

## MEMORANDUM

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Date: March 29, 2021 Project #: 23021.19  
To: Project Management Team  
  
From: Nick Gross, Amy Griffiths, EIT; Alex Garbier, Marc Butorac, PE, PTOE, PMP  
Project: Oregon City-West Linn Pedestrian and Bicycle Bridge Concept Plan  
Subject: TM#2: Identify Crossing Alignments

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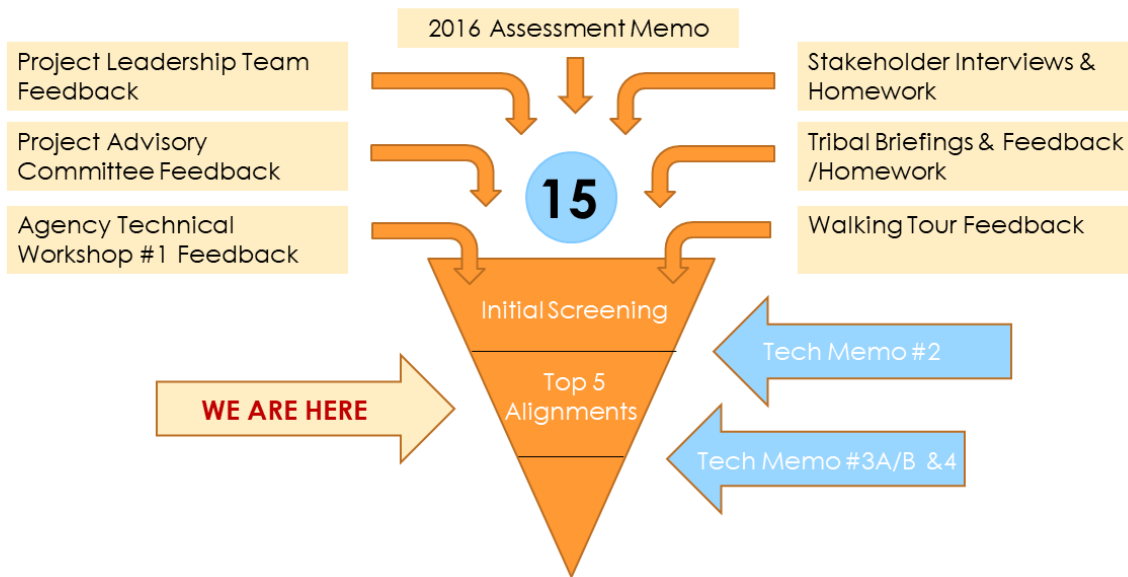
### PURPOSE

This memorandum identifies and provides a preliminary screening of potential bridge alignments based on design feasibility. During the project development process, the Project Advisory Committee (PAC), Project Leadership Team (PLT), Project Management Team (PMT), interested government parties, stakeholders, and the public were given the opportunity to provide input on the potential bridge alignments that will be further evaluated using the criteria outlined in *TM #1: Evaluation Criteria for Crossing Alignments*. Based on this input, the PMT has selected five alignments to advance and evaluate in more detail to ultimately select a preferred alignment.

### POTENTIAL BRIDGE ALIGNMENTS

A preliminary list of nine potential bridge alignments, including the baseline existing Historic Arch Bridge, were developed based on conversations with interested government parties, government agencies with regulatory authority, and previous studies, including the *I-205: Stafford Road to OR 99E (Abernethy Bridge) Bicycle/Pedestrian Assessment (2016)*. Through continued communication with the PMT, PAC, and PLT, as well as coordination between government agencies, public comments, and input from city officials, six additional alignments were developed for the initial screening evaluation, bringing the total to 15 potential bridge alignments. Figure 1 summarizes the process of potential bridge alignment development, including the various groups and events that informed, expanded, and provided input on the 15 alignments.

**Figure 1: Bridge Alignment Development and Process**

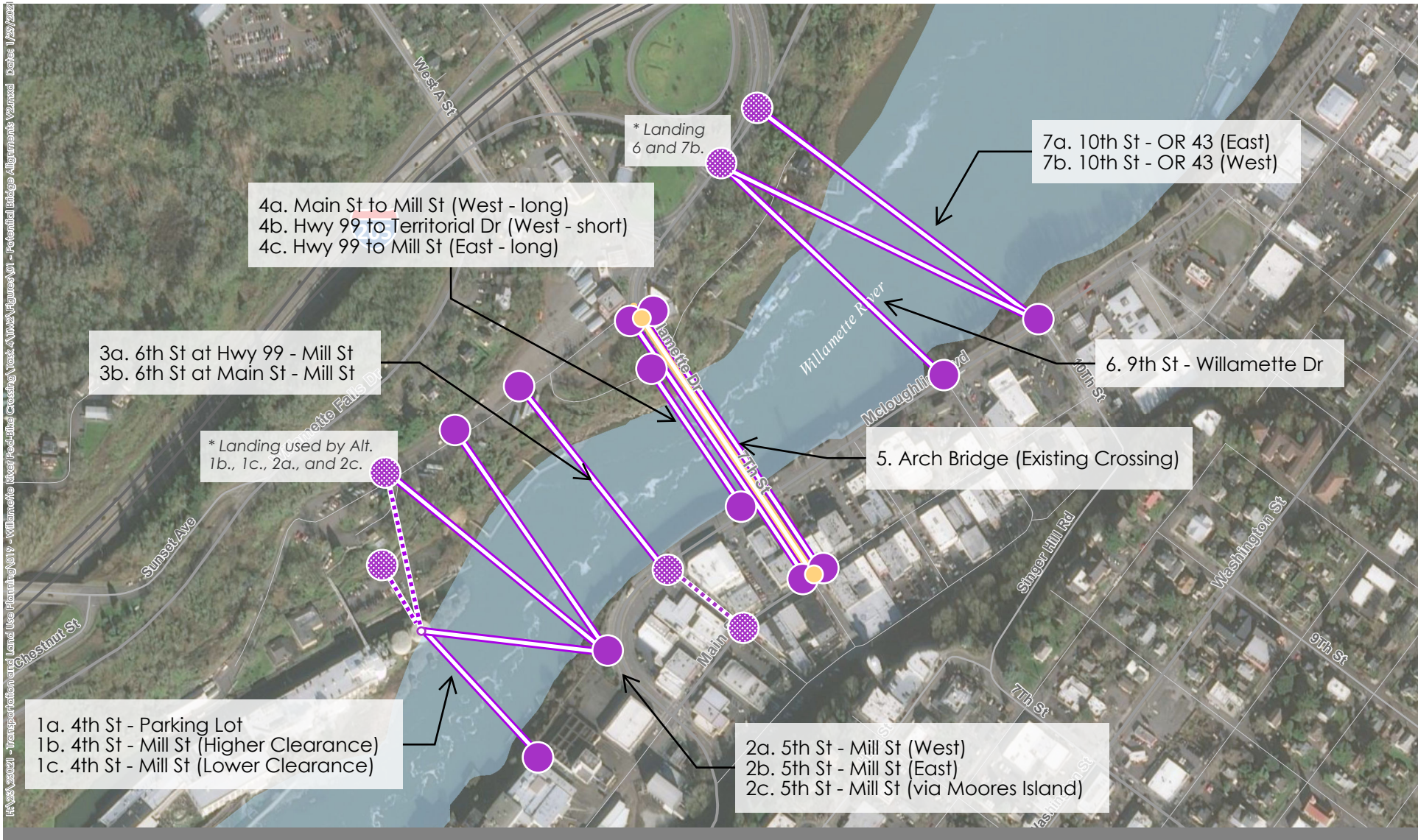


As shown in Figure 1, the list of potential alignments was screened to identify the five most promising alignments for further evaluation. The initial alignments under consideration are located south of the I-205 Abernethy Bridge and within the vicinity of the Historic Arch Bridge. Figure 2 illustrates the initial set of potential alignments.

#### I-205: Stafford Road to OR 99E (Abernethy Bridge) Bicycle/Pedestrian Assessment (2016)

The *I-205: Stafford Road to OR 99E (Abernethy Bridge) Bicycle/Pedestrian Assessment (2016)* provided high-level engineering considerations for Willamette River crossing opportunities. The assessment determined that suspending or cantilevering a path from the Abernethy Bridge is more expensive than a stand-alone structure and would result in a sub-optimal user experience due to the proximity of fast traffic, noise, and air concerns.

*Appendix “A” includes an executive summary of the findings from the 2016 assessment.*



4a. Main St to Mill St (West - long)  
 4b. Hwy 99 to Territorial Dr (West - short)  
 4c. Hwy 99 to Mill St (East - long)

3a. 6th St at Hwy 99 - Mill St  
 3b. 6th St at Main St - Mill St

\* Landing used by Alt.  
 1b., 1c., 2a., and 2c.

1a. 4th St - Parking Lot  
 1b. 4th St - Mill St (Higher Clearance)  
 1c. 4th St - Mill St (Lower Clearance)

2a. 5th St - Mill St (West)  
 2b. 5th St - Mill St (East)  
 2c. 5th St - Mill St (via Moores Island)

\* Landing 6 and 7b.

7a. 10th St - OR 43 (East)  
 7b. 10th St - OR 43 (West)

6. 9th St - Willamette Dr

5. Arch Bridge (Existing Crossing)

- Arch Bridge (Baseline)
- Landing Locations
- Alternative Landing Locations
- Potential Alignments
- Landing Locations
- Alternative Landing Locations



Figure 2



## ALIGNMENT SCREENING

This section describes the preliminary screening criteria used to evaluate the initial set of potential bridge alignments and identify the top five alignments to be advanced for additional analysis and concept refinement.

### Screening Criteria

The project team reviewed the potential alignment shown in Figure 2 to screen out alignments that may be infeasible based on design considerations and impacts to navigable clearances. *Appendix “B” contains additional quantitative details for design and bridgehead considerations.*

### *Design Considerations*

The following considerations provide a high-level context for cost and feasibility. The design team considered five characteristics:

- **Horizontal bridge length** – The horizontal length of the crossing correlates with cost. Longer bridge crossings are expected to have a higher cost and potentially necessitate support piers within the river.
- **Percentage of grade changes between bridgeheads** – Larger grade changes are less comfortable for users (people walking, rolling, and/or biking), particularly users with limited physical abilities (e.g., youth, elderly, and people with disabilities). If the grade exceeds 5 percent<sup>1</sup> between the bridgeheads, additional ramping or other vertical transport systems (e.g., elevators) are necessary to reduce the grade, which can impact the required land and footprint area.
- **Required ramping length** – Describes the amount of ramping required, if any, to limit the maximum grade to 5 percent.
- **Land area for ramping** – Estimated area needed for ramping, which may impact feasibility and/or cost.
- **Impact to navigable clearance** – Does the alignment maintain the existing navigable waterway on the Willamette River? This is measured as a reduction of the existing Historic Arch Bridge height (74 feet)<sup>2</sup>, which is the lowest fixed bridge crossing downstream of Willamette Falls. *Appendix “C” contains information on navigable clearances for the existing bridges along the Willamette River.*

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<sup>1</sup> The maximum grade compliant with the Americans with Disabilities Act of 1990 (ADA) is 5 percent.

<sup>2</sup> Height provided by the National Oceanic and Atmospheric Administration, Office of Coast Survey, *Willamette River: Portland to Walnut Eddy (Chart 18528)*, <https://charts.noaa.gov/OnLineViewer/18528.shtml>.



## Selection of Top Five Alignments

Five of the 15 alignments were selected for further evaluation based on the preliminary screening process. Figure 3 illustrates the results of the preliminary screening. In addition to the top five recommended alignments, the existing crossing at the Historic Arch Bridge was evaluated to understand existing conditions for people walking, biking, and rolling. The following discussion describes the five recommended bridge landing locations as well as the advantages and potential challenges of the different bridge concepts:

### ***Alignment 1c: 4<sup>th</sup> Street to Mill Street (Lower Clearance)***

#### ***Description:***

- Alignment 1c connects 4<sup>th</sup> Street from the Willamette Falls Downtown District in Oregon City to Mill Street in West Linn via Moore Island. As a part of this alignment, a ramp structure system on the island would be developed to provide necessary elevation changes to avoid navigational conflicts with the Willamette Falls Locks canal and future access to the island.



#### ***Advantages:***

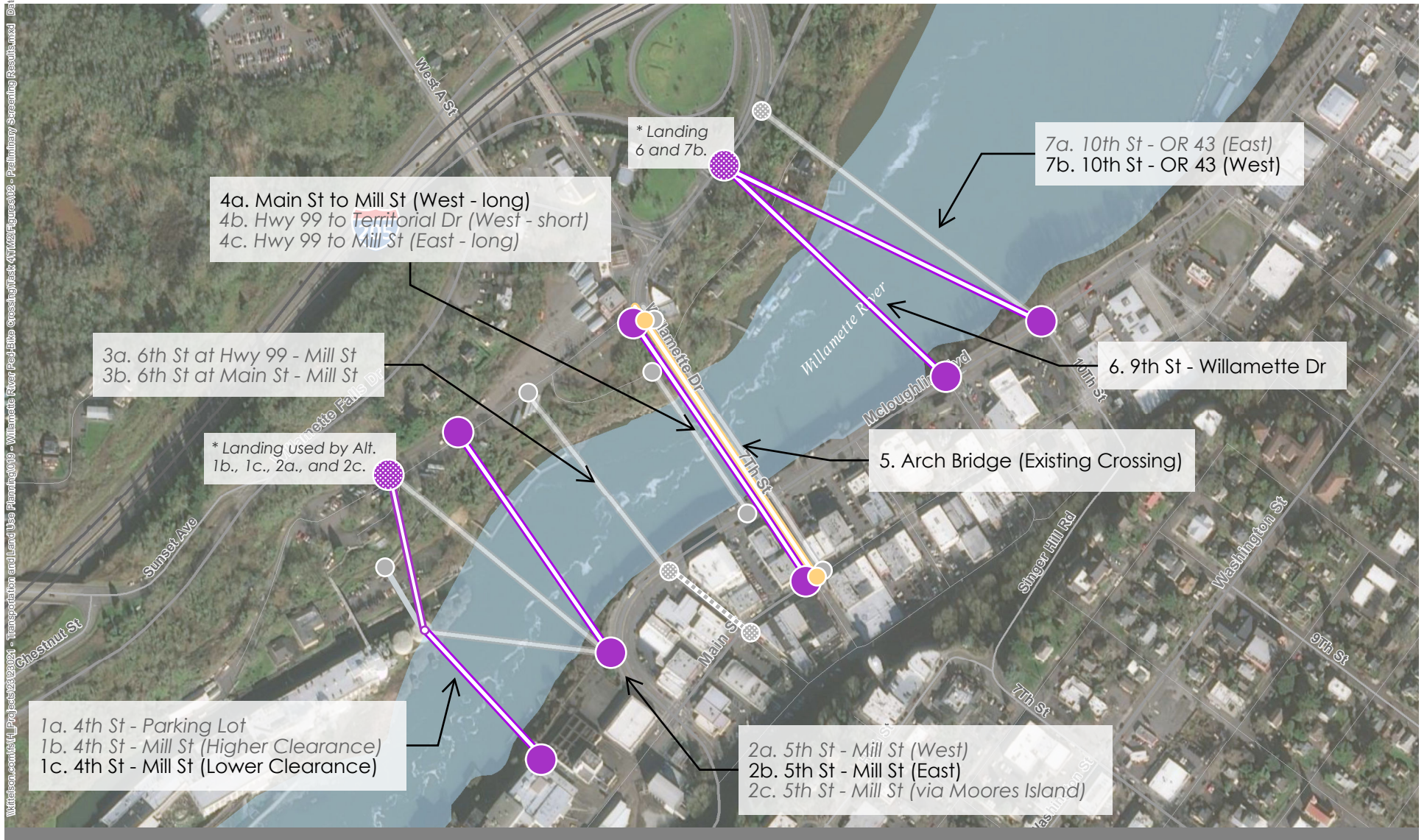
- The alignment proposes a lower “at-grade” connection between 4<sup>th</sup> Street and Moore Island based on the assumption that navigable clearance upstream of the Willamette Falls Locks will not require horizontal and vertical clearance requirements compared to alignments downstream of the Willamette Falls locks.
- The at-grade connection will require little to no ramping at the Oregon City bridgehead.
- The alignment utilizes the existing street grid of 4<sup>th</sup> Street in the Willamette Falls Downtown District and creates economic opportunities for future development.

#### ***Potential Challenges:***

- Developing the ramping structure on Moore Island to create the necessary elevation changes to avoid navigational conflicts with the Willamette Falls Locks canal and future access to the island.

#### ***Considerations:***

- The at-grade alignment between 4<sup>th</sup> Street and Moore Island will have little to no visual impact on views of Willamette Falls from the Historic Arch Bridge.
- A system of ramps is proposed on Moore Island to provide the horizontal clearance needed to bring bridge users across the Willamette Falls Locks.












- |  |   |   |
|--|---|---|
|  Arch Bridge (Baseline)  |  Landing Locations |  Alternative Landing Locations |
|  Potential Alignments    |  Landing Locations |  Alternative Landing Locations |
|  Recommended for Removal |  Landing Locations |  Alternative Landing Locations |



Figure 3



- A bridgehead on Moore Island with accompanying ramping will allow users to gain access to the island in the future if planned redevelopment occurs.
- Further coordination and verification of navigable clearance requirements upstream of Willamette Falls Locks canal are needed.
- The alignment is closest to Willamette Falls, which has received positive and negative stakeholder feedback.
- The alignment may obstruct the view of the Willamette Falls from the Historic Arch Bridge.

### **Alignment 2b: 5th Street to Mill Street (East)**

#### **Description:**

- Alignment 2b connects 5<sup>th</sup> Street in Oregon City to Mill Street in West Linn.

#### **Advantages:**

- The alignment has a relatively short horizontal bridge span at 742 feet with minimal impact on navigable clearances.



#### **Potential Challenges:**

- The grade change between bridgehead landing areas is approximately 7.8 percent, requiring approximately 9,577 feet of bridgehead impact area on the Oregon City shoreline to accommodate ramping.

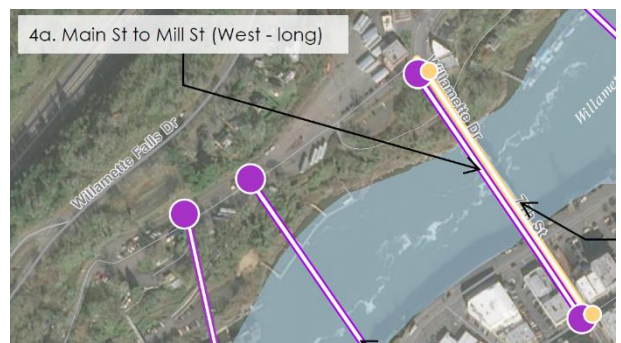
#### **Considerations:**

- Connectivity to the Oregon City bridgehead from Oregon City is adjacent to OR 99E and may pose challenges in providing low-stress accommodations.
- The alignment may obstruct the view of the Willamette Falls from the Historic Arch Bridge.
- The alignment will require ramping in Oregon City to maintain a 5 percent grade; however, the ramping may provide cursory benefits to Willamette Falls Downtown District Legacy Project area by providing an indirect sound barrier to OR 99E.

