



Interstate
BRIDGE
Replacement Program



IBR Program Progress

May 6, 2022

www.interstatebridge.org



Program Update

Greg Johnson, Program Administrator

Ray Mabey, Assistant Program Administrator

Frank Green, Assistant Program Administrator

Recent Steering and Advisory Group Meetings

- ▶ Steering and advisory groups are meeting regularly this spring to provide feedback on the major components that will go into the Modified LPA:
 - Community Advisory Group (4/28; *upcoming: 5/12*)
 - Equity Advisory Group (4/18; *upcoming: 5/16*)
 - Executive Steering Group (5/5; *upcoming: 5/19*)

Responding to Questions: Inflation Assumptions

- ▶ **Cost estimates from 2012 were used for the Conceptual Finance Plan as the best available information at the time.**
- ▶ **The cost estimates were escalated to the scheduled year of construction.**
 - Cost estimates from 2012 were escalated to 2020 using historical data from WSDOT's most recent cost inflation index, informed by external sources.
 - 2020 cost estimates were then escalated to proposed year of construction (2025 to 2035).
 - Average inflation rate applied varied by program phase, and ranged from 1.9% to 4%.
- ▶ **Conceptual finance plan updates this fall will review needed updates to inflation, to provide a more up to date estimated.**

Responding to Questions: How LRT affects construction

- ▶ It is anticipated that a dedicated guideway will be provided for transit regardless of mode.
- ▶ A combination of factors contributes to limitations on the bridge height:
 - Protected air space, access/connections to SR-14, downtown Vancouver, and Hayden Island, appropriate grades for freight and active transportation.
 - The standard grade of decline for LRT is higher than what is required for freight to descend safely on the highway.
 - Running LRT along I-5 allows for a less rapid decline of light rail.

Responding to Questions: Cost for HCT per mile

- ▶ **A national average for construction cost per mile is not easily applicable to IBR:**
 - The Columbia River is wider than other locations across rivers where transit has been built.
 - Both BRT and LRT would require dedicated structural guideway over North Portland Harbor and the Columbia River, so IBR has two river crossings.
 - Many typical BRT projects use extensive lengths of existing transportation infrastructure.
- ▶ **BRT and LRT cost per mile on IBR equates to:**
 - BRT \$350 - \$375 million per mile.
 - LRT \$440 - \$460 million per mile.
- ▶ **Both estimates include:**
 - Total project costs, including escalation to year of expenditure.
 - Includes costs to cross the North Portland Harbor and the Columbia River.
 - Similar costs for stations, Park & Rides, right of way, and maintenance facility needs.
 - An estimated number of transit vehicles and costs for each system.
- ▶ **The cost difference between them is primarily attributed to rail, electrical systems, traction power, and vehicle costs.**

Responding to Questions: Transit O&M

- ▶ **Funding Transit Operations and Maintenance (O&M):**
 - The program is collaborating with transit partners to identify a finance plan that works for all agencies.
 - Once a decision is reached, it will be documented in an agreement between ODOT, WSDOT, C-TRAN, and TriMet.
 - The finance plan for O&M must be identified as part of the NEPA and Capital Investment Grant process.
 - The Capital Investment Grant process requires an O&M finance plan before moving into the ‘transit engineering’ phase, which is anticipated in the 2024/2025 timeframe.



