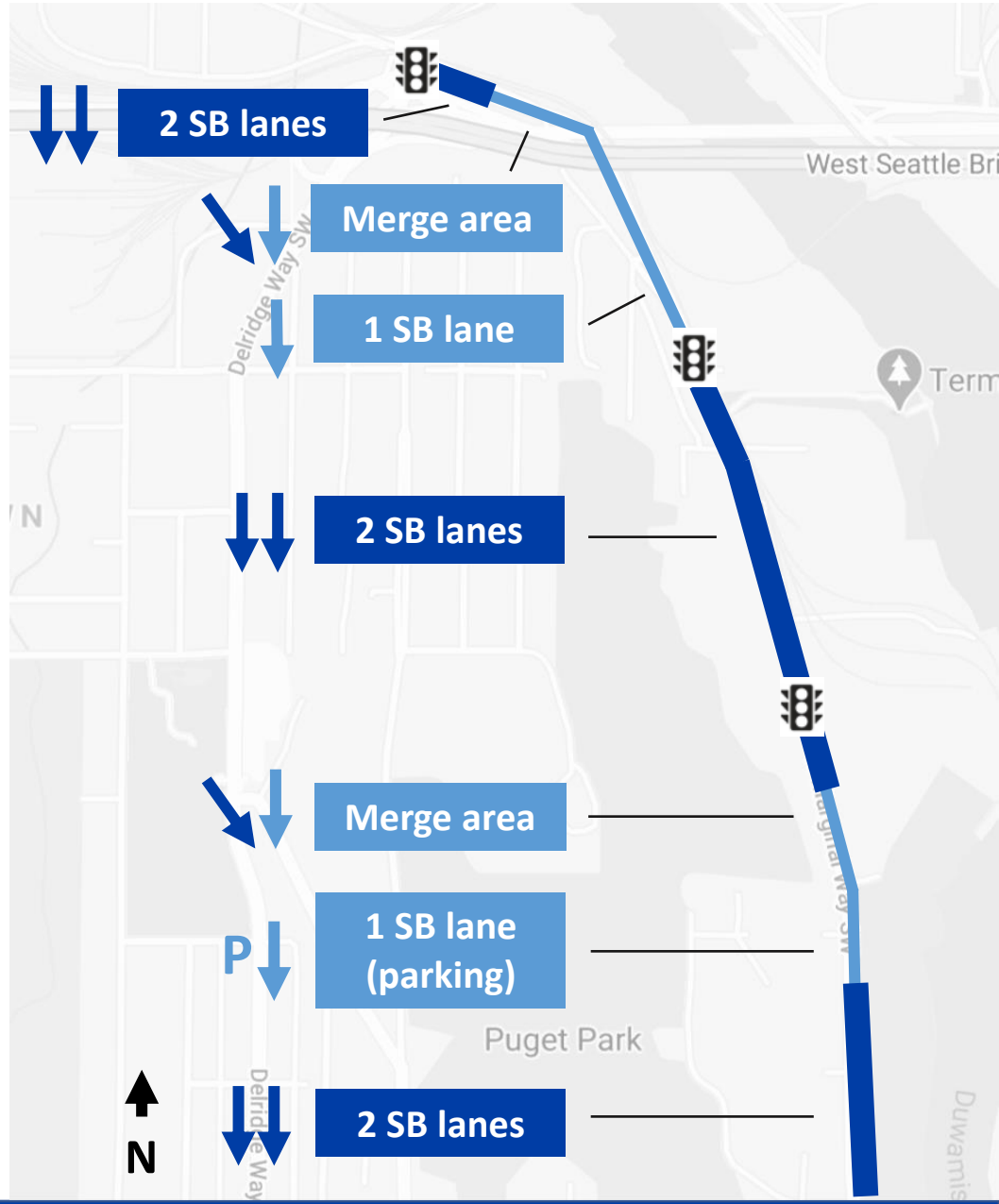


Color Legend
Solid Green <= 0%
0% > Light Green <= 25%
25% > Amber <= 50%
50% > Red

City of Seattle

Travel times: Existing capacity constraints

- Chelan 5-way intersection to SW Marginal Pl
- Highland Park Way SW / W Marginal Way intersection