### **Alignment 4a: Main Street to Mill Street (West – long)**

#### **Description:**

- Alignment 4a connects Main Street in Oregon City to Mill Street in West Linn immediately upstream of the Historic Arch Bridge. This alignment is proposed as a separate structure and would be developed to mimic the look of the bridge, thereby minimizing cultural and historic impacts.





**Advantages:**

- The alignment has a small grade change between bridgeheads of 5.1 percent, requiring little-to-no ramping and a relatively small bridgehead impact area at 548 feet. Due to the alignment’s similarity to the horizontal and vertical structural characteristics of the Historic Arch Bridge, no impacts to navigable clearances are anticipated.

**Potential Challenges:**

- Potential Section 106 and 4(f) impacts – further investigation is required.
- There are limited properties available for the bridge landing in Oregon City and an insufficient rights-of-way currently to support a separate bridge landing at Main Street.
- The parallel bridge structure would obscure the Arch Bridge from upstream viewpoints, including the Willamette Falls Downtown District Legacy Project area.
- The parallel bridge structure would potentially obscure motorist views of the Willamette Falls from the Historic Arch Bridge.

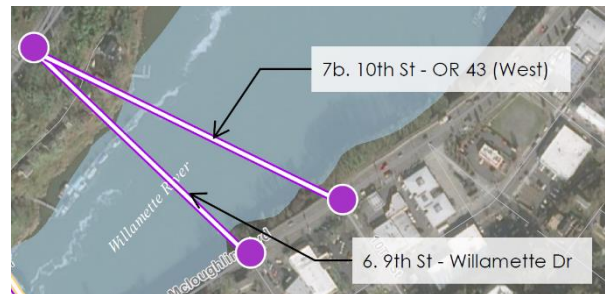
**Considerations:**

- The structure may impact the visual aesthetics of the Historic Arch Bridge.

**Alignment 6: 9<sup>th</sup> Street to Willamette Drive**

**Description:**

- Alignment 5 connects 9<sup>th</sup> Street in Oregon City to Willamette Drive in West Linn.



**Advantages:**

- The alignment has the opportunity to integrate with planned multimodal improvements projects in the area, such as the Willamette Falls Drive – West Linn Arterial Roadways project.
- The alignment has the opportunity to integrate into the existing Oregon City street network, including Singer Hill Road, providing access to the neighborhood above the Oregon City bluff.
- The alignment is located downstream of the Historic Arch Bridge and is further away from the culturally significant and sensitive area around the Willamette Falls compared to the other alignments.

**Potential Challenges:**

- The OR 99E viaduct may pose challenges for bridgehead constructability in Oregon City.
- The alignment has a long bridge span and will require pilings in the Willamette River.

**Considerations:**

- The alignment is located downstream of the Arch Bridge; therefore, people walking and biking along the bridge would have a restricted view of Willamette Falls.

- Alignments downstream of the Historic Arch Bridge, located further away from the Willamette Falls, have been voiced as a strong preference through the public involvement process.

### **Alignment 7b: 10th Street to OR 43 (West)**

#### **Description:**

- Alignment 7b connects 10<sup>th</sup> Street in Oregon City to OR 43 in West Linn.

#### **Advantages:**

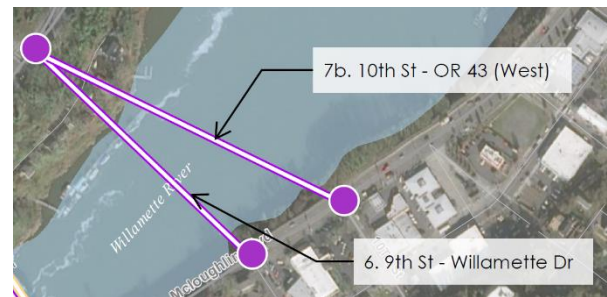
- The alignment has a small grade change in bridge heads at 5 percent, requiring little to no ramping and the smallest bridgehead impact area at 67 feet.
- The alignment is not anticipated to have any impacts to navigable clearances.
- Integration into the existing active transportation network and multiuse path at 14<sup>th</sup> Street in Oregon City is simple due to their close proximity.
- The bridgehead on the West Linn side has the opportunity to utilize Oregon Department of Transportation rights-of-way associated with the ramping approaches to the I-205 Abernethy Bridge and OR 43.

#### **Potential Challenges:**

- The alignment is the longest horizontal bridge span at 1,014 feet and will require in-water structural support piers.
- The alignment may have cultural and archeological impacts on the Oregon City shore.

#### **Considerations:**

- The alignment is furthest away from Willamette Falls compared to other alignments.
- Little walking and biking infrastructure exist at the West Linn bridgehead location for network connectivity.
- The alignment received positive stakeholder input due to its location north of the Historic Arch Bridge.



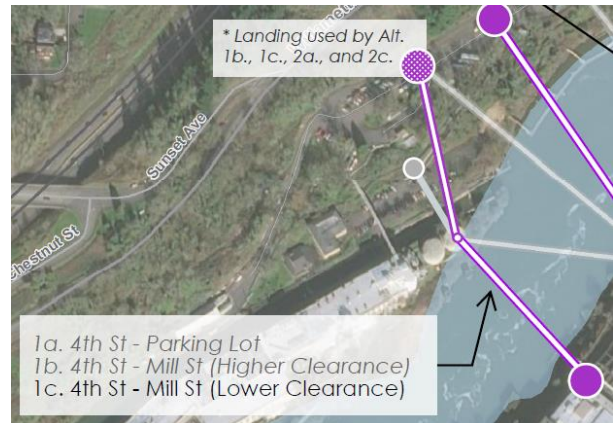
## Removed Alignments

The following potential bridge alignments were determined to be less preferable and more challenging based on design feasibility and stakeholder input. As a result, the following alignments were removed from further consideration.

### ***Alignment 1a: 4<sup>th</sup> Street to Parking Lot***

#### ***Reasons for Removal:***

The connection between Mill Street and the bridgehead landing area on the West Linn side has a substantial grade change, requiring ADA accommodations. These accommodations would likely require significant retaining wall structures to traverse the bluff. Alignment 1c provides a similar connection with fewer impacts to navigable clearance. Alignment 1a has received positive and negative feedback with regards to its proximity to Willamette Falls. Based on the concerns voiced by stakeholders regarding proximity to the falls, only one alignment (Alignment 1c) was identified to be advanced. Alignment 1a also may obstruct the view of Willamette Falls from the Historic Arch Bridge.



### ***Alignment 1b: 4<sup>th</sup> Street to Mill Street (Higher Clearance)***

#### ***Reasons for removal:***

Alignment 1b mimics the alignment of Alignment 1c; however, Alignment 1c takes off at grade from Oregon City whereas Alignment 1b requires the construction of a raised bridgehead. For this reason, Alignment 1c was selected as the superior alignment due to fewer ramping requirements and fewer impacts to Willamette Falls views from the Historic Arch Bridge.





**Alignment 2a: 5<sup>th</sup> Street to Mill Street (West)**

**Reasons for removal:**

Alignment 2a provides the same connectivity as Alignment 2b but has a higher grade change percentage between bridgeheads, resulting in more ramping compared to 2b. Furthermore, Alignment 2b provides a shorter horizontal bridge span compared to Alignment 2a.



**Alignment 2c: 5<sup>th</sup> Street to Mill Street (via Moore Island)**

**Reasons for removal:**

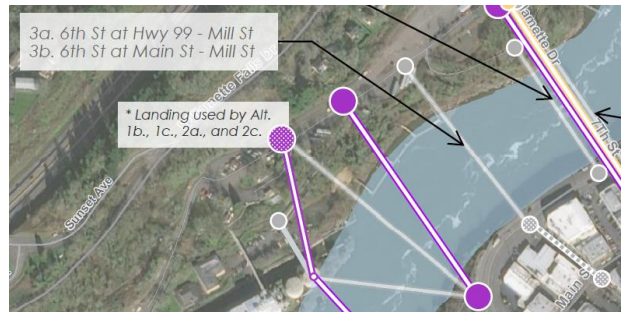
Alignment 2c is similar to Alignment 1c but links to the OR 99 elbow rather in Oregon City. Alignment 2c is considered inferior to Alignment 1c because it does not provide a direct link to the Willamette Falls Downtown District.



**Alignments 3a and 3b: 6<sup>th</sup> Street to Mill Street (via OR 99 and Main Street)**

**Reasons for Removal:**

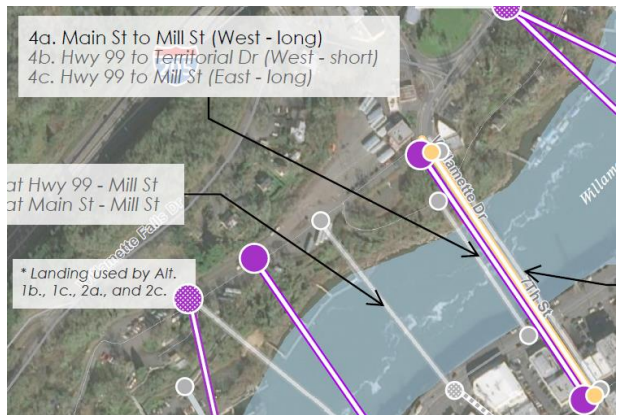
The bridgeheads for the alignments are lower than that of the Historic Arch Bridge. This results in a reduction in the navigable height of the river. Sufficient ramping would not be feasible due to rights-of-way constraints at the bridge landing in Oregon City due to OR 99E.



**Alignment 4b: OR 99 to Territorial Drive (West – short)**

**Reasons for Removal:**

The landing locations are lower than that of the Historic Arch Bridge, particularly on the West Linn side of the river (approximately 70 feet lower). As a result, the alignment would significantly reduce the height on the navigable riverway and therefore is not viable. Additionally, the connection to Mill Street via Territorial Drive has a substantial grade difference, which would necessitate significant ramping.



### Alignment 4c: OR 99 to Mill Street (East – long)

#### Reasons for Removal:

Alignment 4a and Alignment 4c are identical in concept. The main difference is that Alignment 4c is located immediately downstream of the Historic Arch Bridge. Alignment 4a was selected over Alignment 4c because the visual viewshed of the Willamette Falls on the south side of the bridge is preferable based on stakeholder feedback.



### Alignment 5: Existing Arch Bridge Modifications (Concept A: Restricted Facility for Active Transportation Uses and Concept B: Cantilevering Pathway or Widening Sidewalks)

#### Reasons for Removal:

Alignment 5 was removed from further consideration because of regional transportation impacts and potential impacts to the Historic Arch Bridge structure. Two concepts related to the modifying the Historic Arch Bridge were proposed through the public involvement process, including the concept of restricting the Historic Arch Bridge to walking and biking and the concept of cantilevering a pathway or widening the existing sidewalks on the Historic Arch Bridge.

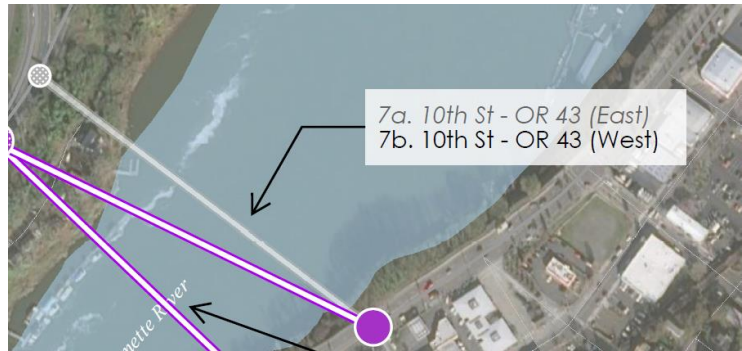


- **Concept A: Restricted Facility for Active Transportation Uses** – Restricting the Historic Arch Bridge to active transportation use will reroute vehicular trips to the I-205 bridge since a new vehicular bridge is not part of this design proposal. Based on input received as part of the I-205 tolling project, rerouting local trips currently using the Historic Arch Bridge to the I-205 bridge is undesirable. For these reasons, restricting the Historic Arch Bridge to active transportation use was dismissed.
- **Concept B: Cantilevering Pathway or Widening Sidewalks** – Widening the existing sidewalks or cantilevering off the existing structure would trigger Section 106 Adverse Effects and Section 4(f) “use,” due to alterations to existing sidewalks, piers, and other structural systems associated with the Historic Arch Bridge. For these reasons, the cantilevering pathway or widening sidewalk option was dismissed. *Appendix “D” includes a detailed summary of the obstacles, challenges, and Section 106 findings.*

### **Alternative 7a: 10<sup>th</sup> Street to OR 43 (East)**

#### **Reasons for Removal:**

Alternative 7a was deemed inferior to Alternative 7b, as the West Linn bridgehead would have potential environmental impacts and require additional improvements on the bluff to support connections to the future OR 43 and Willamette Falls Drive bicycle and pedestrian systems.



### **Preliminary Alignment Screening Summary**

Table 1 summarizes the alignment screening evaluation and assumptions based on the screening criteria.



**Table 1: Preliminary Alignment Screening Summary (Top Five Alignments Highlighted in Blue)**

| Alignment           | Horizontal Bridge Length <sup>1</sup> (ft) | Design Considerations                 |                         |  |   | Potential Impact to Navigable Clearance <sup>4</sup> |
|---------------------|--|---------------------------------------|-------------------------|--|---|--|
|                     |  | Percent Grade Change from Bridgeheads | Grade % Greater Than 5% | Required Ramping Length in Feet (Assuming 5% Ramp) | Land Area for Ramping <sup>2,3</sup> (ft <sup>2</sup> ) |  |
| Alignment 1a        | 674  | 0.4%                                  | N/A                     | N/A  | N/A   | Possible <sup>6</sup>                                |
| Alignment 1b        | 918  | 7.8%                                  | 2.8%                    | 517 <sup>5</sup>                                   | 11,859 <sup>5</sup>                                     | Possible <sup>6</sup>                                |
| <b>Alignment 1c</b> | <b>918</b>                                 | <b>7.8%</b>                           | <b>2.8%</b>             | <b>517<sup>5</sup></b>                             | <b>11,859<sup>5</sup></b>                               | <b>Possible<sup>6</sup></b>                          |
| Alignment 2a        | 786  | 8.4%                                  | 3.4%                    | 528  | 12,089  | No   |
| <b>Alignment 2b</b> | <b>742</b>                                 | <b>7.8%</b>                           | <b>2.8%</b>             | <b>408</b>   | <b>9,577</b>  | <b>Possible<sup>6</sup></b>                          |
| Alignment 2c        | 987  | 6.7%                                  | 1.7%                    | 327  | 7,876   | Possible <sup>6</sup>                                |
| Alignment 3a        | 646  | 7.8%                                  | 2.8%                    | 364  | 8,650   | Yes  |
| Alignment 3b        | 909  | 5.2%                                  | 0.2%                    | 32   | 675   | Yes  |
| <b>Alignment 4a</b> | <b>953</b>                                 | <b>5.1%</b>                           | <b>0.1%</b>             | <b>26</b>  | <b>548</b>  | <b>Possible<sup>7</sup></b>                          |
| Alignment 4b        | 466  | 0.5%                                  | N/A                     | N/A  | N/A   | Yes  |
| Alignment 4c        | 891  | 4.9%                                  | N/A                     | N/A  | N/A   | Possible <sup>7</sup>                                |
| Alignment 5         | 959  | 4.9%                                  | N/A                     | N/A  | N/A   | No   |
| <b>Alignment 6</b>  | <b>894</b>                                 | <b>6.2%</b>                           | <b>1.2%</b>             | <b>206</b>   | <b>4,323</b>  | <b>Possible<sup>7</sup></b>                          |
| Alignment 7a        | 995  | 5.4%                                  | 0.4%                    | 84   | 1,770   | No   |
| <b>Alignment 7b</b> | <b>1,014</b>                               | <b>5.0%</b>                           | <b>N/A</b>              | <b>N/A</b>   | <b>67</b>   | <b>Possible<sup>7</sup></b>                          |

<sup>1</sup> Length measured from bridgehead to bridgehead.

<sup>2</sup> Assumes 14-foot ramp width x required ramping length x 1.5. The factor (1.5) is intended to capture a range of possible ramp layouts, but not all. Bridgehead impact areas will need to be assessed on a case-by-case basis for the five selected alignment alternatives while considering preferred ramping geometry and constraints.

<sup>3</sup> 1000 ft<sup>2</sup> is added to account for elevator and stairwells when an elevation increase required to meet the 5 percent bridge grade is greater than 15 feet.

<sup>4</sup> Visualizations of the impact to navigable clearance is provided in *Appendix "E"*. Some alignments have clearance heights similar to the Historic Arch Bridge and may rely on specific structure types and minor slight increases in elevation at the bridgeheads to avoid impacts on navigable clearance.

<sup>5</sup> Alignment 1b assumes required ramping and ramping landing area on the shoreline of Oregon City (higher clearance across Willamette River); Alignment 1c assumes required ramping and ramping land area on Moore Island (lower clearance across Willamette River).

<sup>6</sup> The alignment relies on the assumption that navigable clearances are not required to meet same thresholds as locations downstream of Willamette Falls Locks. Further coordination and verification with the U.S. Coast Guard will be required to determine the navigable clearance requirements upstream of the Willamette Falls Locks.

<sup>7</sup> Clearance within 5 feet of existing Historic Arch Bridge clearance requirements. Further evaluation is required to determine potential impacts.

## NEXT STEPS

*TM#2: Identify Crossing Alignments* has been reviewed by the Project Advisory Committee (PAC), Project Leadership Team (PLT), and Project Management Team (PMT). Input on considerations and alignment preferences has been solicited from each of these groups to inform the selection of the top five most promising alignment alternatives. The five alignments selected for further analysis will be refined, analyzed, and evaluated according to the criteria outlined in *TM #1: Evaluation Criteria for Crossing Locations*.

*Appendix "F"* contains the homework assignments and input received from the PAC, PLT, and technical workshop attendees.

Appendix A  
I-205: Stafford Road to  
OR 99E Bicycle/Pedestrian  
Assessment and Executive  
Summary





# Memo

Date: Monday, March 29, 2021

Project: ODOT WL-OC Ped Bike Bridge

To: Sandra Hikari, ODOT  
Marc Butorac, Kittelson & Associates, Inc.

From: Andrew Johnson, HDR and Mikal Mitchell, HDR

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Subject: **I-205 Abernethy Bridge Structural Considerations and Updates – Pedestrian/Bicycle Crossing Feasibility**

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## Introduction

In 2016, HDR was hired to provide a high-level assessment of potential bicycle and pedestrian alignments parallel to I-205 in the vicinity of the Willamette River, research the planning context for improvements and develop conceptual cost estimates for the project. The assessment was not meant to select an alternative: it was recognized that more information was going to be needed and a more public process was critical to addressing the identified bicycle facility gap in this part of the region.

## I-205 Bike and Pedestrian Assessment Recap

The I-205 Bike and Pedestrian Assessment examined design and construction risks, user experience, environmental impacts and permitting complexity, system connectivity and plan consistency. The primary purpose of the study at the time was to assess whether bike and pedestrian facilities would be added to the I-205 Corridor, or if it could be better served at another location.

