SOUTHWEST CORRIDOR
LIGHT RAIL PROJECT

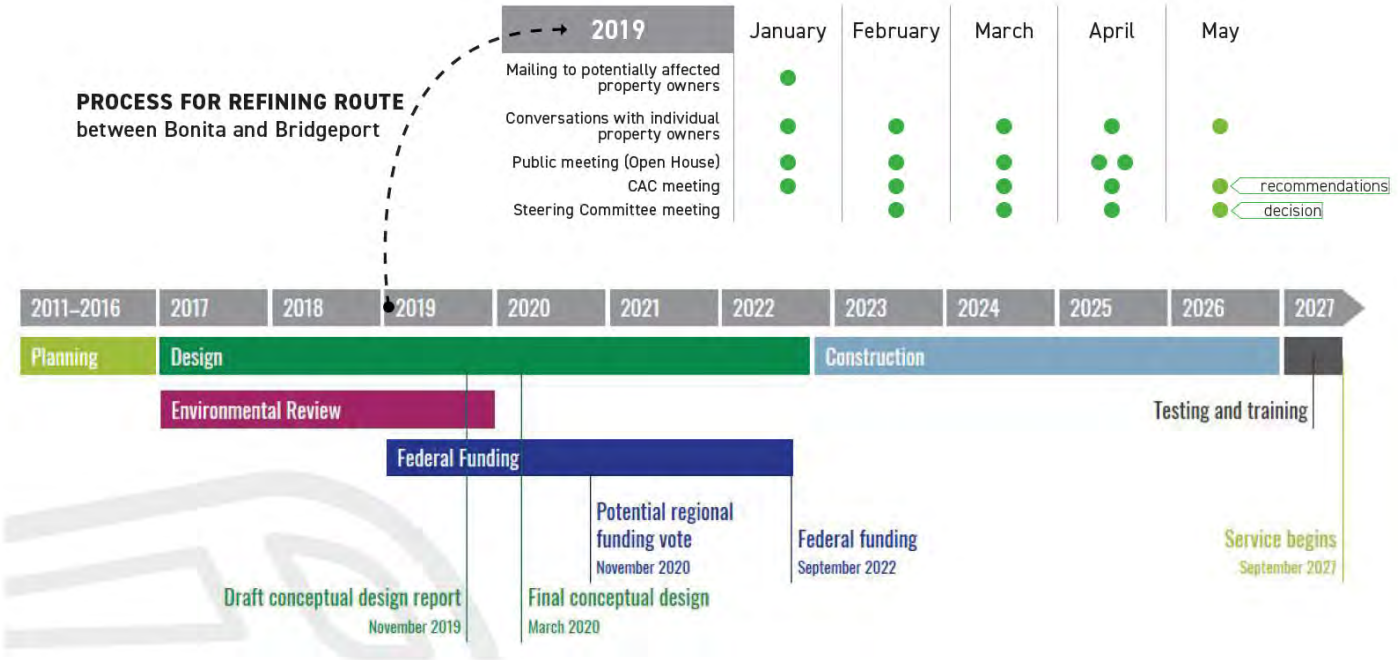
Community Advisory Committee

Bonita to Bridgeport

May 2, 2019

GREAT PLACES SW Corridor

Bonita to Bridgeport Timeline



1. LPA 2018

2. LPA ELEVATED

3. LPA AT-GRADE, REFINED

4. 74TH AVE.

5. 74TH AVE., REFINED

6. EAST OF WES

STAFF FINDINGS ON LPA AT-GRADE, REFINED ROUTE ARE BASED ON THE FOLLOWING:

1. Fewer business impacts
2. Lower costs with fewer risks to project schedule
3. Station at Upper Boones Ferry Road serves employment center
4. Multiple potential designs for Bridgeport Station, including option with no business displacements

FOLLOW-UP ON LPA AT-GRADE, REFINED ROUTE

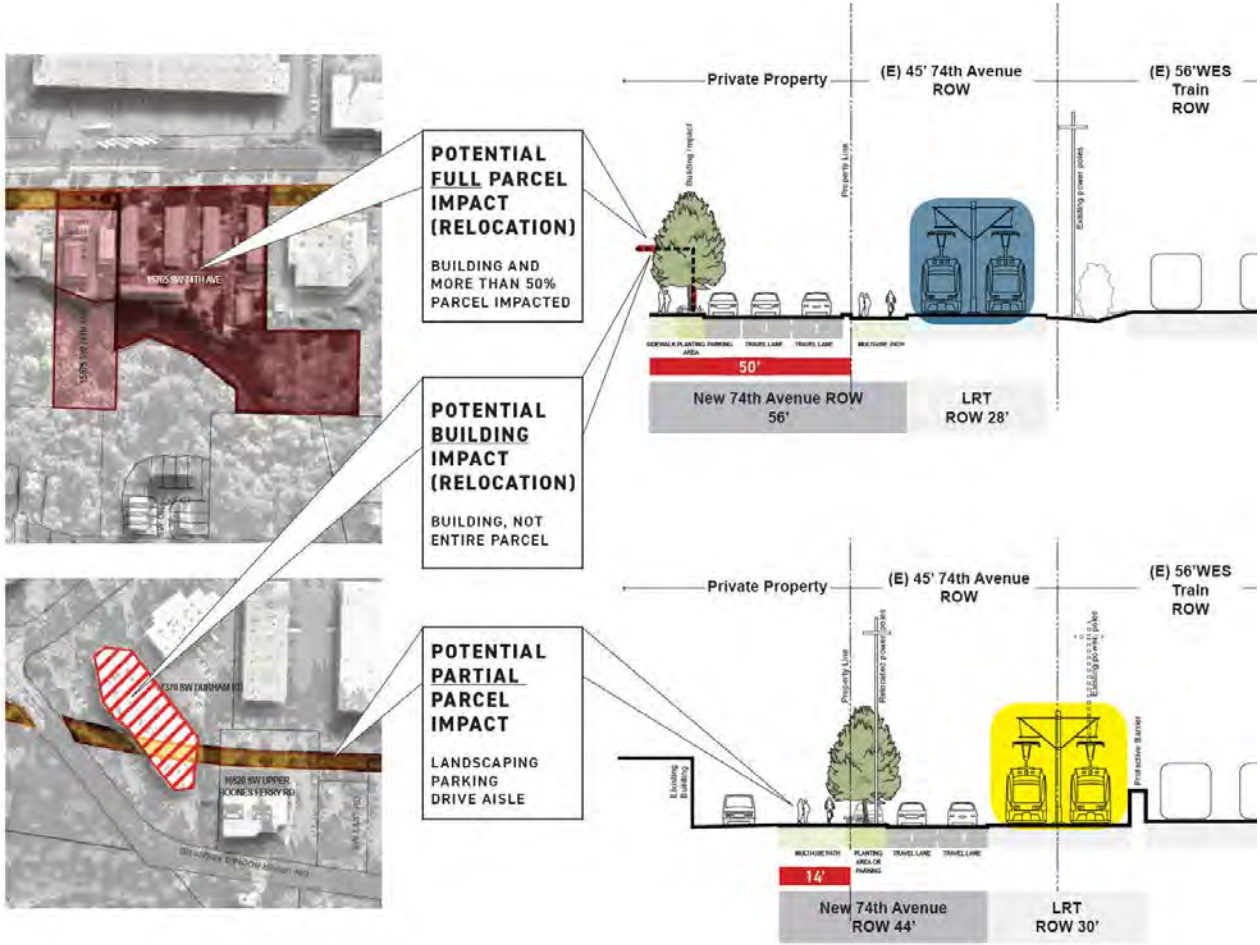
Detailed traffic study in late summer 2019 will help partners collaborate on at-grade crossing design:

- Safety – follow industry best practices
- Transit reliability and travel time – make transit fast and easy
- Traffic issue – motor vehicle queuing, level of service, delay – meet 2035 "no-build" conditions (2045 at I-5 ramps)

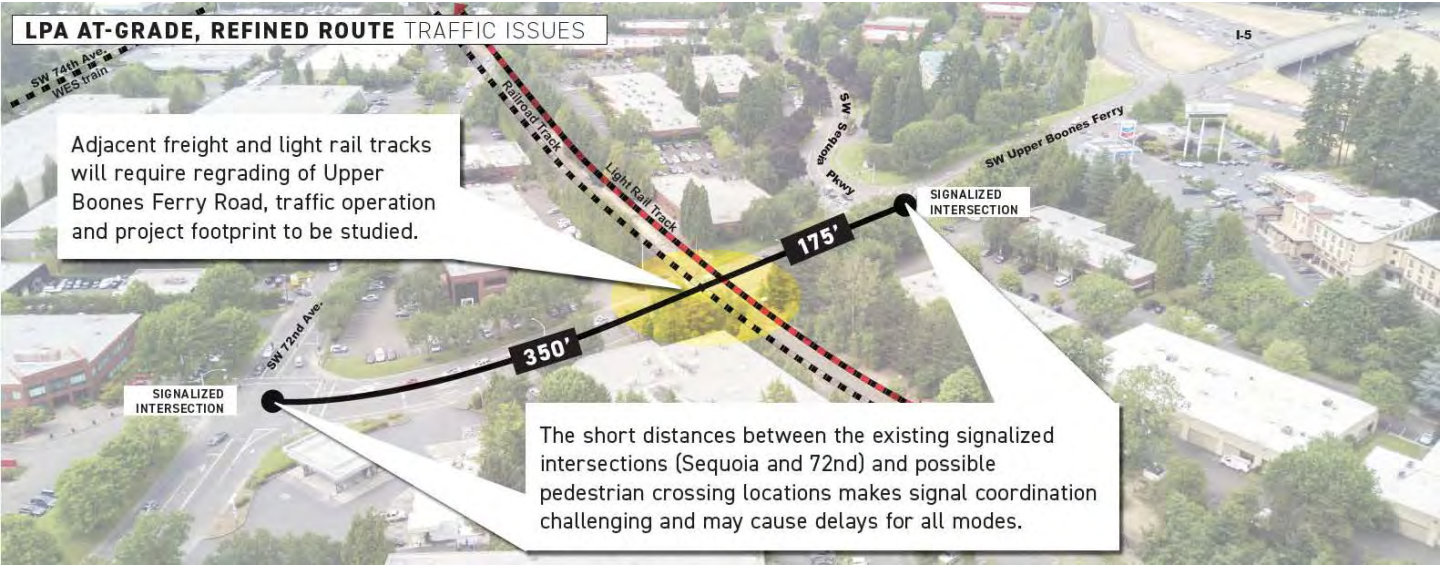
	LPA 2018 IRP in DEIS SUMMER 2018	LPA Elevated LATE 2018	**LPA at-grade Refined** **MARCH/APRIL 2019**	74th Ave JAN/FEB 2019	74th Ave Refined MARCH/APRIL 2019	East of WES MARCH/APRIL 2019
TRAFFIC						
At-grade crossings	72nd Ave Upper Boones, with queuing concern	—	**72nd Ave Upper Boones, with queuing concern**	—	—	—
Bridgeport Park & Ride Location	South of Lower Boones	South of Lower Boones	**South of Lower Boones**	North of Lower Boones	North of Lower Boones	North of Lower Boones
LIGHT RAIL PERFORMANCE						
Travel time difference from LPA	N/A	30 seconds faster	**30 seconds slower**	60 seconds faster	60 seconds faster	60 seconds faster
On-time performance	Risk of delay	—	**Risk of delay**	—	—	—
PROPERTY ACQUISITIONS						
Full or partial parcel acquisitions	31	28	**33**	32	34	24
RELOCATIONS						
Businesses	12	11	**8**	63	10	9
Employees	320	270	**130**	680	190	250
ENVIRONMENTAL IMPACTS						
Acres of floodplain	0.00	0.00	**0.00**	0.80	0.00	0.00
Acres of wetland	0.01	0.01	**0.60**	0.56	0.14	0.26
LAND USE, TRAILS						
Differences in land uses served by an Upper Boones station	More commercial, industrial	More commercial, industrial	**More commercial, industrial**	More residential	More residential	More residential
Regional trail opportunity	—	—	**—**	On-street	On-street	—
RISKS						
Railroad interface	Union Pacific; no existing agreement	Union Pacific; no existing agreement	**Union Pacific; no existing agreement**	Outside railroad right-of-way	Portland & Western (WES); shared use agreement	Portland & Western (WES); shared use agreement
Utilities	—	—	**—**	High risk	Higher risk	—
COST						
Difference from most recent full-project cost estimate	(-$55m)	—	**(-$53m)**	(-$31m)*	(-$77m)*	$12.5m*