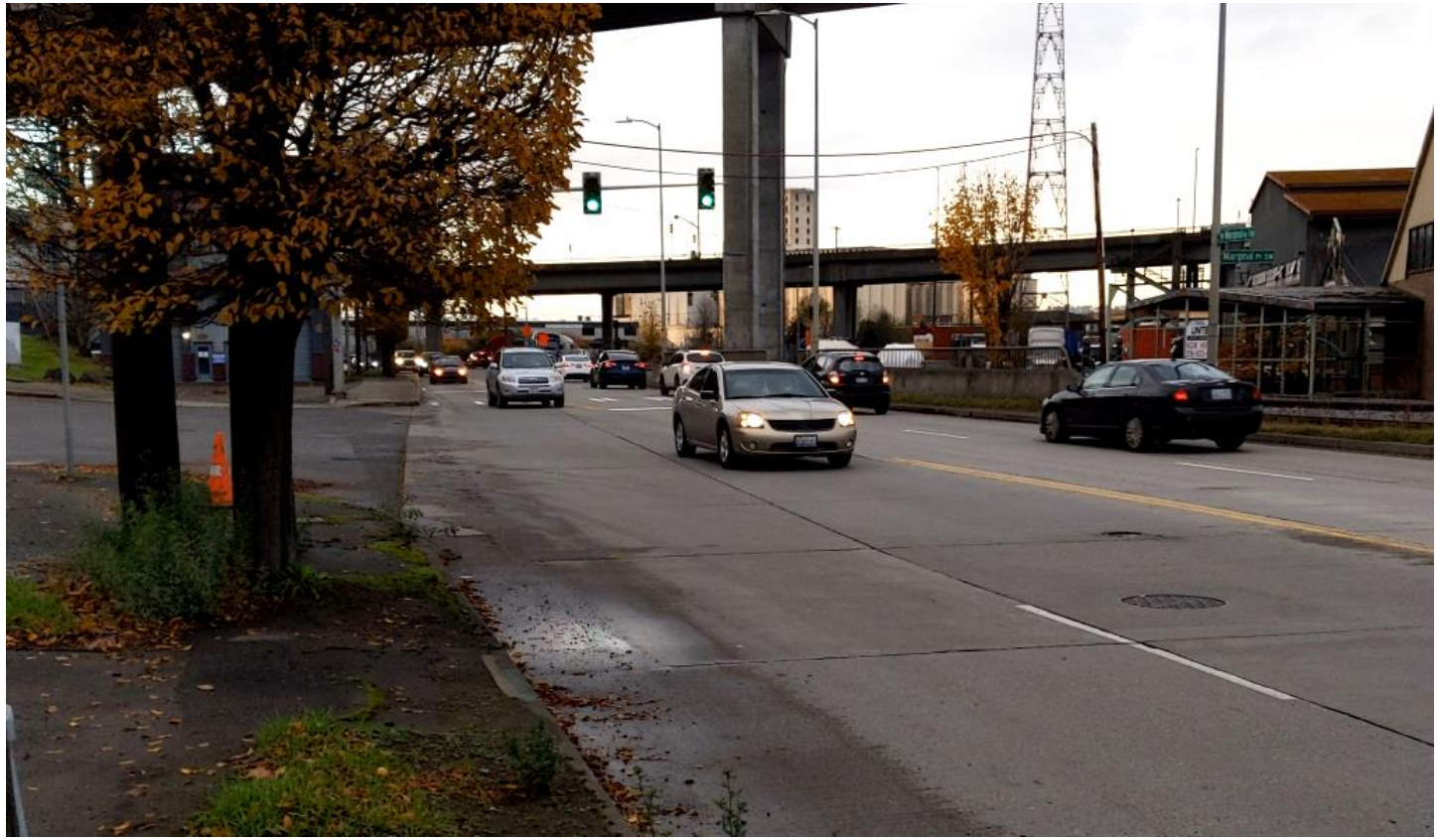
City of Seattle

SW Marginal Pl southbound

Looking east from Chelan 5-way

Looking north at SW Marginal Pl

SW Marginal Pl southbound



Looking north at SW Marginal Pl