The bike and pedestrian Willamette River bridge options were evaluated assuming an alignment close to I-205. Our high-level assessment examined a cantilever multi-use path attached to the north and south of I-205 Abernethy Bridge, as well as providing an attached facility down the center below the I-205 bridge. A path at the deck surface down the center of I-205 was not considered due to safety and feasibility concerns related to pedestrians accessing the median from either side of the river. A few key factors arose from the assessment that are relevant to the ongoing Oregon City-West Linn Pedestrian/Bicycle Bridge Concept Plan relative to the feasibility of attaching a bike and pedestrian facility to the I-205 Abernethy bridge structure:

- Cantilevering off the side of I-205 (north or south) adds complexity to the design and construction of I-205 and can be more expensive than stand-alone bicycle/pedestrian bridge structures at locations with shorter spans. Cantilevering to the north is the most expensive option due to the cost to the I-205 structure, as well as long approach structures on either end of the bridge to ramp down to existing grade.
- Cantilever options result in a sub-optimal user experience due to the proximity of fast-moving adjacent traffic (separated by a raised barrier wall) and related noise and air concerns.



- Cantilever options required the longest on/off ramp connections at either side to meet ADA grade requirements due to the height of the bridge and elevation of the ground and local street connections.
- Attaching a facility under the bridge with typical bike clearance standards would infringe upon US Coast Guard clearance requirements at this location making permitting very complicated or even infeasible.
- Constructing a facility under the bridge results in potential security concerns with limited visibility to surrounding areas.
- Each of the three I-205 structure modification options add impacts to Jon Storm Park and approach structures could affect access to the boat launch and parking lot.
- Each of the three I-205 options result in complicated connections and potentially conflicts at interchange entrance and exit ramps, some of which are high speed or loop ramp facilities.
  - The City of West Linn has a planned realignment of Willamette Falls Drive and a connection to the realigned facility is desired, but would be challenging due to the interchange location and existing parks in this area.
- Each of the three I-205 options served long bicycle trips well (e.g., regional trips along the I-205 multi-use path to the north); however, the options resulted in out of direction travel for short trips with destinations in West Linn or Oregon City.

## **I-205 Corridor Widening Status**

Since the Abernethy Bike and Pedestrian Study was completed, the I-205 Improvements Project has moved forward. The project concluded 2020 at the 60% design phase and is moving toward completion of final design for Phase 1 (10th Street to OR 213) in August 2021. Based on the current design, a few important details of the design affect the ability to add bike and pedestrian facilities to the current I-205 project:

- The widening of I-205 Abernethy Bridge spans involves moving the existing structure out from the middle and cantilevering the current bridge over widened substructure. Given this approach to widening the bridge, additional widening for pedestrian loading would be extremely difficult and perhaps infeasible.
  - The widening relies on reserve capacity in the existing box girders to support the cantilevered deck widening. Widening the deck further to accommodate pedestrians without additional girders would overload the existing box girders.
  - For the 430-foot span required, an additional girder to match the existing bridge would not be efficient, adding significant weight to the structure. A cable-supported structure is more appropriate for this span length, but would not match the existing bridge.
  - The outrigger bents being used to replace the existing supports in the river require a very long span (154 feet) to avoid the existing foundations. Additional structure weight required for additional widening would increase the size and weight of these elements as well, all being transferred to the large diameter drilled shaft foundations. Additional weight would overload these foundations and using a larger diameter drilled shaft foundation is not feasible due to current construction equipment limitations.
  - The additional structure weight discussed in the bullets above would require the very complex seismic analysis that has already been completed to be performed again.



- Accommodating additional structure would affect all aspects of the current bridge design, including redesigning substructure and superstructure. This type of modification would come at great cost and would have substantial effects to the existing schedule.
- Adding to or modifying the design will affect assumed construction approaches.
- Lastly, adding additional impacts will affect several permits and environmental clearances at a complicated location. Additional park (namely 4(f) and 6(f)) impacts that involve a permanent conversion of land requires a referral to voters County-wide. There are also cultural, historic, US Coast Guard and ESA considerations in the current design subject to years of permitting conversations and commitments.

An alignment on the I-205 Abernethy Bridge is not included in the current Concept planning process, based on the previous assessment and the current status of the I-205 Improvements Project.

I would be happy to answer any further questions and look forward to continuing to find the optimal alignment for this important bike and pedestrian facility.

Appendix B  
Detailed Alignment  
Screening Table

| Alignment ID | North Bridgehead ID | South Bridgehead ID | North Bridgehead Ground Elevation (ft) (NAVD 88) | South Bridgehead Ground Elevation (ft) (NAVD 88) | Horizontal Bridge Length (Bridgehead-Bridgehead) (ft) | Ground Elevation Difference (ft) | Grade % (Ground-Ground) | Grade % Greater than 5% | Elevation Increase at Low End to Meet 5% Bridge Grade (ft) | Required Ramping Length assuming 5% Ramp (ft) | Bridgehead Potential Impact Area <sup>1,2</sup> (ft <sup>2</sup> ) | Bridge + Required Ramp Length (ft) | Approx. Vertical Clearance to Columbia River Datum <sup>3</sup> (ft) |
|--------------|---------------------|---------------------|--|--|---|----------------------------------|-------------------------|-------------------------|--|---|--|------------------------------------|--|
| 1a           | N1_A                | S1                  | 52.3   | 49.5   | 674   | 2.8                              | 0.4%                    | N/A                     | N/A  | N/A   | N/A  | 674                                | 40   |
| 1b           | N1_B                | S1                  | 121.3  | 49.5   | 918   | 71.8                             | 7.8%                    | 2.8%                    | 25.9   | 517   | 11859  | 1435                               | 74   |
| 1c           | N1_B                | S1                  | 121.3  | 49.5   | 918   | 71.8                             | 7.8%                    | 2.8%                    | 25.9   | 517   | 11859  | 1435                               | 46   |
| 2a           | N1_B                | S2                  | 121.3  | 55.5   | 786   | 65.7                             | 8.4%                    | 3.4%                    | 26.4   | 528   | 12089  | 1314                               | 74   |
| 2b           | N2                  | S2                  | 113.1  | 55.5   | 742   | 57.5                             | 7.8%                    | 2.8%                    | 20.4   | 408   | 9577   | 1151                               | 73   |
| 2c           | N1_B                | S2                  | 121.3  | 55.5   | 987   | 65.7                             | 6.7%                    | 1.7%                    | 16.4   | 327   | 7876   | 1314                               | 53   |
| 3a           | N3                  | S3                  | 104.9  | 54.4   | 646   | 50.5                             | 7.8%                    | 2.8%                    | 18.2   | 364   | 8650   | 1010                               | 67   |
| 3b           | N3                  | S3_A                | 104.9  | 57.8   | 909   | 47.1                             | 5.2%                    | 0.2%                    | 1.6  | 32  | 675  | 941                                | 67   |
| 4a           | N4_A                | S4_A                | 112.7  | 63.7   | 953   | 49.0                             | 5.1%                    | 0.1%                    | 1.3  | 26  | 548  | 979                                | 74   |
| 4b           | N4                  | S4                  | 53.3   | 55.6   | 466   | 2.3                              | 0.5%                    | N/A                     | N/A  | N/A   | N/A  | 466                                | 43   |
| 4c           | N5_A                | S5_A                | 108.3  | 64.3   | 891   | 44.1                             | 4.9%                    | N/A                     | N/A  | N/A   | N/A  | 891                                | 71   |
| 5            | N5                  | S5                  | 111.2  | 64.5   | 959   | 46.7                             | 4.9%                    | N/A                     | N/A  | N/A   | N/A  | N/A                                | 74   |
| 6            | N6                  | S6                  | 119.6  | 64.7   | 894   | 55.0                             | 6.2%                    | 1.2%                    | 10.3   | 206   | 4323   | 1099                               | 73   |
| 7a           | N7                  | S7                  | 122.7  | 68.8   | 995   | 54.0                             | 5.4%                    | 0.4%                    | 4.2  | 84  | 1770   | 1079                               | 74   |
| 7b           | N6                  | S7                  | 119.6  | 68.8   | 1014  | 50.9                             | 5.0%                    | 0.0%                    | 0.2  | 3   | 67   | 1017                               | 72   |

**Notes:**

- 1) Assumes 14 ft. Ramp Width x Required Ramping Length x 1.5. 1.5 factor is intended to capture a range of possible ramp layouts, but not all. Bridgehead impact areas will need to be assessed on a case-by-case basis for the 5 selected alignment alternatives considering preferred ramping geometry and constraints.
- 2) 1000 ft<sup>2</sup> is added to account for elevator and stairwells when Elevation Increase at Low End to Meet 5% Bridge Grade is greater than 15 ft.
- 3) Assumes 5 ft. structure depth for new structures

| Comments |   |
|----------|---|
| 1a       |   |
| 1b       | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |
| 1c       | Alternative 4c differs from 4b in the ramping would occur on Moore's Island, rather than on the Oregon City side of the Willamette River.   |
| 2a       | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |
| 2b       | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |
| 2c       | Ramping would occur on Moore's Island, rather than on the Oregon City side of the Willamette River.   |
| 3a       |   |
| 3b       |   |
| 4a       | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |
| 4b       |   |
| 4c       | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |
| 5        | Oregon City Arch Bridge (no new structure).   |
| 6        | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |
| 7a       | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |
| 7b       | This alignment is in the range where structure type selection and minor elevation changes at the bridge heads could provide vertical clearance that meets or exceeds the Oregon City Arch Bridge. |



Appendix C  
Existing Willamette River Bridges

| Willamette River <sup>2</sup>             | Type          | Clearance (ft) | Communication                                  | Notes  |
|---|---------------|----------------|--|--|
| <a href="#">St. Johns Bridge</a>          | Fixed span    | 205            |  |  |
| <a href="#">BN St. Johns Railroad</a>     | Vertical lift | 55– 200        | 1 long, 1 short<br>Channel 13<br>503-2411-4492 |  |
| <a href="#">Fremont Bridge</a>            | Fixed         | 163            |  |  |
| <a href="#">Broadway Bridge</a>           | Bascule       | 90 down        | 2 long, 1 short<br>Channel 13<br>503-988-3452  | Operated by Multnomah County, with Burnside, Morrison, and Hawthorn.   |
| <a href="#">Steel Bridge</a>              | Vertical lift | 26–75–161      | 1 long, 1 short<br>Channel 13<br>503-249-2292  |  |
| <a href="#">Burnside Bridge</a>           | Bascule       | 64 down        | 1 long, 2 short<br>Channel 13<br>503-988-3452  | Closed weekdays from 7:00am to 8:30am and from 4:00pm to 5:30pm  |
| <a href="#">Morrison Bridge</a>           | Bascule       | 69 down        | 1 long, 3 short<br>Channel 13<br>503-988-3452  | Closed weekdays from 7:00am to 8:30am and from 4:00pm to 5:30pm<br>For tide info, see <a href="#">Morrison Bridge tide</a> |
| <a href="#">Hawthorne Bridge</a>          | Vertical lift | 49–159         | 1 long, 4 short<br>Channel 13<br>503-988-3452  | Closed weekdays from 7:00am to 8:30am and from 4:00pm to 5:30pm  |
| <a href="#">Marquam Bridge</a>            | Fixed         | 120            |  |  |
| <a href="#">Tilikum Crossing</a>          | Fixed         | 77             |  | For more info on the Tilikum Crossing, see <a href="http://trimet.org">trimet.org</a>                                      |
| <a href="#">Ross Island Bridge</a>        | Fixed arch    | 120            |  |  |
| <a href="#">Sellwood Bridge</a>           | Fixed span    | 72             |  | For info on the new bridge, see <a href="http://SellwoodBridge.org">SellwoodBridge.org</a> .                               |
| <a href="#">Lake Oswego RR Bridge</a>     | Fixed span    | 69             |  |  |
| <a href="#">Abernethy Bridge, I-205</a>   | Fixed span    | 85             |  |  |
| <a href="#">Oregon City (Arch Bridge)</a> | Fixed span    | 49             |  |  |

Source: Portland Yacht Club, <https://portlandyc.com/links/bridges-clearance-and-signals/>.

Appendix D  
Section 106 and 4f Findings

## **Oregon City Arch Bridge No. 00357**

### **Obstacles to Sidewalk Widening for a Bicycle/Pedestrian Facility**

**Robert W. Hadlow, Ph.D., Senior Historian; and Jennifer E. K. Pearce, Bridge Engineer**

**February 5, 2021**

**The Oregon City Arch Bridge No. 00357** is a 360-foot-long Gunite-covered steel plate through arch with reinforced-concrete girder span approaches. It is a one-of-a kind structure and is the earliest major bridge in Conde B. McCullough's *oeuvre* as state bridge engineer. He went on to design bridges throughout Oregon and is noted most for the wonderful collection of bridges on the Oregon Coast Highway from the 1920s and 1930s. The Oregon City Arch Bridge's opening in 1922 was a significant milestone in the completion of the Pacific Highway in Oregon.

**The recent rehabilitation project on the Oregon City Arch Bridge took place from 2010 to 2012.** It cost \$15+ million in 2012 dollars. The project had many components to address 90+ years of wear and tear on the bridge. It repaired/replaced corroded steel throughout the structure, replaced the Gunite covering the steel plate arch, repaired damaged concrete floor beams, installed a micro silica overlay on the deck, repaired steel hangers in the arch and encased them in new concrete, replicated historic luminaires and installed new traffic safety lighting, cleaned and painted sections of the bridge, installed replica entry pylons, and replaced failing sidewalks and sidewalk railing with new sidewalks integrated with new crashworthy stealth railing (structural steel encased in concrete).

The rehabilitation project avoided a Section 106 Adverse Effect (National Historic Preservation Act) and a Section 4(f) "use" of the bridge (US DOT Act) by following the Secretary of the Interior's Standards for the Treatment of Historic Properties, under "Rehabilitation." The project received many awards. They include the International Bridge Conference's prestigious **Abba Lichtenstein Medal** for "a recent outstanding achievement in bridge engineering demonstrating artistic merit and innovation in the restoration and rehabilitation of bridges of historic or engineering significance" and the Oregon Heritage Commission's Oregon Heritage Excellence Award.

### **Challenges with sidewalk widening on the Oregon City Arch Bridge by 8-to-10 feet to better accommodate bikes and pedestrians:**

- 1) Widening the north or south sidewalk and relocating the stealth railing would be an expensive and onerous task. The reinforcing steel for the precast stealth railing is laced underneath the reinforcing steel for the new sidewalks. Railing posts are cast in place. The rails and sidewalks work together to contain errant vehicles. Widening the sidewalks would require tying additional rebar into the existing reinforcement and recasting the sidewalks. It would also require a metal fence extension on top of the railing to meet code for bikeways.
- 2) Sidewalk widening would require widening the sides of the piers and relocating entry pylons and pier pylons.
- 3) Structural work would be needed on the girders supporting the sidewalk where it passes over OR99E on the Oregon City end of the bridge.
- 4) Arch deflection on sides of the bridge because of the widened sidewalk would create uneven loading, also affecting arch hangers on the arch rib and sidewalk supports.
- 5) The Oregon City end of the widened bridge would require right-of-way purchases and closure of streets south or north of the bridge. It could also force closures of businesses nearby that rely on these streets for the movement of goods and services. This would likely mean buying out businesses affected by the project.

In the end, the sidewalk widening project would have a **Section 106 Adverse Effect** on the Oregon City Arch Bridge because of the alterations to sidewalks, piers, and other structural systems. This would require a memorandum of agreement to resolve the adverse effect and call out mitigation. It would also be a **Section 4(f) "use."** Section 4(f) analysis requires the project proponent to choose a prudent and feasible that "avoids the use" of the "historic site." If that is not possible, the proponent must choose an alignment that "minimizes harm" to the resource.

There are several alignments that meet the project's purpose and need, are prudent and feasible, and avoid a use of the historic site (the historic bridge is a historic site under Section 4(f)).

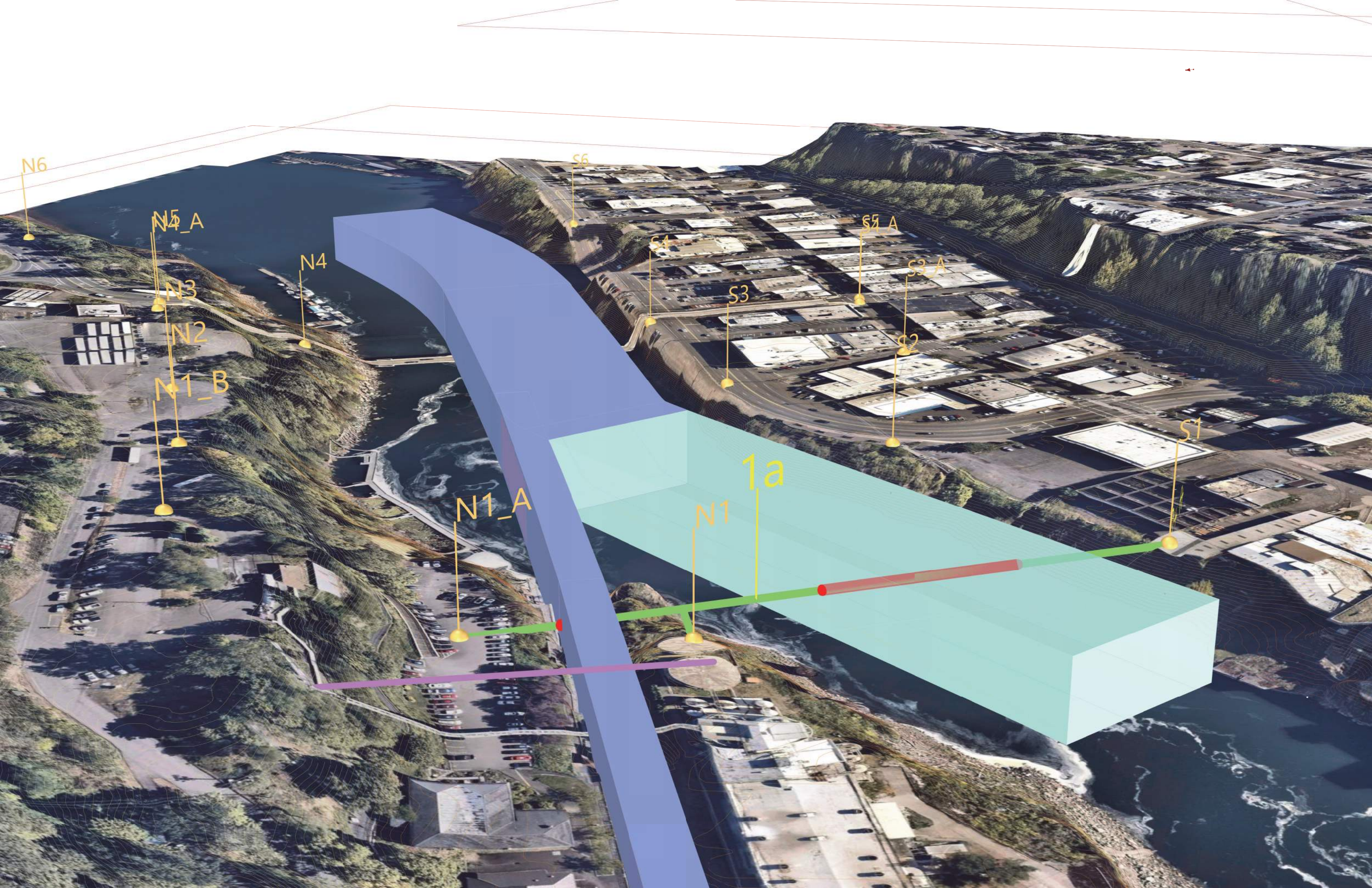
**West Linn – Oregon City Pedestrian and Bicycle Bridge Concept Plan**

Based on the findings summarized in this document, a separate structure north or south of the Oregon City Arch Bridge would provide a substantially lower cost alignment compared to increasing the width of the existing sidewalks on the historic bridge. However, it should be noted that these alignments may presents significant potential Section 106 and/or Section 4(f) impacts due to their proximity to the historic bridge.



