

## Marquam Hill Connector

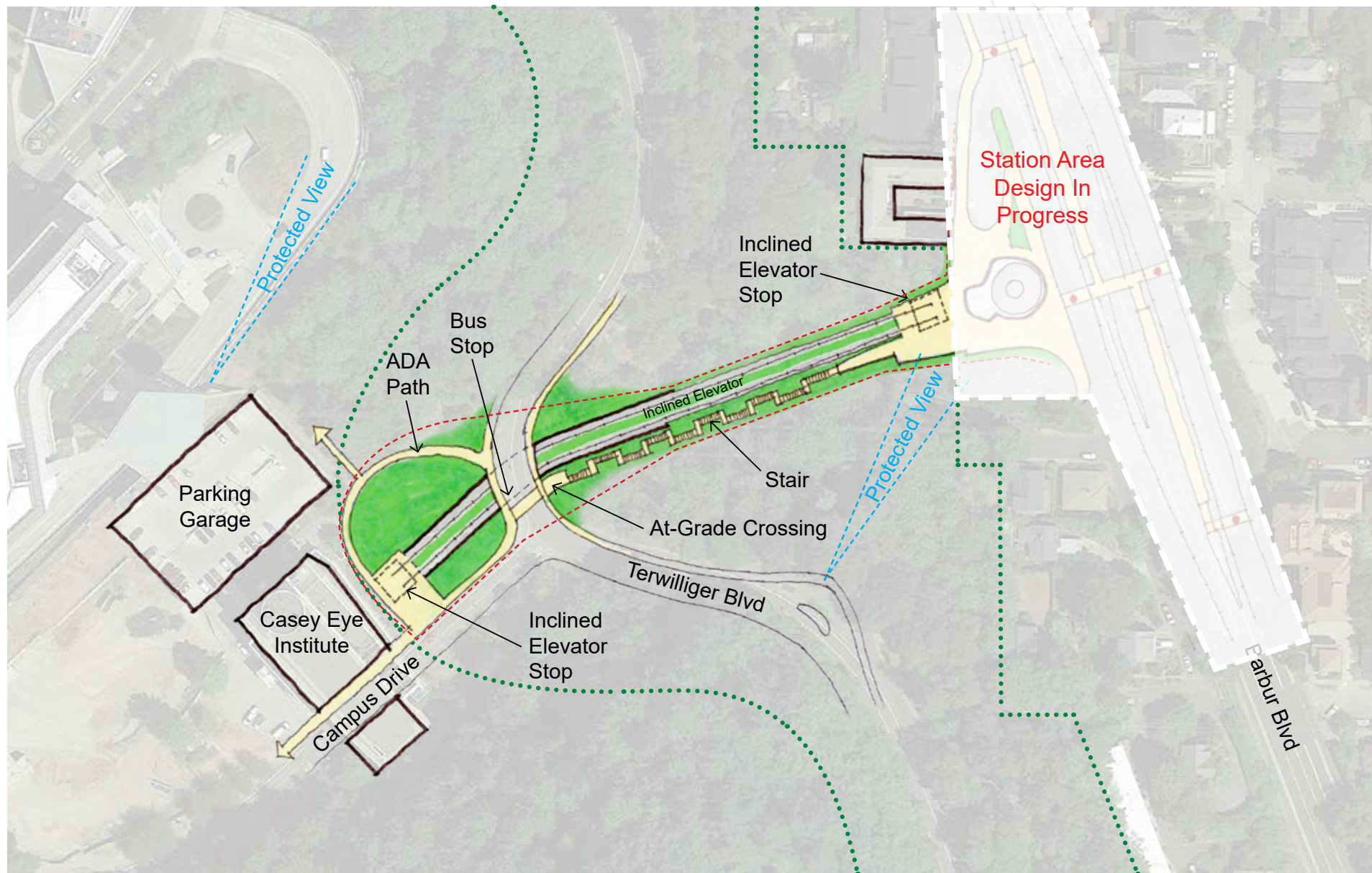
Working Group 4/25 Worksheet Input - DRAFT



After the April 17 working group, members were asked to fill out a worksheet to rank and provide input on the four connector types, based on the current information and discussion. Below is a compilation of these worksheets, which were turned in on April 25. This compilation represents a snapshot of feedback at that time and may not reflect future preferences based on new information. This feedback represents the views and opinions of working group members and does not reflect official organizational positions.

Member	Affiliation	Choice 1	Choice 2	Choice 3	Choice 4
Jeb Doran	TriMet	Bridge + Elevator	Inclined Elevator	Aerial Tram	Tunnel
Michael Harrison	OHSU	Bridge + Elevator	Inclined Elevator	Aerial Tram	Tunnel
Brett Horner	PP&R	Inclined Elevator	Bridge + Elevator	Aerial Tram	Tunnel
Teresa Boyle	PBOT	Inclined Elevator	Bridge + Elevator	Aerial Tram	Tunnel
Hillary Adams	BDS	Inclined Elevator	Bridge + Elevator	Aerial Tram	Tunnel
John Dodier	VA Hospital	Inclined Elevator	Bridge + Elevator	Tunnel	Aerial Tram
Don Baack	SW Trails	Inclined Elevator	Bridge + Elevator	Aerial Tram	Tunnel
Jim Gardner	South Portland NA	Inclined Elevator	Aerial Tram	Tunnel	Bridge + Elevator
Ed Fischer	Homestead NA	Inclined Elevator	Aerial Tram	Tunnel	Bridge + Elevator
Anton Vetterlein	Friends of Terwilliger	Inclined Elevator	Aerial Tram	Tunnel	Bridge + Elevator
Chris Ford	Metro	Inclined Elevator & Bridge + Elevator		Aerial Tram & Tunnel	

