



Interstate
BRIDGE
Replacement Program



Equity Advisory Group

April 04, 2022

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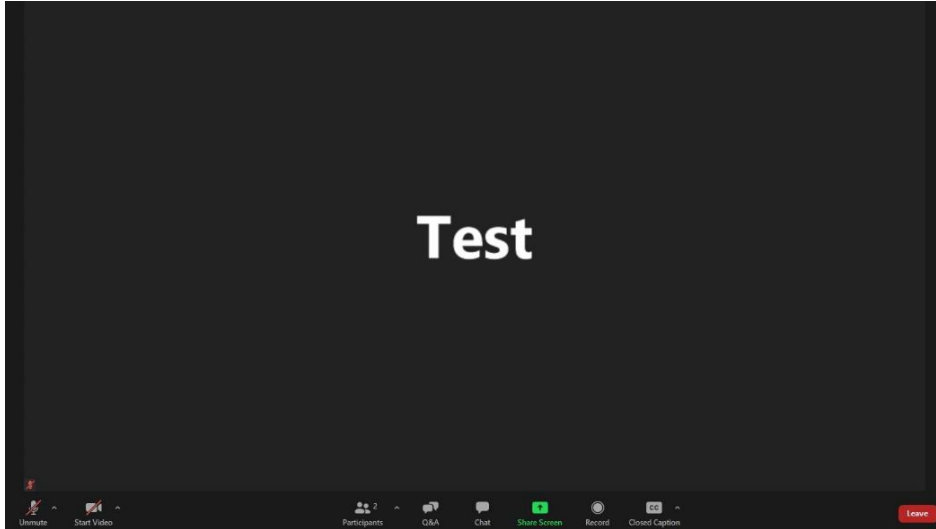
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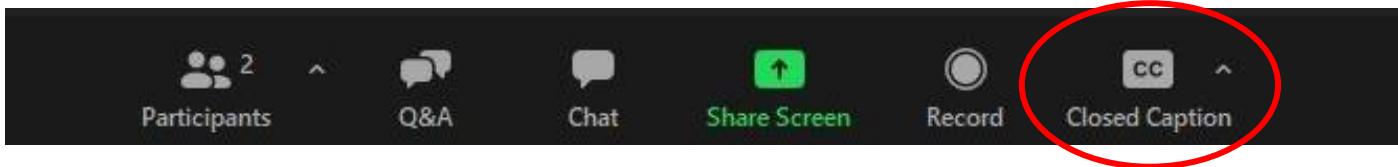
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Reminders

- ▶ We encourage EAG members to turn on your video.
- ▶ Please say your name when you begin to speak.
- ▶ If you experience technical difficulties, please contact program staff at: **(360) 329-6744**

Public Input Instructions

- ▶ There will be an opportunity to provide brief public input later in the meeting today.
- ▶ To submit input after the meeting:
 - Email comments to info@interstatebridge.org with “EAG Public Comment” in the subject line
 - Call 888-503-6735 and state “EAG Public Comment” in your message



Today's agenda


- ▶ Program Administrator Update
- ▶ Update on Equity Framework Accountability Tool
- ▶ Transit Equity Analysis – Disability Community
- ▶ Hayden Island/Marine Drive Technical Presentation
- ▶ Hayden Island/Marine Drive Breakout Session
- ▶ Public comment
- ▶ Close out

Program Update

Greg Johnson, Program Administrator

Update on Equity Framework Accountability Tool

Emilee Thomas-Peralta, Equity Team



Transit equity benefits analysis, pt. 2

Access for people with disabilities

Jake Warr, Equity Lead

IBR Equity Objectives

Mobility & Accessibility

Improve mobility, accessibility, and connectivity, especially for lower income travelers, people with disabilities, and historically underserved communities who experience transportation barriers.

Physical Design

Integrate equity, area history, and culture into the physical design elements of the program, including bridge aesthetics, artwork, amenities, and impacts on adjacent land uses.

Community Benefits

Find opportunities for and implement local community improvements, in addition to required mitigations.

Economic opportunity

Ensure that economic opportunities generated by the program benefit minority and women owned firms, BIPOC workers, workers with disabilities, and young people.

Decision-making processes

Prioritize access, influence, and decision-making power for underserved communities throughout the program in establishing objectives, design, implementation, and evaluation of success

Avoiding further harm

Actively seek out options with a harm-reduction priority, rather than simply mitigate disproportionate impacts on historically impacted and underserved communities and populations.

This analysis is primarily in support of the Mobility & Accessibility objective

Analysis Overview: Two Components

1. Population & demographics around stations

- Do certain transit investments serve people with disabilities better than others?

2. Improvements in access to jobs

- To what degree would job access improve for people with disabilities?
 - *Jobs are a proxy for the types of places people go (e.g., shopping, services, education, health care) in addition to employment*

Keep in mind...

▶ What this is:

- An analysis of potential walking + rolling access and mobility benefits from high-capacity transit investments
- One component of the IBR equity commitment

▶ What this is NOT:

- An analysis of biking and park-and-ride access to stations (forthcoming)
- Adequate to fully understand all benefits and burdens -- considerations such as mobility and access benefits from other non-transit program elements, property impacts analysis, etc. are forthcoming
- A comprehensive review of all transit investments and equity initiatives in the region
- Inclusive of the actions that need to be taken for communities to realize potential access and mobility benefits

Analysis 1: Populations near stations

Ten Representative Transit Investments*

Light Rail (LRT)	Bus Rapid Transit (BRT)	Hybrid (LRT+BRT)
Expo to Turtle Place	Expo to Turtle Place	Expo to Turtle Place
2013 LPA	2013 LPA alignment	
Expo to Kiggins Bowl	Expo to Kiggins Bowl	
Expo to I-5/McLoughlin		
Expo to I-5/McLoughlin (incl. Vancouver Waterfront)		
Expo to Evergreen		

