Interstate BRIDGE Replacement Program

IBR Program Progress

November 23, 2021

www.interstatebridge.org

IBR Program Progress

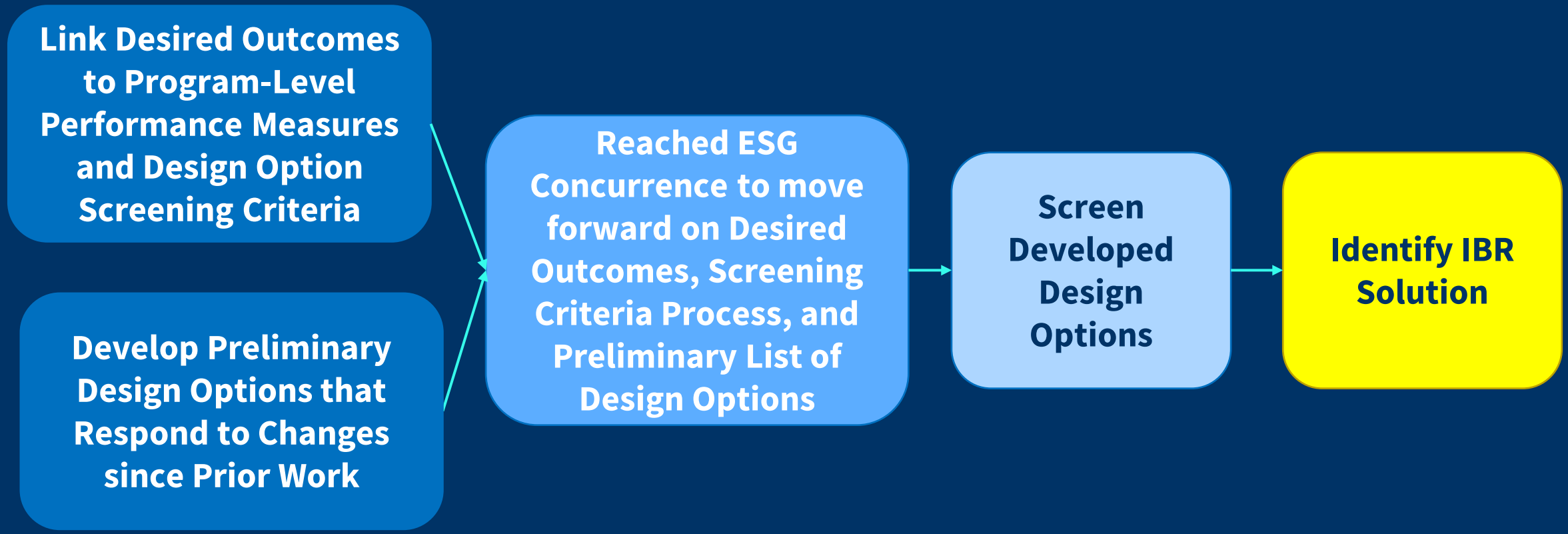
- **Program Update**
  - Timeline and workplan progress
  - Positioning IBR for Federal grant funding
- **Equity Update**
  - Equity Framework and demographic trends
  - Equity in the screening process
- **Overview of Travel Demand Modeling**
- **Overview of Traffic Data, including origin/destination patterns**
- **Next Steps**
  - Proposed future meeting topics
  - Next steps beyond March 2022

Program Update

Greg Johnson, Program Administrator

Moving towards an IBR Solution

July – Sept 2021	Oct 2021	Nov – Dec 2021	Early 2022



Positioning IBR Program for Grant Funding

- **First, define project scope and progress through NEPA processes**
- **Work to secure non-federal funding match commitments**
  - Federal agencies typically prefer to offer the "last dollar in" to complete a project. Thus, it can be difficult to assemble project funding that combines grants from several competitive sources.
- **There are advantages to being one of the first projects to express interest to USDOT/FHWA regarding the new competitive grant programs**
  - This allows the project team to become familiar with the agencies' thinking and potentially help shape grant guidelines before they are published

Major IIJA Discretionary Grant Programs

	NEW Competitive Bridge Investment Program	NEW National Infrastructure Project Assistance Program	FTA Capital Investment Grant New Starts Program
Authorized Funding	$15.8 B ($9.2 B guaranteed, $6.5 B is subject to future appropriations)	$10 B over 5 years, half for projects costing >$500 M	$23 B ($8 B guaranteed, $15 B subject to future appropriations)
Maximum Project Award	Up to 50% of project costs	Up to 60% of project costs	Up to 60% project costs
Eligible Projects	Replacement, rehabilitation, preservation, or protection of bridges	Highways and bridges, freight, intercity rail, public transportation, multimodal	Fixed guideway transit (rail or bus rapid transit)

Selection Criteria	• To be further defined by FHWA, but will include
	  • Benefits (11 criteria)
	  • Benefit/cost analysis
	  • Financial commitment
	  • Consistency with asset management plan
		• To be further defined by USDOT, but will include:
		  • Support for state of good repair
		  • Benefits and cost-effectiveness
		  • Total person or freight volume of freight supported
		  • National/regional economic benefits of job access + creation
		  • Additional considerations (e.g. more than one state benefits)
			• Project justification rating includes mobility improvements, environmental benefits, congestion relief, cost-effectiveness, economic development, and land use.
			• Local financial commitment rating includes agency capital/operating condition, commitment of funding, and reasonableness of capital + O&M cost estimates.

Procedures	• Annual submittals • Project ratings based on criteria (5- point scale) • Secretary of Transportation must recommend the project for funding in an annual report to Congress	• Secretary rates projects as highly recommended, recommended, or not recommended based on criteria, and publishes list of selected projects	• FTA approval at project milestones • Project ratings based on criteria (5- point scale) • Annual report to Congress with ratings and funding recommendations

Recent and Upcoming Engagement

- **Executive Steering Group**
  - Update on Equity Framework
  - Intro to tolling on IBR
  - Overview of travel demand modeling
- **Equity Advisory Group**
  - Completing the Equity Framework
  - Development of equity performance measures and equity-focused screening criteria for Design Options
  - Informing the links between equity and climate
- **Community Advisory Group**
  - Received program update, discussed desired outcomes, the screening criteria process, design options and CAG's input integration
- **Community Working Groups**
  - Multimodal Commuter Working Group: November 16
  - Downtown Vancouver Working Group: November 18
  - Active Transportation Working Group: November 23
  - Hayden Island / Marine Drive Working Group: December 7
- **Freight Focus Group**

Please note that meeting materials are available on the IBR website

Fall Community Engagement

- **Online Open House**
  - Started in late October and live now
- **Community Input Survey**
  - Launched November 11th
  - Questions will seek feedback on preferences and priorities associated with the user experience and/or attributes of design options, not a ranking between options
- **Community Briefings**
  - Briefings held on:
    - *November 10, 13, 17, 22*
  - Listening sessions co-hosted with community-based organizations serving equity priority communities will be held on:
    - *November 11: Multilingual Listening Session*
    - *November 17: BIPOC Listening Session*
    - *November 19: People Living with Disabilities Listening Session*

Questions?

Interstate BRIDGE Replacement Program

Equity Update

Johnell Bell, Principal Equity Officer

Jake Warr, Equity Lead

Dr. Roberta Hunte, EAG Facilitator

Why we are centering equity

- **Transportation projects have historically excluded and directly harmed Black, Indigenous, and People of Color (BIPOC) communities, low-income neighborhoods, people with disabilities, and other communities**
  - For example, construction of I-5 through N/NE Portland decimated a thriving African American community
- **Disparities in access to quality transportation options impacts household costs, available job opportunities, access to health care, etc.**
- **The IBR program provides opportunities for economic benefits for individuals and businesses at a historic disadvantage**

How we are centering equity

- A Principal Equity Officer is leading equity work for the program
- Grounding the IBR program in the history of the river, I-5 corridor, and the region
- The Equity Advisory Group is guiding the program towards equitable processes and outcomes
- Robust demographic analysis is informing program design and strategies to further equity
- Inclusive and intentional community engagement strategies
  - -Accessibility and inclusion for multilingual communities and people with disabilities
- Diversity, Equity, and Inclusion (DEI) education and training for IBR program staff
- Equitable procurement and contracting

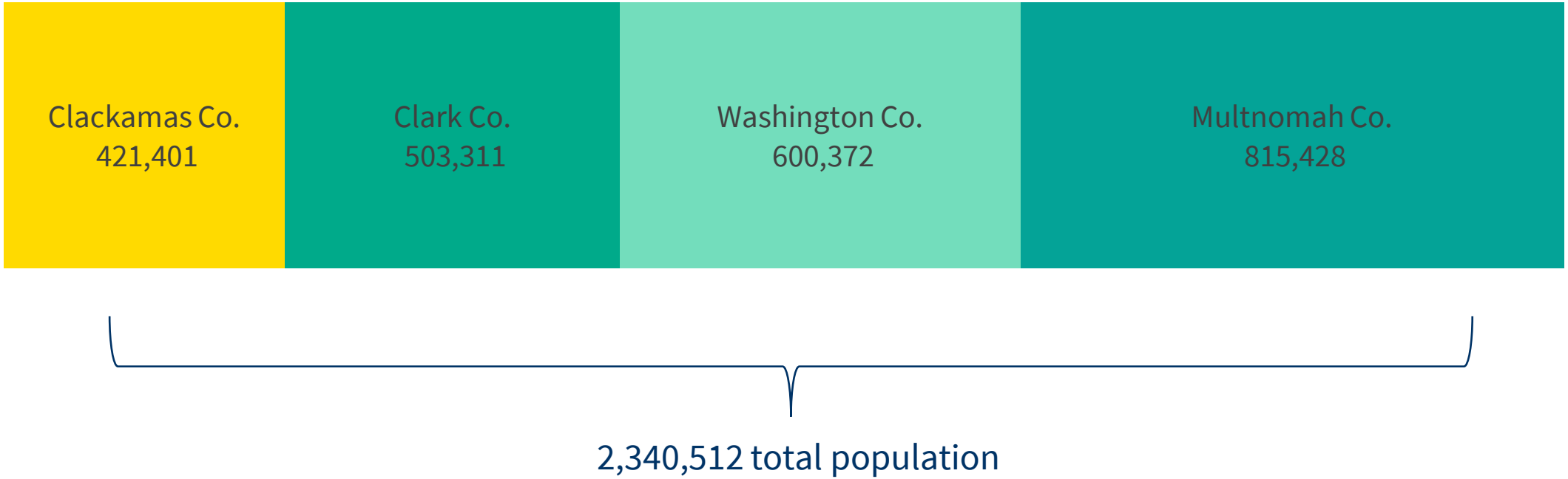
Equity Advisory Group

Purpose: to provide laser-focus on project's potential impacts and benefits for marginalized and underserved communities.

- **Helps to fulfill IBR leadership's commitment to prioritize equity throughout the course of the program**
- **Monitors and provides oversight of equity throughout program in all elements**
- **Makes recommendations to the IBR Program Administrator regarding the program's processes, policies, and decisions that have the potential to impact equity priority communities (either positively or negatively)**

Demographic trends

Population by County in 2020



Source: 2020 U.S. Census

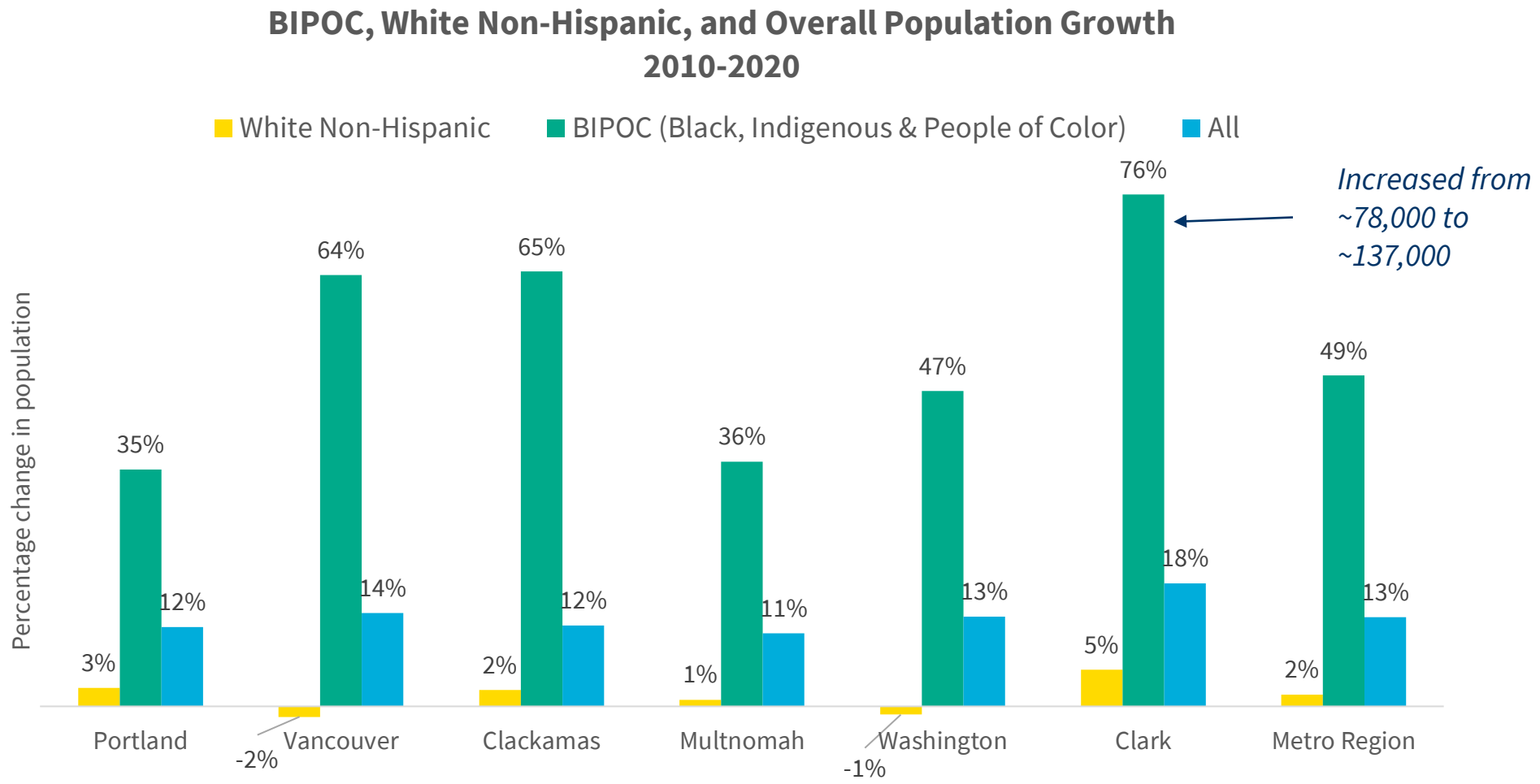
2010-2020 Population Changes

- The region* added over 274,000 residents from 2010-2020, a 13% increase.
- Most of the growth in the region was among people of color, increasing 49% over the past decade.
- The region went from 20% to 32% of the population comprised of people of color.