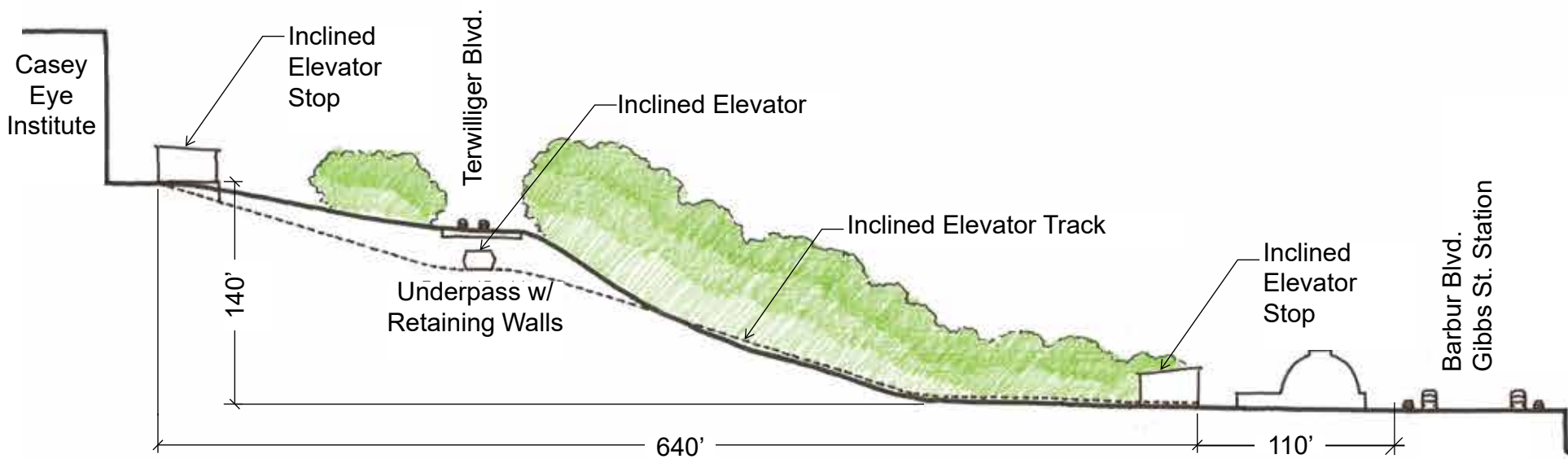
# Option 1: Inclined Elevators



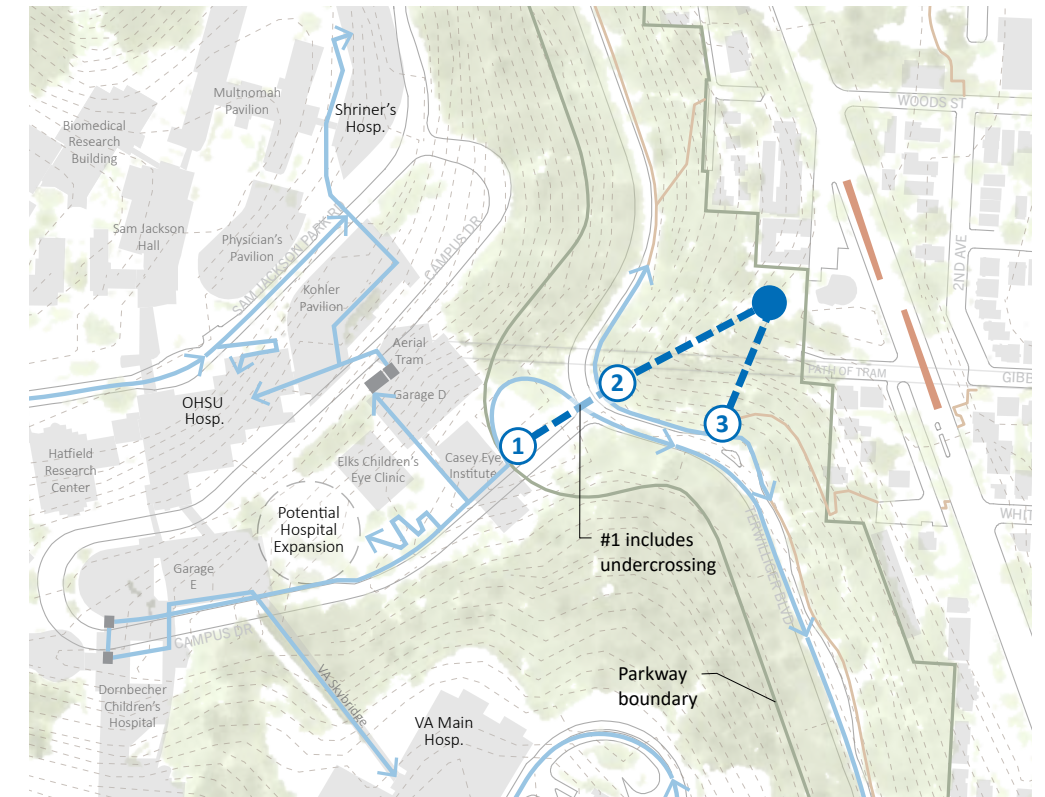
**Estimated Average Travel Time from Gibbs Station during AM Peak (Minutes)**

Destination:	Fastest User	Slowest User
OHSU Hospital	11	15
VA Medical Center Hospital	11*	14*
Shriners Hospital	13	24*
OHSU Hospital Expansion	5	11

\* Includes bus trip



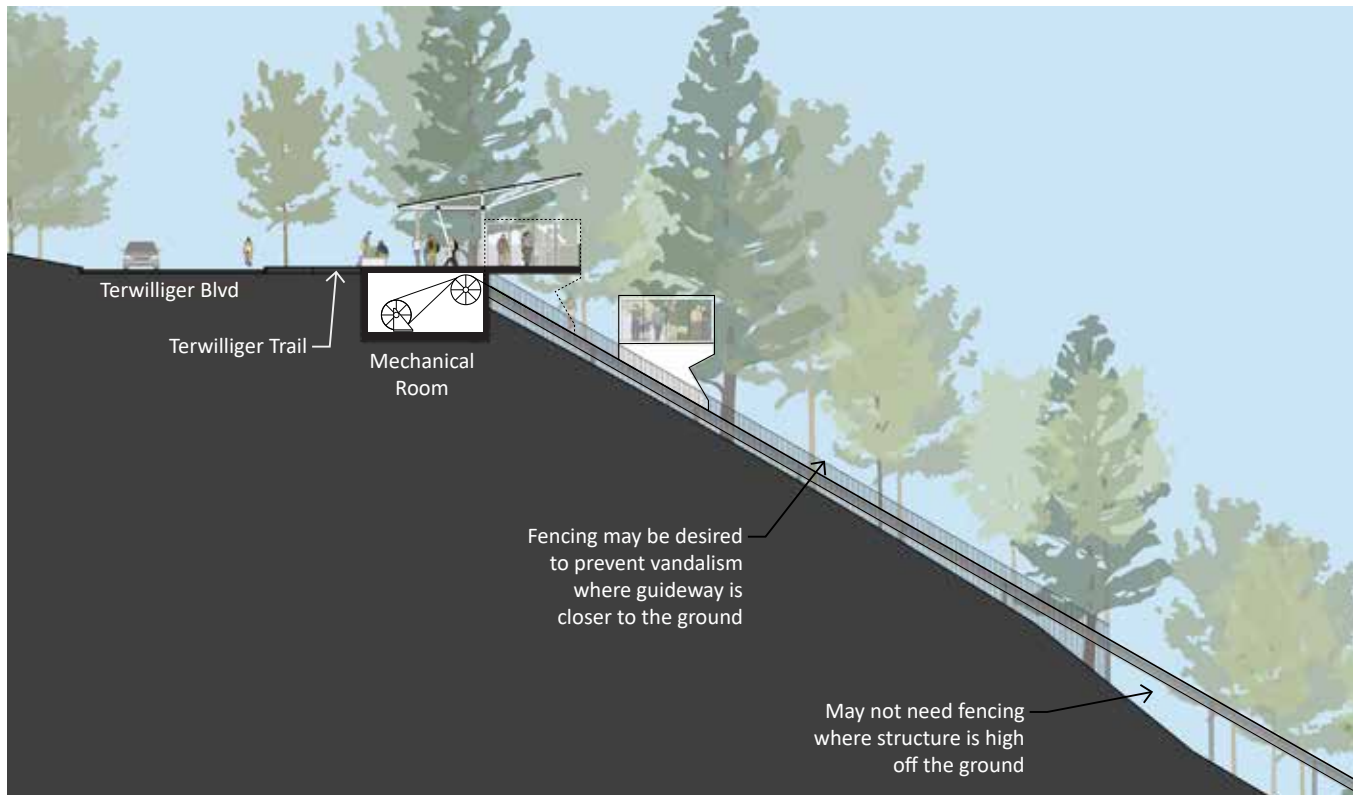
## Other Potential Alignments



**Alignment #2 - Plan**



**Alignment #2 - Conceptual Section**



**Marquam Hill Connector**

Working Group 4/25 Worksheet Input - DRAFT



**1. Inclined Elevator**

Pros	Cons
<p><b>Access</b></p> <ul style="list-style-type: none"> <li>#8 bus connection</li> <li>Parkway recreation and nature</li> <li>Centralized dispersal point</li> <li>Minimal physical effort</li> <li>Weather protected</li> </ul> <p><b>Context</b></p> <ul style="list-style-type: none"> <li>Lower profile than other options</li> </ul> <p><b>Experience</b></p> <ul style="list-style-type: none"> <li>Unique and iconic</li> </ul>	<p><b>Access</b></p> <ul style="list-style-type: none"> <li>Requires additional connection into campus via pathway or bus</li> </ul> <p><b>Budget (\$35 – 45 million)</b></p> <p><b>Operations</b></p> <ul style="list-style-type: none"> <li>Not fully known cost of O&amp;M</li> </ul> <p><b>Environmental</b></p> <ul style="list-style-type: none"> <li>Wildlife crossings</li> <li>Potential impacts to utilities</li> </ul>