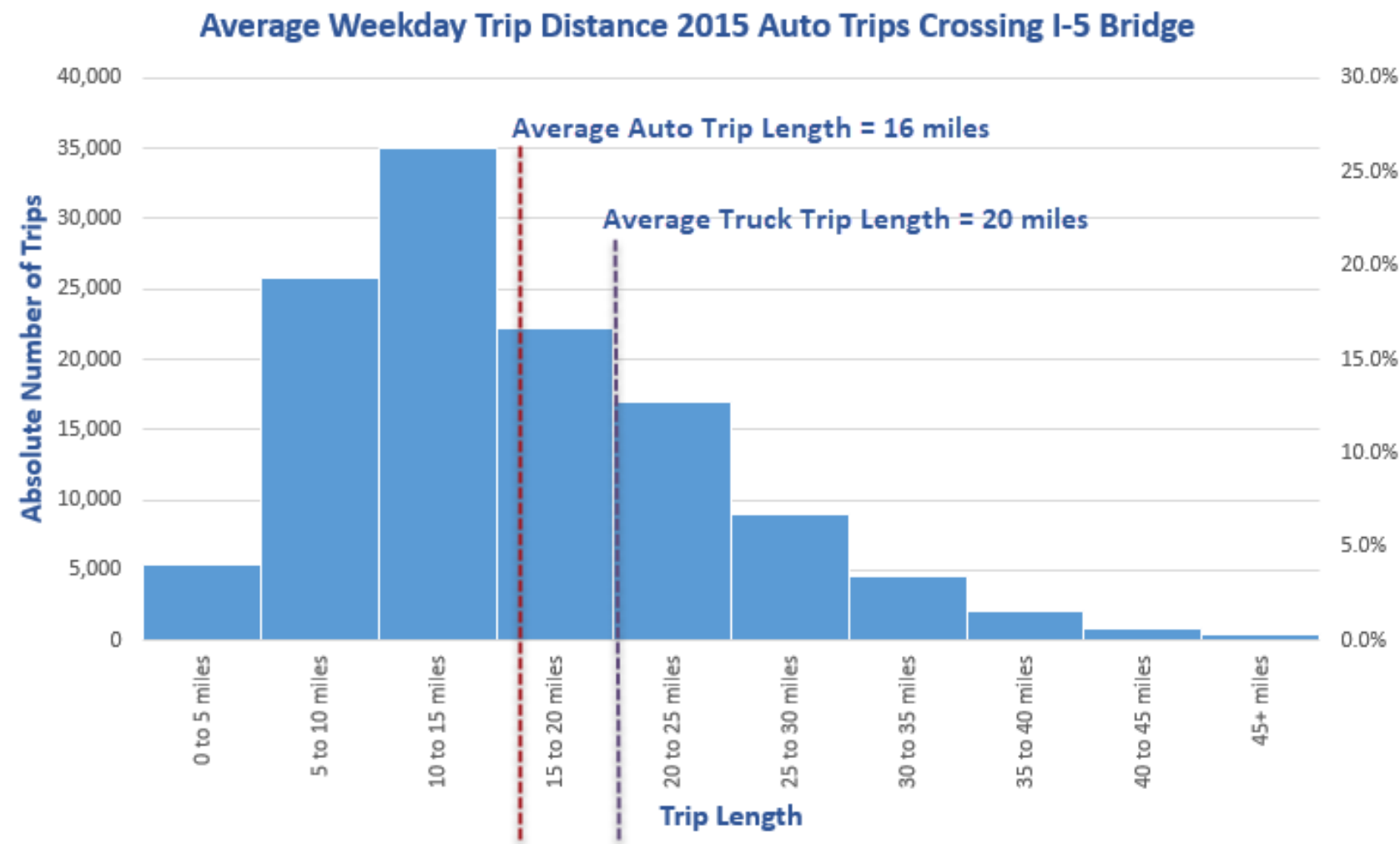
Responding to Questions: Transit O&M

- ▶ **Generally, LRT has a lower per rider O&M cost than BRT.**
 - Detailed O&M cost estimates specific to the IBR program's Draft Modified LPA will be developed in late 2022.
- ▶ **Factors that affect Transit O&M costs:**
 - Maintaining rail infrastructure tends to be more costly than maintaining roadways where BRT service operates.
 - LRT vehicles have more than twice the useful life, with BRT buses lasting 12 years versus 30 years for LRT vehicles.
 - LRT has 2.7x greater capacity per operator, resulting in lower labor costs per passenger.
 - *Labor is typically the largest cost of operating public transit. More vehicles results in more operator and maintenance labor.*
 - While LRT vehicles have complex parts to maintain, they do not have the same scheduled maintenance requirements as rubber-tired diesel, hybrid, or battery-electric buses.

Responding to Questions: TriMet Financials

- ▶ **TriMet does not break down the financial performance of each of their MAX Lines. However, TriMet continues to have strong financial performance.**
 - Last year the nation's top credit rating agencies granted TriMet a transit industry-leading triple-A bond rating, reaffirming support for the agency's creditworthiness and the strength of its government-issued bonds.
 - In 2018, TriMet became the first transit agency in the nation to have a special tax-backed bond rated Triple-A by the three top rating agencies.
- ▶ **Among MAX Lines, the Yellow Line had the lowest percentage drop in riders throughout the pandemic and is recovering rides at about the same pace as the other MAX Lines.**
- ▶ **Currently, the Yellow Line is at about half of its pre-pandemic ridership, but it is growing rapidly.**
 - At its current rate of growth, the Yellow Line will reach pre-pandemic ridership levels in about 2 years, well before the Interstate Bridge Replacement is built.

Responding to Questions: Trip Length



Responding to Questions: Traffic Data

- ▶ **IBR is using 2019 data as a baseline year for all transportation data.**
 - Long-range transportation forecasts rely on historical trends and current behavior to understand future conditions and areas of uncertainty.
 - It is important to observe patterns over a significant period of time to reveal long-range trends and avoid misinterpreting short-term changes.
- ▶ **Pre-COVID total daily traffic volume compared to current total daily traffic volume:**
 - As of early 2021, weekday volumes on I-5 in Portland were 12% below 2018.
 - As of early 2022, weekday volumes on I-5 in Portland were 8% below 2018.



Questions or Feedback?



Key Components of the Draft Modified Locally Preferred Alternative

- ▶ **IBR Team**

Greg Johnson, Program Administrator

John Willis, Program Manager

- ▶ **Program Partners**

Mayor Anne McEnery-Ogle, City of Vancouver

Executive Director Curtis Robinhold, Port of Portland

Section Overview

- ▶ Scenario Development
- ▶ Transit investments
- ▶ Hayden Island / Marine Drive interchanges
- ▶ Auxiliary Lanes
- ▶ Program recommendation and other considerations

Identifying Scenarios

Scenario Development



Scenario A	Scenario B
Bridge - Replace	Bridge - Replace
River Crossing Auxiliary Lanes - 1	River Crossing Auxiliary Lanes - 2
System and Demand Management - Yes	System and Demand Management- Yes
HI/MD - Partial	HI/MD - Full
Transit- Light Rail	Transit- Light Rail



Transit Investments

Preferred Transit Investment

- ▶ The IBR Preferred transit investment components:
 - Mode – Light Rail Transit
 - Alignment – I-5 Running/Adjacent
 - IBR Terminus – Near Evergreen
- ▶ Other components that will be studied further:
 - General station locations
 - General Park & Ride location and size
 - Operations and maintenance facility
 - System improvements to transit speed and reliability
- ▶ After a preferred transit investment is selected project components will be optimized and refined as design advances and benefits and impacts are better understood.