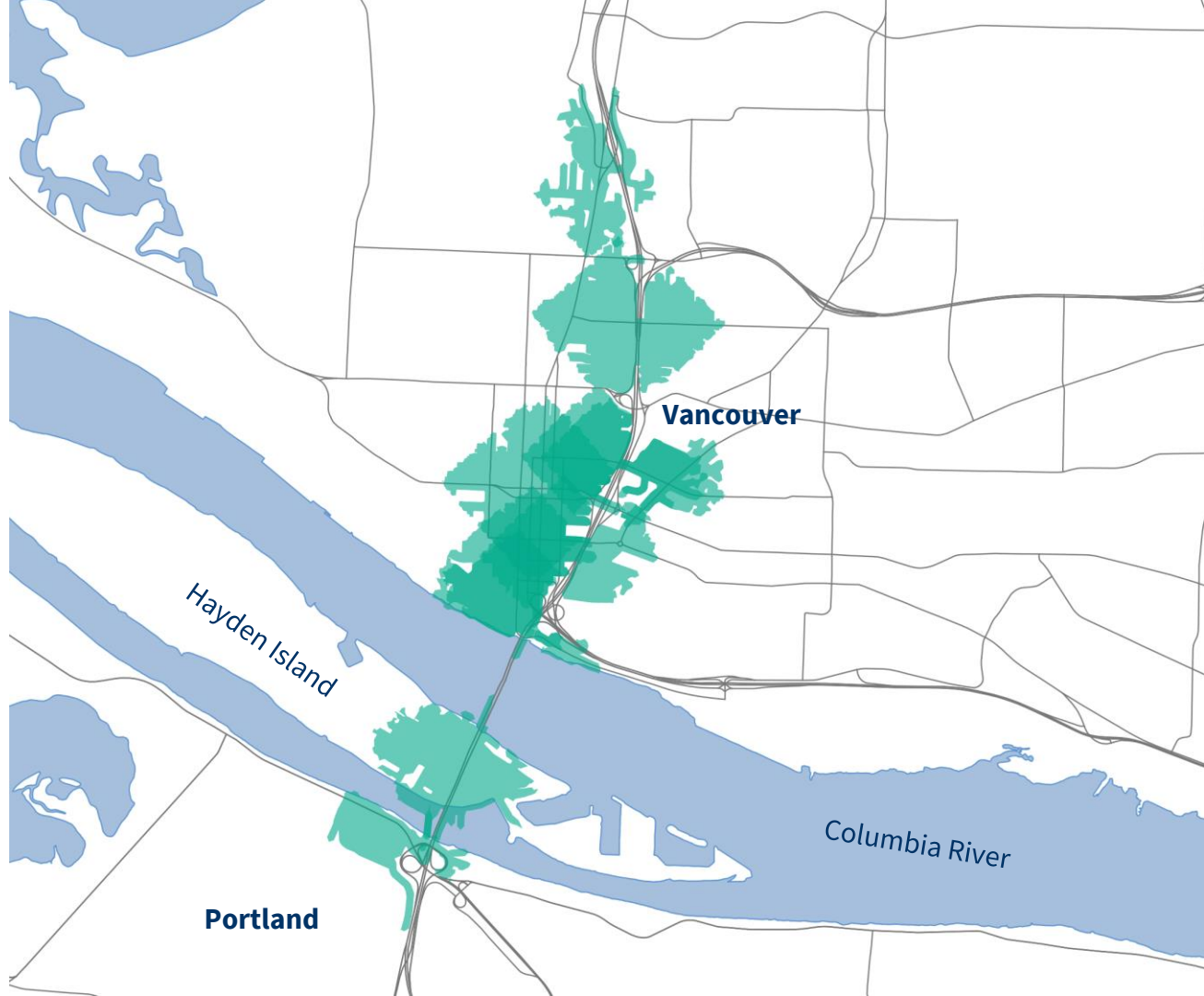
*Bus On Shoulder is assumed to be included in any investment and is not shown here.



Transit station “walksheds”

The area around a station that someone can reach by walking ½ mile or less

This map shows the “walksheds” around all stations included in the analysis of transit investments.



Residents with disabilities near stations



Transit investment	# of stations	Residents with disabilities w/in half mile walk	
		Est. # of people	Est. % of pop.
E: BRT Expo to Kiggins Bowl	6	1,023	19%
J: LRT Expo to Kiggins Bowl	6	1,023	19%
B: 2013 LPA (LRT)	6	800	21%
F: BRT on 2013 LPA	6	800	21%
L: LRT Expo to McLoughlin (incl. Waterfront)	5	589	22%
I: LRT Expo to I-5/McLoughlin	4	459	19%
M: LRT Expo to Evergreen	4	435	22%
D: BRT Expo to Turtle Place	3	385	24%
G: Hybrid LRT/BRT Expo to Turtle Place	3	385	24%
H: LRT Expo to Turtle Place	3	385	24%

Note: BRT and LRT investments along the same alignments are assumed to have the same station locations.

Sources: 2020 US Census, 2015-2019 ACS

Takeaways: Populations near stations

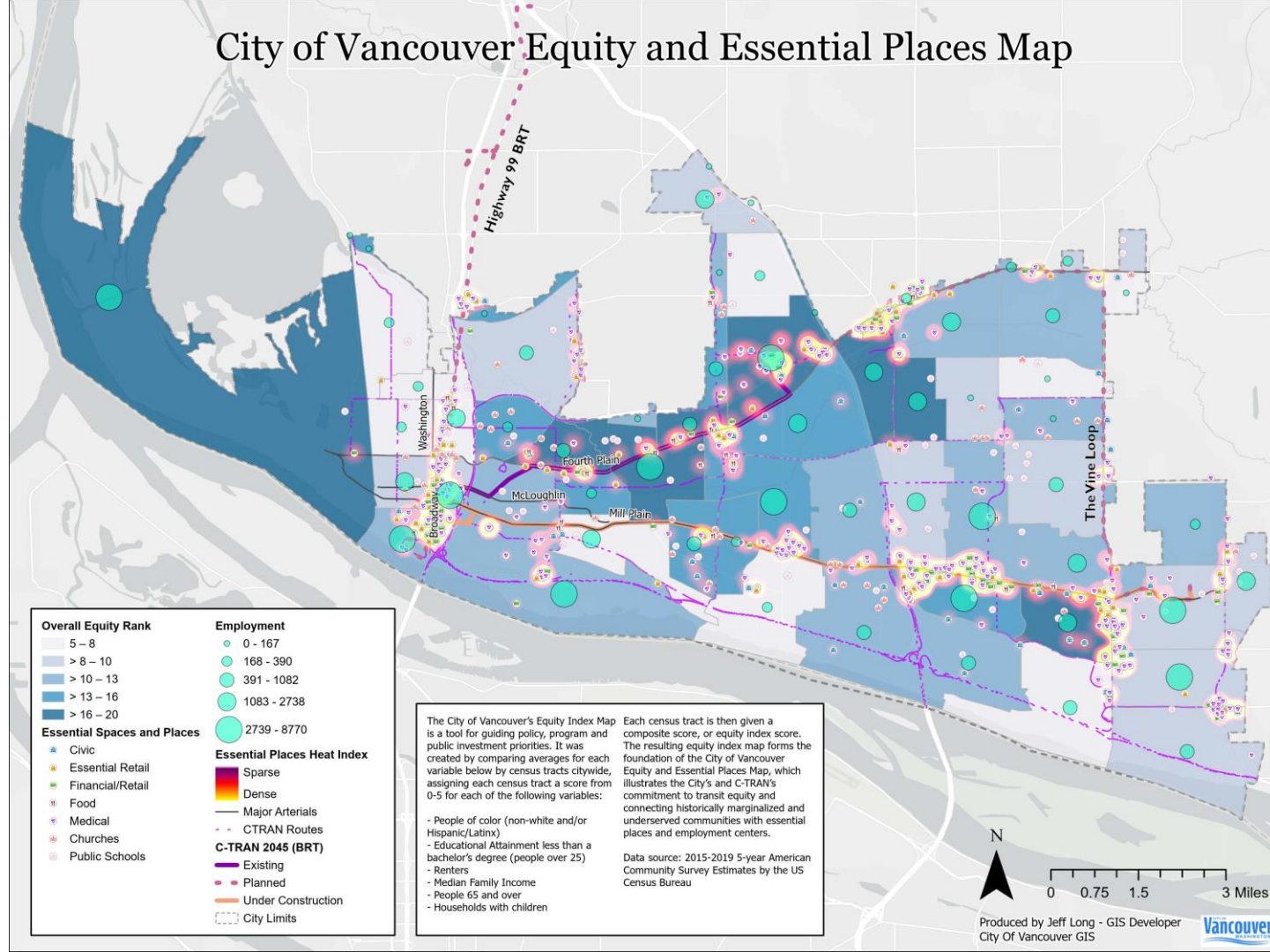
- ▶ Longer transit alignments and more stations = more residents within ½ mile walk, including residents with disabilities
- ▶ Investments appear to be similar in terms of percentage of populations within ½ mile walk that have a disability

