



Advisory Group Meeting #5.

Potential Near-Term Mobility Strategies
January 26, 2017.

Ruth Fisher Board Room, Union Station.
6:00 - 8:00 pm.

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ADVISORY GROUP Near-Term Strategies Input

Helping Address Near-Term Mobility Challenges

- Seattle faces an enviable challenge - managing growth spurred by one of the nation's strongest economies and the draw of a vibrant city located in a spectacular region of the world.
- Growth is driving increased demand for access and mobility in a time when construction projects seem omnipresent.
- Sound Transit light rail will be extended to Northgate by 2021 and Lynnwood and the Eastside (East Link) by 2023, providing important new access to the Center City.
- Seattle residents and regional commuters need safe, affordable, comfortable, reliable and convenient transportation options to, through, and within Center City.
- **One Center City** will identify a set of recommended strategies to address near-term mobility challenges and prioritize public realm investments, providing safe and reliable options for all users.



JAN 12

Near-Term
Opportunities
and Challenges

JAN 26

Presentation
on Potential
Strategies

FEB 9

Discussion
of Potential
Strategies

MARCH

Recommended
Strategies For
Further Evaluation
and Outreach

APRIL

Public and
Stakeholder
Outreach
Council and
Board Decision
Processes

Key Roles of the Advisory Group

- Focus on alignment with adopted [One Center City](#) Draft Guiding Principles.
- Consider the balance of bus service restructuring and surface street capital projects to guide the technical team in developing a draft preferred set of strategies.
- Share feedback on specific proposals to help refine the concepts. This input will be considered before proposals move into a broader public involvement process.
- Members are not asked to be technical experts.

Final recommendations will require approval from the Seattle City Council, the Metropolitan King County Council, and the Sound Transit Board of Directors. In the coming months King County Metro Transit and Sound Transit will seek customer comments on potential changes to bus routes.

In reviewing various projects and service options, we need your input on:

Values Alignment

- How various service proposals, capital projects, and operations strategies align with the [One Center City](#) Draft Guiding Principles.

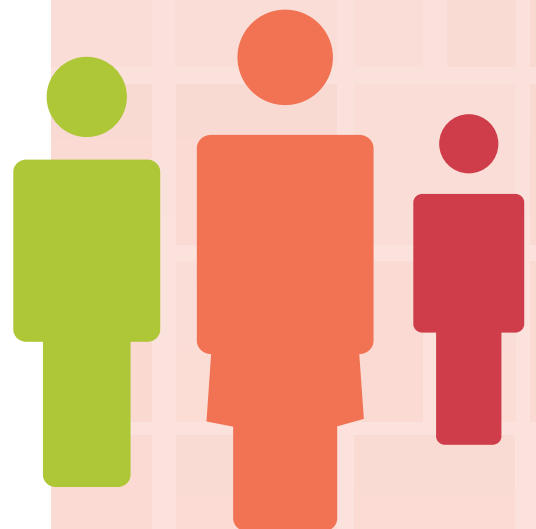
See [One Center City](#) Draft Guiding Principles sheet.

Balance

- How should we prioritize limited rights-of-way? (Transit, SOVs, pedestrian, parking etc.)
- How should we invest in operating bus routes differently vs. operating streets differently?
- How can we accommodate mobility and access needs while creating vibrant, functional public spaces?
- What issues are your communities going to be most interested in or most concerned about?
- Are there other strategies that need to be on the table?

Stakeholder Interests and Communication

- Changes to streets and public spaces affect many stakeholder groups. Options and tradeoffs will be communicated more broadly over the coming months.



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SURFACE STREET OPTIONS

North-South Travel

What is the Challenge and the Opportunity?

- Center City mobility and access demands are growing rapidly; there is very limited additional public right-of-way on surface streets to accommodate travel growth.
- Center City streets, particularly north-south avenues in downtown, have many mobility and access priorities to balance, including:
 - » Safe facilities for people walking and on bicycles
 - » Curb uses, including commercial loading, passenger loading, and short-term parking
 - » Transit operations and passenger facilities
 - » General purpose traffic
 - » Freight and commercial vehicle movements
 - » Active uses of the public realm.
- Local and regional bus services provide critical access to Center City jobs and services.
- Major changes in Center City, including the end of bus operations in the Downtown Seattle Transit Tunnel, opening of the Center City Streetcar, closure of the Alaskan Way Viaduct, and other regional projects, will put pressure on already strained surface streets.
- If Downtown Seattle Transit Tunnel buses are moved on to surface streets in conjunction with the Viaduct coming down and reduced capacity on 1st Avenue, projections show regional buses on 2nd and 4th Avenues will slow to speeds of just 3 to 4 miles per hour during the afternoon peak period without capital investments to improve surface operations.



What Options Will You Review?

Four scenarios for 2019:

- Baseline, representing 2019 conditions with no *One Center City* actions or investments ("Do Nothing")
- Operational Enhancements on 2nd, 3rd, and 4th Avenues
- 2019 4th Avenue & 5th Avenue Transit Couplet
- 5th Avenue Transit Spine

What Do the Draft Options Include?

- These options are packages of surface street projects representing different approaches to addressing near-term access and mobility challenges.
- Options for improving transit, bicycle facilities, pedestrian and public realm, and general purpose traffic operations were considered for each major corridor and the system as a whole.
- Options emphasize solutions for transit following the end of bus operations in the Downtown Transit Tunnel (as early as Fall 2018) and before future light rail extensions, which will reduce downtown bus volumes (2021/2023).
- Options assume all tunnel buses move to surface street pathways.
- Certain corridor projects can be implemented independently; others rely on other capital improvements or service adjustments.
- The Dashboard provides a comparison of each scenario to existing (2016) conditions.

What Happens Next with the Draft Options?

- **One Center City** Interagency Team members will review Advisory Group input and consider it along with technical analysis, additional stakeholder feedback, and public comment to develop a draft set of preferred near-term projects and strategies.
- Draft Recommended Strategies will be presented for Advisory Group review at the March meeting.
- Before any decisions are made, surface street options identified in the **One Center City** planning effort will go through a separate public involvement process.



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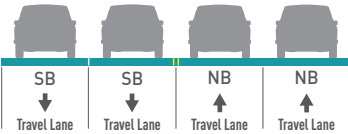
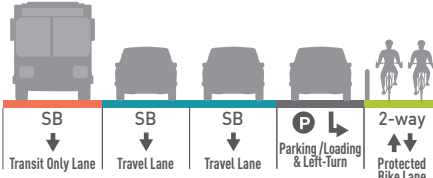
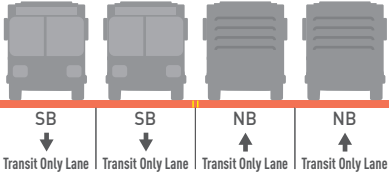
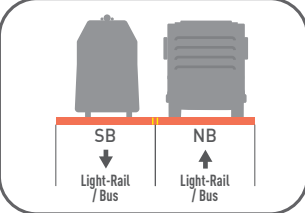
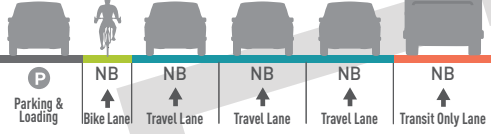
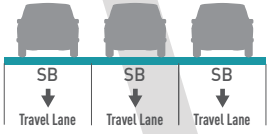
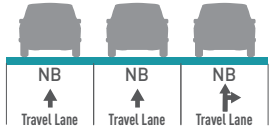
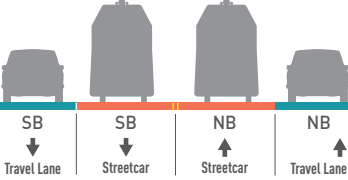
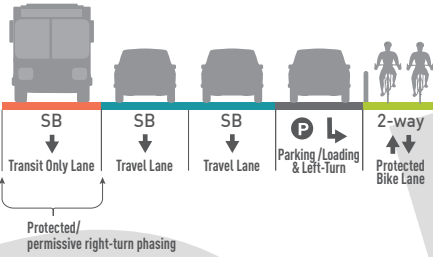
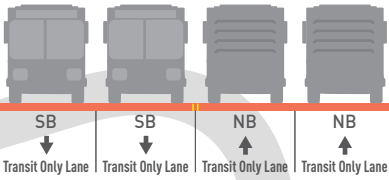
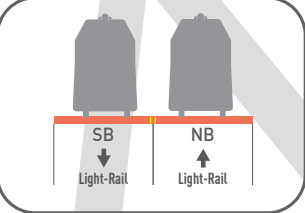
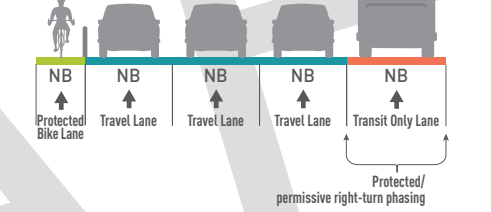
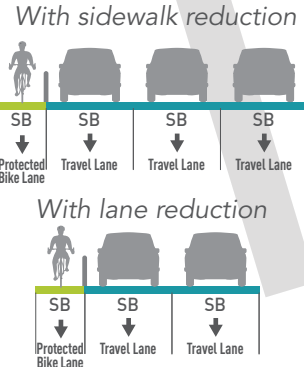
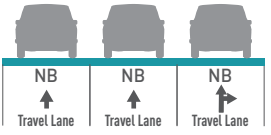
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OPTION A: BASELINE OR "DO NOTHING" (2019)

	1st Ave	2nd Ave	3rd Ave	Downtown Seattle Transit Tunnel	4th Ave	5th Ave	6th Ave
		* Typical cross sections between Spring St and Madison St looking north. Curb parking/loading not shown except where subject to change.					
Existing							
Option A Concept							
	NB = Northbound SB = Southbound						
What is Changing?	<ul style="list-style-type: none">Center City Connector StreetcarOne lane each direction repurposed for transit lane	<ul style="list-style-type: none">Downtown Seattle Transit Tunnel bus routes operate southbound on 2nd AveExisting 2-Way protected bike lane is extended north to Denny and south to Jackson (current SDOT project)Traffic volumes increase 10-15% due to temporary Alaskan Way closure and lane repurposing on 1st Ave	<ul style="list-style-type: none">Same as today	<ul style="list-style-type: none">Light rail onlyLight rail headway same as today	<ul style="list-style-type: none">Downtown Seattle Transit Tunnel bus routes operate northbound on 4th AveTraffic volumes increase 10-15% due to temporary Alaskan Way closure and lane repurposing on 1st Ave	<ul style="list-style-type: none">Same as today	<ul style="list-style-type: none">Same as today

- KEY TAKEAWAYS:
- Bus trips are longer and less reliable for transit customers on 2nd, 4th, and 5th Avenues
 - Transit agencies pay more to maintain current service levels
 - Several key bus stops are overcrowded during the PM peak, affecting pedestrian movements
 - Light rail reliability improves in Downtown Seattle Transit Tunnel
 - Drivers have longer peak trips due to traffic shifting from Alaskan Way and 1st Avenue and increased bus volumes
 - Challenging to implement northbound and southbound protected bike lane east of 3rd Ave

OPTION B: OPERATIONAL ENHANCEMENTS ON 2ND, 3RD, 4TH, & 5TH AVENUES (2019)