Appendix E  
Navigable Clearance Visual





N6

N5\_A

N4

N3

N2

N1\_B

N1\_A

N1

1a

S6

S4

S3

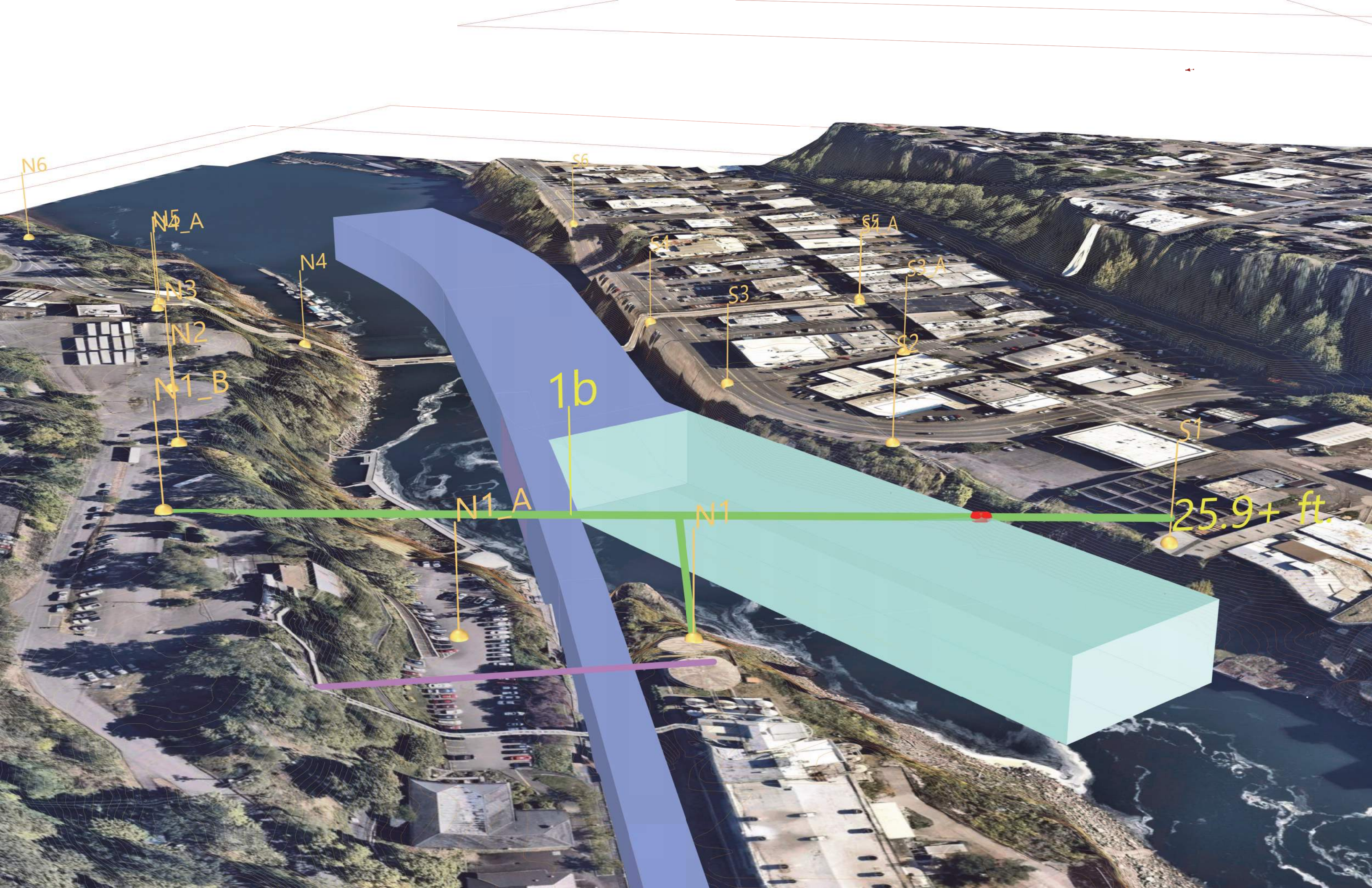
S5\_A

S3\_A

S2

S1





N6

N5\_A

N4

N3

N2

N1\_B

1b

N1\_A

N1

S6

S4

S3

S5\_A

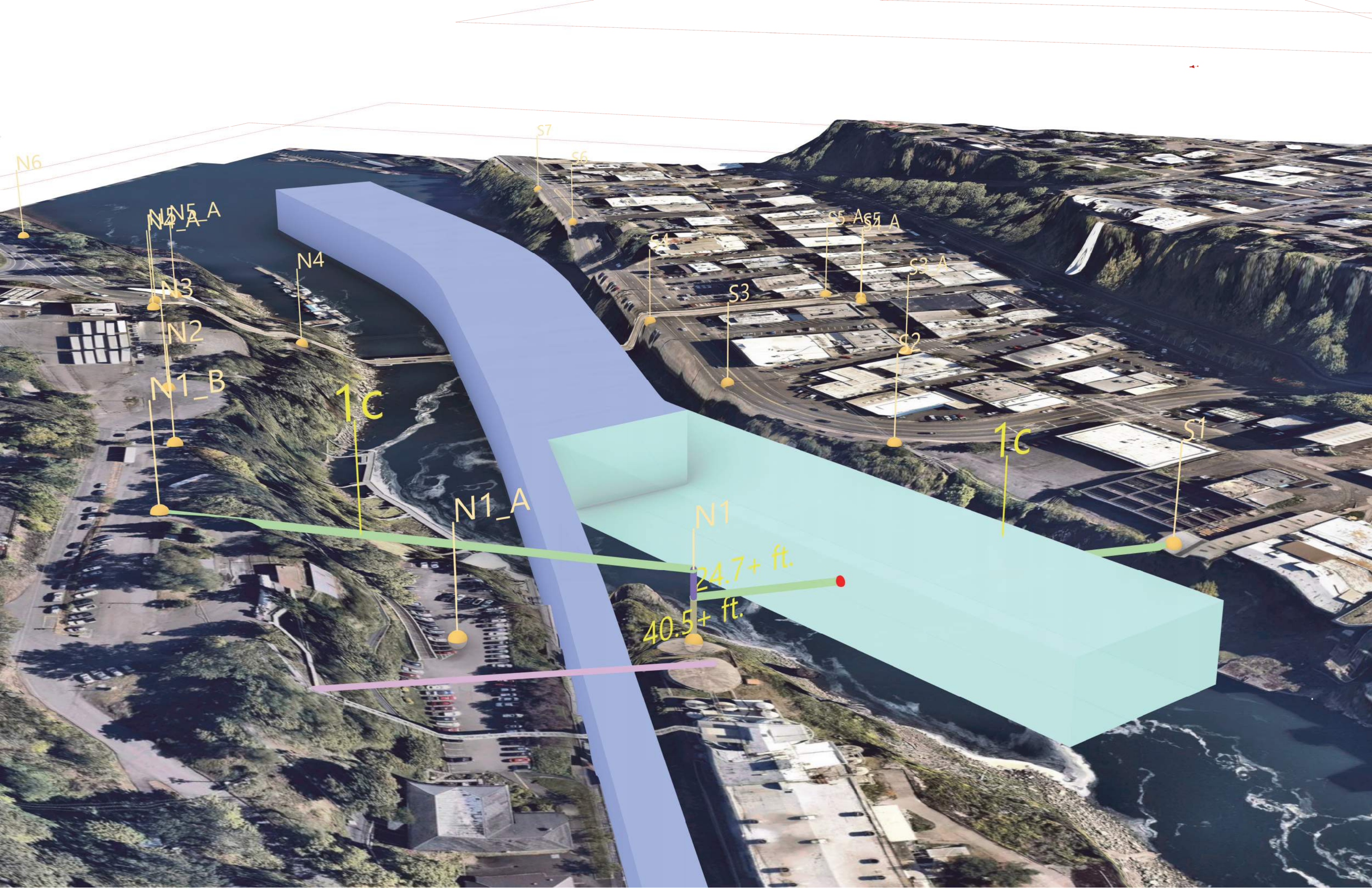
S3\_A

S2

S1

25.9+ ft.





N6

N4\_A  
N5\_A

N4

N3

N2

N1\_B

1C

N1\_A

N1

24.7+ ft.

40.5+ ft.

S7

S6

S4

S3

S5\_A

S5\_A

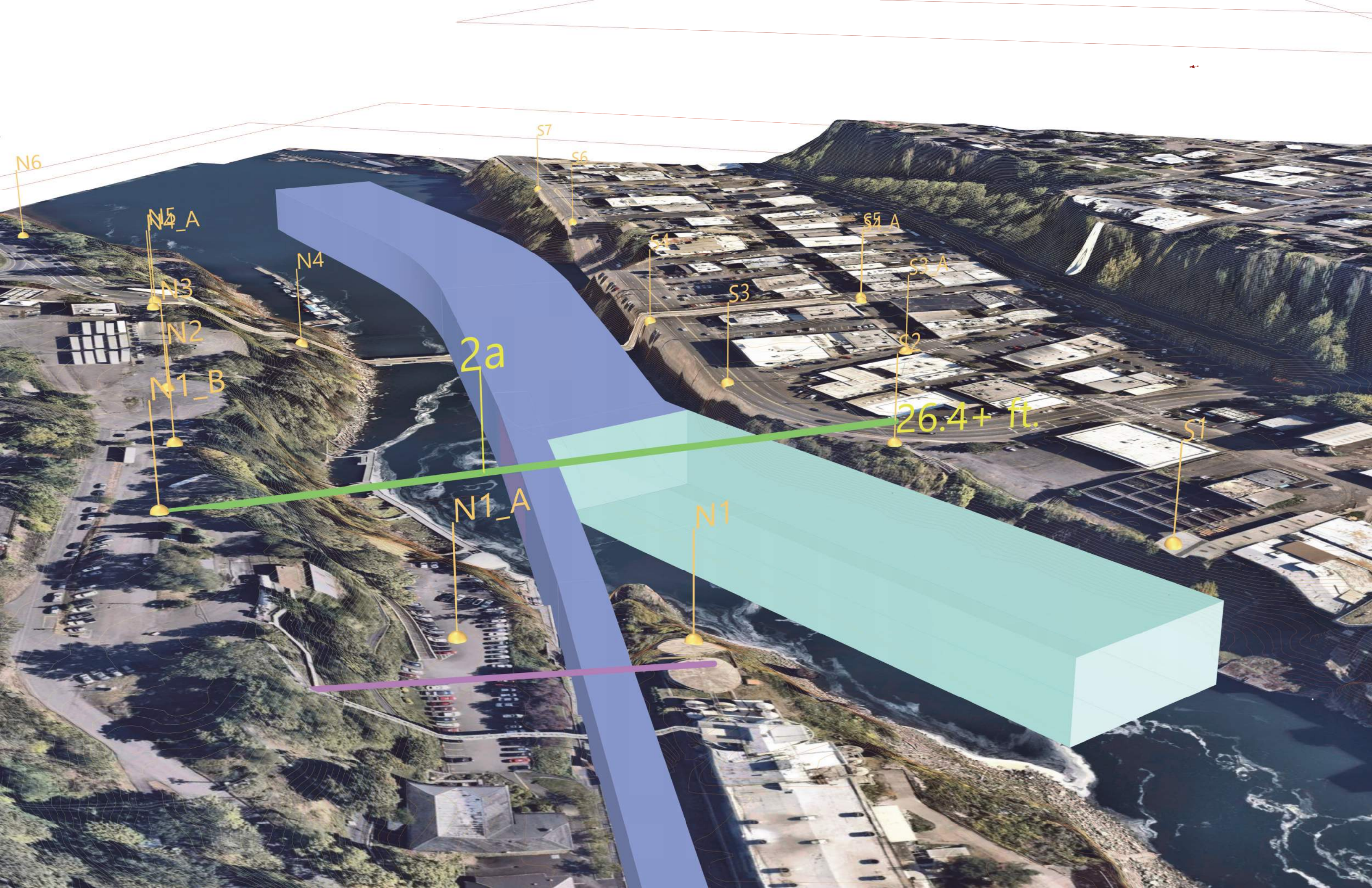
S3\_A

S2

1C

S1





N6

N5\_A

N3

N2

N1\_B

N4

2a

N1\_A

N1

S7

S6

S4

S3

S5\_A

26.4+ ft.

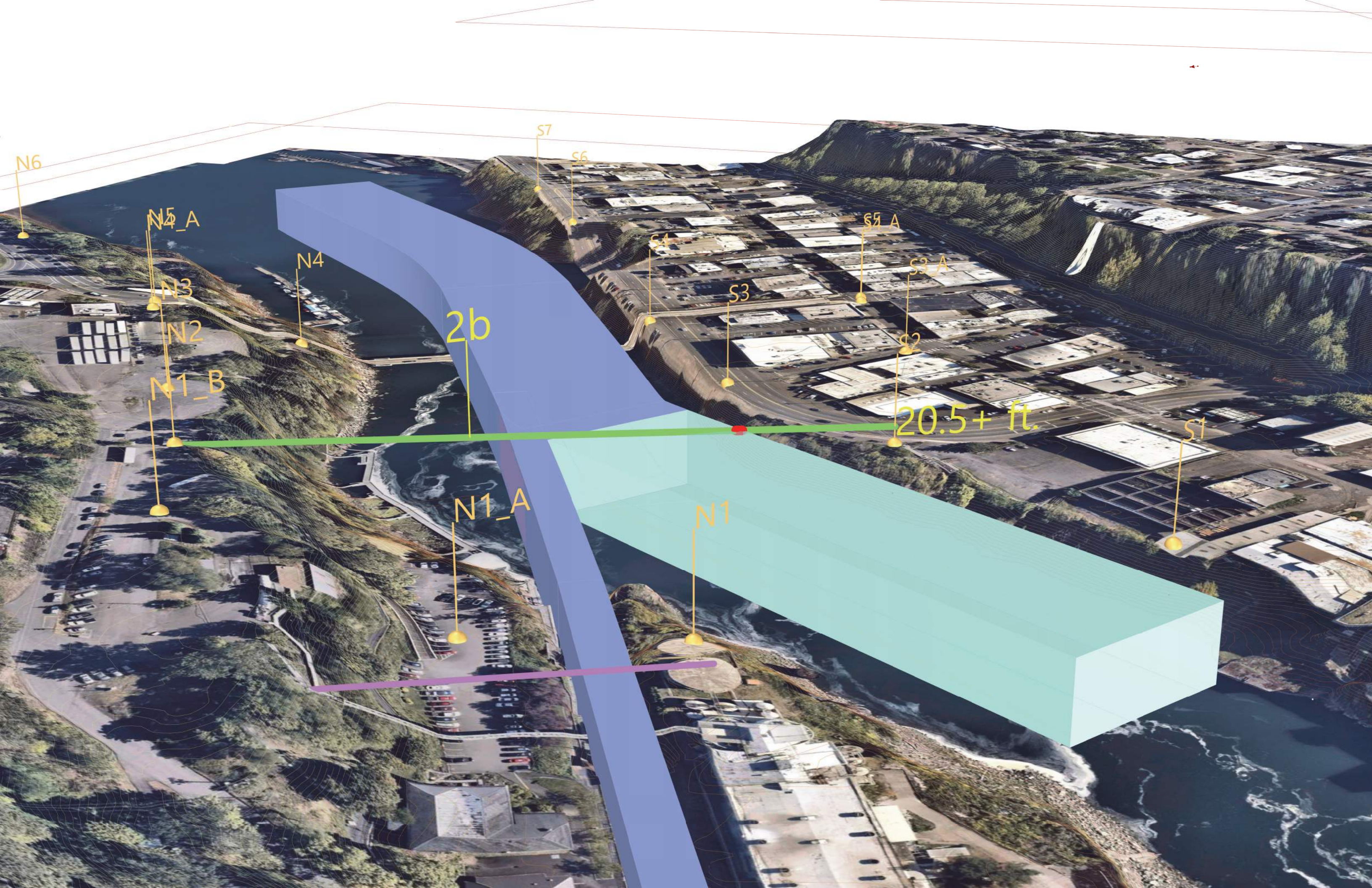
S3\_A

S2

S1

S1\_A





N6

N5\_A

N3

N2

N1\_B

N4

2b

N1\_A

N1

S7

S6

S4

S3

S5\_A

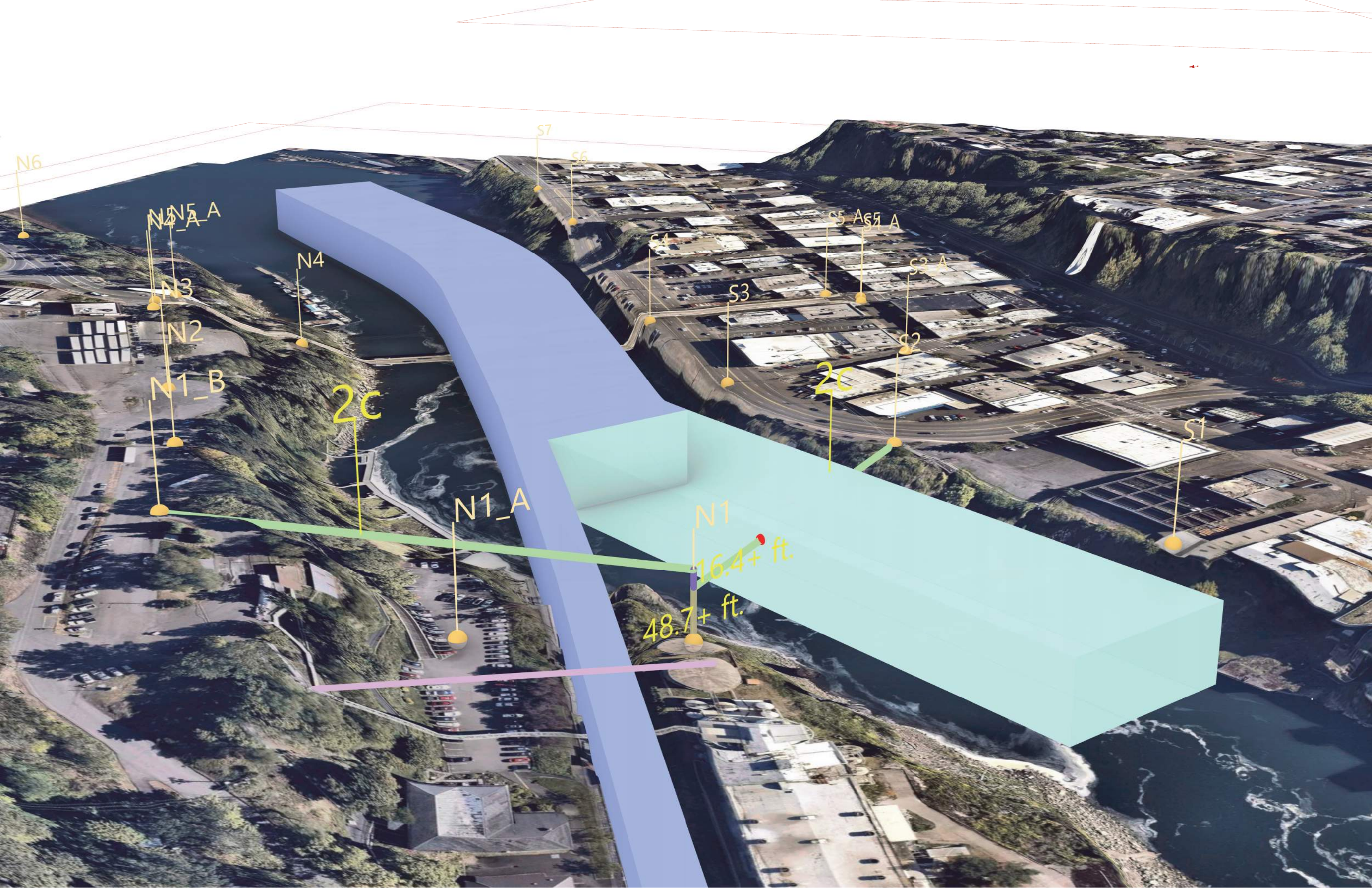
20.5+ ft.

