SOUTHWEST CORRIDOR
LIGHT RAIL PROJECT

Steering Committee

June 10, 2019
SWC Cost Elements

Project Scope Target (YOE) 2.375B
2018 Estimate (YOE) 2.733B

Total Cost (Scope Gap): 2.733B / (-2.358M)

To Reach Bridgeport:
- Solve Viaducts Funding: D
- Reduce High Value ROW Costs: E
- Reduce O&M Facility: G
- Reduce Bonita to Bridgeport Costs: H or I
- Continue to Balance Cost Pressures: A thru C

A Downtown Tie-in + $10-40M
B Marquam Hill Connector + $12-60M
C Consolidate Station(s) - $3.4-7.5M
D Viaducts - $100-200M
E High Value ROW * - $15-50M
F B2 - Short Span - $0-7.5M
G O&M Facility - $15-50M
H 74th Alignment Options - $0-75M
I Upper Boones At-Grade - $55M

Total: ($-98M)

Expected Scorecard

Updated: 05.28.2019
Process

Summer  Next Full Project Estimate

September  Project *Definition* for *Funding* that aligns with *budget*

Ongoing  Refine estimates as design progresses
MOS - Definition

Minimum Operable Segment

- Required by FTA
- A segment of the LPA that is most cost effective with greatest benefit
- Able to function as a stand-alone project
MOS - Guidelines

- Fit within $2.375B target
- Be competitive for FTA funding
  - New Starts Capital Investment Grant
  - Discretionary funding – cities across the county compete
FTA funding criteria

- Local commitment
- Project justification
# MOS - Considerations

## Potential Evaluation Considerations

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ridership</td>
<td>Cost Effectiveness</td>
</tr>
<tr>
<td>Access to Jobs</td>
<td>Bus Connections</td>
</tr>
<tr>
<td>Access to Affordable Homes</td>
<td>Extendability</td>
</tr>
<tr>
<td>Economic Development</td>
<td>Park and Ride</td>
</tr>
<tr>
<td>Others?</td>
<td></td>
</tr>
</tbody>
</table>
Process

July  Potential MOS options

September  Select MOS within FEIS

Ongoing  Design and environmental study for MOS *and* full-length project
Marquam Hill Connector
Upper Routes on Marquam Hill

Blue line: Common 9th floor connecting buildings on upper campus
Goals & Objectives

• Access: Develop equitable, efficient and convenient connections for all users to a number of destinations on Marquam Hill.

• Safety: Create a safe and secure, 24/7 connection for all users.

• Context: Enhance and improve the historic, scenic and recreational resources; consider the unique character of the area in the design.

• Environmental: Protect and enhance natural resources and habitat.
Goals & Objectives

• Operational: Provide a long-term, sustainable connection for current and future users.

• Budget/Schedule: Be cost effective and timely within the SW Corridor Light Rail project.

• Experience: Create a connection that provides a high-quality user experience and inspires civic pride.
Public Process Review

- Open house  
  - April 10
- Online open house  
  - April 15 - 29
- Committee on Accessible Transportation  
  - April 11
- Portland Design Commission briefing  
  - April 18
- Portland City Council work session  
  - June 4

- Green Ribbon Committee
  - February 23, March 13, April 10, May 8, June 5

- Community Advisory Committee
  - May 2, June 6

- Steering Committee Decision  
  - June 10
Open House Feedback

How well does the option meet the project goals?

<table>
<thead>
<tr>
<th>Option</th>
<th>Not at all</th>
<th>Not very well</th>
<th>Somewhat</th>
<th>Well</th>
<th>Very well</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclined Elevator</td>
<td>9%</td>
<td>14%</td>
<td>23%</td>
<td>25%</td>
<td>29%</td>
</tr>
<tr>
<td>Bridge + Elevator</td>
<td>12%</td>
<td>17%</td>
<td>23%</td>
<td>26%</td>
<td>23%</td>
</tr>
<tr>
<td>Aerial Tram</td>
<td>12%</td>
<td>21%</td>
<td>24%</td>
<td>25%</td>
<td>17%</td>
</tr>
<tr>
<td>Tunnel + Elevator</td>
<td>21%</td>
<td>27%</td>
<td>22%</td>
<td>19%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Total Responses: 308
## Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Rough Cost Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridge + Elevator</td>
<td>$15 – 25 million</td>
</tr>
<tr>
<td>Inclined Elevator (Funicular)</td>
<td>$35 – 45 million</td>
</tr>
<tr>
<td>Aerial Tram</td>
<td>$50 – 85 million</td>
</tr>
<tr>
<td>Tunnel + Elevator</td>
<td>$55 – 125 million</td>
</tr>
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</table>
Bridge + Elevator
Bridge + Elevator

Travel Time to Terwilliger: 3-6 min
Inclined Elevator
Inclined Elevator

Travel Time to Terwilliger: 2-3 min
## Estimated Capacity and Travel Time

<table>
<thead>
<tr>
<th></th>
<th>Inclined Elevator</th>
<th>Bridge + Elevator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elevator Cycle Time</strong></td>
<td>2.3</td>
<td>1.5</td>
</tr>
<tr>
<td>(round trip, min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Elevator Travel distance</strong></td>
<td>108 vertical</td>
<td>108 vertical</td>
</tr>
<tr>
<td>(ft)</td>
<td>317 horizontal</td>
<td></td>
</tr>
<tr>
<td><strong>People/hour</strong></td>
<td>2080</td>
<td>3200</td>
</tr>
<tr>
<td><strong>Travel Time</strong></td>
<td>2 – 3</td>
<td>3 – 6</td>
</tr>
<tr>
<td>(Barbur to Terwilliger, min)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Assumes two, 40-person cabin elevators*
Green Ribbon Committee