Transit Investments

► Key Takeaways:

- A combination of Vine BRT, LRT, and express bus service utilizing Bus on Shoulder, where available, will be needed to serve identified markets and demand.
 - *Transfers from other transit vehicles are the highest mode of access for all representative transit investments, highlighting the importance of connecting the existing systems.*
- An LRT extension of the Max Yellow Line from Expo Center into Vancouver best integrates existing transit investment in the region.
 - *LRT allows for preservation of the C-TRAN Vine and express bus current and future system while providing convenient connections to new LRT stations.*
- Capacity on LRT options allows the program to maximize trips.
- LRT provides more competitive travel time compared with trips that require a transfer at Expo.
- LRT investments improve access to jobs to a greater degree than BRT alone.
- LRT is more competitive for FTA discretionary funding.

Transit Investments

► Additional Considerations:

- Evergreen terminus has fewer potential property impacts and connects directly to the downtown library, the Historic Reserve, jobs, services, and amenities.
- Evergreen terminus maximizes transfer opportunities given direct connections to several local routes as well as planned BRT routes.
- The City of Vancouver has worked with C-TRAN to design robust station environments for the Vine system on Broadway and Washington in the Central Business District.
- The City of Vancouver has seen substantial growth in the Waterfront District as planned for in the Waterfront Development Plan.

Transit Investments – What We’ve Heard

► Community Advisory Group Feedback:

- Overall, Community Working Groups were supportive of HCT options, with many preferring LRT or a combined LRT/BRT option.
- Congestion relief is a top priority.
- Reliability of mode is important.

► Equity Advisory Group Feedback:

- Equity-priority communities expressed high interest in accessible and dependable transit options, including:
 - *Desire for multiple transportation options that are efficient, reliable, and user-friendly.*
 - *Support for infrastructure that promotes HCT and low-stress active transportation options.*

Transit Investments – What We’ve Heard

► Community Survey Feedback:

- Overall support for implementation of a HCT system, with noted interest in LRT specifically.
- Desire for greater connectivity from Clark County into Portland and the regional transit system.
- Travel time ranked as most important transit priority.
- Highest preferences for potential transit stations located at or near Vancouver Waterfront, Clark College, Expo Center, Hayden Island, Vancouver Library (Evergreen).

► Community Opinion Polling Results:

- There is strong support among residents in the entire region and solid majority support throughout Clark County for the concept of extending the Max Yellow Line from Expo Station to Vancouver in a dedicated space across the new I-5 bridge.
 - *79% of total respondents strongly or somewhat support light rail across the bridge:*
 - Portland Metro Area (OR): 84%
 - City of Portland: 90%
 - Clark County: 61% (Clark County excluding Vancouver: 57%)
 - City of Vancouver: 69%