Analysis 2: Improvements in access to jobs

Methodology

- ▶ Combines projected jobs in 2045 with current demographics
- ▶ Baseline: projected 2045 transit network, without IBR HCT (“No Build”)
 - Includes all planned service investments, e.g. all 3 C-Tran Vine BRT routes
- ▶ Travel time includes walking + riding transit
 - Includes transfers
- ▶ Analyzes access to jobs for residents of the IBR program area (Washington and Oregon sides)

City of Vancouver Equity and Essential Places Map



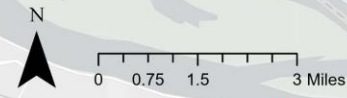
Overall Equity Rank	Employment
5 - 8	0 - 167
> 8 - 10	168 - 390
> 10 - 13	391 - 1082
> 13 - 16	1083 - 2738
> 16 - 20	2739 - 8770
Essential Spaces and Places	Essential Places Heat Index
▲ Civic	■ Sparse
▲ Essential Retail	■ Dense
▲ Financial/Retail	— Major Arterials
▲ Food	- - C-TRAN Routes
▲ Medical	— Existing
▲ Churches	— Planned
▲ Public Schools	— Under Construction
	--- City Limits

The City of Vancouver's Equity Index Map is a tool for guiding policy, program and public investment priorities. It was created by comparing averages for each variable below by census tracts citywide, assigning each census tract a score from 0-5 for each of the following variables:

- People of color (non-white and/or Hispanic/Latinx)
- Educational Attainment less than a bachelor's degree (people over 25)
- Renters
- Median Family Income
- People 65 and over
- Households with children

Each census tract is then given a composite score, or equity index score. The resulting equity index map forms the foundation of the City of Vancouver Equity and Essential Places Map, which illustrates the City's and C-TRAN's commitment to transit equity and connecting historically marginalized and underserved communities with essential places and employment centers.

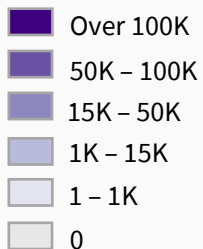
Data source: 2015-2019 5-year American Community Survey Estimates by the US Census Bureau



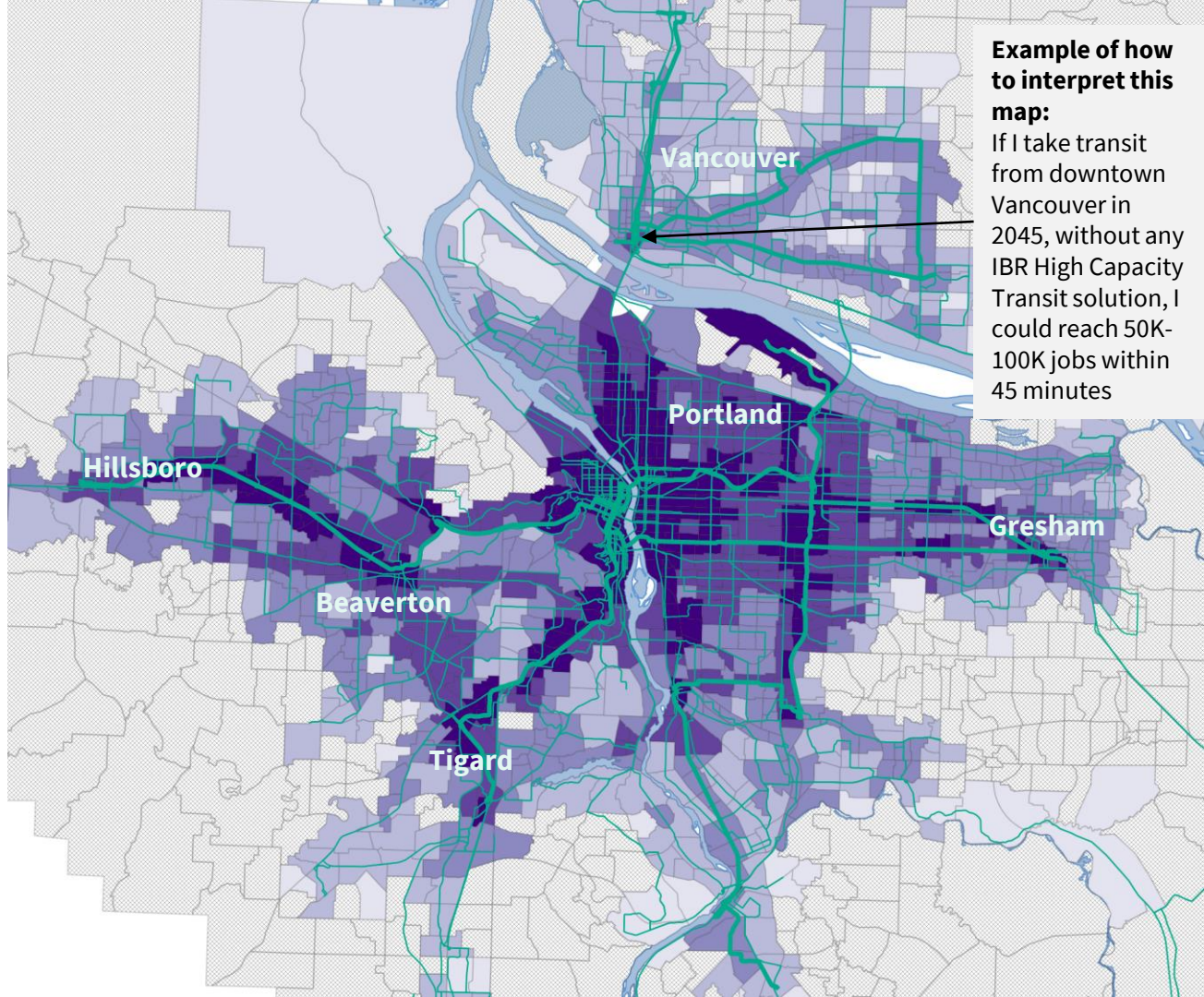
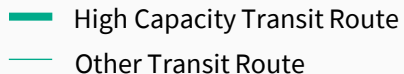
From where can people reach the most jobs via transit?

