Connector Types
Marquam Hill Green Ribbon Committee Meeting #2
March 13, 2019
<table>
<thead>
<tr>
<th>Time</th>
<th>Agenda Item</th>
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</thead>
<tbody>
<tr>
<td>4:02 – 4:20</td>
<td>Public Comment</td>
</tr>
<tr>
<td>4:20 – 4:30</td>
<td>Refined Goals &amp; Criteria</td>
</tr>
<tr>
<td>4:30 – 5:30</td>
<td>Previous Studies &amp; Preliminary Analysis of Connector Types</td>
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<tr>
<td>5:30 – 5:58</td>
<td>Connector Type Discussion</td>
</tr>
</tbody>
</table>
Marquam Hill Connector

OHSU Hospital
Kohler Pavilion
Tram Terminal
Upper Parkway Slope

9th Floor
Potential Hospital Expansion
ECEC
Casey Eye Institute

Expansion Slope
Campus Drive Slope
Terwilliger Blvd.
Lower Parkway Slope
Base

Gibbs Street Station
Barbur Blvd.
Marquam Hill Connector

- OHSU Hospital
- Kohler Pavilion
- Tram Terminal
- Upper Parkway Slope
- ON-GRADE
- ABOVE
- BELOW
- Expansion Slope
- Campus Drive Slope
- Terwilliger Blvd.
- Lower Parkway Slope
- Base
- approx. 1000 ft
- Gibbs Street Station
- Barbur Blvd.
## Connector Types

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Aerial Tram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevated Pathway</td>
<td>Gondola</td>
</tr>
<tr>
<td>Bridge + Elevators</td>
<td>Shuttle Bus</td>
</tr>
<tr>
<td>Funicular/Inclined Elevator</td>
<td>Roadway At-Grade Crossing</td>
</tr>
<tr>
<td>Tunnel + Elevators</td>
<td>Roadway Undercrossing</td>
</tr>
<tr>
<td>Escalator/Moving Walkway</td>
<td>Roadway Overcrossing</td>
</tr>
</tbody>
</table>
Precedents
Precedents

Pathway
OHSU Safe and Accessible Pathway (2018)
OHSU Safe and Accessible Pathway (2018)
Elks Children’s Eye Clinic
Elevated Pathway

Precedents

Fuzhou Forest Walkway, China

Melbourne, Australia

Neckartenzlingen, Germany
Pathway + Elevated Pathway

Plan

Accessible pathway connection planned between CEI, ECEC and Hospital Expansion

Accessible path on steep slope would be min. 1550 ft long

Accessible path on steep slope would be min. 1960 ft long

Section

OHSU Hospital
Kohler Pavilion
Tram Terminal
Upper Parkway Slope

Potential Hospital Expansion

9th Floor

ECEC
Casey Eye Institute

Expansion Slope
Campus Drive Slope
Terwilliger Blvd.
Lower Parkway Slope
Base

Gibbs Street Station
Barbur Blvd.

Accessible pathway connection planned between CEI, ECEC and Hospital Expansion
Bridge + Elevators

Precedents

Edmonton, Canada

Ennetbaden, Switzerland

Edmonton, Canada

Navarre, Spain
Bridge + Elevators

Precedents

Ennetbaden, Switzerland

Pescatore Park, Luxembourg

Pescatore Park, Luxembourg
Bridge + Elevators

Precedents

Darlene Hooley Pedestrian Bridge
DEIS - Option 1A (2016-18)
Bridge + Elevators

Plan

Section

Marquam Hill Green Ribbon Committee  |  Preliminary Analysis of Connector Types  
Marquand, MO |  Page 17

1" = 200'
Funicular/Inclined Elevator

Precedents

Montmartre, Paris

Edmonton, Canada

Montmartre, Paris

Edmonton, Canada
Funicular/Inclined Elevator

Precedents

Innsbruck

Innsbruck

Innsbruck

Washington, DC
Funicular/Inclined Elevator

Plan

Section
Tunnel + Elevators

Precedents

Miho Museum, Japan

Miho Museum, Japan
Tunnel + Elevators

Precedents

Amsterdam

Metra Tunnel, Chicago

National Gallery, Washington DC

Kings Cross, London
DEIS - Option 1C (2016-18)
DEIS - Option 2 (2016-18)
**Tunnel + Elevators**