Southbound gap analysis

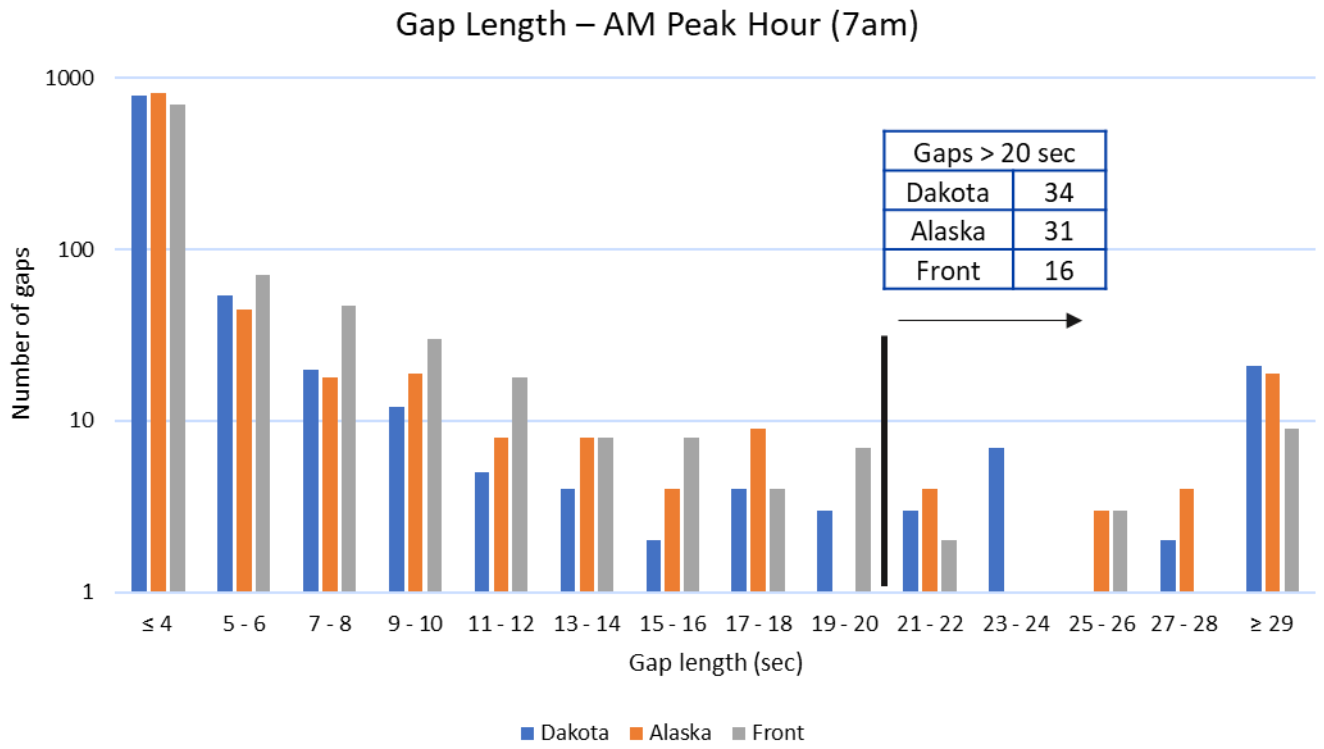
- Reviewed traffic gaps at three points along West Marginal Way
  - Dakota St - 2 southbound lanes
  - Alaska St - 1 southbound lane
  - Front St - 2 southbound lanes