**Area of Disagreement: Landing Point**

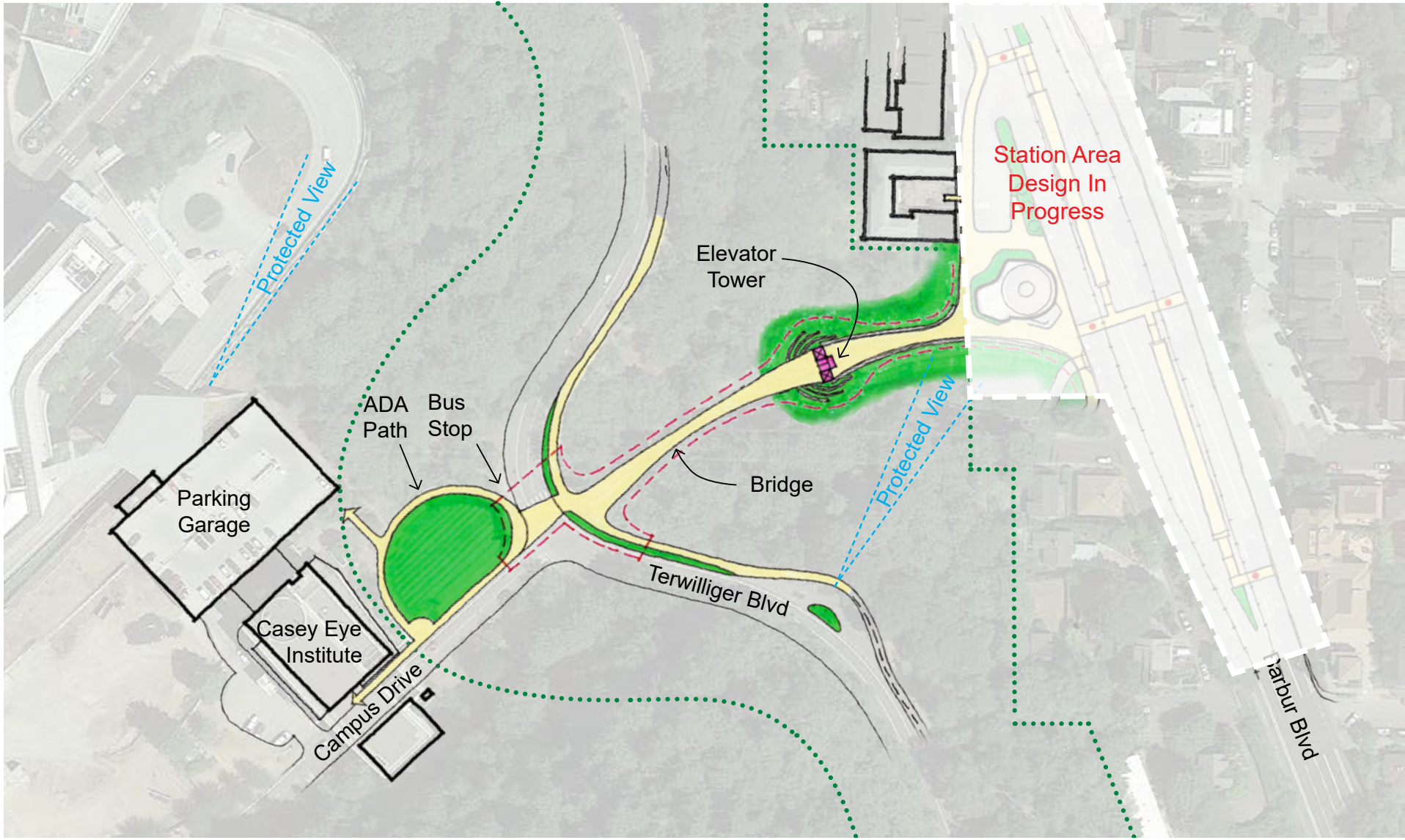
While there is considerable agreement about the preference for an inclined elevator, working group members' preferences for an upper terminus location are split, as reflected in the worksheets:

Terminus East of Terwilliger	Terminus West of Terwilliger
<ul style="list-style-type: none"> <li>Jeb Doran of TriMet</li> <li>Hillary Adams of BDS</li> <li>Michael Harrison of OHSU</li> <li>Brett Horner of PP&amp;R</li> <li>John Dodier of VA Hospital</li> </ul>	<ul style="list-style-type: none"> <li>Teresa Boyle of PBOT</li> <li>Don Baack of SW Trails</li> <li>Anton Vetterlein of Friends of Terwilliger</li> <li>Ed Fischer of Homestead NA</li> <li>Jim Gardner of South Portland NA</li> </ul>
Reasoning for Landing Choice	
<ul style="list-style-type: none"> <li>Minimizes cost</li> <li>Minimizes construction risks</li> <li>Improves at-grade crossing</li> </ul>	<ul style="list-style-type: none"> <li>Undercrossing reduces modal conflicts on Terwilliger</li> <li>Maintains historic character of Parkway</li> <li>Lands closer to Hill destinations</li> </ul>

**Design Preferences**

- Minimize footprint and avoid utility relocation
- Include stairway in close proximity
- Use architectural elements to blend with parkway & natural setting (minimal fencing)
- Minimize removal of high value trees
- Restore viewpoints eastward
- Intersection design to fit Parkway character
- In undercrossing, consider capping with vegetation
- Consider additional connection opportunities further west such as:
- Better elevator access through OHSU buildings (CEI garage or hospital expansion)