	1st Ave	2nd Ave	3rd Ave	Downtown Seattle Transit Tunnel	4th Ave	5th Ave	6th Ave
Existing							
Option B Concept	 NB = Northbound SB = Southbound						
What is Changing?	<ul style="list-style-type: none"> Same as Baseline 	<ul style="list-style-type: none"> Intersection improvements at westbound cross streets (i.e., Madison & Columbia) Signal phasing that allows transit lane to clear of right turning vehicles 	<ul style="list-style-type: none"> Opportunities to speed boarding at bus stops are pursued Allows some buses to relocate from 2nd & 4th Aves Improvements to passenger environment & organization at crowded bus stops 	<ul style="list-style-type: none"> Same as Baseline 	<ul style="list-style-type: none"> Intersection improvements at eastbound cross streets (i.e., Cherry, Marion, Spring, Pike) Signal phasing that allows transit lane to clear of right turning vehicles Northbound protected bike lane (assume paired with southbound lane on 5th Ave) 	<ul style="list-style-type: none"> Southbound protected bike lane would require repurposing a travel lane or moving curbs and possibly removing trees Reduction to two travel lanes would require additional investment in two-way 6th Ave 	<ul style="list-style-type: none"> Same as Baseline

KEY TAKEAWAYS:

- Modest operational improvements for transit on 2nd and 4th Avenues, but potential improvements to speed boarding allow some regional routes to relocate to 3rd Avenue
- Opportunity to implement 4th and 5th Avenue protected bike lane couplet
- Low capital investment allows easier implementation before Fall 2018

OPTION C:

4TH & 5TH AVENUE TRANSIT COUPLET (2019)

	1st Ave	2nd Ave	3rd Ave	Downtown Seattle Transit Tunnel	4th Ave	5th Ave	6th Ave
	* Typical cross sections between Spring St and Madison St looking north. Curb parking/loading not shown except where subject to change.						
Existing							
Option C Concept							
What is Changing?	<ul style="list-style-type: none">• Same as Baseline	<ul style="list-style-type: none">• Intersection improvements at westbound cross streets (i.e., Madison, Columbia)• Signal phasing that allows transit lane to clear of right turning vehicles	<ul style="list-style-type: none">• Same as Baseline	<ul style="list-style-type: none">• Same as Baseline	<ul style="list-style-type: none">• Second northbound transit lane added• Dual transit lane adds capacity for buses• Current skip stop pattern retained• Signal phasing that allows transit lane to clear of right turning vehicles• Does not allow room for bike lane	<ul style="list-style-type: none">• One lane repurposed to create southbound transit lane• More bus service moved to 5th Avenue to take advantage of transit lane• One travel lanes north of Madison, three south of Madison• Does not allow room for bike lane	<ul style="list-style-type: none">• Converted to two-way street between Stewart and Marion• Southbound travel lane provides additional capacity for I-5 access from North Downtown, Denny Triangle, Belltown, and South Lake Union• 5th Ave transit lane is dependent on two-way 6th Ave

KEY TAKEAWAYS:

- Adds one full lane of transit capacity northbound and southbound
- Repurposing lane for transit on 5th Avenue necessitates new southbound lane on 6th Avenue; important for access to I-5 South
- Very difficult to implement northbound or southbound protected bike lane east of 3rd Avenue
- Sidewalk crowding is an issue on 2nd, 4th, and 5th Avenues
- Bus passengers may have to walk further uphill/downhill to access transit
- Has the most significant reduction in on-street parking and loading during the peak period
- More intensive capital projects such as two-way 6th Avenue will require expedited process to implement by Fall 2018

































OPTION D: 5TH AVENUE TWO-WAY TRANSIT SPINE (2019)

	1st Ave	2nd Ave	3rd Ave	Downtown Seattle Transit Tunnel	4th Ave	5th Ave	6th Ave
		* Typical cross sections between Spring St and Madison St looking north. Curb parking/loading not shown except where subject to change.					
Existing							
Option D Concept							
	NB = Northbound SB = Southbound						
What is Changing?	<ul style="list-style-type: none">• Same as Baseline	<ul style="list-style-type: none">• Southbound transit lane removed• West curb lane used for general traffic during peak and parking/loading during off peak• Most transit service relocated to 5th Ave	<ul style="list-style-type: none">• Same as Baseline	<ul style="list-style-type: none">• Same as Baseline	<ul style="list-style-type: none">• Northbound transit lane removed• East curb lane used for general traffic during peak and parking/loading during off peak• Most transit service relocated to 5th Ave	<ul style="list-style-type: none">• Transit only during peak periods from Stewart to Jackson• Operates similar to 3rd Ave Transit Spine; transit only at peaks with limited access and delivery• Most bus services using 2nd & 4th Aves consolidate to 5th Ave• Significantly alters the existing 5th Ave streetscape and tree line	<ul style="list-style-type: none">• Converted to two-way street between Stewart and Marion• Southbound travel lane provides additional capacity for I-5 access from North Downtown, Denny Triangle, Belltown, and South Lake Union• 5th Ave peak transit only operation is dependent on two-way 6th Ave

KEY TAKEAWAYS:

- Concentrates transit service on 1st, 3rd, and 5th Avenues
- During peak, most surface transit is operating in a transit-only lane
- Simplifies street operation as there are very limited turn movements from 5th Avenue during peak periods
- Simplified traffic operations reduce driver delay, but would change access to some buildings & garages
- Bus passengers may have to walk further uphill/downhill to access transit
- Introducing new bus stops on 5th Avenue would require impact streetscape and require some tree removal
- 5th and 6th Avenue project elements are capital intensive; design/outreach would make Fall 2018 completion challenging

NORTH/SOUTH SURFACE STREET OPTIONS OVERVIEW

	Change from Today				 Pedestrian Experience at Hubs and Major Bus Zones	 Surface Street Project Capital Cost	 Opportunity to Implement Northbound and Southbound Protected Bike Lane (East of 3rd Ave)	 Potential for On-Time Delivery
	 Change in Transit Travel Time & Reliability (Downtown Bus Riders)	 Additional Downtown Transit Operating Costs (Bus Only)	 General Purpose Traffic Travel Time	 Change in On-Street Parking & Loading Spaces				
Option A: 2019 Baseline	Travel Time: +3.5 min. per rider during peak period Reliability: LOW	+\$7-\$8M annually	Northbound: +0.3 min. average of 4th & 6th Ave Southbound: +3.0 min. average of 2nd, 5th, & 6th Ave	No Change	2ND  3RD  4TH  5TH 	N/A	 LOW	 N/A
Option B: Operational Enhancements to 2nd, 3rd, 4th, & 5th	Travel Time: +1.9 min. per rider during peak period Reliability: MED	+\$1.5-\$2.5M annually	Northbound: No Change average of 4th & 6th Ave Southbound: +2.8 min. average of 2nd, 5th, & 6th Ave	Commercial Load Zones: -1 Passenger Load Zones: -4 Parking Stalls: -25 during PM peak period	2ND  3RD  4TH  5TH 	\$11-\$14M	 MED	 HIGH
Option C: 4th & 5th Avenue Transit Couplet	Travel Time: +1.7 min. per rider during peak period Reliability: MED	+\$0.5-\$1M annually	Northbound: +1.2 min. average of 4th & 6th Ave Southbound: +3.4 min. average of 2nd, 5th, & 6th Ave	Commercial Load Zones: -6 Passenger Load Zones: -19 Parking Stalls: -45 during PM peak period	2ND  3RD  4TH  5TH 	\$14-\$17M	 LOW	 MED
Option D: 5th Avenue Two-Way Transit Spine	Travel Time: No Change per rider during peak period Reliability: HIGH	+/- \$0M annually	Northbound: +0.7 min. average of 4th & 6th Ave Southbound: No Change average of 2nd, 5th, & 6th Ave	Commercial Load Zones: -3 Passenger Load Zones: -4 Parking Stalls: -36 during PM peak period	2ND  3RD  4TH  5TH 	\$22-\$28M	 MED	 LOW

The draft guiding principles below were developed based upon feedback received at the November 10 Advisory Group meeting as well as a follow-up meeting between agency staff and several Advisory Group member volunteers held on November 22. These include refinements from the January 12 meeting.

Draft Guiding Principles



Equity: Design for the health, safety and well-being of all who live in our community using established race and social justice guidelines.



Flexibility: Create flexible systems that can evolve over time by taking a system-wide view and challenging long-held assumptions.



Optimization: Optimize use of limited street and sidewalk space for people and goods.



Public space: Design the street experience and public realm so that they are inviting, engaging, safe and supportive of social connections and community-building.



Stewardship: Reduce vehicles and emissions and use sustainable building practices.



Transportation: Provide safe, affordable, comfortable, reliable and convenient transportation options for all users of all abilities – daytime and nighttime, commuters and non-commuters, and those needing timely multiple connections.



User experience: Create an easy to use and intuitive system by prioritizing accessibility, pedestrian mobility, wayfinding, and multimodal connectivity.

























Well-being: Support social sustainability and economic prosperity for all.

SURFACE STREET SCENARIO EVALUATION

Preliminary Measures used for Surface Street Dashboard

The following can be used as a reference sheet for reviewing potential Surface Street Options and the preliminary measures that were used to assess them.

Measure	Guiding Principles Supported	What Are We Measuring?	How Was the Rating Calculated?	Key Assumptions or Qualifier
Change in Transit Travel Time and Reliability: Downtown Bus Riders	 User experience  Transportation  Equity  Stewardship	Change in travel time and reliability for bus riders traveling to and through downtown.	Calculated using traffic and bus stop operations model, includes travel time and reliability on 2nd, 4th, and 5th Ave.	Bus riders on transit tunnel routes currently experience higher travel speeds and better reliability through downtown, and will experience a greater degradation than bus riders using current surface street routes.
Additional Downtown Transit Operating Costs	 Well-being	Change in annual bus transit operating costs resulting from increased travel times for buses operating on surface streets	Additional transit delay compared to existing conditions. Calculated using a bus stop operations model that evaluates: <ul style="list-style-type: none"> • Delay because buses are backed up at bus stops • Additional dwell time due to increased passenger volumes • Additional time to reach layover 	Does not account for other changes in downtown traffic or transit operations such as changes related to East Link construction and waterfront construction. All costs in 2016 dollars, does not include Light Rail operating costs.
General Purpose Traffic Travel Time	 Transportation  Equity  Stewardship	Average amount of additional time auto drivers and passengers spend traveling through downtown during afternoon peak period.	Modeled using traffic operations models that simulate traffic operations including general purpose traffic, buses, bicycles, and pedestrians.	Traffic pattern changes resulting from lane changes on 1st Avenue due to Center City Connector streetcar and temporary closure of Alaskan Way taken into account. Includes travel north or south on 2nd, 4th, 5th, and 6th Aves, or east or west on Pike and Pine Streets.