- Able to review 2 lane vs 1 lane gaps side-by-side

- Data collected in early November 2020

Southbound gap analysis: AM peak hour

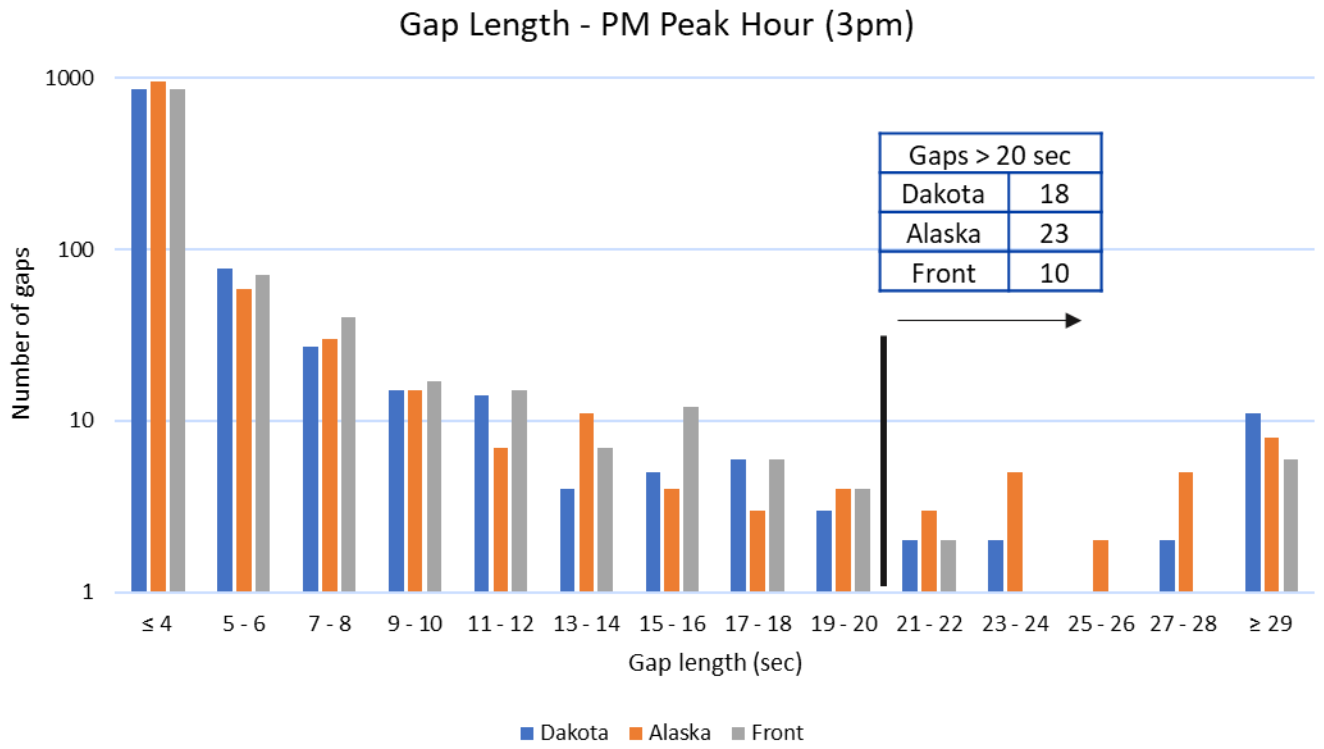
- Single lane Alaska St has less gaps than two-lane Dakota St but more gaps than two-lane Front St



City of Seattle

Southbound gap analysis: PM peak hour

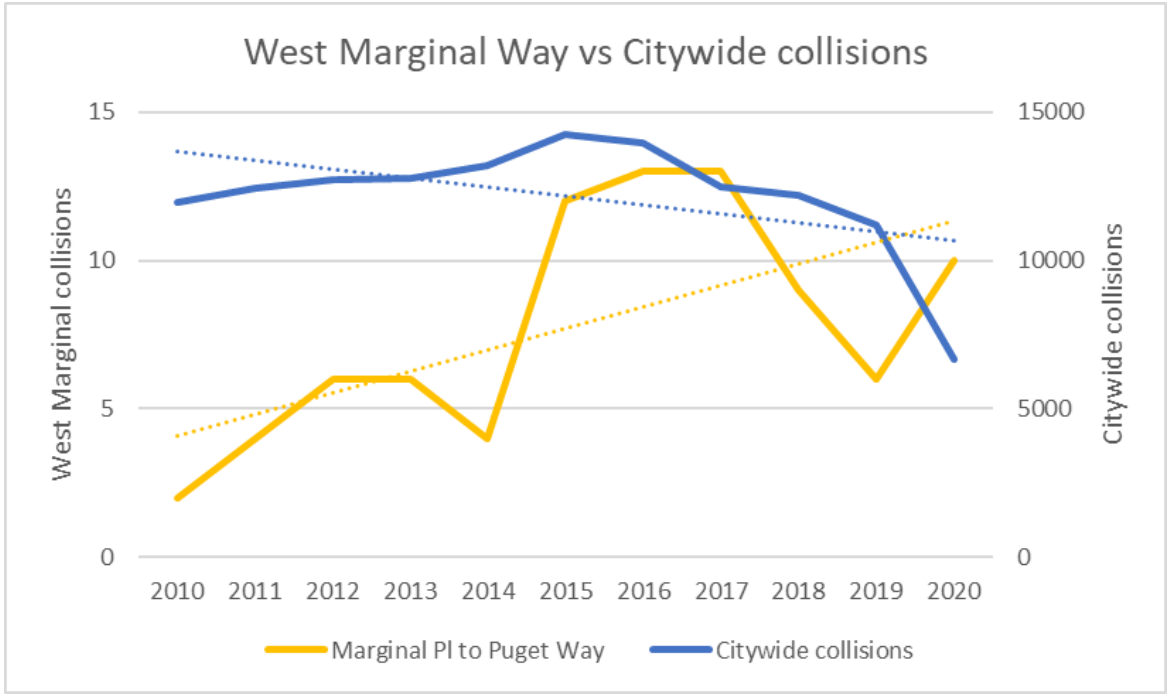
- Single lane Alaska St has more gaps than two-lane Dakota St and two-lane Front St
- Conclusion: Going from two to one lane will have a negligible impact on number of gaps for people entering W Marginal Way