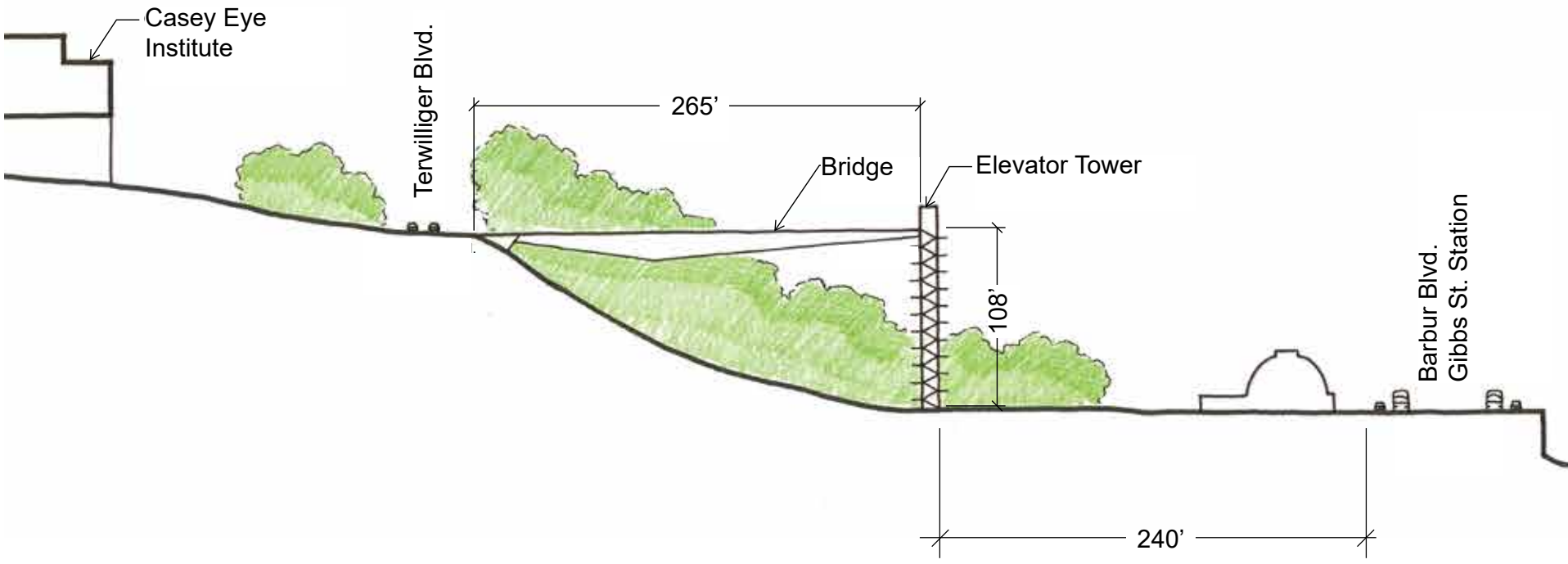
# Option 2: Bridge + Elevators



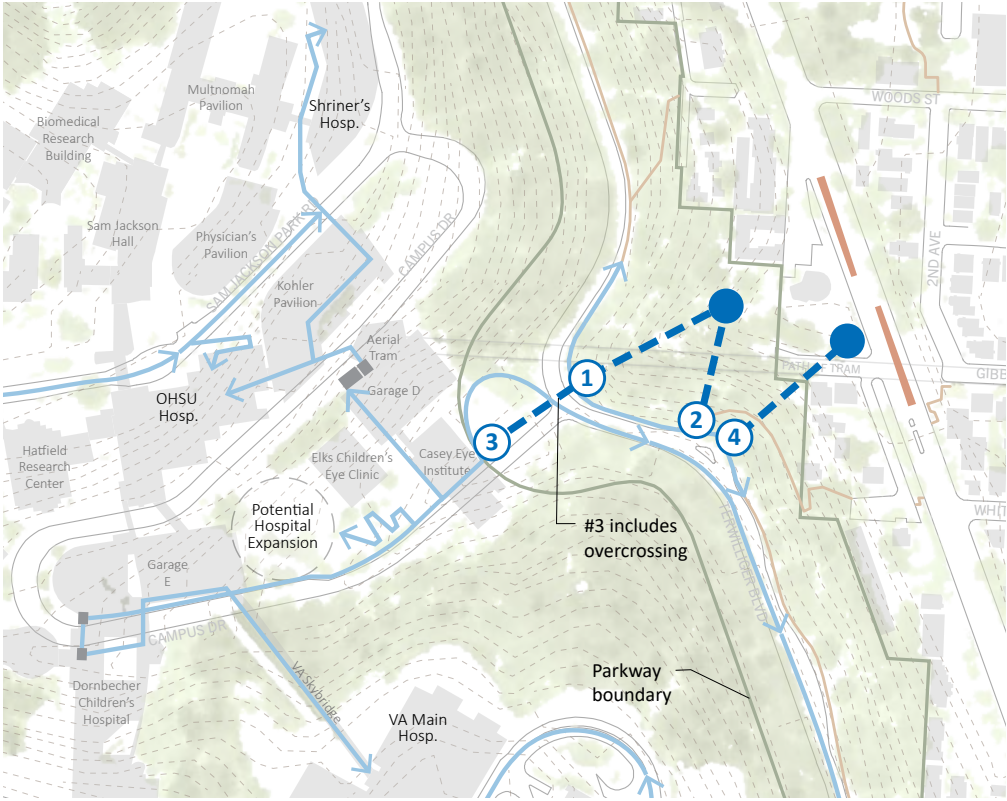
**Estimated Average Travel Time from Gibbs Station during AM Peak (Minutes)**

Destination:	Fastest User	Slowest User
OHSU Hospital	12	21*
VA Medical Center Hospital	12*	14*
Shriners Hospital	14	24*
OHSU Hospital Expansion	7	16

\* Includes bus trip



## Other Potential Alignments



View west toward elevator tower



View east from Terwilliger



## 2. Bridge/Elevator

Pros	Cons
<p><b>Access</b></p> <ul style="list-style-type: none"> <li>• #8 bus connection</li> <li>• Parkway recreation and nature</li> <li>• Centralized dispersal point</li> </ul> <p><b>Budget (\$15 – 25 million)</b></p> <p><b>Operational</b></p> <ul style="list-style-type: none"> <li>• No attendant</li> <li>• Free</li> <li>• Likely to be 24/7</li> </ul> <p><b>Experience</b></p> <ul style="list-style-type: none"> <li>• Canopy walk</li> <li>• Views</li> </ul>	<p><b>Access</b></p> <ul style="list-style-type: none"> <li>• Walk distance, exposure on bridge</li> <li>• Requires additional connection into campus via pathway or bus</li> </ul> <p><b>Context</b></p> <ul style="list-style-type: none"> <li>• Size/visibility of elevator tower</li> <li>• Width/thickness/visibility of bridge structure &amp; abutment</li> <li>• View corridors</li> <li>• Tree clearing around bridge structure</li> </ul> <p><b>Safety</b></p> <ul style="list-style-type: none"> <li>• Camping under structure</li> <li>• At-grade xing - concerns about sight lines &amp; modal conflicts on Terwilliger</li> <li>• Bridge width – concerns about bike/ped conflicts</li> </ul> <p><b>Environmental</b></p> <ul style="list-style-type: none"> <li>• Tree removal</li> <li>• Potential impacts to utilities</li> </ul>