Sources: 2010 and 2020 U.S. Census.

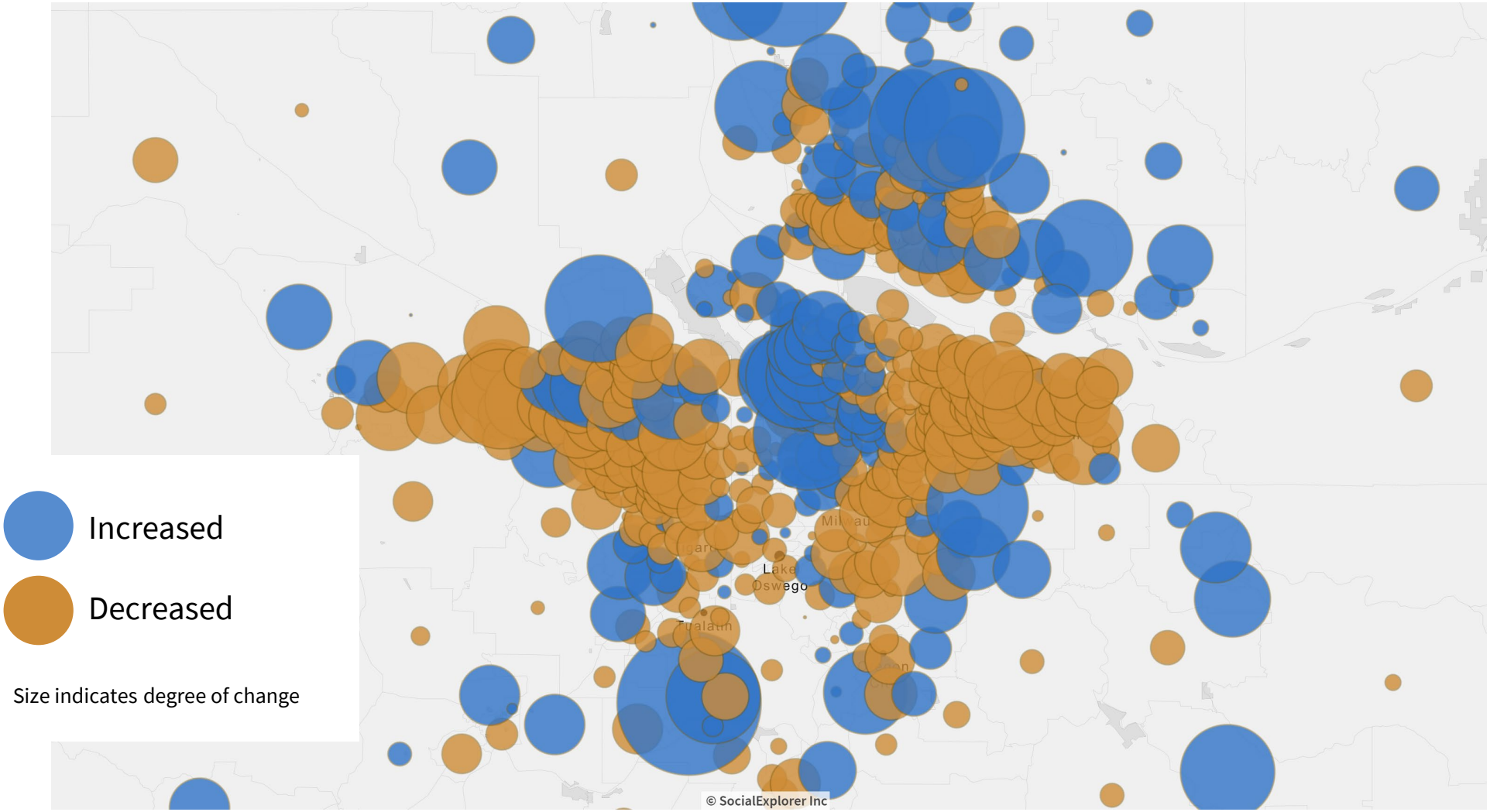
**Region is defined as Clark, Clackamas, Multnomah, and Washington Counties.*

2010-2020 Population Growth



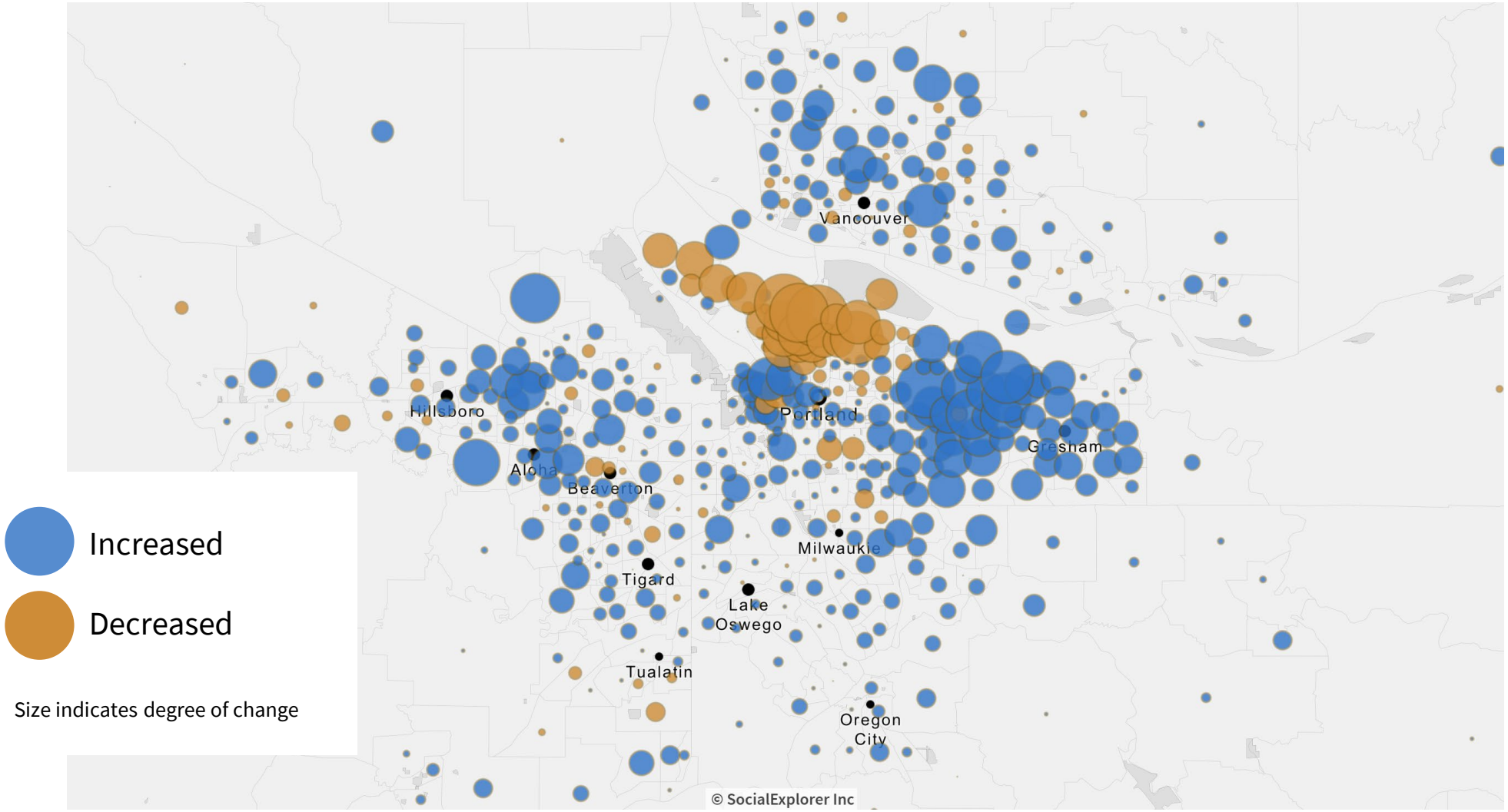
Sources: 2010 and 2020 U.S. Census. Metro Region is defined as Clark, Clackamas, Multnomah, and Washington Counties.

2010-2020 White Non-Hispanic Pop. Change



Interstate BRIDGE Replacement Program

2010-2020 Black or African American Pop. Change



Interstate BRIDGE Replacement Program

Equity Framework

Dr. Roberta Hunte, EAG Facilitator

Equity Framework

- **Equity Definition, Principles, and Objectives**
- **Operationalizing Equity**
  - Measurable and Actionable Outcomes
  - Responsibility and Structure for Implementation of the Framework
  - Accountability Mechanisms
- **Toolbox**
  - Equity Lens
  - Equity Index
  - Best Practices Review

IBR Equity Definition

- **The IBR program defines equity in terms of both *process* and *outcomes*.**
  - **Process Equity** means that the program centers and prioritizes access, influence, and decision-making power for historically **underserved communities** throughout the program in establishing objectives, design, implementation, and evaluation of success.
  - **Outcome Equity** is the result of successful Process Equity and is demonstrated by tangible transportation, community, and economic benefits for historically **underserved communities**.

IBR Equity Definition, continued

- **Underserved communities are defined as those who experience and/or have experienced discrimination and exclusion based on identity, such as:**
  - BIPOC (Black, Indigenous, People of Color)
  - People with disabilities
  - Communities with limited English proficiency (LEP)
  - Persons with lower income
  - Houseless individuals and families
  - Immigrants and refugees
  - Young people
  - Older adults
- **Together, *Process Equity* and *Outcome Equity* contribute to addressing the harmful impacts of and removing longstanding injustices experienced by historically underserved communities.**

IBR Equity Objectives

Mobility & Accessibility	Physical Design	Community Benefits	Economic opportunity	Decision-making processes	Avoiding further harm
Improve mobility, accessibility, and connectivity, especially for lower income travelers, people with disabilities, and historically underserved communities who experience transportation barriers.	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.	Find opportunities for and implement local community improvements, in addition to required mitigations.	Ensure that economic opportunities generated by the program benefit minority and women owned firms, BIPOC workers, workers with disabilities, and young people.	Prioritize access, influence, and decision-making power for underserved communities throughout the program in establishing objectives, design, implementation, and evaluation of success	Actively seek out options with a harm-reduction priority, rather than simply mitigate disproportionate impacts on historically impacted and underserved communities and populations.

Equity in the Screening Process

- **Over the past several months developed a set of equity screening criteria in addition to the larger set of screening criteria:**
- **Examples:**
  - Population from equity priority communities* within 0.25/0.33/0.5 mile of high-capacity transit station
  - Jobs and services accessible within 30/45/60 minutes via transit and driving for equity priority communities*
- **Overall screening criteria categories:**
  - Aesthetics
  - Air Quality
  - Congestion Reduction
  - Cultural Resources
  - Diversions
  - Land Use
  - Neighborhoods and Populations
  - Noise
  - Parks, Recreation, and Open Space
  - Mobility
  - Modal Choice
  - Travel Reliability
  - Safety

See equity definition for list of equity priority communities

Questions and Feedback?

Is there any specific input you would be interested in hearing from the EAG?

Interstate BRIDGE Replacement Program

Travel Demand Modeling

Ryan LeProwse, Transportation/Planning Lead

Travel Demand Modeling

- Modeling will be used alongside screening criteria results and community feedback to evaluate design options and identify tradeoffs.
- The process used to predict travel behavior and resulting demand for a specific timeframe given a defined set of assumptions.

