

# I-5 Lid Feasibility Study

## Report to the Seattle Design Commission

April 1, 2021



# Agenda

**-Background**

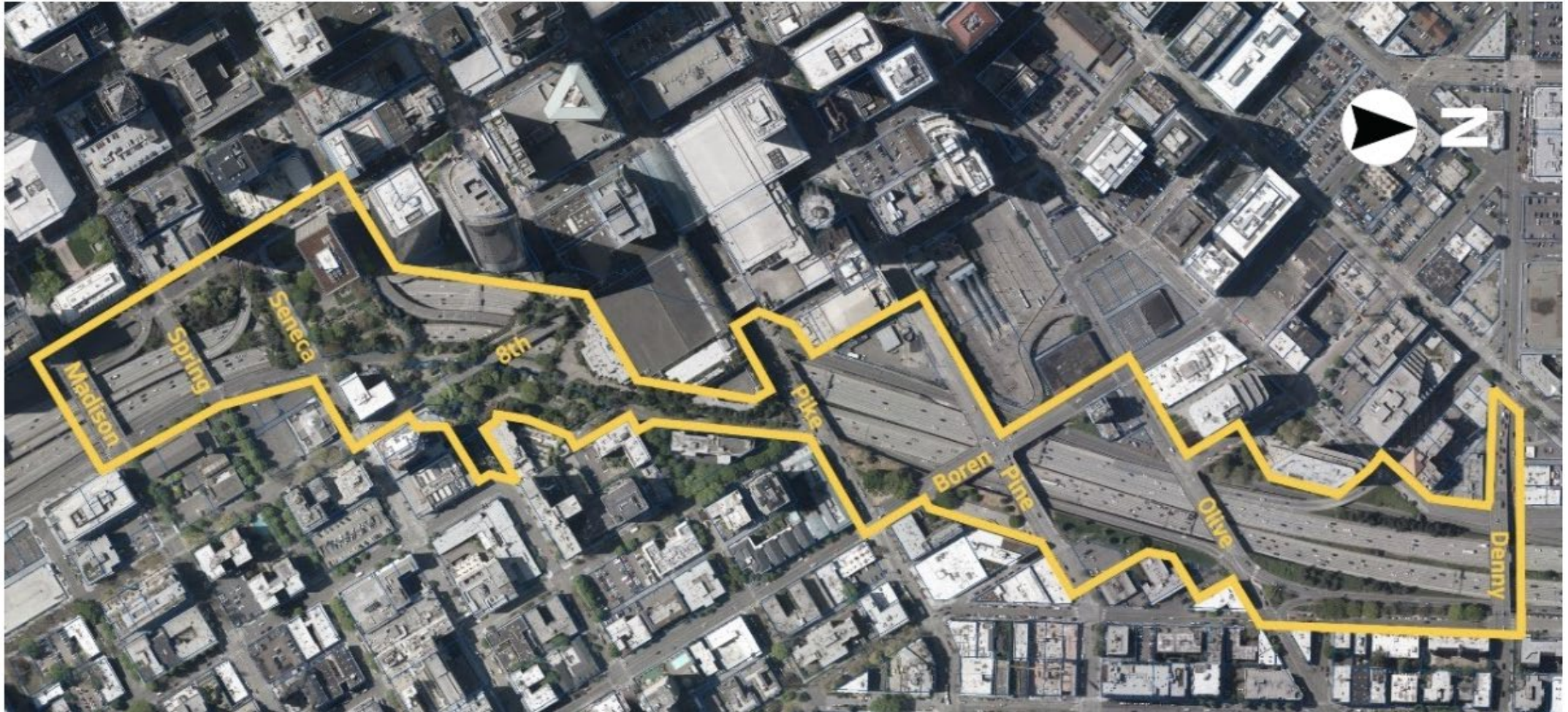
**-Overview of study and key findings**

**-Technical Analysis**

**-Next Steps**



# Background





Washington State Convention Center (WSCC) Addition Project at the corner of Pine Street and Boren Avenue



Photo Credit: LMN Architects





# I-5 Lid Feasibility Study

## Summary Report

September 2020



# Overview of Study and Key Findings



# Overview of Study and Key Findings

**This is a very preliminary study**



# Overview of Study and Key Findings

**Lidding in this area is possible, but not easy**





# Overview of Study and Key Findings

**The more you want to hold up on a lid, the more expensive it is to build**

# Overview of Study and Key Findings

**On- and off-ramps are particularly challenging**



# Overview of Study and Key Findings

**Vehicle parking and slope issues will require creative solutions**

# Overview of Study and Key Findings

**This is a very large and expensive undertaking, requiring a variety of funding and financing sources**

# Overview of Study and Key Findings

**How you do it will depend on what you're doing**



# Overview of Study and Key Findings

**This area of the city has significant needs beyond re-linking neighborhoods and mitigating the environmental impacts of I-5**