City of Seattle

Crash analysis

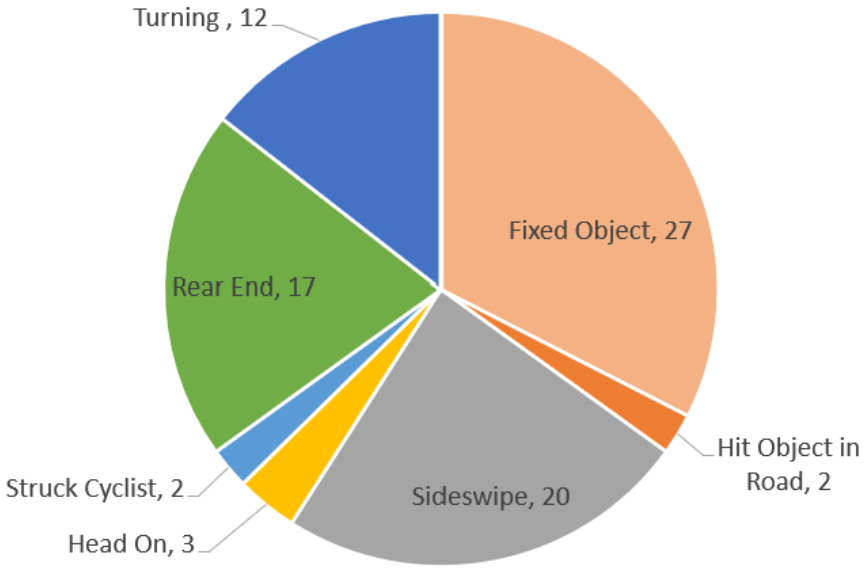
- W Marginal Way collisions are trending upward (SW Marginal Pl to Puget Way SW)