Measure	Guiding Principles Supported	What Are We Measuring?	How Was the Rating Calculated?	Key Assumptions or Qualifier
Opportunity to Implement Protected Bike Lane	 User experience  Optimization  Flexibility	Opportunity to implement a new protected bike lane in both the northbound and southbound directions east of 3rd Ave, and in both directions on the Pike-Pine Corridor.	Evaluated performance of general purpose auto and transit with inclusion of protected bike lane using Vissim traffic operations model.	HIGH has limited impact on travel times for transit and auto travelers MED has some impact, but impact may be reduced if combined with other strategies (surface street or service intervention) LOW has significant impact on travel times for transit and auto
Pedestrian Experience at Transportation Hubs and Major Bus Stops	 User experience  Optimization  Public space	The degree to which waiting bus passengers impede pedestrian movement on sidewalks where bus stops are located.	Estimated density of waiting bus passengers, pedestrian volumes, and other physical impediments from street furniture, etc.	HIGH sidewalks operate well for pedestrians passing bus stop MED pedestrian movements are constrained during peak periods LOW waiting bus passengers regularly block pedestrian movement
Surface Street Capital Project Costs	 Well-being  Optimization	The total capital cost of all surface street improvements included in the scenario.	Calculated using SDOT capital costing tools and unit costs from recent projects.	All costs in 2016 dollars.
Change in On Street Parking and Loading Spaces	 User experience  Transportation  Public space  Flexibility	The change in number of on-street parking and loading stops resulting from scenario projects and number of driveways that have access patterns affected (not required to close) .	Counted number of on-street parking, and commercial and passenger loading areas displaced by capital project options.	
Potential for On Time Delivery	 Well-being  Flexibility	Likelihood to design, receive environmental clearances, contract, and construct the set of projects within the fall 2018 timeline	<p>Detailed schedule assessment using SDOT's capital project assessment tool.</p> <p>Schedule assessment considered a number of possible options for expedited design and delivery.</p>	LOW significant risk construction will not be complete by fall 2018 MED moderate risk construction will not be complete by fall 2018 HIGH very low risk construction will not be complete by fall 2018

POTENTIAL FOR ON-TIME DELIVERY

Implementation Timeline And Risks

The surface street capital projects listed below are those considered in developing the rating shown on the Surface Street Options (N-S Avenues) sheets. They are rated High to Low, with High meaning the project has a high potential for on-time delivery and Low meaning the project has low potential for on-time delivery.

Improvement Strategy	Construction Timeline	Public, Customer, Stakeholder	Other Capital Projects Conflict
2nd Ave Spot Improvements + P/P Right Turn Phasing	HIGH Standard schedule	HIGH Minimal change to street operations	HIGH None
4th Ave Spot Improvements + P/P Right Turn Phasing	HIGH Standard schedule	HIGH Minimal change to street operations	HIGH None
4th Ave Dual Transit Lane	MED Need expedited schedule	MED Moderate change to street operations	HIGH None
5th Ave SB Transit Lane	MED Need expedited schedule	MED Moderate change to street operations	MED Denny Substation & UW Tower Project
5th Ave Two-Way Transit Spine	LOW Need expedited schedule, environmental determination of non-significance and streamlined public process	LOW Major change to transit routings, street operations, driveway access and parking facilities	LOW Denny Substation, UW Tower Project
6th Ave Two-Way Operations	LOW Need expedited schedule, environmental determination of non-significance and streamlined public process	MED Major change to street operations, driveway access and parking facilities	MED Denny Substation

BUS SERVICE RESTRUCTURING OPTIONS

What is the Challenge and the Opportunity?

- Current planning is for buses to stop using the Downtown Seattle Transit Tunnel as early as Fall of 2018. This will provide more frequent and reliable train service, as planned when the tunnel was built.
- There is limited capacity on Center City surface streets to carry the additional buses that will move out of the tunnel without capital investment to improve surface street operations..
- Light rail trains provide substantial capacity to move people reliably into and out of Center City neighborhoods. With buses no longer in the tunnel, Sound Transit Link efficiency will improve.

Why Restructure Bus Services?

- Increase mobility for bus operations and transit customers on Center City surface streets during busy commute hours.
- Increase travel reliability by removing buses from congested corridors, and having more people use light rail.
- Move bus stop activity to transportation hubs designed to handle higher volumes of waiting and transferring passengers and improve loading time at existing busy bus stops.
- Make the best use of light rail capacity and increase service reliability.

How Were Draft Bus Service Restructuring Options Identified?

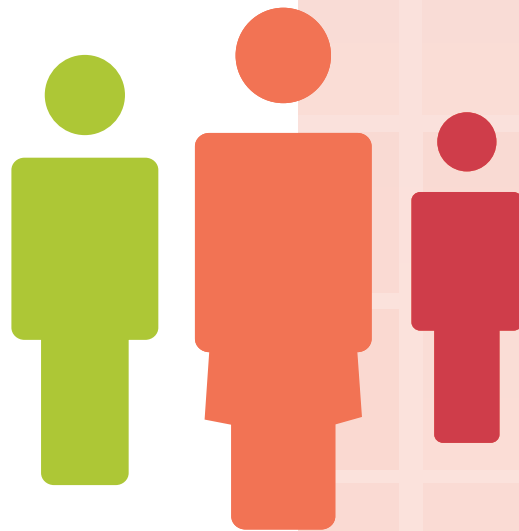
- King County Metro, Sound Transit, Community Transit and SDOT staff worked together to develop a long list of service restructuring options that met some or all of the following objectives:
 - » Maintained or improved customer experience and reliability.
 - » Consideration of any adverse impacts on minority or low-income populations.
 - » Reduced bus volumes on Center City surface streets, particularly regional bus pathways such as 2nd and 4th Avenues.
- The long list of over 30 options was refined and reduced based on technical analysis that reviewed:
 - » Alignment of the proposal with long-term transit network plans.
 - » How the proposal affected travel time and service reliability for transit customers
 - » The number of peak period buses removed from congested Center City surface streets and key choke points.
 - » The ability for sidewalks and bus stops to accommodate waiting bus passengers.

What Options Will You Review?

- Based on the detailed technical analysis, the agencies identified seven (7) options for bus service restructuring, which are described in the one-page sheets that accompany this summary.
- Some options align with restructuring strategies that Sound Transit and King County will seek public input on beginning in spring 2017.

What Happens Next with the Draft Service Proposals?

- King County Metro, Sound Transit, and Community Transit all have well established and comprehensive public involvement processes that allow community members and stakeholders to review and provide input on proposed changes to bus service.
- Before any decisions are made, service restructuring recommendations identified in the [One Center City](#) planning effort will go through a more detailed analysis and separate public involvement process that may include:
 - » Citizen advisory panels
 - » Community stakeholder outreach
 - » Public meetings
 - » Surveys
 - » Targeted outreach to underrepresented populations
- Final decision on any service restructuring proposal will be made by King County Council the Sound Transit Board, or the Community Transit Board

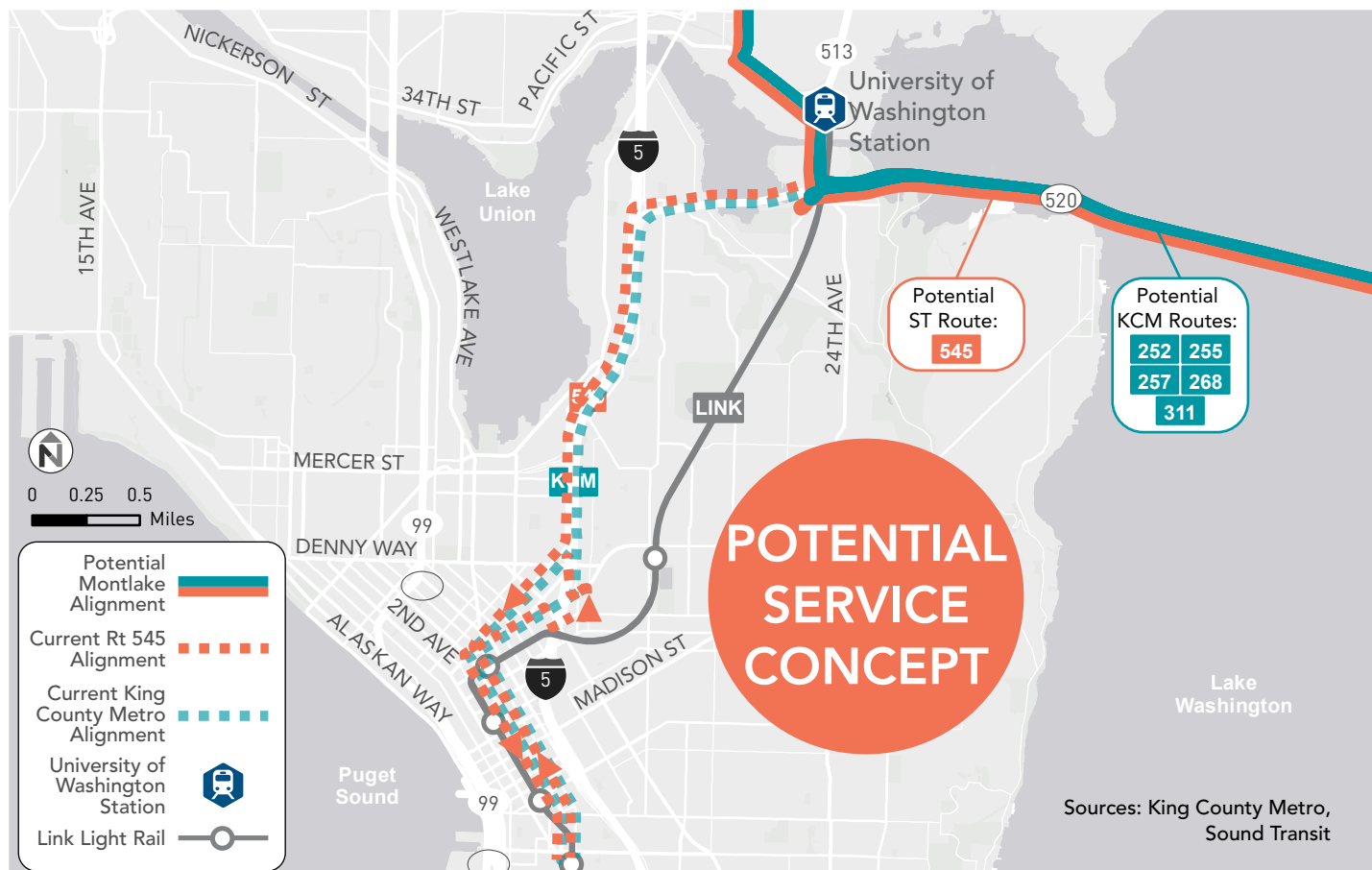


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SR 520 Routes Service to University of Washington Station