(No Build Scenario, 2045)

Number of jobs accessible in 45 mins, midday



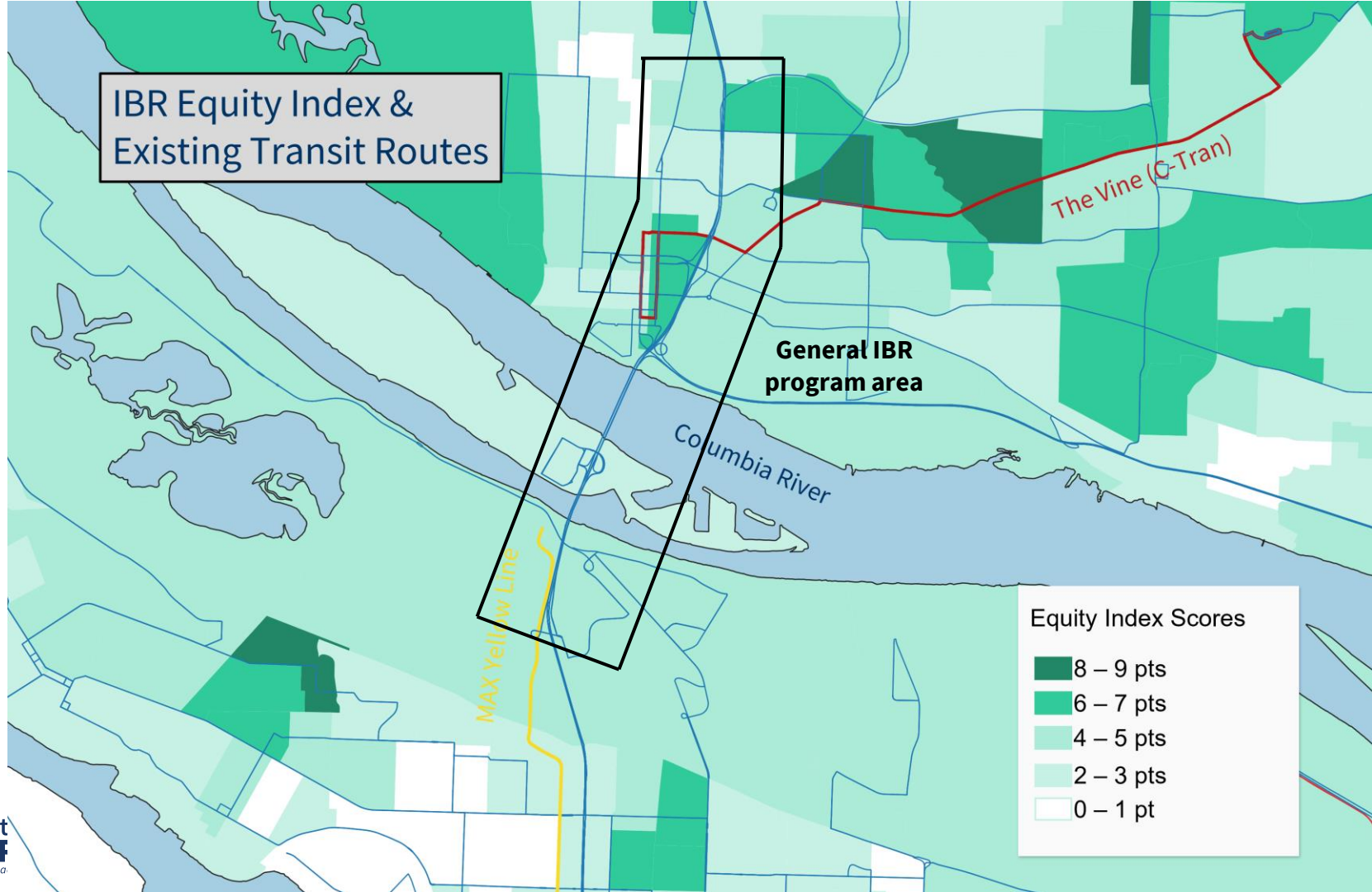
Source: Metro 2045 Model



Example of how to interpret this map:

If I take transit from downtown Vancouver in 2045, without any IBR High Capacity Transit solution, I could reach 50K-100K jobs within 45 minutes

IBR Equity Index & Existing Transit Routes



Comparison

People with Disabilities vs. Others

Increase in jobs reachable within a **45-minute** midday transit trip

From the IBR program area

Sources: 2015-2019 ACS, Metro 2045 Model

Transit investment	People with Disabilities		No Disability	
	Increase over No Build (#)	Increase over No Build (%)	Increase over No Build (#)	Increase over No Build (%)
No Build (baseline)	24,576 jobs		24,072 jobs	
B: 2013 LPA	20,364	83%	17,946	75%
F: BRT on 2013 LPA	3,696	15%	3,530	15%
D: BRT Turtle Place to Expo	2,575	10%	2,468	10%
H: LRT Expo to Turtle Place	7,938	32%	6,452	27%
G: Hybrid LRT/BRT	2,193	9%	2,168	9%
E: BRT Kiggins Bowl to Expo	4,953	20%	4,917	20%
J: LRT Expo to Kiggins Bowl	24,826	101%	24,497	102%
I: LRT Expo to I-5/McLoughlin	13,746	56%	12,203	51%
L: LRT Expo to McLoughlin (incl. Vancouver Waterfront)	22,965	93%	18,693	78%
M: LRT Expo to Evergreen	17,392	71%	13,881	58%

Comparison

People with Disabilities vs. Others

Increase in jobs reachable within a **60-minute** midday transit trip

From the IBR program area

Sources: 2015-2019 ACS, Metro 2045 Model

Transit investment	People with Disabilities		No Disability	
	Increase over No Build (#)	Increase over No Build (%)	Increase over No Build (#)	Increase over No Build (%)
No Build (baseline)	77,099 jobs		75,093 jobs	
B: 2013 LPA	57,959	75%	53,464	71%
F: BRT on 2013 LPA	14,967	19%	14,801	20%
D: BRT Turtle Place to Expo	12,404	16%	12,263	16%
H: LRT Expo to Turtle Place	27,844	36%	24,681	33%
G: Hybrid LRT/BRT	9,517	12%	9,423	13%
E: BRT Kiggins Bowl to Expo	19,407	25%	19,425	26%
J: LRT Expo to Kiggins Bowl	69,171	90%	69,208	92%
I: LRT Expo to I-5/McLoughlin	40,463	52%	37,925	51%
L: LRT Expo to McLoughlin (incl. Vancouver Waterfront)	63,748	83%	55,853	74%
M: LRT Expo to Evergreen	51,352	67%	44,662	59%

Takeaways: Improvements to job access

- ▶ **LRT investments appear to provide greater benefit than BRT** in terms of increased job access
- ▶ **All investments would increase job access** for people with disabilities (on average)
 - Greatest increases for Investments B, J, & L
- ▶ All investments would increase job access for the program area residents with disabilities **as much or more than residents without disabilities** (on average)