* = RISK OF ADDITIONAL ENVIRONMENTAL STUDY

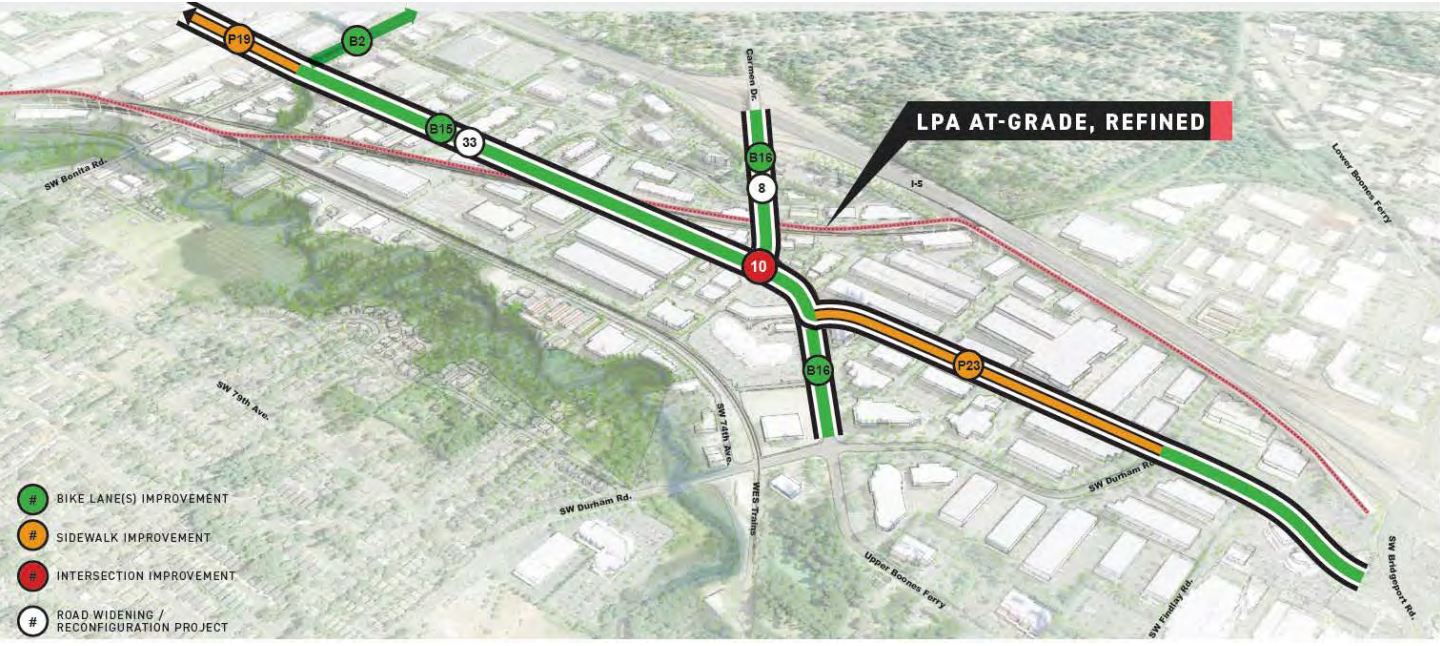
Assumptions for Relocation vs. Partial Impacts