Who Uses Travel Demand Models?

- **State DOTs**
  - Highway & corridor planning
- **Metropolitan Planning Organizations (Metro / RTC)**
  - Regional Transportation Plans
  - Corridor planning
- **Cities and Counties**
  - Transportation System Plans
  - Street system planning
  - Development impact analysis
  - Bike and pedestrian facilities
- **Transit Districts (TriMet / C-Tran)**
  - Route / System planning
  - Long-range planning
  - Capital Investment Grant Funding (New Starts / Small Starts)

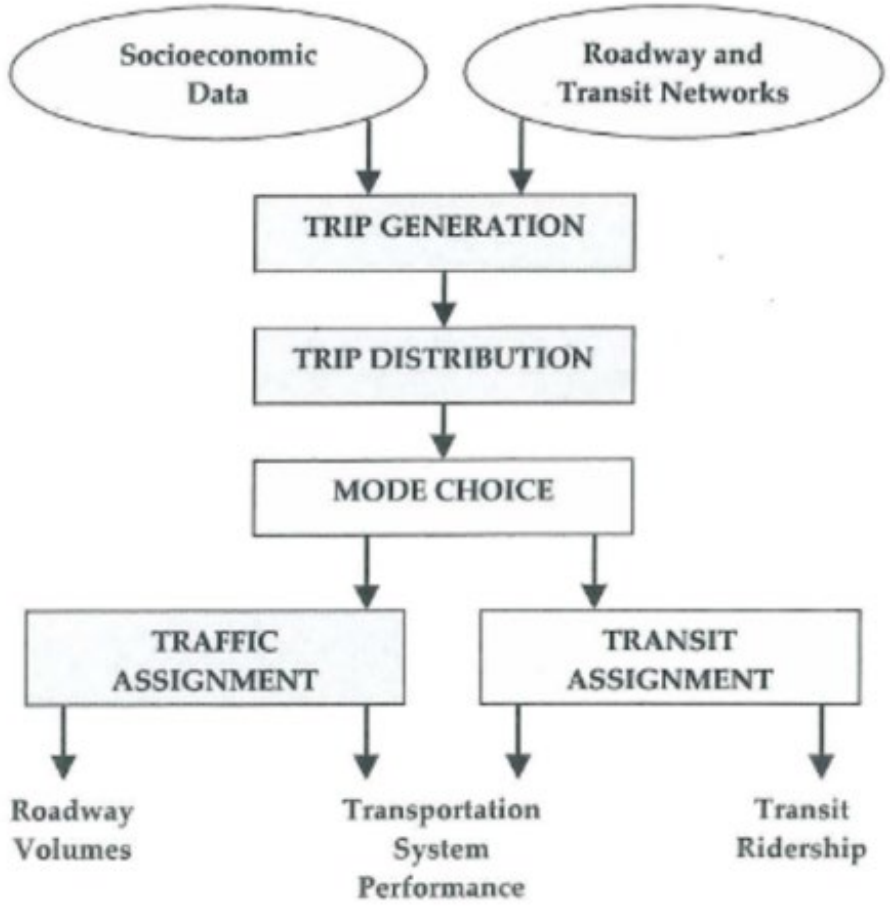
Regional Travel Demand Model Participants

How is Transportation Demand Modeling Performed?

- **Four Step Process**
  - Step 1: Trip generation
  - Step 2: Trip distribution
  - Step 3: Mode choice
  - Step 4: Trip assignment

The travel demand modeling process estimates trip-making behavior through a four-step process. Various socioeconomic scenarios and transportation alternatives can be forecasted by the model. Roadway traffic volumes, transit ridership, and system performance characteristics are produced by the model's application.

Multimodal Travel Demand Model Diagram

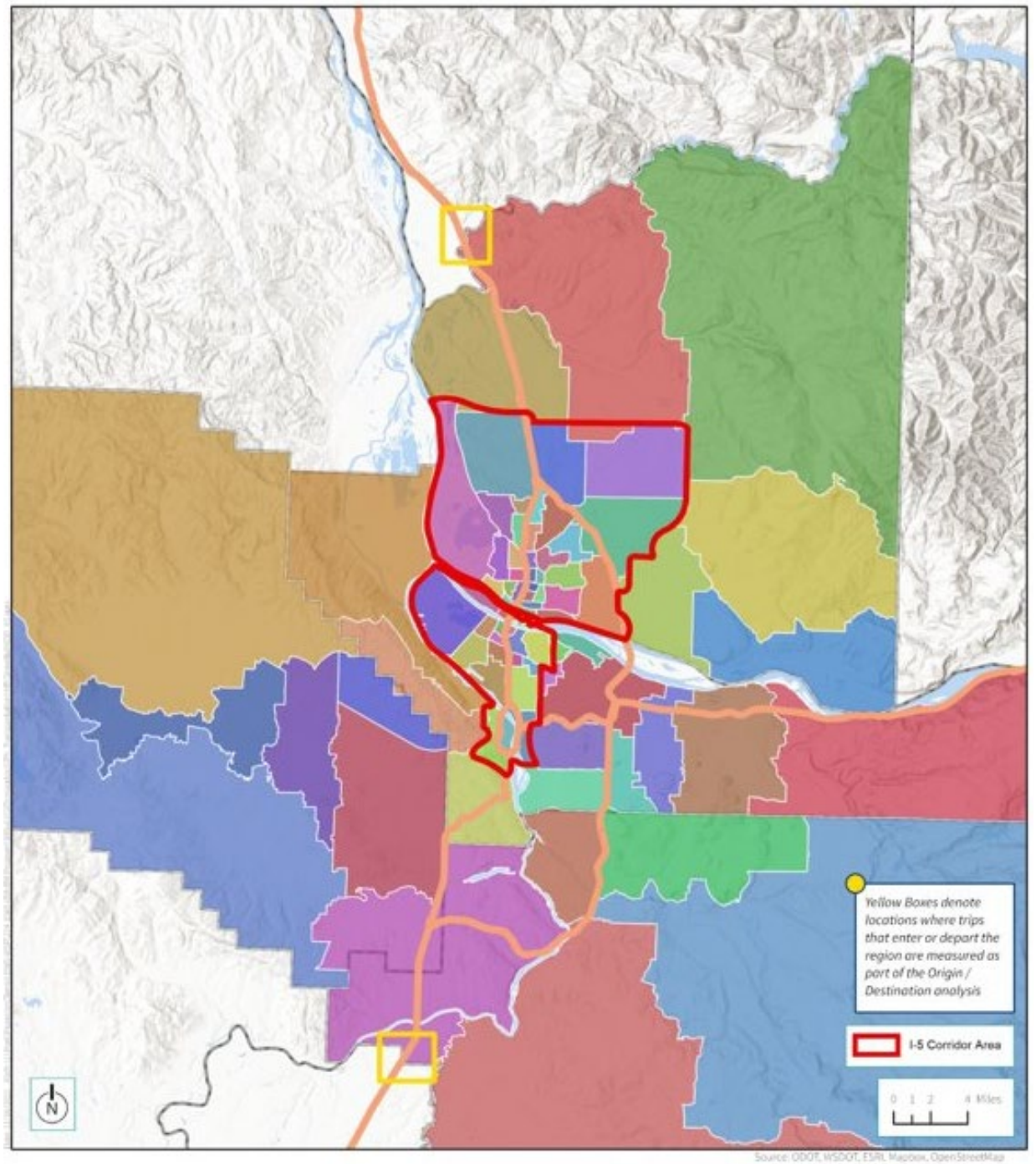


How is Transportation Demand Modeling Performed?

- **Step 1: Trip Generation - How many total trips are made?**
  - Population and employment by zone
    - **Existing:** *Based on census and building permits*
    - **Forecast:** *Based on regional growth plans*
    - **Consistent with adopted plans:** *Local comp plans, Regional Transportation Plan / Metro Transportation Plan*
  - Trip generation outputs
    - **Total daily trips produced from each zone and attracted to each zone**
    - **Total trips by type:** *Work, shopping, recreation, school/college*

How is Transportation Demand Modeling Performed?

- **Step 2: Trip Distribution**
  - Matches origins and destinations of trips by purpose



Interstate BRIDGE Replacement Program

How is Transportation Demand Modeling Performed?

- **Step 3: Mode Choice - How are trips made?**
  - Choice of Modes
    - *Drive alone*
    - *Carpool*
    - *Walk / bike to transit*
    - *Drive to transit (Park & Ride or drop-off)*
    - *Walk*
    - *Bike*
  - What factors impact Mode Choice?
    - *Cost*
    - *Travel time*
    - *Auto availability*
    - *Transit access*
    - *Socioeconomic relationships (e.g. household income, household size)*

How is Transportation Demand Modeling Performed?

- **Step 4: Trip Assignment - Which routes do people take?**
- **Auto**
  - Assignments to auto network consider travel time with congestion (*speed/capacity*), as well as factors such as ramp meters and tolls
  - Trips are segmented by hour and vehicle type: single-occupancy vehicles, high-occupancy vehicles, medium and heavy truck
- **Transit**
  - Identify routes available for trip and considers access via driving or walking
  - Select route (or routes) based on total travel time projected for walking, waiting (including transfers) and time in the vehicle

Use of Travel Demand Model for IBR Program

- **Evaluate design options**
  - Travel markets
  - Auto and transit travel times
  - Traffic impacts / volumes / speeds
  - Transit ridership
    - *Mode*
    - *Route*
    - *Station level*
    - *Mode of access to transit*
    - *Park & Ride demand*

- **Environmental Impact Analysis as part of the NEPA process**
  - Informs multiple disciplines
    - *Transportation*
    - *Air Quality*
    - *Greenhouse Gas Analysis*
    - *Equity*
    - *Environmental Justice*
  - Federal, state, and local grant funding

Questions and Feedback?

Interstate BRIDGE Replacement Program

Transportation Data

Ryan LeProwse, Transportation/Planning Lead

Introduction

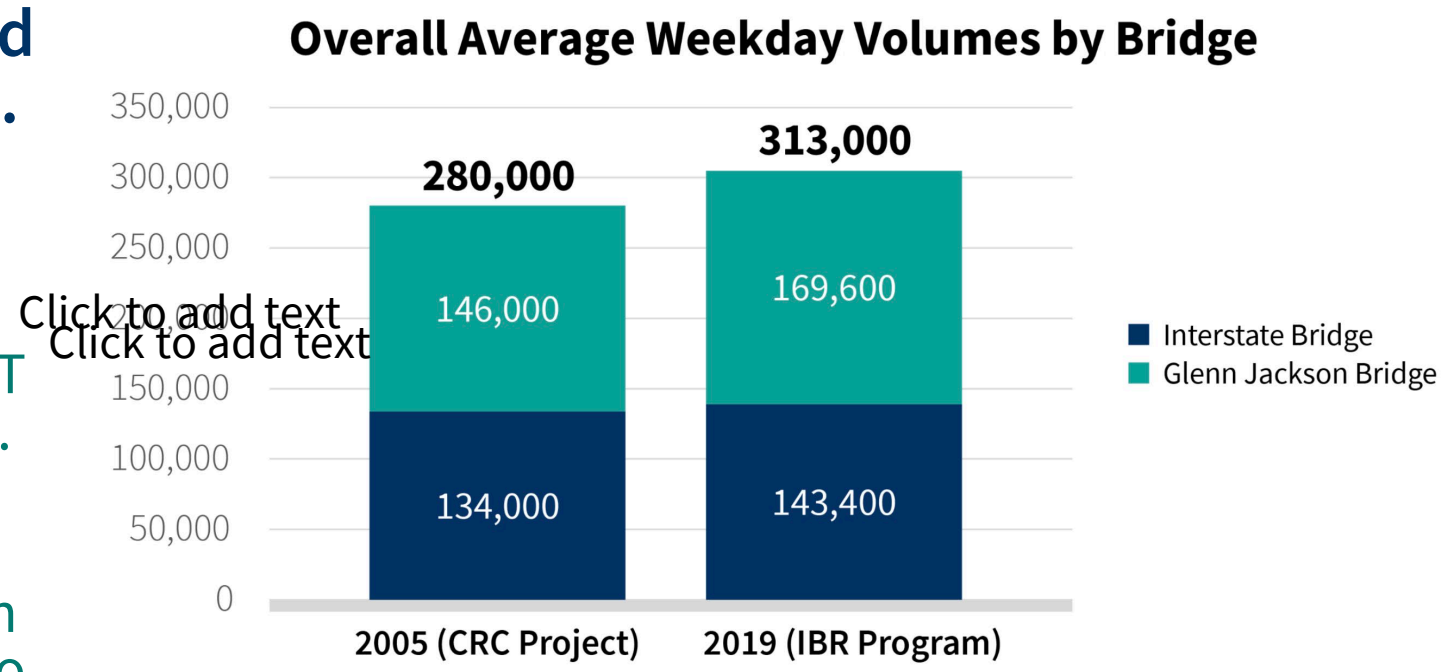
- **Comprehensive and quality data provides the foundation for robust transportation analysis to support program work.**
- **The baseline data used for the IBR program is similar to data collected during previous project (e.g., transportation and environmental data)**
  - Additional data continues to be incorporated to support new technologies and interest areas since previous planning efforts occurred.
- **The IBR program is following industry standards by using long term travel forecasts to analyze future conditions which are based on historical trends observed over a long period of time vs short term impacts, such as the COVID-19 pandemic.**
  - The program is using 2019 as the baseline year for all data.
  - Any potentially permanent or long-term changes in travel behavior due to COVID-19 are currently unknown.

