

# Agenda



**Metro**

600 NE Grand Ave.  
Portland, OR 97232-2736

Meeting: 82<sup>nd</sup> Avenue Transit Project Steering Committee #4  
Date: March 23, 2023  
Time: 4:00 p.m. to 6:00 p.m.  
Place: Zoom meeting  
<https://us02web.zoom.us/j/86791964648?pwd=bHd4bi9GK1hsamlrcmxIaDdRMWRKUT09>  
Passcode: 822410 Webinar ID: 867 9196 4648

Purpose: Discuss updates to the project work and related efforts, discuss feedback and analysis around amending the Draft Purpose & Need, provide time to ask questions and discuss complex project components (general station locations) and how they will be shared with public for feedback, and technical work updates.

Outcome(s): Steering Committee will provide feedback on planned update to Draft Purpose & Need and Goals & Objectives, have time to discuss Station Siting methodology and preliminary findings and engagement, and understand project next steps.

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- 4:00 p.m. Welcome and Introductions
- 4:10 p.m. Approval of September and December meeting minutes
- 4:15 p.m. Updates on Project Engagement and Analysis (Kelly Betteridge, Metro)
- Participating in online open house and presentation to the Building a Better 82<sup>nd</sup> Avenue CAG
  - Update on technical analysis/findings and the transit operating location
- 4:30 p.m. Steering Committee Feedback on Purpose and Need in February
- Comfort with Goals & Objectives
  - Proposed amendment to the needs to discuss climate change (Elizabeth Mros-O'Hara, Metro)
  - Questions/Discussion
- 4:45 p.m. Engagement and Station Siting Presentation and Discussion
- Upcoming engagement around the project and station siting (Paulina Salgado, TriMet)
  - Recap of Station Siting methodology and findings (Jesse Stemmler, TriMet)
  - Steering committee discussion
    - Questions/thoughts about how preliminary station locations were identified?
    - Questions/thoughts about the information that will be shared at the upcoming online open house?
    - Are there more things staff should consider as they continue with station and terminus analysis and sharing information with the public?
- 5:30 p.m. Public Comment
- 5:55 p.m. Next steps/Adjourn (Metro Councilors Hwang/Lewis)

**Materials:**

*Draft meeting minutes (September and December 2022)*

*Draft 82<sup>nd</sup> Avenue Purpose & Need (no changes)*

*February Steering Committee Presentations (Purpose & Need/Goals & Objective, Station Siting  
Methodology and Findings, FX Mode)*

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ការគោរពសិទ្ធិពលរដ្ឋរបស់ ៗ សំរាប់ព័ត៌មានអំពីកម្មវិធីសិទ្ធិពលរដ្ឋរបស់ Metro ឬដើម្បីទទួលបានការបណ្តឹងរើសអើងសូមទូរស័ព្ទទៅតាមលេខ [www.oregonmetro.gov/civilrights](http://www.oregonmetro.gov/civilrights)។ បើលោកអ្នកត្រូវការអ្នកបកប្រែភាសានៅពេលអង្គប្រជុំសាធារណៈ សូមទូរស័ព្ទមកលេខ 503-797-1700 (ម៉ោង 8 ព្រឹកដល់ម៉ោង 5 ល្ងាច ថ្ងៃធ្វើការ) ប្រាំពីរថ្ងៃ ថ្ងៃធ្វើការ មុនថ្ងៃប្រជុំដើម្បីរៀបចំឱ្យមានភាពងាយស្រួលសំរាប់លោកអ្នក ។

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# Meeting minutes

Meeting: **82nd Avenue Steering Committee meeting**  
Date/time: Monday, September 12, 2022 | 4:00 p.m. to 6:00 p.m.  
Place: Virtual webinar meeting held via Zoom

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<b><u>Members, Alternates Attending</u></b>	<b><u>Affiliation</u></b>
Councilor Duncan Hwang, Co-chair	Metro
Councilor Christine Lewis, Co-chair	Metro
Commissioner Mark Shull	Clackamas County
Commissioner Jo Ann Hardesty	City of Portland
Representative Kahn Pham	State of Oregon, House District 46
Commissioner Jessica Vega Pederson	Multnomah County
Chris Ford	ODOT
JC Vanatta	TriMet
Emerald Bogue	Port of Portland
Leslie Lum	Unite Oregon
Zachary Lauritzen	Oregon Walks
Kaitlyn Dey	Clackamas Service Center

<b><u>Panelists Attending</u></b>	<b><u>Affiliate</u></b>
Elizabeth Mros-O'Hara	Metro
Brian Harper	Metro
Yuliya Lee	Metro
Michael Kiser	TriMet
Julia Reed	Portland Bureau of Transportation

**Welcome and introductions** (Councilors Duncan Hwang, Metro and Christine Lewis, Metro)  
Co-chair Councilor Duncan Hwang, Metro called meeting to order at 4:00 p.m. and welcomed the attendees to the meeting. Councilor Hwang stressed the importance of the 82<sup>nd</sup> avenue project and urged committee members to work together to ensure project's success.

Committee members introduced themselves, noted their affiliation, and shared their hopes for the project and Steering Committee.

Co-chair Councilor Christine Lewis, Metro walked through the agenda.

**Presentation: Description of the 82nd Avenue Transit Project** (Elizabeth Mros-O'Hara, Metro)  
Elizabeth Mros-O'Hara, Metro, discussed why the 82<sup>nd</sup> Avenue project is moving forward at this time and why rapid bus is being explored, highlighted the coordinated efforts on 82<sup>nd</sup> Avenue and TriMet bus line 72 that runs along 82<sup>nd</sup> Avenue and NE Killingsworth. She discussed communities within the 82<sup>nd</sup> Avenue corridor, the constraints of the corridor, and summarized past analysis, outreach and engagement that have been done. Elizabeth Mros-O'Hara provided more details on previous technical analyses that have been done and 82<sup>nd</sup> Avenue transit.

Michael Kiser, TriMet, discussed the benefits of bus rapid transit (BRT), these include being faster, predictable, distinctive, convenient, comfortable, and ease of use. He then discussed BRT station components including, specialized vehicles, dedicated running ways, enhanced stations, enhanced fare collection systems, BRT branding, transit signal priority, stop spacing, and lane configuration. Michael Kiser highlighted project benefits, including reducing bus delay, transit travel times, safe access to



transit, and connecting many low-income areas. He discussed leveraging the FX-2 investments, Building a Better 82<sup>nd</sup> Avenue and other partner investments.

Elizabeth Mros-O'Hara concluded the presentation by summarizing the work plan.

### **Discussion**

Representative Kahn Pham expressed concern for reducing the number of stops along 82<sup>nd</sup> Avenue.

Michael Kiser responded by explaining the data that goes into deciding where stops should be located and agreed that there is a tradeoff between creating a faster bus service and stop reduction.

JC Vannatta agreed with Michael Kiser and highlighted that they will have to work with the community to understand where stations should be located.

Leslie Lum, Unite Oregon, asked about unintended consequences or negative feedback that was received around the FX-2 line along Division.

Elizabeth Mros-O'Hara responded by explaining that more comments will be coming in in response to the FX-2 line opening and highlighted the importance of making busses more accessible as more cars cannot be fit along the corridor.

Commissioner Hardesty voiced the challenge of serving the needs of today's TriMet users while still planning for the transit users of tomorrow.

Zachary Lauritzen, Oregon Walks, explained that the 72-bus line essentially serves as the school bus for McDaniel High School and stressed the importance of inviting these students to these conversations.

### **Steering Committee draft schedule and charter review** (Elizabeth Mros-O'Hara, Metro)

Elizabeth Mros-O'Hara highlighted the jurisdictions and organizations of Steering Committee members, the Committee structure, and the Committee's charges to represent the community, advance the project, and recommend transit locally preferred alternative (LPA) in the summer of 2023. She summarized decision making protocols by discussing consensus decision making and discussed next steps.

### **Discussion:**

Zachary Lauritzen asked about specific funding deadlines for this project.

Elizabeth Mros-O'Hara responded by highlighting the importance of working quickly in order to secure federal funding, align timelines with the work being done by the City of Portland and Oregon Department of Transportation (ODOT), and fit within the Regional Transportation Plan (RTP) without the need for amendments.

### **Community Coalition Update– Equitable Development Strategy:** (Brian Harper, Metro)

Brian Harper, Metro, discussed what was learned through the community engagement process in 2016 with the Southwest Corridor Project and how Metro can engage with community based organizations on 82<sup>nd</sup>.

**Discussion:**

Zachary Lauritzen discussed what organizing and engagement work Oregon Walks has been doing.

**Coordination with other projects:**

Councilor Hwang asked committee members to provide updates on projects that their jurisdictions or organizations are working on along 82<sup>nd</sup> avenue.

Chris Ford, Oregon Department of Transportation (ODOT), discussed the handover effort of 82<sup>nd</sup> Avenue within the City of Portland from ODOT to the City of Portland and ODOT's Foster to Thompson project.

Commissioner Mark Shull, Clackamas County, discussed Clackamas County's efforts to attract businesses to the southern end of 82<sup>nd</sup> Avenue and Sunnyside Road improvements.

Emerald Bogue, Port of Portland, explained that the Port of Portland owns 82<sup>nd</sup> Avenue north of Alderwood Road and discussed the Port of Portland's reliance on the corridor.

Commissioner Jessica Vega Pederson, Multnomah County, discussed the importance of 82<sup>nd</sup> for the people that Multnomah County serves especially the houseless population as there are several shelters and potential shelters located along the corridor.

JC Vanetta discussed improvements along the northern part of 82<sup>nd</sup> as TriMet looks to extend the Red Line and improvements made during the FX-2 project.

Emerald Bogue discussed current construction underway at the airport and an improvement project planned on 82<sup>nd</sup> and Airport Way.

Julia Reed, PBOT, discussed the importance of 82<sup>nd</sup> Avenue, dangers of the street, highlighted partners in Building a Better 82<sup>nd</sup> Avenue, and the jurisdictional transfer agreement. She went on to discuss what transferred on June 1, 2022 and funding for 82<sup>nd</sup> Avenue transportation Improvements which includes, lighting, crossings, corridor safety improvements, paving, and signals. Julia Reed highlighted the future investment timeline, key outcomes, transportation-related community priorities, and support for community and small businesses.

**Discussion:**

Commissioner Shull asked if there are plans to put transmission lines underground.

Julia Reed explained that burying powerlines is being considered as an option moving forward.

Representative Pham explained that the emphasis on shade equity is something that they have heard echoed by constituents.

**Public Comment**

There was none.

**Next Steps**

Councilor Hwang gave a brief overview of the agenda for October's meeting.

There being no further business, co-chair Councilor Hwang adjourned the meeting at 6:00 p.m.

Respectfully submitted,

Stellan Roberts, 82<sup>nd</sup> Avenue Steering Committee Recorder

Attachments to the Public Record, 82<sup>nd</sup> Avenue Steering Committee meeting, September 12, 2022

Item	DOCUMENT TYPE	DOCUMENT DATE	DOCUMENT DESCRIPTION	DOCUMENT No.
1	Agenda	09/12/2022	09/12/2022 82 <sup>nd</sup> Avenue Steering Committee meeting agenda	09122282ASC-01
2	Document	09/12/2022	82nd Avenue Transit Project Steering Committee – Draft Charter	09122282ASC-02
3	Document	09/12/2022	82nd Avenue Transit Project Committee Structure - Draft	09122282ASC-03
4	Document	09/12/2022	82nd Avenue Transit Project map	09122282ASC-04

# Meeting minutes

Meeting: **82nd Avenue Steering Committee meeting**  
Date/time: Monday, December 14, 2022 | 4:00 p.m. to 6:00 p.m.  
Place: Virtual webinar meeting held via Zoom

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## **Members, Alternates Attending**

Councilor Duncan Hwang, Co-chair  
Councilor Christine Lewis, Co-chair  
Commissioner Mark Shull  
JC Vannatta  
Chris Warner  
Rian Windsheimer  
Robin Ye  
Zachary Lauritzen  
Kaitlyn Dey  
Leslie Lum

## **Affiliation**

Metro  
Metro  
Clackamas County  
TriMet  
Portland Bureau of Transportation  
Oregon Department of Transportation  
State of Oregon, House District 46  
Oregon Walks  
Clackamas Service Center  
Unite Oregon

## **Panelists Attending**

Elizabeth Mros-O'Hara  
Malu Wilkinson  
Kelly Betteridge  
Jessie Stemmler  
Jonathan Plowman  
Michael Kiser  
Julia Reed  
Stellan Roberts

## **Panelists Attending**

Metro  
Metro  
Metro  
TriMet  
TriMet  
TriMet  
Portland Bureau of Transportation  
Metro

## **Welcome and introductions** (Councilors Duncan Hwang, Metro and Christine Lewis, Metro)

Co-chair Councilor Christine Lewis, Metro called meeting to order at 4:00 p.m. and welcomed the attendees to the meeting. Councilor Lewis provided background on the importance of the 82<sup>nd</sup> Avenue corridor.

Committee members introduced themselves, noted their affiliation, and shared what they imagine a successful transit project on 82<sup>nd</sup> avenue would look like.

Co-chair Councilor Duncan Hwang, Metro walked through the agenda.

## **Updates on Project Efforts, Community Coalition Efforts, and Related Partner Work** (Elizabeth Mros-O'Hara, Metro)

Elizabeth Mros-O'Hara, Metro, updated committee members on important milestones that have happened since the precious steering committee meeting in September. Elizabeth highlighted the opening of TriMet's FX-2 line, work being done to understand existing conditions in the corridor as well as travel times, transit infrastructure roadway constraints, and community in the area. Elizabeth explained that the project team is working to summarize past engagement plans, looking at land use and transportation plans, and fleshing out a preliminary purpose and need that will come to the steering committee for feedback early next year.

Zachary Lauritzen, Oregon Walks, provided an update on the 82<sup>nd</sup> Avenue Community Coalition and Equitable Development efforts. Zachary discussed the work being done by the larger committee as well as with subcommittees made up of community members in the region.

Julia Reed, Portland Bureau of Transportation (PBOT), provided updates on work being done by PBOT in the region. Julia highlighted a recently completed community survey and explained that results will be shared in January, focus groups that are being developed to reach additional community members, PBOT will begin meeting with school communities in January, and working to directly communicate with business owners. Julia highlighted that Building a Better 82<sup>nd</sup> Avenue community advisory committee has recently been assembled and will be meeting every two months.

Rian Windsheimer, Oregon Department of Transportation (ODOT), highlighted that ODOT is continuing to work in partnership with the City of Portland on its Foster to Thompson project.

Michael Kiser, TriMet, explained that they have been working closely with Metro to create outreach and work plans to get to a locally preferred alternative (LPA) this summer.

Leslie Lum, Unite Oregon, highlighted work being done by Unite Oregon in partnership with Merci Corps Northwest on a small business training program and childcare training program along the 82<sup>nd</sup> avenue corridor.

Kaitlyn Dey, Clackamas Service Center, explained that the Clackamas Service Center is rearranging to re-open for indoor dining which could be used as an opportunity for more outreach to be done.

**Presentation: Consider Adopting Steering Committee Charter** (Elizabeth Mros-Ohara, Metro)

Elizabeth highlighted the Steering Committee members, the Committee structure, and the Committee's charges, which are, to represent the community, advance the project, and recommend transit LPA. Elizabeth summarized decision making protocols by discussing consensus decision making and discussed next steps.

**Discussion**

Commissioner Mark Shull, Clackamas County, expressed that himself and the Clackamas County planning staff has reviewed the steering committee charter and agree with it as written.

Seeing no further discussion Councilor Hwang asked steering committee members to vote on adopting the charter by displaying a green, yellow, or red object. Green meaning "I support this", yellow meaning "I have concerns that need to be addressed", or "I do not support this".

With unanimous agreement the charter was adopted.

**Presentation: FTA New Starts/Small Starts Context** (Kelly Betteridge, Metro)

Kelly discussed the Federal Transit Administration (FTA) Capital Investment Grant Program, the region's success in garnering discretionary federal funding, Small Starts and New Starts funding request eligibility, Small Starts and New Starts project design eligibility, FTA funding criteria, walked through a Small Starts and New Starts project roadmap.

**Discussion**

Zachary Lauritzen asked for more information on what a New Start or Small Start project might look like on 82<sup>nd</sup> Avenue.

Kelly responded by explaining that for New Starts over 50% of the corridor would need a Business Access and Transit (BAT) lane or other dedicated transit specific space, for a Small Starts project the requirement is to improve transit speed and reliability.

JC Vannatta, TriMet, asked about the project timeline.



Kelly explained the major hurdle that in order to move into project development they need to have enough funding committed to complete the project.

Director Chris Warner, PBOT, asked when the decision will be made between going with a Small Starts or New Starts recommendation.

Kelly responded by describing that this decision would be made before a locally preferred alternative is decided.

Zachary Lauritzen asked where additional funding for this project will come from.

Kelly explained that they do not know where all the funding will come from yet and that the region will have to work together to find funding from several different sources. She stated that is how the region has typically funded these types of projects.

Malu Wilkinson, Metro, agreed with Kelly and explained where funding came from with the Division Transit Project.

**Corridor Routing and Station Analysis and Process:** (Jonathan Plowman & Jessie Stemmler, TriMet)

Jonathan Plowman, TriMet, discussed why this investment is moving forward now, investments that the City of Portland is making, investments that ODOT has begun to make, and coordination with PBOT. Jonathan explained where Line 72 takes people, what parts of Line 72 are used the most, the importance of investing in 82<sup>nd</sup> Avenue transit, discussed Bus Rapid Transit (BRT), and BRT investment along 82<sup>nd</sup>.

Jessie Stemmler, TriMet, provided an overview on station platforms, discussed station improvements and amenities, how stop spacing effects travel times, existing stop spacing, station criteria, and next steps.

**Discussion**

JC Vannatta asked about the block length in this corridor.

Councilor Hwang asked why line 72 is the busiest line in the system.

Jessie explained that it is a line with multiple stop destinations and number of connection opportunities.

Director Warner asked about lessons learned for the consolidation of stops during the Division Transit Project and noted the importance of the northern terminus of Line 72.

Jessie responded by explaining that it is often easy to see the essential bus stops, but the insight gained from steering committees and from the community is critical to get the stop consolidation process correct.

Leslie Lum expressed discomfort around consolidating stops.

Kaitlyn Dey asked for more information about potential sidewalk improvements between Clatsop and Lindy stops, expressed concern about consolidating stops on line 72 and cutting service off from Killingsworth.

Jessie responded to Kaitlyn's concerns around stop consolidation by explaining that TriMet will be doing a deeper dive into stop spacing.

