

Agenda



Metro

600 NE Grand Ave.
Portland, OR 97232-2736

Meeting: Tualatin Valley Highway BRT Steering Committee

Date: Thursday, December 15, 2022

Time: 4:00 to 6:00 p.m.

Place: Zoom

https://us02web.zoom.us/j/82491231728?pwd=I4dVzvshKwHi9mQ4eSL3hNSa_fxTb.1

Passcode: 201580

US: +1 253-215-8782 or 877-853-5257 (Toll Free)

Webinar ID: 824 9123 1728

Purpose: Orient Steering Committee to why and how the team is evaluating project scenarios, including Small Starts eligibility criteria. Orient Steering Committee to the project process from this point onward.

Outcomes: Understanding of scenario evaluation approach, Small Starts criteria, and upcoming project process. Agreement on scenario evaluation approach.

4:00 p.m.	Welcome and Introductions <i>Are there any updates related to TV Highway you'd like to share from your community?</i>	Metro Councilor Gerritt Rosenthal
4:20 p.m.	Approval of November meeting minutes	Councilor Rosenthal
4:25 p.m.	Preliminary FX2 Division Travel Time Information – What we are seeing so far	Jesse Stemler, TriMet
4:45 p.m.	Project Scenarios Evaluation <ul style="list-style-type: none">• Purpose of evaluation• Proposed evaluation framework• Small Starts criteria	Jess Zdeb, Metro Jamie Snook, TriMet
5:15 p.m.	Discussion <ul style="list-style-type: none">• <i>Do you agree with the presented approach for screening project scenarios?</i>• <i>Is the process toward an LPA clear, or do you have questions about the general path for decision-making?</i>• <i>Are any clarifications needed regarding Small Starts criteria and the levers that exist to influence scores?</i>	Councilor Rosenthal
5:55 p.m.	Next Steps	Councilor Rosenthal

Upcoming TV Highway meetings

- *Technical Working Group (January 18, canceling December)*
- *Policy Group (January 25, canceling December)*
- *Steering Committee (February 9, canceling January)*

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Meeting minutes



Metro

600 NE Grand Ave.
Portland, OR 97232-2736

Meeting: **Tualatin Valley Highway Steering Committee meeting**

Date/time: Thursday, November 10, 2022 | 4:00 p.m. to 6:00 p.m.

Place: Virtual webinar meeting held via Zoom

Members, Alternates Attending

Councilor Juan Carlos Gonzalez, Co-chair
Councilor Gerritt Rosenthal, Co-chair
Councilor Ashley Hartmeier-Prigg
Commissioner Nafisa Fai
Commissioner Jerry Willey
Mayor Jeffrey Dalin
Councilor Rick Van Beveren
Rian Windsheimer
JC Vanatta
Ernesto Oliva
Maria Dolores Torres
Nansi Lopez
Karmen Chavez-Sam

Affiliate

Metro
Metro
City of Beaverton
Washington County
Washington County
City of Cornelius
City of Hillsboro
ODOT
TriMet
Unite Oregon
Adelante Mujeres
Centro Cultural
APANO

Panelists Attending

Jess Zdeb
Malu Wilkinson
Yuliya Lee
Michaela Skiles
Jonathan Plowman
Jamie Snook
Jesse Stemmler
David Aulwes

Affiliate

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Welcome and introductions (Councilor Juan Carlos Gonzalez, Metro)

Co-chair Councilor Gonzalez called meeting to order at 4:01 p.m. and welcomed the attendees to the meeting. Jess Zdeb, Metro, gave a brief overview of the Zoom webinar logistics. The committee members proceeded to introduce themselves and shared their favorite dish for Thanksgiving.

Councilor Gonzalez reported to the committee that there was one fatality in TV Highway corridor since last steering committee meeting and reminded everyone of the importance of this project's work. He asked the committee for approval of the meeting summary from October 13, 2022. With all in favor, the meeting summaries were accepted unanimously.

Ernesto Oliva, Unite Oregon, shared his takeaways from the TV Highway community workshop event that took place on October 29, 2022. Mayor Jeffrey Dalin, City of Cornelius, inquired how many workshop participants were current public transit users. Ernesto Oliva responded that it was a mixed group of commuters and public transit riders. He noted that accessibility was one of the most prominent topics brought up during the workshop discussion. Mayor Jeffrey Dalin commented on the importance of getting feedback from those who commute, to better understand what would it take for them to change from using personal vehicle to using public transit.

Councilor Juan Carlos Gonzalez gave a brief overview of the agenda and upcoming presentations.

Presentation: Corridor characteristics memo update, pt. 2 (Jess Zdeb, Metro)

Jessica Zdeb, Metro, started presentation with introduction of where do TV Highway residents work within the TV Highway corridor, and noted the differences between West and East Side Study areas, and Low/Mid Wage group versus Upper Wage group. She continued with an overview of other characteristics which included transportation modes, mode share comparison, vehicle access, roadway safety, youth and older adults groups comparison, and housing cost burden breakdown in various regions of the corridor.

Mayor Jeffrey Dalin inquired about data, showing how many individuals with zero cars are those who are residing in assisted living facilities or no longer able to drive due to their age. Jess Zdeb responded that census data that was used does not reflect it. Mayor Dalin asked to clarify the details concerning commute time from Cornelius on one of the maps during the presentation. Jess responded that visual representation of that statistic can be improved and explored further.