LPA At-Grade, Refined Traffic Issues

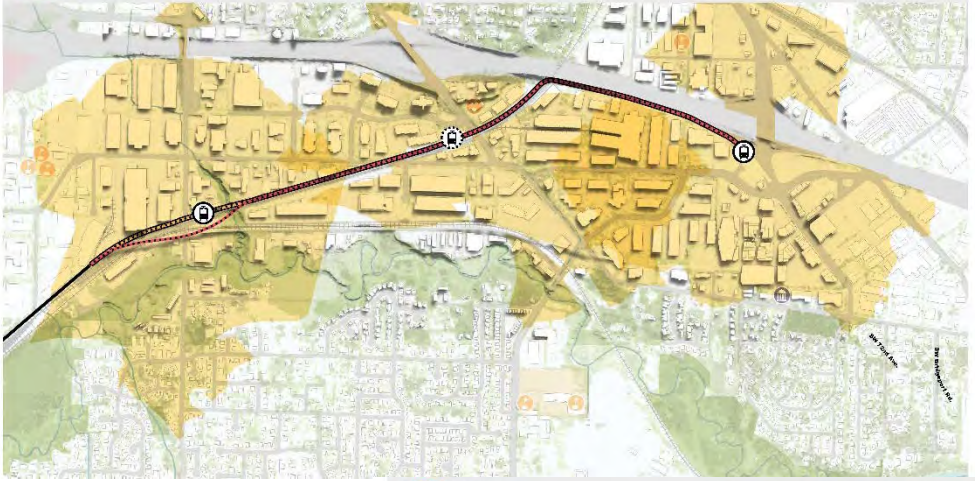


Future Planned Projects

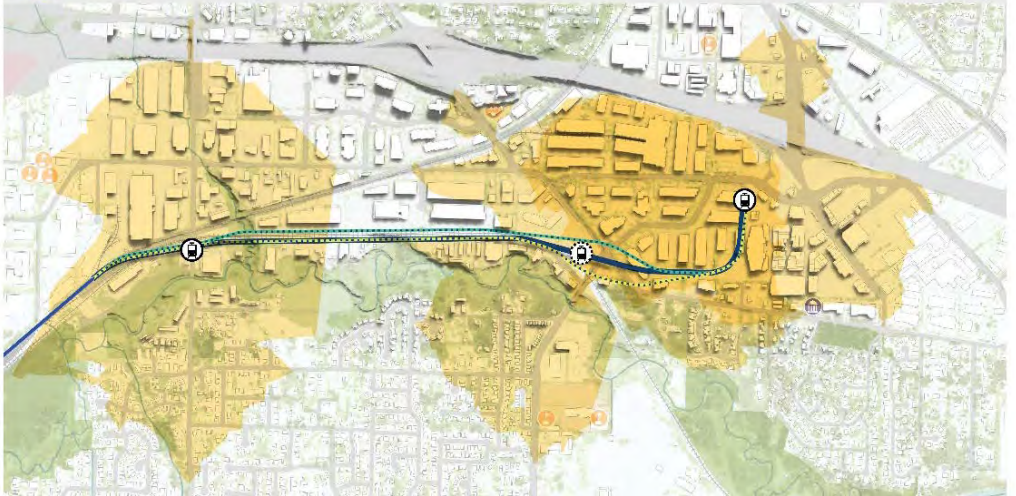


GREAT PLACES SW Corridor

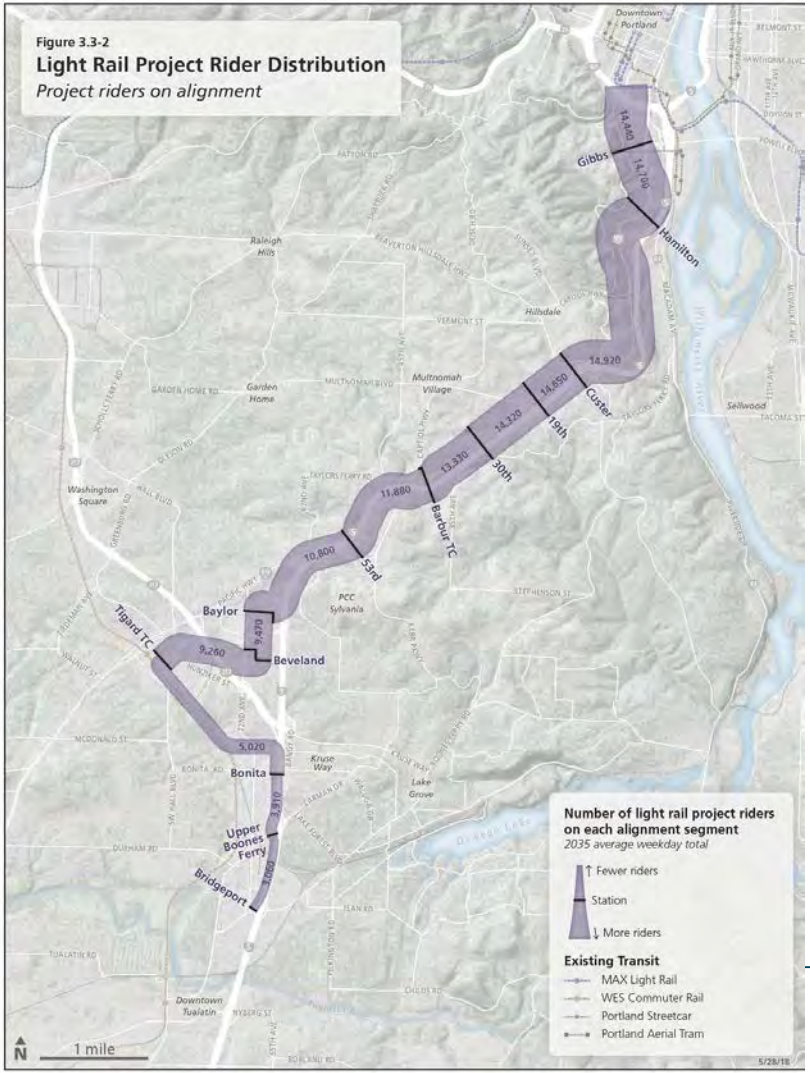
LPA STATIONS & 1/2 MILE WALK DISTANCE



74TH STATIONS & 1/2 MILE WALK DISTANCE



GREAT PLACES SW Corridor



GREAT PLACES SW Corridor

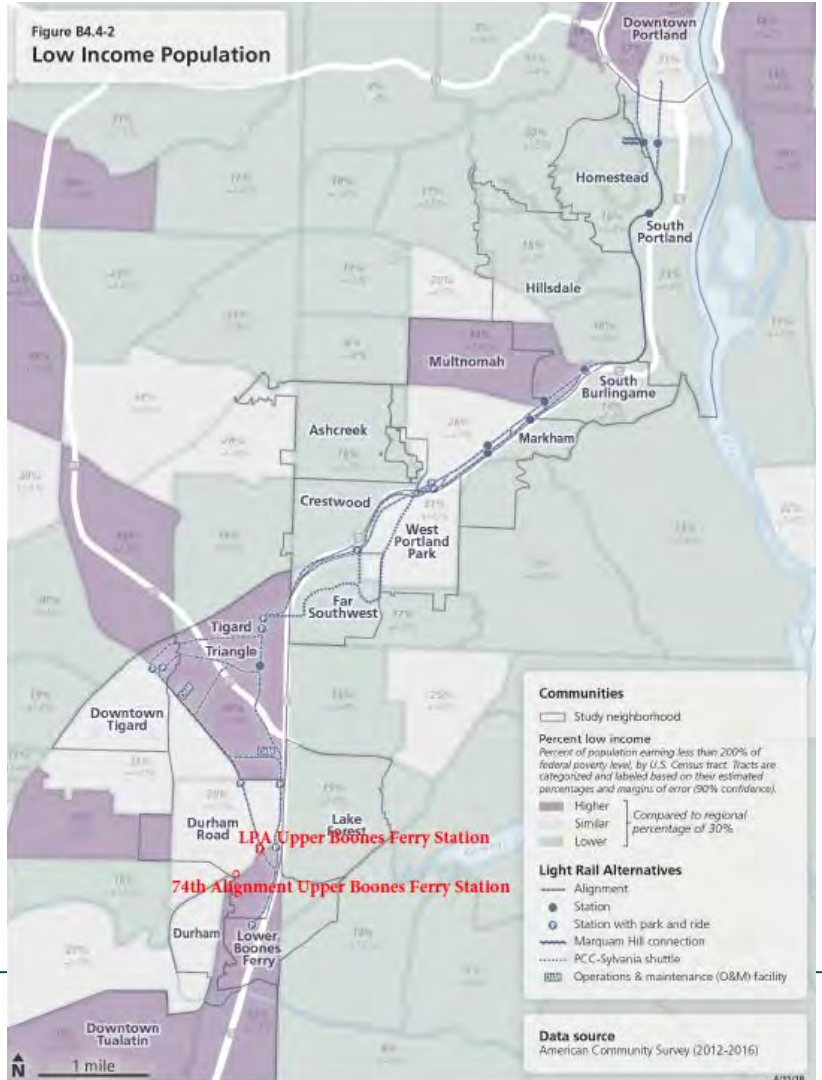


Figure B4.4-2
Low Income Population
Downtown Portland
Homestead
South Portland
Hillsdale
Multnomah
South Burlingame
Markham
Ashcreek
Crestwood
West Portland Park
Far Southwest
Tigard
Triangle
Downtown Tigard
Durham Road
Lake Forest
LPA Upper Boones Ferry Station
74th Alignment Upper Boones Ferry Station
Durham
Lower Boones Ferry
Downtown Tualatin
N
1 mile
Communities
Study neighborhood
Percent low income
Percent of population earning less than 200% of federal poverty level, by U.S. Census tract. Tracts are categorized and labeled based on their estimated percentages and margins of error (90% confidence).
Higher
Similar
Lower
Compared to regional percentage of 30%
Light Rail Alternatives
Alignment
Station
Station with park and ride
Marquam Hill connection
PCC-Sylvania shuttle
Operations & maintenance (O&M) facility
Data source
American Community Survey (2012-2016)

168 COMMENT CARDS RECEIVED

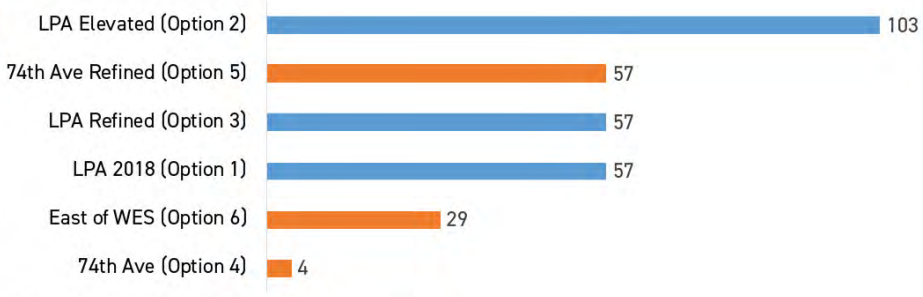
OVER 325 ATTENDEES AT MEETINGS & OPEN HOUSES