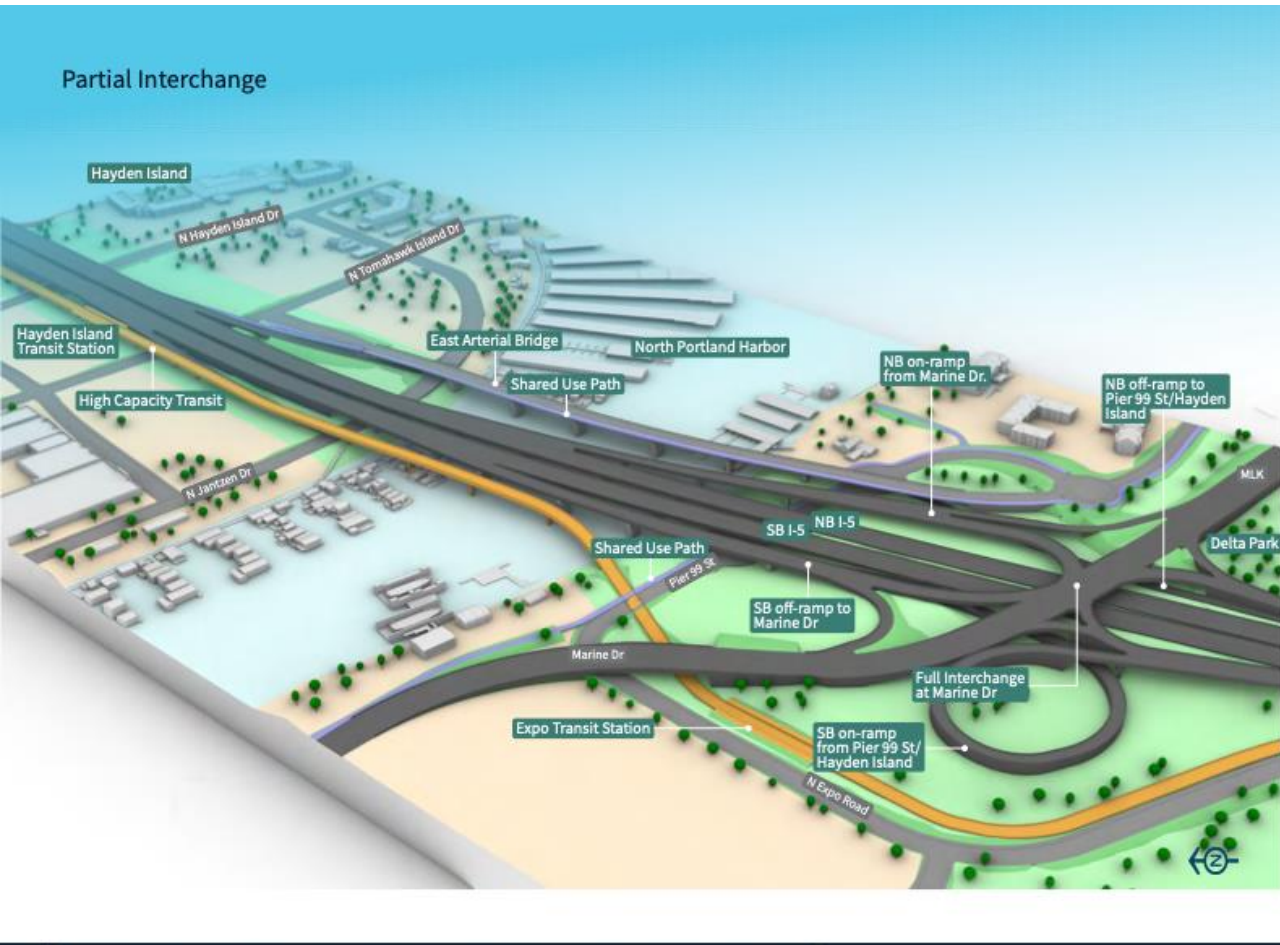


Hayden Island / Marine Drive Interchanges

Hayden Island/Marine Drive Design Assumptions

- ▶ North Portland Harbor bridge replacement
- ▶ Local auto access bridge between North Portland and Hayden Island
- ▶ Local pedestrian/bicycle connections with shared use path
- ▶ High-Capacity Transit station on Hayden Island

Program Recommendation: Hayden Island/Marine Drive Interchange



Hayden Island/Marine Drive Interchange: Partial Interchange

► Key Takeaways:

- Smaller footprint over North Portland Harbor.
- Fewer floating home impacts.
- Smaller scale/complexity of I-5 over Hayden Island provides higher quality experience for active transportation and transit access on east-west streets.
- Hayden Island vehicle/freight access to/from Portland via local roads and I-5 ramps that cross under Marine Drive.
- Hayden Island vehicle/freight access to/from Vancouver via Jantzen Drive I-5 ramps.

Hayden Island/Marine Drive Interchange: What We've Heard

► Community Advisory Group Feedback:

- Preference for option with smallest footprint over Hayden Island.
- Important to consider freight needs.
- Consider active transportation safety and access.

► Equity Advisory Group Feedback:

- Screening summary demonstrates that **equity was incorporated** into the process. However, it is difficult to understand all the information and tradeoffs.
- Crucial to focus on the **human experience** and impact.
- **Wayfinding** signage needs to be a priority given the complexity.

Hayden Island/Marine Drive Interchange: What We've Heard

► Community Survey Feedback:

- Prioritized congestion relief on I-5 near Hayden Island, safe intersections and road improvements, and convenient access to services, shopping, and restaurants.
- Survey respondents who indicated they live in Washington were more likely to prefer direct access to Hayden Island.
- Oregon residents more likely to prefer island access via Marine Drive and local access bridge.

► Community Opinion Polling Results:

- Oregon residents drive to Hayden Island only a few times a year, if at all. They don't express much interest in what happens regarding the highway interchange options.
- Washington residents are more likely to drive to Hayden Island and are more likely to be interested in the highway interchange options.



Auxiliary Lanes

What are Auxiliary Lanes?

- ▶ **Ramp-to-ramp connections** to facilitate acceleration and deceleration, weaving, merging, and diverging for automobiles and trucks between two or more interchanges.