Michael Kiser, TriMet, explained that the intent is to not cut off the northern portion of line 72 but investment will have to be made to maintain the connectivity between the areas.

Zachary Lauritzen asked where most people who board the bus on 82<sup>nd</sup> are getting off and stressed the

importance of increasing walkability along the route if stops will be consolidated. Zachary followed up by asking what outcomes are expected from stop consolidation.

Michael explained that they are looking to complete a study so that they can understand riders' trips as part of the stop spacing evaluation. Michael responded to Zachary's second question by explaining that along the FX-2 line travel time decreased substantially since 2019 along comparable routes and highlighted that stop consolidation along 82<sup>nd</sup> Avenue are expected to significantly reduce travel times.

Elizabeth Mros-O'Hara explained that more information about markets and where people are travelling in future steering committee meetings.

#### **Public Comment**

Jacob Lobe with the 82<sup>nd</sup> Avenue Business Association, Montavilla Business Association, and the Montavilla Neighborhood Association expressed their hope for the bus to be used as a tool to get from one business to another within the district rather than just a way to get through the district. Jacob also discussed the benefits of fare-less transit in order to promote ridership.

#### **Next Steps**

Councilor Lewis discussed the potential for a steering committee project tour in January.

There being no further business, co-chair Councilor Lewis adjourned the meeting at 6:00 p.m.

Respectfully submitted,

Stellan Roberts, 82<sup>nd</sup> Avenue Steering Committee Recorder

Attachments to the Public Record, 82<sup>nd</sup> Avenue Steering Committee meeting, December 14, 2022

Item	DOCUMENT TYPE	DOCUMENT DATE	DOCUMENT DESCRIPTION	DOCUMENT No.
1	Agenda	12/14/2022	12/14/2022 82 <sup>nd</sup> Avenue Steering Committee #2 meeting agenda	12142282ASC-01
2	Document	12/14/2022	82nd Avenue Transit Project Steering Committee – Factsheet	12142282ASC-02
3	Document	12/14/2022	Study Map Area	12142282ASC-03
4	Document	12/14/2022	82nd Avenue Transit Project Steering Committee – Draft Charter	12142282ASC-04
5	Document	12/14/2022	Meeting Protocols and Proposed Decision Making Procedures	12142282ASC-05
6	Document	12/14/2022	PBOT Building a Better 82 <sup>nd</sup> Ave.	12142282ASC-06

## 82nd Avenue Transit Project

# DRAFT Initial Purpose and Need Statement

### BACKGROUND

The 82nd Avenue corridor is a major route for the region connecting key destinations and communities in Clackamas County and Portland, Oregon and supporting the movement of people and goods in a diverse and growing area. The corridor disproportionately serves BIPOC, limited English proficiency, and low-income communities. 82nd Avenue was once the primary north-south highway for the area before the Interstate 205 was opened in 1983. Since then, the primary function of 82nd Avenue as a regional thoroughway has diminished, but its importance as a transit and pedestrian corridor has grown. The roadway continues to carry significant freight, auto, and bus traffic.

TriMet's Line 72 Killingsworth/82 serves the 82nd Avenue corridor and is the highest ridership bus line in TriMet's system<sup>1</sup>, exceeding that of the Orange or Yellow Max light rail lines. However, unlike light rail transit, the bus runs in mixed traffic and is often delayed. Line 72 is a frequent service route connecting riders to major destinations, high-capacity transit lines (the new Division FX2 and the MAX Green, Blue, and Red Lines), and over 20 bus routes just in the corridor. It is a workhorse with high ridership all day and weekends and saw relatively high retention of riders during the pandemic.

The 2010 High Capacity Transit (HCT) System Plan, the 2018 Regional Transportation Plan (RTP), and the 2018 Regional Transit Strategy all call for a major transit investment in the corridor. The 2018 RTP identified the corridor for transit. In 2019, Metro's Transportation Funding Task Force selected 82nd Avenue as a Tier 1 priority to include a bus rapid transit project.

The need is urgent with an unprecedented opportunity for an 82nd Avenue bus rapid transit project to leverage and complement a \$185 million investment that the City of Portland, the State of Oregon, and regional partners are making as part of the 82nd Avenue jurisdictional transfer. These investments provide the opportunity to transform and reimagine the corridor to improve safety and pedestrian facilities in conjunction with high-quality, frequent, reliable Bus Rapid Transit service. The City of Portland and ODOT are already making near-term safety, paving, and maintenance fixes that will improve access to transit. A second phase of that work is underway through the City's Building a Better 82<sup>nd</sup> Avenue program to identify additional improvements within Portland for the corridor that are being coordinated closely with the transit project.

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<sup>1</sup> The Line 72 continues west of 82<sup>nd</sup> Avenue to Swan Island. However, the 82<sup>nd</sup> Avenue segment accounts for 77 percent of rides (2022) and 82 percent of the passenger delay (2019).

## PURPOSE

The purpose of the 82nd Avenue Transit Project is to improve transit speed, reliability, capacity, safety, comfort, and access on 82nd Avenue, which is one of the most important transit corridors in the region. The project seeks to address the needs of people who live, work, learn, shop, and travel within the corridor both today and in the future – in particular, BIPOC and low-income individuals – through context-sensitive transit improvements in a constrained corridor.

## NEED

The 82nd Avenue Transit Project would address four major needs in the corridor:

1. **Transit speed and reliability:** need to provide faster and more reliable transit service to improve access to destinations and the ability for people to rely on transit to meet their needs
2. **Constrained corridor:** need to serve the high travel demand in a constrained corridor
3. **Safety:** need to improve safe access to transit and bus stop amenities in a high injury corridor
4. **Transit-dependent communities:** need to provide safe, accessible, efficient, and reliable transit service to meet the needs of the high concentration of communities who rely on transit

The following subsections provide more information on each need.

### Transit speed and reliability

Line 72 has slow travel times and reliability issues which reduce travelers' ability to access destinations, make transit transfers, and plan trips. Travel times and reliability are cited as key reasons people choose not to ride transit<sup>2</sup>.

82nd Avenue is extremely busy with high volumes of cars<sup>3</sup>, freight, and bus traffic on weekdays and weekends. The Line 72 runs in mixed traffic with little transit priority and is subject to daily congestion, which is worst in the midday and evenings. Line 72 travel time variability and lengths are increased by the many signals, frequent bus stops, and long bus dwell times. Current bus stop spacing is very close together (every 850 feet on average) which is closer than TriMet's current spacing standards (1,500 feet apart). Consequently, average bus travel time is 12 miles per hour and run times vary significantly by time of day. A northbound trip from Clackamas Town Center to Cully Boulevard takes 53 percent longer (21 minutes) during the evening rush hour compared to early morning (see Table 1). In addition, transit travel times are approximately twice as long as driving during the evening peak hour (see Table 2).

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<sup>2</sup> <https://www.ecolane.com/blog/7-reasons-why-people-stop-using-public-transit>

<sup>3</sup> Average daily traffic counts in 2019 ranged between 14,000 and 31,000 vehicles in different segments

**Table 1. Bus travel time by time of day, in minutes (Fall 2019 average weekday)**

Direction	Early AM	AM peak	Midday	PM peak	PM peak delay (vs. early AM)
Northbound (CTC > Cully)	40	48	54	61	21
Southbound (Cully > CTC)	46	51	57	59	13

CTC = Clackamas Town Center

Source: TriMet 2019

**Table 2. PM peak travel time difference between driving and bus\***

Direction	Car travel time	Bus travel time	Difference (minutes)	Difference (%)
Northbound	31	61	30	97%
Southbound	30	59	29	97%

Source: Based on Regional Integrated Transportation Information System/INRIX travel time data from 2019 PM peak period compared with 2019 Line 72 travel times.

Line 72 has the highest cumulative passenger travel delay<sup>4</sup> of any bus route in the TriMet system. The 82<sup>nd</sup> Avenue portion of the line accounts for 82 percent of the delay. The average delay per bus trip is approximately 15 minutes resulting in an average of 22 hours of cumulative passenger delay per trip. Cumulative passenger delay accounts for the number of passengers subject to the delay.

Transit travel times are projected to increase by 2040, especially in the evening peak period. Comparing 2022 to 2040 between Alberta Street and 82<sup>nd</sup> Avenue in the northern part of the terminus and Clackamas Town Center bus travel times are expected to increase between 22 and 24 percent in the PM peak period.

**Table 1. Projected growth in bus travel time (2021 versus 2040)**

Direction	2021 Travel Times		2040 Travel Times		Difference minutes (%)	Difference Minutes (%)
	AM peak	PM peak	AM Peak	PM peak	AM peak	PM peak
Northbound (CTC > Alberta)	40	49	44	61	4.4 (11%)	12 (24%)
Southbound (Alberta > CTC)	38	47	41	57	3.2 (9%)	10 (22%)

Source: DKS calculated based on Synchro/SimTraffic models and validated with existing Line 72 travel times

Note: travel times are rounded

### Constrained corridor

82<sup>nd</sup> Avenue is a high-demand corridor for all travel modes but is constrained by limited right-of-way and development adjacent to the roadway. This condition makes adding travel lanes for car traffic an unlikely option. To accommodate future growth and meet the region's climate change goals, more trips will need to be made on transit, which can carry more people than cars in the

<sup>4</sup> Delay is defined as the difference between the 80<sup>th</sup> percentile and 20<sup>th</sup> percentile run time. These numbers are based on TriMet 2019 data.



same space. The corridor study area includes approximately 69,000 people and 45,000 jobs in 2015 which is anticipated to grow to 94,000 people and 66,000 jobs in 2040.<sup>5</sup>

Today, there is insufficient capacity to accommodate anticipated growth in travel demand. The MAX Green Line operates parallel to 82nd Avenue but serves regional trips and would not be able to support local trips and destinations directly along 82nd Avenue. Increased frequency of service, faster travel times and larger vehicles are all strategies that would increase the transit carrying capacity.

## **Safety**

The 2018 Regional Transportation Safety Strategy (RTSS) identified 82nd Avenue as a regional high injury corridor<sup>6</sup>, and the City of Portland identified 82nd Avenue as part of its high-crash network. According to the RTSS, 82nd Avenue had the tenth highest rate of serious crashes<sup>7</sup> per mile out of the 181 corridors identified. Crash data for the six-year period from 2015 through 2020 for the full length of the corridor showed 2,698 injury crashes, of which 15 resulted in a fatality.<sup>8</sup> Pedestrian and bicycle crashes are over-represented in more serious crashes, making up two-thirds of fatal crashes and approximately one-quarter of serious injury crashes. Many pedestrian crashes are happening near transit stops.

All transit riders are pedestrians for some part of their trip. Infrastructure is essential for a safe pedestrian environment. The corridor has many missing and substandard sidewalks, limited safe crossing locations and no continuous, protected bicycle facilities. Signalized pedestrian crossings are spaced on average over 1,000 feet apart. Within the City of Portland over half of the sidewalk ramps are not Americans with Disabilities Act compliant. In addition, the lighting along the corridor is inconsistent making pedestrians less visible to drivers.

## **Transit-dependent communities**

The 82nd Avenue corridor is one of the most diverse parts of our region. It serves many BIPOC communities, limited English proficiency speakers, and low-income communities. It contains seven census tracts identified as areas of persistent poverty by the U.S. Department of Transportation and car ownership is lower than the regional average through much of the corridor. In addition, most of the corridor has been identified as being Equity Focus Areas due to high concentrations of people of color, low-income people, and and/or people with limited English proficiency. There are census tracts with some of the highest BIPOC concentrations in the state. Thirty-two percent of the population is low income compared to 24 percent for the regional average; and 11 percent of the population has limited English proficiency compared to 8 percent of the region<sup>9</sup>. These groups are more likely to depend on transit for their daily needs than the general population.

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<sup>5</sup> Study area is half-mile from 82<sup>nd</sup> Avenue and includes the area around Clackamas Town Center in the south and the four potential termini in the north. Source: MetroScope, Metro Oregon.

<sup>6</sup> Metro. [High Injury Corridors & Intersections Report](#). April 2017.

<sup>7</sup> Serious injuries = fatalities and incapacitating injuries

<sup>8</sup> ODOT. 2015-2020.

<sup>9</sup> Source: 2016-2020 American Community Survey

Transit travel time and reliability are equity issues for people that need to be at work or other places on time. BIPOC, low-income people, and women are more likely to fill “essential worker” jobs requiring workers to be in-person with a fixed start time. Consequently, these groups are more likely to have a longer commute and often need to take an early bus to avoid being late. In addition, ridership on the Line 72 is higher mid-day than in the morning peak hour. This generally indicates that a lot of trips are for other needs than a typical “8 to 5” commute rather being used by people trying to get to appointments, school, and essential jobs that have later start times. In addition, the Line 72 had the third highest ridership retention rate among TriMet’s frequent service lines in Spring 2022 relative to Fall 2019 (pandemic drop), demonstrating its importance as an essential transit service line.

Bus stop area infrastructure and amenities are lacking in the corridor making it less safe and comfortable to access transit. The stop area infrastructure includes narrow, aging, or missing sidewalks in many places; poor and inconsistent lighting; and bus stops closer than TriMet’s standards. Along 82nd Avenue, 36 percent of bus stops have shelters, 57 percent have seating, 65% have signalized crossings nearby, and only 83% have lighting. Respondents to the City of Portland’s Building a Better 82<sup>nd</sup> Avenue conducted in 2022, stated desire for improved bus stop quality, access to bus stops, better transfers, and shorter wait times.



# **82nd Avenue Transit Project**

## **Draft Purpose & Need and Draft Goals & Objectives**

**Elizabeth Mros-O'Hara, Metro**

**Steering Committee Meeting**

February 23, 2023

# **Agenda -*Getting Agreement on Desired Outcomes***

## **1. Review Draft Purpose and Need**

- Walk through Draft Purpose and Need
- Review existing conditions that demonstrate the need
- Steering Committee discussion

## **2. Review Draft Goals and Objectives**

- Walk through Draft Goals & Objectives
- Steering Committee discussion

## **3. Next Steps**

- Staff will make revisions based on feedback
- Staff will bring revised documents back to the Steering Committee to consider for adoption in March

# Draft Purpose

The purpose of the 82nd Avenue Transit Project is to improve transit speed, reliability, capacity, safety, and access on 82nd Avenue, which is one of the most important transit corridors in the region. The project seeks to address the needs of people who live, work, learn, shop, and travel within the corridor both today and in the future – in particular, BIPOC and low-income individuals – through context-sensitive transit improvements in a constrained corridor.



# Draft Need

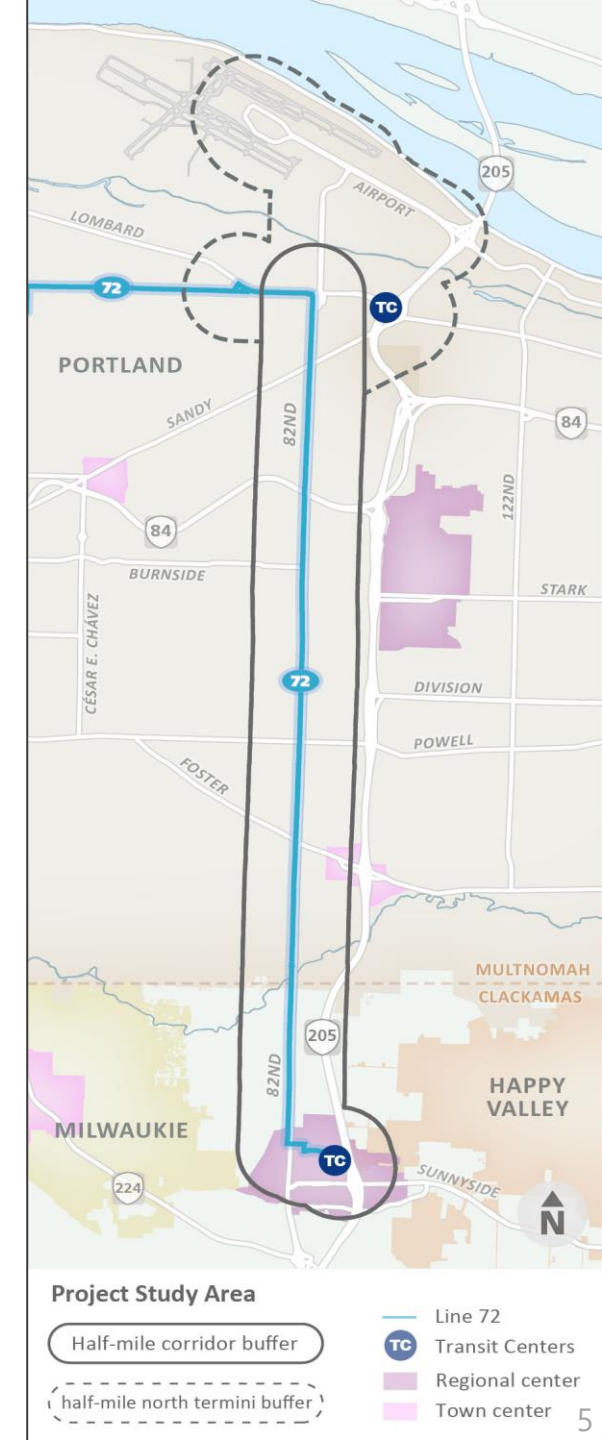
**The 82nd Avenue Transit Project would address four major needs in the corridor:**