Nansi Lopez, Centro Cultural, thanked Jess Zdeb for acknowledging that current data might not reflect the entire picture of the study area, noting that many community members in the area do not have experience connecting to the system outside of their own community. She emphasized the importance of making connection to those populations and getting them involved in the process of decision-making.

Commissioner Nafisa Fai, Washington County, inquired about TV Highway Technical Group takeaways and reactions from the participants of the community workshop in regards to presented data.

Jess Zdeb responded, that in addition to the available data, additional qualitative data needs to be gathered to supplement it, to reflect a better picture of the study area. Ernesto Oliva added that community workshop was more about project's introduction, however the following events can be more focused on data and community's feedback on it.

Maria Dolores Torres, Adelante Mujeres, voiced concern about high numbers of accidents and fatalities in the corridor, noted the importance of working together to improve safety. She also highlighted the need for bus stop infrastructure improvements and commented on possible barriers that community members might encounter while trying to use public transit.

Councilor Rick Van Beveren, City of Hillsboro, commented that presented data reflected his experiences in the corridor and echoed other comments on the urgency to address pedestrian safety.

Presentation: Run time estimate: Initial results and use (Michaela Skiles, Metro)

Michaela Skiles, Metro, started presentation and explained that planning-level run time estimate is for understanding the benefit of the project, specifically ridership estimates, and to show what design elements provide run time benefits. She noted that current calculations are based on actual run time data from 2019 and 2021, and these are not reflective of future year traffic conditions for real-world bus run times. Michaela Skiles explained run time calculation, which included:

- Consists of assumptions regarding
 - Number of stops
 - Individual stop dwell time
 - Signal priority treatments
 - Physical priority treatments
- Cumulative time savings are subtracted from base year run time

She elaborated on stops impact, explaining that stops assumptions vary along the corridor and are based on committee input and stakeholder workshops. She added that data on stops served is from 2019 and 2021, and dwell time assumed to be shorter per stop based on 60 feet buses.

The committee members inquired about number of stops in the corridor, how average dwell time was calculated, and asked to provide additional details on standard versus mean stop time deviation.

Michaela Skiles continued presentation with an overview of the signal priority impact, which included:

- Greater benefit at intersections **not near capacity**
- Greater benefit **outside downtown contexts** where signal cycles are longer

She explained physical priority impacts, which consisted of:

- Few locations in design for BAT lanes and queue jumps
- Assumed benefit is a function of length and configuration of treatment
- BAT lanes are in opportunistic locations currently

In conclusion, Michaela Skiles talked about estimated improvement ranges for westbound and eastbound directions, and differences by time of the day and by base year. She shared map of the corridor segments to show percentage of run time and average improvement in each of those segments. She noted that time estimates are being used:

- Not for communications purposes
- Validate inputs for ridership modeling
- Inform decisions about design elements

Discussion (Councilor Juan Carlos Gonzalez, Metro)

The committee members were asked the following discussion question: is any clarification needed regarding the results or use of the run time analysis?

Dave Aulwes, TriMet, responded to the questions that were raised during presentation. He stated that run time estimates are based on real time data, dwell time varies from location to location and its average or mean times can be calculated later on. He stated that total of 107 stops are currently being used in the analysis work.

The committee members inquired about difference in dwell time associated with in-line and pull-out stop designs, if data on impacts from FX bus line on Division was available, would adding buffer space for in-lane bus stops help with safety in certain segments of the corridor. Dave Aulwes responded that additional analysis is needed to explore dwell time difference between pull-out and in-line bus stops and existing FX bus line impacts.

In addition, the committee members asked if one of the strategies to improve run time is to eliminate bus stops, how to improve public transit experience to increase its usage, what are the takeaways from FX bus line that can be applied to TV Highway project, and if additional details can be shared on the westbound run time benefit percentages. JC Vanatta, TriMet, responded about FX bus line, stating that after the initial learning effort, fixed mechanical components, and additional bus driver experience, all those improvements will contribute to improved run times.

Presentation: Basis of Design, part 2: Design treatment application (Jesse Stemler, TriMet, Dave Aulwes, TriMet)

Dave Aulwes started presentation with introduction of Jesse Stemler, TriMet, to give an overview of run times and design improvements at the early concept draft stage. Jesse Stemler continued by sharing different design tools that are being tried to create improvements in the corridor, which included:

- Speed management-Chicane (example: Market Centre, Aloha – Segment 5)
- Pedestrian crossings improvements (example: Ped Signal & Refuge Island, Forest Grove – Segment 10)

He elaborated on various bus stop designs, such as Pedestrian Bypass, Pedestrian Pass Through, Pedestrian Island, and Shared Bicycle & Pedestrian. Jesse Stemler explained that working together with Oregon Department of Transportation (ODOT), Shared Bicycle & Pedestrian design bus stop station was placed to be studied and evaluated to collect data on its performance, concerns and considerations.

He concluded presentation with an overview of constraints and considerations for various station placements.

Discussion (Councilor Juan Carlos Gonzalez, Metro)

The committee members were asked the following discussion question: do you have initial reactions to the design tradeoffs presented?

Ryan Windsheimer, ODOT, urged the committee and project staff to engage freight partners in project's work before getting too far ahead. He also commented on the challenges and solutions to the crosswalk placement at the intersections.

Nansi Lopez commented on the importance of involving community and stakeholders in the process of planning and developing. She cautioned against impact on the community without its involvement and feedback in the design process.