S3\_A

S2

S1





N6

N5\_A  
N4\_A

N3

N2

N1\_B

N4

2C

N1\_A

N1

16.4+ ft.

48.7+ ft.

S7

S6

S4

S3

S5\_A

S5\_A  
S7\_A

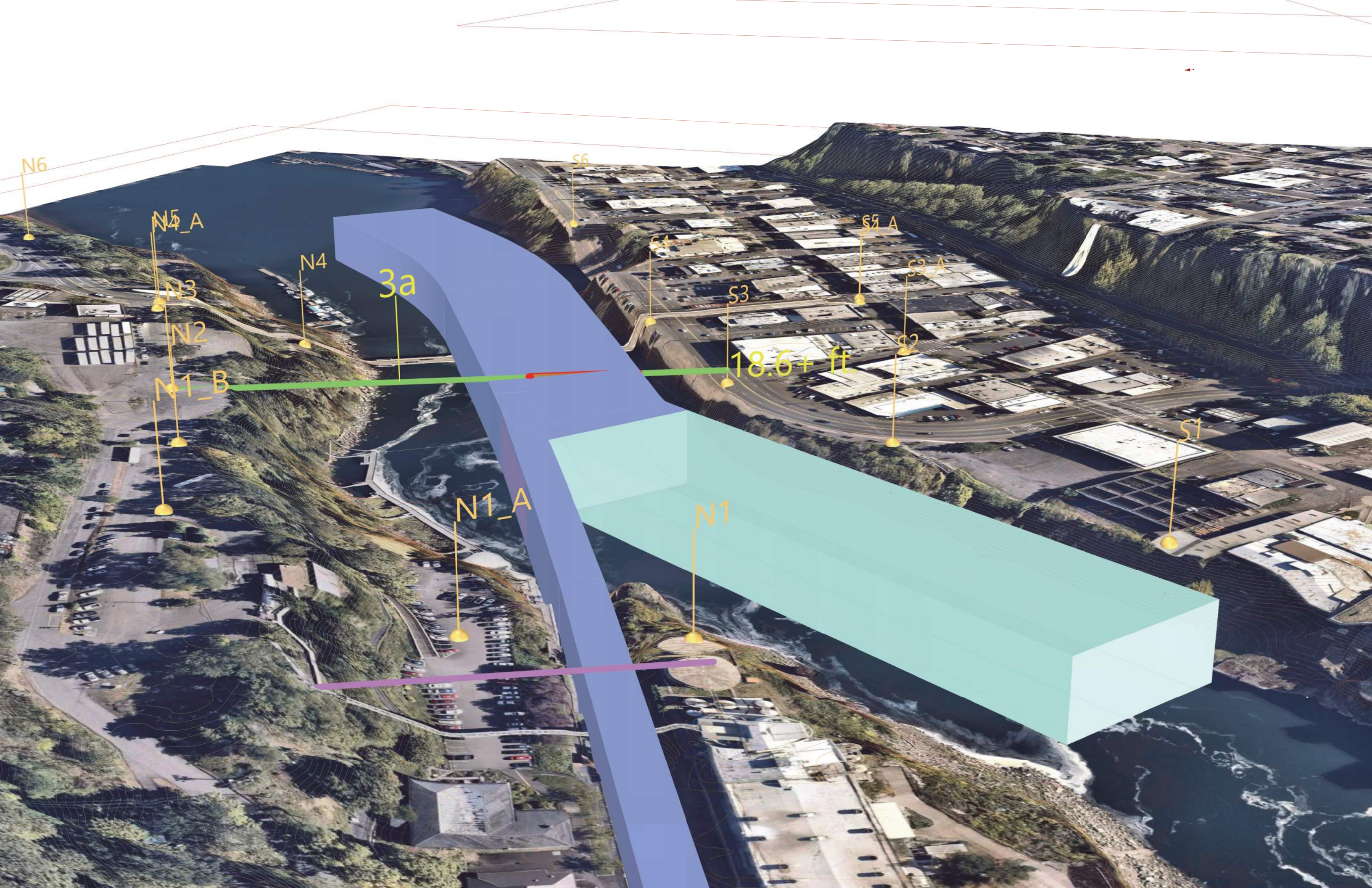
S3\_A

S2

2C

S1





N6

N5\_A

N4

N3

N2

N1\_B

3a

N1\_A

S6

S4

S3

S2

18.6+ ft

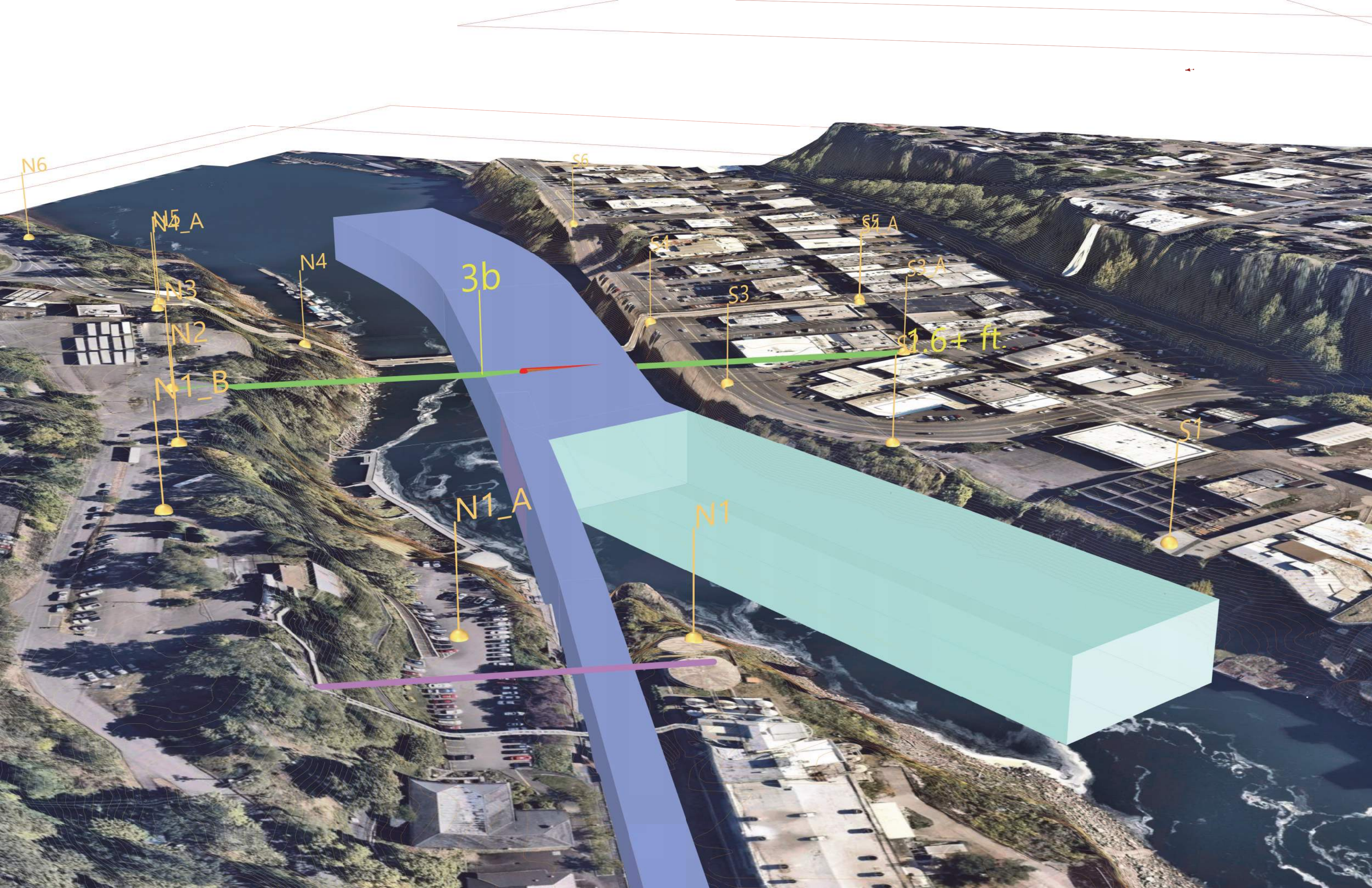
S5\_A

S3\_A

S1

N1





N6

N5\_A

N3

N2

N1\_B

N1

3b

N1\_A

N1

S6

S4

S3

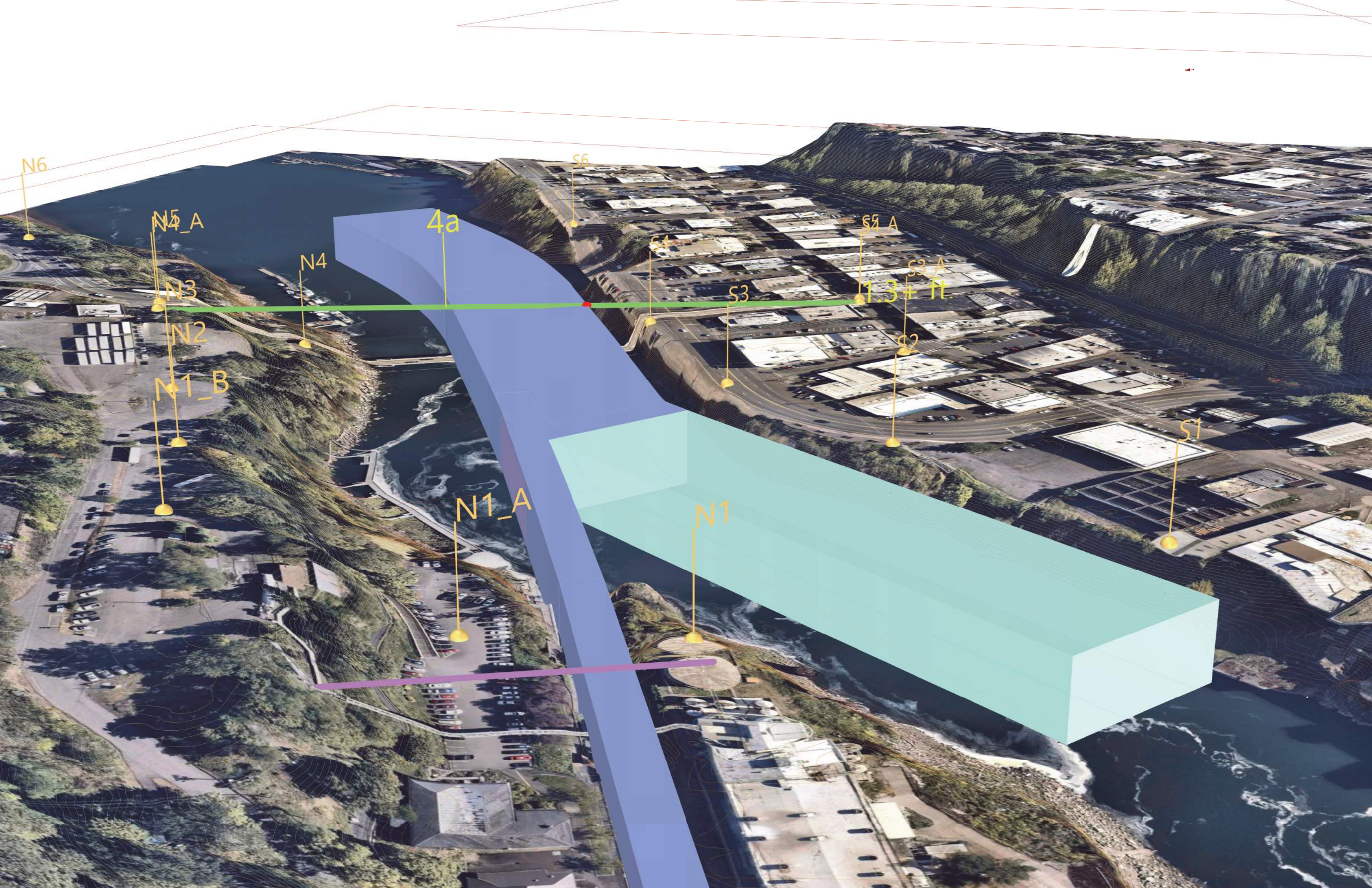
S2\_A

S3\_A

1.6+ ft.