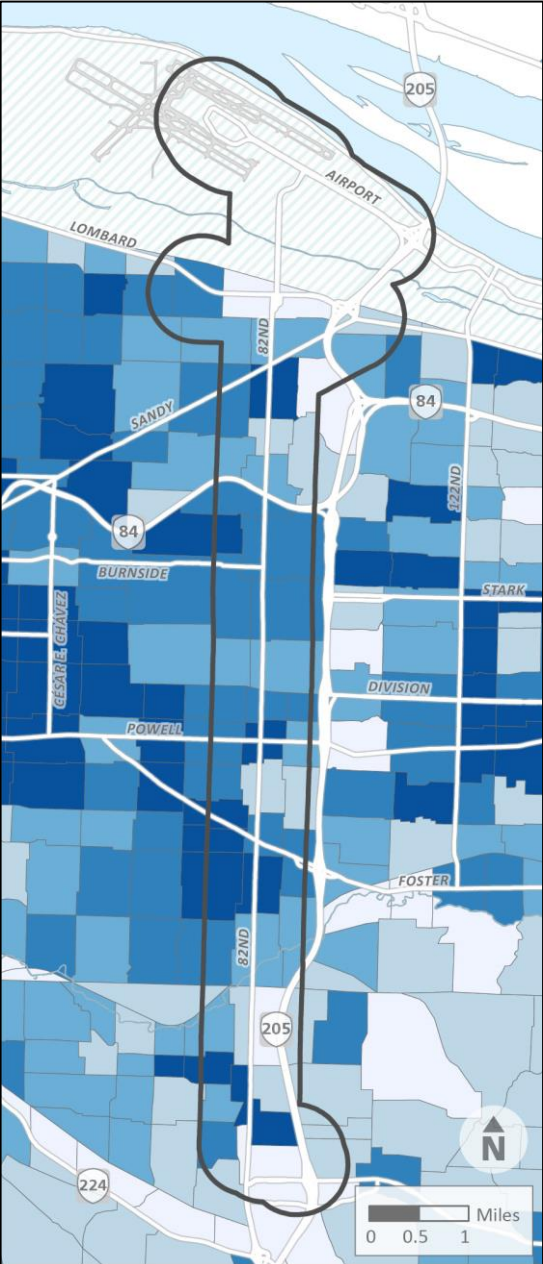
- **Transit-dependent communities:** need to provide safe, accessible, efficient, and reliable transit service to meet the needs of the high concentration of communities who rely on transit
- **Safety:** need to improve safe access to transit and bus stop amenities in a high injury corridor
- **Transit speed and reliability:** need to provide faster and more reliable transit service to improve access to destinations and the ability for people to rely on transit to meet their needs
- **Constrained corridor:** need to serve the high travel demand in a constrained corridor



# Study Area – Existing Conditions

- Half mile buffer from Clackamas TC to Lombard, plus the four potential terminus locations
  - Most people will walk ½ mile to high quality transit
  - Indicates who could directly benefit and how the corridor compares to the region
- Includes multiple neighborhoods, regional and town centers, the 7-mile Civic Corridor, and parts of two counties
  - Where people are traveling to and from (travel markets)
  - Connections in the transit system





**Transit-dependent communities:** need to provide safe, accessible, efficient, and reliable transit service to meet the needs of the high concentration of communities who rely on transit

**Population and employment in the corridor is high and growing**

- Nearly 70,000 people (4% of the region)
- Between 47,000 – 62,000 jobs (5-7% for the region)
- Anticipated to grow at substantially and faster than the region

**The corridor includes populations that are more likely to rely on transit than the general population**

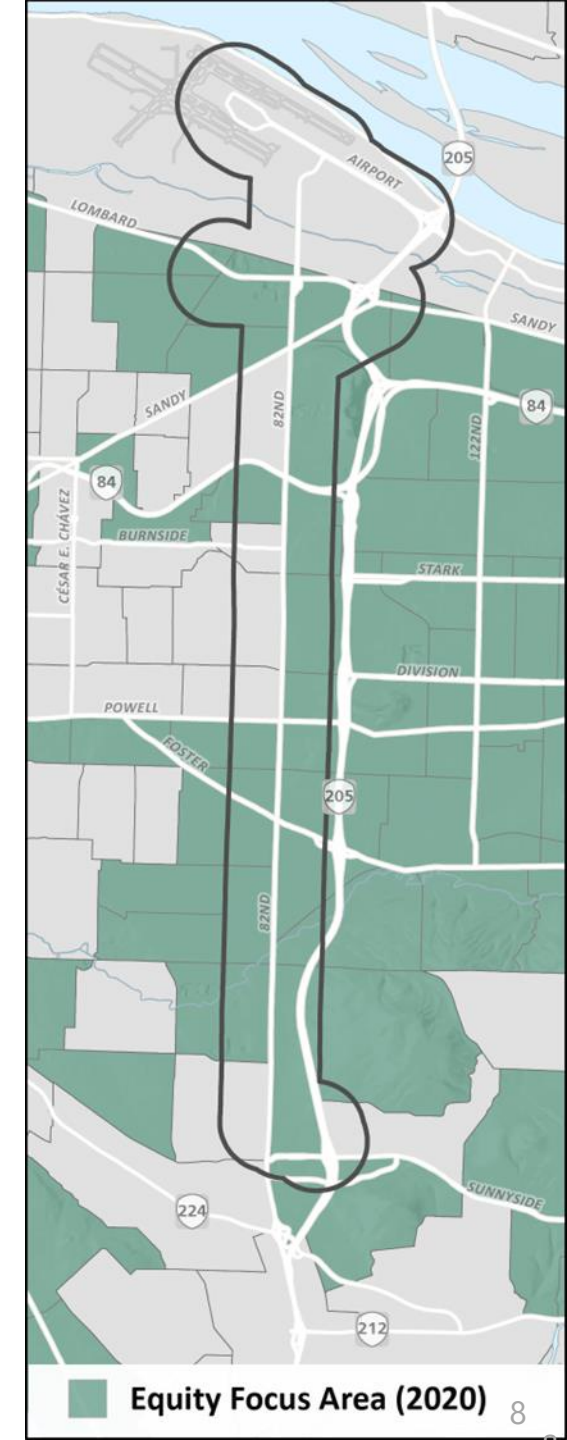
- Equity Focus Areas (BIPOC, Low Income, and Limited English Proficiency)
- Persons with a disability
- Zero car households
- Certain housing populations

# Equity Focus Areas

**Equity Focus Areas:** Metro's composite of areas with relatively higher share of people of color, people earning low incomes, or people with limited English proficiency. Must meet a density threshold for at least one of the populations

## Most of the corridor is in an Equity Focus Area

- BIPOC populations along the entire corridor (some census tracts exceeding 50% BIPOC)
- Low-income populations are much higher than regional average and than both counties and located throughout
- Limited English (11% compared to 8% average for the region)



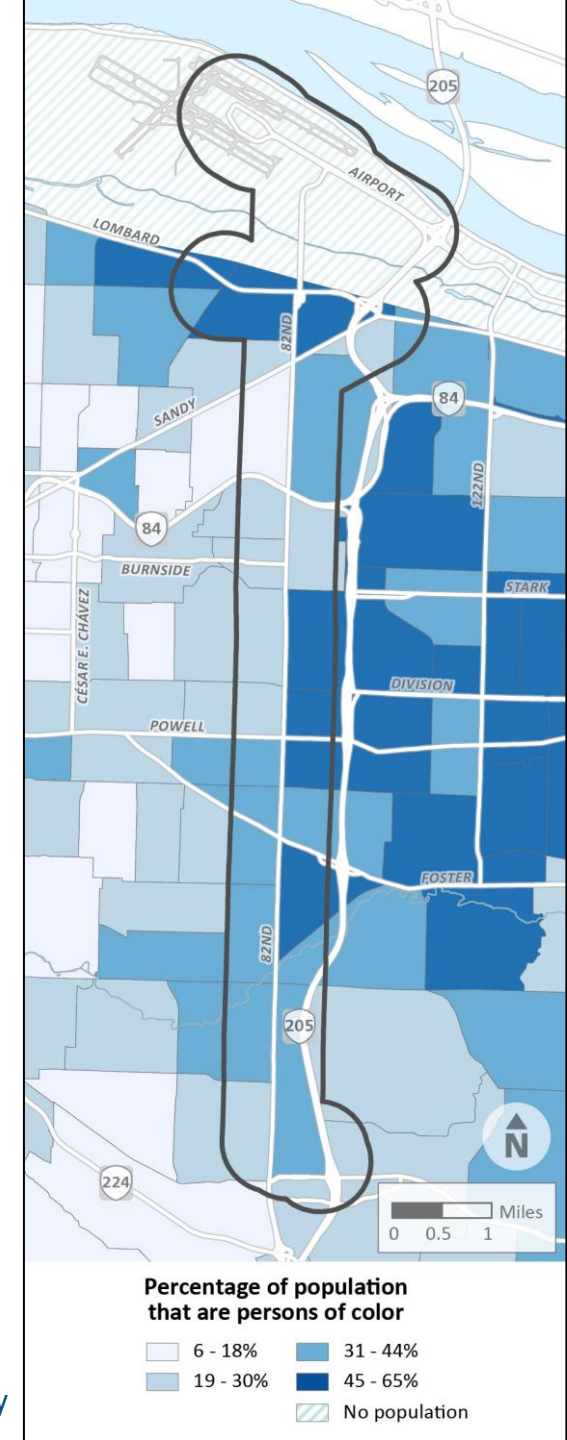
# BIPOC & LEP Populations

**BIPOC populations are located along the entire corridor**

- Includes some of the most diverse census tracts in our region exceeding 50% BIPOC
- Clackamas County percent is high compared to general county population
- Nearly 26,000 total BIPOC residents

**Limited English proficiency populations very high**

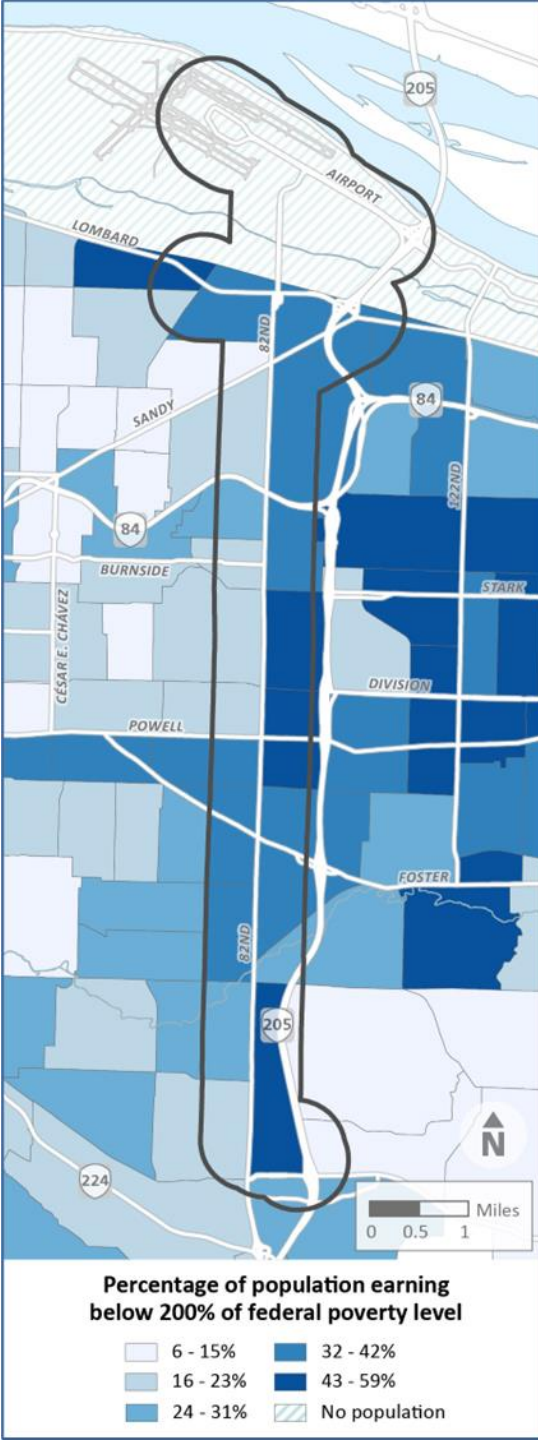
- 11% compared to 8% for the region and 4% for Clackamas Co
- Diversity of Languages





# Low-income Populations (200% federal poverty level)

- Low-income populations are distributed throughout the corridor
- Majority of tracts exceed the regional average – some exceed 50%
- Rate is 1/3 higher rate than the regional average (32% versus 24%)
- Over 21,000 low-income residents



# Other Community Characteristics

## Zero vehicle households

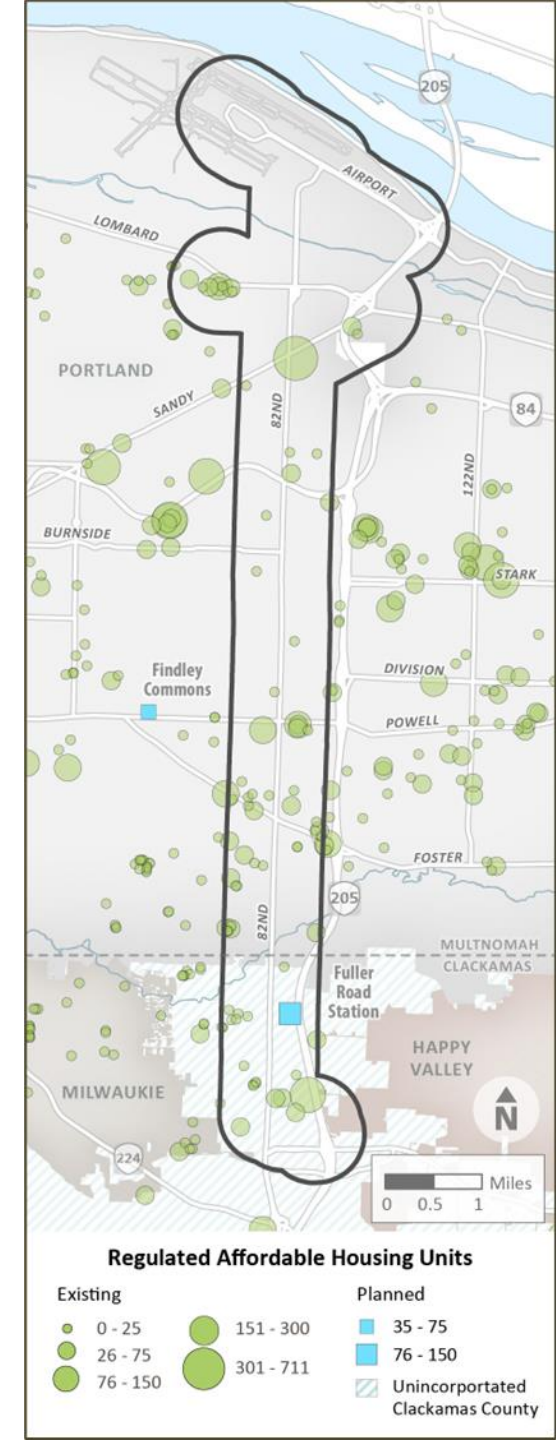
- Higher than regional average and double Clackamas County (11% v. 5%)
- Indicator of transit dependence

## Disabled Populations

- 13-14% of the corridor population compared to 11% regionally
- Shows need for quality investments in curb cuts, lighting, sidewalks, crossings.

## Housing

- The corridor contains over 2,000 regulated affordable housing units
- Lower vacancy rate, lower ownership, and higher renter rates than region





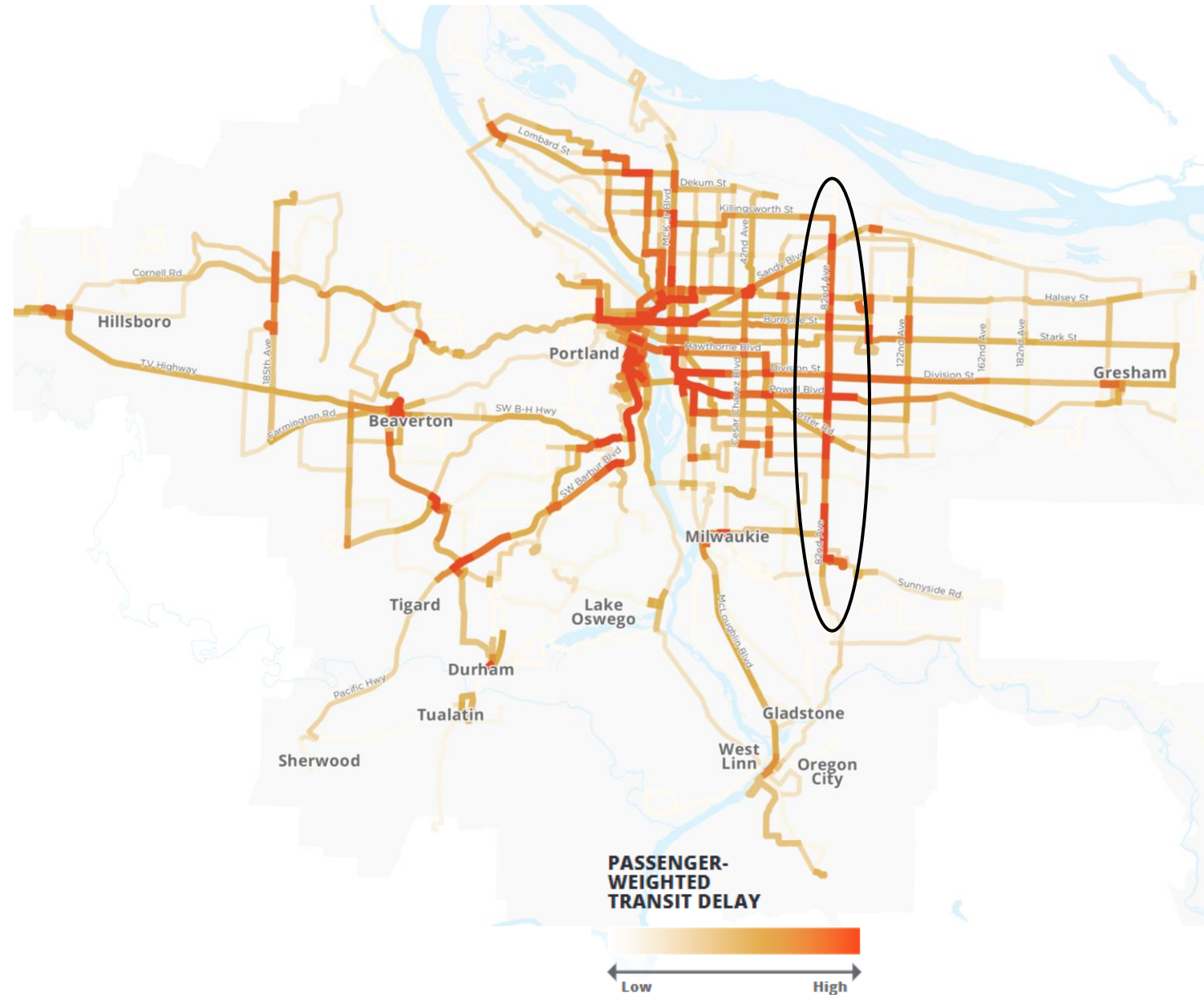
# Summary

- Population and employment data demonstrate densities to support high-capacity transit now and in 2040
- Equity considerations are high for the corridor – majority of the corridor falls in an Equity Focus Area
- Groups that are more likely to be transportation disadvantaged and to rely on transit are located throughout the corridor
- Demographics demonstrate a need for culturally-specific outreach with multiple languages
- Demand for transit is high now and demand is likely to grow with project growth in population and employment