**Plan**

**Section**
Escalator/Moving Walkway

Precedents

Chongqing, China

Tokyo, Japan

Hong Kong

Tokyo, Japan
Escalator/Moving Walkway

Precedents

Washington, DC

Orvieto, Italy
Aerial Tram vs. Gondola

Aerial Tram

```
Aerial Tram

Stop

Fast

Stop

Fast

Fast

Stop
```

Gondola

```
Gondola

Slow

Fast

Slow

Fast

Fast

Slow
```
Aerial Tram

Precedents

Portland Aerial Tram

Roosevelt Island, NYC

Wroclaw, Poland

Roosevelt Island, NYC
Figure 3.14  Barbur Monocable Station & Crossing Improvements
Gondola

Precedents

Whistler, BC

London, UK

Spokane, WA

Medellin, Colombia
Aerial Tram + Gondola

Plan

Section

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Shuttle Bus

Precedents

[Images of shuttle buses and bus stop shelters]
Shuttle Bus

Precedents
Plan

Shuttle Bus

<table>
<thead>
<tr>
<th>Route</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 1</td>
<td>1.2 miles</td>
</tr>
<tr>
<td>Route 2</td>
<td>1.6 miles</td>
</tr>
<tr>
<td>Route 3</td>
<td>1.9 miles</td>
</tr>
</tbody>
</table>

**RECOMMENDED**
- Route 2: 1.6 miles
- Route 3: 1.9 miles
- Route 1: 1.2 miles

Ex. turn around at Kohler Pavilion

May require turn around for shuttle

Kohler Pavilion Terminus

Gibbs Station Terminus
Roadway At-Grade Crossing

Precedents
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Roadway At-Grade Crossing

Plan

Section
Roadway Undercrossing

Precedents
DEIS - Option 1B (2016-18)
DEIS - Option 1C (2016-18)
Roadway Overcrossing

Precedents

Squibb Park, Brooklyn

Chicago Art Institute

San Diego Convention Center

Wildwood Bride, Portland
Roadway Overcrossing

Plan

Section
## Working Group Feedback

<table>
<thead>
<tr>
<th>CONNECTOR TYPE</th>
<th>OVERALL LEVEL OF INTEREST</th>
<th>OPPORTUNITIES</th>
<th>CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-mechanical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pathway</td>
<td>High</td>
<td>Match SW trails &amp; Parkway aesthetics, low complexity &amp; cost</td>
<td>Steep slopes, not appropriate as primary route for entire distance</td>
</tr>
<tr>
<td>Elevated Pathway</td>
<td>Low</td>
<td>Unique relationship to surroundings</td>
<td>Steep slopes &amp; cost efficiency, not appropriate as primary route for entire distance</td>
</tr>
</tbody>
</table>

| **Mechanical**         |                           |                                                                               |                                                                            |
| Bridge + Elevators     | High                      | Design variety, potential for views                                          | Visibility of structure, cost efficiency                                  |
| Funicular/Inclined Elevator | High/Medium               | Relatively high speed, new type of connection in Portland, potential for views | New technology for operations & maintenance, station area footprint         |
| Tunnel + Elevators     | Medium/Mixed              | Weather protection, may include moving walkways, etc.                        | Constructability & geotechnical conditions, cost efficiency, connection to Parkway |
| Escalator/Moving Walkway | Low/Mixed                | High capacity, low physical effort, continuous                               | Accessibility, maintenance, weather protection                              |
| Aerial Tram            | Low/Mixed                 | High capacity & speed, potentially low impact to Parkway                     | Fixed capacity, cost efficiency                                            |
| Gondola                | Low                       | High capacity & speed, potentially low impact to Parkway                     | Accessibility, cost efficiency                                              |
| Shuttle Bus            | Low                       | Uses existing roadway network, low impact to Parkway                         | Circuitous route & anticipated travel time. Not appropriate for primary route |

| **Terwilliger Crossing** |                           |                                                                               |                                                                            |
| Roadway At-Grade Crossing | High                     | Access to Parkway trails & bus stops, low complexity & cost                  | Intersection operations                                                    |
| Roadway Undercrossing  | High/Medium               | Continuous connection across Terwilliger                                      | Impacts to Parkway, access to Parkway trails & bus stops                   |
| Roadway Overcrossing   | Low                       | Continuous connection across Terwilliger                                      | Visual impact to Parkway, access to Parkway trails & bus stops             |
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