Maria Dolores Torres voiced concerns about challenges on one of the intersections that was being used as an example of possible bus stop designs. Dave Aulwes and Jesse Stemler responded that further

research and involvement with community and partners will guide decisions on the most appropriate improvement and design for the specific locations, considering safety as one of the top priorities.

Councilor Rick Van Beveren, City of Hillsboro, inquired about how design for in-line and pull-out bus stations differ based on the speed limit.

Commissioner Nafisa Fai asked about if there are any considerations to address lack of safe train crossing to the bus stops in the section between 198 and 185 eastbound.

Mayor Jeffrey Dalin inquired about how to integrate Council Creek Trail as a way to improve safety and provide alternate way for bicyclists to commute between Forest Grove and Cornelius.

Councilor Gerritt Rosenthal, Metro, asked for clarification for the naming or numbering TV Highway corridor segments.

Public comment

No public comment was submitted.

Next steps (Councilor Juan Carlos Gonzalez, Metro)

Co-chair Juan Carlos Gonzalez gave a brief overview of next meetings and events. There being no further business, he adjourned the meeting at 5:59 p.m.

Respectfully submitted,
Yuliya Lee, TV Highway Steering Committee Recorder

Attachments to the Public Record, TV Highway Steering Committee meeting, November 10, 2022

Item	DOCUMENT TYPE	DOCUMENT DATE	DOCUMENT DESCRIPTION	DOCUMENT No.
1	Agenda	11/10/2022	11/10/2022 TV Highway Steering Committee meeting agenda	111022TVHSC-01
2	Document	10/13/2022	10/03/2022 TV Highway Steering Committee meeting minutes	111022TVHSC-02
3	Document	10/26/2022	TV Highway Corridor Characteristics Memo, Part 2 – 10/26/22	111022TVHSC-03
4	Document	11/10/2022	TV Highway: Run Time Summary – 11/10/22	111022TVHSC-04
5	Document	10/20/2022	Basis of Design, Part 2 – 10/20/22	111022TVHSC-05

00:20:49 Ashley Hartmeier-Prigg (she/her): I was so focused on the delicious question. I'm Council President for City of Beaverton. :)

00:29:58 Maria Dolores Torres: Se corta un poco la voz del interprete. tal vez el internet?

00:33:26 Jess Zdeb | Metro: @Maria Dolores Vemos su comentario y nos comunicamos con Matt sobre el volumen del sonido.

00:33:39 Maria Dolores Torres: Gracias

00:33:47 Matt Toupin (Spanish Interpreter): Me escuchas?

00:44:41 Luis Aguilera (Spanish Interpreter): de regreso

00:44:46 Luis Aguilera (Spanish Interpreter): Matt, mi turno

00:45:25 Matt Toupin (Spanish Interpreter): Adelante.

00:45:28 Matt Toupin (Spanish Interpreter): Gracias Luis

01:11:42 Luis Aguilera (Spanish Interpreter): Matt, su turno en 3 minutos

01:11:59 Matt Toupin (Spanish Interpreter): Casi estoy listo

01:13:33 Matt Toupin (Spanish Interpreter): Luis, mi turno

01:13:39 Luis Aguilera (Spanish Interpreter): Matt, su turno ahora

01:13:44 Matt Toupin (Spanish Interpreter): ok

01:18:54 Jess Zdeb | Metro: To answer Commissioner Fai's question: today there are 77 stops eastbound and 83 westbound. From the workshops we've had with jurisdiction staff so far, we have 51 stops eastbound and 52 westbound. This includes stops that are still under discussion for changes, so the run time estimate is conservative by assuming more stops than there may eventually be.

01:33:03 Nafisa Fai: Since we are short on time for this topic, I will put my questions here: How does the time saving work? Is it during peak time or across the entire day? Also why don't we have park and ride? And whats the impact on traffic?

01:34:40 Mayor Jeffrey Dalin: I see bus driver concern of being able to pull out as a law enforcement issue and not a justification for stopping in the lane.

01:43:12 Matt Toupin (Spanish Interpreter): Luis, 2 minutos...

01:44:59 Luis Aguilera (Spanish Interpreter): Matt, listo...taking over

01:45:09 Matt Toupin (Spanish Interpreter): Adelante. Gracias.

02:06:36 Karmen Chavez-Sam (she/her) - APANO CUF: Thank you for the presentations today. I don't have anything to add right now, it's a lot to take in!

02:08:13 Maria Dolores Torres: Thank you.

02:09:00 Nansi Lopez, She/her/ella - Centro Cultural: Thank you, Jesse.

02:12:20 Rian Windsheimer: ODOT has recently submitted a pre-application to the Great Streets Program for an enhanced Ped Crossing at 334th. With Great Streets funding (\$3 million approximately) this project would install a pedestrian activated enhanced crossing signal with advanced warning with a pedestrian refuge on OR8. The project includes adjacent illumination and complementary sidewalk infill with ADA ramps. The Great Streets funding leverages this important work and will help demonstrate state support for safety investments along the corridor.

The primary goal safety for pedestrians and those accessing transit. The project will improve visibility (ped activated signal and illumination) and reduce crossing distance for pedestrians. In addition, the 2020 Road Safety Audit identified the following risk factors that will be addressed if funded:

- Three pedestrian fatalities near this intersection
- In-lane bus stops in both directions
- One of the highest TriMet ridership stops for study corridor

02:13:55 Jess Zdeb | Metro: I believe that Annadiana has left the meeting and we have her email to follow up.