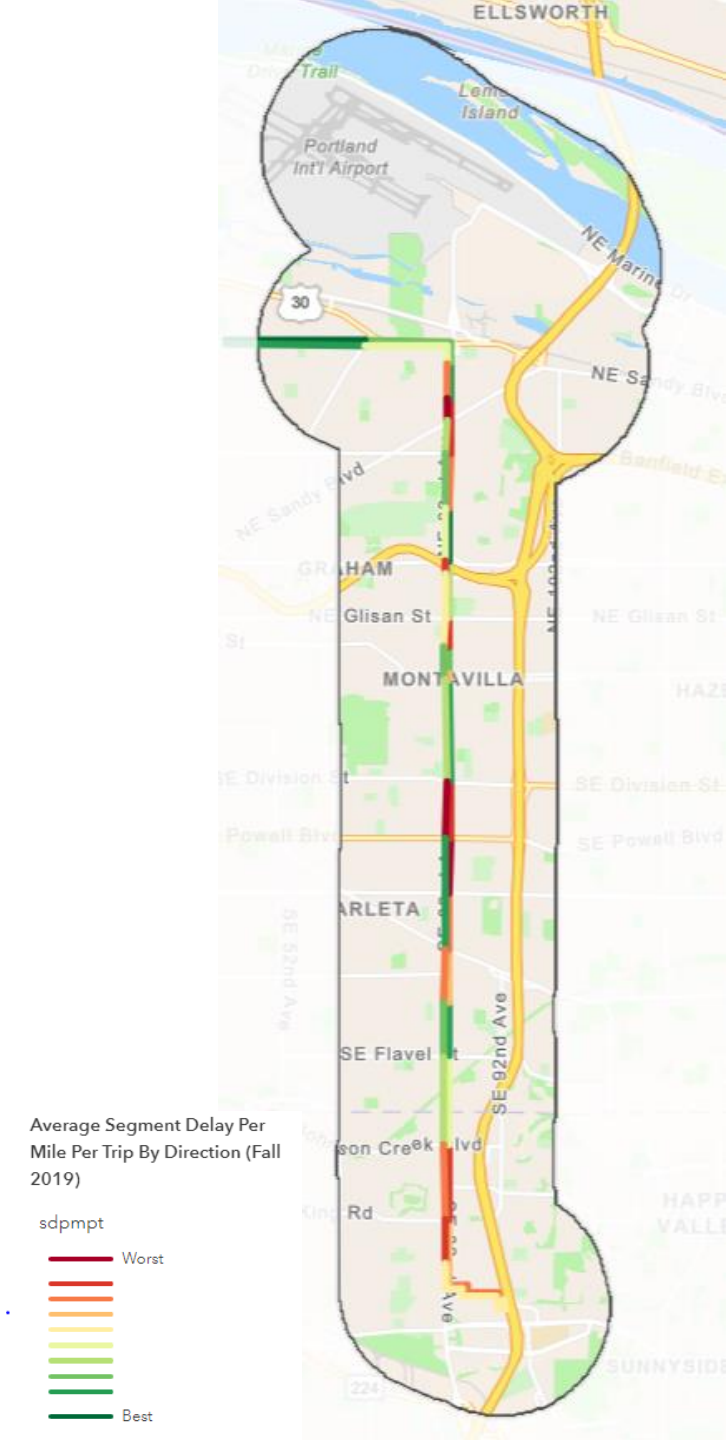
# The Need

**Transit speed and reliability:** need to provide faster and more reliable transit service to improve access to destinations and the ability for people to rely on transit to meet their needs.

- **What affects transit speed & reliability today?**
  - Traffic congestion
  - Bus stop activity (deceleration, dwell, acceleration)
  - Street design & operations



- Line 72 experiences the **most passenger delay** in the TriMet network
  - The 82<sup>nd</sup> Ave portion accounts for most of the passenger delay (82%)
- Transit travel times are **significantly longer** than auto travel times, and less reliable - *about twice as long during rush hour*
- **Northbound** delay is *generally* worse than Southbound
- Transit speed & reliability is **worse in the afternoons and evenings**
- Unlike many corridors, there are significant speed/reliability issues on **weekends, especially near major retail** (Jade District, Clackamas County)
- **Powell & Division** are currently the worst pain points in the corridor, and will continue to get worse as traffic congestion increases
  - Delay at one intersection can cascade for long distances along the corridor as queues build



# What does it mean for riders?

- **Equity considerations**
  - Having to take the early bus to be on time
  - Essential workers, students, medical and other appointments more impacted
- **Stress and quality of life**
- **Desire to switch to driving**

# Predicted to get worse

- Transit travel times are projected to increase, especially during the evening peak period
- Between Alberta Street and Clackamas Town Center bus travel times are expected to increase between 22 and 24 percent in the PM peak period

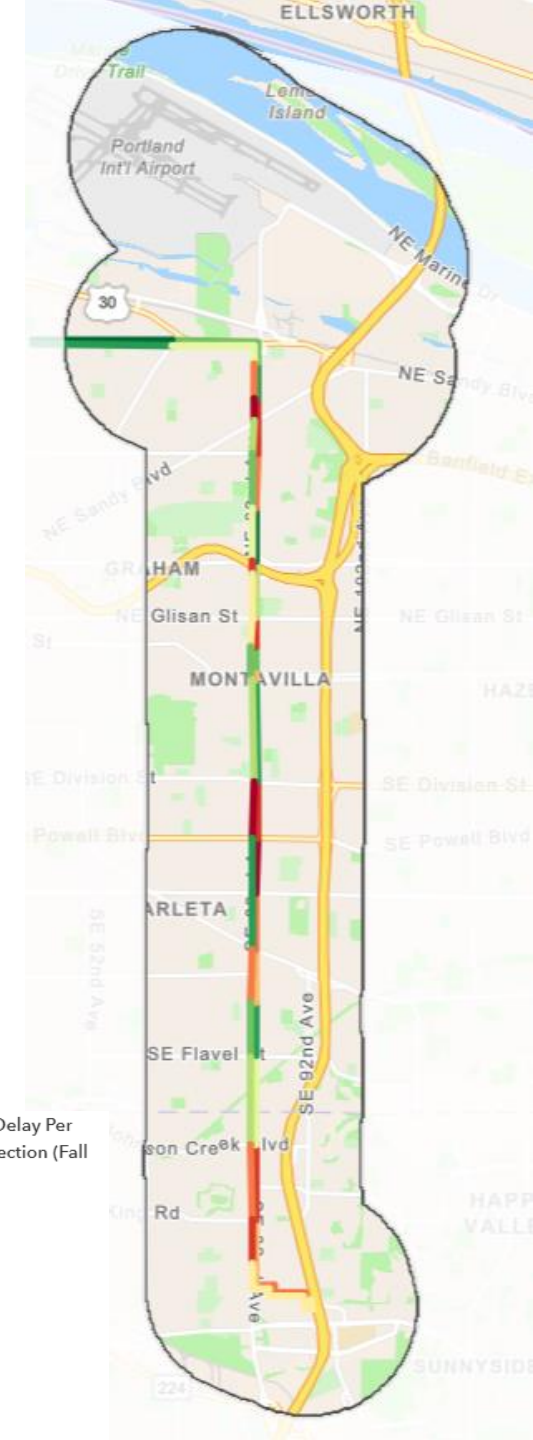
## Projected growth in bus travel time (2021 to 2040)

Direction	2022 Travel Times		2040 Travel Times		Difference minutes (%)	Difference Minutes (%)
	AM peak	PM peak	AM Peak	PM peak	AM peak	PM peak
Northbound (CTC > Alberta)	40	49	44	<b>61</b>	4.4 (11%)	<b>12 (24%)</b>
Southbound (Alberta > CTC)	38	47	41	<b>57</b>	3.2 (9%)	<b>10 (22%)</b>

Source: DKS based on Synchro/SimTraffic models and validated with existing Line 72 travel times.  
(Note: travel times are rounded)

Average Segment Delay Per  
Mile Per Trip By Direction (Fall  
2019)

sdpmpt



# The Need

**Constrained Corridor:** need to increase transit capacity to serve the high travel demand in the corridor

- **Higher boardings than any other bus route and two MAX lines (Orange/Yellow)**
- 9,743 daily boardings (in 2019) from Killingsworth/Cully to Clackamas Town Center Transit Center account for **~75% of Line 72 boardings**

## Route Ridership Report

## Weekdays

Route	Spring 2022						
	Boarding Rides	Rides Revenue Hour	Rides Vehicle Hour	Cost Per Ride	Passenger Miles	Passenger Miles Per Revenue Mile	Avg. Trip Length
MAX Blue Line	23,150	83.1	66.8	\$6.85	156,696	29.7	6.8
MAX Green Line	10,260	91.5	67.2	\$6.81	45,877	23.7	4.5
MAX Orange Line	4,880	68.6	49.9	\$9.16	23,214	20.7	4.8
MAX Red Line	10,960	82.2	65.8	\$6.95	65,702	24.8	6.0
MAX Yellow Line	6,840	97.1	70.0	\$6.53	22,823	22.7	3.3
72-Killingsworth/82nd Ave	8,500	30.5	23.5	\$5.26	24,825	7.1	2.9
20-Burnside/Stark	6,610	26.2	20.3	\$6.09	27,053	7.5	4.1
9-Powell Blvd	4,980	25.6	18.7	\$6.62	17,264	7.0	3.5
75-Cesar Chavez/Lombard	4,960	24.5	20.1	\$6.15	16,108	5.9	3.2
57-TV Hwy/Forest Grove	4,510	31.4	23.2	\$5.34	20,373	8.5	4.5
2-Division	4,470	22.7	17.5	\$7.07	14,794	6.3	3.3

Source: TriMet Spring 2022 Route Ridership Report



# Transit demand is high

- Line 72 features the **highest bus ridership** in the TriMet network
  - The 82<sup>nd</sup> Ave portion accounts for most of the ridership (75%)
  - Highest ridership on both weekdays and weekends
- Ridership has rebounded since the pandemic at a quicker rate than other routes. It has **come back stronger in the Clackamas County** portion than the City of Portland segment
- **Mid-day ridership is high on both weekdays and weekends**, indicating higher prevalence of non-“9-5” commute trips (i.e. shopping trips, school, appointments, etc.)
- Ridership is high at stops located at **transfer points**, especially near frequent service lines
  - Connects to over 20 bus routes and 3 Max Lines in the corridor
- Pedestrian demand is high for transit riders and others

# Travel demand for all modes

- **Auto demand is high on 82<sup>nd</sup> Avenue**
  - Daily traffic counts --over 20,000 vehicles per day in most sections with the busiest section of 31,400 between Washington and Division (2019)
  - Anticipated to grow
- **Major freight route** – lots of destinations
- **Competing priorities** demonstrated by Portland TSP
  - Major Transit Priority Street, Major City Traffic Street, Major Emergency Response Route (highest), Civic Main Street/Civic Corridor/Regional Corridor, City Bikeway, Major City Walkway (highest), Major Truck Street



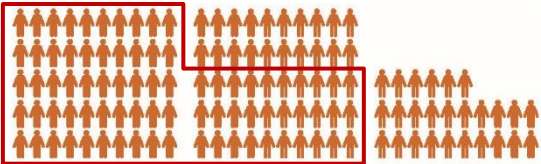
# Space is limited

- **Existing Street width** is typically **56'-60'** allows for a maximum of **5 “lanes”** (combination of traffic, transit, turn lanes/medians)
- Many locations have **buildings at or close to sidewalk**; widening not feasible or acceptable in many cases.
- Widening would lengthen pedestrian crossings -safety concern.
- Left-turn lanes are needed to keep traffic from routing through the neighborhood.
- Transit can carry more people in the same space as cars
  - Bus vehicle capacity – 51 to 114
  - Auto capacity – typically 1.2 people, 4-8 max

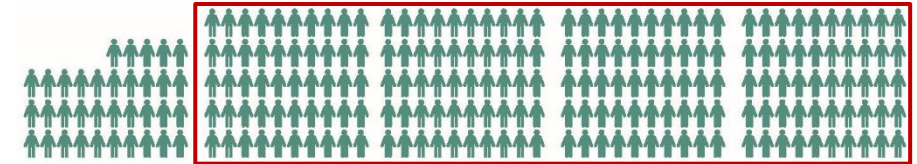


# Why Transit Capacity Matters

**126 People** move through this roadway during each light cycle. **80 in transit.**



**235 People** on a road with transit-only lanes move through this roadway during each light cycle. **204 in transit.**



# Summary

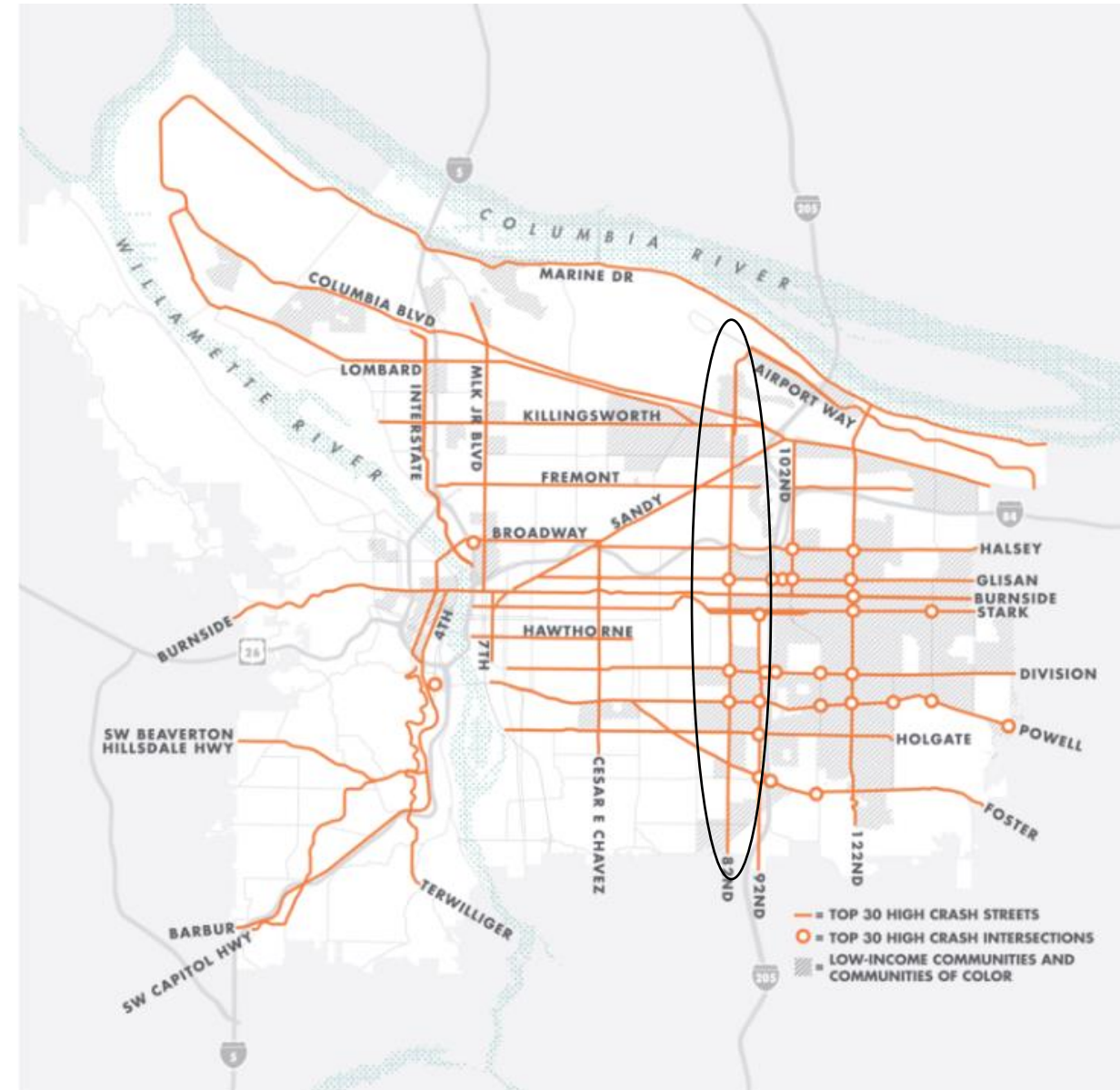
- **Travel demand on 82nd is very high for multiple modes of travel**
  - Highest ridership bus in the region but is stuck in traffic
  - Autos, freight, and transit all rely on it as a major thoroughfare
  - Travel demand is forecast to increase
- **Constrained right-of-way on 82nd Avenue**
  - 56-60 feet wide, sidewalks too narrow in places and buildings near the roadway
- Can not expand the footprint to add travel lanes without major impacts
- Transit can be a tool to move more people in the same space with priority treatments

# The Need

**Safety:** need to improve safe access to transit and bus stop amenities in a high injury corridor

- 82<sup>nd</sup> Ave is both a **Metro's High Injury Corridor network** (including Clackamas Co segment) and **City of Portland High Crash Network Street**
- Contains 3 of the top crash intersections:
  - Glisan\*
  - Division\*
  - Powell

*\*(also in top 1% of regional high injury intersections)*







# Summary

- **Safe pedestrian access** to transit is an important contributor to transit use and comfort for riders
- 82<sup>nd</sup> Ave is one of the **highest crash and highest injury corridors** in the region
- **Most fatalities along the corridor have been pedestrians or cyclists** within the past 5 years, showing a strong need to improve safety for vulnerable road users across the corridor
- **Crossing improvements planned by PBOT and ODOT** will improve safe access to existing stops, but some gaps will remain
- **Sidewalk quality varies** throughout the corridor, but is generally best between Division and Holgate and worst in the northern part of Clackamas County
- **Lighting in the corridor varies** making it difficult for drivers to see pedestrians and bicyclists

# Steering Committee Discussion- questions, comments, feedback

The purpose of the 82nd Avenue Transit Project is to improve transit speed, reliability, capacity, safety, and access on 82nd Avenue, which is one of the most important transit corridors in the region. The project seeks to address the needs of people who live, work, learn, shop, and travel within the corridor both today and in the future – in particular, BIPOC and low-income individuals – through context-sensitive transit improvements in a constrained corridor.