Equity in IBR: Big Picture

- ▶ Equitable **access** does not necessarily translate to equitable **outcomes**
- ▶ Striving for equity requires **strategies and actions** beyond building infrastructure
- ▶ Combating **gentrification and displacement** that may result from improved community amenities will take intentional policies, partnerships, and investments



Hayden Island/Marine Drive

Recommendations overview

IBR Program Team

April 04, 2022

Hayden Island/Marine Drive Design Options

► Overview of design and screening process

- Identify changes since 2013
- Develop full, partial, and no interchange options to address changes
- Develop screening metrics and collect data to evaluate design options
- Identify design options (2013 LPA and Options 1 and 5) to move through screening

► Design Options

- **2013 Locally Preferred Alternative (LPA)**
- **Option 1: Full interchange**
- Option 2: Partial interchange
- Option 3: Partial interchange
- Option 4: No interchange
- **Option 5: Partial interchange**

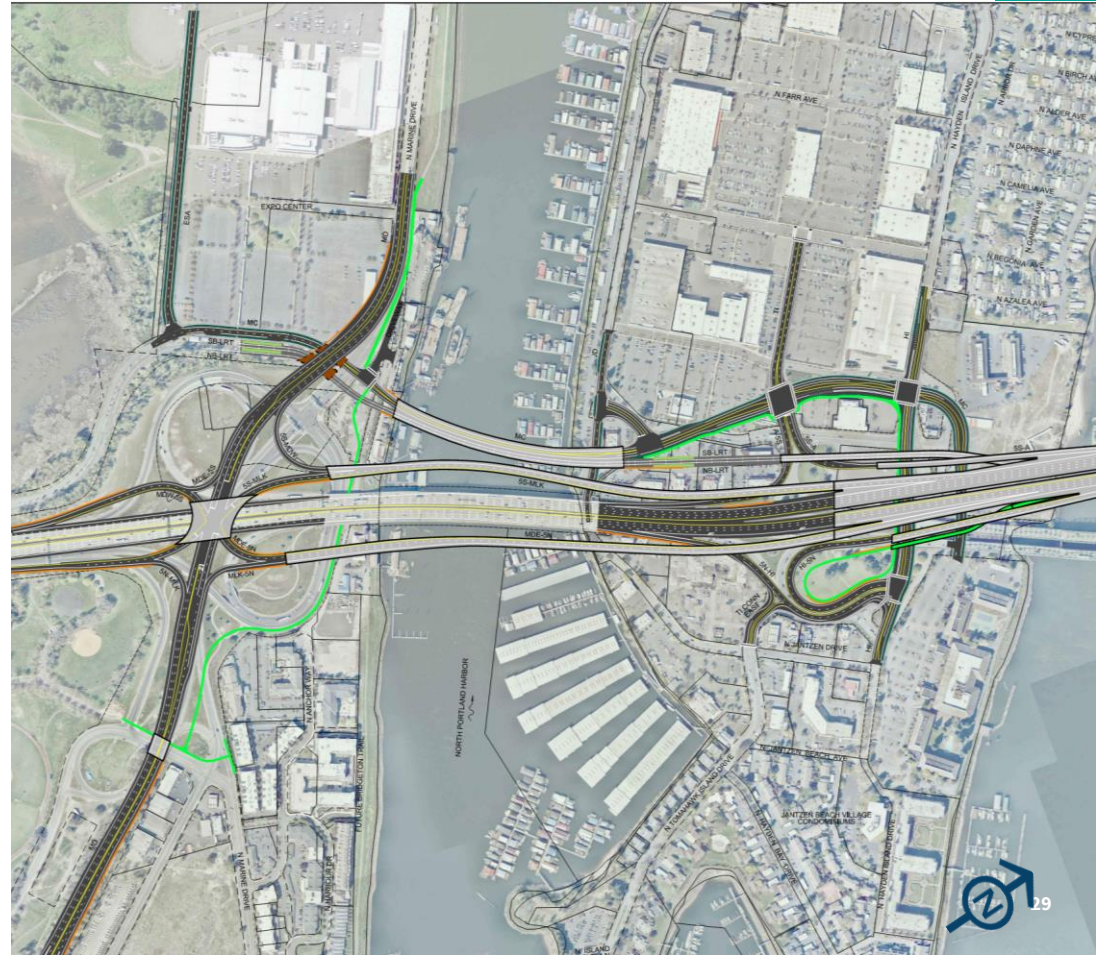
Hayden Island/Marine Drive Solution

► Changes since 2013

- Increased off-ramp traffic volumes for southbound Marine Drive exit
- Changes in business development
- Port of Portland marine terminal no longer planned for Hayden Island
- Increased need to replace aging North Portland Harbor bridge
- Proposed levee system improvements

► 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
- HCT station on Hayden Island



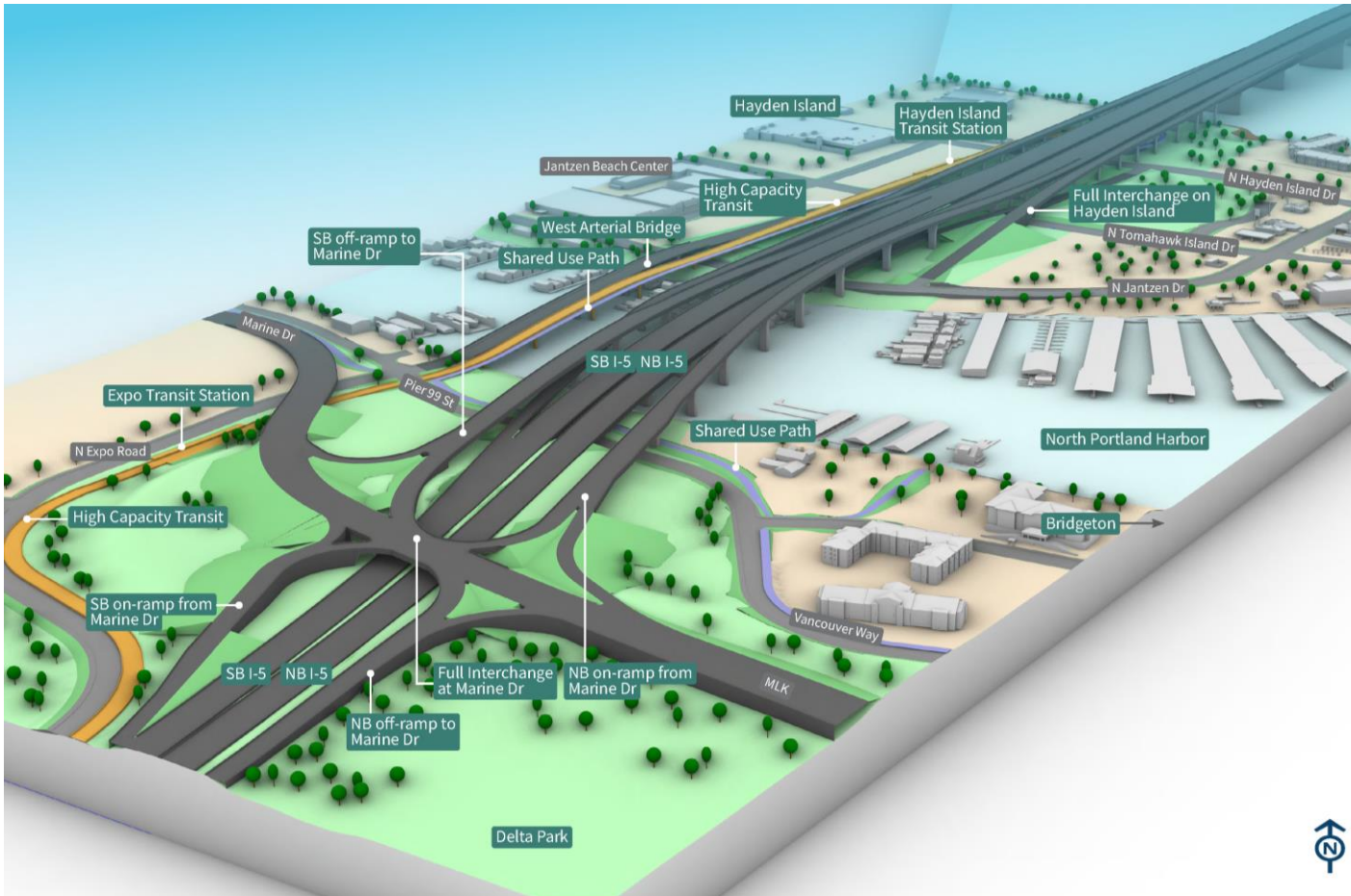
Hayden Island/Marine Drive Partial Interchanges