Traffic Growth Rates

- **Overall average weekday daily traffic (AWDT) increased 12% between 2005 and 2019.**
  - The Interstate Bridge AWDT increased 0.3% per year annually.
  - The Glenn Jackson Bridge AWDT increased 1% per year annually.
  - Of the total growth in river crossing trips (33,000 AWDT), 72% of the increase occurred on the Glenn Jackson Bridge due to capacity constraints and extensive congestion over the Interstate Bridge.

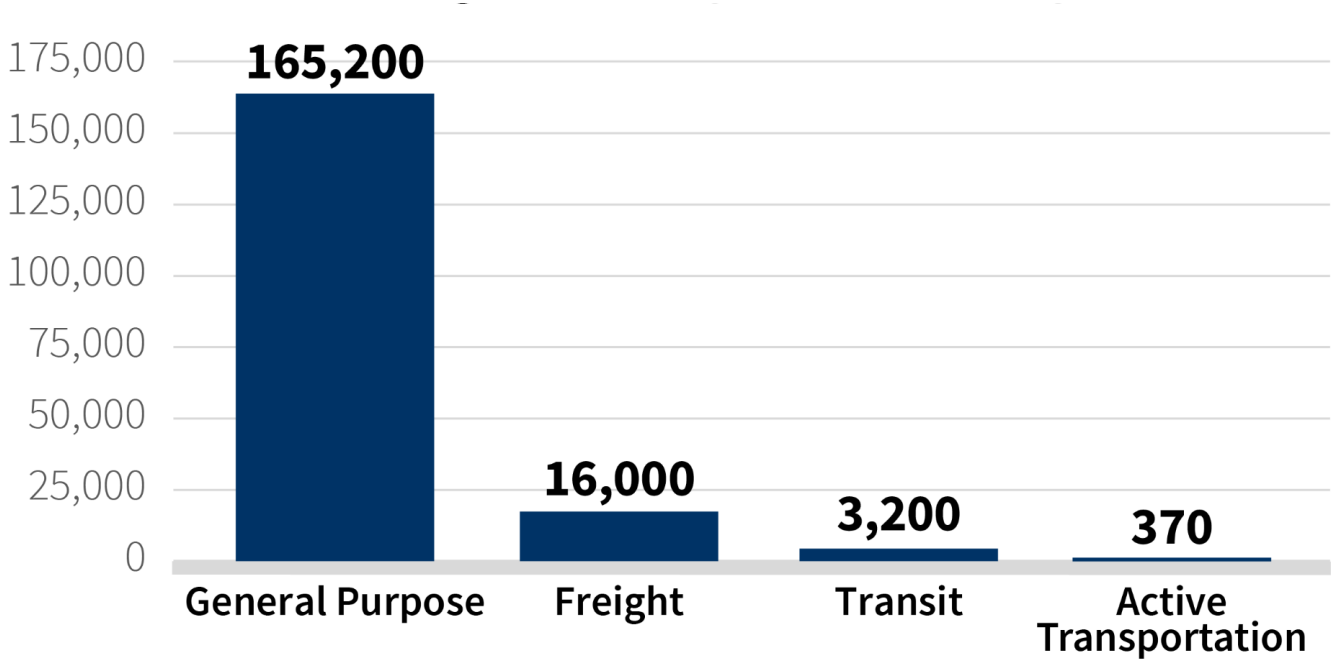
Click to add text

Click to add text

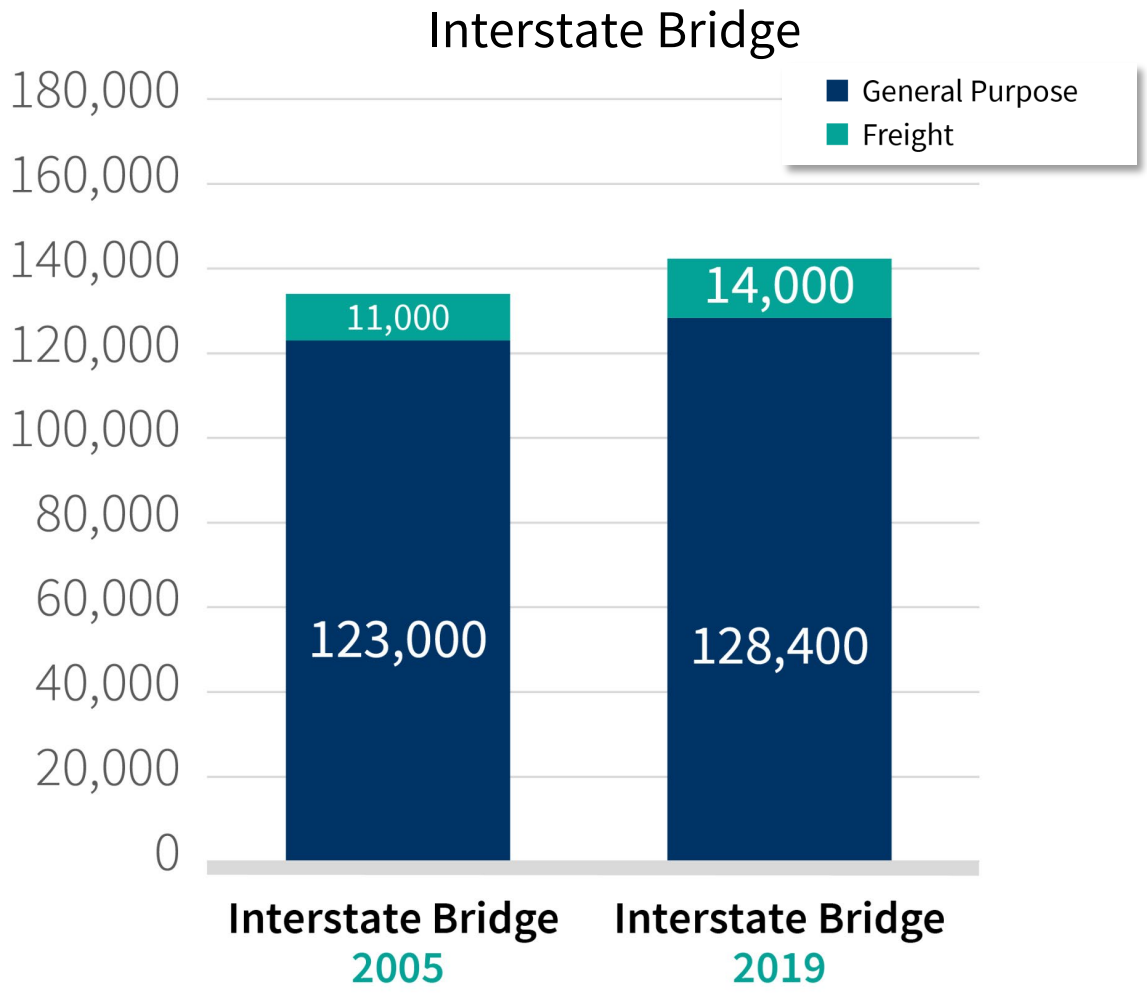


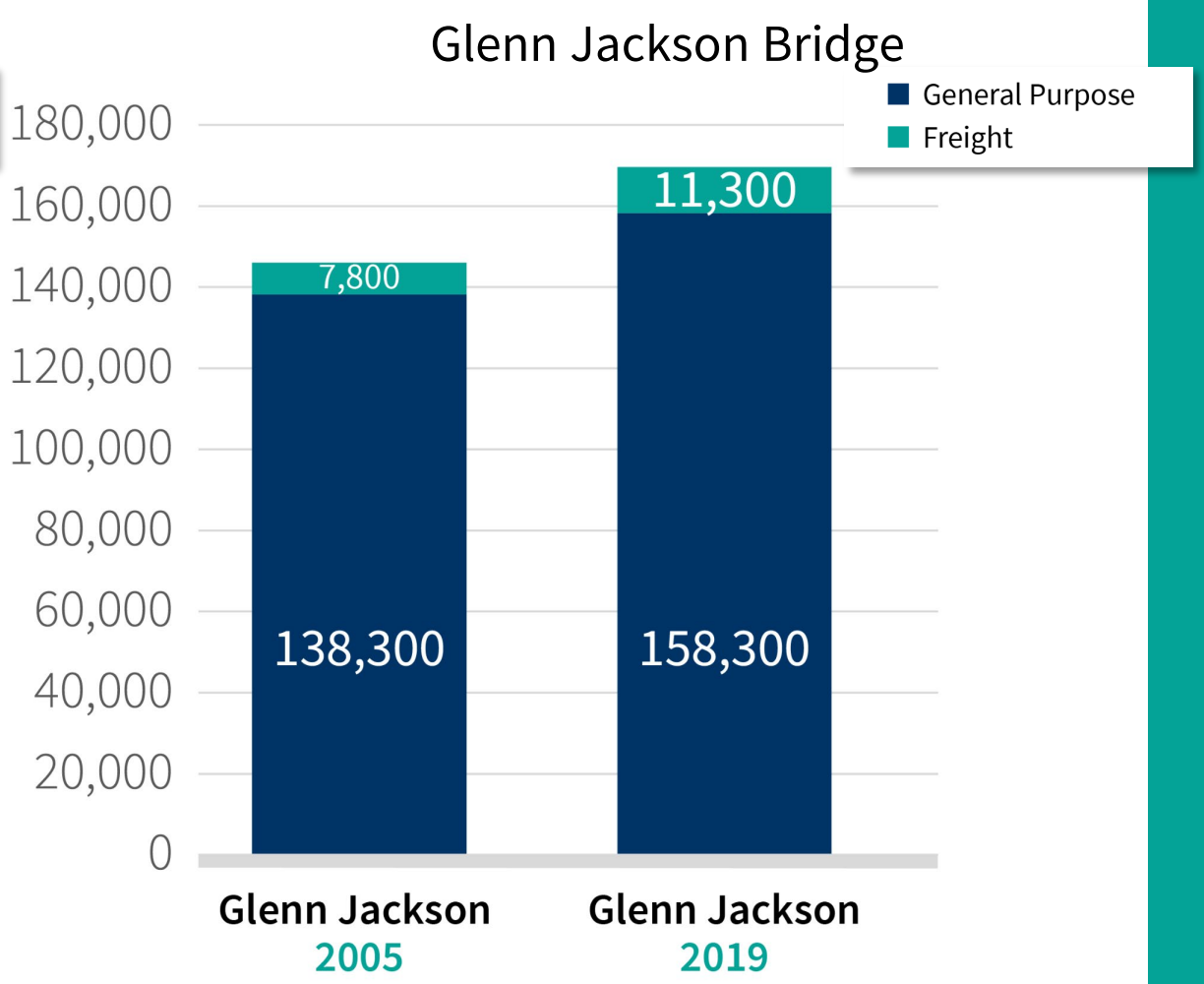
Interstate Bridge Weekday Person Trips by Mode

- The Interstate Bridge primarily serves general purpose traffic.
- The lack of dedicated transit facilities limits the ability to provide effective transit service.
- The limited active transportation facilities and connections in the program area limit the ability for people to use active transportation modes to cross the river.