**Transit speed and reliability:** need to provide faster and more reliable transit service to improve access to destinations and the ability for people to rely on transit to meet their needs

**Constrained corridor:** need to serve the high travel demand in a constrained corridor

**Safety:** need to improve safe access to transit and bus stop amenities in a high injury corridor

**Transit-dependent communities:** need to provide safe, accessible, efficient, and reliable transit service to meet the needs of the high concentration of communities who rely on transit

# Articulating what we want to achieve

## Goals and Objectives

- Clarify what the regional partners agree that the project should be trying to achieve
- Goals are broad desires
- Objectives are related to the goals and set a clear understanding of how to reach the Goal
- There is a tension between different goals that require us to balance
  - Access to destinations and travel time



# Draft Goals & Objectives

Show document for discussion

# Serving the People





# **82nd Avenue Transit Project Station Investment & Placement**

**Jesse Stemmler**

**Jonathan Mosteiro**



**Steering Committee Meeting**

**February 23, 2023**





# OVERVIEW

- Existing Corridor & Stop Conditions
- Station Investment
- Station Placement - Analysis & Methodology
- Feedback on Analysis & Methodology
- Questions/Discussion

# Line 72 – A Transit Workhorse for our Community

**Highest Ridership Bus Line** - 10,000 daily trips (More than Yellow & Orange MAX lines)

**Major Transit connections:**

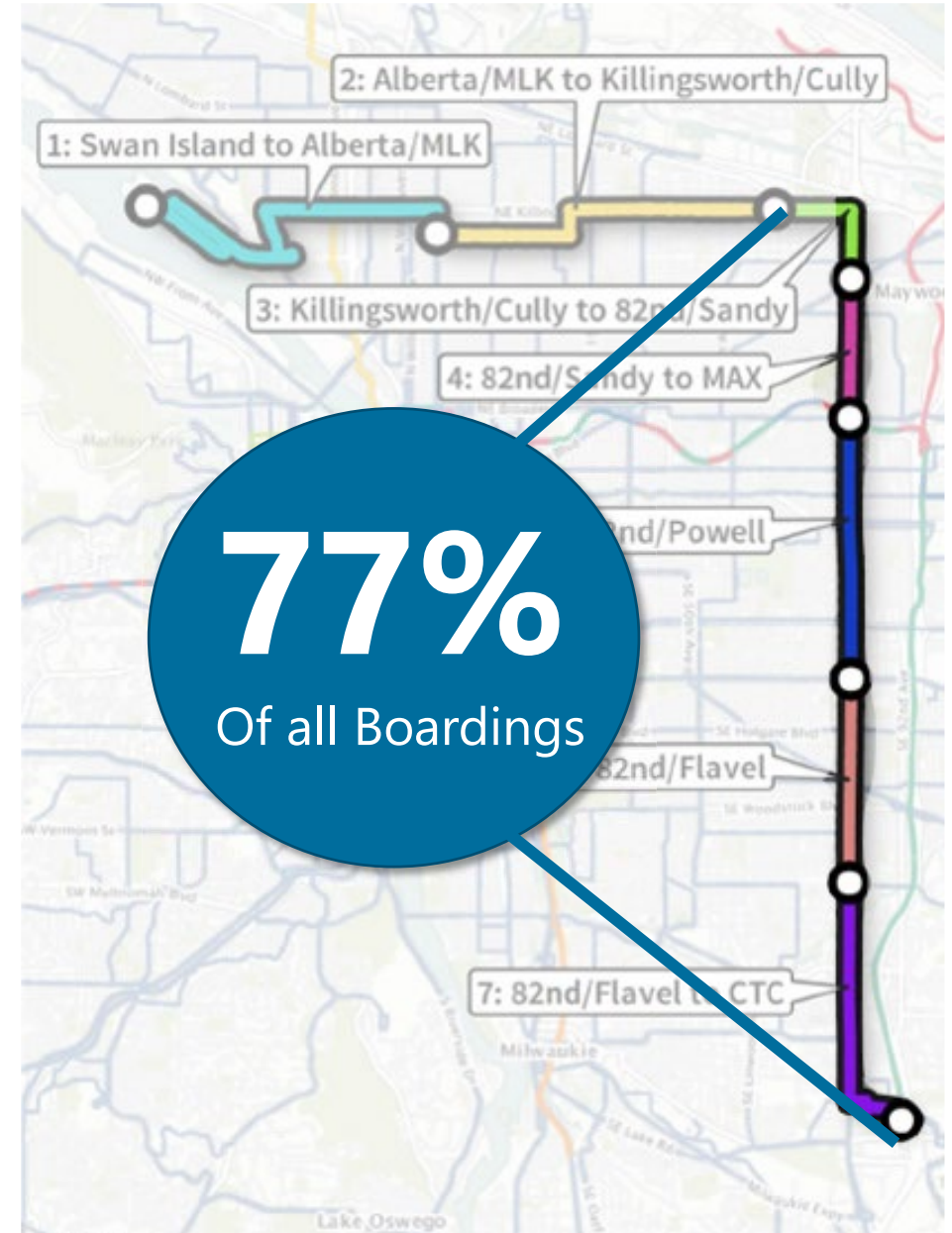
- MAX Blue, Green and Red Lines
- Intersecting over 20 bus lines along 82nd

**Connection to key destinations:**

- Downtown Portland
- Downtown Gresham
- Milwaukie City Center

**Key Transfers** (Downtown PDX, Gresham, Milwaukie)

*An important way in which people get to school, work, shopping, medical appointments and everyday needs.*





# Line 72 - Regular Bus Delay

**Line 72 ranks 1st for cumulative passenger delay**

**Within Line 72, delay is greatest along 82nd Ave**

**15 min average delay for Line 72**  
(13 mins SB, 21 mins NB)

**12.9 mph average bus speed through 30 MPH corridor**

*(Fall 2021 average bus speed data without acceleration/decelerations )*



*And its only going to get worse...*

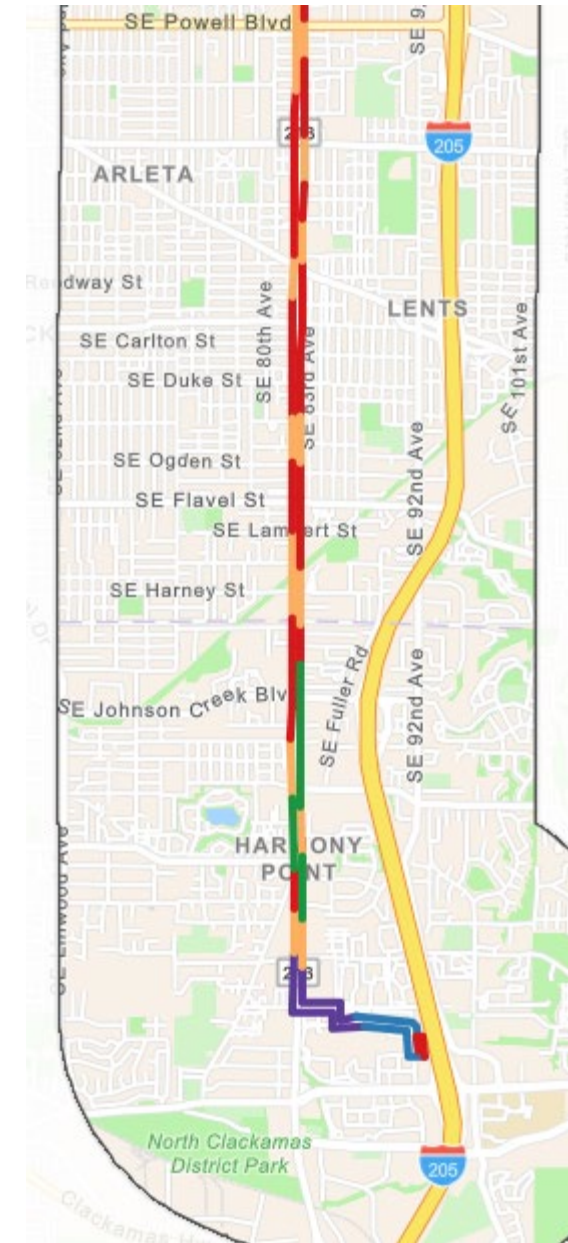
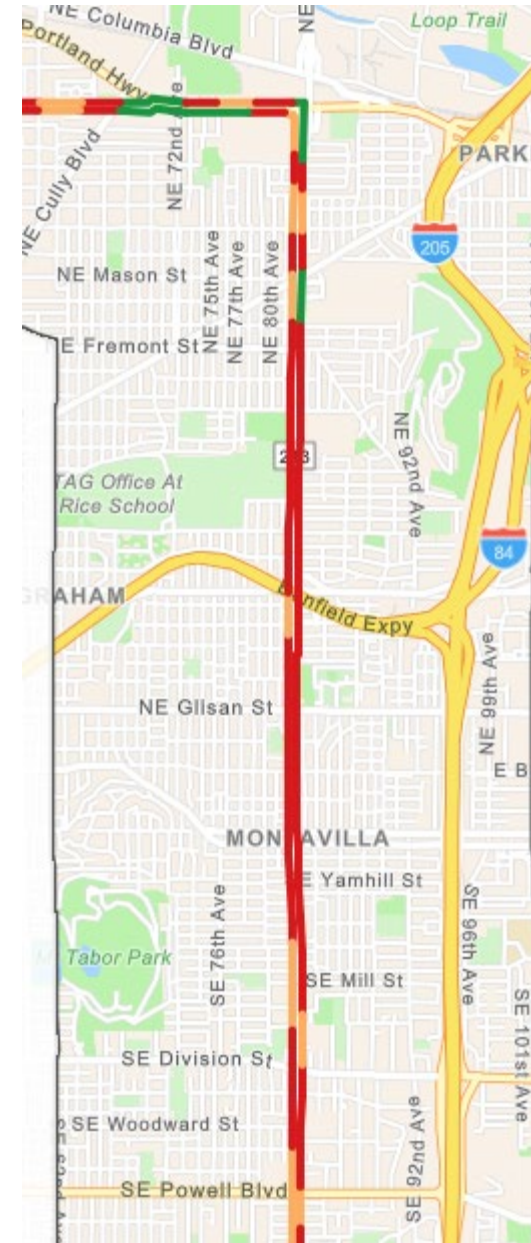


# Existing Stop Spacing

## Line 72 existing stop spacing is very close

- 115 stops between Clackamas Town Center and Cully
- On average existing stops are every 3 blocks (7-8 stops per mile)
- Older stops closer together than current TriMet standards
- Majority of existing stops are 3 blocks or less

- Stops less than 3 blocks (1/8 Mile)
- Stops between 3 and 5 blocks (1/8 - 1/4 Mile)
- Stops between 5 and 7 blocks (1/4 - 1/3 Mile)
- Stops between 7 & 10 blocks (1/3 - 1/2 Mile)
- Stops more than 10 blocks (1/2 mile)



# Improving Transit Through Station Investments

- Closely spaced stops are a source of delay
- Optimizing stop locations is an important tool in improving travel time and reliability
- Improves overall transit experience
- Focus station investment at important locations/destinations where riders need it most
- Majority of riders will continue to be served at the same stop location as today







82<sup>nd</sup> Ave at SE Luther (Northbound)



# Existing Bus Stops: A Need For Investment



*A common Line 72 bus stop along 82<sup>nd</sup> Avenue*

## **Stops have minimal amenities**

- 36% have shelters/weather protection
- 57% have seating
- 65% have crosswalks
- 83% have lighting

## **Stop-area infrastructure needs improvement**

- Poor accessibility
- Narrow, aging or missing sidewalks
- Poor and inconsistent lighting
- Bus stops closer than TriMet spacing standards



# Stops to Stations- *Focusing & Leveraging Investments*

- **Focus investments** at key station areas to improve ease of use, accessibility and safety
- **Improve transit service** better travel times and overall reliability
- **Leverage and compliment other corridor investments** along 82nd Avenue (*pedestrian crossings sidewalks, street improvements*).



Line 2 - Division (2017)



FX-2 Division (2022 - After Small Starts Investment)



# Station Features & Amenities

3377



- Shelters/weather protection
- Seating
- Consistent branding, signage and wayfinding
- Real time bus arrival information
- Standardized, safer lighting
- Raised platforms with near-level boarding
- Amenities (trash receptacles, leaning rails, bike racks, etc.)

# Improving Corridor Through Station Investments

Station investments bring improvements to accessibility, connectivity and safety within the corridor through:

- *Accessible, ADA compliant sidewalks and ramps*
- *Safer pedestrian crossings*
- *Improved lighting*
- *Signage & wayfinding*
- *Other safety treatments*





The background image shows a transit station scene. A green bus with 'FX2 DIVISION' and '4517' on its front is stopped at a station. A pedestrian with a backpack is walking across a crosswalk with white stripes and yellow tactile paving. The station has a modern design with a green roof and glass panels. The scene is set in an urban environment with trees and buildings in the background.

# Station Location Criteria

- Important Places & Destinations
- Ridership
- Transfers
- Existing & Future Frequent service
- Environmental & Land Use
- Nearby Public Services
- Bike & Pedestrian connections
- Population & employment density
- Equity considerations
- Safety & Operations
- Transit performance

# Station Investment Locations – Timeline & Process

- Used *Station Location Criteria* to guide station siting along 82<sup>nd</sup> corridor
- September 2022 Workshop - Design team and stakeholders identified preliminary station locations
- October 2022 Workshop – Team refined station locations using additional analysis and stakeholder feedback
- Team identified “must-have” station locations as well areas that require further analysis



September 23<sup>rd</sup> Station Workshop





# Station “Must-Have” Example: SE 82<sup>nd</sup> and SE Powell

**Highest tier of ridership** (239 daily ons, 212 offs –Spring 2022)

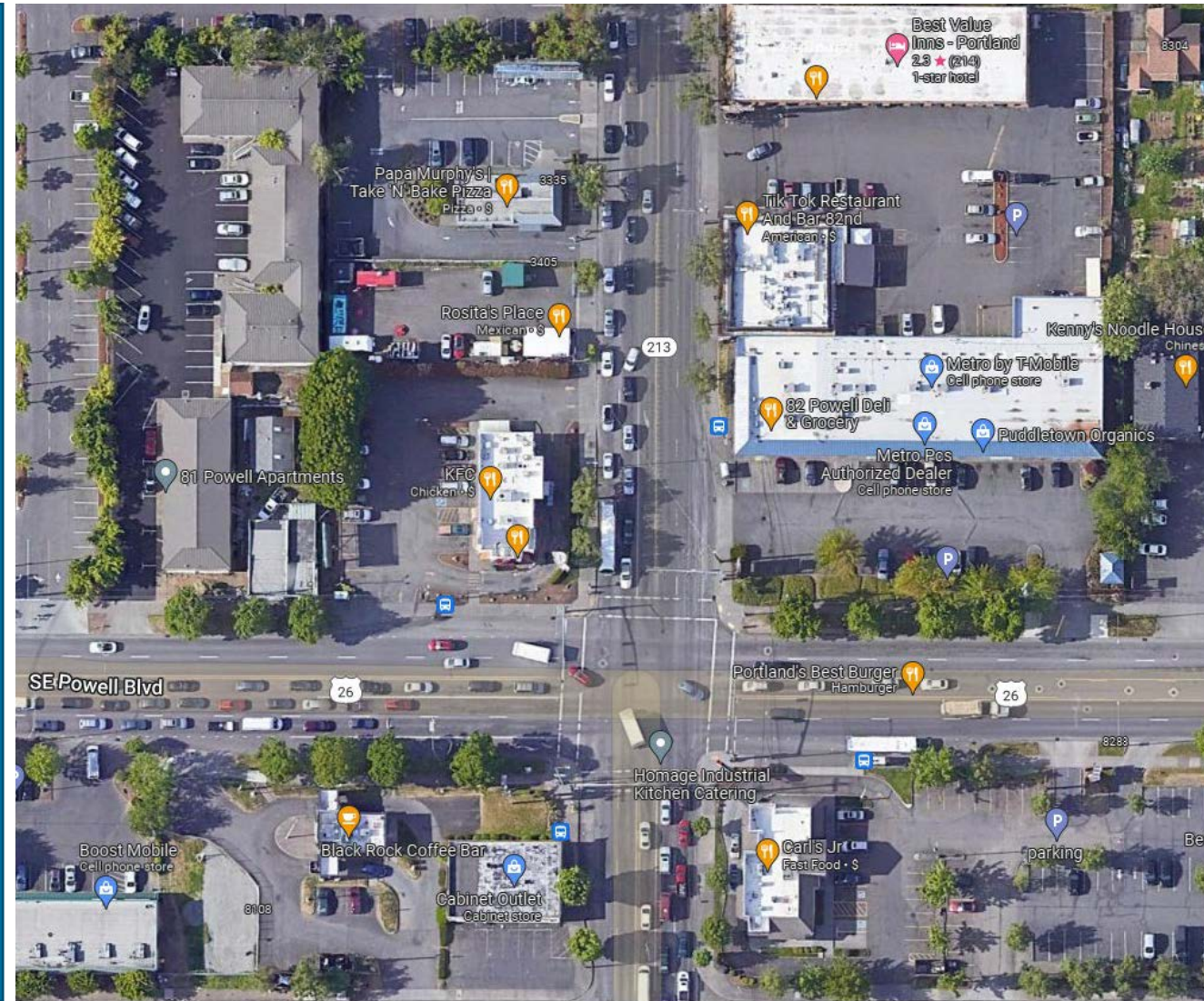
**High # of Monthly Lifts** (134 NB, 114 SB)

**Transfer Location** (Line 9)

**Proximity to shopping, housing & services**

**Serves diverse population**

**One of longest bus dwell times in corridor**  
(Top 10)



# Existing High Ridership Stops & Important Places

Highest ridership stops & important places:

- 82<sup>nd</sup> Ave MAX
- Powell (*Winco*)
- Holgate (*Eastport Plaza*)
- McDaniel HS
- Clackamas Town Center TC & CTC Mall
- Foster (*Shun Fat Supermarket*)
- Division (*PCC, FX2*)
- Burnside (*Walgreens, Hong Phat*)

Route 72 Ridership by Stop  
(Spring 2022)