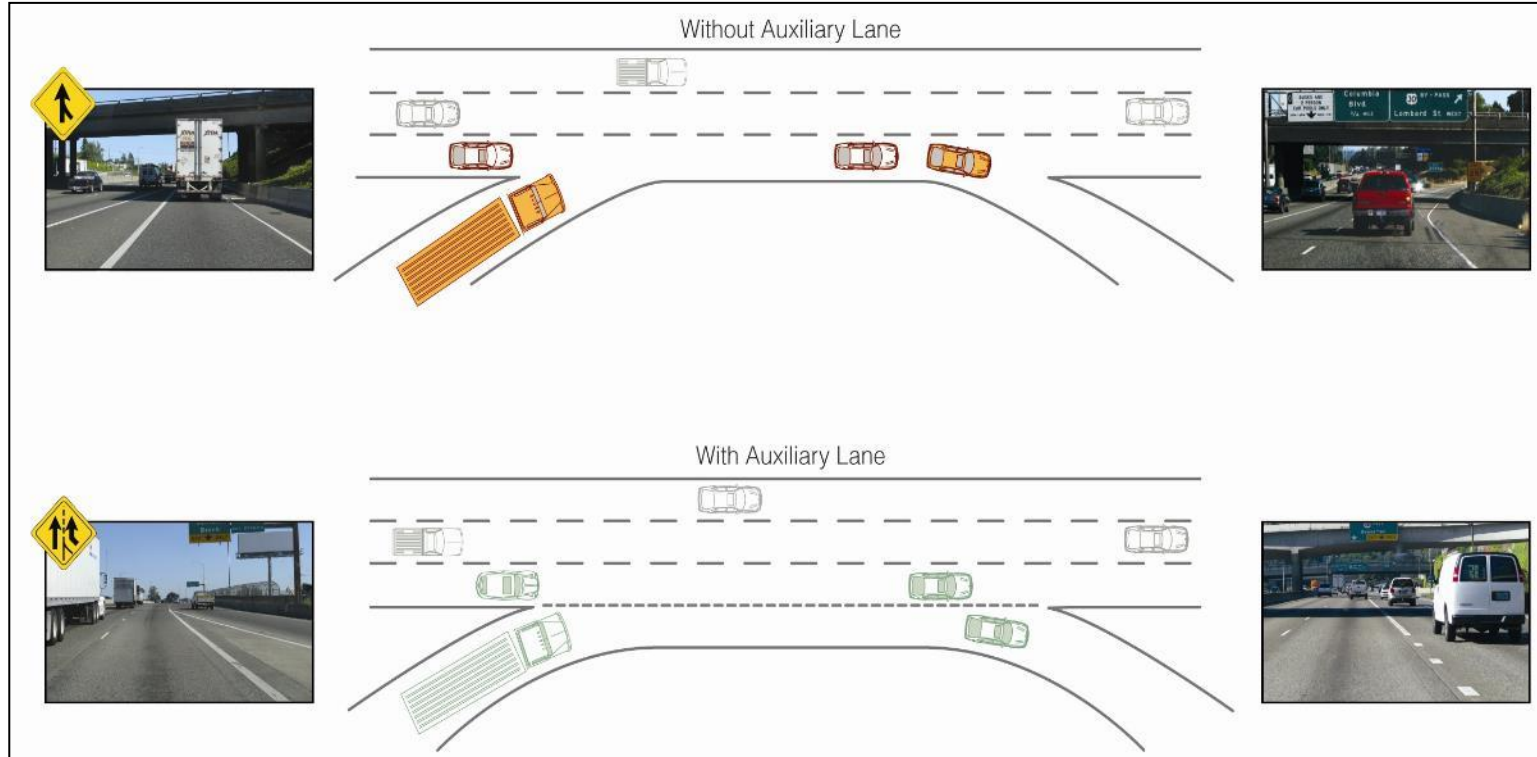
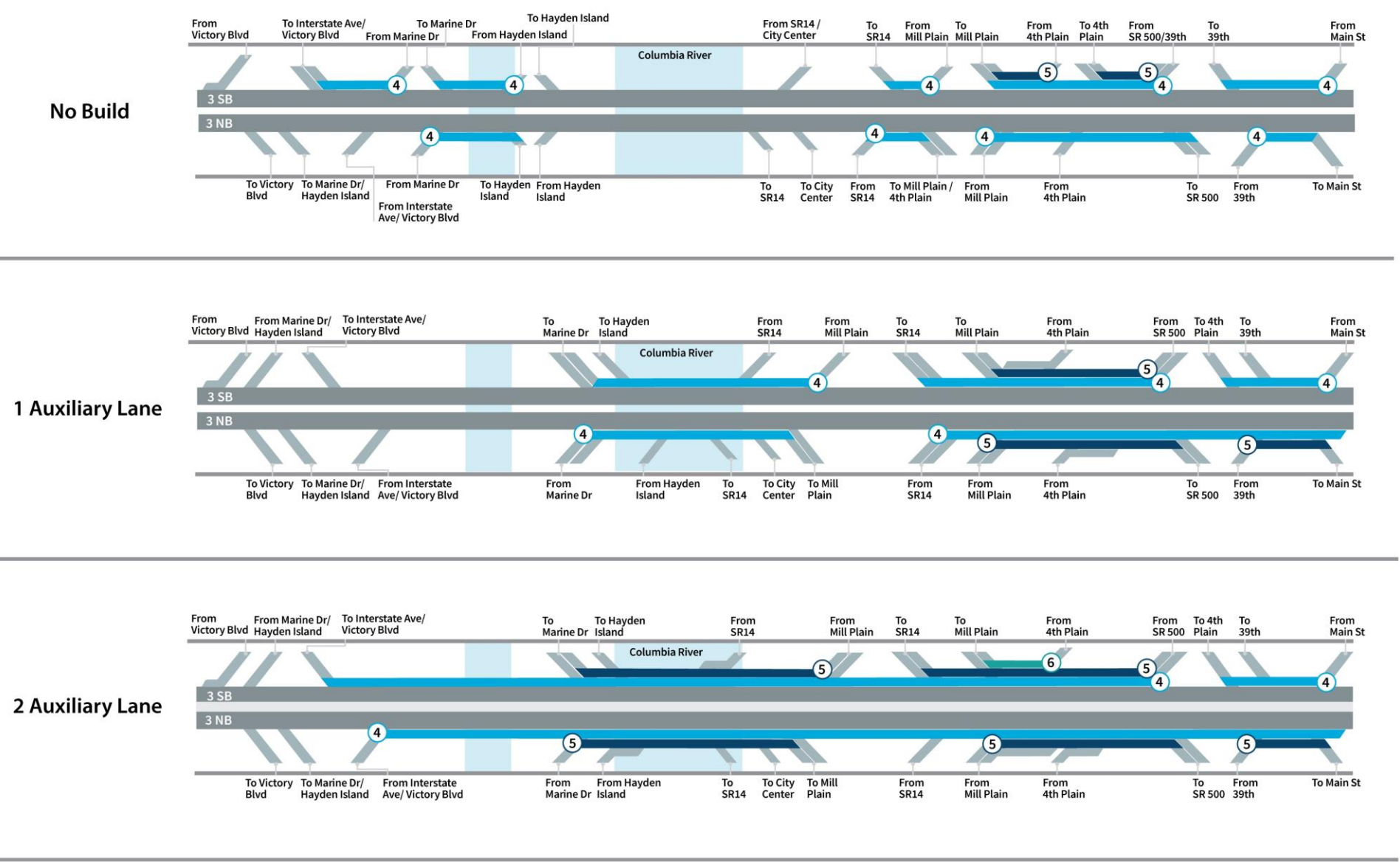