02:14:32 Rian Windsheimer: · One of the highest TriMet ridership stops for study corridor

- Higher turning movement volumes compared to other stop-controlled side streets on the study corridor
- Tall grass in the northeast corner of the intersection causes difficulty seeing westbound vehicles from the side street

There potentially may be opportunities to leverage future future transit investments using the Great Streets funding. Applications are due in January. It would great to demonstrate support from this group if the project makes it through this pre-ap phase and moves into the formal application phase.

02:15:34 Karmen Chavez-Sam (she/her) - APANO CUF: Thank you!



Metro



Implementation Scenarios Introduction

Steering Committee | December 15, 2022

Agenda

1. Why we're evaluating project scenarios
2. Project process
3. Scenarios overview
4. Scenario screening measures: Small Starts feasibility

Why Evaluate Implementation Scenarios

- Seeking the best transit project to serve corridor needs and meet project goals
- The transit project alone cannot meet *all* needs of the corridor, so we're starting to investigate other opportunities for safety/roadway

Why Evaluate Implementation Scenarios

- Study area is large: longer than most Small Starts BRT projects
- Anticipated challenges
 - Ridership modeling may show sub-segments to be less competitive
 - Competitive segment for ridership may be ineligible with current cost assumptions

Project Process Refresher

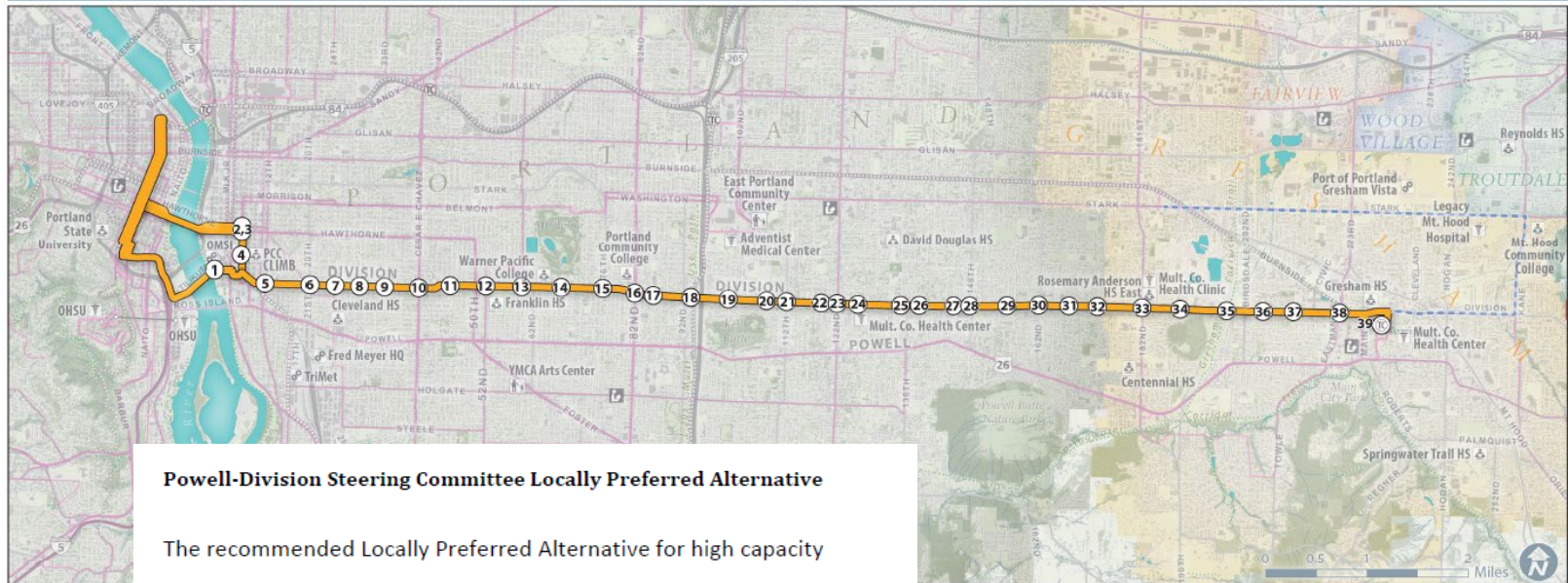
- Steering Committee will eventually endorse a Locally Preferred Alternative for FTA Small Starts
- Locally Preferred Alternative consists of:
 - Concept design: mode, alignment, general station locations
 - Conceptual financial plan
- LPA needs to be adopted into the fiscally constrained Regional Transportation Plan (RTP)
 - Prior to RTP, LPA voted on by local bodies

LPA Example

2018 Regional Transportation Plan

Powell-Division Transit and Development Project: Proposed Locally Preferred Alternative

EXHIBIT B
Appendix O
Metro



Powell-Division Steering Committee Locally Preferred Alternative

The recommended Locally Preferred Alternative for high capacity transit in the Powell-Division corridor is bus rapid transit with stations at the locations indicated on the attached map, operating between downtown Portland and the Gresham Transit Center. The route will operate on the transit mall (5th and 6th avenues) in downtown Portland, cross the Willamette River, and run on Division Street from SE 8th Avenue in Portland to the Gresham Transit Center.