OVER 350 EMAILS & LETTERS

MARCH AND APRIL COMMENT CARDS

GATHERED FROM PUBLIC OPEN HOUSES AND ONLINE

PREFERRED OPTIONS



Respondents could choose multiple updated 4/23/19 5pm

TOP OPEN-ENDED COMMENTS

- Concern about business impacts (117)
- Circuit Bouldering Gym (54)
- Concern about traffic impacts (52)
- Cost Considerations (26)
- Prefer lower cost option (17)
- Prefer higher cost for lower impacts (9)

GREAT PLACES SW Corridor

April 25th Open House

- About 30 people; 10 comment cards
- Many supported LPA elevated (for traffic and avoiding business impacts)
- A few supported 74th Ave, refined (for station at 74th & Upper Boones)
- A few supported LPA at-grade, refined
- Many advocated for bike and pedestrian access to stations

Discussion & Recommendations

SOUTHWEST CORRIDOR
LIGHT RAIL PROJECT

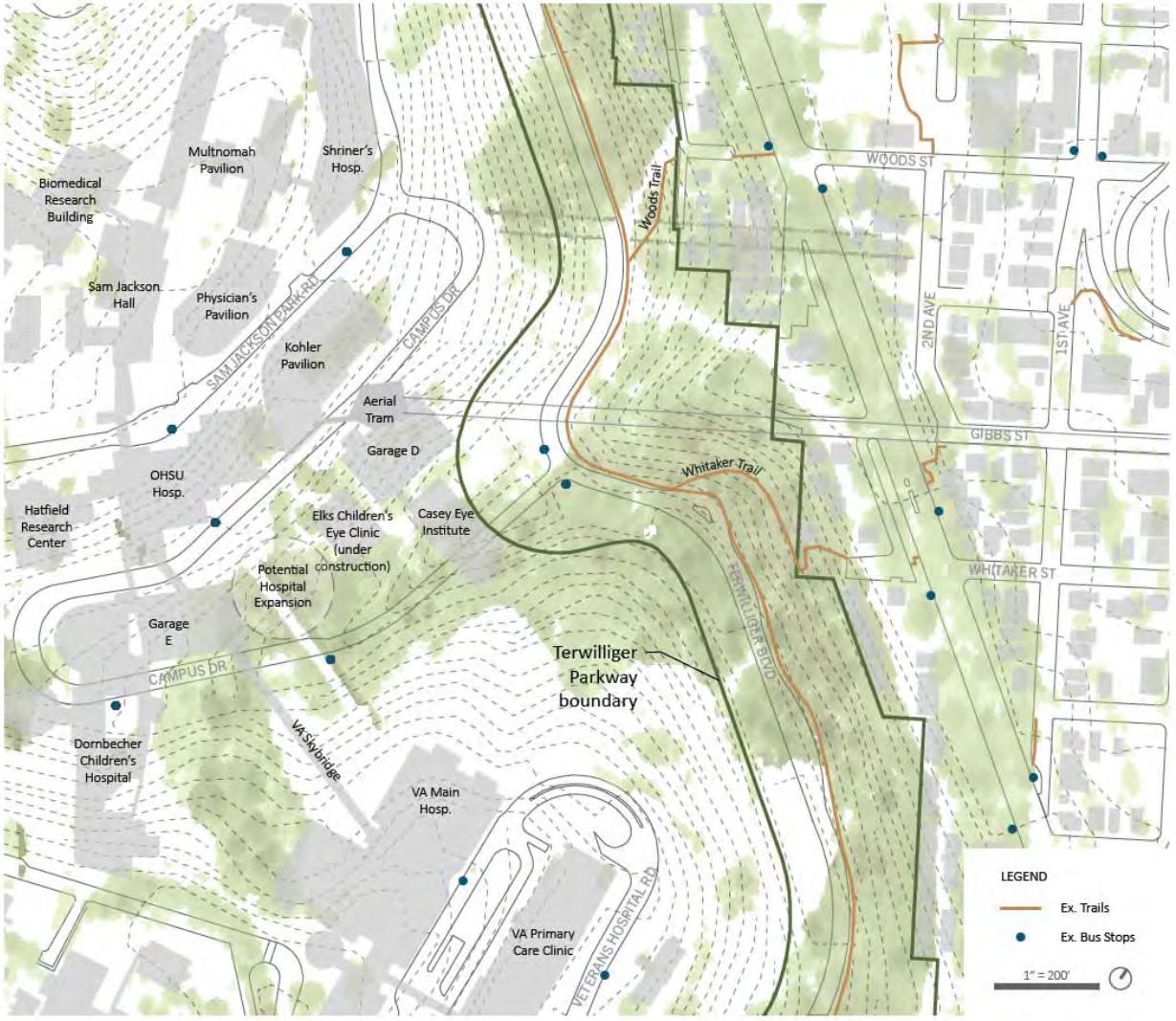
Community Advisory Committee

Marquam Hill Connector

May 2, 2019

GREAT PLACES
SW Corridor

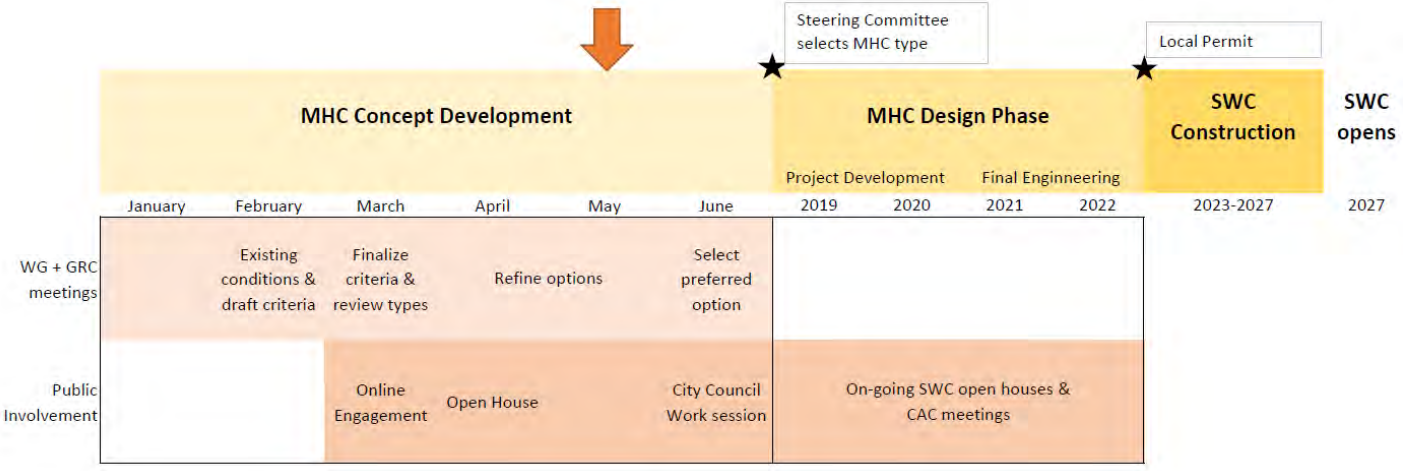
Marquam Hill Connector


Multnomah Pavilion
Shriner's Hosp.
Biomedical Research Building
Sam Jackson Hall
Physician's Pavilion
Kohler Pavilion
SAM JACKSON PARK RD
CAMPUS DR
Aerial Tram
Garage D
OHSU Hosp.
Hatfield Research Center
Elks Children's Eye Clinic (under construction)
Casey Eye Institute
Potential Hospital Expansion
Garage E
CAMPUS DR
Dornbecher Children's Hospital
VA Skybridge
VA Main Hosp.
VA Primary Care Clinic
VETERANS HOSPITAL RD
Terwilliger Parkway boundary
Woods Trail
WOODS ST
2ND AVE
1ST AVE
GIBBS ST
Whitaker Trail
WHITAKER ST
TERWILLIGER BLVD
LEGEND
Ex. Trails
Ex. Bus Stops
1" = 200'

Options

Option	Rough Cost Estimate
Bridge + Elevator	$15 – 25 million
Inclined Elevator (Funicular)	$35 – 45 million
Aerial Tram	$50 – 85 million
Tunnel + Elevator	$55 – 125 million

Timeline


Steering Committee selects MHC type
Local Permit
MHC Concept Development
MHC Design Phase
SWC Construction
SWC opens
Project Development
Final Enginneering
January
February
March
April
May
June
2019
2020
2021
2022
2023-2027
2027
WG + GRC meetings
Existing conditions & draft criteria
Finalize criteria & review types