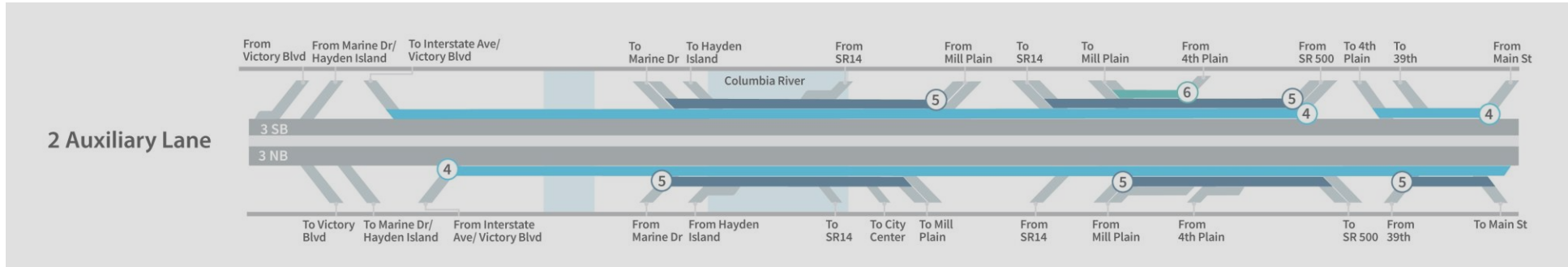
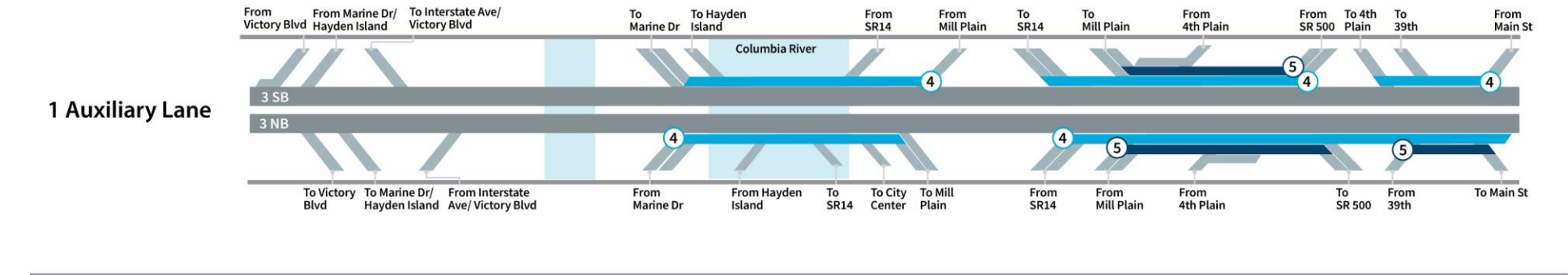
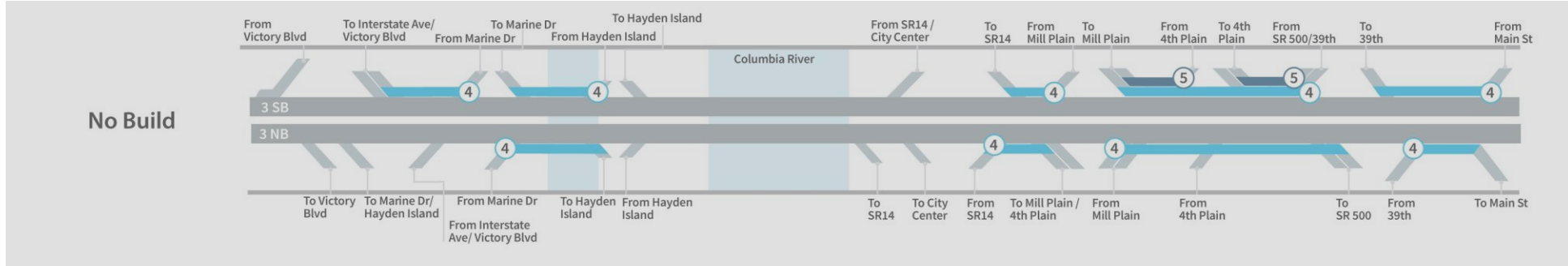
Figure shows typical highway Merge and Diverge Conditions, with (top) and without (bottom) an auxiliary lane.

IBR Program - Auxiliary Lane Options



All options, have 3 lanes thru traffic Northbound and Southbound

IBR Program - Auxiliary Lane Options



All options, have
3 lanes thru traffic
Northbound and
Southbound

- Through lanes
- 4 Auxiliary lane 4
- 5 Auxiliary lane 5
- 6 Auxiliary lane 6
- Collector-distributor roads and ramps

Auxiliary Lanes

► Benefits of one auxiliary lane compared to 2045 No Build:

- Travel time improvements:
 - *SB AM travel time is reduced by 3 minutes (5% faster) between I-5/I-205 split and I-405.*
 - *NB PM travel time is reduced by 11 minutes (30% faster) between Broadway Ave and SR-500.*
- Reduces overall congestion:
 - *While congestion is similar in the AM/PM peak, there are off-peak benefits, including weekends.*
 - *Less diversion to local streets.*
 - *Faster congestion recovery from crashes and incidents.*
 - *Decrease in crashes, improving safety.*
- Mode shift—daily transit share is expected to increase from 7% in No Build to 11% in the Build.
- Fewer lane changes required (i.e. lane balance).
- Climate—GHG reduction due to less congestion, VMT reduction, mode shift, and tolling.
- Large safety improvements:
 - *Lane widths to allow for current vehicle widths, turning, and comfort.*
 - *Fewer sideswipe crashes.*
 - *Full shoulders to recover from breakdowns and allow for emergency vehicle access and Bus on Shoulder.*
 - *Improved visibility.*
 - *No bridge lifts.*