Map Key

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Station Location

- on & 167th
- on & 174th
- on & 182nd
- on & 190th
- sham-Fairview Trail
- & Bella Vista
- Wallula/212th
- & Eastman
- Transit Center

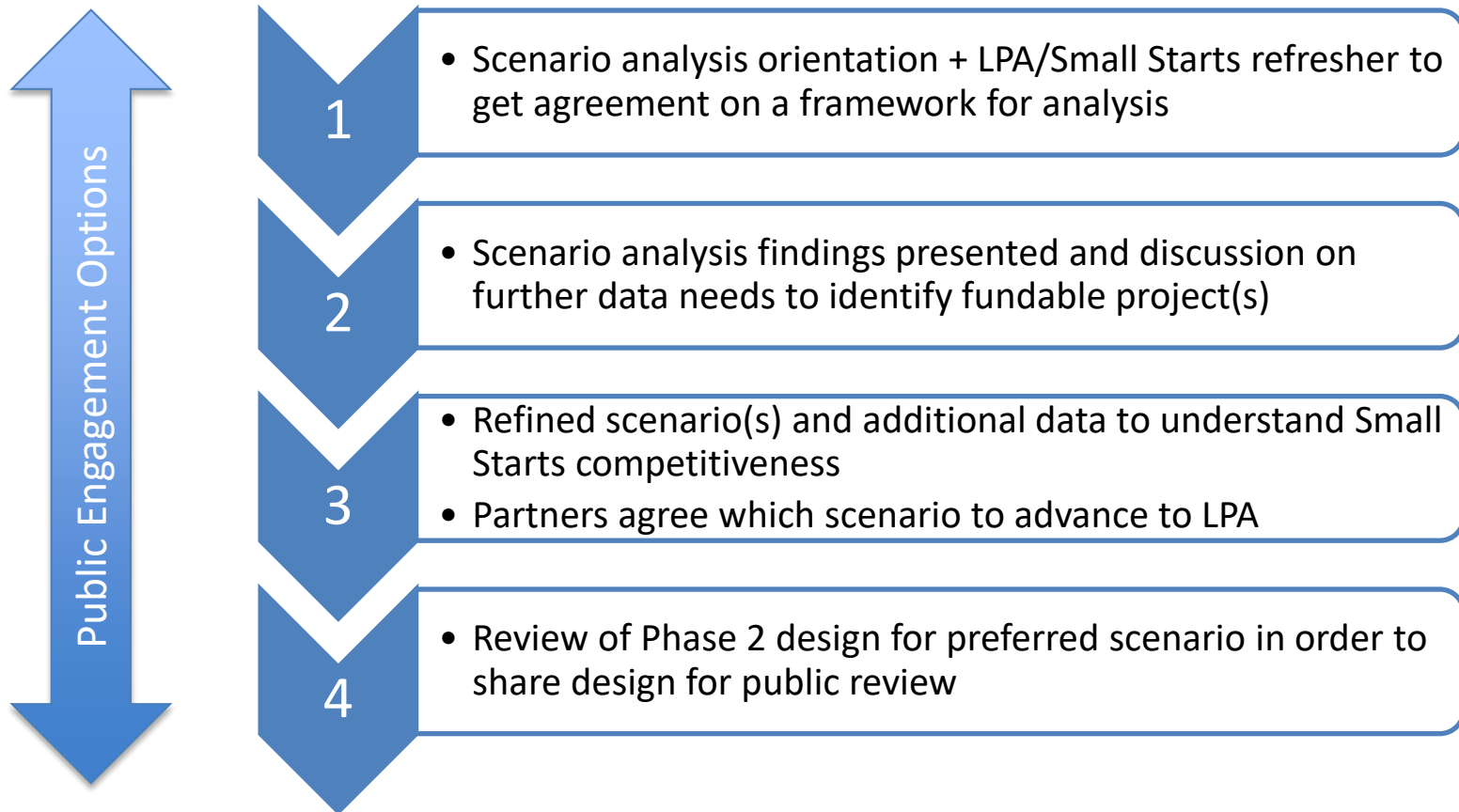
in East Portland were shifted as requested by east county steering committee members.

Elements of the Proposed Locally Preferred Alternative

- Bus Rapid Transit Alignment (River crossing to be determined)
- Approximate station location
- Line 20 connection to Mount Hood Community College
- Light rail
- Streetcar
- Aerial tram
- Frequent bus
- Standard bus
- Regional trail

November 3, 2016

Project LPA Process



Project Goals

Improves the travel experience (safety, time, reliability) for transit riders, in particular communities of color and low-income communities

Advances local goals related to **land use, transportation, equity, and climate**

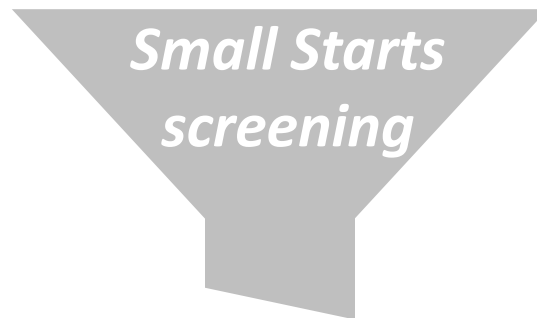
Supported by the community, in particular transit riders and communities of color