Average Weekday Volumes – Vehicles and Freight

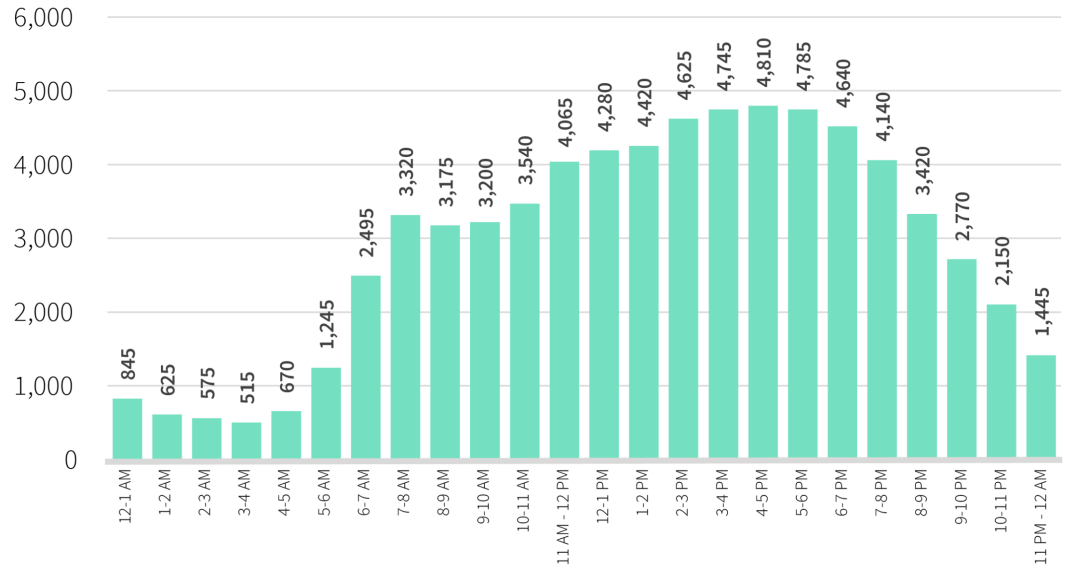




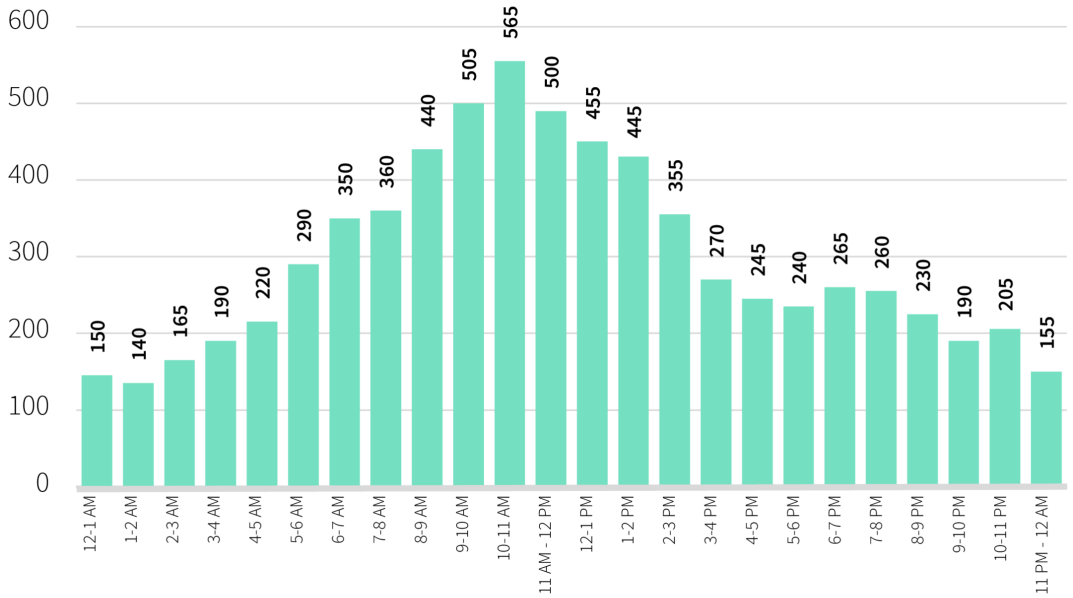
Interstate BRIDGE Replacement Program

Interstate Bridge Hourly Profiles – Northbound Vehicles and Freight Volumes

Interstate Bridge Hourly Profile - Overall Northbound Weekday Service Volumes

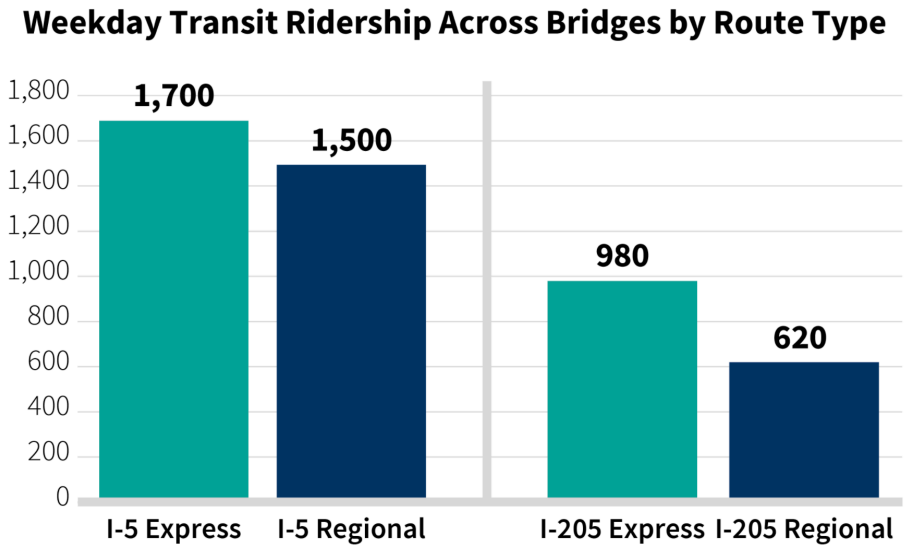


Interstate Bridge Hourly Profile - Northbound Weekday Freight Service Volumes



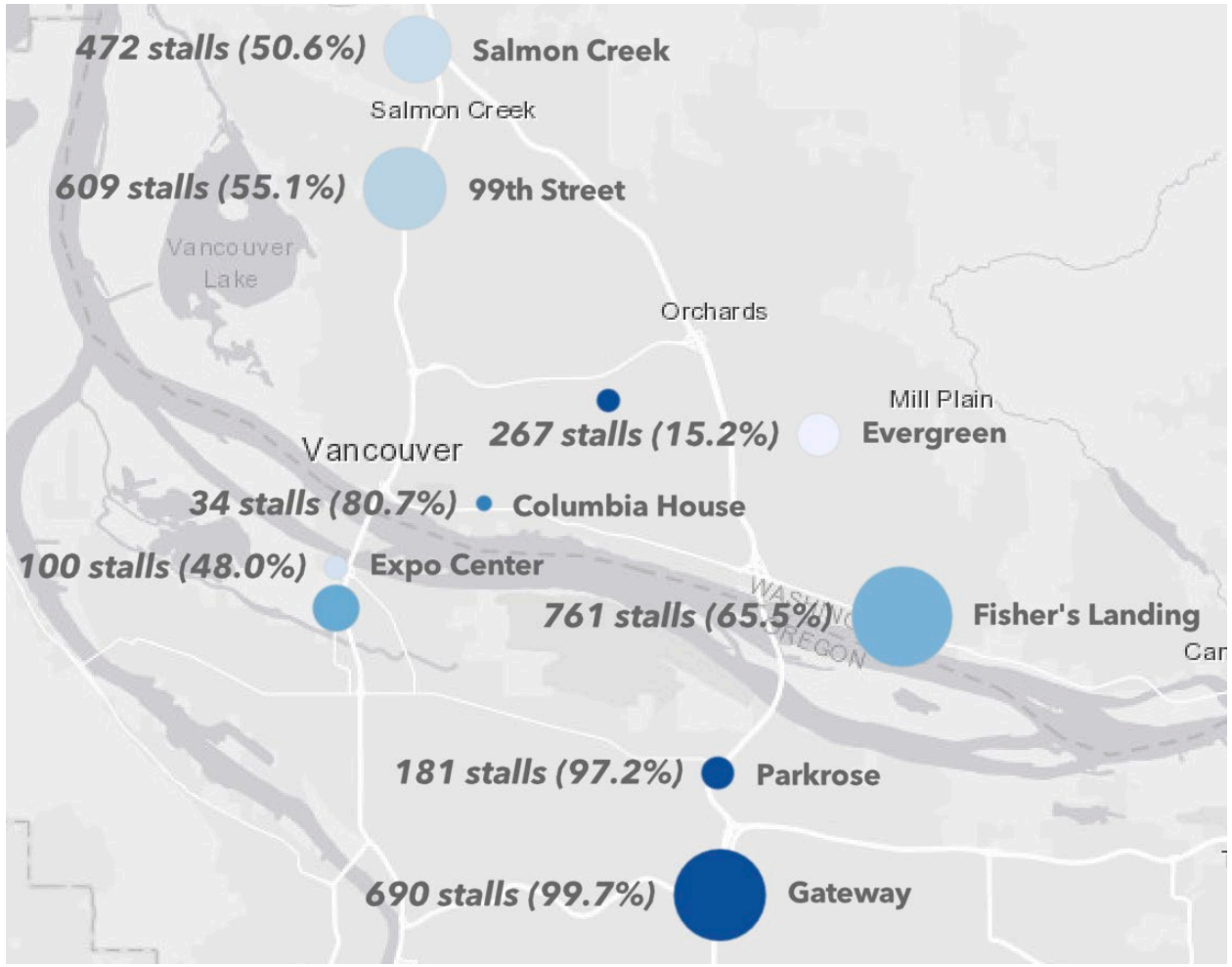
Freight traffic does not peak during typical commute hours (6-9 AM and 3-6 PM). The highest freight volumes occur during the middle of the day, as freight trucks try to avoid the most congested periods of the day.

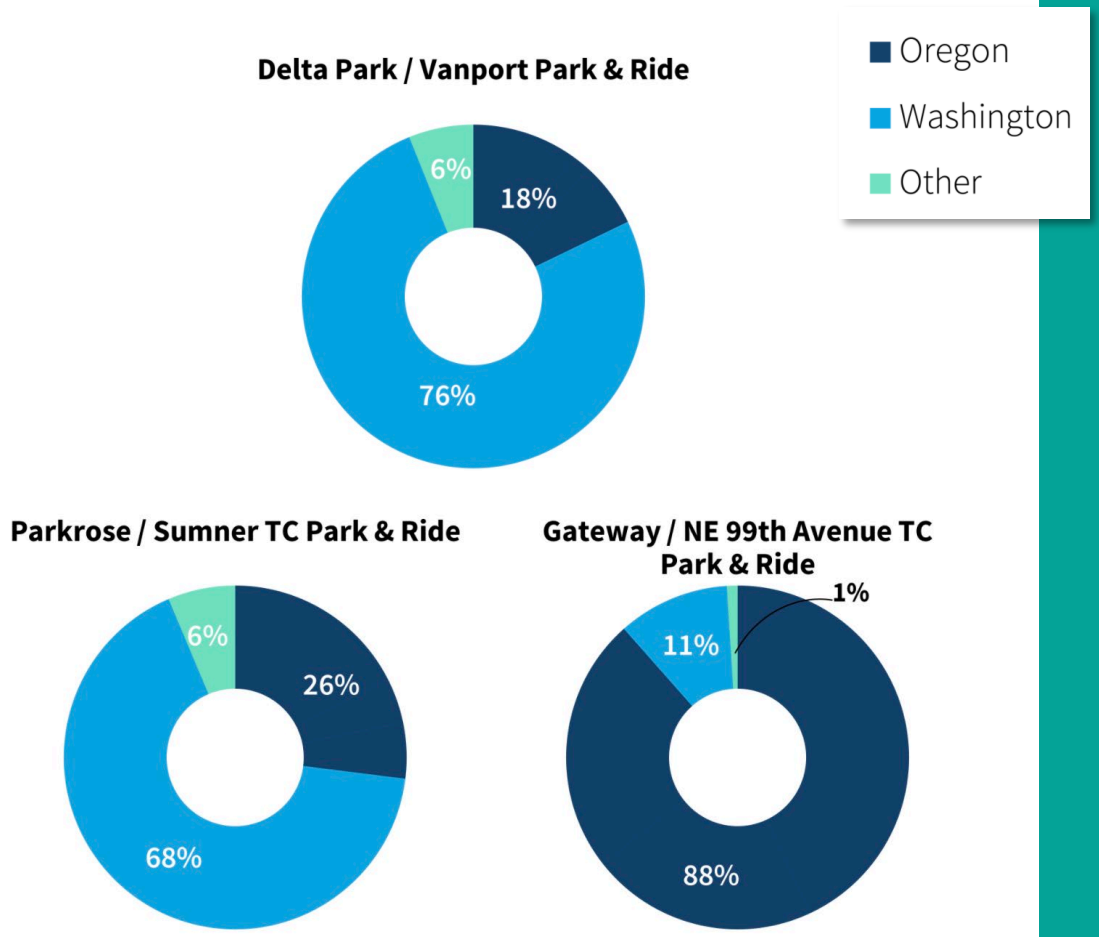
River Crossing Transit Routes and Ridership



Interstate BRIDGE Replacement Program

Park and Ride Utilization





Regional Bus on Shoulder (BOS) Operations

- **C-TRAN BOS Operations**
  - BOS have been in operation in Clark County since 2017.
  - Currently, BOS lanes are in use on three highway corridors: SR-14, I-5, and I-205.

- **South Metro Area Regional Transit (SMART) BOS Operations**
  - ODOT is collaborating with SMART to support more reliable travel through a pilot project by using BOS lanes in both directions of I-5 between the I-205 interchange and Elligsen Road in Wilsonville .