- ▶ **Option 5** was developed to address design and traffic issues identified in Partial Interchange Options 2 and 3. It:
 - Solves the Marine Drive traffic and design issues identified with Options 2 and 3 by maintaining the separation of Hayden Island vehicles from Marine Drive.
 - Includes an efficient Marine Drive interchange
- ▶ **Options 2 and 3:**
 - Include design and operational flaws on the I-5 SB Marine Drive loop off-ramp
 - Do not meet Freight Purpose & Need
 - Create safety issues due to speed differentials

Draft Findings: No interchange **Option 4**

- ▶ Screening preliminary traffic data revealed that Option 4 has the same issues as Options 2 and 3, but the issues are much greater because all Hayden Island traffic must use the Marine Drive interchange. These impacts include:
 - Substantial traffic/freight impacts on Marine Drive and ramp terminal intersections
 - Ramp queuing from Marine Dr. onto I-5 would create unsafe conditions due to speed differential with I-5 through traffic
- ▶ These findings are consistent with previous planning studies that investigated combining the Hayden Island and Marine Drive interchanges into one interchange

Option 1 Full Interchange



Option 5 Partial Interchange



Hayden Island/Marine Drive

2013 Design

☑ Meets Purpose and Need



Screening Summary

2013 Design

Climate Impacts/Adaptation	<ul style="list-style-type: none"> - Larger construction footprint (comparison is not based on expected user emissions) - Addresses future river elevation and integrates with new Levee Ready Columbia flood protection improvements (RE)
Natural Environment	<ul style="list-style-type: none"> - Larger footprint over aquatic habitat - Larger footprint over terrestrial habitat - Most non-residential building impacts (AH)
Built Environment	<ul style="list-style-type: none"> - More floating home displacements (AH) - Large scale and complexity of I-5 structures over Hayden Island challenge for local placemaking opportunities (AH, CB, CC) - Does not include Tomahawk Island Drive crossing (CC) - Less direct north-south shared use path (MA, ME)
Active Transportation	<ul style="list-style-type: none"> - Lower quality of active transportation experience on east-west streets (MA, ME) - Higher number of shared use path road/transit crossings (MA)
Transit Access	<ul style="list-style-type: none"> - Less east-west island connectivity because it does not include Tomahawk Island Drive (MA, ME) - Wider highway footprint (ME)
Vehicles	<ul style="list-style-type: none"> - Intersection traffic operations meet ODOT and City of Portland performance standards at Hayden Island and Marine Drive study area intersections (RI)
Freight	<ul style="list-style-type: none"> - Freight to/from Marine Drive area operates acceptably with minimal delay through the interchange (RI)
Cost	<ul style="list-style-type: none"> - Lower construction cost - Higher estimated O&M cost
Seismic	<ul style="list-style-type: none"> - Seismic retrofits North Portland Harbor Bridge; does not replace

Equity Lens



- 🚫 Avoids Harm (AH)
- 🚫 Community Benefit (CB)
- 🚫 Mobility/Accessibility (MA)

Climate Lens



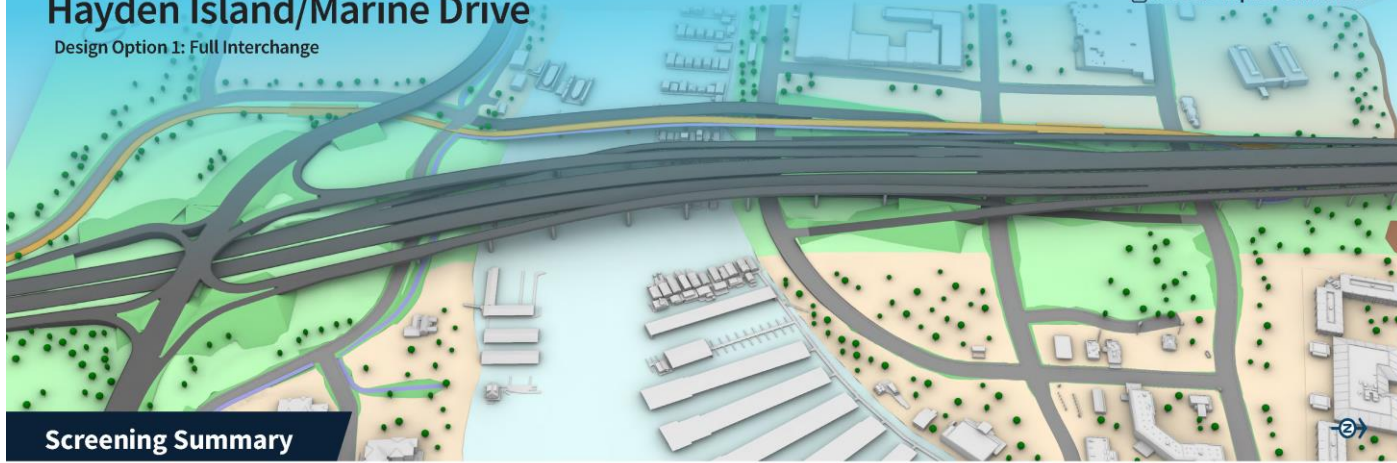
- 🚫 Multimodal Environmental Factors (ME)
- 🚫 Complete Communities (CC)
- 🚫 Reduces Idling (RI)
- 🚫 Resilience (RE)