Feasible to fund, construct and operate

Able to move into the next phase, Project Development

Meeting Project Goals

Project Scenarios



Feasible Scenarios

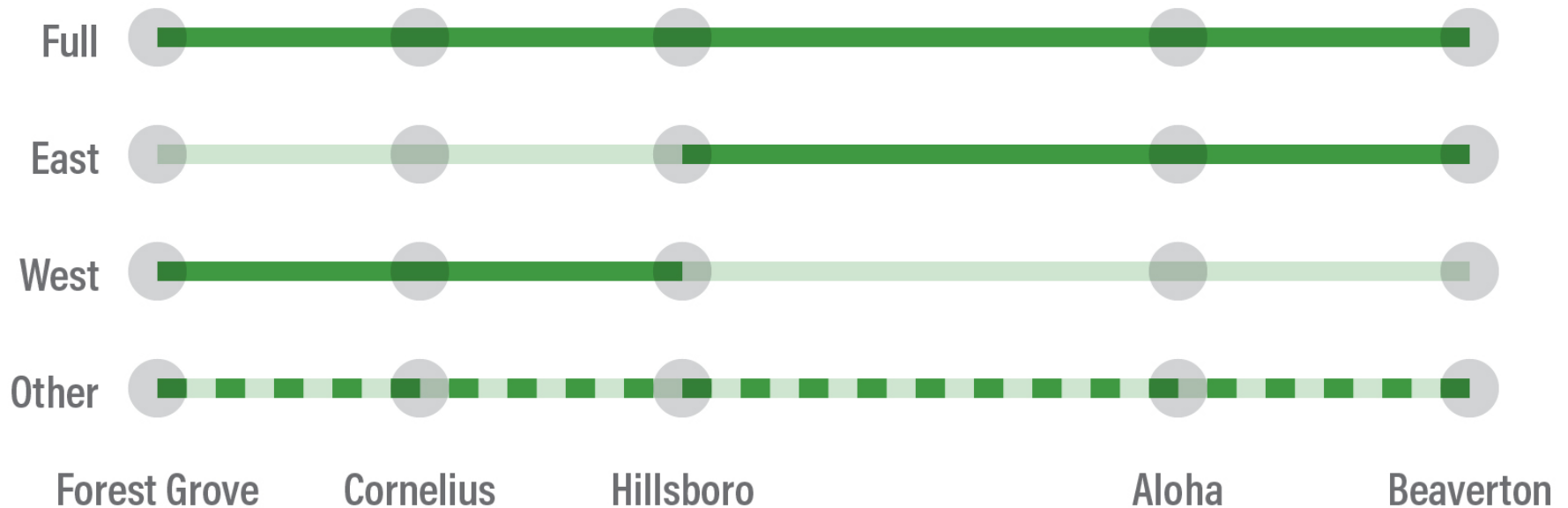


Preferred Scenario(s) for Discussion

Scenarios for Analysis

- Scenarios comprise:
 - **Capital investments** (e.g., stations, crossings)
 - **Service characteristics** (i.e., how the bus line serves the corridor)
- Team is studying a subset of the combinations of capital and operating options

CIG-funded Capital Investment Extents



Discussion Break

Small Starts

- One category within FTA's discretionary **Capital Investment Grant (CIG)** Program
- TV Highway is **not viable for New Starts** because New Starts requires over 50% dedicated transitway

Small Starts Feasibility

BRT eligibility:

What are the critical project elements?

Cost constraints:

How expensive can the project be?

How much could come from Small Starts?

Ratings:

Would the project meet minimum rating thresholds? Would it be competitive?

Small Starts Eligibility

TV Highway could be eligible for Small Starts as a **corridor-based BRT**, mostly in mixed traffic but with features that emulate rail transit:

- **Defined stations** with accessibility, weather protection, info on schedules and routes
- **Consistent branding** for stations and vehicles
- **Faster travel times** through congested intersections

Small Starts Cost Constraints

Small Starts projects must be:

- Less than \$400M total capital cost
- **AND**
- Less than \$150M CIG share

TriMet targets **50% CIG share**, to balance competitiveness with leveraging federal \$

- <50% CIG share improves rating
- Maximum Federal share (all sources) is 80%

Small Starts Ratings

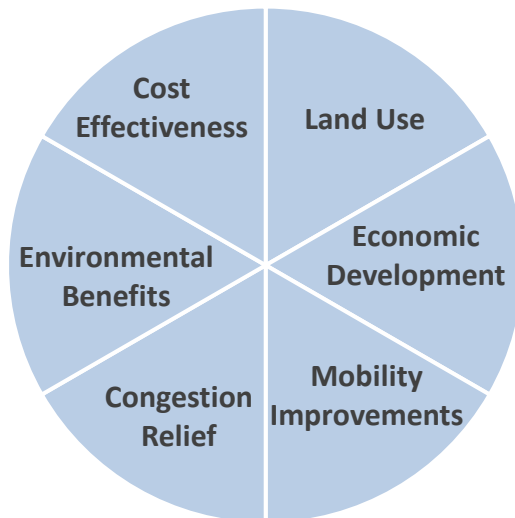
Overall project rating and individual ratings all use this scale:

5	High
4	Medium-High
3	Medium
2	Medium-Low
1	Low

Small Starts Ratings

- Overall rating is an average of two summary ratings
- Both must be **Medium or better** to receive a grant