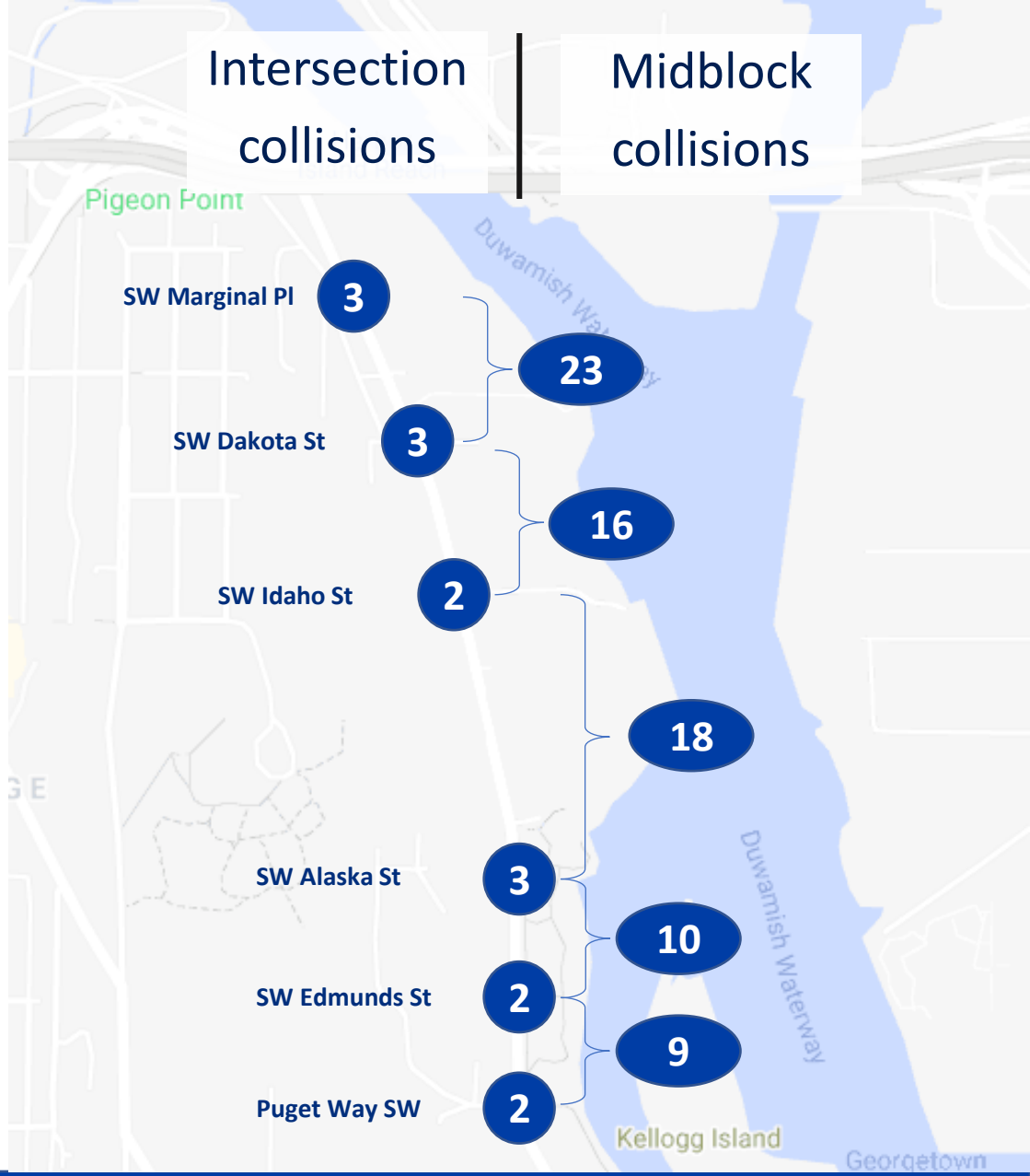


City of Seattle

Crash analysis

- Most collisions are happening midblock
- Leading collision types are indicative of high speeds





City of Seattle

SDOT preferred design options and assessment

SDOT preferred designs

- Section 1: Option 2, Duwamish Trail connection

- Section 2: Option 1 or 2
  - 1: Extend Duwamish Trail connection south to Longhouse signal