# Station Access – Round 1

## Stop Access Today Compared to Proposed Station Access (Sept 2022)

### Within 5 min Walk

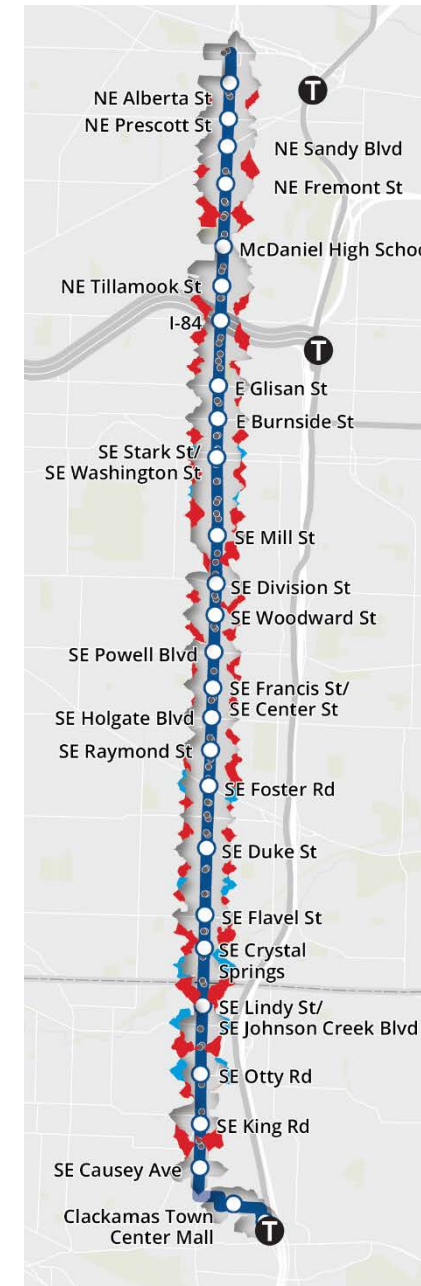
	Population	Change from Existing	% Change from Existing
Existing	20,149	-	-
Proposed	16,739	-3,410	-17%

### Within 10 min Walk

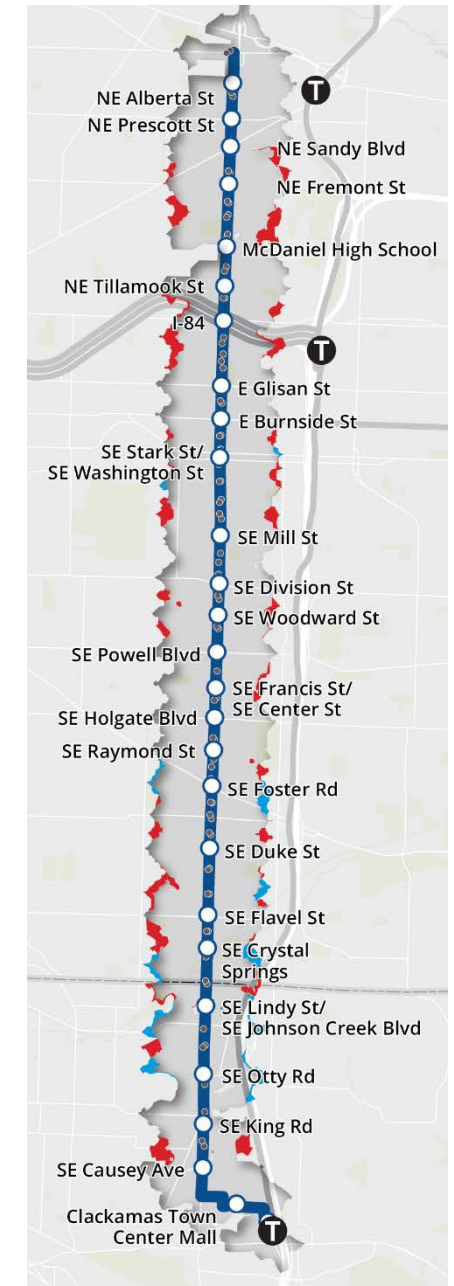
	Population	Change from Existing	% Change from Existing
Existing	50,523	-	-
Proposed	48,838	-1,685	-3%

- Areas within a 5 min walk or 10 min walk
- Areas outside 5 or 10 min walk
- New areas within 5 or 10 min walk

### 5 min Walk



### 10 min Walk





# Round 1 Ridership Analysis

## Spring 2022 ridership

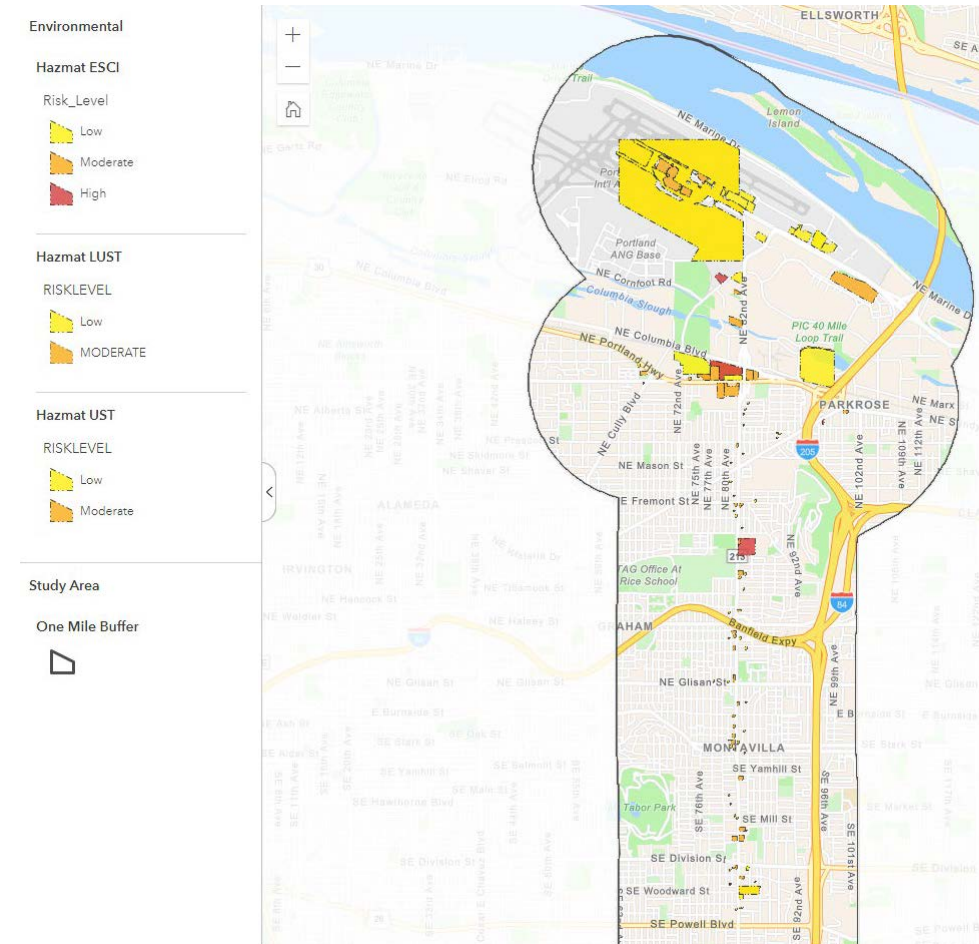
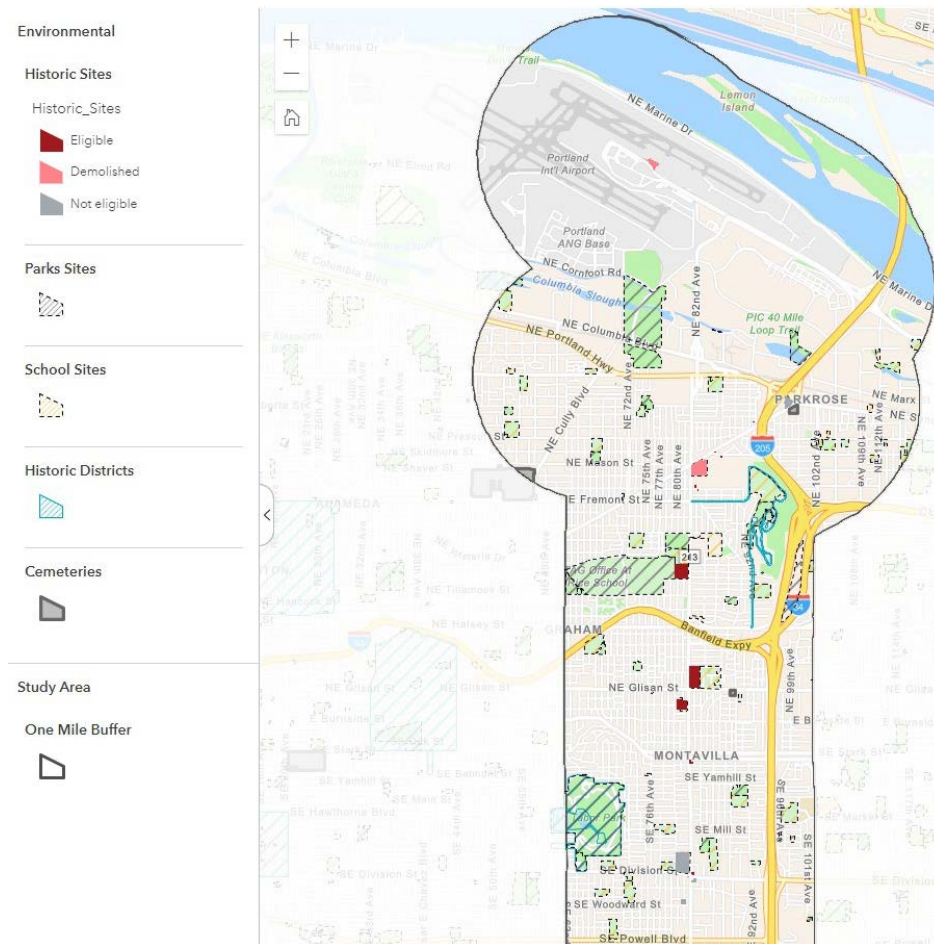
- **70% of existing boardings** along 82<sup>nd</sup> corridor are within ~1 block (200') of proposed station locations
- **85% of existing boardings** are within ~2-3 blocks (500')

Distance from Preliminary Station	Daily Boardings (Spring 2022)	% of Total Corridor Boardings (Spring 2022)
< 100'	2,014	33%
< 200'	4,251	70%
< 300'	4,467	74%
< 400'	4,915	81%
< / = 500'	5,157	85%
> 500'	891	15%
Total daily boardings along 82 <sup>nd</sup> corridor	6,048	

# Refinement: Environmental Constraints

Avoid impacts to

- Schools
- Parks
- Historic Sites
- Age of building
- Hazmat risk level



# Refinement: Planned Crossings

- Existing: 22 full signals, 2 RRFB
- Funded: 10 full signal rebuilds, 13 half signals, 7 RRFB
- Crossing standard: 530' ped district; 800' outside ped districts
- Crossing spacing today: **1096'**
- Crossing spacing with existing + funded: **759'**

Existing Bus Stops

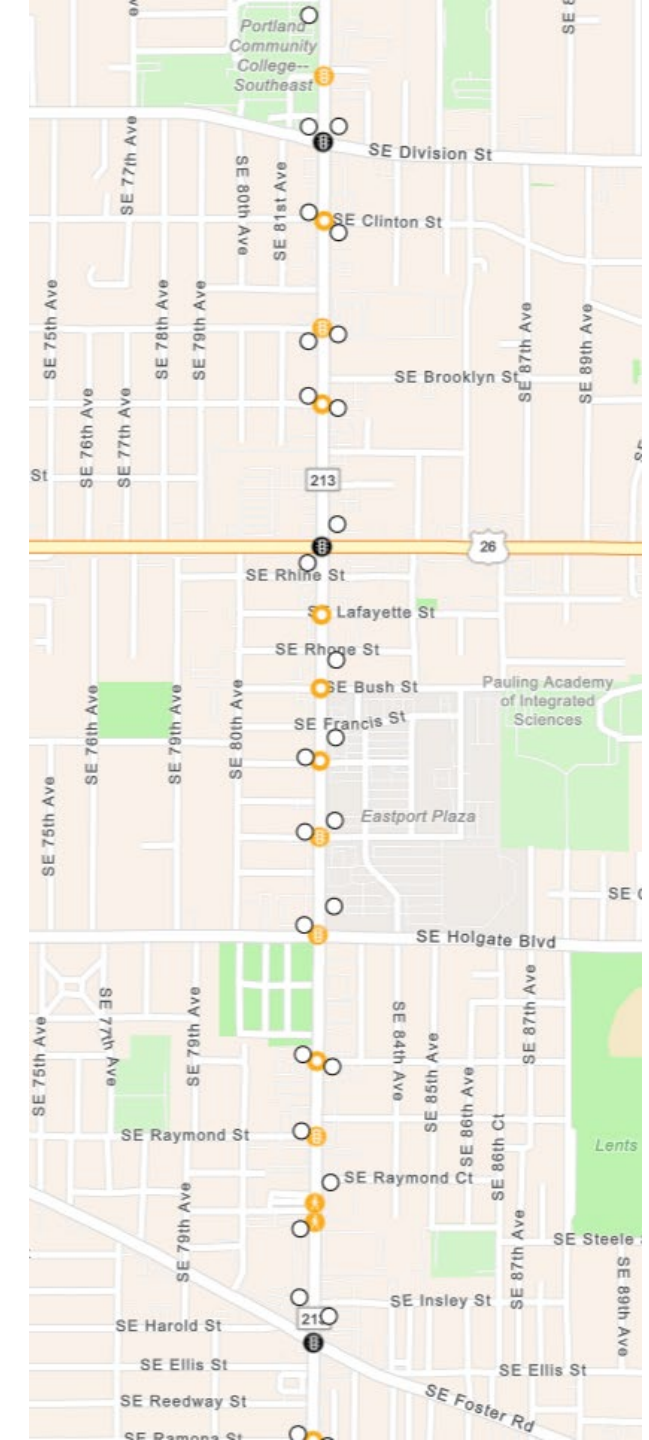


Signal and Crossings

Signal and Crossing

CrossingSignalTypeV2

- Full Signal - Existing
- Full Signal - Funded Rebuild
- Full Signal - Needs rebuild
- Half Signal - Funded
- RRFB - Existing
- RRFB - Funded
- Unfunded - Need





# Station Refinement Example:

- September 22<sup>nd</sup> workshop - considered removal of stop at Boyer
- Further study and input indicated:
  - *High ridership retention*
  - *High number of lifts*
  - *Planned safe crossing near existing stop*
- October 21<sup>st</sup> workshop – stakeholders recommended station be included in proposed initial station list



# Station Access – Round 2

## Stop Access Today Compared to Proposed Station Access:

### Within 5 min Walk

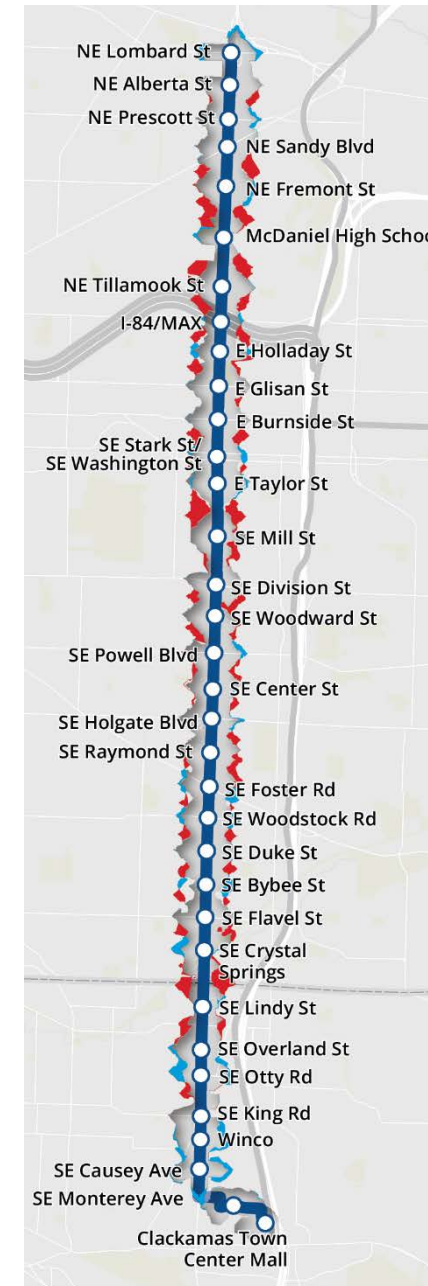
	Population	Change from Existing	% Change from Existing
Existing	20,149	-	-
Proposed	18,405	-1,744	-9%

### Within 10 min Walk

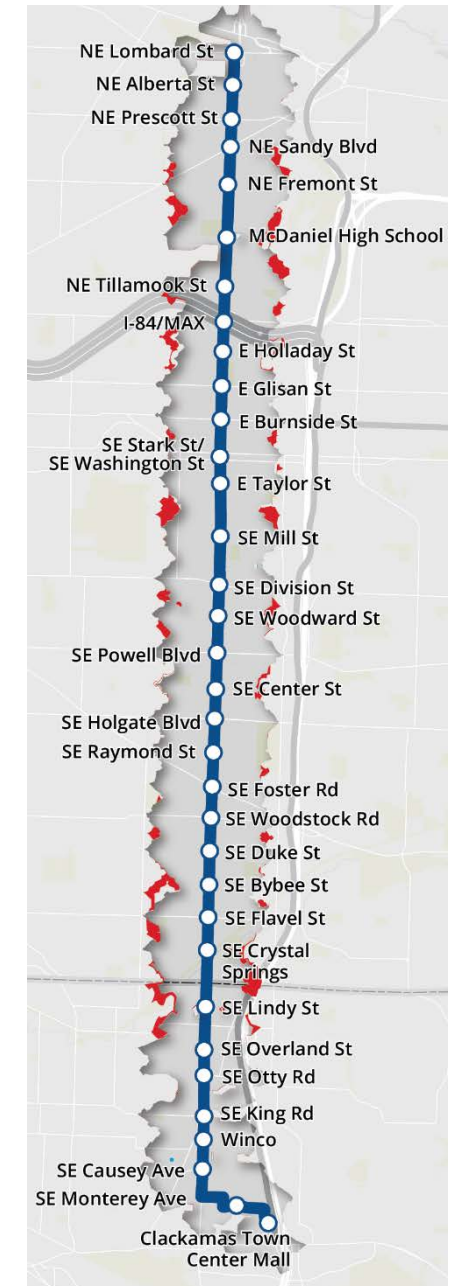
	Population	Change from Existing	% Change from Existing
Existing	50,523	-	-
Proposed	49,926	-597	-1.2%

- Areas within a 5 min walk or 10 min walk
- Areas outside 5 or 10 min walk
- New areas within 5 or 10 min walk