Best
↑
Good

Hayden Island/Marine Drive

Design Option 1: Full Interchange

☑ Meets Purpose and Need



Screening Summary

Design Option 1: Full Interchange

Climate Impacts/Adaptation	<ul style="list-style-type: none"> - Larger construction footprint (comparison is not based on expected user emissions) - Addresses future river elevation and integrates with new Levee Ready Columbia flood protection improvements (RE)
Natural Environment	<ul style="list-style-type: none"> - Larger footprint over aquatic habitat - Larger footprint over terrestrial habitat - Fewer non-residential building impacts (AH) - Most floating home displacements (AH)
Built Environment	<ul style="list-style-type: none"> - Large scale and complexity of I-5 structures over Hayden Island challenge for local placemaking opportunities (AH, CB, CC) - Includes Tomahawk Island Drive crossing (CC) - More direct north-south shared use path (MA, ME)
Active Transportation	<ul style="list-style-type: none"> - Lower quality of active transportation experience on east-west streets (MA, ME) - Higher number of shared use path road/transit crossings (MA) - Inclusion of Tomahawk Island Drive improves east-west island connectivity (MA, ME)
Transit Access	<ul style="list-style-type: none"> - Wider highway footprint (ME)
Vehicles	<ul style="list-style-type: none"> - Intersection traffic operations meet ODOT and City of Portland performance standards at Hayden Island and Marine Drive study area intersections (RI)
Freight	<ul style="list-style-type: none"> - Freight to/from Marine Drive area operates acceptably with minimal delay through the interchange (RI)
Cost	<ul style="list-style-type: none"> - Higher construction cost
Seismic	<ul style="list-style-type: none"> - Replaces North Portland Harbor Bridge

Equity Lens



- Avoids Harm (AH)
- Community Benefit (CB)
- Mobility/Accessibility (MA)

Climate Lens



- Multimodal Environmental Factors (ME)
- Complete Communities (CC)
- Reduces Idling (RI)
- Resilience (RE)

Best
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Good

Hayden Island/Marine Drive

Design Option 5: Partial Interchange

☑ Meets Purpose and Need



Screening Summary

Design Option 5: Partial Interchange

Climate Impacts/Adaptation	<ul style="list-style-type: none"> Smaller construction footprint (comparison is not based on expected user emissions) Addresses future river elevation and integrates with new Levee Ready Columbia flood protection improvements (RE)
Natural Environment	<ul style="list-style-type: none"> Smaller footprint over aquatic habitat Smaller footprint over terrestrial habitat Levee closure structure part of freeway interchange ramps Fewer non-residential building impacts (AH) Least floating home displacements (AH)
Built Environment	<ul style="list-style-type: none"> Smaller scale and complexity of I-5 structures over Hayden Island is less challenging for local placemaking opportunities (AH, CB, CC) Includes Tomahawk Island Drive crossing (CC) More direct north-south shared use path (MA, ME)
Active Transportation	<ul style="list-style-type: none"> Higher quality of active transportation experience on east-west streets (MA, ME) Lower number of shared use path road/transit crossings (MA)
Transit Access	<ul style="list-style-type: none"> Inclusion of Tomahawk Island Drive improves east-west island connectivity (MA, ME) Narrower highway footprint (ME)
Vehicles	<ul style="list-style-type: none"> Intersection traffic operations meet ODOT and City of Portland performance standards at Hayden Island and Marine Drive study area intersections (RI) Longer routing and more challenging wayfinding for Hayden Island traffic to/from Portland via I-5 and/or Interstate Ave
Freight	<ul style="list-style-type: none"> Freight to/from Marine Drive area operates acceptably with minimal delay through the interchange (RI)
Cost	<ul style="list-style-type: none"> Higher construction cost
Seismic	<ul style="list-style-type: none"> Replaces North Portland Harbor Bridge

Equity Lens



- Avoids Harm (AH)
- Community Benefit (CB)
- Mobility/Accessibility (MA)

Climate Lens



- Multimodal Environmental Factors (ME)
- Complete Communities (CC)
- Reduces Idling (RI)
- Resilience (RE)

Best
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Hayden Island/Marine Drive

Design Option 1: Full Interchange

Higher Construction Cost

Freight Operates Acceptably with Minimal Delay Through the Interchange

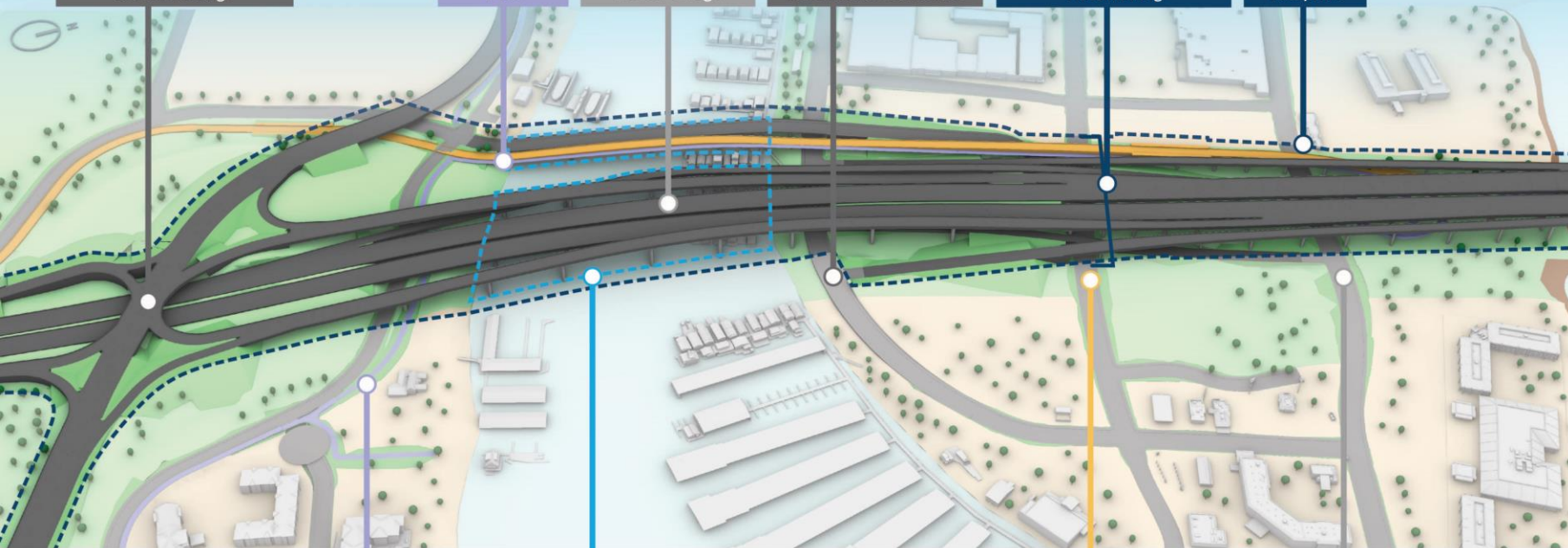
More Direct N-S Shared Use Path

New Seismically Resilient N. Portland Harbor Bridge

Intersections meet ODOT and City of Portland Performance Standards.