Auxiliary Lanes – What We’ve Heard

► Community Advisory Group Feedback:

- The option that maximizes capacity and minimizes congestion.
- Two auxiliary lanes seems like the right decision.
- Combined with transit considerations, one auxiliary lane is appropriate.
- Two auxiliary lanes addresses congestion and is the best value.
- Congestion and safety are major CAG values and priorities, having auxiliary lanes addresses these priorities.

► Equity Advisory Group Feedback:

- Want to understand differences in property impacts & displacements between one and two auxiliary lanes.
- Both travel time and environmental impacts are important from an equity standpoint.
- Consider projected demographic changes.

Auxiliary Lanes – What We’ve Heard

► Community Survey Feedback:

- Desire to both relieve congestion and reduce greenhouse gas emissions.
 - *Mixed feedback on the number of lanes (some want to see the number of lanes increased, other do not due to environmental concerns).*
- Concern around potential impacts to residences, businesses, and neighborhoods.

► Community Opinion Poll Results:

- Large majorities of support overall, with one auxiliary lane receiving slightly more support than the two auxiliary lane option:
 - *85% of total respondents strongly or somewhat support the one auxiliary lane option.*
 - *74% of total respondents strongly or somewhat support the two auxiliary lane option.*
 - *After hearing potential tradeoffs, respondents tended to favor the two auxiliary lane option by a slim majority:*
 - Clark County residents were more likely to select the two auxiliary lane option.
 - Oregon residents were more split with the two auxiliary lane option slightly more preferred by those living outside of Portland city limits.

Program Recommendation

Scenario Development



Scenario A	Scenario B
Bridge - Replace	Bridge - Replace
River Crossing Auxiliary Lanes - 1	River Crossing Auxiliary Lanes - 2
System and Demand Management - Yes	System and Demand Management- Yes
HI/MD - Partial	HI/MD - Full
Transit- Light Rail	Transit- Light Rail



IBR Recommendation: Modified LPA

Hayden Island/
Marine Drive:

**Partial
Interchange**

Transit:

**Light Rail to
Evergreen near
I-5**

River Crossing
Auxiliary Lanes:

1

Variable Rate
Tolling:

Yes



Partial Interchange Summary

Hayden Island Drive local-only trips and
Tomahawk Island Drive extension increase
Hayden Island east-west connectivity



Smaller interchange leaves space for a
comfortable pedestrian environment
and opportunities for open space

Addresses safety and congestion by improving
active transportation, adding shoulders, increasing
lane widths and improving ramp merges



Benefits of Expanding LRT from Expo to Evergreen

4 Stations* 

3,000+ Residents are within
a half mile walk

26% BIPOC  **41%** Low-income

*Includes the existing Expo station and 3 new stations.

Equity - Jobs Accessible via Transit (% increase)*

68% General **73%** BIPOC

59% Low-income **71%** People w/
disabilities

*Increase in jobs accessible from the program area within a 45
minute midday transit ride. Percent increase determined by
adding LRT Expo to Evergreen compared to 2045 No Build.

Climate - GHG Reduction*

36,000 metric tons/year
or the equivalent of



7,000
homes' electricity
for one year

OR



89,400,000
miles driven by gas
powered car

*GHG reduction is an estimate calculated from the displacement
(or avoidance) in the shift from cars to transit.

Strategies to Combat Climate Change



- Demand Management, including
Variable Rate Tolling (tolling will consider
price reductions for low-income users and
low-carbon vehicles)
- Increase traffic operation efficiencies
(ramp metering and auxiliary lanes)
- Mode shift from cars to active
transportation and transit
- Low-carbon emission construction
strategies

Other Components of the Recommended Modified LPA

- ▶ Current I-5 bridge replacement with a seismically sound bridge with three through lanes northbound and southbound.
- ▶ Prioritizing a comprehensive transit network.
- ▶ Safe and comfortable active transportation.
- ▶ Replacement of the North Portland Harbor Bridge with three through lanes, northbound and southbound.
- ▶ Assumption that Variable Rate Tolling will be used for funding, such as constructing the program, managing congestion, and improving multimodal mobility within the I-5 corridor.
- ▶ Improvements to additional interchanges within the program corridor.

Developing Program Commitments

- ▶ Identifying a Modified LPA provides an important foundation for what to study in the federal environmental review process.
- ▶ The program is developing a draft list of additional work that will need to be part of considerations moving forward.



Discussion

- ▶ Program partners
- ▶ Questions or feedback?