    or
  - 2: Extend parking north to Duwamish Trail signal

City of Seattle

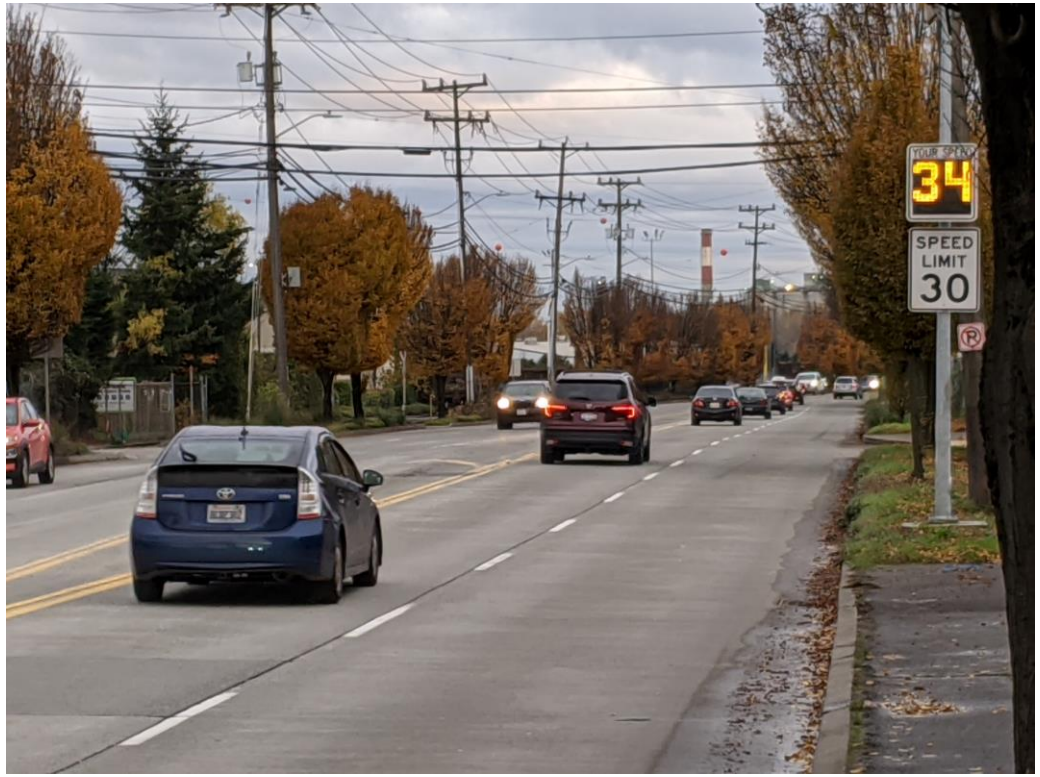
Assessment of preferred designs

- Improves safety by reducing risk factors
  - Lowers speeds closer to speed limit
  - Eliminate potential for high-speed passing
  - Improved sightlines at driveways
  - Maintain sightlines at Alaska St
- Improves mobility for people biking
  - More comfortable facility with adequate space to pass
  - Closes network gap

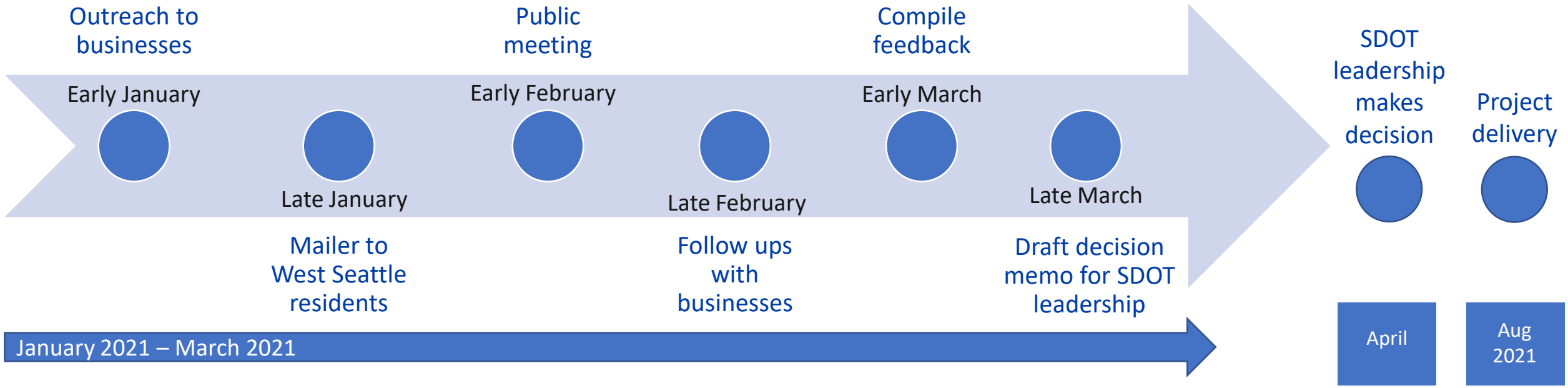
City of Seattle

Assessment of preferred designs

- Negligible or no change to travel times and delay
  - Existing Marginal Pl bottleneck is the limiting factor for SB travel times
  - Speeds in existing single lane section are still above speed limit
  - Existing single lane section (Alaska St) sees no delay today
- Negligible or no change to freight mobility
  - Very minimal or no impact to traffic gaps and future Terminal-5 operations



Engagement and final decision timeline



City of Seattle

Public meeting

- Virtual open house:
  February 18, 6-7:30pm

- http://www.seattle.gov/transportation/West-Marginal-Way-SW-Improvements

Follow up questions and feedback
WestSeattleBridge@seattle.gov