• Do not pursue aerial tram and tunnel

• Preference for inclined elevator
  • Current technology seems workable.
  • Poses least visual & environmental impact.
  • Safe, reliable, convenient, and accessible.
  • Serves riders well in all weather conditions.
  • Best option to encourage ridership.
Green Ribbon Committee

Inclined Elevator:

- Investigate landing and alignment alternatives to assess impact and costs.
- Explore public private partnership opportunities to address additional cost.

General

- Explore opportunities for placemaking.
- Integrate elements to enhance historic Parkway.
Community Advisory Committee (CAC)

Continue further study of the Inclined Elevator and Bridge + Elevator

More detailed information:

- Cost
- Environmental and utility impacts
- Travel and wait times
Marquam Hill Connector
Overview

- Connected Transportation
- Station Access
- Revisit Park & Rides
- Online Outreach
  - Park & Ride Scenarios
- Next Steps
Connected Transportation Choices

- Light Rail
- Bus
- Westside Express Service
- Park & Ride

Existing bus routes in & near Southwest Corridor

Image Source: Bruce Forster

Image Source: Mayer/Reed
Connected Transportation Choices

- Multi-use Trails for Cycling & Walking
- Bike Facilities

Image Source: Bruce Forster
Connected Transportation Choices

- Electric bikes, scooters & shuttles are being considered for connections to stations.

- Phone apps will make trip planning & fare payments simple & easy to use.
Station Access

Source: Fehr & Peers

Pogo sticks…
What next?
Station Access

What strategies are other cities taking?

Seattle, WA

Denver, CO

Fort Collins, CO

Los Angeles, CA
Station Access

Conceptual Design Report (CDR)

- Patron Experience
- Climate Change
- Resilience
- Environment
- Community
- Mobility

Station Area Planning
Station Access

Mode of Access

- Hall (Downtown Tigard):
  - 28% WALK
  - 61% BUS
  - 11% CAR
  - Direct access to major arterials
  - Access to frequent bus service/transfer

- 19th:
  - 70% WALK
  - 29% BUS
  - 1% CAR

- 30th:
  - 85% WALK
  - 5% BUS
  - 0% CAR

- Barbur Transit Center:
  - 48% WALK
  - 25% BUS
  - 27% CAR
  - Access to frequent bus service/transfer

- 53rd:
  - 46% WALK
  - 2% BUS
  - 52% CAR
  - Direct access to major arterials

- 68th:
  - 69% WALK
  - 1% BUS
  - 30% CAR
  - Direct access to major arterials

- Elmhurst:
  - 91% WALK
  - 6% BUS
  - 3% CAR

- Upper Boones Ferry:
  - 94% WALK
  - 6% BUS
  - 0% CAR

- Bonita:
  - 89% WALK
  - 11% BUS
  - 0% CAR

- Bridgesport:
  - 32% WALK
  - 36% BUS
  - 32% CAR
  - Direct access to major arterials
  - Access to frequent bus service/transfer
Station Access

First Mile  Metro Provided  Last Mile

Trip
Station Access

Access Sheds

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

What is a Shared Mobility Hub?
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
Park & Rides

Goals & Objectives

Access  Budget  Development and Land Use

Environment  Demand
Park & Rides

Goals & Objectives

- Equitable, Efficient, Convenient
- Complement other modes and transit (bus)

- Balance with other project cost pressures
- Support Transit Oriented Development (TOD)
  - Sensitive to zoning, community visions, etc.

- Minimize visual impacts, traffic mitigations
  - Greenhouse Gas Reduction Goals
- Respond to ridership needs
Park & Ride Criteria

Viable Park & Ride Locations

- Outside of Central City
- Land Availability
- Direct Access to Major Arterials
- Lack Access to Frequent Bus Service/Transfer Opportunities
Park & Ride Scenarios

Scenario A
Park & Rides Spread Among Stations

Scenario B
Large Regional Structures only at Major Arterials

Scenario C
Maintain Existing Park & Rides (No New Facilities)

LEGEND
Symbol/ Name          | Park & Ride Spaces (Existing & Proposed)
-                      | 0
Small                  | 1-200
Medium                 | 201-400
Large                  | 401-950
Large (Structure)      | 401-950
Online Engagement

STATION ACCESS AND PARK & RIDE
ONLINE OPEN HOUSE

June 10 - 28th
Help us spread the word!
trimet.org/swcorridor
Next Steps

- **July**
  - Station Access/ Park & Ride (Update)
  - Conceptual Design Report (Intro)
  - MOS (Update)

- **August**
  - No Meetings

- **September**
  - Park & Ride (Recommendation/ Decision)
  - MOS (Recommendation/Decision)

- **Ongoing**
  - Conceptual Design Report / Station Access
Questions and Comments

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