Bus on Shoulder (BOS) Operations

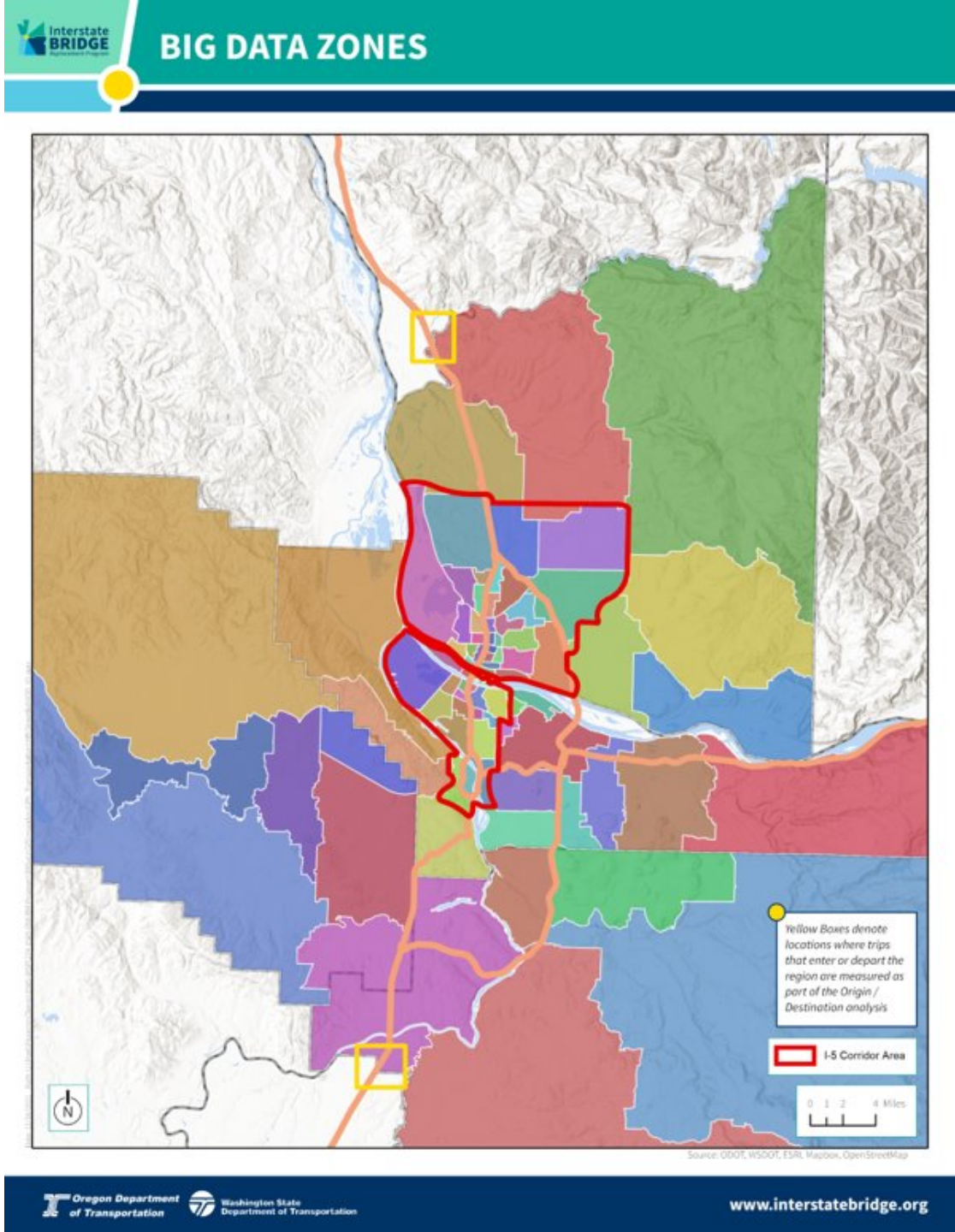
- **General Safety Procedures and Operations for BOS Lanes**
  - The overall speed of traffic must be less than 35 mph.
  - While using the shoulder, buses are only allowed to go up to 15 mph faster than adjacent traffic, to a maximum speed of 35 mph.
  - Priority for shoulder use is always given to emergency vehicles, stalls, or breakdowns.
  - Signs will be placed along the BOS corridor noting that shoulder use is for authorized transit vehicles only and when to expect BOS buses to merge back into traffic.
  - BOS lanes are narrow and built to carry the weight of intermittent traffic, which is why they cannot become designated HOV lanes.

Origin / Destination Travel Patterns

- **The IBR program is collecting cell phone (Big Data) data available from 2016 to 2021 using a Big Data platform.**
  - Big data uses sampled anonymized location records from smart phones and navigation devices in connected vehicles.
  - This data will be used to address similar questions as the license plate survey completed during previous planning in 2005 (ramp to ramp movements within the IBR program area).
  - It will also be used to provide regional travel pattern information and to validate the Metro/RTC regional travel demand model.

Origin / Destination Travel Patterns

- **Geographical areas**
  - 85 zones used for analysis
    - Includes 4 external “zones” that represent movements north and south on Interstate 5 beyond the 4-county area (Clark, Multnomah, Washington, Clackamas).
  - I-5 Corridor area
    - This corridor was defined in the previous CRC work to summarize trips that were part of specific market analysis for use in evaluating alternatives.

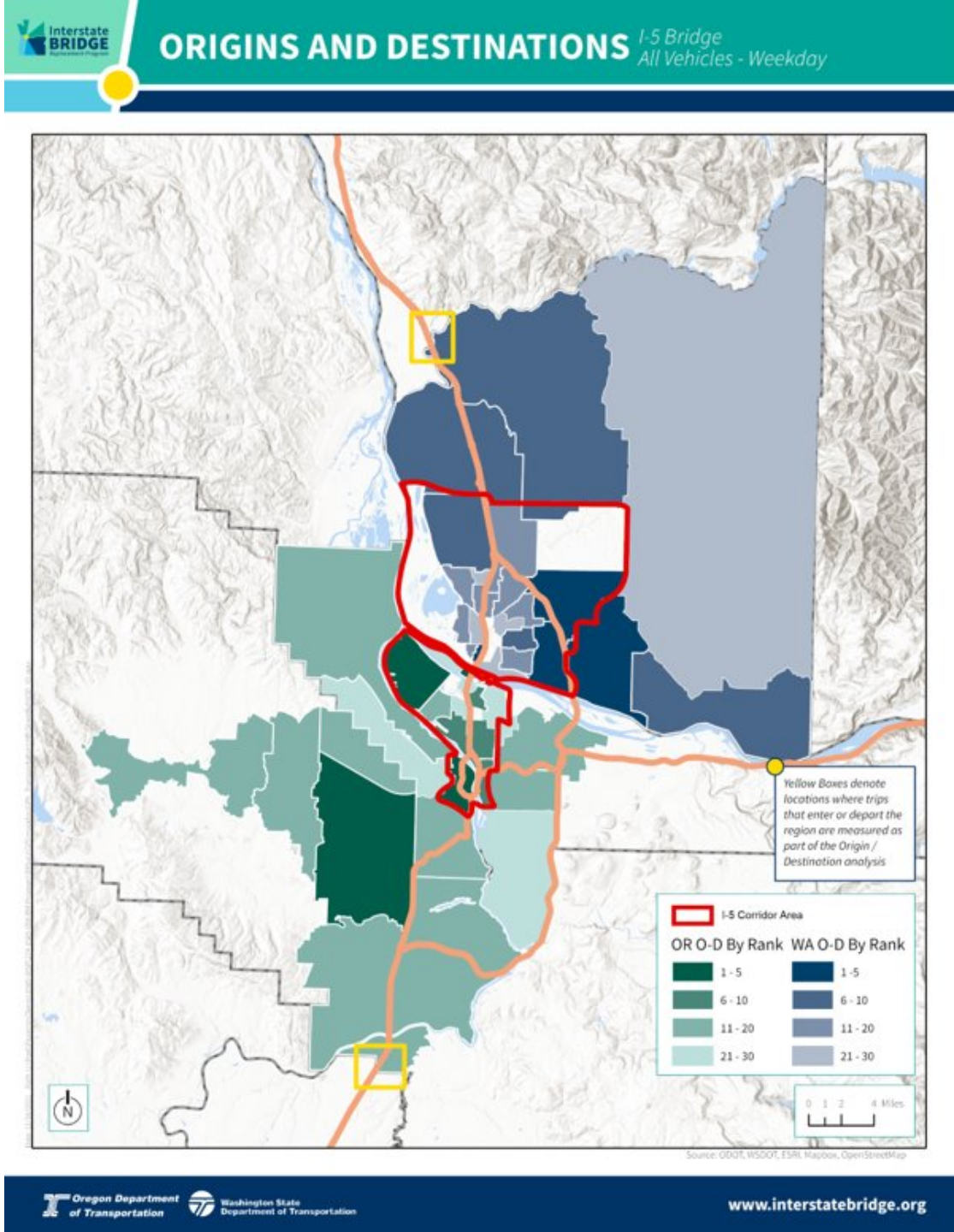


Interstate BRIDGE Replacement Program

I-5 Bridge Users

Average Weekday - All Vehicles

- **Nearly two thirds of trips using the I-5 Interstate Bridge have a starting or ending point within the I-5 corridor area.**
- **Top 5 Oregon origins/destinations**
  - *Beaverton/Tigard (9%)*
  - *Downtown Portland (8%)*
  - *Hayden Island (7%)*
  - *Rivergate/N Portland (6%)*
  - *West/south of downtown Portland (OHSU/South Waterfront) (6%)*
- **Top 5 Washington origins/destinations**
  - *North of Clark County on I-5 (14%)*
  - *East of I-205 (11%)*
  - *Orchards (8%)*
  - *West of I-205 (7%)*
  - *Downtown Vancouver (5%)*

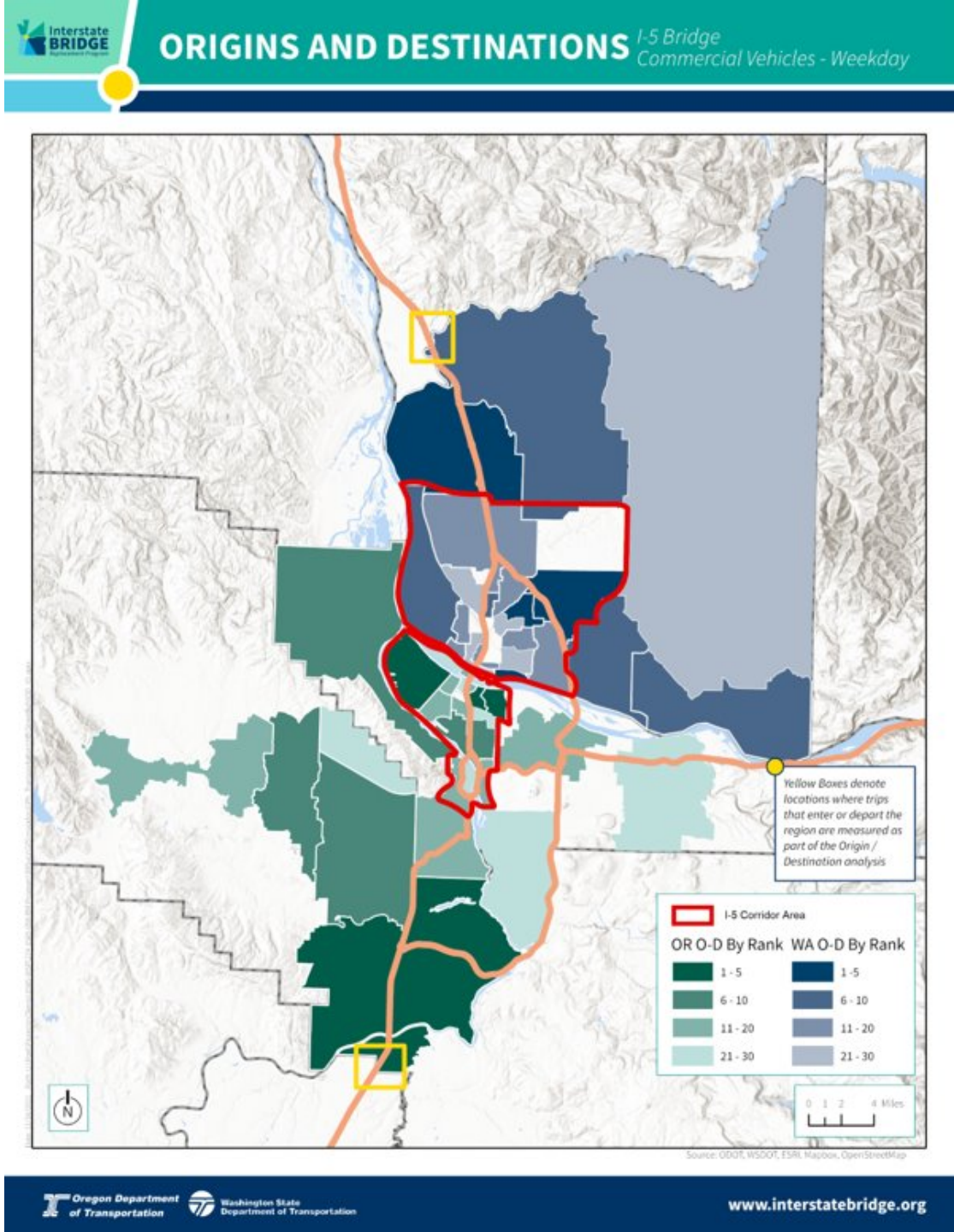


Interstate BRIDGE Replacement Program

I-5 Bridge Users

Average Weekday – Commercial Vehicles Only

- **45% of commercial trips using the I-5 Interstate Bridge start or end in the Oregon portion of I-5 corridor area.**
- **30% of commercial trips using the I-5 Interstate Bridge start or end in Washington portion of I-5 corridor area.**
  - Top 5 Oregon origins/destinations
    - *South of Tri-County Oregon Region on I-5 (30%)*
    - *Delta Park (13%)*
    - *Rivergate (8%)*
    - *Tualatin/Lake Oswego/Wilsonville (8%)*
    - *NE Portland east of Delta Park(6%)*
  - Top 5 Washington origins/destinations
    - *North of Clark County on I-5 (60%)*
    - *Ridgefield (5%)*
    - *Minnehaha (4%)*
    - *Columbia Way/SR-14 (3%)*
    - *Orchards (3%)*