S1





N6

N5\_A

4a

S6

S5\_A

N4

S4

S3\_A

N3

S3

1.3 ft

N2

S2

N1\_B

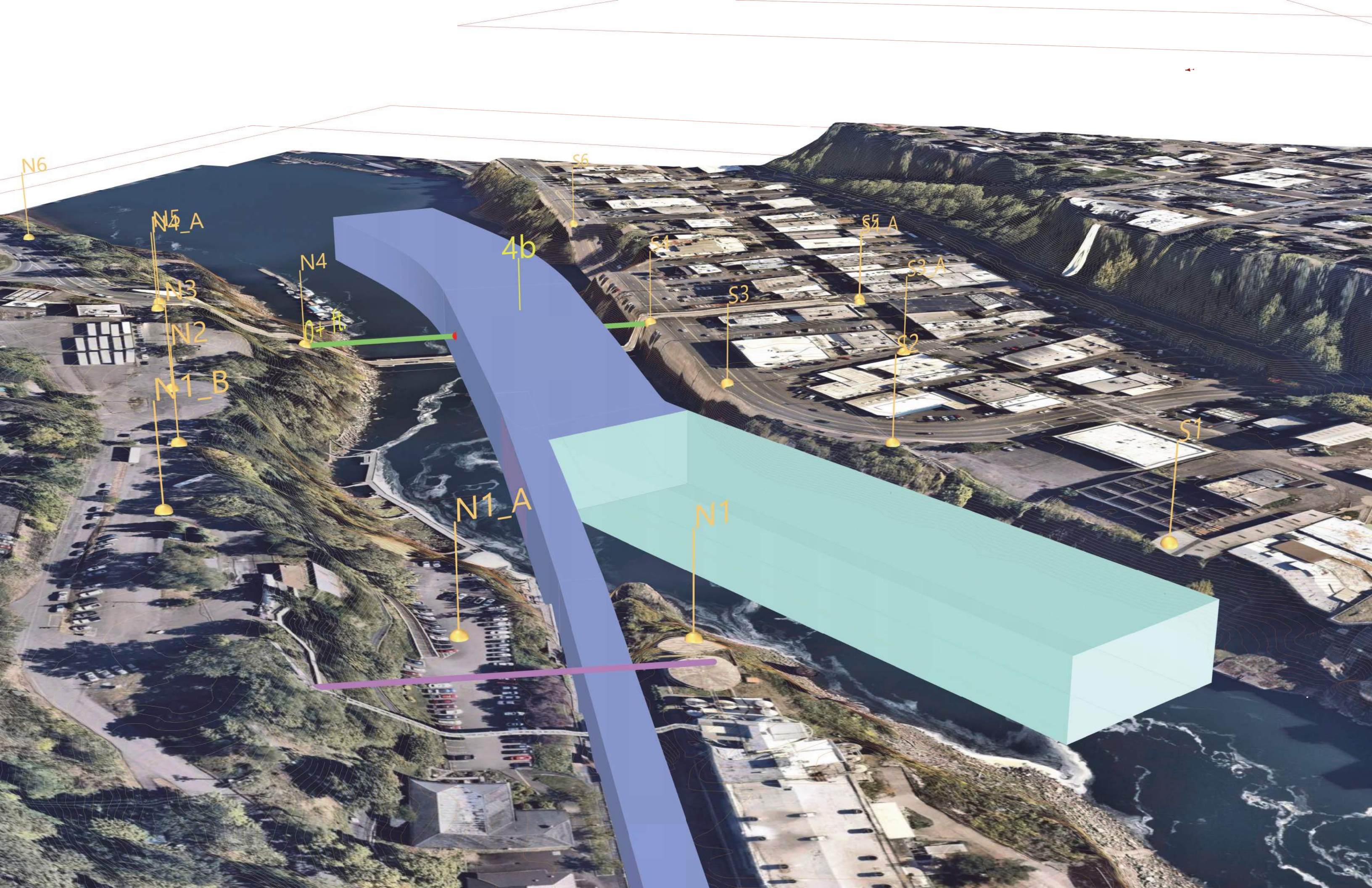
S1

N1\_A

N1







N6

N5\_A

N3

N2

N1\_B

N4

0+ft

4b

N1\_A

N1

S6

S4

S3

S5\_A

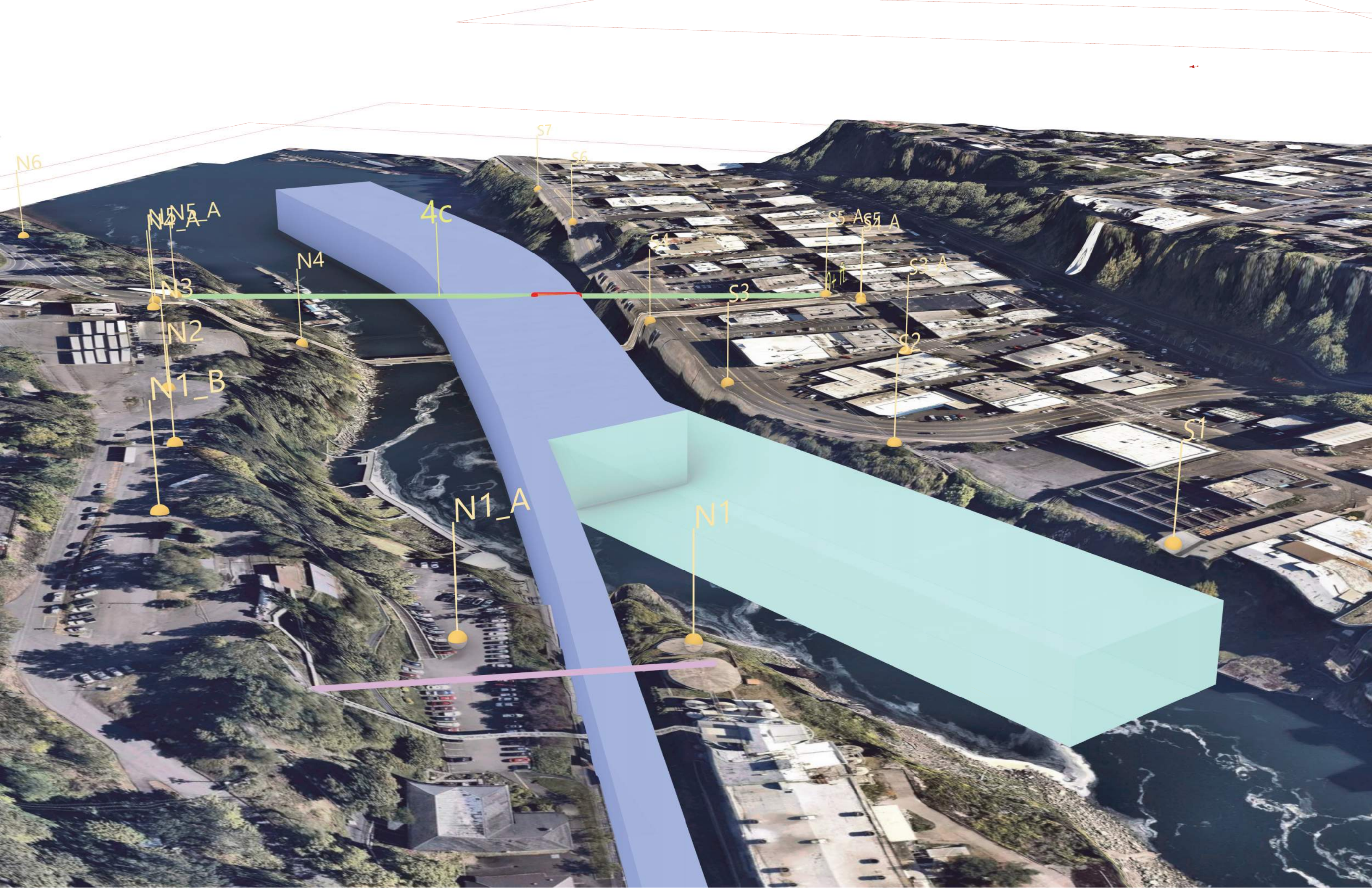
S3\_A

S2

S1







N6

N5\_A  
N4\_A

N3

N2

N1\_B

N1\_A

4C

N4

N1\_A

N1

S7

S6

S4

S3

S5\_A

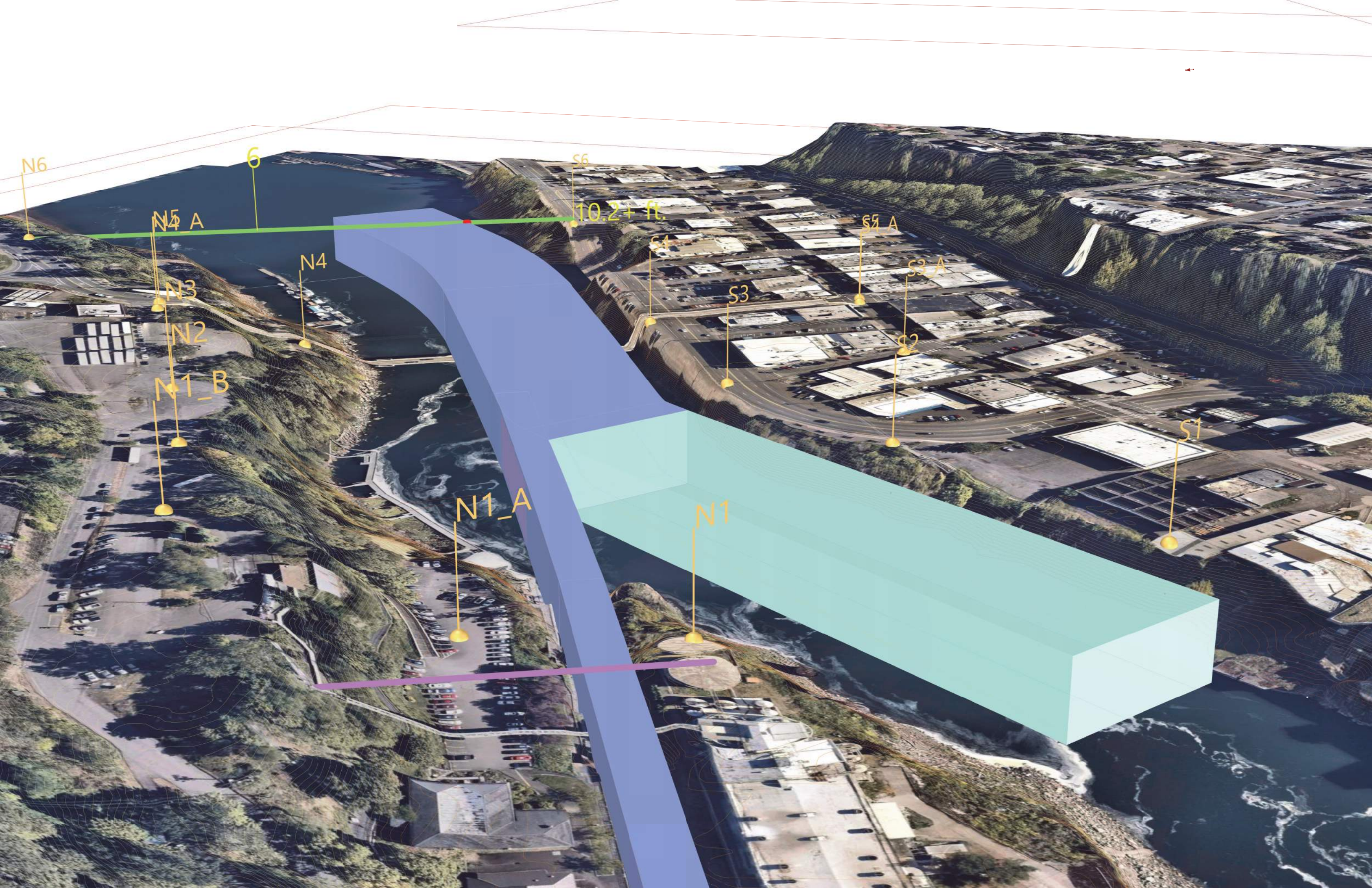
S7\_A

S3\_A

S2

S1





N6

6

N5 A

S6

10.2+ ft.

S5 A

N4

S4

S3

S3 A

N3

N2

N1\_B

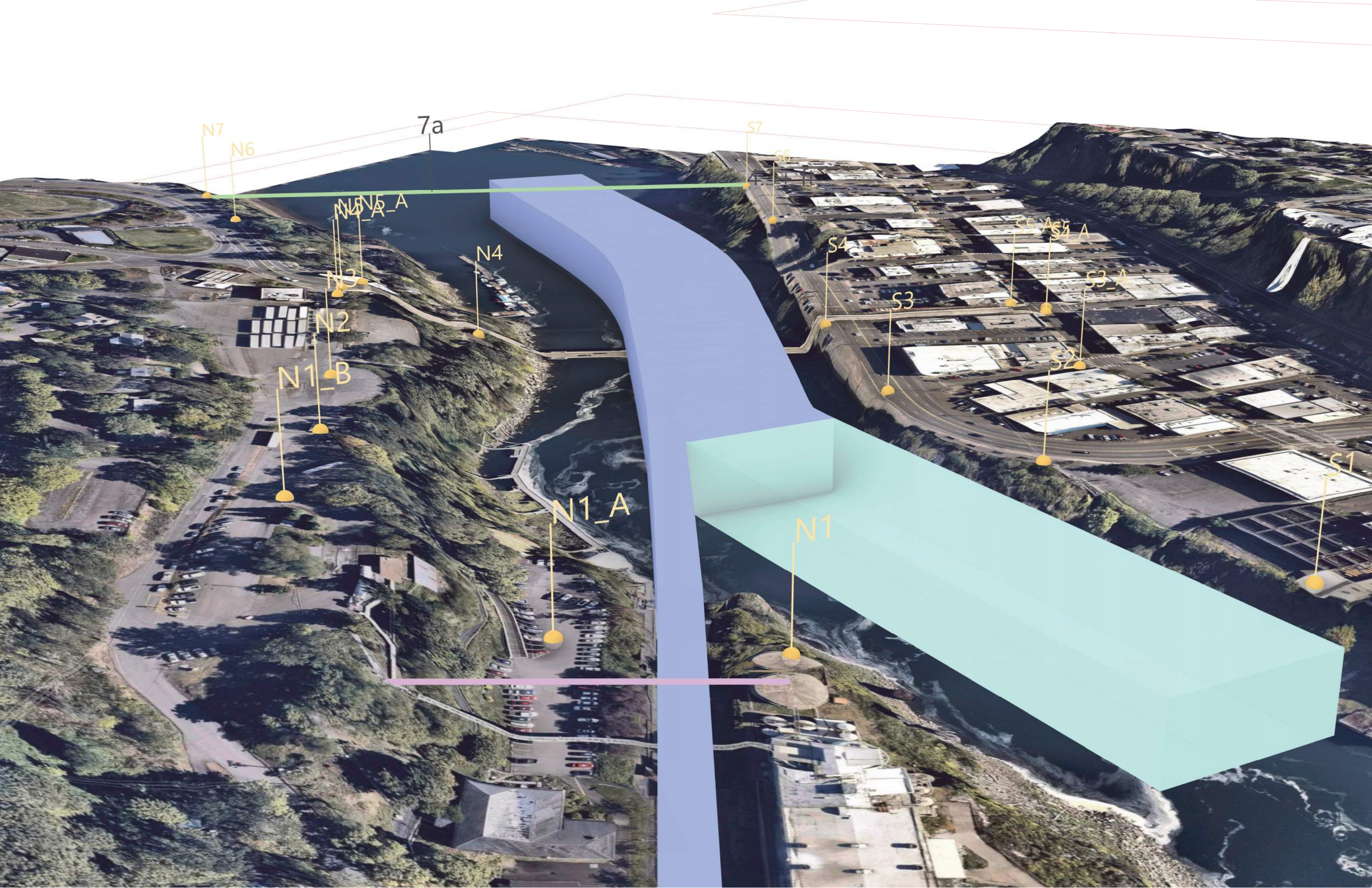
N1\_A

N1

S1

S2





N7

N6

7a

S7

S6

N5

N5\_A

N4

S4

S5

S5\_A

S4

S4\_A

N3

S3

S3\_A

N2

S3

S2

N1

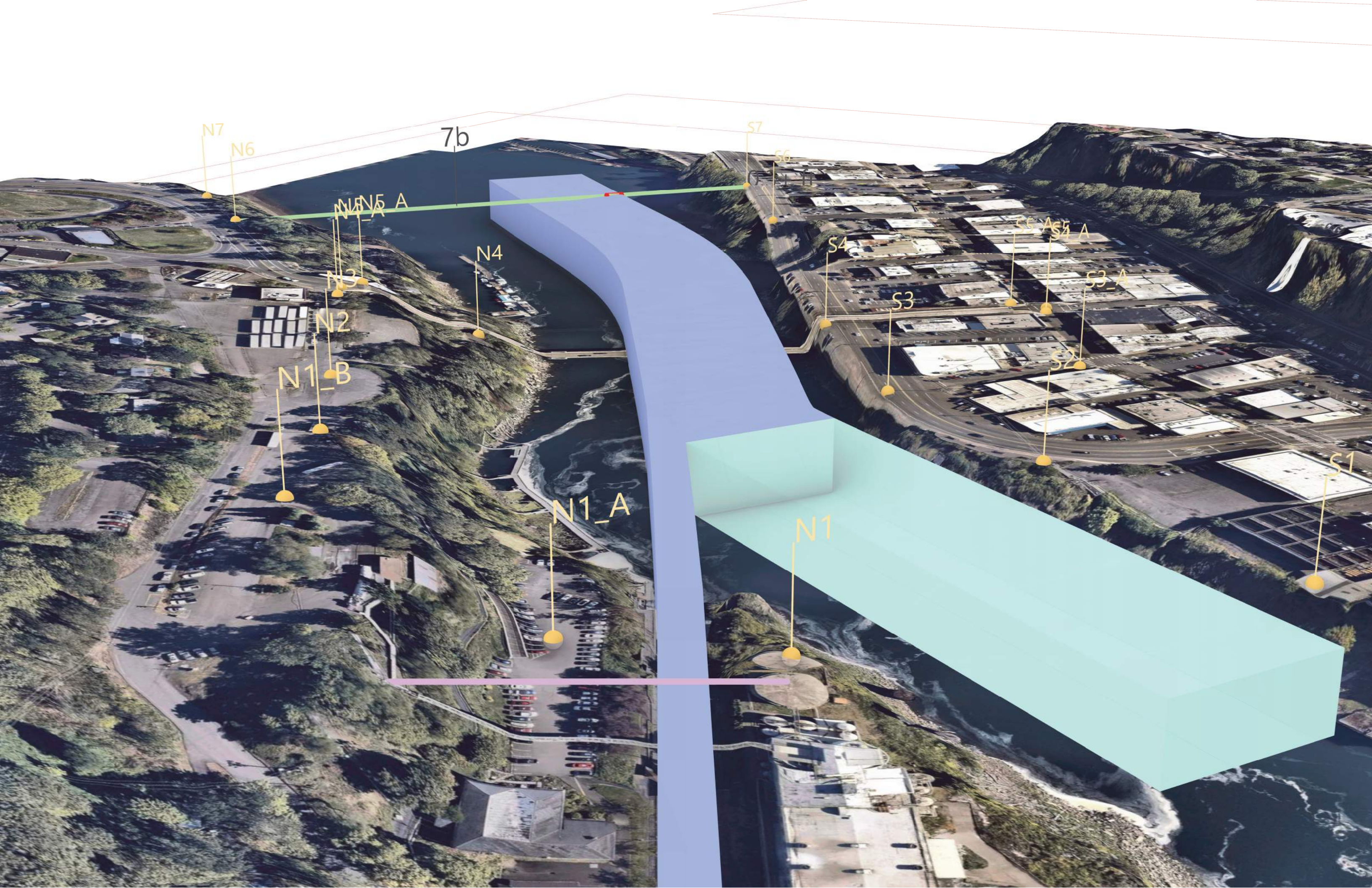
N1\_B

S1

N1\_A

N1







Appendix F  
PAC, PLT, and Technical  
Workshop Homework  
Assignments

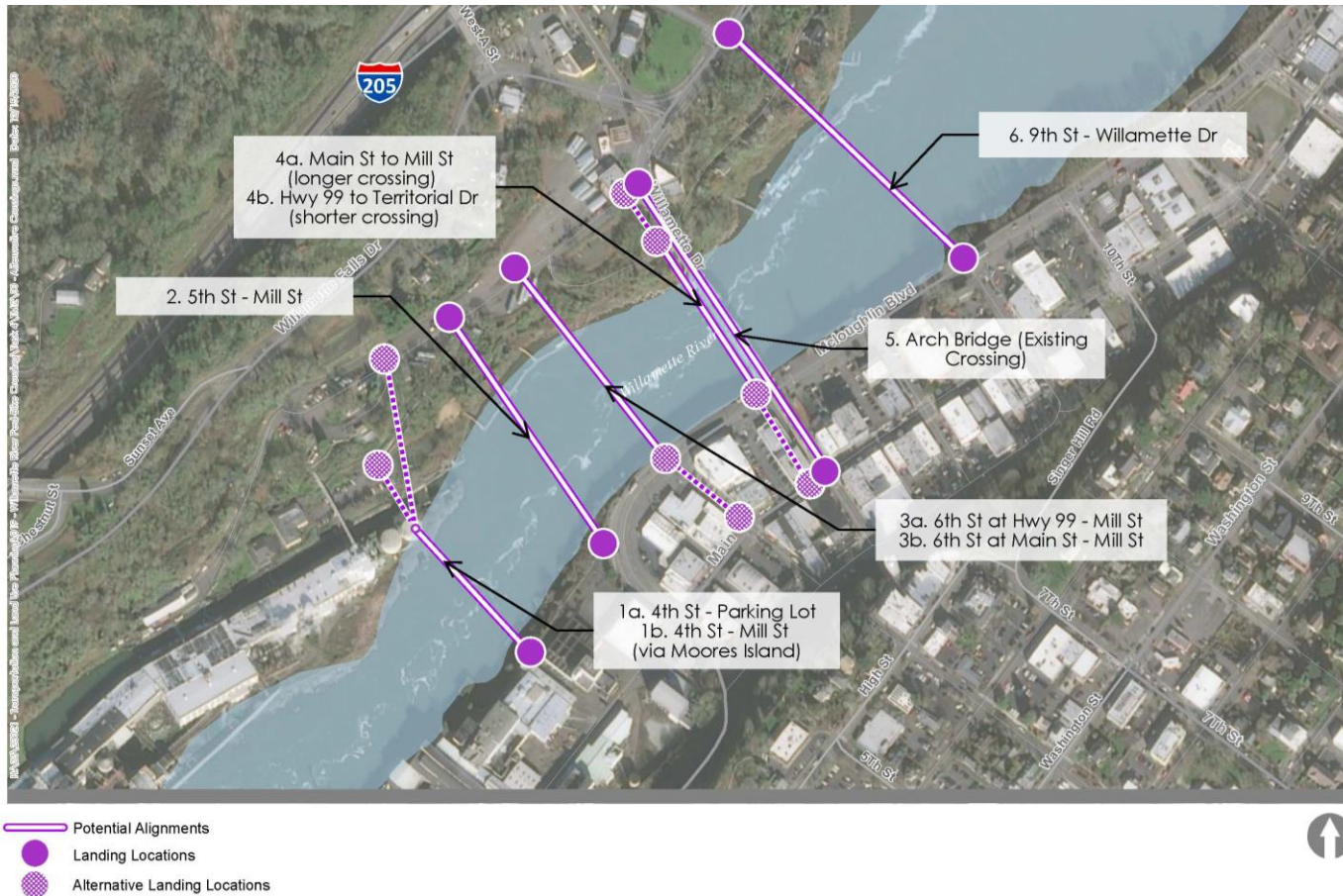
# Oregon City-West Linn Pedestrian and Bicycle Bridge Concept Plan Homework Assignment

Please review the initial crossing alignments figure (Part 1), complete the homework questions (Part 2), and email a Word, PDF or picture of the completed homework sheet to [ngross@kittelsohn.com](mailto:ngross@kittelsohn.com) by January 8, 2021.

Attachment "A" contains the project Purpose & Need Statement.

## Part 1: Initial Crossing Alignments (Figure)

Review the initial potential crossing alignments.



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

Of the potential alignments shown, which two do you believe are the most promising and why?

- 1A or 1B: preferred
- 2 - maybe

What areas within the study area do you believe would not make good locations for a crossing? Why not?

All other alignments 3-6 add more conflicts to the already-congested area (not to mention geometry limitation). It's unsafe all modes when everyone competes for space and to be the next vehicle in the queue. Need to disperse the traffic modes throughout the area and not concentrate at constrained points.

OR 99 E is still a route for larger vehicles (whether being accepted or not) between the south (Woodburn/Canby) and Oregon City, West Linn & beyond.

OR 43 (Arch Bridge) is currently a choke point for all modes. So there should not be more traffic (of all modes) added in the vicinity of the bridge.

The alignment selection should not be based solely on cost. It should be placed where it is safe and does not diminish operation of the significantly constrained area.

Recommend no bike/pedestrian connection directly to OR 99 E and any signals in the vicinity of the Arch Bridge connection.