DRAFT FOR DISCUSSION ONLY



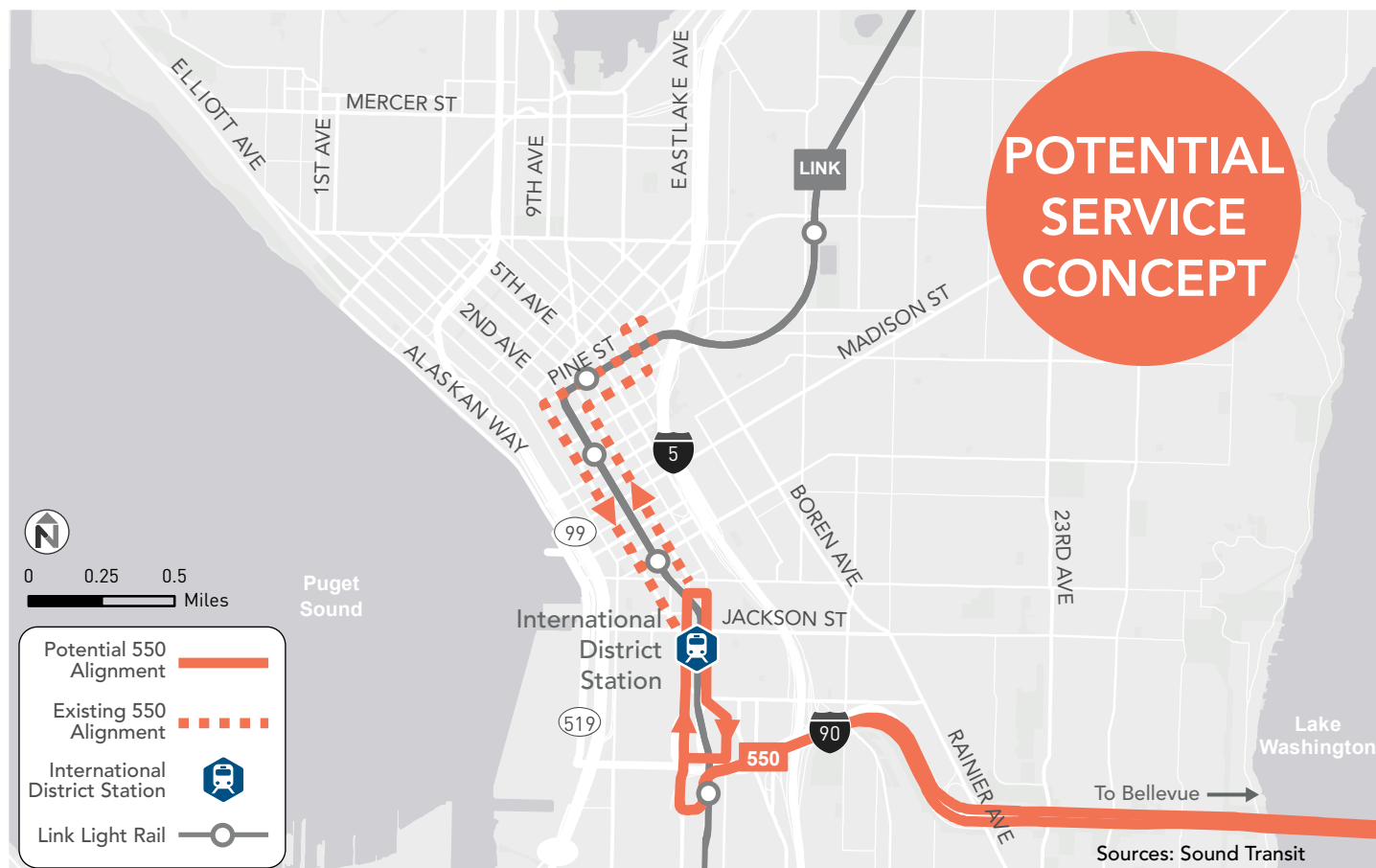
Benefit to Regional Mobility	Rider Travel Time (Change from Today)		
	Destination	2019 Baseline	2019 with Restructure
High			
Service Reliability	Westlake Station	3+ Minutes	No Change
Improves for all riders by avoiding I-5 and downtown congestion	International District/Chinatown Station	5+ Minutes	No Change

Key Details

- Potentially reorient four peak-only routes and two all-day routes to serve University of Washington Station at Montlake Hub and the University District
- Permanent change with high benefit for downtown mobility, minimal travel time impact, and improved reliability for riders
- Limits transit travel time and reliability impacts of major construction projects such as Portage Bay Bridge reconstruction (2020-2026), Washington State Convention Center Addition (2018-2020), and others
- A Sound Transit internal analysis underway will identify any opportunities to increase capacity within the Downtown Seattle Transit Tunnel
- \$2 – \$3 M capital investment required at Montlake Hub to accommodate more buses and provide improved passenger experience
- Considered for Sound Transit and King County Metro evaluation and comprehensive public involvement process on potential 2018 service changes

ST Route 550 (Bellevue - Seattle) Service to International District/Chinatown Station

DRAFT
FOR DISCUSSION ONLY



Benefit to Regional Mobility	Rider Travel Time (Change from Today)		
	Destination	2019 Baseline	2019 with Restructure
Medium			
Service Reliability	Westlake Station	3+ Minutes	No Change
Improves for Westlake Station riders	International District/Chinatown Station	No Change	No Change

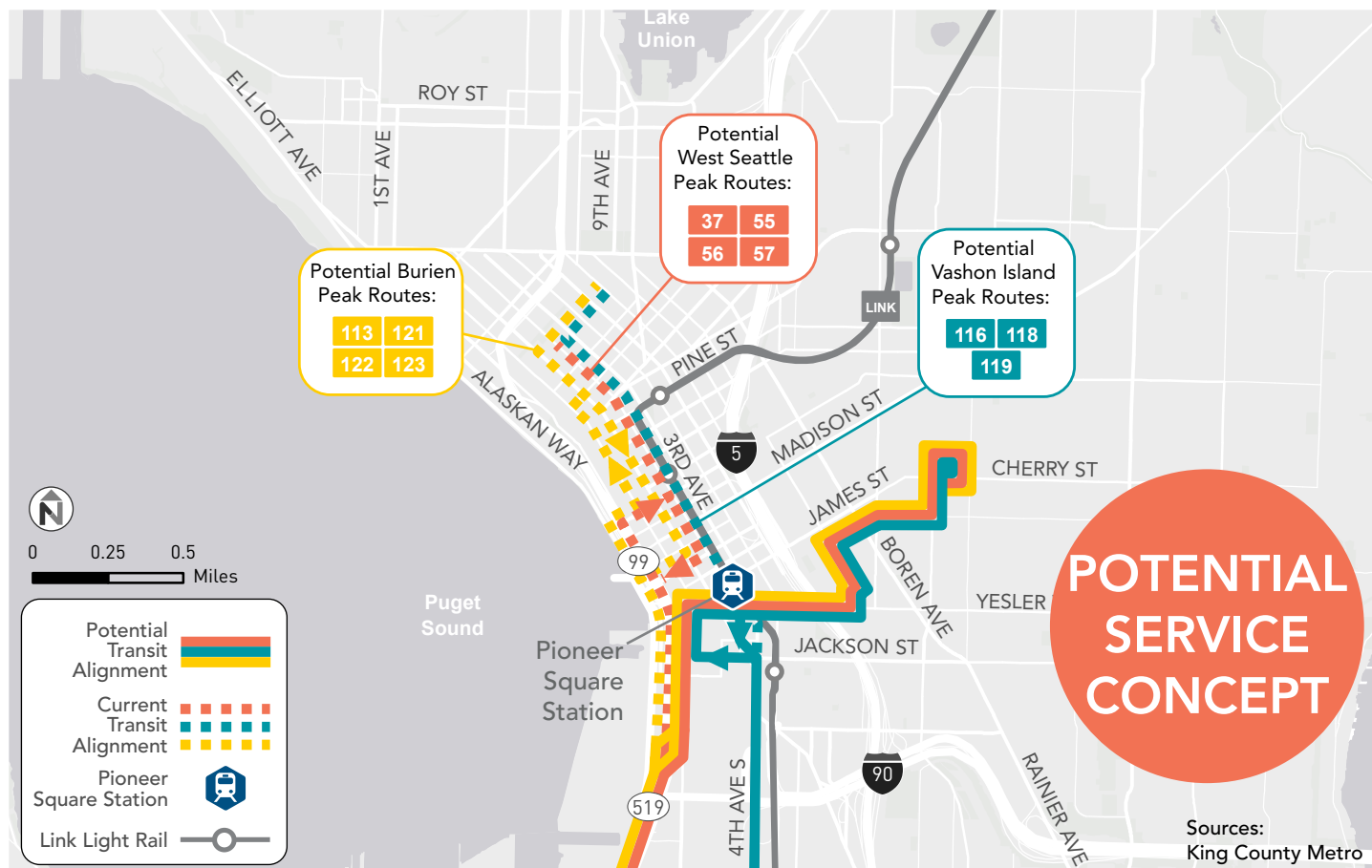
Key Details

- Potentially reorient one all-day route that currently operates in the tunnel to International District/Chinatown Station
- A Sound Transit internal analysis underway will identify any opportunities to increase capacity within the Downtown Seattle Transit Tunnel
- Temporary change until East Link extension opens in 2023
- \$1.5 – \$2.5 M capital investment required at International District/Chinatown Station to accommodate more buses and provide improved passenger experience
- Considered for Sound Transit evaluation and comprehensive public involvement process on potential 2018 service changes

West Seattle/Burien/Vashon Peak Routes

Service to First Hill

DRAFT FOR DISCUSSION ONLY



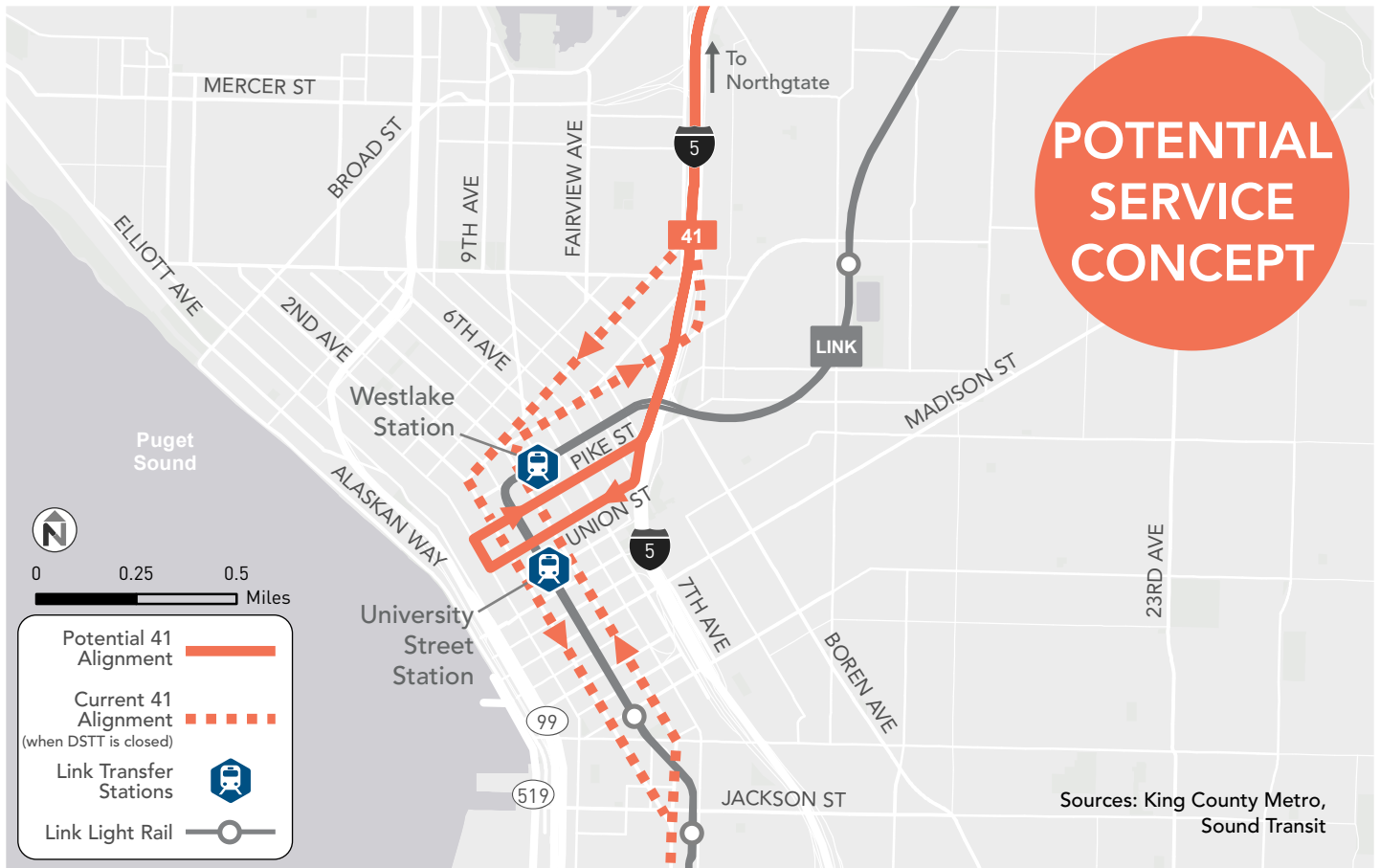
Benefit to Regional Mobility	Rider Travel Time (Change from Today)		
	Destination	2019 Baseline	2019 with Restructure
High			
Service Reliability	First Hill	No Change	-5 Minutes
Improves for Westlake Station riders by avoiding downtown congestion	Westlake Station	2+ Minutes	2+ Minutes
	International District/Chinatown Station	No Change	No Change