Next Steps

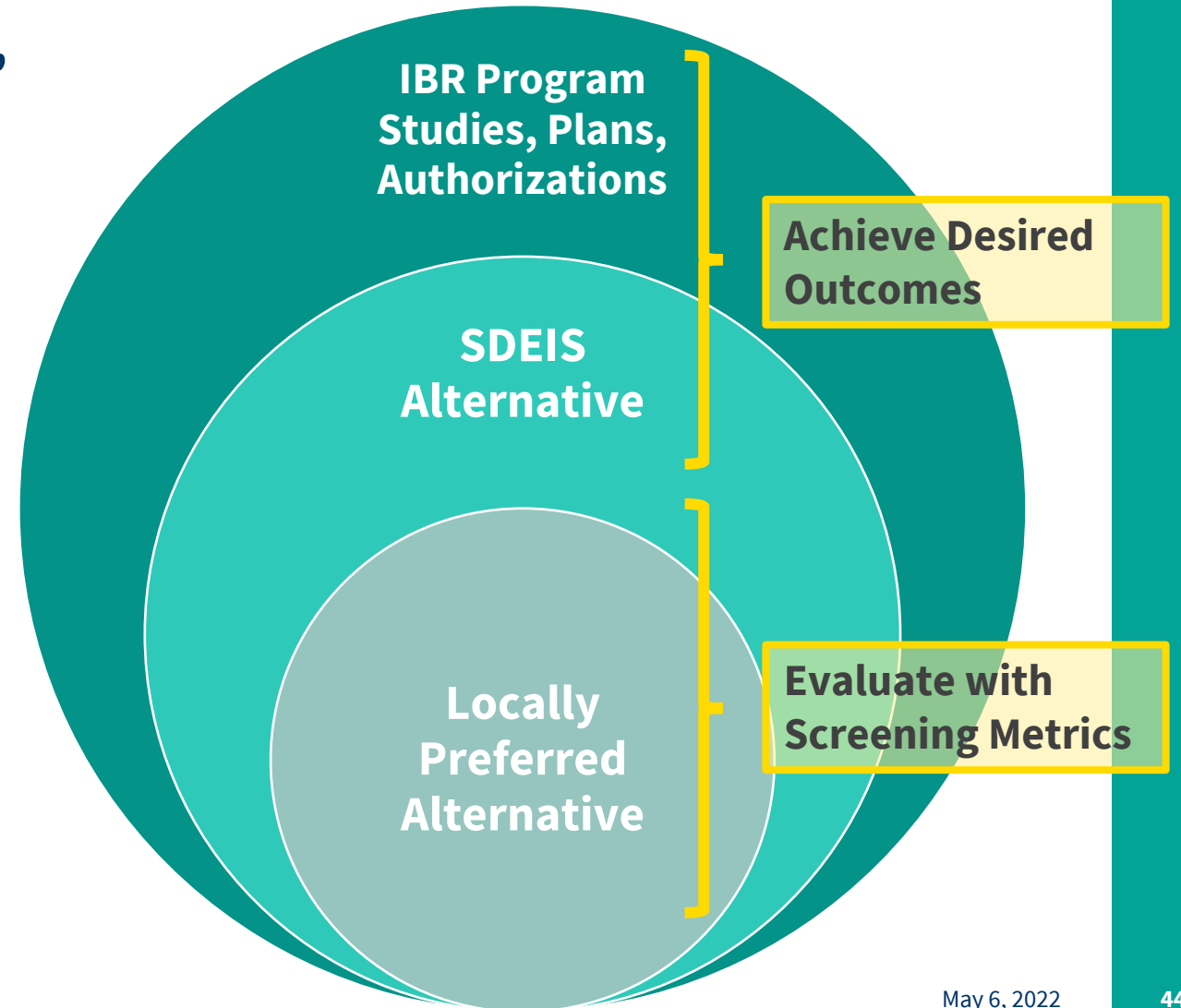
Greg Johnson, Program Administrator

Near Term Timeline

- ▶ **May 10 – June 14**
 - IBR recommended Modified LPA briefing and discussion at program partner boards, councils, and commissions.
- ▶ **May 19/20**
 - ESG (5/19) and BSLC (5/20) meet to hear ongoing feedback on the recommended Modified LPA and discuss program considerations.
- ▶ **June 16/17**
 - ESG (6/16) and BSLC (6/17) meet to review initial feedback from boards/councils/commissions and confirm Modified LPA language to move forward for board/council/commission action.
- ▶ **June 22 – July 13**
 - Program partner boards/councils/commissions endorse the Modified LPA.
- ▶ **July 21**
 - ESG meets to consider adoption of the Modified LPA.
 - BSLC meets to consider and respond to the Modified LPA.

Next Steps – How They Fit Together

- ▶ Program requires numerous studies, plans, analyses, authorizations, etc.
- ▶ Supplemental Draft Environmental Impact Statement (SDEIS) is a study where benefits and impacts of the Modified Locally Preferred Alternative will be evaluated for public review and comment.
 - A Locally Preferred Alternative (LPA) identifies the foundational elements of the alternative to be studied in the SDEIS process.



Timeline Beyond Summer 2022

► Late 2022 through 2023:

- Updates to the Conceptual Finance Plan once details of the Modified LPA are confirmed.
- Additional tolling and funding discussions as part of the 2023 legislative sessions.
- Anticipate applying for federal grant funding opportunities in 2023.

► Ongoing through 2024:

- Additional analysis and continued community engagement as part of the federal environmental review process.
- Additional development of design details such as bridge type, active transportation facilities, transit details, etc.

► Construction anticipated to begin by late 2025.



Questions or Guidance?

- ▶ What additional information is needed to support Bi-State Legislative Committee consideration of the recommended Modified LPA?
- ▶ What is needed to support August 1st legislative milestone identified in WA supplemental transportation budget?



For more information contact:

info@interstatebridge.org

360-859-0494 or 503-897-9218

888-503-6735

<https://www.interstatebridge.org>

Follow us on social: @IBRprogram



Thank you!

www.interstatebridge.org