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

- It looks like on the OC side just about every block/intersection between 4<sup>th</sup>-9<sup>th</sup> was looked at, except 8<sup>th</sup>. Does that have to do with it being at the viaduct, or that the area between 99E & Main street along 8<sup>th</sup> is mostly developed? Not sure it is better, just wondered if it was considered.

Of the potential alignments shown, which two do you believe are the most promising and why?

What areas within the study area do you believe would not make good locations for a crossing? Why not?

- 1a with a movable bridge sounds expensive, initial and on-going expense for something like this seems like a deal breaker. Is there any other example of a bike/ped drawbridge?

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

Additional comments?

- Thinking about the future and where I would expect the dense redevelopment to occur (WFLP site & OC downtown between 5<sup>th</sup> to 10<sup>th</sup>), getting it where it would still be considered a 'desire path' for users would be key.
- Oregon City has limited parking in downtown. Providing other mode options for accessing downtown OC is important. Currently we have excess parking in the north end (10<sup>th</sup>-15<sup>th</sup>) as it is not developed at the same densities or types of uses as the section from 5<sup>th</sup> -10th, but we regularly hear complaints that there is no parking. I think this really is related to how we use the demand criteria but also the grade of the approaches, mode shift and BLTS/PLTS.

- I'm hearing community concerns about view corridors . . . of the Arch Bridge, from the Arch Bridge, of the falls from the Arch Bridge. Would this be looked at under Equity?
- I see the removed alignments includes Alt 5. I think the reasoning is sufficient for the group that does not want to convert the bridge. I wonder if the reasoning should be bulked up a little for those (most likely in the bike/ped community) that think this is a good idea.
- Alternative 1 in WFP: the intent of that area is to bring back the historical grided street system. Bringing back the old Water Street, and 4<sup>th</sup> & 3<sup>rd</sup> streets. That is shown on the Framework Master Plan Map, found on this page:  
<https://www.orcity.org/communitydevelopment/wflp-background-information>
- 1b, how would the ramping noted work with the Riverwalk and redevelopment of that site.



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

*More information is needed to determine if additional potential locations for the bridge should be explored. Generally, it may be desirable to look for alternative locations if significant negative impacts are identified for the current alignments.*

Of the potential alignments shown, which two do you believe are the most promising and why?

*Alignments 3 and 4 appear to provide the best connection to downtown Oregon City which may be a primary destination for pedestrians and bicycle users.*

What areas within the study area do you believe would not make good locations for a crossing? Why not?

*Alignments 2, 3 and 6 appear to require the widest river crossings. This could create the need for placement of more piers in the water than alignments that cross narrower parts of the river. More piers can require more in-water work and a higher potential for impacts to aquatic species, especially species that may be protected by the Endangered Species Act. Generally, any alignment causing multiple negative environmental impacts should be avoided.*

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

*Encouraging the use of non-motorized travel modes in the area may have beneficial affects on public health by reducing vehicle emissions and promoting exercise. There may be some economic gains if these users visit local businesses, especially in downtown Oregon City. Costs associated with constructing a new bridge, and longer term maintenance costs, could be potential burdens.*

Additional comments?

## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

No

Of the potential alignments shown, which two do you believe are the most promising and why?

1a and 1B seem to have the most viable landing locations, as well as good staging areas for construction. If a pier can be included on the island, that helps reduce the span lengths and reduces piers in the water.

Additionally, the way for users to leave the bridge site and enter either city seems obvious and passable.

Option 6 would serve people coming out of the residential part of Oregon City coming down Singer Hill well. There is also good access to improved sidewalks and crossings on Willamette Dr., so that the overall pedestrian system ties users to other locations. There appears to be space for either landing. There is room for construction staging on the West Linn end. However, it is a longer and therefore more expensive span.

What areas within the study area do you believe would not make good locations for a crossing? Why not?

Options which avoid interaction with the existing viaduct/cliff wall and arch bridge structure (including underground structure) are preferred, so Option 4a and 4b are out. Option 2 does not seem like a good location for pedestrian safety. Also, if there is a pier there, it could be a head-on collision problem for SB traffic on McLoughlin.

Options 3a and 3b seem like they could cut off the south blocks of the City.

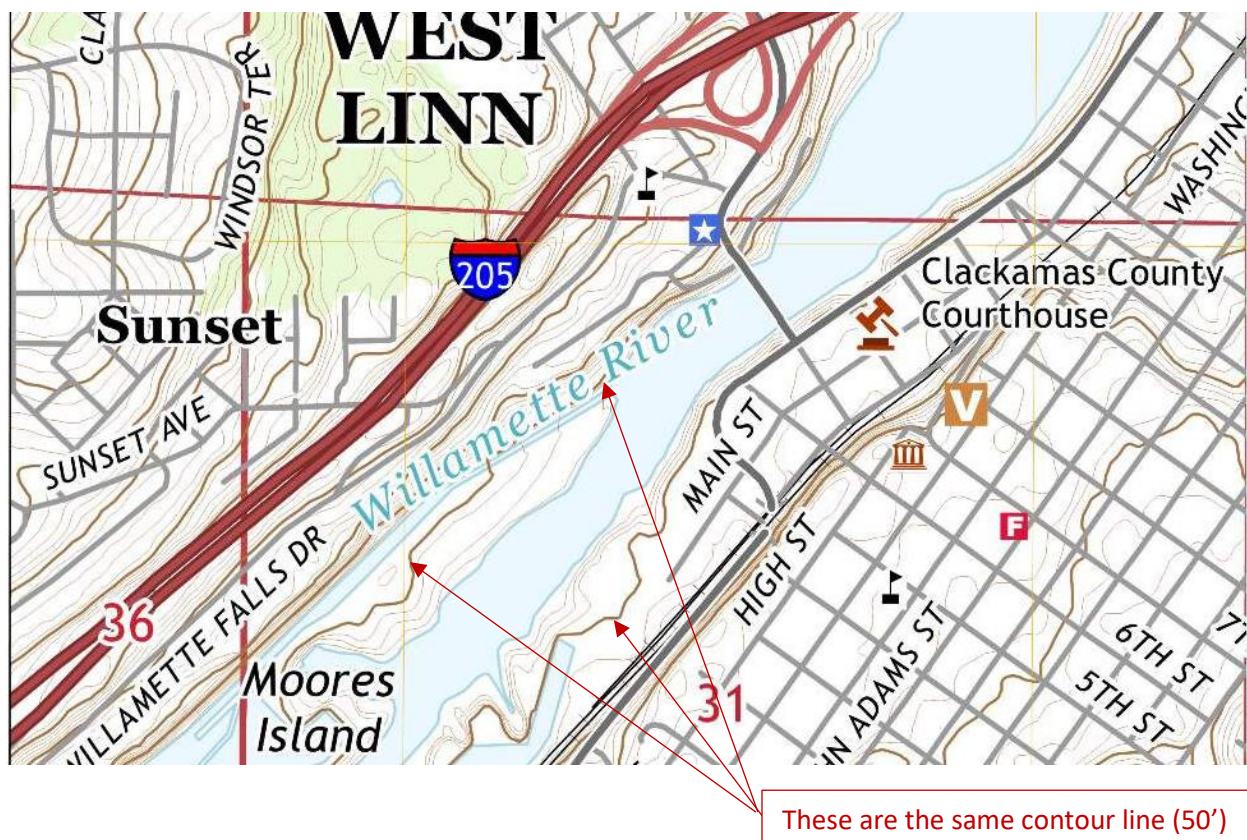
Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

Due to a required ramp system and or elevators to take up the elevation difference on the Oregon City end, the structure could attract homeless residents. If an elevator is required, it will be additional maintenance for the owner.



Additional comments?

1. What is the required clearance over the river and does that change any of the assumptions about the elevations of the structure ends?
2. Are piers in the water going to be allowed? There are structural cost implications for a clear span, but also costs for foundation exploration and construction in the water, not to mention the environmental and Coast Guard passage requirements.
3. Is any of the land on Moores Island available? Or is it a historic site?



Main contours are at 50' intervals.

| Option                                  | Span   | Thoughts  |
|---|--|---|
| 1a. 4 <sup>th</sup> St-Parking Lot      | ~500' to Island,<br>+200' to lot                   | <p>4<sup>th</sup> St Elev between 50' &amp; 60'.<br/>Island elev ~20' at tip.<br/>Parking lot elev. between 50' &amp; 60'.</p> <p>Pretty flat alignment.<br/>Wouldn't require elevator and/or really long ramps.</p> <p>Area for staging at either end seems possible.</p>  |
| 1b. 4 <sup>th</sup> St-Mill St          | ~500' to Island,<br>+400' to Mill St.              | <p>4<sup>th</sup> St Elev between 50' &amp; 60'.<br/>Island elev ~20' at tip.<br/>Mill St. elev appears to be between 110' &amp; 120'.</p> <p>Too steep for a slope, so will need ramps and/or elevator at one end. Expensive, plus maintenance issue. Potential "attractive nuisance" issue with people living under the additional structure.</p> <p>Area for staging at either end seems possible.</p>   |
| 2. 5 <sup>th</sup> St-Mill St.          | ~800'<br>Could place pier at<br>600' out of water. | <p>5<sup>th</sup> St Elev ~ 50'.<br/>Mill St. elev appears to be between 100' &amp; 110'.</p> <p>Too steep for a slope, so will need ramps and/or elevator at one end. Expensive, plus maintenance issue. Potential "attractive nuisance" issue with people living under the additional structure.</p> <p>Peds crossing McLoughlin at a 90 degree bend to access the bridge seems like a safety issue. Visually, want SB vehicles to know where the road is and not drive onto pedestrian approach.</p> |
| 3a. 6 <sup>th</sup> at Hwy 99-Mill St.  | ~700'  | <p>6<sup>th</sup> St Elev ~ 50'.<br/>Mill St. elev appears to be between 110' &amp; 120'.</p> <p>Too steep for a slope, so will need ramps and/or elevator at OR City end. Expensive, plus maintenance issue. Potential "attractive nuisance" issue with people living under the additional structure. Where would ramps be located? Clear distance from McLaughlin? Want to avoid impact to the existing viaduct on the river edge.</p>  |
| 3b. 6 <sup>th</sup> at Main St-Mill St. | ~700' +~300'                                       | <p>6<sup>th</sup> St &amp; Main St. Elev ~ 60' (high 50s).<br/>Mill St. elev appears to be between 110' &amp; 120'.</p> <p>Too steep for a slope, so will need ramps and/or elevator at OR City end. Expensive, plus maintenance</p>  |



|  |  |  |
|--|--|--|
|  |  | <p>issue. Potential “attractive nuisance” issue with people living under the additional structure. Where would ramps be located? Clear distance from McLaughlin? Would the structure cut off the corner businesses from the rest of the city?</p>  |
| 4a. Main St-Mill St.                     | <p>~1000’. May have piers on land w/ ~200’ span, each end.</p> | <p>Main St. Elev ~65’.<br/>Mill St. elev appears to be just over 110’.</p> <p>Too steep for a slope, so will need ramps and/or elevator at OR City end. Expensive, plus maintenance issue. Potential “attractive nuisance” issue with people living under the additional structure. Where would ramps be located? Clear distance from McLaughlin?</p> <p>Would structure block view of historic arch bridge?</p> |
| 4b. Hwy 99-Territorial Dr.               | <p>~1000’. May have piers on land w/ ~200’ span, each end.</p> | <p>Hwy 99 Elev ~ 50’.<br/>Territorial Dr. ~50’</p> <p>Structure slope is good, but the additional elevation gain on existing roadways on the West Linn end may still not provide the desired accessibility. Territorial is a single lane with no sidewalk.</p>   |
| 5. Existing bridge                       |  | No comments  |
| 6. 9 <sup>th</sup> St. to Willamette Dr. | <p>~900’</p>   | <p>9<sup>th</sup> St Elev. Elev. ~60’<br/>Willamette Dr. Elevation ~120’</p> <p>Too steep for a slope, so will need ramps and/or elevator at OR City end. Expensive, plus maintenance issue. Potential “attractive nuisance” issue with people living under the additional structure. Where would ramps be located? Clear distance from McLaughlin?</p> <p>Alignment goes over houses. Is that desirable?</p>    |

## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

1. The City is still most preferring an I-205 alignment. This best supports the existing bike ped trail plans for OC and WL.

Of the potential alignments shown, which two do you believe are the most promising and why?

1. 4b with a river parallel-ish and “esthetic” grade transition that is considerate of the existing historic bridge and the future Willamette Falls Shared Use Path & OR 99E Corridor Enhancement Project.
2. 1b, Not clear about where or how to land this on the Oregon City side in a way that honors the Riverwalk design.

What areas within the study area do you believe would not make good locations for a crossing? Why not?

1. The view corridor from the existing arch bridge to the falls is important to preserve and as such the 2 and 3 options in my opinion would not make good locations.
2. I am also struggling with understanding the required bridge height and how this apparent elevation change would transition on the Oregon City side.

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

1. Benefits – these crossing areas would be closer to the OC business core include the Willamette Falls Legacy Project. We also have plans for trails heading south of WFLP heading toward Canemah so a bridge in this area would add support for shared use path and pedestrian upgrades between the existing Cove Trail and WFLP. I would also anticipate state and regional funding for many, street, highway, pedestrian, and biking needs in the downtown and midtown because of a bike and pedestrian bridge in this area.
2. Burdens – Historic and cultural resources and possible negative impacts. The area between the river and the railroad is already constrained. Any alignments that connect directly with the downtown are difficult especially when you consider grade transition and existing, existing historic buildings, and traffic congestion. The historic view corridor is likely to be compromised. Managing more through bike and pedestrian traffic in our downtown, specifically those trips that are not intending to frequent OC businesses.



Additional comments?

Guiding Goals / Priorities /Evaluation Criteria

1. Create a new low-stress, comfortable, and designated connection for people walking and biking across the Willamette River within the southeastern portion of the Portland metropolitan area - I like this but the limited study area to crossings between the falls and I 205 seems contrary to the intent of this goal
2. Enhance Accessibility, Cultural, and User Experience of the Historic water front including the Willamette Falls and Oregon City and west Linn Frontages, the historic neighboring areas, and the Oregon City and West Linn Bridge.
3. I think you should offer a goal that accounts for the Transportation Sustainability Section of Table 1 that also looks at the impacts to existing travel needs for the Downtown and State Highway network.
4. Oregon City values equity and all persons. Both OC and WL have residents who have been a part of the community for generations. Focus on the existing demographic as this facility would be used by all peoples of both communities.
5. Design Feasibility should consider the existence of Willamette Falls Shared Use Path & OR 99E Corridor Enhancement Project and the concerns for the failing condition 99E viaduct.

## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

*The Willamette Falls Legacy Project includes a mention of a potential future bike/ped bridge that connects old 3<sup>rd</sup> Street (south of all the alignments shown) to West Linn. This is where the river is at its narrowest. The alignment at old 4<sup>th</sup> Street may not be consistent with the current riverwalk design.*

*Also I think another non-vehicular crossing that should be considered is water taxi service between the two public dock areas. This seems like something that could be implemented much more easily and could accommodate bikes and pedestrians.*

Of the potential alignments shown, which two do you believe are the most promising and why?

*9<sup>th</sup> Street to Willamette Drive*

*Connecting from the Riverwalk (maybe not at 4<sup>th</sup> but somewhere on the riverwalk alignment)*

What areas within the study area do you believe would not make good locations for a crossing? Why not?

*I don't see any fatal flaws (yet).*

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

*Yes, absolutely there are benefits and making it easier and safer to travel between Oregon City and West Linn. For the climate, for health, to provide more choices for low cost transportation, etc. And downtown Oregon City and this part of West Linn would become a better and more popular destinations with a bridge like this. A bridge would support the goals of the downtown Oregon city transportation demand management plan.*

*Views of the falls and the historic arch bridge may be compromised. I think on balance this downside is acceptable given all the benefits.*

Additional comments?

*Making the Arch Bridge into bike/ped only is an attractive idea, but I just have a lot of questions about how vehicle and bus traffic would be affected. West Linn residents generally treat downtown Oregon City as their downtown and many downtown businesses generate a lot of customers driving over the Arch bridge. It's not clear that these customers would continue to visit downtown if they had to drive the Abernethy bridge – maybe, but we don't know. And how would Trimet routes be affected by having to get on the Highway? Perhaps there is a way to*



*control traffic on the Arch bridge such that the bridge is closed to vehicles only during certain hours? Or could buses and shuttles use it too, along with bikes and peds, like the Tilikum Crossing? That might make things more palatable, especially if a parking lot were available on the West Linn side in the shorter term so that West Linn residents could still almost drive to OC and walk across the bridge.*

*If a bridge lands on 99E then ODOT must be willing to put a signalized intersection there to stop vehicle traffic for people to cross to enter/exit the bridge.*



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

Of the potential alignments shown, which two do you believe are the most promising and why?

What areas within the study area do you believe would not make good locations for a crossing? Why not?

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

Additional comments?

Thank you very much for the opportunity to provide comments on the Pedestrian and Bicycle Bridge Concepts. The State Historic Preservation Office's (SHPO's) role in the Section 106 process is to "consult, advise, and assist" federal agencies in carrying out their Section 106 responsibilities, including providing recommendations and comments on a federal agency's determinations or inventories, reports, and plans.

The proposed alignments are within an area that has a high probability for encountering significant cultural and archaeological resources. I commend the project proponents for early coordination with appropriate parties, including our Tribal partners. As the preferred bridge alignment process moves forward, we encourage efforts to avoid and minimize potential impacts to historic properties.

Sarah Jalving and I look forward to attending upcoming PAC meetings as ODOT liaisons to SHPO as well as reviewing and providing comments on Section 106-related documents.

Thank you.



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

*No, can't think of any alignment that would work better either up or down river from the options shown.*

Of the potential alignments shown, which two do you believe are the most promising and why?

*All the bridge options seem to meet the basic community connectivity needs between Oregon City and West Linn and would serve those populations well. It will also be a great addition to the regional bike/ped infrastructure.*

*For me, the most promising bridge alignments are numbers 6 and 1a.*

*Number 6 advantages:*

- 1. Good separation and distance from OR43 Bridge. I think it is important for OR43 Bridge to feel like a standalone structure and not be encumbered by another bridge next to it as shown in option 4.*
- 2. Good connection to existing bike/ped system from West Linn, though existing bike lanes and sidewalks could use improvements by building multiuse path on the West Linn side along OR43.*
- 3. Good connection to River walk on Oregon City side.*
- 4. Nice landing in Oregon City and connection to old town and access to upper Oregon City via Singer Hill and streets to the east.*
- 5. Open views of surrounding landscape and views of OR 43bridge.*

*Number 1a advantages:*

- 1. This option seems to best meet the purpose and need statement with its proximity to the falls and an anchor for economic and community development considering the Willamette Falls Legacy Project, Industrial Heritage District and access to downtown Oregon City.*
- 2. May stimulate economic expansion and opportunities for downtown Oregon City by affording a strong connection to Main St. Good site lines to downtown Oregon City and manageable distance for walking to downtown stores.*
- 3. Provides a more interesting experience due to the landscape setting.*
- 4. Considering historic uses and future vision for the areas the bridge would act as a visually and physical nexus, providing a critical link and local landmark (all bridge options do this aside from 4).*
- 5. Closer to the falls.*



6. *On bridge experience offers open views to a wide variety of cultural and natural landscapes.*
7. *Separate from OR43 bridge*
8. *Assume better opportunities to leverage indigenous connection to the land.*
9. *Anticipate bridge heads on each side of the river offer less traffic stress and better staging than the other options.*

What areas within the study area do you believe would not make good locations for a crossing? Why not?