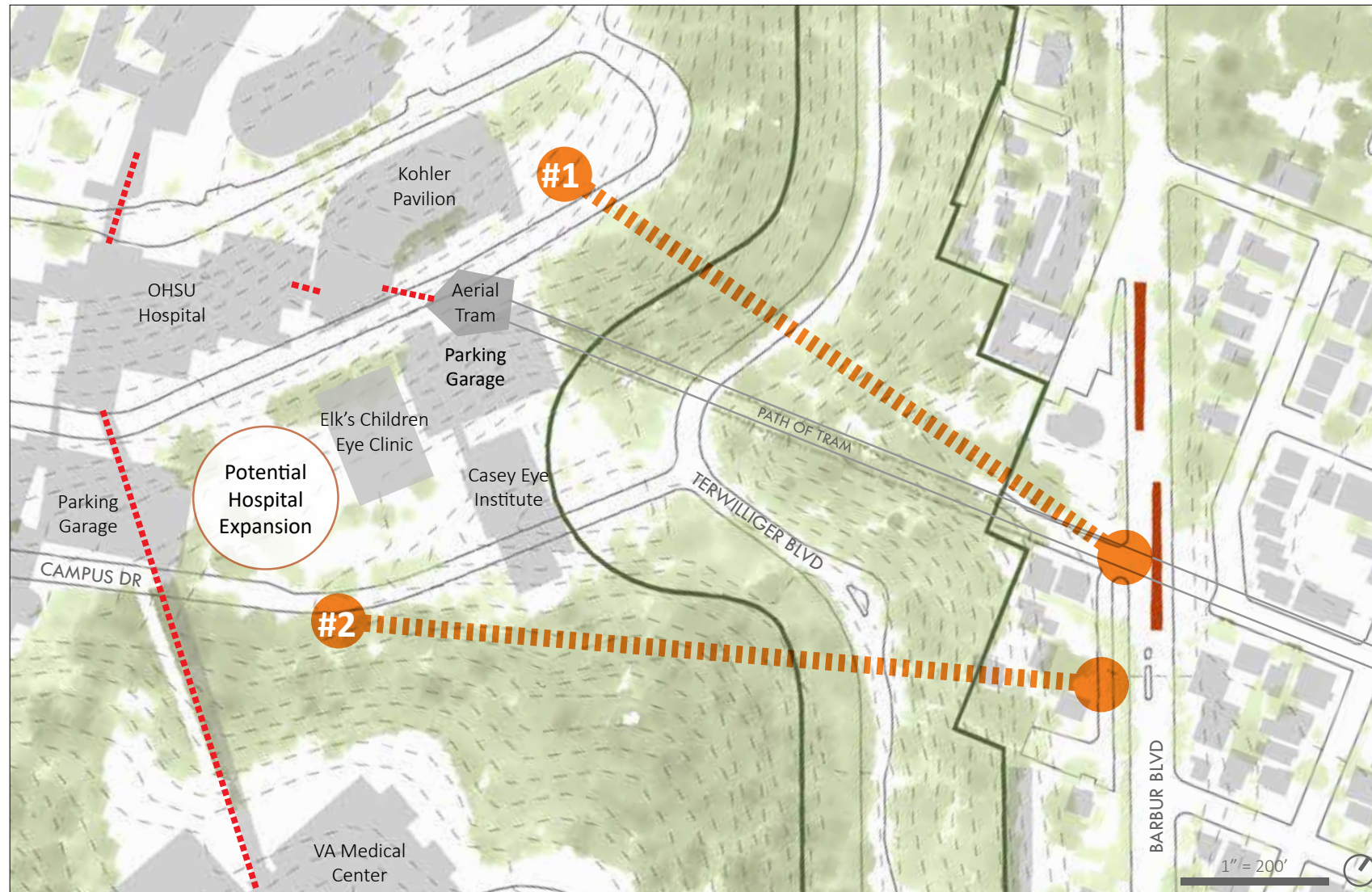
### Design Preferences

- Minimize footprint
- Restore viewpoints eastward
- Use architectural elements to blend with parkway & natural setting
  - Use thin profile structure
- Minimize removal of high value trees
- Tuck elevator tower into hillside/minimize bridge length
- Consider public stairway separate from elevator tower
- Construct in tandem with trail improvements
- Consider additional connection opportunities further west such as:
  - Better elevator access through OHSU buildings (CEI garage or hospital expansion)
  - Frequent circulating campus bus or shuttle

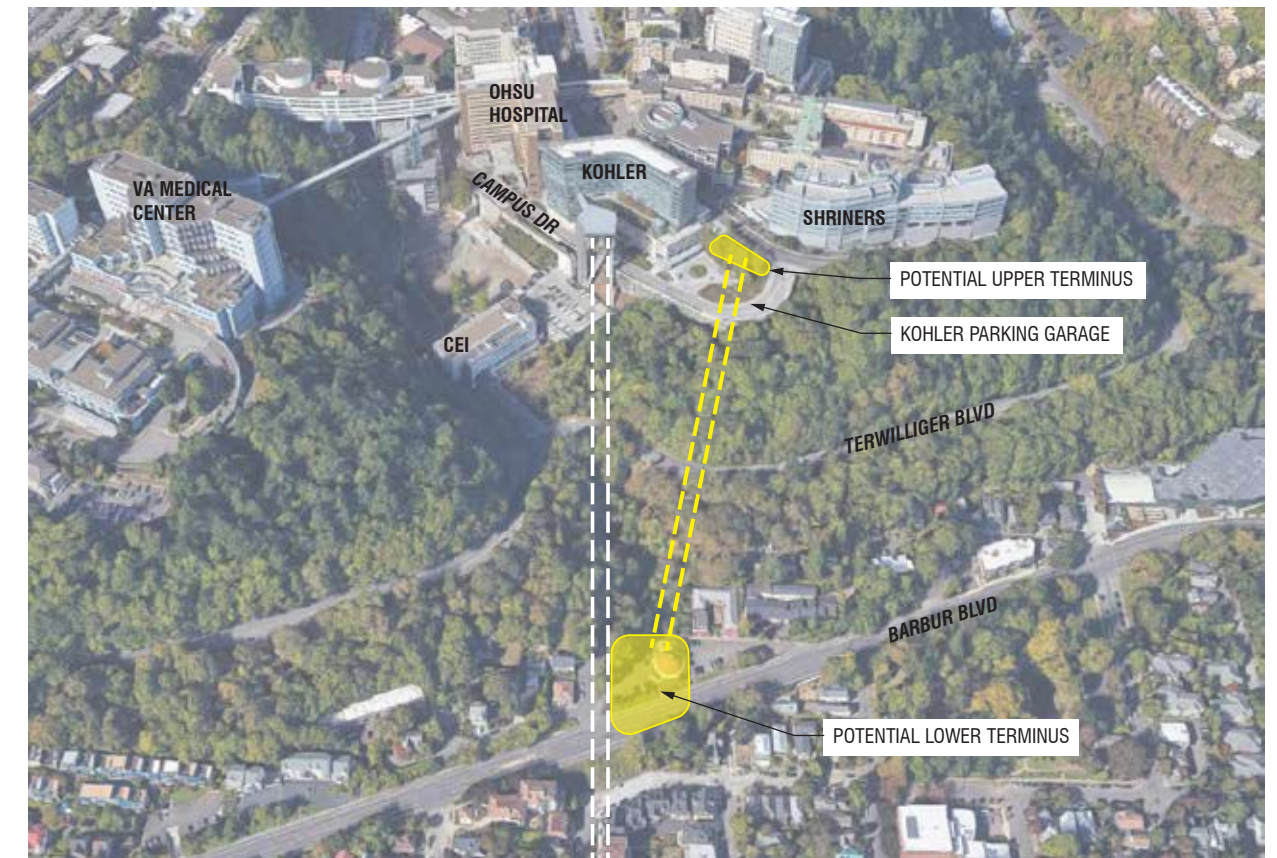
### Area of Disagreement: Covered or Uncovered Bridge

During working group discussions, there was varying opinions on whether the bridge should include weather protection. Some felt this was important, while others felt this would add to the visibility of the structure in the park.