Refine options
Select preferred option
Public Involvement
Online Engagement
Open House
City Council Work session
On-going SWC open houses & CAC meetings

Outreach

• Open house	April 10
• Online open house	April 15 - 29
• Citizens for Accessible Transit	April 11
• Portland Design Commission briefing	April 18
• Citizens Advisory Committee	May 2

• Green Ribbon Committee meetings	May 8 + June 5
• Portland City Council work session	June 4
• Citizens Advisory Committee	June 6
• Steering Committee Decision	June 10

Bridge + Elevator

Pros:

- Simple and cost-effective
- Limited impacts on landscape
- Canopy walk and views

VIEW FROM BASE OF CAMPUS DRIVE, LOOKING EAST

VIEW FROM BASE OF HILL, LOOKING WEST

Bridge + Elevator

Cons:

- Long walking distance
- Limited access to hill destinations
- Safety and exposure to elements

VIEW FROM BASE OF CAMPUS DRIVE, LOOKING EAST

VIEW FROM BASE OF HILL, LOOKING WEST

Inclined Elevator

Pros:

- Cool, unique, iconic!
- Limited walking required
- Safe and weather-protected

VIEW FROM BASE OF HILL, LOOKING WEST

ERIAL VIEW, LOOKING WEST

Inclined Elevator

Cons:

- Expensive
- Unfamiliar technology
- Possible impacts to wildlife and forest

VIEW FROM BASE OF HILL, LOOKING WEST

AERIAL VIEW, LOOKING WEST

Aerial Tram

Pros:

- Access to upper campus
- Maintains context of Terwilliger Parkway
- Good views and fun experience

Aerial Tram

Cons:

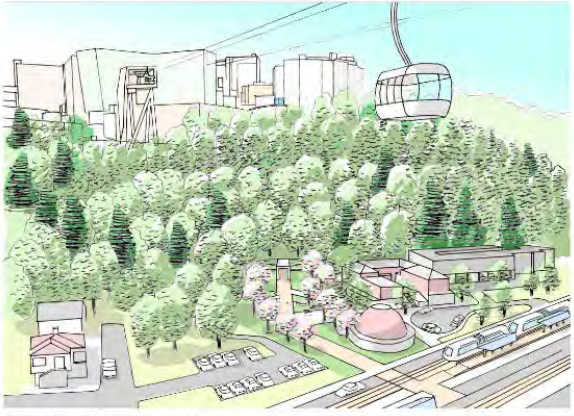
- Expensive: capital, operations, maintenance
- Limited capacity with potential long wait times
- Possible tower and cable view obstructions

Tunnel + Elevator

Pros:

- Maintains context of Terwilliger Parkway
- Sheltered from the elements

VIEW FROM BASE OF HILL, LOOKING WEST



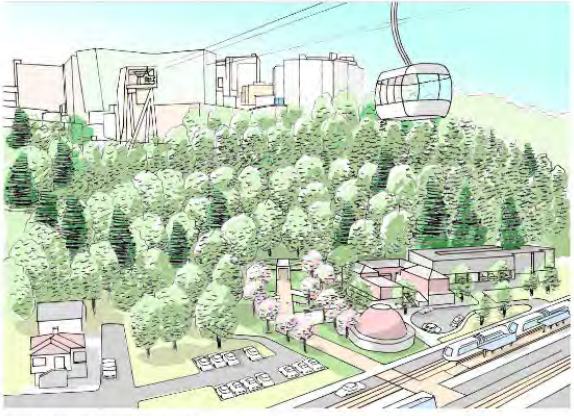
AERIAL VIEW, LOOKING WEST

Tunnel + Elevator

Cons:

- Expensive: capital, operations, maintenance
- Long walking distance
- Does not feel safe and comfortable

VIEW FROM BASE OF HILL, LOOKING WEST



AERIAL VIEW, LOOKING WEST

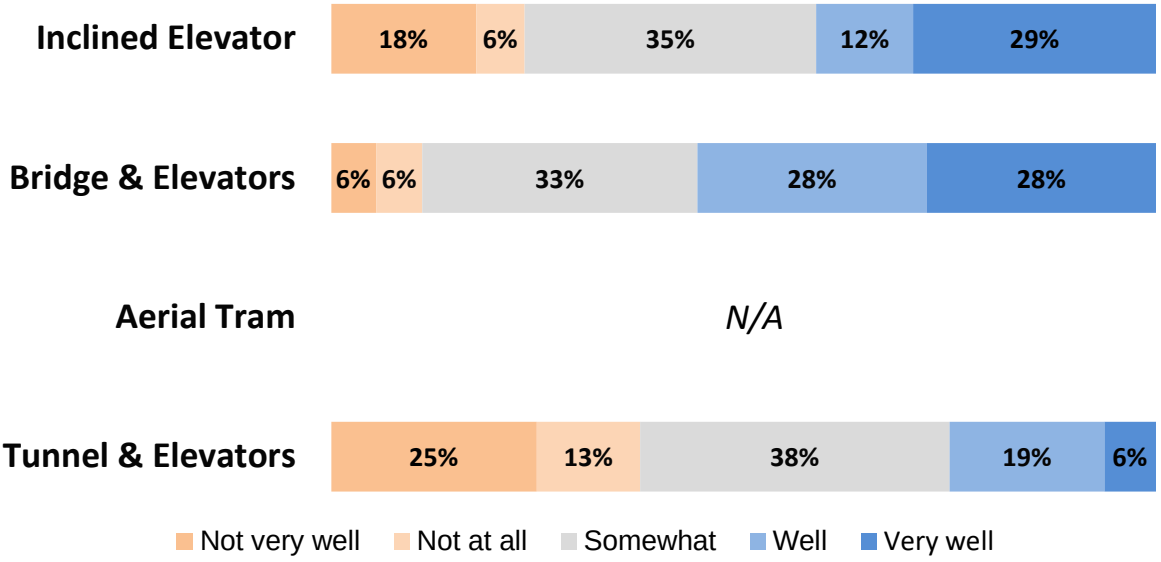
TriMet Committee on Accessible Transportation (CAT)