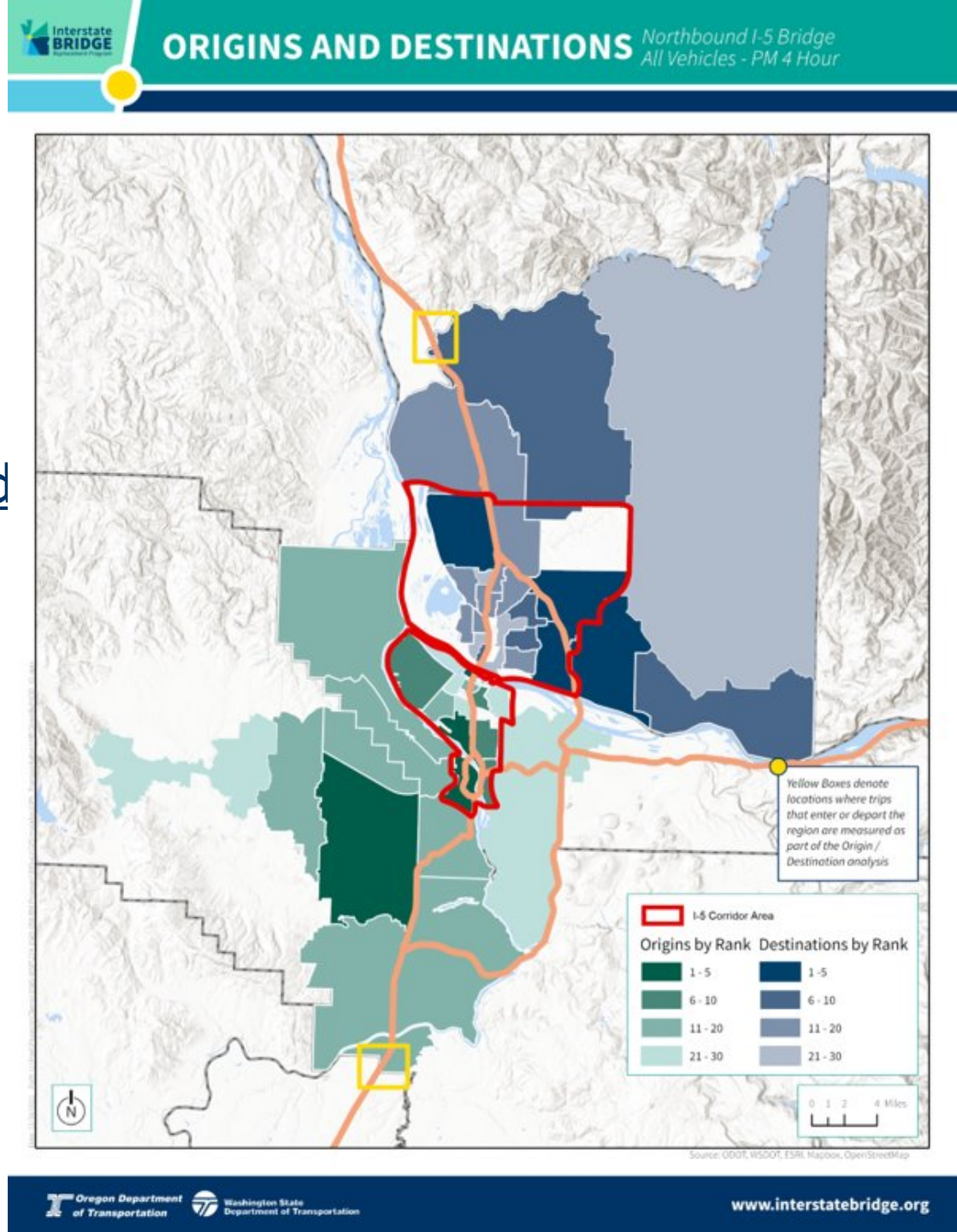


Interstate BRIDGE Replacement Program

I-5 Bridge Users

All Vehicles - Average Weekday – Northbound PM 4-HR Peak

- **70% of trips using the I-5 Interstate Bridge start in the Oregon portion of I-5 corridor area.**
- **65% of trips using the I-5 Interstate Bridge end in Washington portion of I-5 corridor area.**
  - Top 5 Oregon origins
    - *Downtown Portland (12%)*
    - *Beaverton/Tigard (8%)*
    - *N Portland/Swan Island (7%)*
    - *West/S of downtown Portland (OHSU/South Waterfront) (7%)*
    - *Hayden Island (6%)*
  - Top 5 Washington destinations
    - *East of I-205 (12%)*
    - *North of Clark County on I-5 (9%)*
    - *Orchards (9%)*
    - *West of I-205/Burton (6%)*
    - *NW Salmon Creek Area (5%)*

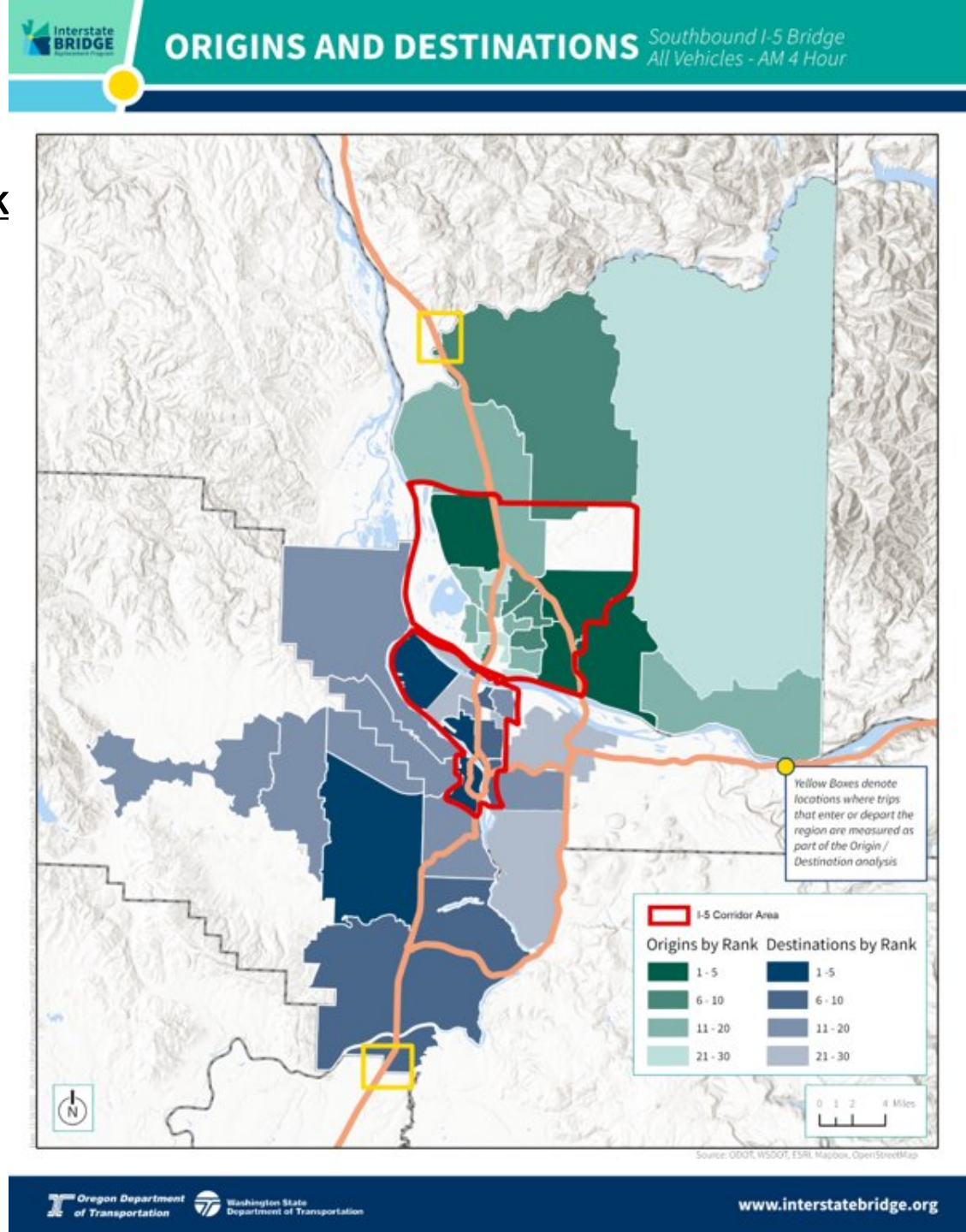


Interstate BRIDGE Replacement Program

I-5 Bridge Users

All Vehicles - Average Weekday – Southbound AM 4-HR Peak

- **70% of trips using the I-5 Interstate Bridge start in the Washington portion of I-5 corridor area.**
- **65% of trips using the I-5 Interstate Bridge end in Oregon portion of I-5 corridor area.**
  - Top 5 Washington origins
    - *Orchards (11%)*
    - *East of I-205 (10%)*
    - *North of Clark County on I-5 (9%)*
    - *NW Salmon Creek area (5%)*
    - *West of I-205/Burton (5%)*
  - Top 5 Oregon destinations
    - *Downtown Portland (11%)*
    - *Beaverton/Tigard (9%)*
    - *West/south of downtown Portland (OHSU/South Waterfront) (8%)*
    - *Rivergate N Portland (8%)*
    - *N Portland/Swan Island (7%)*