# Option 3: Aerial Tram



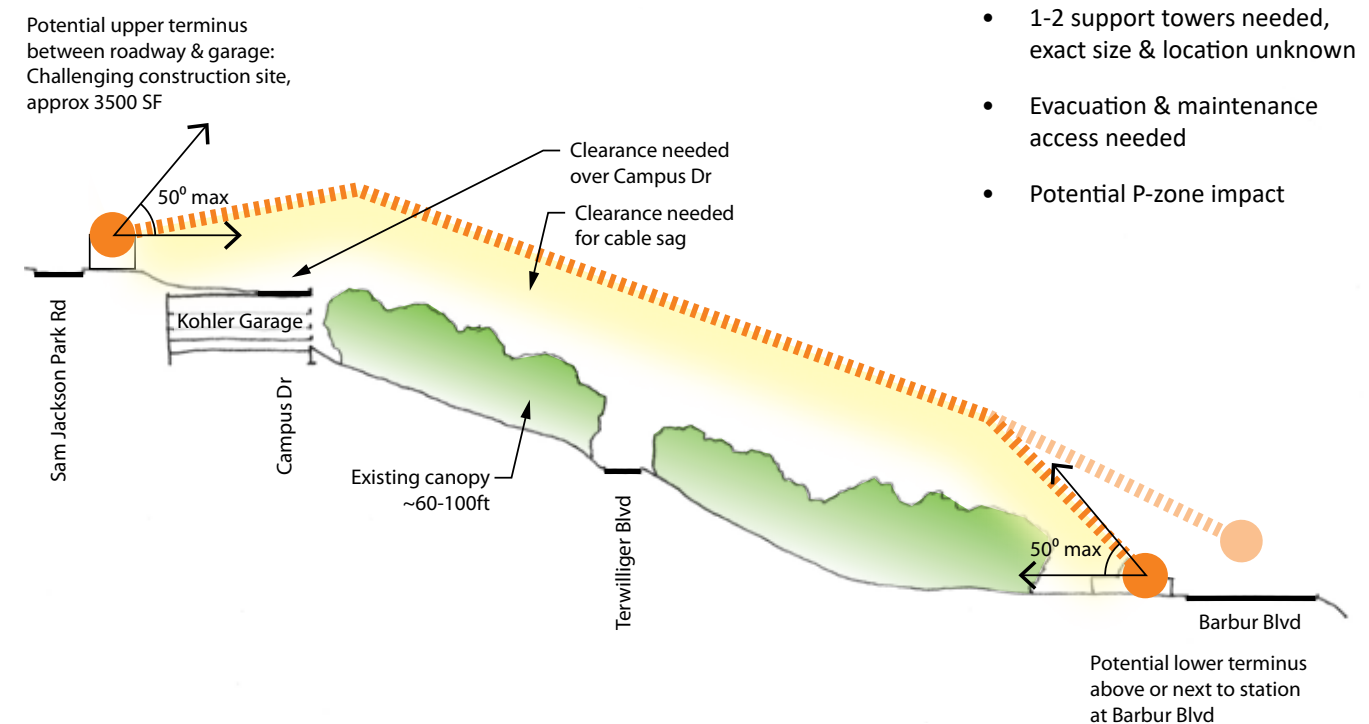
Conceptual alignment #1 to Campus Dr/Sam Jackson Park Rd



Estimated Average Travel Time from Gibbs Station during AM Peak (Minutes)

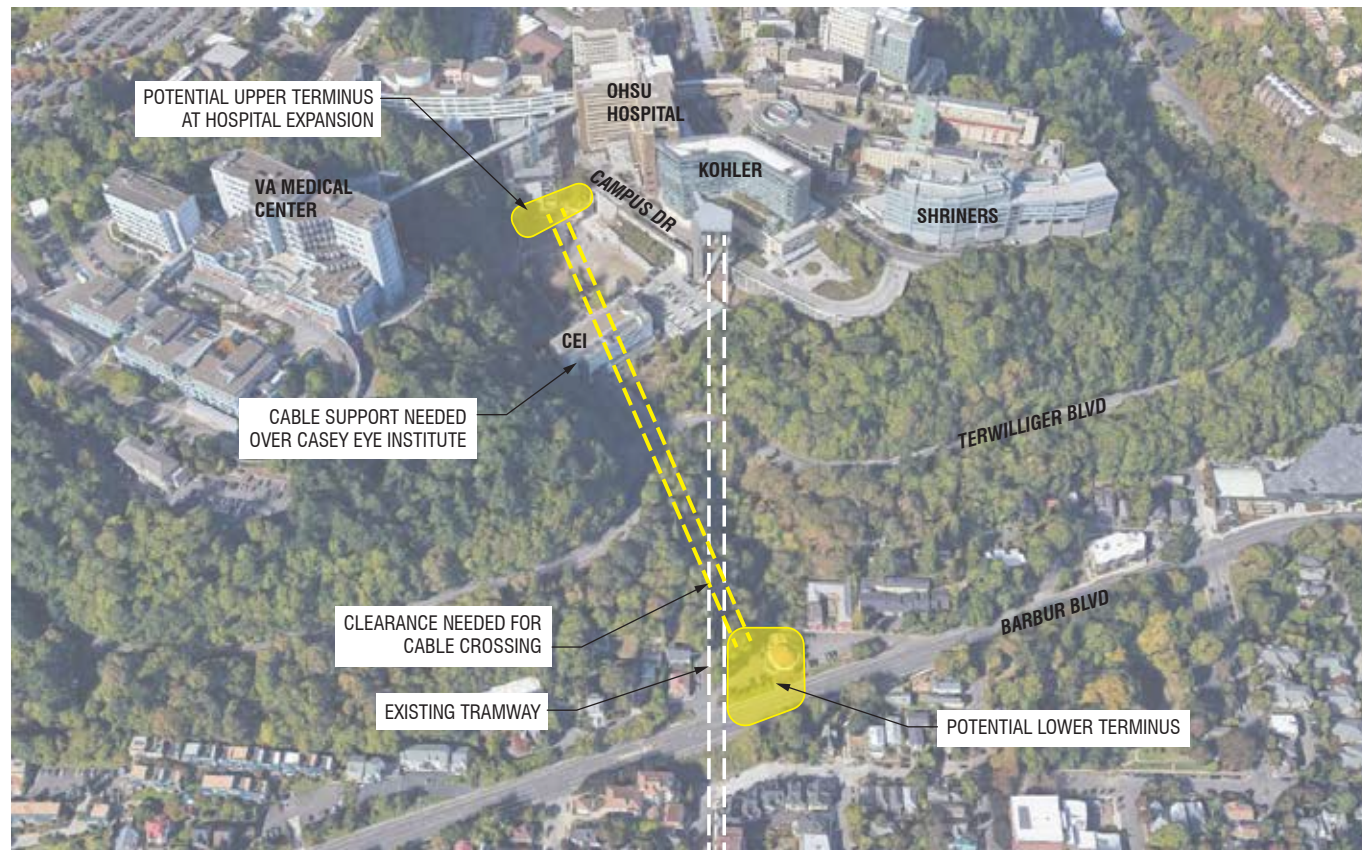
Destination:	Fastest User	Slowest User
OHSU Hospital	7	12
VA Medical Center Hospital	11	21
Shriners Hospital	5	9
OHSU Hospital Expansion	9*	11*