Preferred Options

- Bridge + Elevator
- Inclined Elevator

In-Person Open House

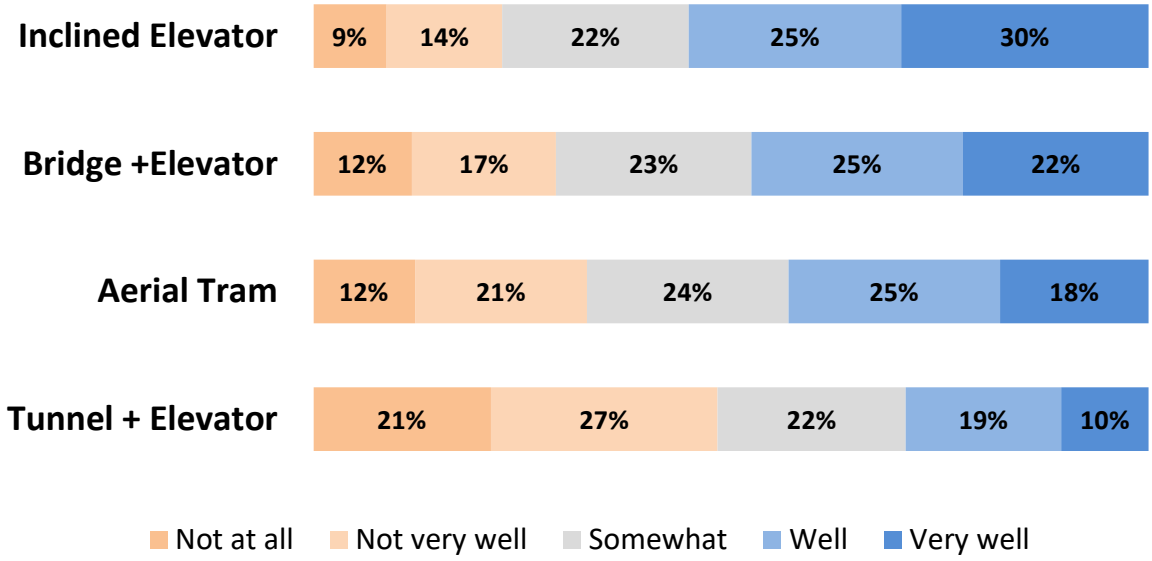
How well does the option meet the project goals?



Total Responses: 17

Online Open House

How well does the option meet the project goals?



Total Responses: 291

SOUTHWEST CORRIDOR
LIGHT RAIL PROJECT

Community Advisory Committee

Park & Rides

May 2, 2019

GREAT PLACES SW Corridor

Overview

- Goals & Objectives
- Inventory & Usage
- Existing Park & Rides
- Lessons Learned
- Considerations
- Next Steps

Overview

What are Park & Rides?

- Station access; bring riders from low density areas with limited mode options to high capacity stations
- Typically adjacent to arterials
- Surface lot or structure

Eastside: 181st Ave Park & Ride

Blue Line: Sunset Park & Ride

Goals & Objectives

Access:

- Station access for all modes
- Equitable, efficient, convenient

Cost:

- FTA's cost effectiveness guidelines
- Balance Park & Ride costs with other project costs
- Responsible use of public resources, land

Context:

- Potential trigger of traffic mitigation
- Existing land use, density
- Future land use, zoning, and community vision

Goals & Objectives

Other Considerations:

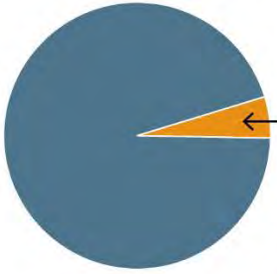
- Visual impact, transit service enhancement, environmental impact, etc.
- Transit oriented development
- Respond to public comments from the DEIS
- Ongoing engagement with public and partners

Background

TriMet Park & Ride Policy (2005)

- In 2040 Regional and Town centers, design facilities that minimize the use of developable urban land
- Prioritize new facilities to provide convenient access for residents of under-served transit areas
- Protect the pedestrian and neighborhood environment and opportunities for Transit-oriented Development (TOD)
- Provide location and design that protects pedestrian and bike traffic safety with a focus on eyes on the street
- Maximize efficiency through the use of partnerships within the public and private sectors

Existing Park & Rides



5% of TriMet's weekday ridership originates from Park & Ride

12,614 Existing TriMet Park & Ride Spaces

40% of TriMet's Park & Ride spaces are typically empty on a weekday

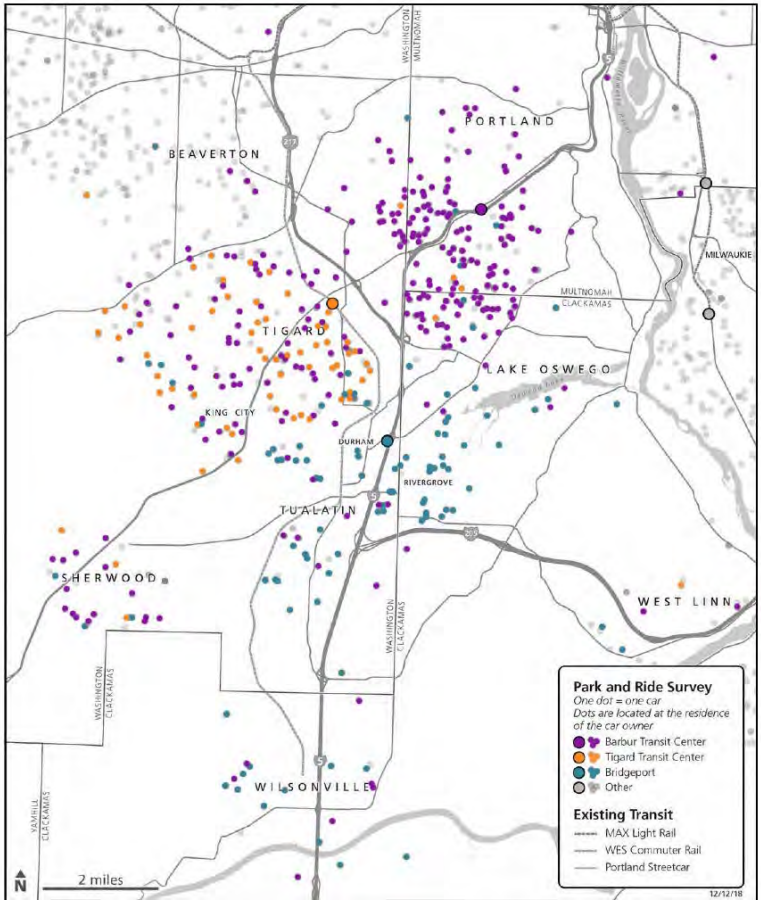
What criteria affects utilization?