### 5 min Walk



### 10 min Walk





# Round 2 Ridership Analysis

Spring 2022 ridership

## NOVEMBER 2022

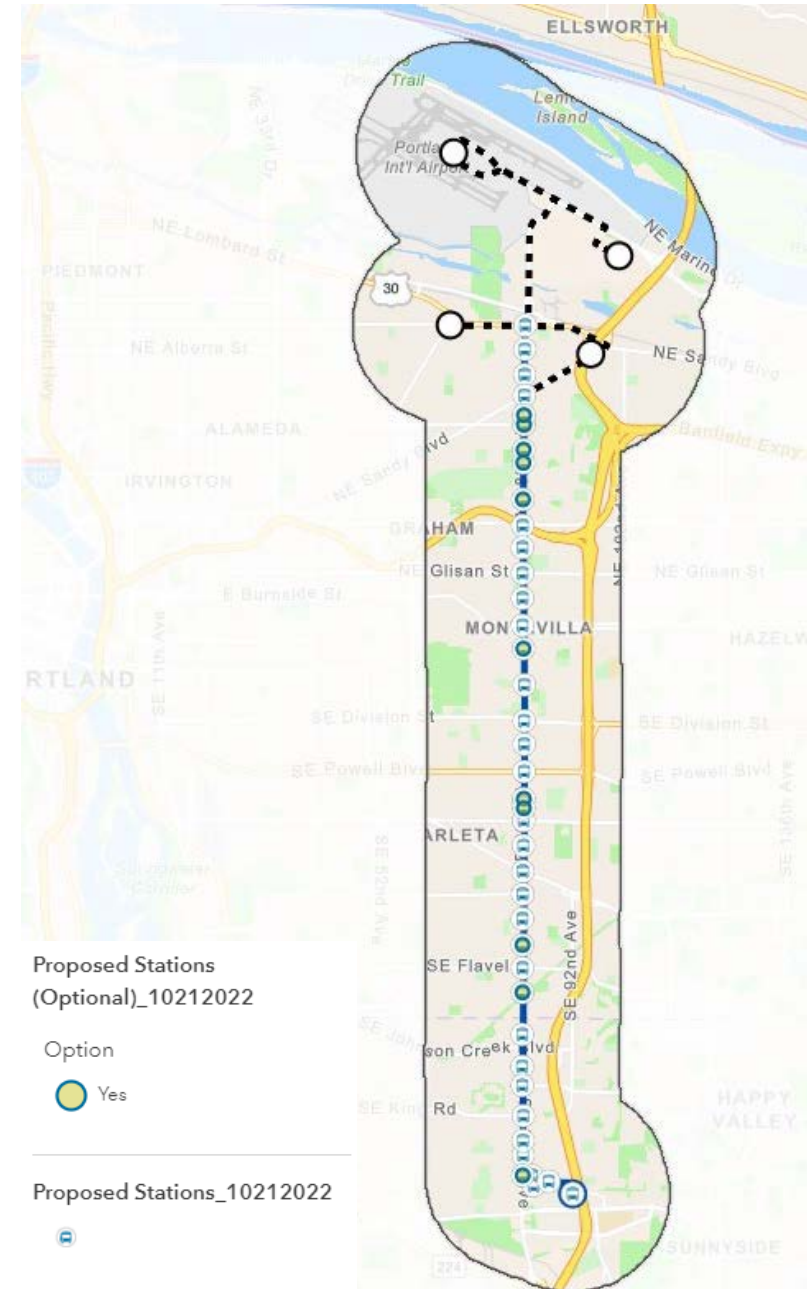
- 33 station pairs (Sandy to CTC)
- **72% of existing boardings** along 82<sup>nd</sup> corridor are within ~1 block (200') of proposed station locations
- **89% of existing boardings** are within ~2-3 blocks (500')

Distance from Proposed Station	Daily Boardings (Spring 2022)	% of Total Corridor Boardings (Spring 2022)
< 100'	2,010	33%
< 200'	4,333	72%
< 300'	4,709	78%
< 400'	5,120	85%
< / = 500'	5,389	89%
> 500'	659	11%
Total daily boardings along 82 <sup>nd</sup> corridor	6,048	



# Station Investment Locations – A First Look

- 33 station investment areas (66 platforms south of Sandy) at “must-have” locations along 82<sup>nd</sup>
- Station spacing averages approximately 1,400 feet along the corridor (~1/4 mile)
- Consolidation of close proximity & low ridership stops
- Process ongoing - further study and refinement of station locations





# Station Spacing – Comparing to Other BRT

## Stop Spacing on Regional Peer BRT Systems

- Typical BRT station spacing **standards** for peers range from ¼-mile up to 1 mile
  - Some standards vary based on land use and density context
- Farthest station spacing is Swift Blue Line
  - Averages more than 1 mile, but much of the corridor is suburban lower density

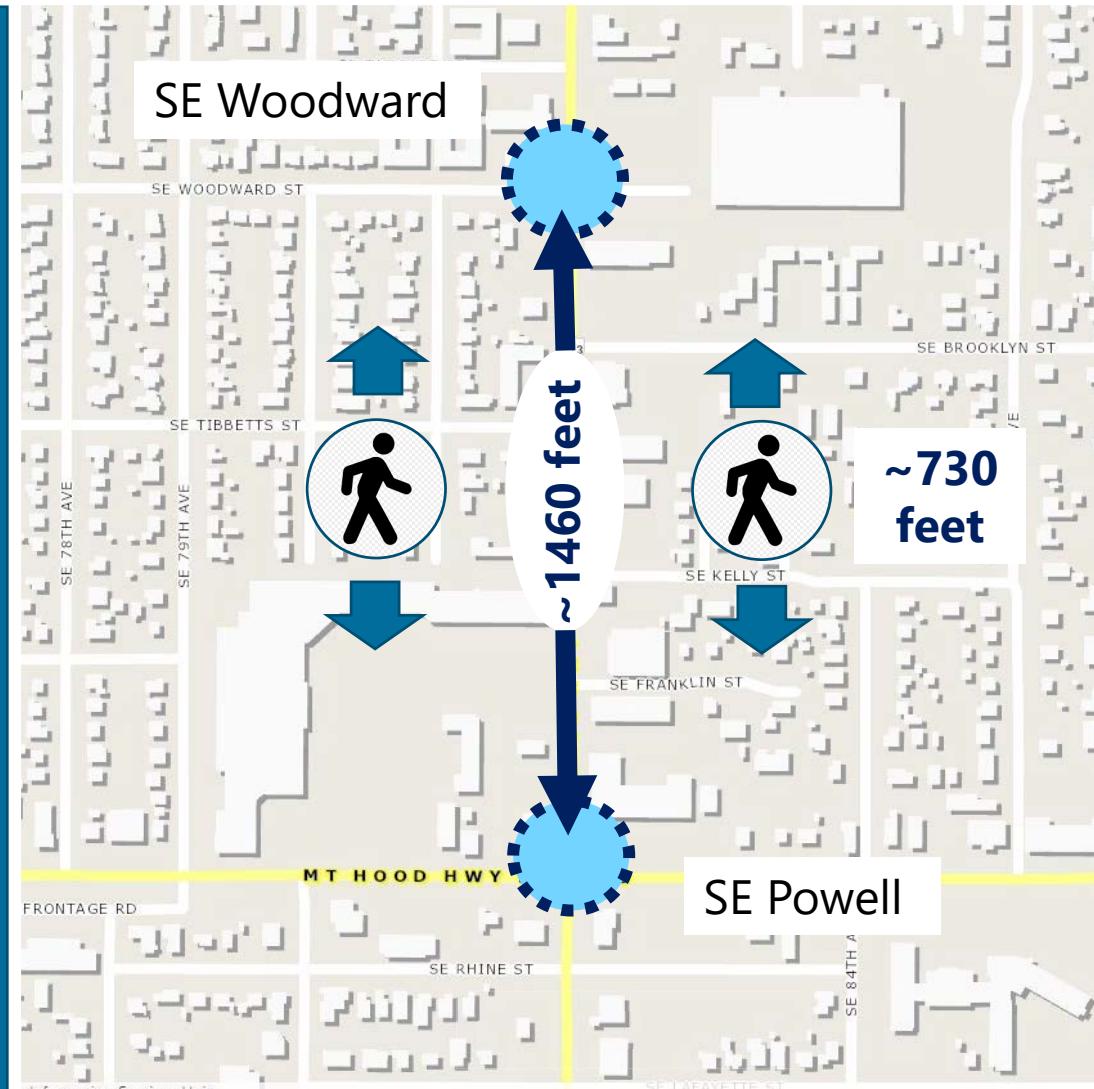
System	Station Spacing
<b>Swift BRT</b> <i>Community Transit, Snohomish County, WA</i>	Standard: ¾-mile+ <i>Blue Line averages 1 mile</i>
<b>RapidRide</b> <i>King County Metro</i>	Standard: ⅓- to ½-mile in higher density areas, ½- to 1 mile in lower density areas
<b>Stream</b> <i>Pierce Transit, Pierce County, WA</i>	Standard: ½-mile desired, ¼-mile minimum
<b>EmX</b> <i>Lane Transit District, Eugene, OR</i>	Springfield-Eugene line averages ½-mile spacing
<b>The Vine</b> <i>C-TRAN, Clark County, WA</i>	Fourth Plain Blvd line averages ⅓-mile



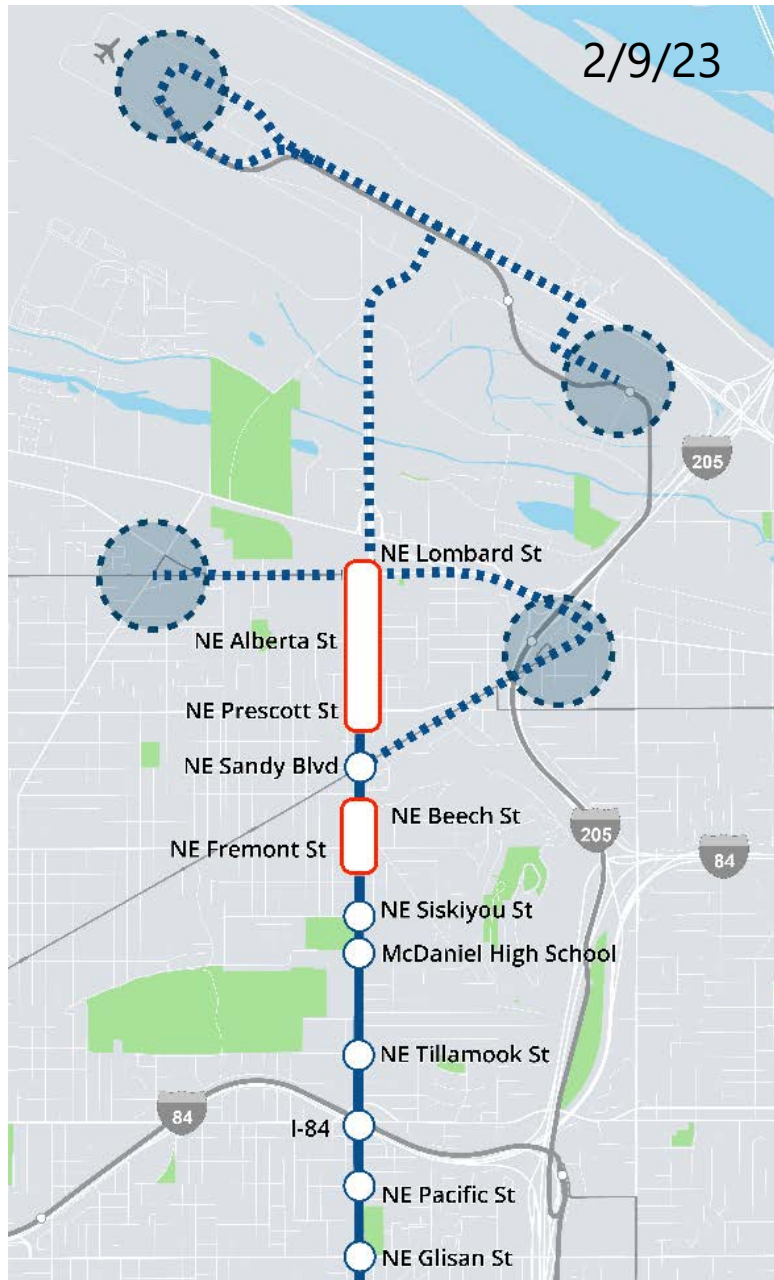


# Station Walking Distance Example: SE Powell & Woodward

- **SE Powell and SE Woodward stations ~3 blocks apart** (less than 5 min walk)
- **Riders typically walk to the nearest station**
- **Walking distance for those near SE Powell and SE Woodward often less than full distance between stations** (less than 3 blocks)



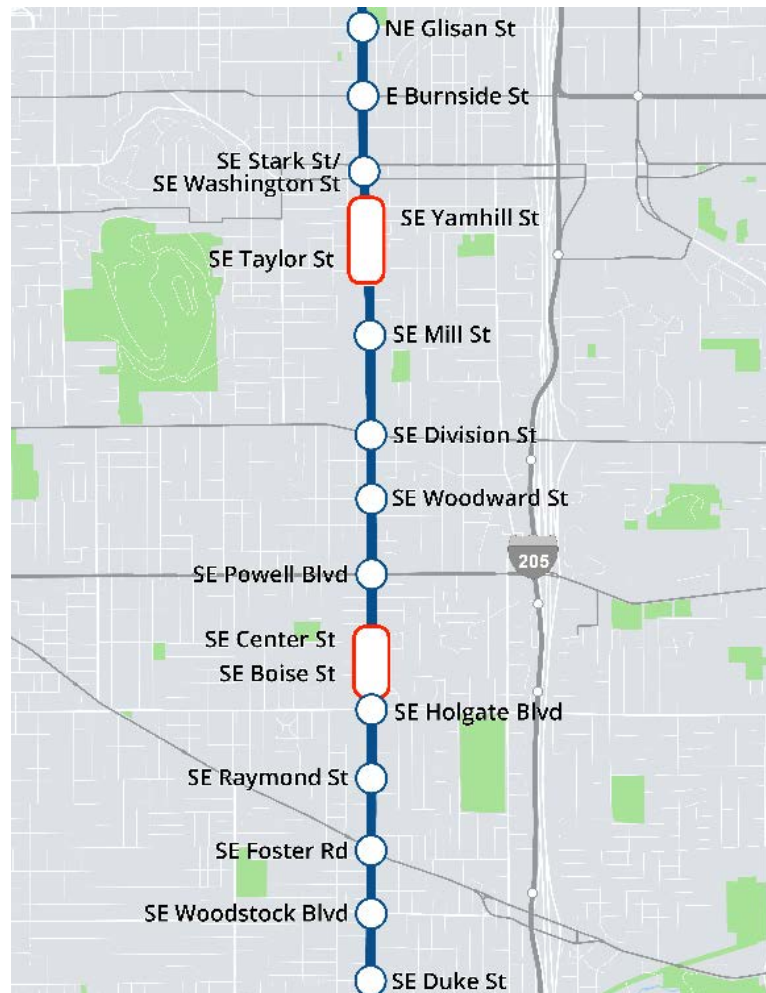




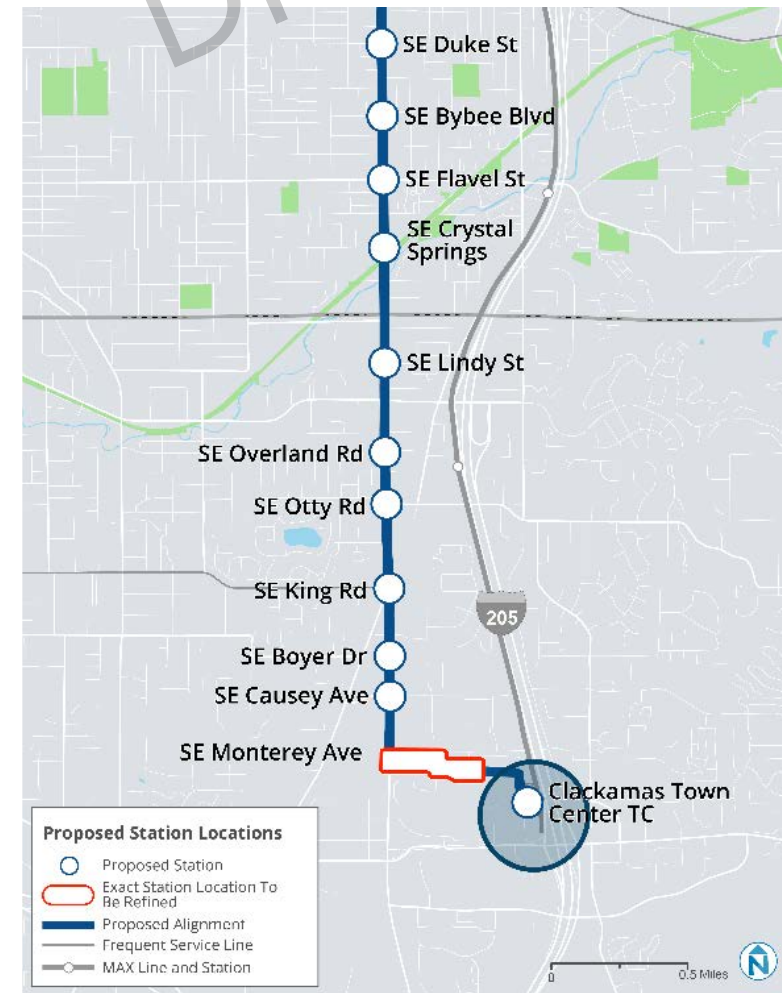
**NE Portland**

# Proposed Stations

(Based on Analysis to Date)