Key Details

- Potentially reorient 11 peak-only routes from the communities of West Seattle, Burien, and Vashon Island to First Hill
- Permanent change that will free up capacity on 3rd Avenue during the busiest commute times while providing more service to First Hill
- No additional capital improvements needed to implement change
- Considered for King County Metro evaluation and comprehensive public involvement process on potential 2018 service changes

Route 41 Service to Westlake Station

DRAFT FOR DISCUSSION ONLY



Benefit to Regional Mobility	Rider Travel Time (Change from Today)		
Medium	Destination	2019 Baseline	2019 with Restructure
Service Reliability	Westlake Station	No Change	No Change
Improves for International District/Chinatown Station riders by avoiding downtown congestion	International District/Chinatown Station	5+ Minutes	3+ Minutes

Key Details

- Potentially end one all-day route in Westlake Station that currently operates in the tunnel
- Being evaluated concurrent with Pike/Pine protected bike lane options
- Temporary change until Northgate Link extension opens in 2021
- \$1.5 – \$2.5 M capital investment needed to accommodate additional buses and passengers
- Considered for King County Metro evaluation and comprehensive public involvement process on potential 2018 service changes

ST Pierce County Routes Service to International District/Chinatown Station or South Lake Union

DRAFT
FOR DISCUSSION ONLY



Benefit to Regional Mobility	Rider Travel Time for SLU Routes (Change from Today)		
	Destination	2019 Baseline	2019 with Restructure
High	Westlake Station	3+ Minutes	No Change
Service Reliability	International District/Chinatown Station	No Change	5+ Minutes
No significant change			

Key Details

- Potentially reorient Sound Transit peak and all-day services from Pierce County to International District/Chinatown Station or South Lake Union
- Service to South Lake Union would use 6th Ave and Westlake, providing direct access to Westlake Station and South Lake Union while service to International District/Chinatown Station would use SODO Busway
- \$1.5 – \$2.5 M capital investment required at International District Station to accommodate more buses and passengers
- Considered for Sound Transit evaluation and comprehensive public involvement process beyond 2018 service changes due to technical constraints.

Community Transit Service to International District/Chinatown Station

DRAFT FOR DISCUSSION ONLY



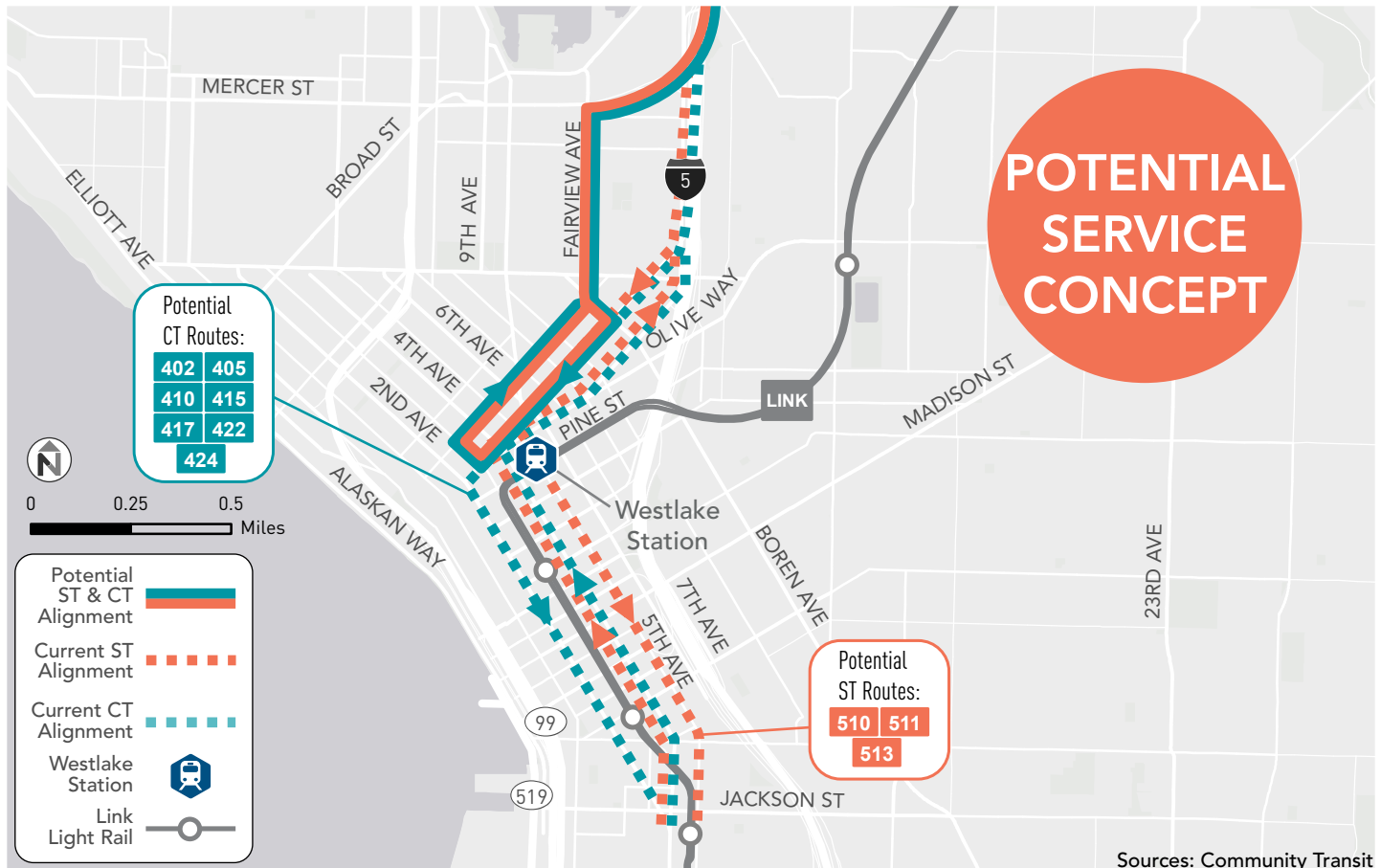
Benefit to Regional Mobility	Rider Travel Time (Change from Today)		
	Destination	2019 Baseline	2019 with Restructure
High			
Service Reliability	South Lake Union	5+ Minutes	5+ Minutes
No significant change	Westlake Station	3+ Minutes	3+ Minutes
	International District/Chinatown Station	No Change	No Change

Key Details

- Potentially reorient six peak-only routes to International District/Chinatown Station via the Cherry St I-5 Express ramps
- Temporary change until Lynnwood Link extension opens in 2023
- No additional capital improvements needed to implement change
- Considered for Community Transit evaluation and comprehensive public involvement process beyond 2018 service changes due to technical constraints.

Snohomish County Routes Service to South Lake Union & Westlake

DRAFT FOR DISCUSSION ONLY

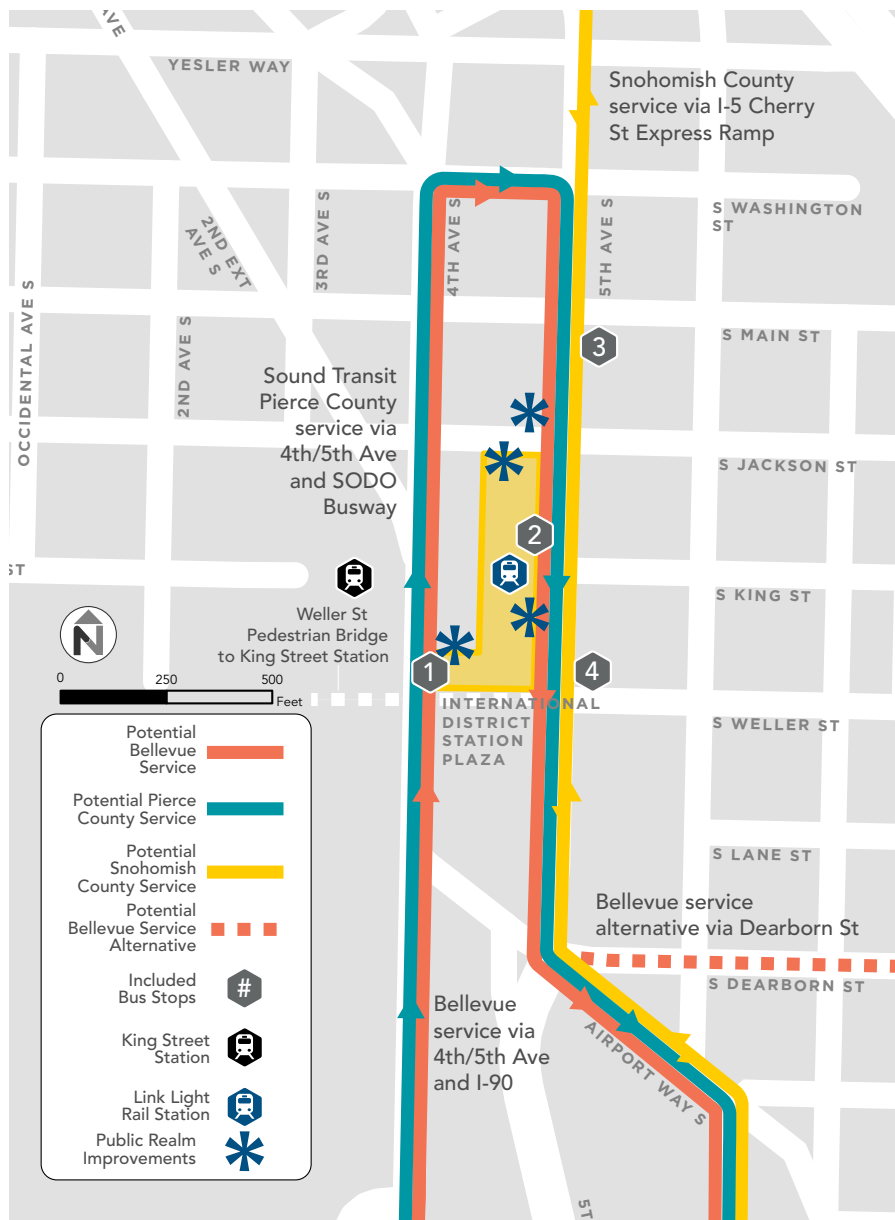


Benefit to Regional Mobility	Rider Travel Time (Change from Today)		
	Destination	2019 Baseline	2019 with Restructure
High			
Service Reliability	South Lake Union	No Change	-5 Minutes
	Westlake Station	No Change	No Change
	International District/Chinatown Station	5+ Minutes	3+ Minutes
No significant change			

Key Details

- Potentially reorient ten peak-only routes operated by Sound Transit and Community Transit to South Lake Union and Westlake Hub
- Improves South Lake Union access from Snohomish County
- \$1.0 – \$1.5 M capital investment required at Westlake Hub to accommodate more buses and passengers
- Temporary change until Lynnwood Link extension opens in 2023
- Considered for Sound Transit and Community Transit evaluation and comprehensive public involvement process beyond 2018 service changes due to technical constraints.