*Number 4 is too close to the historic structure and compromises its historic character and would contextually not be visually harmonious.*

*The bridge head/landing for number 2 on the south sides would be right next to OR43 and does not offer a good experience and likely higher traffic stress getting on/off and to the structure from the Oregon City side of the river.*

*Number 3 is definitely workable but not as interesting as my preferred options and doesn't leverage the opportunities available in options 1 and 6.*

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

*Don't see many burdens. Opportunities abound for both "local" and "tourist" populations.*

Additional comments?

*How will low income communities benefit from this bridge? Will they have better access to recreation, business, and places of employment? Will it take them where they want to go? Have we asked these stakeholders this question? I see this bridge as an economic development anchor and a great bike/ped connection for the region, West Linn and Oregon City. Riding ones bike on the OR43 Bridge is doable, you take the lane, but it is not pleasant.*



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

N/A

Of the potential alignments shown, which two do you believe are the most promising and why?

6 and 4b due to surrounding areas of these potential bridge landing sites on properties that may make the project more feasible; shorter crossing (4b) and proximity to downtown as a key destination.

What areas within the study area do you believe would not make good locations for a crossing? Why not?

Crossings (including shorter ones) that may be challenging to meet ADA and would also generate environmental/cultural/social inequities or conflict.

This effort needs to further study the implications and limitations of using the existing Arch Bridge if it is in the consideration of moving forward as one of the alternatives.

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

Benefits: extend bike/ped network connectivity in an area that has been most accessible by car; initiate a modern and inclusive planning process to incorporate active transportation (bike/ped/transit) priorities among stakeholders who have not been centered in this process in the past; construct a new crossing that appeals to all ages and abilities; accept or reject a project that needed more clarity in the plans; opportunity to construct something with equity/climate/health in mind if this is an inclusive process.

Burden: new crossing selected may not include marginalized decisionmakers and leans toward established power.



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

Open to consider another alignment.

Of the potential alignments shown, which two do you believe are the most promising and why?

I have no strong preference on any potential alignment, at this moment.

What areas within the study area do you believe would not make good locations for a crossing?  
Why not?

No opinion at this moment.

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

Benefits are connectivity, air quality, and alternative transportation. Burdens are sustainable operation and maintenance.



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

An alignment farther north than alignment #6 might work well, but the presence of the Interstate 205 George Abernethy Bridge and its ramps makes that particularly challenging.

Of the potential alignments shown, which two do you believe are the most promising and why?

I see alignment #6 as one of two alignments that are most promising. It does not interfere with views of Willamette Falls from the Oregon City Arch Bridge. The alignments between the Oregon City Arch Bridge and Willamette Falls would have setting impacts on the historic bridge that could affect its historic integrity in an adverse way. Also, alignment #6 is far enough north of the historic bridge that it will not greatly compromise views of the historic bridge from McLoughlin Blvd. to the north.

Alignment #5, the Oregon City Arch Bridge alignment, would be my other choice. It would mean changing the historic use of the bridge from multimodal to strictly bike/pedestrian, but it would preserve views of Willamette Falls from the bridge. It would also preserve views of the historic bridge from both the north and the south. The alignment would also save the bridge from damage from heavy and oversized vehicle traffic. The bridge would continue to possess the aspects of integrity that make it eligible for its listing in the National Register of Historic Places. (The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association.)

What areas within the study area do you believe would not make good locations for a crossing? Why not?

Alignments south of the Oregon City Arch Bridge, especially alignments 4a and 4b, would not make good locations for a crossing. Alignments 4a and 4b are so close to the historic bridge that they would adversely affect its setting. The other alignments south of the bridge would to a lesser degree affect its immediate setting, but would still affect the overall setting that includes views of Willamette Falls. Setting is one of the seven aspects of integrity that properties eligible for or listed in the National Register of Historic Places possess.

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.



A new bike/ped crossing within the study area has real benefits. It helps to connect the communities of Oregon City and West Linn. We know from the closing of the Oregon City Arch Bridge during its rehabilitation project in 2010-12 that many non-motorized users relied on the bridge to travel between the two communities to meet all sorts of needs. Either construction of a new bridge in an appropriate location or repurposing the existing historic bridge for bike/ped use only, would strengthen the ties between these two cities and provide a vital transportation link that is unattainable with Interstate 205.

Additional comments?

None

Robert W. Hadlow, Ph.D.

Senior Historian

Oregon Department of Transportation



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

Maybe a more angled crossing that lands on the west side at the same location as 3a & 3b, but lands on the east side at same locations as option 2. I believe this will line up better with the flow of ped/bike traffic from West Linn to Oregon City and vice versa. Also, the longer bridge would mean a flatter slope making it safer and more enjoyable for all to use.

Of the potential alignments shown, which two do you believe are the most promising and why?

Option 2 and 4b, both are shorter crossings that land at good locations on the east side of the river.

What areas within the study area do you believe would not make good locations for a crossing? Why not?

Option 1 and 6.

Option 1 would land on private property and could potentially prohibit the land owners ability to develop their site around where the bridge lands. Bridge span could also be in conflict with METRO's Riverwalk project.

Option 6 is a longer crossing therefore higher costs and doesn't land that close to downtown Oregon City. Therefore not very good connectivity for the city.

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

Great benefits for ped/bike facilities and will help increase connectivity between West Linn and Oregon City

Additional comments?

As I represent land owner on the east side of the river and will be a member of the PAC, I would like to see the evaluation matrix that is being developed to score each alignment. I would like to see the various categories within the matrix and see what the scoring is for each category.



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

*Any alignment that avoids impacts to the historic arch bridge and archeological resources should be the one chosen.*

Of the potential alignments shown, which two do you believe are the most promising and why?

*I don't have enough information at this time to proffer an opinion on this.*

What areas within the study area do you believe would not make good locations for a crossing? Why not?

*I don't think that option 4 would be a good idea, since it is so close to the existing historic structure.*

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

*I think the benefits of improved access for bikes and peds has been made clear. I think the potential burdens are negative environmental impacts including but not limited to aquatic species (both from a biological and cultural viewpoint), archaeological resources, viewshed/visual and historic resources.*

Additional comments?

*The purpose and need section of the memo is confusing – it starts with defining the concept plan and then gets into the purpose and need for a new crossing.*

*Also, it seems really early in the process to be selecting a preferred alternative. The project hasn't been classified yet (CE, EA or EIS). If you end up with and EIS, you'll need to explore more than one alternative.*

*It seems like the 'additional benefits' under purpose and need are more like goals.*

## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

*No.*

Of the potential alignments shown, which two do you believe are the most promising and why?

*2 – view of Willamette Falls, ramp creating sound barrier between OR99E and future Willamette Falls District*

*4a – matches closely to existing travel patterns*

What areas within the study area do you believe would not make good locations for a crossing? Why not?

*No comments*

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

*No comments*

Additional comments?

*I recommend the proposed alignments be reviewed the A&E team working on the ODOT I-205 Abernethy Bridge project. There is considerable work being done on the West Linn side and syncing up the alignment will be critical.*



## Part 2: Initial Crossing Alignments Questions & Feedback

### **Is there another alignment you believe is better than the ones shown or another that should be assessed?**

Is there a path being designed for the reconstructed I-205 Bridge? If not, why not? If so, that path should become “the” pathway across the Willamette River in this area – another path would then seem an unnecessary expense. While the I-205 crossing (Abernethy Bridge) is not an ideal crossing location, there would be enormous cost savings, the pathway could be constructed relatively soon, would be built to current standards, and would allow any money that may have been planned to be spent for a completely new bridge to be used to create high-quality connections to the new path on the I-205 Bridge. A path on the I-205 bridge would also appear to meet the Oregon Bike Bill requirements for new infrastructure and would presumably allow the use of new toll revenue for Operations & Maintenance.

### **Of the potential alignments shown, which two do you believe are the most promising and why?**

My previous comment notwithstanding,

Alternative 4 would appear to align most with the existing crossing and the Oregon City Municipal Elevator. A new crossing here would maximize the existing connections on both sides of the river.

Alternative 6 would appear to provide a crossing closer to established neighborhoods and existing multi-use facilities to the north and east.

### **What areas within the study area do you believe would not make good locations for a crossing? Why not?**

I think this is far more dependent on bridge length, general construction costs, environmental factors, and geotechnical considerations. The steep grade on both sides of the river in this area is a primary consideration because even with a high-quality crossing, accessing a crossing is very difficult.

### **Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.**

From an equity standpoint, spending money to build a new ped/bike bridge (assuming that a new ped/bike crossing would not be constructed as part of the new I-205 bridge) is a poor idea with a very low rate of return in regards to equity. I think the best use of scarce public dollars to achieve equitable transportation outcomes would be to construct a new path as part of the I-205 project, reallocate any future funds that might have been designated for the West Linn/Oregon City project to improve ped/bike infrastructure in communities in those jurisdictions where historically marginalized people live.

### **Additional comments?**

Hi Amy,

I am unable to fill in the actual document but here are my responses.

I haven't had a chance to go look at the site in person which will help me assess the crossings better.

My initial read of suggested crossings generally is that considerations be made using the following criteria:

1. Indigenous peoples' wishes or consultation input
2. Those living near or neighboring businesses to landings
3. Impact to river navigability & environmental impacts
4. Cost and efficacy of use

Looking forward to the meeting today. See you at 3pm.

Mary



## Part 2: Initial Crossing Alignments Questions & Feedback

**Is there another alignment you believe is better than the ones shown or another that should be assessed?**

The CTUIR requests that the alignment be as close to existing crossings as possible, to limit the impacts to the viewshed of Willamette Falls and other previously recorded resources.

**Of the potential alignments shown, which two do you believe are the most promising and why?**

The CTUIR prefers crossings 5 and 4a to keep ground disturbance associated with the proposed crossing as close to previously disturbed areas as possible.

**What areas within the study area do you believe would not make good locations for a crossing? Why not?**

The CTUIR does not prefer crossings 1, 2, 3, and 6 due to proximity to Willamette Falls and previously recorded archaeological resources.

**Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.**

Benefits to a new pedestrian/bicycle crossing would include a safe crossing for pedestrians/bicyclists and increased use of public recreation areas.

Burdens would be potential for increased littering and damage to previously recorded archaeological resources and potential damage to previously recorded archaeological resources from crossing construction.

**Additional comments?**

N/A

# Oregon City-West Linn Pedestrian and Bicycle Bridge Concept Plan

## Homework Assignment

Please review the initial crossing alignments figure (Part 1), complete the homework questions (Part 2), and email a Word, PDF or picture of the completed homework sheet to [ngross@kittelsohn.com](mailto:ngross@kittelsohn.com) by January 22, 2021.

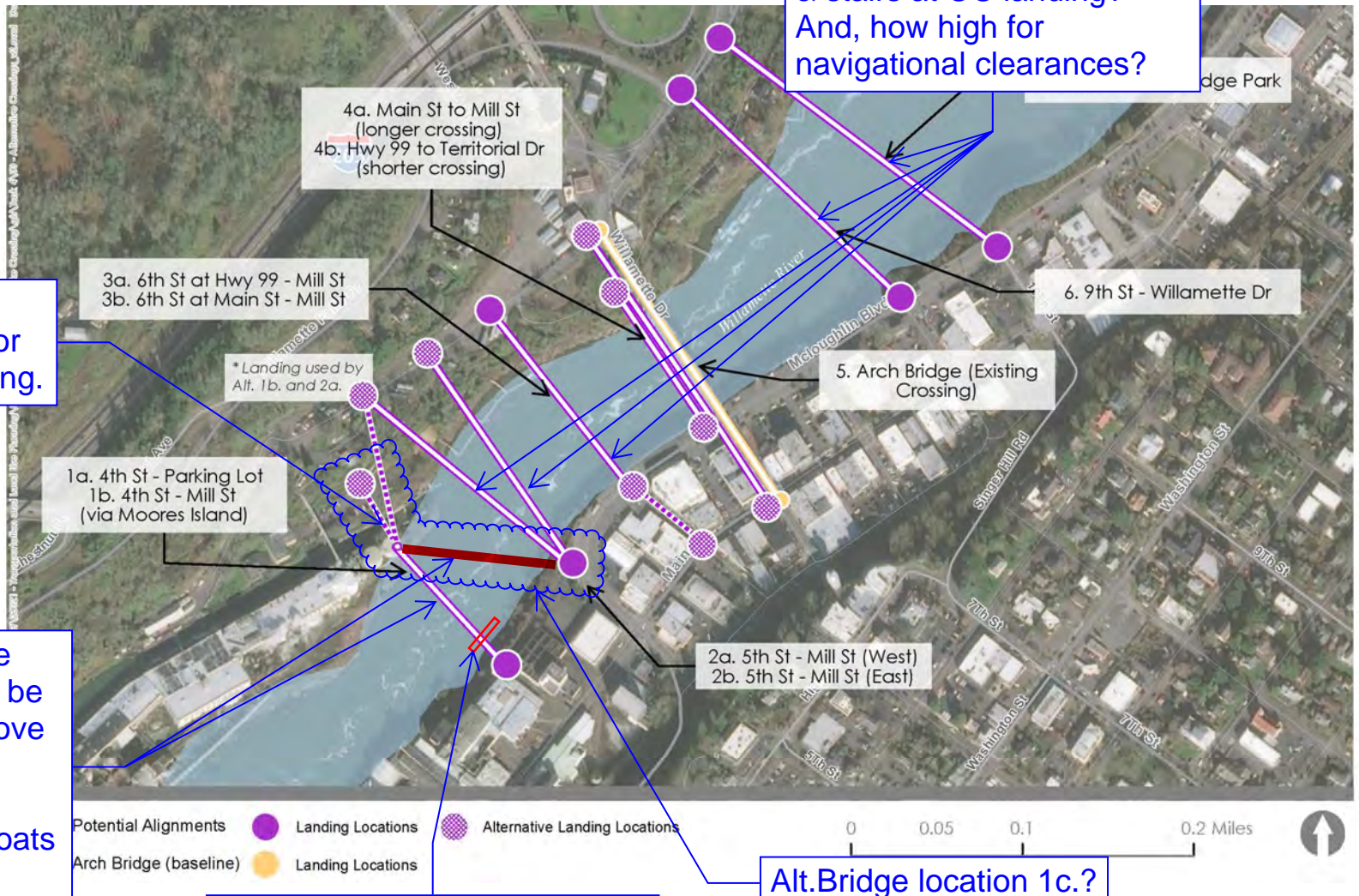
### Part 1: Initial Crossing Alignments (Figure)

Review the initial potential crossing alignments.

Would these bridges be steep slopes or req elevator & stairs at OC landing?  
And, how high for navigational clearances?

Draw Bridge over Locks...for future reopening.

Assume these bridges could be lower, still above flooding and allow boats under. Tall boats go up Locks.



Existing and Future Boat Dock

Alt. Bridge location 1c.?



## Part 2: Initial Crossing Alignments Questions & Feedback

Is there another alignment you believe is better than the ones shown or another that should be assessed?

- See location 1c identified on attached site plan.

Of the potential alignments shown, which two do you believe are the most promising and why?

- #2 (a and b): Landing at corner of 99E could be great for visibility of excitement and for security. Also this is the location of the start of the future RiverWalk which the bridge would add to that access. Concern that these are very long spans from the tall West Linn side, and would likely require elevator/stair tower at the OC side unless slope can handle the height difference?

- #1c.: Same positive notes as above re 99E. Thinking this would be at a lower level on the West Linn side and thus be more of a flat span/not require an elevator/stair at the OC side. See notes on attached site plan: Could be a interesting draw bridge over the locks to maintain that access. Future larger boats using the locks would not require to pass under this bridge location.

What areas within the study area do you believe would not make good locations for a crossing?

Why not?

- #1 location of the landing at 4th street could bring excitement into the new mill site development, but also could be a burden to integrate with the RiverWalk at this location. There is an existing boat dock below this location.

#4a The landing next to the Arch Bridge on the OC side is very narrow at Main St. #4b. The landing on OC side is in an area that is a fair distance away from anything/ across a busy 99E from the back side of OC buildings. The West Linn side at Territorial is an existing small steep road for ped/bikes to get to.

#6 Similar concern for location of landing at OC side as 4b. Note that #7 landing location at OC has an existing signal and could allow safer crossing.

Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.

- Benefits: Could greatly add to the pedestrian and bike access to this area for vibrant activity and potential positive economic impact. Increase access for retail and residential in the area/future. Great view potential from some of these locations.

- Burden: If location precludes/hinders development sites. If location makes it hard to maintain security. If, because of grades, a stair/elevator combo is required at landings, it could be difficult to integrate with other trail connections, access to docks, etc.

Additional comments?

- Need to show 3d views (drone, cross sections, more specifics of landing areas) of the specifics of the sites with bridge and bridgeheads. There will be significant impact to some locations that will affect decisions. Slope, elevator/stair towers, gathering areas, views, etc.

## Part 2: Initial Crossing Alignments Questions & Feedback

### **Is there another alignment you believe is better than the ones shown or another that should be assessed?**

The topography of the respective cities of West Linn and Oregon City represent challenges to the construction /location of any structure. The West Linn side elevation on 105 feet and the Oregon City elevation is 60 feet. The grade is consistent 5%. The landing areas as shown in Oregon City present challenges to construction, access to the structure; physical barriers such as McLoughlin Boulevard/99E, intersecting streets and so forth.

I do not support at this time any options that would compromise the integrity of the two adjacent National Register properties: the Willamette Falls Locks or the Oregon City West Linn /Arch Bridge

I think there are options on the north side of the historic Arch Bridge.

- McLean Park to Clackamette Drive
- Near the I-205 bridge
- The documentation/justification of not considering the I-205 bridge have yet to be seen

### **Of the potential alignments shown, which two do you believe are the most promising and why?**

Without being able to see and evaluate all the possible options, I am not sure I could identify “*which two I believe are the most promising*”. It is a bit of a leading question without all of the information.

### **What areas within the study area do you believe would not make good locations for a crossing? Why not?**

Again, I feel more information is needed about the landing areas on the Oregon City side.

These areas are already developed, which is different than the West Linn side. More discussion is needed.

Any proposal that compromised the view shed from the bridge to the falls and any proposal that is too close to the bridge presents a problem- architecturally, historically and integrity wise.

### **Do you see benefits or burdens to having a new pedestrian/bicycle crossing within the study area? If so, please describe.**

- The study area may be too small.
- The existing bridge is not ideal, it does provide access to pedestrians and cyclists. It was designed for vehicles and pedestrian/employees to and from both operating mills. Traffic management of the bridge is an option that has not been talked about. How can we get drivers to slow down and not speed on the bridge; changing the signal timing on the bridge to allow for equal queuing to and from the bridge. Right now access on the bridge is a very long light for the west to east flow. Could there be a better signal timing for pedestrians?



### Additional comments?

The work of the technical team is appreciated but I think this group honed it down too far, I suspect the TAC maybe felt that the public would not need to have the benefit of their initial work, and the field was narrowed to facilitate discussion. I wonder what was left on the table.

I would like to wait for further discussion before being asked to select an options. Thank you.