Corridor	2017 Capacity (# spaces)	2010 Utilization	2017 Utilization	Good Access from Arterials	Higher Frequency	Direct Service	Newer Design Features & Amenities
Westside MAX	3643	82%	85%	X	X	X	X
Eastside MAX	2967	55%	47%	X		X	
Interstate MAX	600	40%	51%			X	X
Green Line MAX	1990	25%	30%				X
Orange Line MAX	719	n/a	100%	X	X	X	X
Westside Bus	1329	68%	62%	X	X	X	
WES	300	35%	52%	X			X

*Green Line P&R usage has declined, but utilization rate has increased because of a reduction of 300 spaces at Powell P&R.

Existing Park & Rides

- Park & Ride users typically utilize their closest station
- Predominant use is home-based trips to destinations with restrictive parking policies and costs



Fall 2018 TriMet
License Plate Survey Data/ Trip Origins

GREAT PLACES SW Corridor

Lessons Learned

- Utilization:
  - Varies within TriMet's system
  - Decreases with facility age
  - Changes as adjacent land use changes
  - Is higher where other modes are limited (ex: no sidewalks, bike lanes)
  - Is higher at first and last facilities along a MAX line

- Regional modeling tools have become more sophisticated


Orange Line Park & Ride: Park Ave

Considerations

Capital Cost

- Parking is expensive

Cost Effectiveness

- Required metric by the Federal Transit Administration

Operating Costs / Fees

- Existing TriMet Park & Rides are currently free
- Operating costs are approx. $1 per day per space
- Coordination of neighborhood parking and park & ride management

Includes: engineering, administration, & contingency

Considerations

Environmental Impact

- Greenhouse gas emissions
- Congestion, air pollution & auto collisions

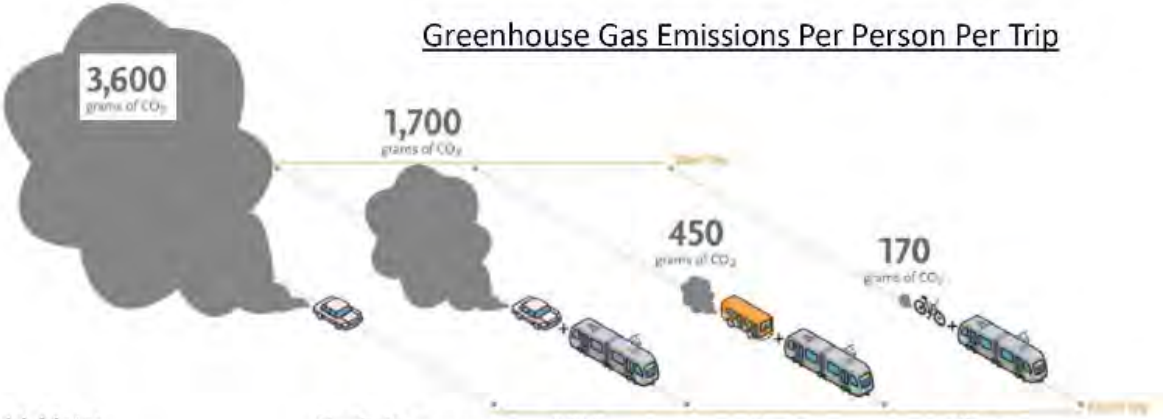
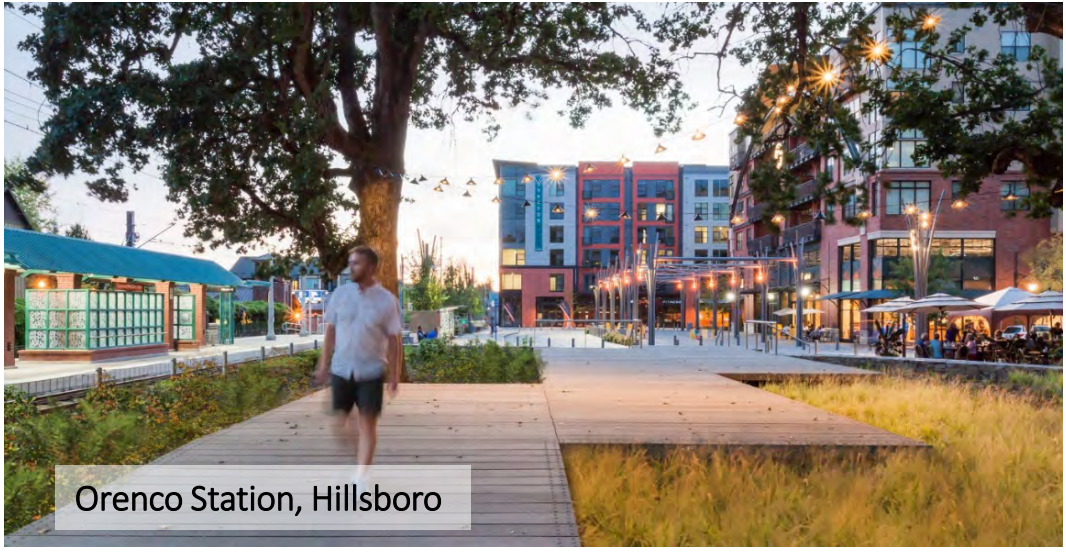


Image Source: LA Metro, First/Last Mile Strategic Plan

Considerations

Transit Oriented Development

- Surface can evolve into other uses
- “Future-proofing” station areas



Orenco Station, Hillsboro

Photo credit: Walker Macy

Considerations

Ridership and Access

- One parking space = Two daily trips
- Access for those with mobility needs
- Mode of access: Walk – Transfer – Drive
- Parking competes with Service Enhancement Plan

Mobility is rapidly changing

- Decline in automobile ownership & vehicle miles traveled (VMT)
- Shared ride services (cars, bikes, scooters)
- Autonomous vehicles

Next Steps

May/June

- **Online engagement**

June CAC

- **More background and discussion**
- **Potential Park & Ride scenarios**

July CAC

- **Discussion and recommendations**

Ongoing

- **Station design**

Questions and Comments

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