Conceptual International District/Chinatown Station Hub Improvements



Concept Details

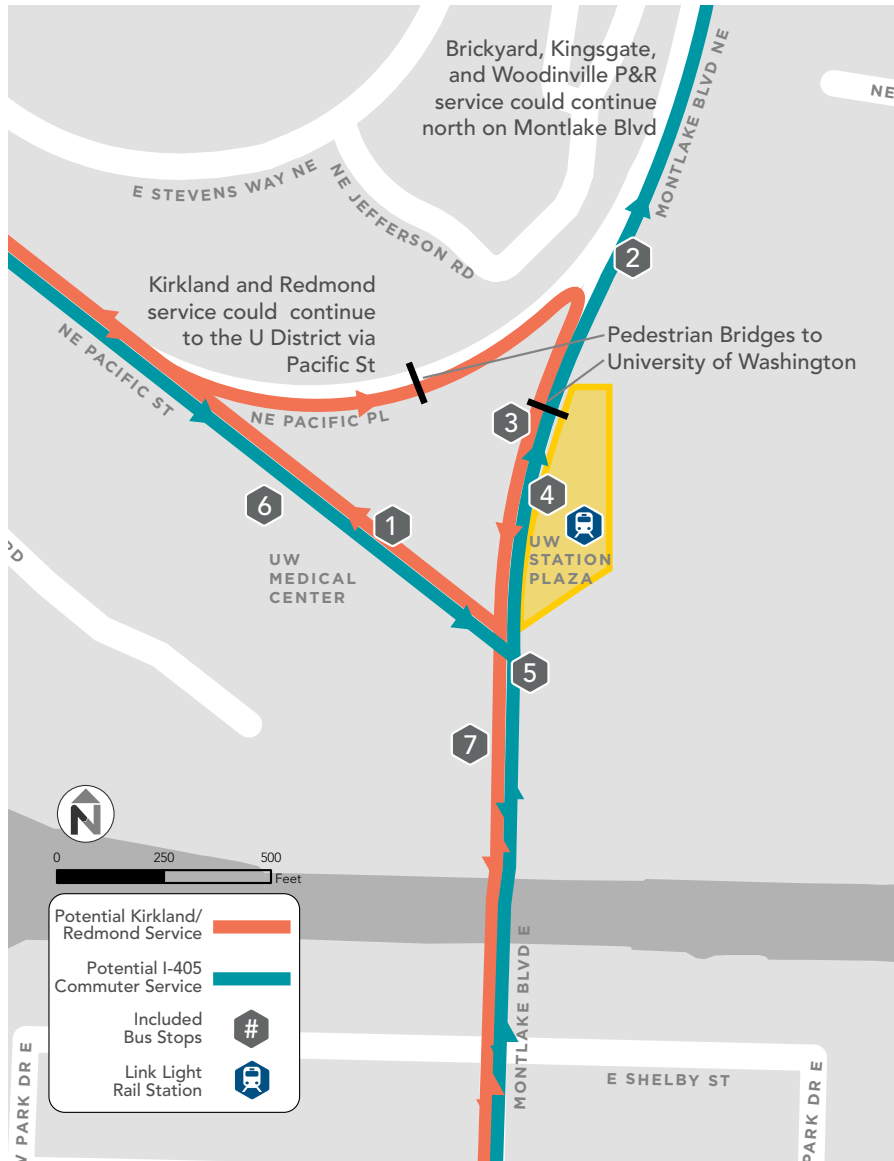
- International District/Chinatown Station currently serves as a transfer hub for Sound Transit buses from Bellevue and Pierce County, and Community Transit buses from Snohomish County
- Riders can connect to Link Light Rail, frequent bus service, Sounder, and shared mobility options

Key Improvements

- DEDICATED BUS LANES**
Bus-only lanes separate transit from traffic
- ENHANCED FARE COLLECTION**
Offboard payment using card readers and other tools at stations allows passengers to board more quickly.
- ENHANCED BUS STOPS**
Bus stops could include larger shelters, real-time arrival information, and other passenger amenities.
- QUEUING MANAGEMENT**
Organizing waiting passengers at busy stops to maintain a pedestrian through-zone.
- PUBLIC REALM**
Improvements for pedestrians and waiting bus passengers may include wayfinding, lighting, and other improvements.

Bus Stop Concepts	Description	Necessary Improvements
1 New Bus Stop	All-day drop-off stop for passengers	Transit Lane
2 Existing Bus Stop	All-day pick-up stop for passengers	Enhanced Stop, Offboard Fare Payment, Queueing Management
3 Existing Bus Stop	All-day drop-off stop for passengers	Enhanced Stop, Transit Lane
4 New Bus Stop	All-day drop-off stop for passengers	Enhanced Stop

Conceptual Montlake Hub Improvements



Concept Details

- University of Washington Station currently serves as a transfer hub between bus service in Northeast Seattle and Link Light Rail service to downtown Seattle
- Buses using SR 520 to reach downtown Seattle today can be reoriented to use this existing transfer hub
- Some routes will continue to the University District while others may serve Seattle Children's Hospital or the UW campus loop

Key Improvements

- DEDICATED BUS LANES**
Bus-only lanes separate transit from traffic
- ENHANCED FARE COLLECTION**
Off-board payment using card readers and other tools at stations allows passengers to board more quickly.
- ENHANCED BUS STOPS**
Bus stops could include larger shelters, real-time arrival information, and other passenger amenities.
- TRANSIT PRIORITY**
Intersection improvements allow buses to bypass congestion.

Bus Stop Concepts	Description	Necessary Improvements
1 Existing Bus Stop	All-day drop-off stop for passengers	Enhanced Stop
2 Existing Bus Stop	Morning drop-off stop for passengers	None
3 Existing Bus Stop	All-day pick-up stop for passengers	Enhanced Stop, Offboard Fare Payment, Bus Lane and Transit Priority
4 New Bus Stop	Morning drop-off stop for passengers	Limited Improvements
5 New Bus Stop	All-day drop-off stop for passengers	Limited Improvements
6 Existing Bus Stop	Afternoon pick-up stop for passengers	Enhanced Stop, Offboard Fare Payment
7 New Bus Stop	Afternoon pick-up stop for passengers	Enhanced Stop, Offboard Fare Payment



SURFACE STREET OPTIONS (Union, Pike, & Pine Streets)

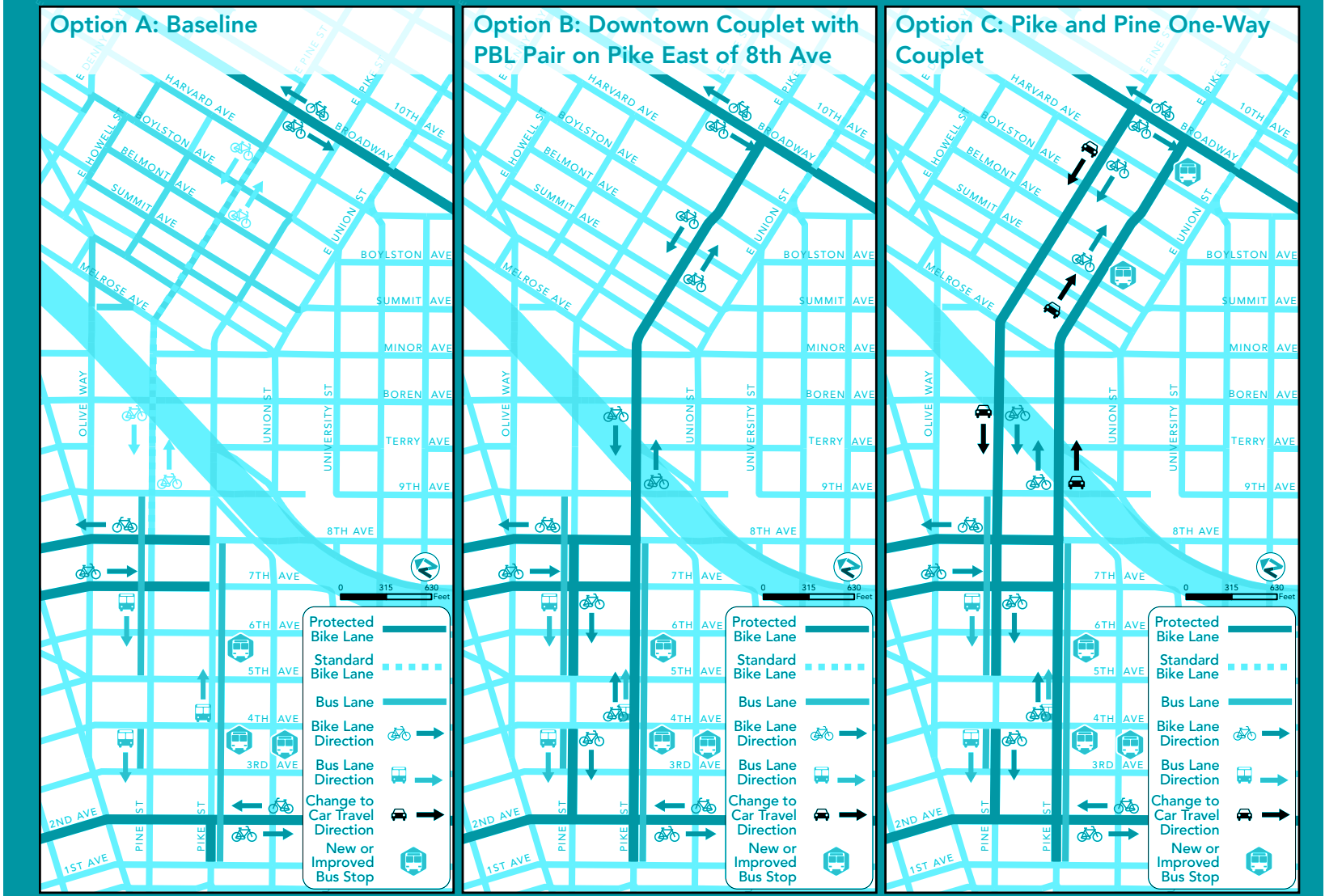
What is the Challenge and the Opportunity?

- King County Metro Route 41 will continue to be a critical connection between Northgate and Downtown until the 2021 extension of Link light rail opens. Union and Pike Streets are proposed to serve as a temporary downtown routing for Route 41 (until 2021). This Northgate express service has very high ridership and new stops on Union and Pike would have very high passenger volumes.
- The Pike-Pine corridor a critical multimodal connection between Capitol Hill, Westlake/Convention Center, Downtown, and Seattle Waterfront. Directness, street connections over I-5, limited grade compared to other downtown streets, and access to many major destinations and transit make this street pair an important focus of future investment.
- Pike and Pine Streets are designated to connect Broadway and 2nd Avenue protected bike lanes with an east-west protected bike lane connection. The grade in this corridor is more favorable to cyclists than other east-west connections.
- Many planned public and private development projects will bring new investment to the Pike-Pine Corridor, including: Seattle Waterfront Project investments, Pike-Pine Streetscape Project, the Washington State Convention Center, and others.
- These investments offer the opportunity to create a world-class corridor linking neighborhoods and making great places for people.

What Options Will You Review?