Large Scale and Complexity is a Challenge for Local Placemaking

Larger Construction Footprint



Higher Number of SUP Road and Transit Crossings

Larger Footprint over Aquatic Habitat

Most Floating Home Displacements

Fewer Building Impacts (non-residential)

Includes Tomahawk Island Drive Crossing

Lower Quality Active Transportation Experience on E-W Streets

Hayden Island/Marine Drive

Design Option 5: Partial Interchange

Higher Construction Cost

Freight Operates Acceptably with Minimal Delay Through the Interchange

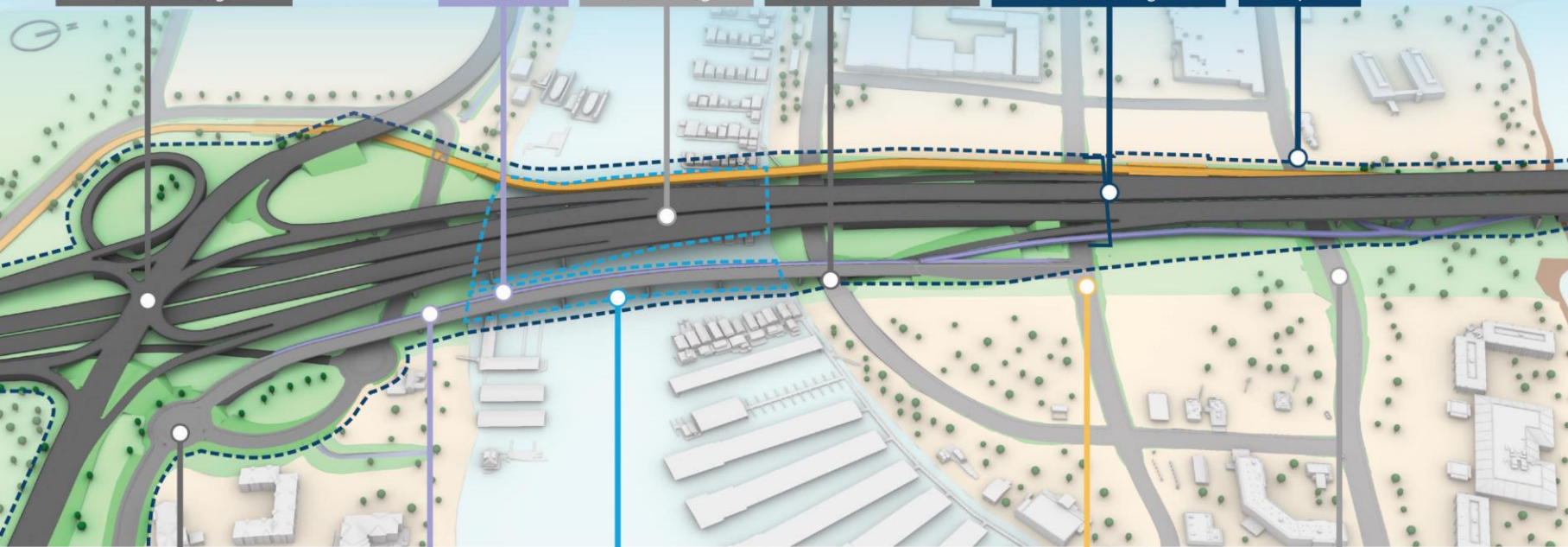
Most Direct N-S Shared Use Path

New Seismically Resilient N. Portland Harbor Bridge

Intersections Meet ODOT and City of Portland Performance Standards.

Smaller Scale and Complexity is Less Challenging for Local Placemaking

Smaller Construction Footprint



Longer Routes, More Challenging Wayfinding for Hayden Island Traffic to/from I-5

Lower Number of SUP Road and Transit Crossings

Smaller Footprint over Aquatic Habitat

Least Floating Home Displacements

Fewer Building Impacts (non-residential)

Includes Tomahawk Island Drive Crossing

Higher Quality Active Transportation Experience on E-W streets

Hayden Island/Marine Drive | Relative Design Option Comparison

2013 Design

- Climate Impacts/Adaptation
- Natural Environment
- Built Environment
- Active Transportation
- Transit Access
- Vehicles
- Freight
- Cost
- Seismic

Design Option 1: Full Interchange

- Climate Impacts/Adaptation
- Natural Environment
- Built Environment
- Active Transportation
- Transit Access
- Vehicles
- Freight
- Cost
- Seismic

Design Option 5: Partial Interchange

- Climate Impacts/Adaptation
- Natural Environment
- Built Environment
- Active Transportation
- Transit Access
- Vehicles
- Freight
- Cost
- Seismic

Equity Lens



Medium

- Avoids Harm
- Community Benefit
- Mobility/Accessibility

Equity Lens



Medium

- Avoids Harm
- Community Benefit
- Mobility/Accessibility

Equity Lens



High

- Avoids Harm
- Community Benefit
- Mobility/Accessibility

Climate Lens



Medium-High

- Multimodal Environmental Factors
- Complete Communities
- Reduces Idling
- Resilience

Climate Lens



Medium-High

- Multimodal Environmental Factors
- Complete Communities
- Reduces Idling
- Resilience

Climate Lens



High

- Multimodal Environmental Factors
- Complete Communities
- Reduces Idling
- Resilience

Design Option 2: Partial Interchange



Does not meet Purpose and Need.

Design Option 3: Partial Interchange



Does not meet Purpose and Need.

Design Option 4: No Interchange



Does not meet Purpose and Need.





Hayden Island/Marine Drive Breakout Discussion

Hayden Island/Marine Drive Breakout Discussion

1. Do the screening results align with your understanding of the ties between the Hayden Island/Marine Drive decision and our equity objectives?
2. What strategies should the IBR Program explore to complement the design and construction of these interchanges?

Public comment

Comment Instructions

To make a verbal comment:

- ▶ To make a live comment via phone, dial: 253-215-8782
- ▶ Meeting ID: 986 0940 5983
 - ▶ Passcode: 701376
- ▶ Dial *9 to raise your hand
- ▶ The facilitator will call on participants to provide comment
- ▶ Dial *6 to unmute yourself
- ▶ Please provide your name and affiliation.
- ▶ Commenters will be given 2 minutes to speak.

If we run out of time and you have not had a chance to speak, you can still provide comments after the meeting.



Comment Instructions

To submit comment after the meeting:



- ▶ Fill out the comment form on the program website or email your comments to info@interstatebridge.org with “EAG Public Comment” in the subject line.



- ▶ Call **888-503-6735** and state “EAG Public Comment” in your message.
- ▶ Written comments need to explicitly say “**EAG Public Comment**” in the subject line or in the body of the message for them to be identified and distributed to EAG members.
- ▶ All written comments must be received prior to 48 hours in advance of each upcoming meeting in order to be distributed to advisory group members. Comments received after that point will be distributed to members in advance of their next meeting.

Wrap up

- Takeaways
- Meeting evaluation
- Next meeting: Monday April 4 (Proposed), 5:30 – 7:30 p.m.



Thank you!