\* Includes bus trip



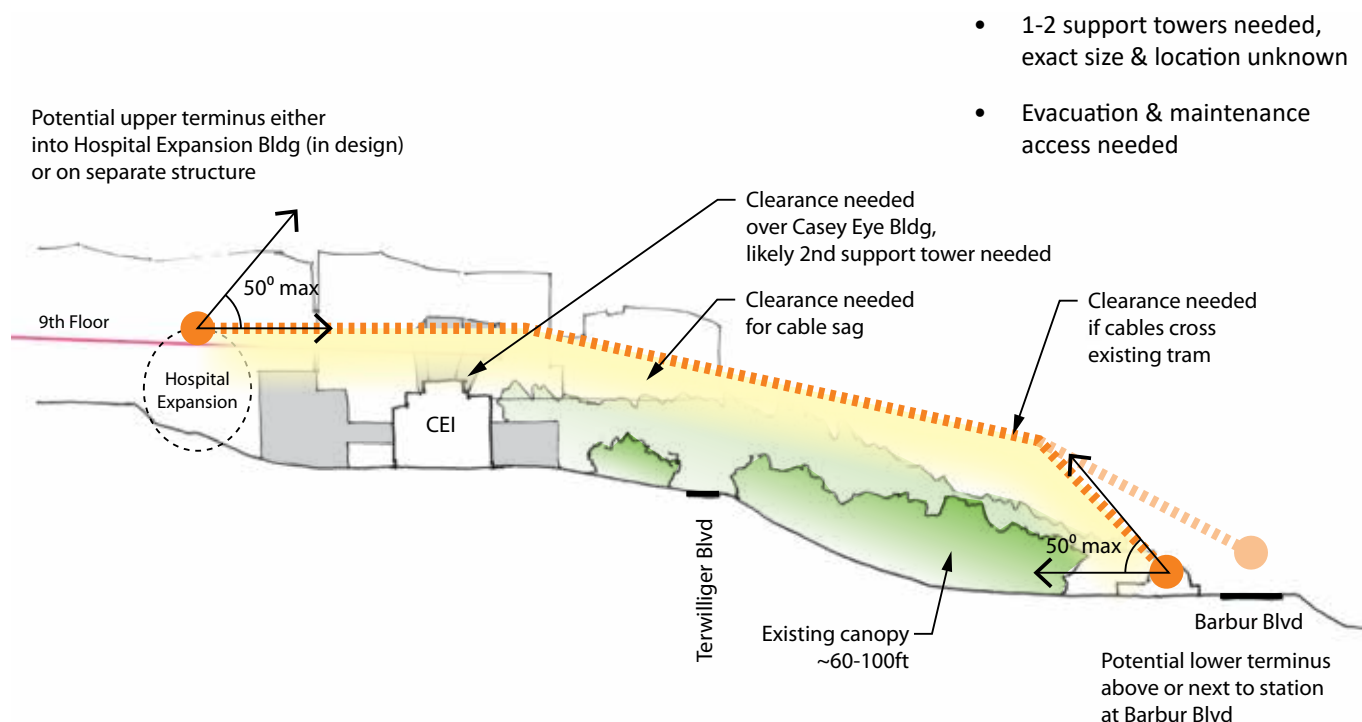
- 1-2 support towers needed, exact size & location unknown
- Evacuation & maintenance access needed
- Potential P-zone impact

**Conceptual alignment #2 to Hospital Expansion**



**3. Aerial Tram**

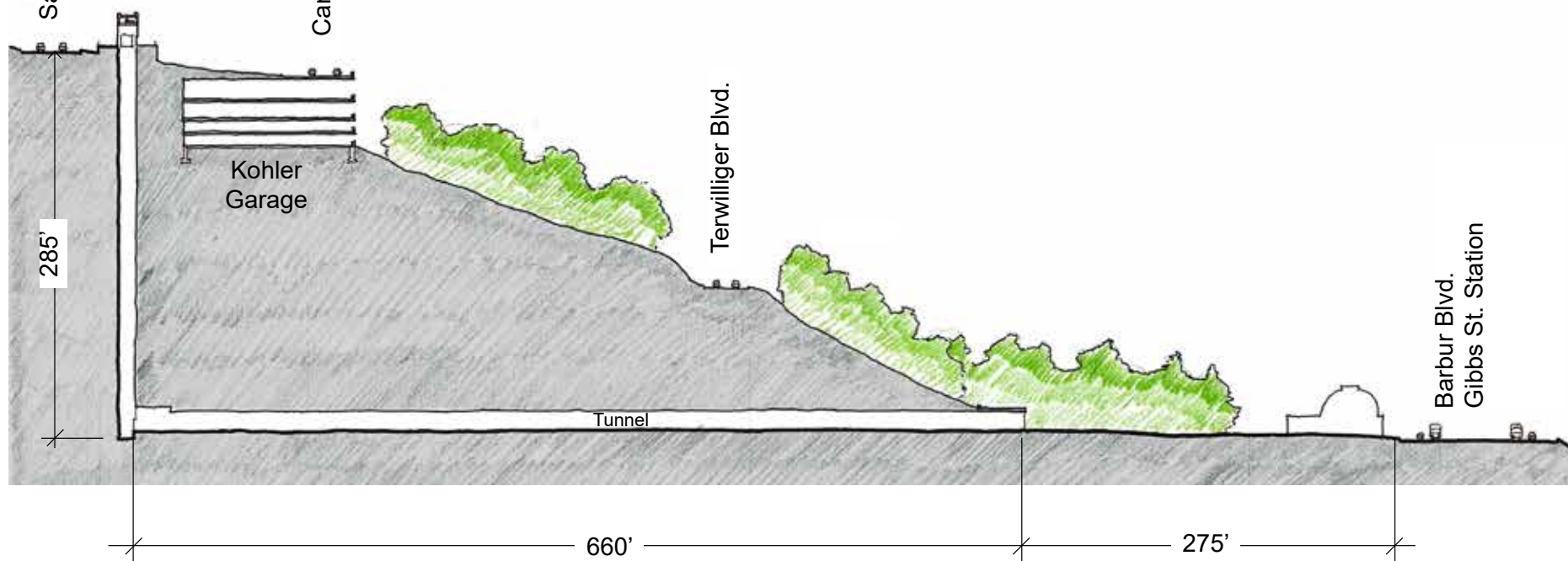
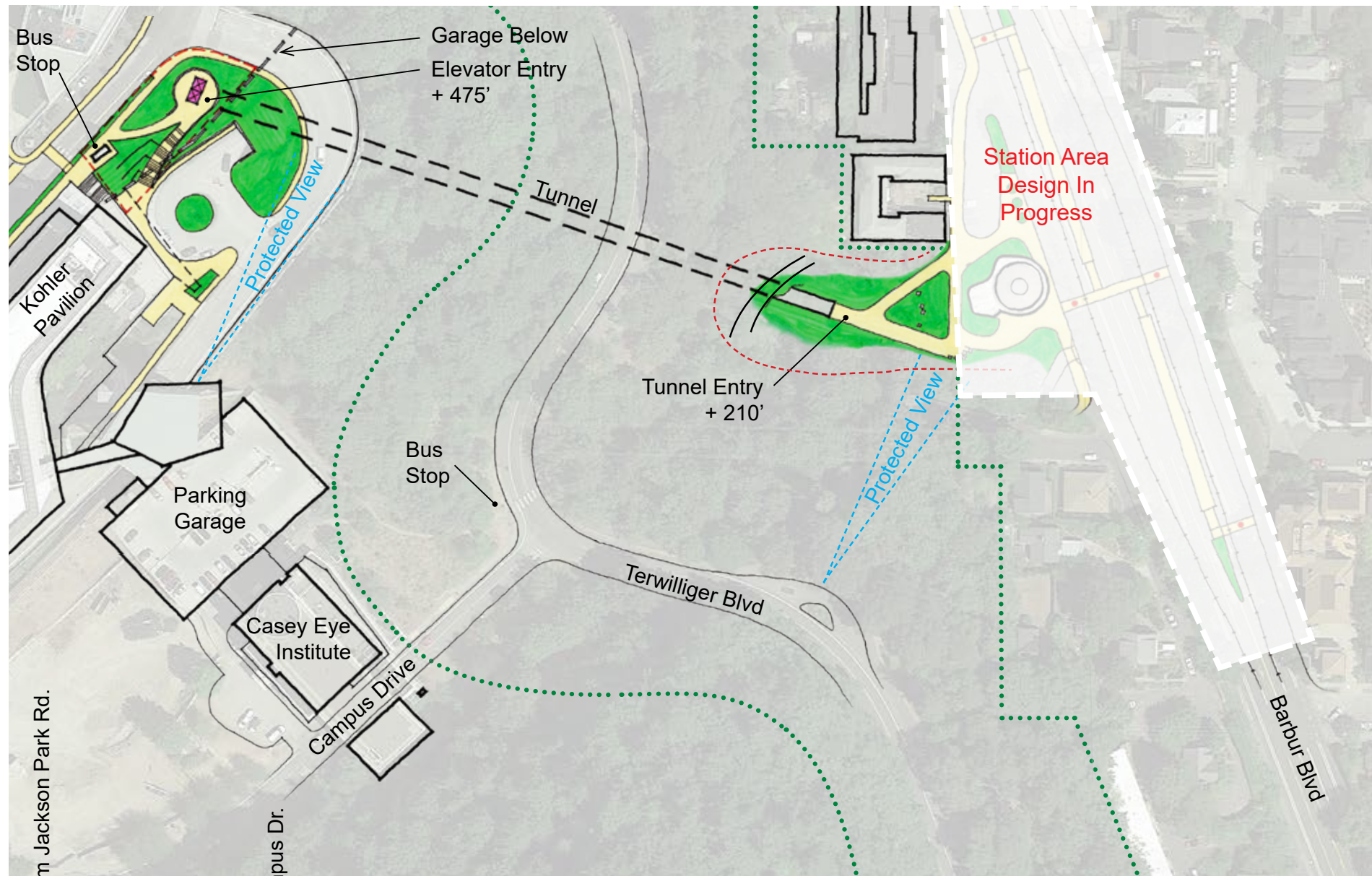
Pros	Cons
<p><b>Access</b></p> <ul style="list-style-type: none"> <li>• Further into OHSU</li> <li>• Minimizes physical effort</li> <li>• Weather protection</li> </ul> <p><b>Experience</b></p> <ul style="list-style-type: none"> <li>• Nice views, fun</li> </ul> <p><b>Environmental/Context</b></p> <ul style="list-style-type: none"> <li>• Least long-term impacts to area</li> <li>• Avoids impacts to habitat/wildlife</li> </ul>	<p><b>Access</b></p> <ul style="list-style-type: none"> <li>• No Parkway connection</li> <li>• Long connections to lower campus or VA</li> <li>• Not preferred by sensitive users (cabin swings, vertigo, etc.)</li> </ul> <p><b>Budget (\$50 – 85 million)</b></p> <p><b>Operations</b></p> <ul style="list-style-type: none"> <li>• Likely to require fee</li> <li>• Likely limited hours of operation</li> <li>• Requires attendants</li> <li>• High costs</li> <li>• Limited ability to expand capacity</li> </ul> <p><b>Context</b></p> <ul style="list-style-type: none"> <li>• Visible support towers and cables</li> <li>• Lower path of travel over Parkway than existing tram</li> </ul>