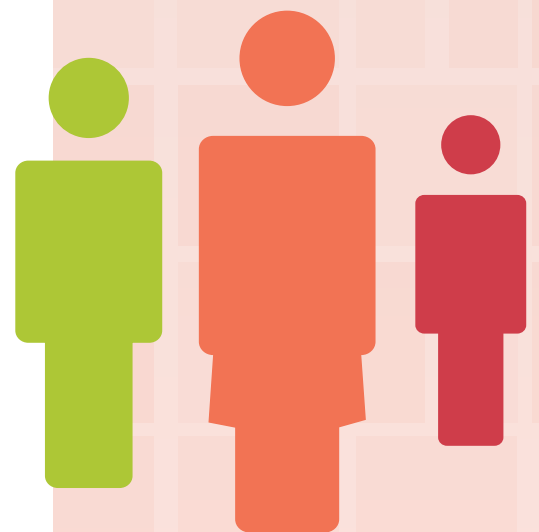
- Three options for operating a multimodal Union, Pike, and Pine corridor.
- Option A (the baseline scenario) is identical to today's street layout but with 2019 traffic and bus volumes.
- Options B and C are largely identical west of 8th Avenue (within downtown), and include repurposing street space for a single protected bike lane on Pike and Pine Streets running in the direction of travel on each street. Options B and C also include both improved and new bus stops along Pike and Union Streets west of 6th Avenue for Route 41.
- East of 8th Avenue, B and C are distinctly different:
 - Option B: Streets remain bi-directional for auto traffic and transit east of 8th. New curbside protected bike lanes run in both directions on Pike between 8th Ave and Broadway.
 - Option C: Pike and Pine Streets operate as a couplet, with traffic, bikes, and transit all operating eastbound on Pike and westbound on Pine.
- *Note: See following page for maps of Pike-Pine multimodal corridor options*

Pike-Pine Multimodal Corridor Options



What Happens Next with Union, Pike, and Pine Options?

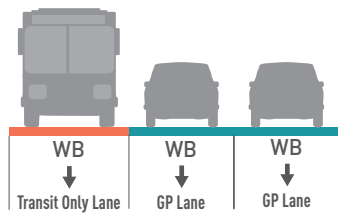
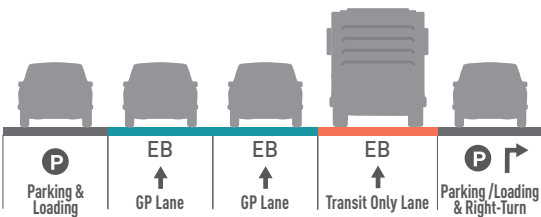
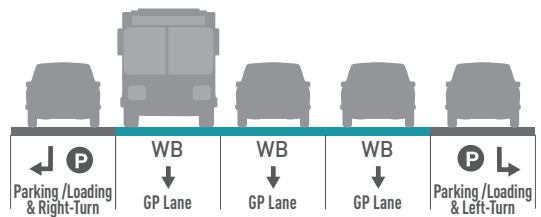
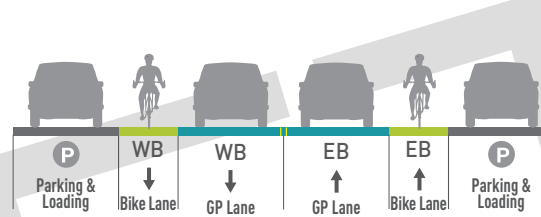
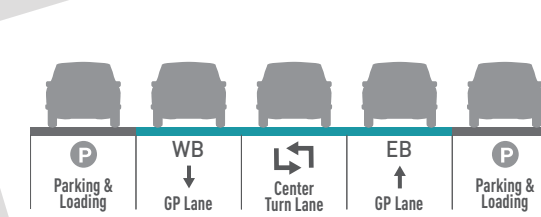
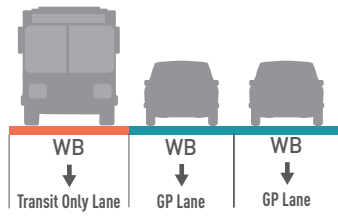
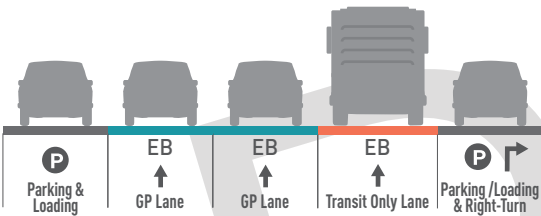
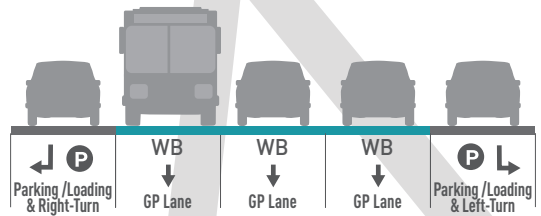
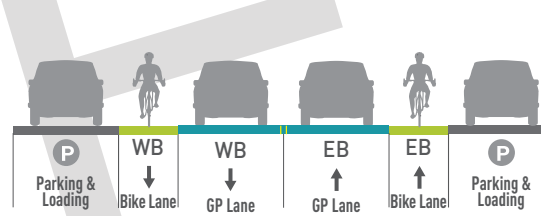
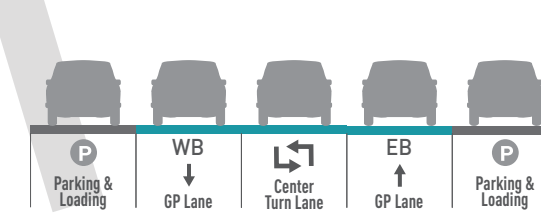
- Members of the [One Center City](https://onecentercity.org) Interagency Team will review Advisory Group input and consider this input along with technical analysis, additional stakeholder feedback, and public comment to develop a draft set of preferred near-term projects and strategies.
- Draft projects and strategies will be presented for Advisory Group review at the March Advisory Group meeting.
- Union, Pike, and Pine corridor design recommended for implementation will be developed with stakeholder input.



**JOIN THE CONVERSATION
AND LEARN MORE AT:**

onecentercity.org

OPTION A: BASELINE OR "DO NOTHING" (2019)

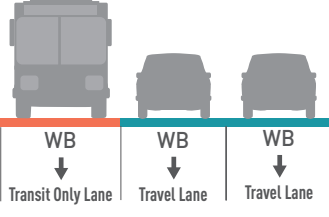
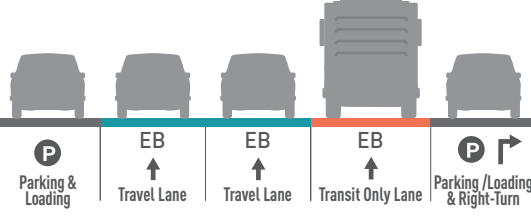
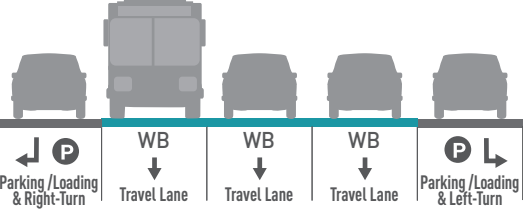
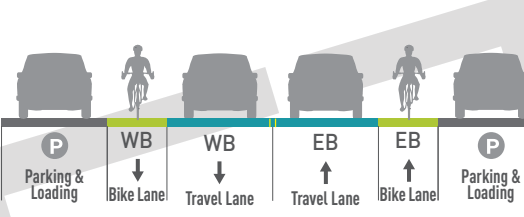
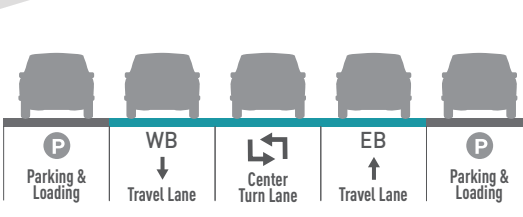
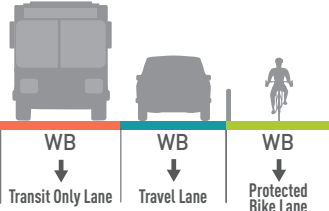
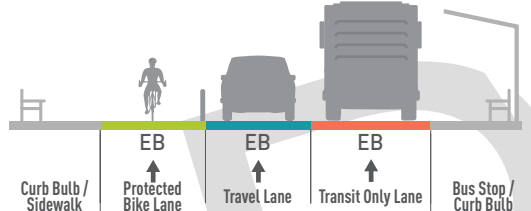
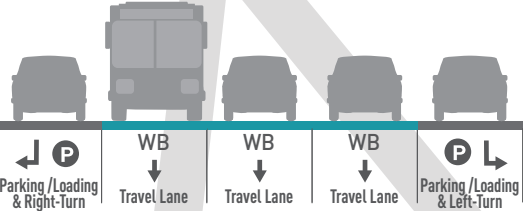
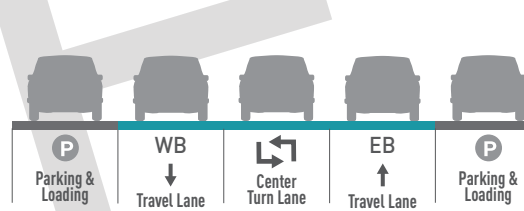
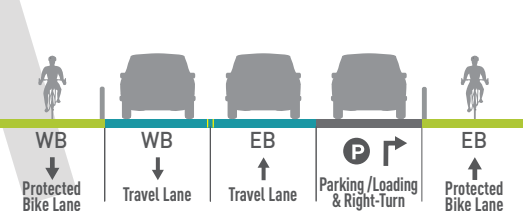
	1st Avenue to 8th Avenue			8th Avenue to Broadway	
	Pine St	Pike St	Union St	Pine St	Pike St
Existing	* Typical cross sections between 5th Ave and 6th Ave looking east.			* Typical cross sections between Belmont Ave and Boylston Ave looking east.	
	 <p>WB ↓ Transit Only Lane</p> <p>WB ↓ GP Lane</p> <p>WB ↓ GP Lane</p> <p>South curb has parking/loading west of 5th Ave</p>	 <p>Parking & Loading</p> <p>EB ↑ GP Lane</p> <p>EB ↑ GP Lane</p> <p>EB ↑ Transit Only Lane</p> <p>Parking/Loading & Right-Turn</p> <p>Only 3 travel lanes west of 4th Ave</p>	 <p>Parking/Loading & Right-Turn</p> <p>WB ↓ GP Lane</p> <p>WB ↓ GP Lane</p> <p>WB ↓ GP Lane</p> <p>Parking/Loading & Left-Turn</p>	 <p>Parking & Loading</p> <p>WB ↓ Bike Lane</p> <p>WB ↓ GP Lane</p> <p>EB ↑ GP Lane</p> <p>EB ↑ Bike Lane</p> <p>Parking & Loading</p> <p>South curb has parking/loading west of 5th Ave</p>	 <p>Parking & Loading</p> <p>WB ↓ GP Lane</p> <p>Center Turn Lane</p> <p>EB ↑ GP Lane</p> <p>Parking & Loading</p> <p>Only 3 travel lanes west of 4th Ave</p>
Option A Concept	 <p>WB ↓ Transit Only Lane</p> <p>WB ↓ GP Lane</p> <p>WB ↓ GP Lane</p> <p>South curb has parking/loading west of 5th Ave</p>	 <p>Parking & Loading</p> <p>EB ↑ GP Lane</p> <p>EB ↑ GP Lane</p> <p>EB ↑ Transit Only Lane</p> <p>Parking/Loading & Right-Turn</p> <p>Only 3 travel lanes west of 4th Ave</p>	 <p>Parking/Loading & Right-Turn</p> <p>WB ↓ GP Lane</p> <p>WB ↓ GP Lane</p> <p>WB ↓ GP Lane</p> <p>Parking/Loading & Left-Turn</p>	 <p>Parking & Loading</p> <p>WB ↓ Bike Lane</p> <p>WB ↓ GP Lane</p> <p>EB ↑ GP Lane</p> <p>EB ↑ Bike Lane</p> <p>Parking & Loading</p> <p>South curb has parking/loading west of 5th Ave</p>	 <p>Parking & Loading</p> <p>WB ↓ GP Lane</p> <p>Center Turn Lane</p> <p>EB ↑ GP Lane</p> <p>Parking & Loading</p> <p>Only 3 travel lanes west of 4th Ave</p>
What is Changing?	<ul style="list-style-type: none"> No change in configuration of streets Small increase in traffic volumes from today due to growth May be construction impacts to Pike and/or Pine from Washington State Convention Center Expansion 			<ul style="list-style-type: none"> No change in configuration of streets Small increase in traffic volumes from today due to growth 	