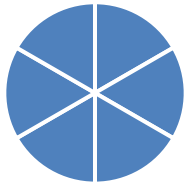
Project Justification



Local Financial Commitment



Project Justification

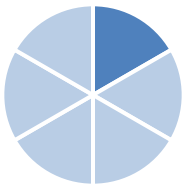


Six equally-weighted individual measures, based on:

1. Transit-supportive land use and policies
2. Modeling:
 - a. Informed by routing, runtimes, headways
 - b. Average of current and horizon year results
3. Federal share of project capital cost

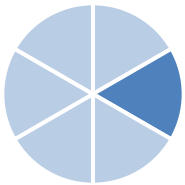
Project Justification Measures

These two are based on **existing conditions, plans and policies.**



Land Use is a compilation of:

- Access to jobs
- Affordable housing
- Population density
- Parking cost and supply



Economic Development: qualitative measure of support for transit-oriented development, based on plans and policies

Project Justification Measures

These two are based on **ridership projections**.



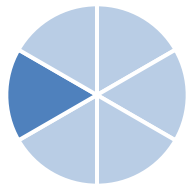
Mobility Improvements: number of trips on the transit project, double counting transit-dependent riders



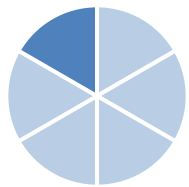
Congestion Relief: net change in overall system transit trips

Project Justification Measures

These two are **divided by the cost.**



Environmental Benefits: annualized monetary value of the change in auto VMT and bus VMT electrification, divided by the annualized federal share of the capital cost



Cost Effectiveness: number of annual trips on the transit project divided by the annualized federal share of the capital cost

Project Justification

What does it take to get Medium or better?

- Add up the individual numeric ratings
- 15–20 = Medium, 21–26 = Medium-High

Here are a few examples:

ML	ML	M	M	MH
M	MH	M	MH	MH
ML	ML	M	M	MH
ML	L	ML	M	M
M	ML	M	MH	MH
M	MH	MH	MH	H
15	15	18	21	24
2.5	2.5	3	3.5	4
M	M	M	MH	MH

6 individual Project
Justification ratings

Total of numeric ratings

Average of numeric ratings

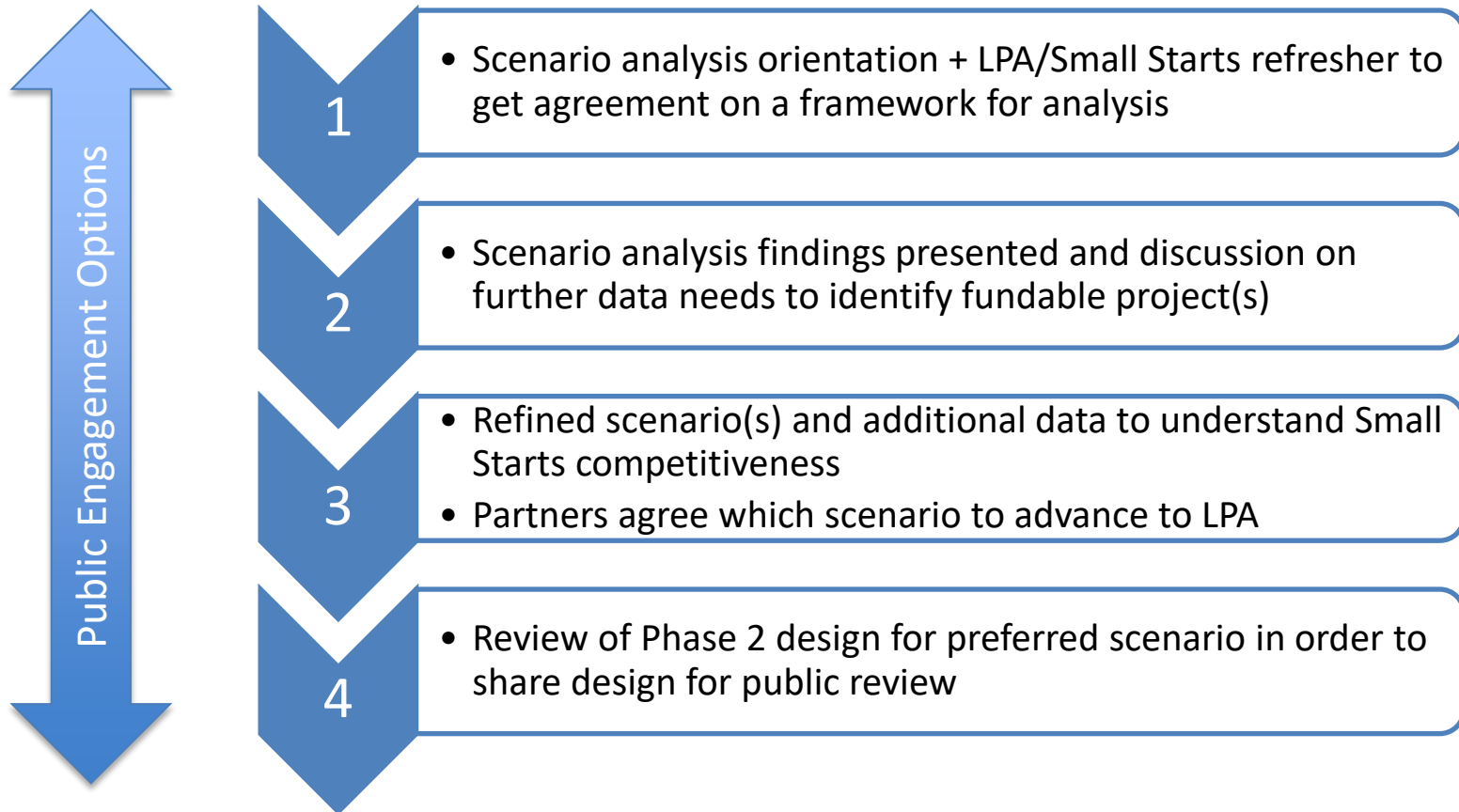
Summary rating

Overall Project Rating

	Infeasible scenarios	Feasible scenarios								
Project Justification	Below Medium for either rating	M	MH	M	MH	H	M	MH	H	H
Local Financial Commitment		M	M	MH	MH	M	H	H	MH	H
Overall Project Rating	Ineligible	M	MH	MH	MH	MH	MH	H	H	H
		← less competitive					more competitive →			

Discussion Break

Project LPA Process



Next Steps

- Collecting ridership and cost data to complete draft ratings
- Collecting more travel patterns data to understand more about what needs should be served
- Presenting findings in February

Memo



Metro

600 NE Grand Ave.
Portland, OR 97232-2736

Date: Thursday, December 15, 2022
To: TV Highway BRT Steering Committee
From: Metro and TriMet project staff team
Subject: Responses to November 2022 Steering Committee Questions

1. How many stops are there currently and how many are proposed for consolidation?
 - Line 57 currently has 133 stops. The project team worked with project partners to identify an initial 28 stops recommended for removal and one new stop to add, resulting in 106 proposed stops for initial analysis and design. Sixteen of those stops are recommended for further consideration and discussion with project partners for potential removal. There will be a public process to review all stop consolidation proposals in the next phase of work.
2. Are the time savings from “BRT stops” mostly from stop consolidation? How much is stop consolidation v. dwell time?
 - The project team is currently working to disaggregate the calculated time savings from decreased dwell time versus stop consolidation and hopes to have an answer to this question soon.
 - On a planning level, standard transit studies from the federal Transit Cooperative Research Program (TCRP) indicate that removing two to three stops results in approximately one minute of travel time savings (at a speed of 25 mph). TCRP studies also show that on average converting pull-out stops to in-lane increases bus speeds by approximately 7%. These are approximations only that vary from corridor to corridor.
3. Do run time savings incorporate delay to merge into traffic from pull-out stops?
 - The base runtimes used to calculate the estimated savings presented in the November 2022 Steering Committee meeting included existing delay from buses merging into traffic. The estimate of BRT runtime savings did not include assumed savings from converting pull-out stops to in-lane stops. Future updates to the runtime estimate may include this additional level of detail.
4. How do the time savings estimates work?
 - The time saving estimate presented in the November Steering Committee meeting compared what the travel time was at two different times in the past (2019 and 2021) to what they could have been at that time if the proposed improvements had been in place. These estimates were shown by time of day and direction of travel, as they vary based on these two factors. These time savings estimates are not predictions of savings into the future but rather were presented to show that the improvements speed up the bus and which of the improvements impact travel time to varying degrees.

5. Are the time savings during peak time or across the entire day?
 - The time savings estimate provided in the November Steering Committee looks at AM peak, midday, and PM peak runtimes in both 2019 and 2021. Different times of day affect traffic speeds and the percent of stops served, both of which impact travel time.
6. Why doesn't the project include park and rides?
 - Riders could use existing park and rides along the corridor (there are two in Hillsboro). Constructing new park and ride facilities is typically not included in a bus rapid transit project and are currently not included in the initial design or cost estimates for the TV Highway Project. BRT projects focus on improving transit speed and reliability, and on station access and stations themselves.
7. What is the impact on traffic?
 - The project team is currently undertaking traffic analysis that will work towards answering this question, especially to understand the impact of physical priority treatments like BAT lanes and queue jumps. We will share this information when it is available.
8. What will happen in locations with 45mph speed limit – will stations be pull-out type?
 - The project team is investigating the opportunities for designing segments that are currently 40mph or greater to be 35mph. If design treatment solutions are identified for that speed change, we anticipate in-lane stops in these areas. Where speed limits remain higher than 35mph, we anticipate retaining and/or converting to pull-out station types.
9. There are currently stops where buses pull into the bike lane and leave enough space for traffic to pass next to them with one to two feet clearance between. I guess we consider these “in lane” stops although they allow traffic to pass. Can stop be moved fully out of lane so traffic can pass safely?
 - Yes, these are currently considered “in-lane” stops because they do not get the bus fully out of the through travel lane and allow for safer passing movements. At some locations where speed reductions may not be possible, the design team is exploring options for pull-out stops that would take the buses completely out of a through travel lane. Potential impacts of space needs for these pull-out stops on adjacent private property will need to be better understood.
 - The in-lane stops being explored as part of this project bring the curb closer to the travel lane while still providing a space for a bike lane to pass behind or in a designated space to the right of the bus. This design can help eliminate conflicts between bikes and buses, and the situation where the bus is partially in the vehicle lane and partially in the bike lane and drivers attempt to pass the bus creating collision risks. In-lane stops also limit the right-of-way needed for bus stops and speed up the bus as merging time is reduced. This project is also expecting to decrease bus dwell times at stops and optimize the number of bus stops so that transit users can get to their destinations quicker and impacts to others on the roadway are minimized.