**SE Portland**

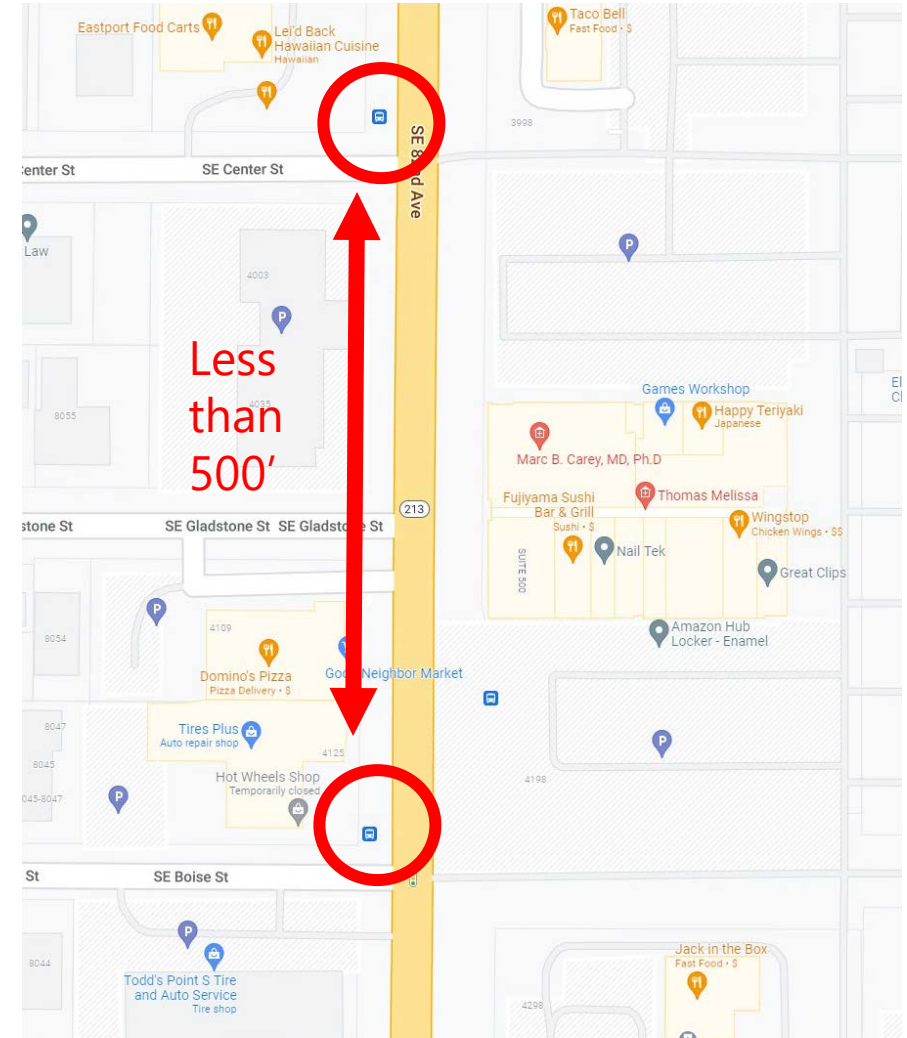


**Far SE Portland & Clackamas**



# Station Study Area Example: SE Center or SE Boise?

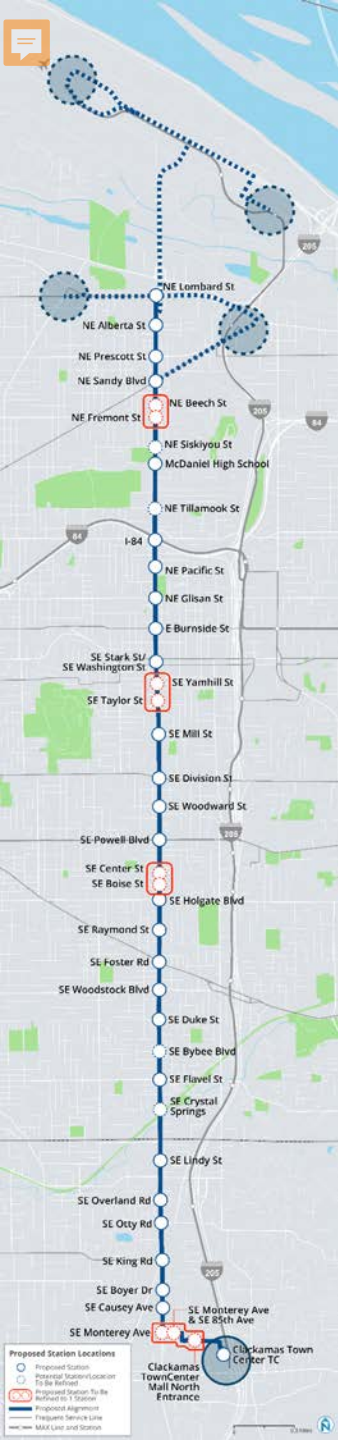
- **SE Center & SE Boise have comparable higher level ridership**
- **Stops are very close together** - less than 500 feet from one another (~2 blocks)
- **Further study and input needed**
  - *Safety & accessibility*
  - *Adjacent land use*
  - *Operations*
  - *Stakeholder & community input*



# Steering Committee Questions

Please Remember: *Station locations are not final. We want to make sure we benefit from your input on our analysis, methodology and overall work to date.*

1. Do you have feedback on team's methodology and analysis to date?
2. What are the most important locations for stations? Other station impressions?
3. Thoughts related to preparing for future community conversations & engagement?
4. Anything else important you'd like to share on work done to date?
5. Other comments or feedback?





An architectural rendering of a modern transit station at night. The station features a glass and metal shelter with a sign that reads "34TH WESTBOUND". Several people are shown using the station, including a person in a wheelchair. The station is illuminated by warm lights, and the surrounding area includes trees, a sidewalk, and a building in the background. A sign on the left indicates "WESTBOUND 3 MIN".

# NEXT STEPS

- *Furthering analysis & station siting work*
- *Study of terminus options and related stop locations*
- *Share findings/recommendations with steering committee*
- *Engage community and stakeholders (Spring Survey)*



**Thank you!**







# FX (BRT) Mode For High Demand Corridors



# Overview

- Issues that we look to solve or improve
- Standard transit tools - most frequently used in our system
- Utilizing an FX system approach – when and how we pivot to a new tool
- Gains that can we expect from an FX system

# Issues That FX Helps to Solve

1. Long-term transit reliability
2. Increased transit speed/capacity
3. Greater accessibility and comfort
4. Improved connectivity
5. Improved safety



# Standard Transit Tools

This “Tool Box” typically includes:

- **Adaptive Stop Placement** – minimal infrastructure requirements
- **Shelter Placement** – Applied where demand meets minimum thresholds
- **40' Buses** – Single-door boarding
- **Service Frequency and Line Variation** – Tool for matching service with demand

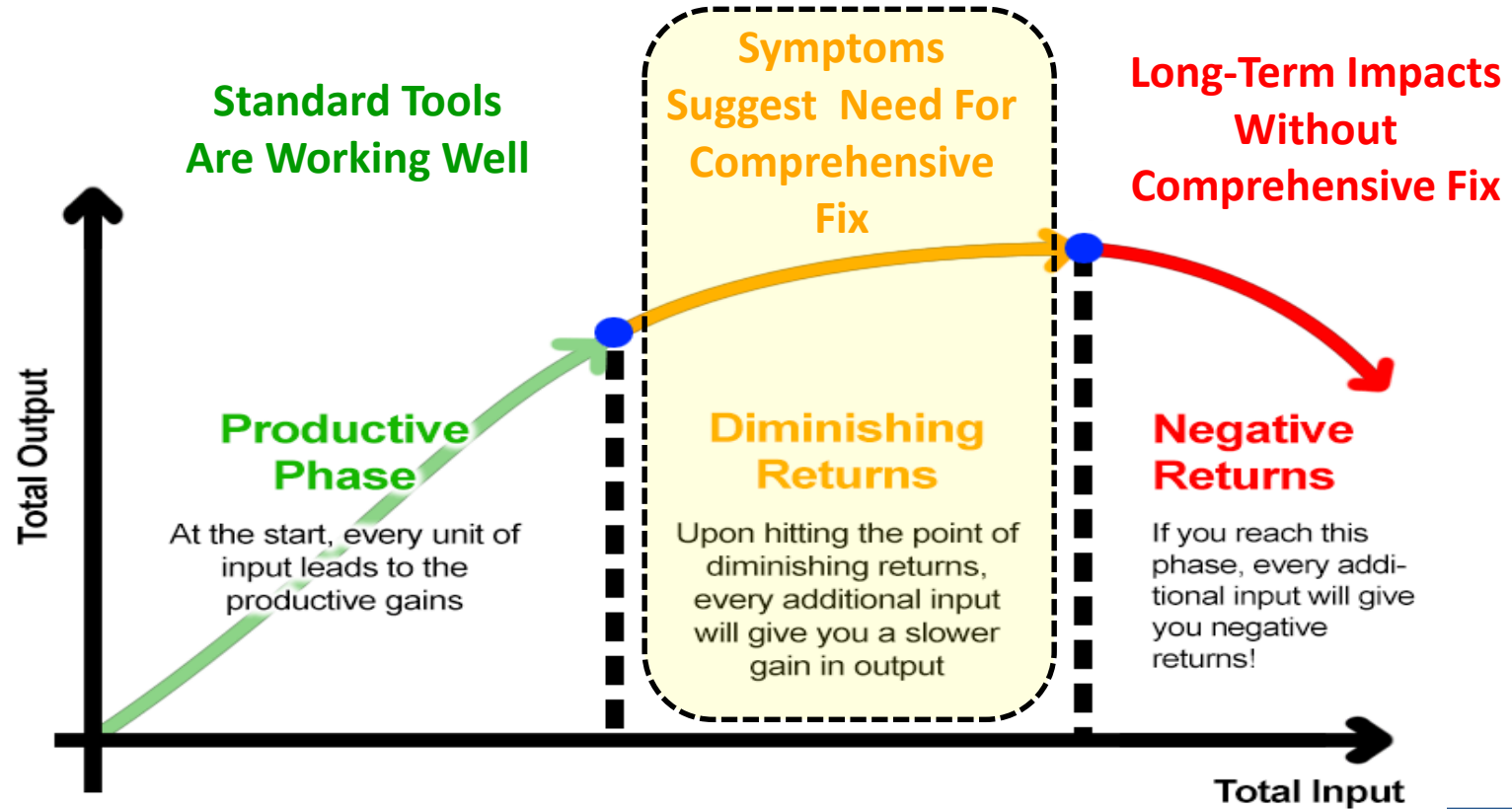


# Standard Transit Tools

## Limitations of this basic tool box:

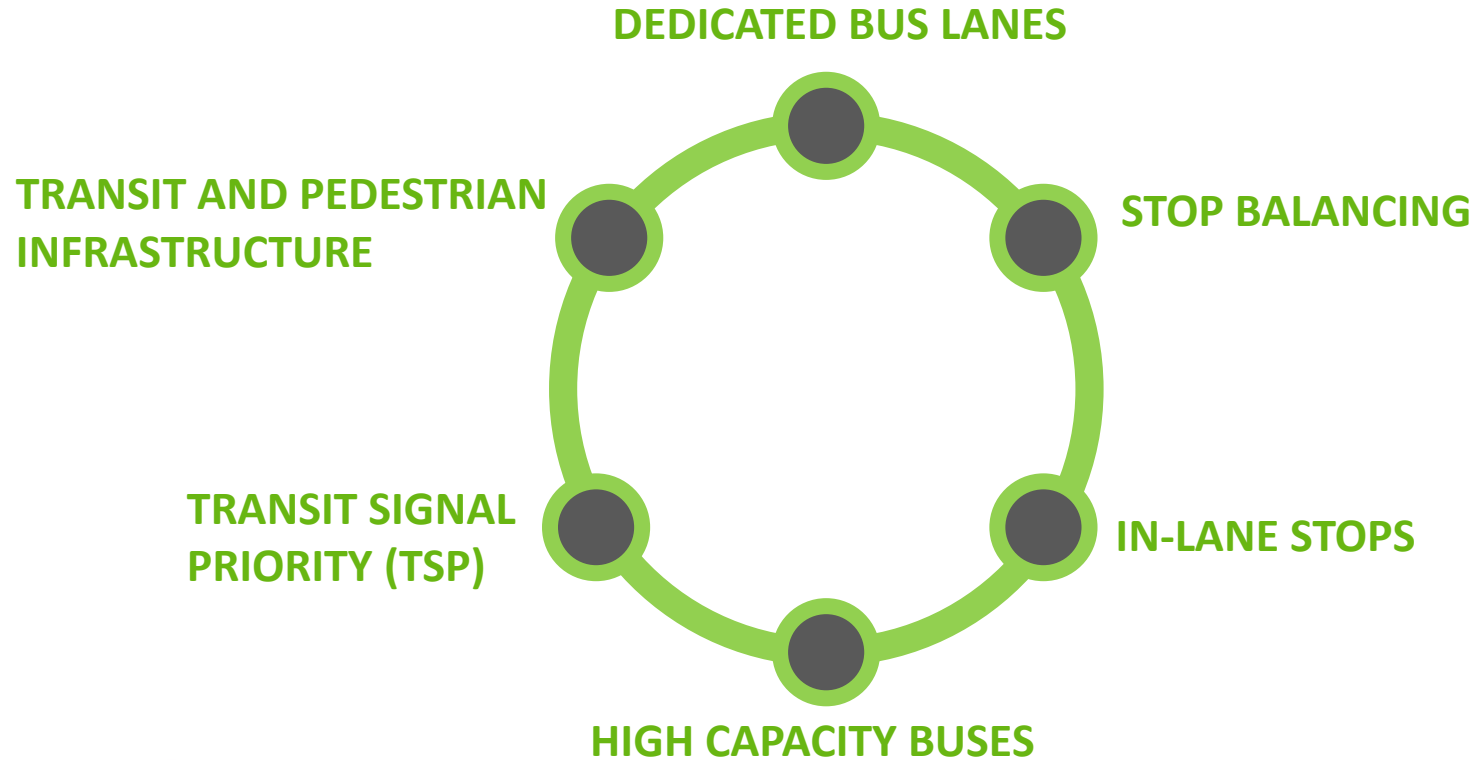
- **Minimal improvement to infrastructure** (stop improvements, sidewalk connections, ADA ramps, lighting, signal and safety improvements).
- **Little improvement to speed / reliability** when route congestion is already an issue
- **Localized vs. corridor-wide safety and accessibility improvements**

# Identifying The Need For An Alternative Approach





# FX as a System



# Why Is 82<sup>nd</sup> Ready For FX?

- **Standard transit tools are becoming less effective in improving service**
- **Higher transit demand and reduced road capacity is projected**
  - Line 72 has the **highest ridership** of any bus line on our system
  - Bus Travel times are projected to increase between 29-35% in the PM peak by 2040
- **Congestion and delay reduces transit reliability and access to jobs**
  - Due to congestion, Line 72 has **highest passenger travel delay** of any line on the system, with 82% coming from 82<sup>nd</sup> Ave
- **Declining Infrastructure Compromises Safety and Accessibility**
  - 82<sup>nd</sup> Ave is overdue for infrastructure investment that will have a **positive contribution** for those that rely on the use of this corridor

# Dedicated Bus Lanes

- Most effective BRT tool for combatting congestion
- Helps ensure long-term transit service reliability
- Improved travel time and performance



# Bus Stop Balancing & Consolidation

- Balance between convenience and performance
- Faster more reliable service
- Investment reflects demand and community needs
- Eliminates underutilized stops to improve overall service





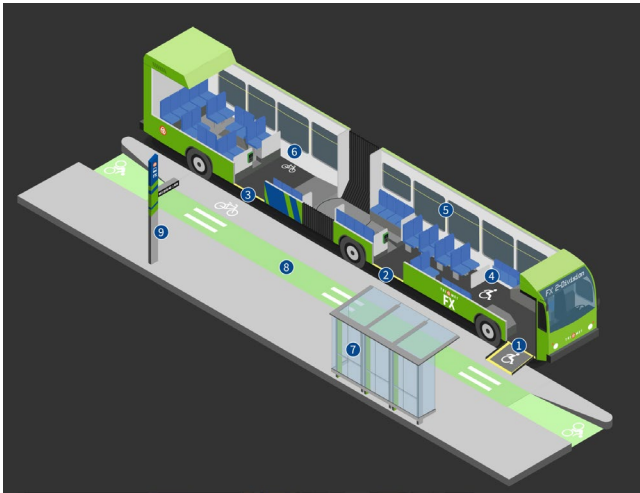
# In-Lane Stopping

- Maintains **bus flow** with low dwell times at stops
- Improves **travel time** by eliminating the need to merge with traffic after stopping
- Improves **transit reliability** in congested environments



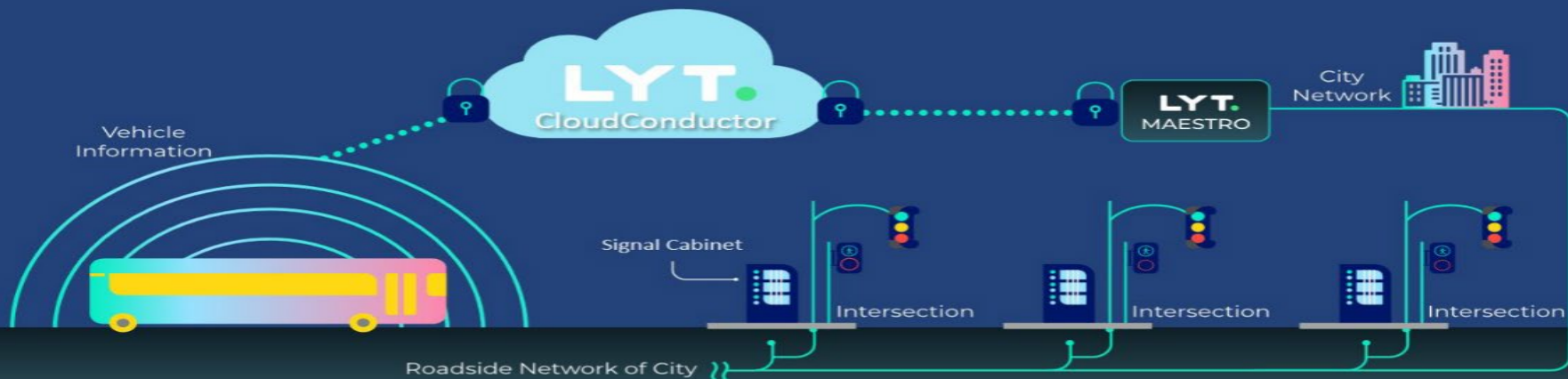
# High Capacity 60' Buses

- **60% More Capacity Than A 40' Bus** – Eliminates pass-ups, and carries more people with fewer trips
- **3-Door Boarding** - Reduces dwell time by about 1.4 seconds per passenger / 7 seconds per stop (LA Metro, SF Muni studies)



# Transit Signal Priority

- **Anticipates bus arrival**, and improves the flow of buses
- **Creates greater reliability** in congested corridors
- **Significantly improves travel times**
- **Optimizes performance** over time with machine learning



# Improved Pedestrian Environments

## Corridor Improvements

- **Signalized Crossings** – provides safe crossings near stops
- **ADA ramps** – Improved accessibility across the corridor
- **Safer Intersections** – Protected intersections & defined access
- **Lighting** – Site responsive lighting near stops
- **Sidewalk Improvements** – Reduces gaps in connectivity, and complements new City pedestrian infrastructure investments



# Corridor Improvements



# Corridor Improvements





# Corridor Improvements



# Improved Station Environment

## Stations

- Shelters & seating
- Lighting
- Real Time Info
- Near Level Boarding
- Accessibility Improvements





# Improved Station Environment



# Improved Station Environment





# Improved Station Environment



© Jeff Amram Photography