KEY TAKEAWAYS:

- Operations and street experience similar to today
- Slight increases in delay for transit passengers and drivers due to growth
- Analysis does not account for Washington State Convention Center construction impacts

OPTION B: DOWNTOWN COUPLET WITH PIKE STREET

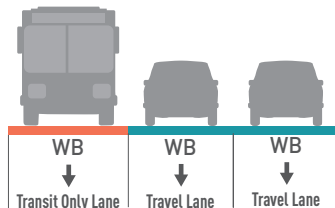
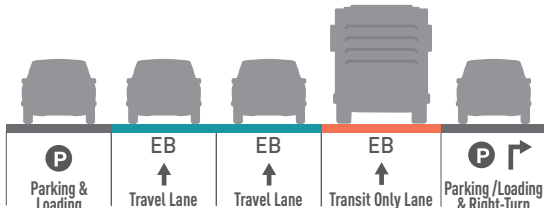
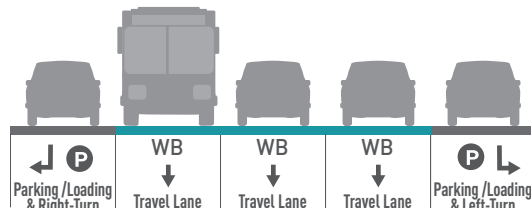
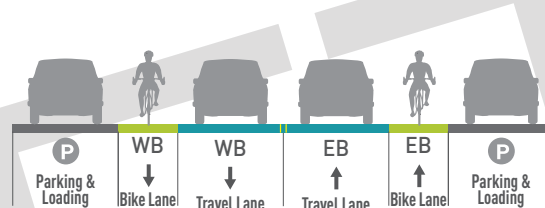
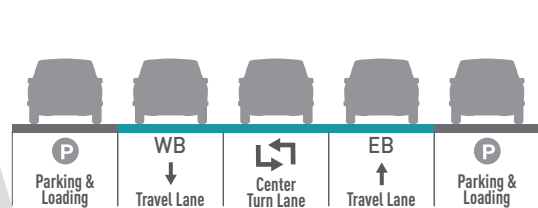
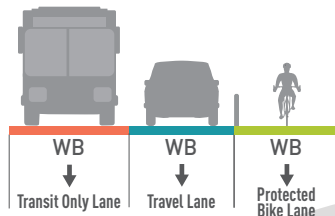
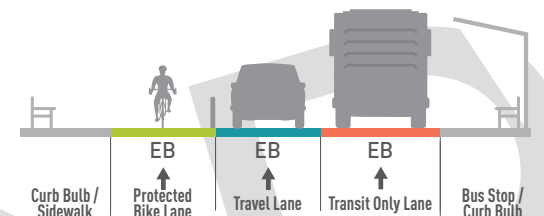
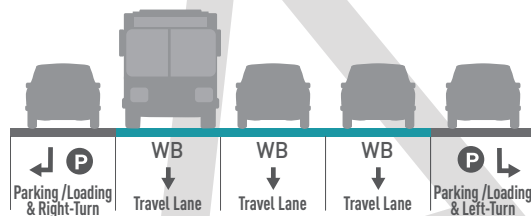
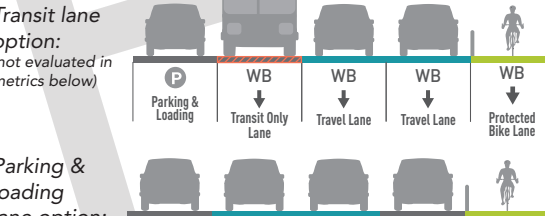
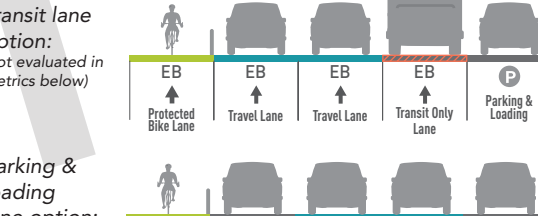
PROTECTED BIKE LANE PAIR EAST OF 8TH AVENUE

	← 1st Avenue to 8th Avenue →			✱ 8th Avenue to Broadway →	
	Pine St	Pike St	Union St	Pine St	Pike St
Existing	* Typical cross sections between 5th Ave and 6th Ave looking east.			* Typical cross sections between Belmont Ave and Boylston Ave looking east.	
	 WB ↓ Transit Only Lane WB ↓ Travel Lane WB ↓ Travel Lane South curb has parking/loading west of 5th Ave	 P ↓ Parking & Loading EB ↑ Travel Lane EB ↑ Travel Lane EB ↑ Transit Only Lane P ↓ Parking/Loading & Right-Turn Only 3 travel lanes west of 4th Ave	 P ↓ Parking/Loading & Right-Turn WB ↓ Travel Lane WB ↓ Travel Lane WB ↓ Travel Lane P ↓ Parking/Loading & Left-Turn	 P ↓ Parking & Loading WB ↓ Bike Lane WB ↓ Travel Lane EB ↑ Travel Lane EB ↑ Bike Lane P ↓ Parking & Loading	 P ↓ Parking & Loading WB ↓ Travel Lane Center Turn Lane EB ↑ Travel Lane P ↓ Parking & Loading
Option B Concept	 WB ↓ Transit Only Lane WB ↓ Travel Lane WB ↓ Protected Bike Lane	 Curb Bulb / Sidewalk EB ↑ Protected Bike Lane EB ↑ Travel Lane EB ↑ Transit Only Lane Bus Stop / Curb Bulb Only 3 travel lanes west of 4th Ave	 P ↓ Parking/Loading & Right-Turn WB ↓ Travel Lane WB ↓ Travel Lane WB ↓ Travel Lane P ↓ Parking/Loading & Left-Turn	 P ↓ Parking & Loading WB ↓ Travel Lane Center Turn Lane EB ↑ Travel Lane P ↓ Parking & Loading	 WB ↓ Protected Bike Lane WB ↓ Travel Lane EB ↑ Travel Lane P ↓ Parking/Loading & Right-Turn EB ↑ Protected Bike Lane EB = Eastbound WB = Westbound
What is Changing?	<ul style="list-style-type: none"> Westbound travel lane repurposed for single-direction protected bike lane 	<ul style="list-style-type: none"> Eastbound travel lane repurposed for single-direction protected bike lane Improvements to existing bus stops at 4th and 6th Aves to accommodate Route 41 passengers 	<ul style="list-style-type: none"> Route 41 operates westbound from I-5 to 1st Ave New Route 41-only bus stop between 4th and 3rd Aves 	<ul style="list-style-type: none"> Existing bike lanes removed Center turn lane added 	<ul style="list-style-type: none"> Single-direction protected bike lane on each curb On-street parking and loading retained on south side of street adjacent to protected bike lane Center turn lane eliminated east of Boren Ave and one eastbound traffic lane eliminated between Boren Ave and 8th Ave

KEY TAKEAWAYS:














- Changes have minimal effect on transit speed or reliability downtown
- Traffic modeling shows significant congestion eastbound on Pike Street during PM peak period
- Route 41 would require improved and new bus stops and potential boarding improvements to avoid sidewalk crowding
- This option has most significant loss of curb parking and loading

OPTION C: ONE-WAY COUPLET ON PIKE & PINE STREETS

← 1st Avenue to 8th Avenue →					← 8th Avenue to Broadway →				
Pine St		Pike St		Union St	Pine St		Pike St		
Existing	* Typical cross sections between 5th Ave and 6th Ave looking east.				* Typical cross sections between Belmont Ave and Boylston Ave looking east.				
									
Option C Concept									
	EB = Eastbound WB = Westbound		Only 3 travel lanes west of 4th Ave			Transit lane option: (not evaluated in metrics below)		Transit lane option: (not evaluated in metrics below)	
What is Changing?	South curb has parking/loading west of 5th Ave		Only 3 travel lanes west of 4th Ave			Parking & loading lane option: (evaluated in metrics below)		Parking & loading lane option: (evaluated in metrics below)	
	<ul style="list-style-type: none">Westbound travel lane repurposed for single-direction protected bike lane		<ul style="list-style-type: none">Eastbound travel lane repurposed for single-direction protected bike laneImprovements to existing bus stops at 4th and 6th Aves to accommodate Route 41 passengers		<ul style="list-style-type: none">Route 41 operates westbound from I-5 to 1st AveNew Route 41-only bus stop between 4th and 3rd Aves	<ul style="list-style-type: none">One-way westbound for all modesOne-way protected bike laneTwo traffic lanesOne flexible lane – could be used for transit, parking, and loading		<ul style="list-style-type: none">One-way eastbound for all modesOne-way protected bike laneTwo traffic lanesOne flexible lane – could be used for transit, parking, and loading	

- Changes have minimal effect on transit speed or reliability downtown
- Potential to improve transit speed and reliability if flexible lane east of I-5 is dedicated to transit (peak or all day)
- Traffic modeling shows significant congestion eastbound on Pike Street during PM peak period
- Route 41 would require improved and new bus stops and potential boarding improvements to avoid sidewalk crowding
- Directional changes require greater capital investment and would take longer to design and construct

EAST/WEST SURFACE STREET OPTIONS OVERVIEW

	Change from Today				 Surface Street Project Capital Cost	 Pedestrian Experience at Major Bus Zones	 Potential for On-Time Delivery
	 Transit Travel Time (Corridor Bus Riders)	 Additional Downtown Transit Operating Costs (Bus Only)	 General Purpose Traffic Travel Time (Between 1st Ave & Broadway)	 Change in On-Street Parking and Loading Spaces			
Option A: 2019 Baseline	+0.5 min. (2%) <small>between 1st Ave & Broadway</small>	No Change <small>existing Pike/Pine bus routes</small> - \$0.5M <small>annually for route 41</small>	Westbound (Pine): +1.0 min. Eastbound (Pike): No Change	No Change	N/A	 MED	 N/A
Option B: Downtown Couplet with Pike PBL Pair East of 8th Ave	+0.5 min. (2%) <small>between 1st Ave & Broadway</small>	No Change <small>existing Pike/Pine bus routes</small> - \$0.5M <small>annually for route 41</small>	Westbound (Pine): +0.5 min. Eastbound (Pike): +4.2 min.	Commercial Load Zones: -16 Passenger Load Zones: -22 Parking Stalls: -78	Under Development	 MED	 HIGH
Option C: One-Way Couplet on Pike & Pine Streets	No Change <small>between 1st Ave & Broadway</small> <small>assumes parking & loading lane option on Pike & Pine - transit lane option may reduce transit travel times</small>	No Change <small>existing Pike/Pine bus routes</small> - \$0.5M <small>annually for route 41</small>	Westbound (Pine): +0.5 min. Eastbound (Pike): +3.4 min.	Commercial Load Zones: -8 Passenger Load Zones: -19 Parking Stalls: -30 <small>assumes parking & loading lane option on Pine</small>	Under Development	 MED	 LOW