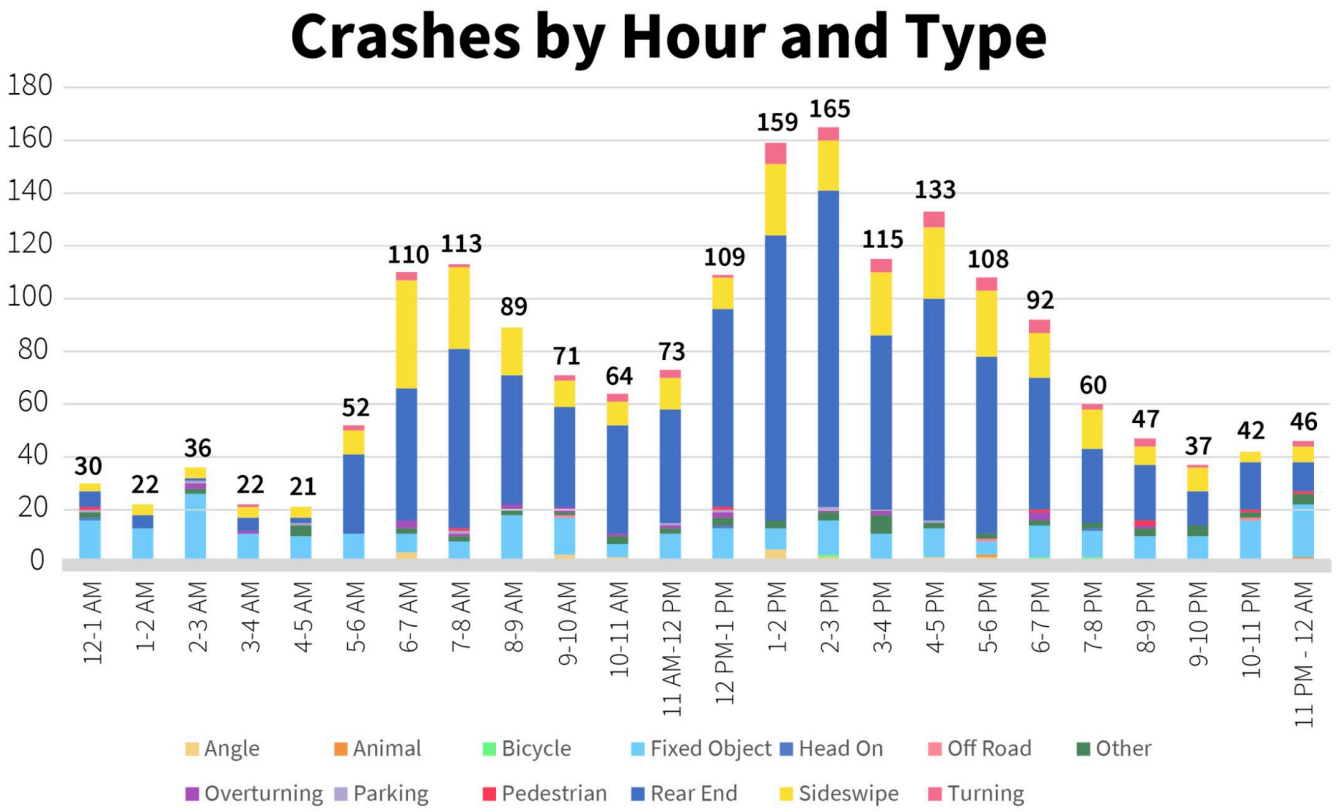


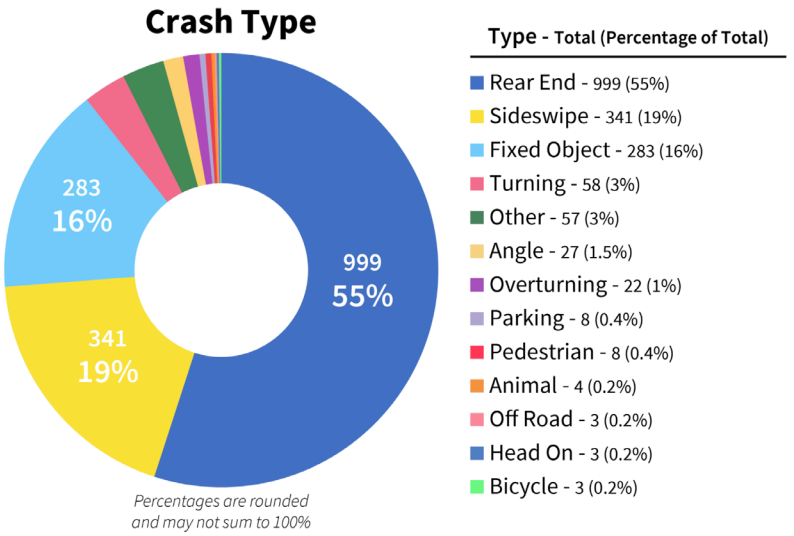
Interstate BRIDGE Replacement Program

Bottleneck Locations in the Program Area

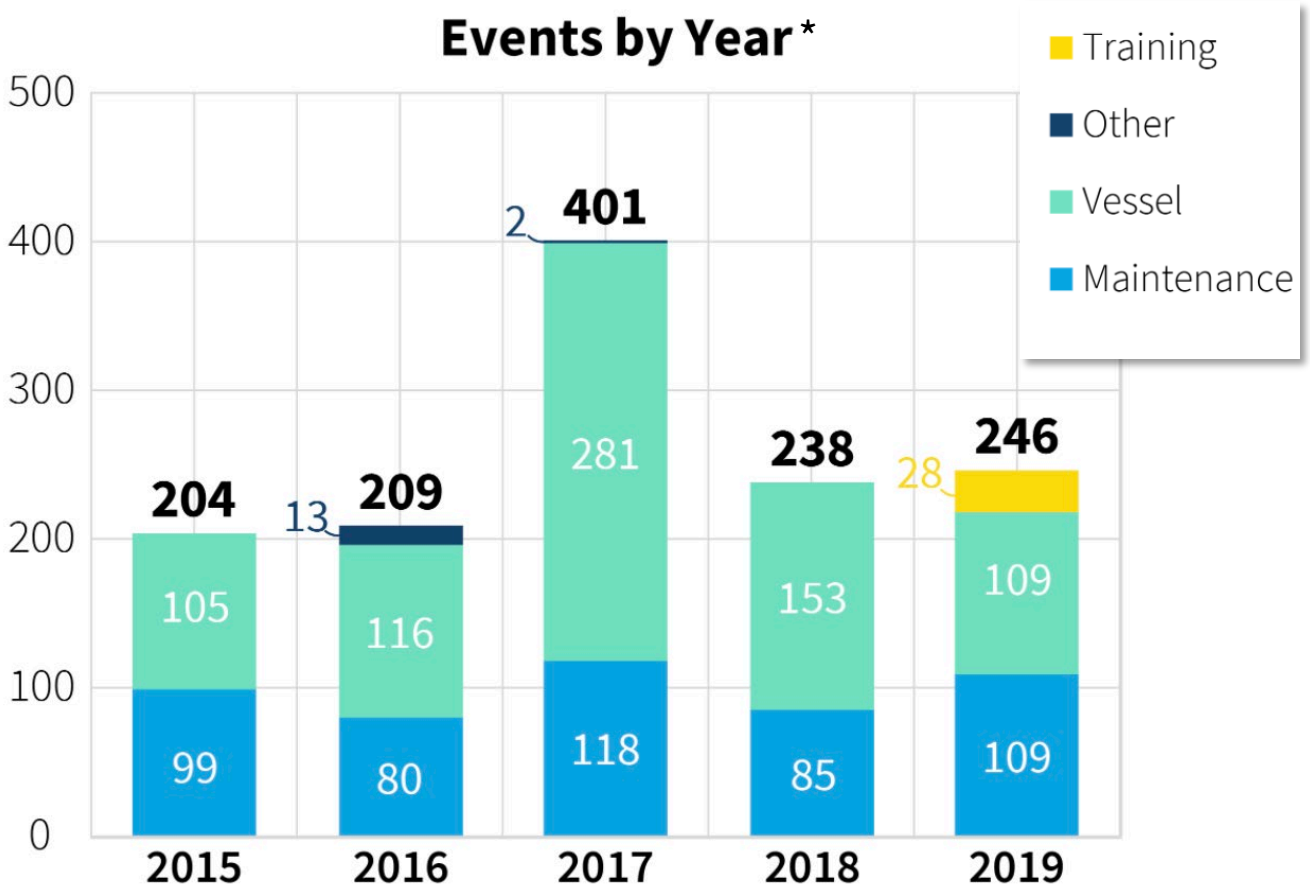
- **There are multiple bottleneck locations within and influencing the IBR Program Area.**
- **These include:**
  - **Northbound I-5** – Capitol Hwy to Interstate Bridge for 7 hours from 12:30-7:30 PM
  - **Southbound I-5 -** Main Street to Interstate Bridge for 3.5 hours from 6-9:30 AM.
  - **Southbound I-5** – Marine Drive to Going Street for 4 hours from 7-11 AM.

Crash Data by Type

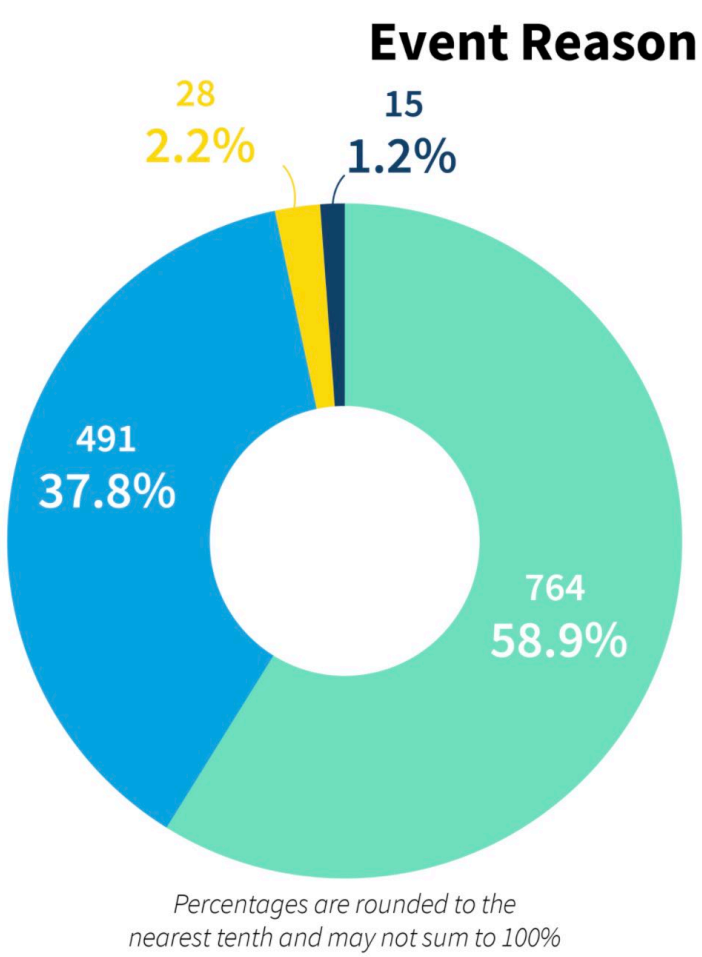




Bridge Lift Events

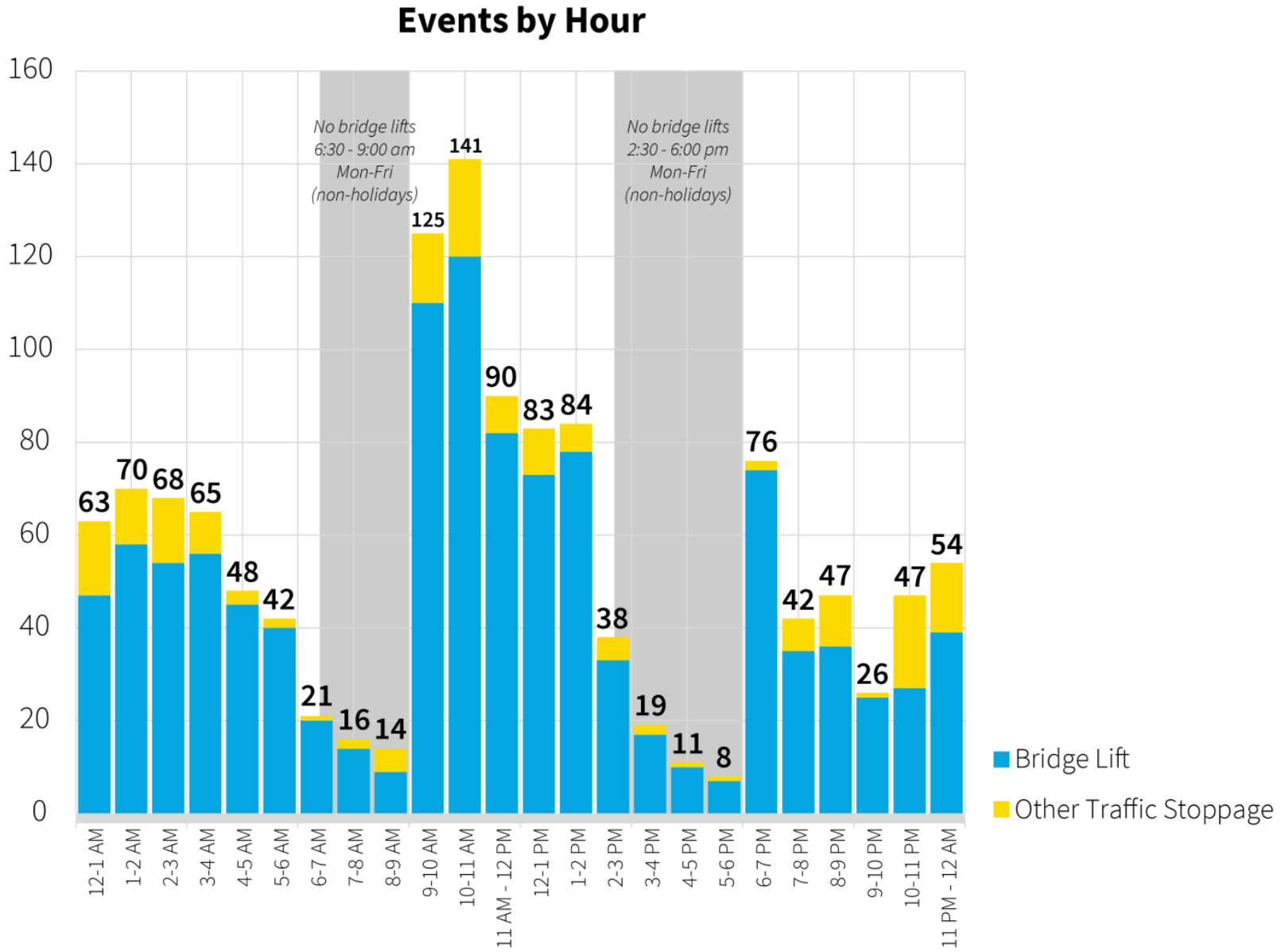


*1,298 Total Bridge Events



Percentages are rounded to the nearest tenth and may not sum to 100%

Bridge Lift Events



Questions and Feedback?

Next Steps

Greg Johnson, Program Administrator

Upcoming Work and Meeting Topics

- **Proposed future meeting topics:**
  - December
    - *Engagement with equity priority communities*
    - *Update on governance structures study including examples such as bridge authority, bi-state agreement, and interstate compact*
    - *Economic Impact Analysis introduction*
  - Future Meetings
    - *Progress in moving toward the IBR solution*

Next Steps Beyond March 2022

- **Environmental work and timelines**
  - IBR solution advances through NEPA in 2022 for additional analysis of impacts and benefits. Current timeline anticipates the Supplemental Final EIS being published in late 2023.
- **Additional development of design details—mid-2022 through mid-2024**
  - Additional development of design details: ex. bridge type, active transportation facilities and connections, affected local roadways, transit station locations and size, off-site improvements
- **Funding needs and timelines in anticipation of 2023 sessions**
  - The program will be updating the conceptual finance plan in late 2022 in preparation for the 2023 OR and WA legislative sessions and potential funding conversations
- **Tolling/pricing discussions and timelines– ongoing through 2025**
- **Community Workforce Agreement—begin late 2022, through 2024**
- **Construction contract requirements, including DBE goals—late 2023 to mid-2025**

Feedback and Guidance:

Are there additional topics or information that would be useful to discuss at future meetings?

Interstate BRIDGE
Replacement Program

For more information contact:

info@interstatebridge.org
360-859-0494 or 503-897-9218
888-503-6735

www.interstatebridge.org