**Design Preferences**

- Connect to Hospital Expansion if possible
- Minimize size/height of towers
- Large cabin size
- Match existing tram design
- Combine with frequent circulating campus bus

# Option 4: Tunnel + Elevators

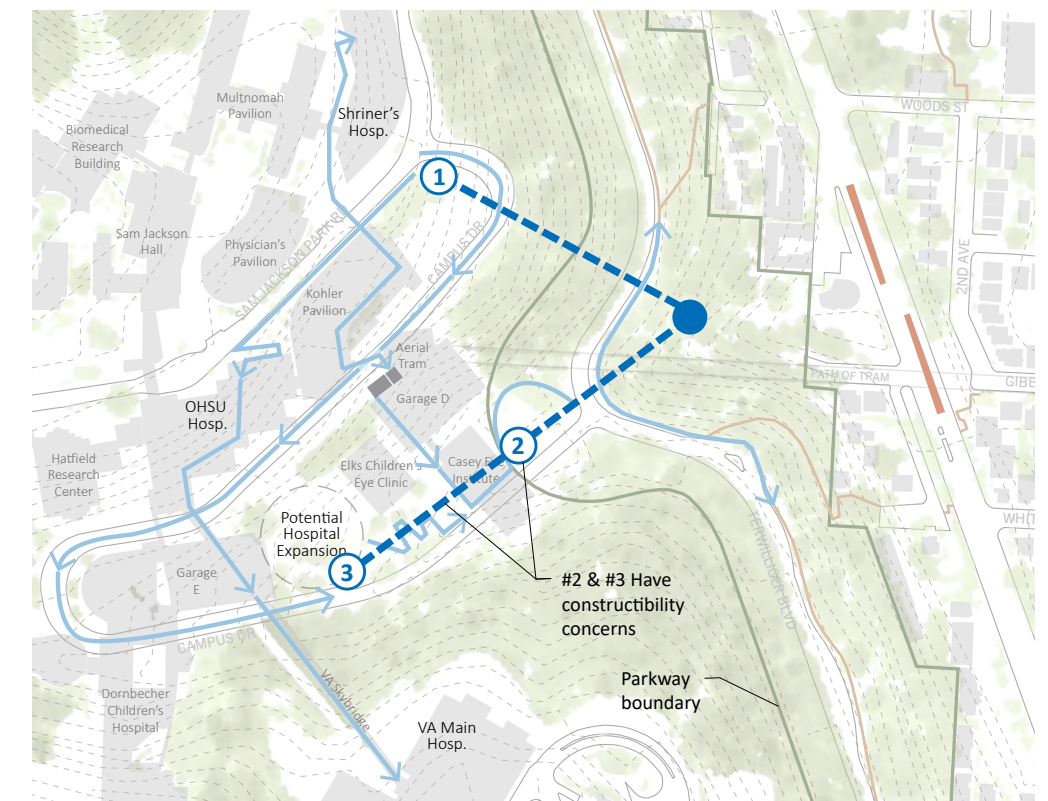


**Estimated Average Travel Time from Gibbs Station during AM Peak (Minutes)**

Destination:	Fastest User	Slowest User
OHSU Hospital	8	17
VA Medical Center Hospital	12	26
Shriners Hospital	7	14
OHSU Hospital Expansion	11*	16*

\* Includes bus trip

## Other Potential Alignments





**Bird's eye view of tunnel**



**View toward tunnel portal**



## 4. Tunnel

Pros	Cons
<p><b>Access</b></p> <ul style="list-style-type: none"> <li>• Weather protection</li> </ul> <p><b>Context</b></p> <ul style="list-style-type: none"> <li>• Low impact to Parkway</li> </ul> <p><b>Environmental</b></p> <ul style="list-style-type: none"> <li>• Low long-term impacts to habitat/wildlife</li> </ul>	<p><b>Safety</b></p> <ul style="list-style-type: none"> <li>• Requires attendants</li> <li>• Need space to gather at elevators underground</li> </ul> <p><b>Budget (\$55 – 125 million)</b></p> <p><b>Experience</b></p> <ul style="list-style-type: none"> <li>• Confined spaces create issues for some users</li> </ul> <p><b>Access</b></p> <ul style="list-style-type: none"> <li>• No Parkway connection</li> <li>• Walk distance is long &amp; out of direction for some destinations</li> </ul> <p><b>Operations</b></p> <ul style="list-style-type: none"> <li>• Likely to require fee</li> <li>• Likely limited hours of operation</li> <li>• High cost to maintain</li> <li>• Limited ability to expand capacity</li> <li>• High risk construction type</li> </ul>

### Design Preferences

- Connect to Hospital Expansion if possible
- Tunnel should be as wide as possible & well lit
- Include moving walkway