# Overview of Study and Key Findings

**There are significant benefits that could flow from this investment**



# Overview of Study and Key Findings

**While we analyzed the full stretch of this study area as a single lid project, it could be approached differently**



# Overview of Study and Key Findings

**This will require significant and ongoing partnership**



# Overview of Study and Key Findings

**This is a first step**



# Technical Analysis

Figure 7-15. Change in Displacement Risk Index in the Study Site, 2010–2017

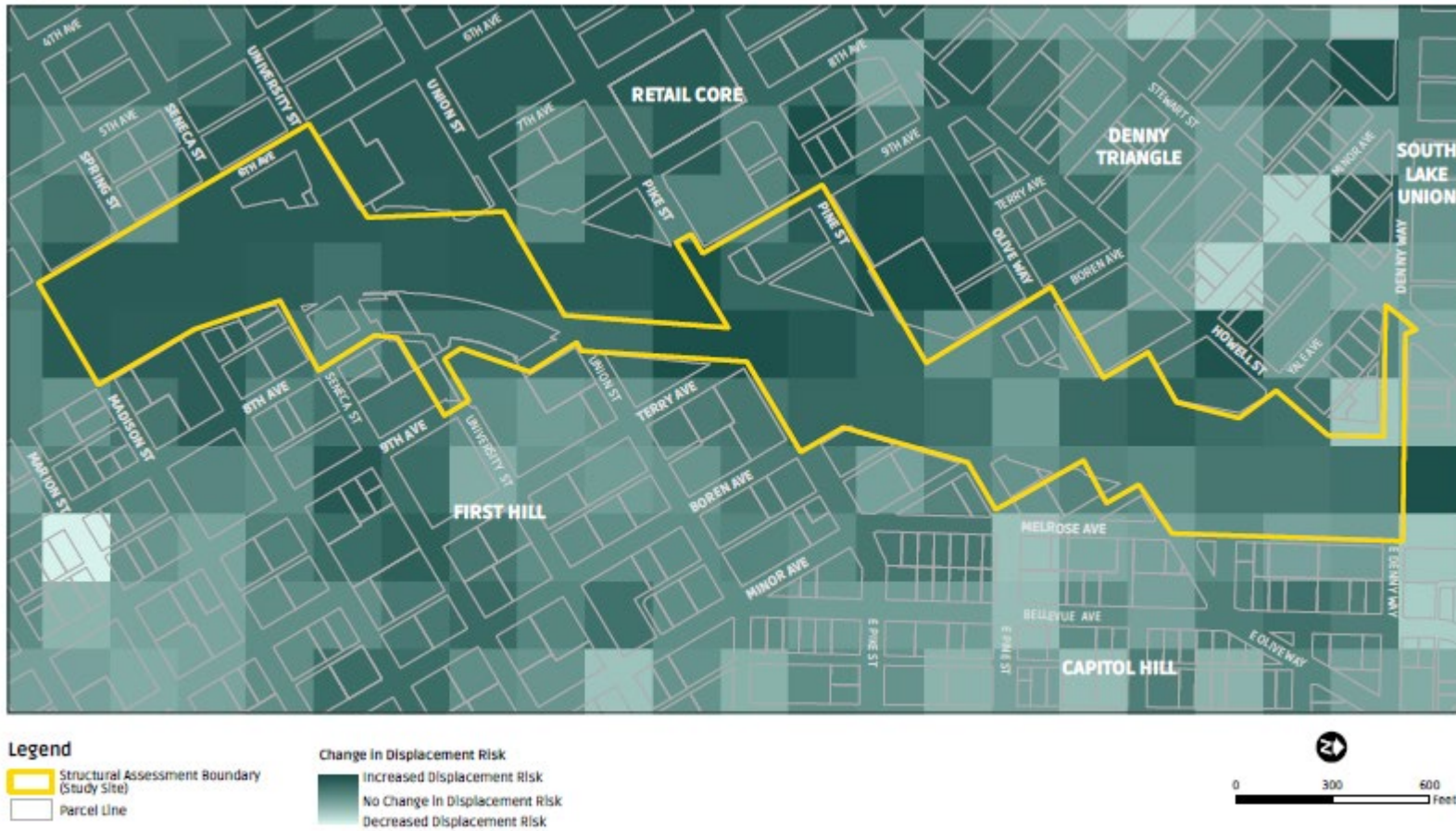


Figure 7-19. Public Space Equity Map for Greater Downtown

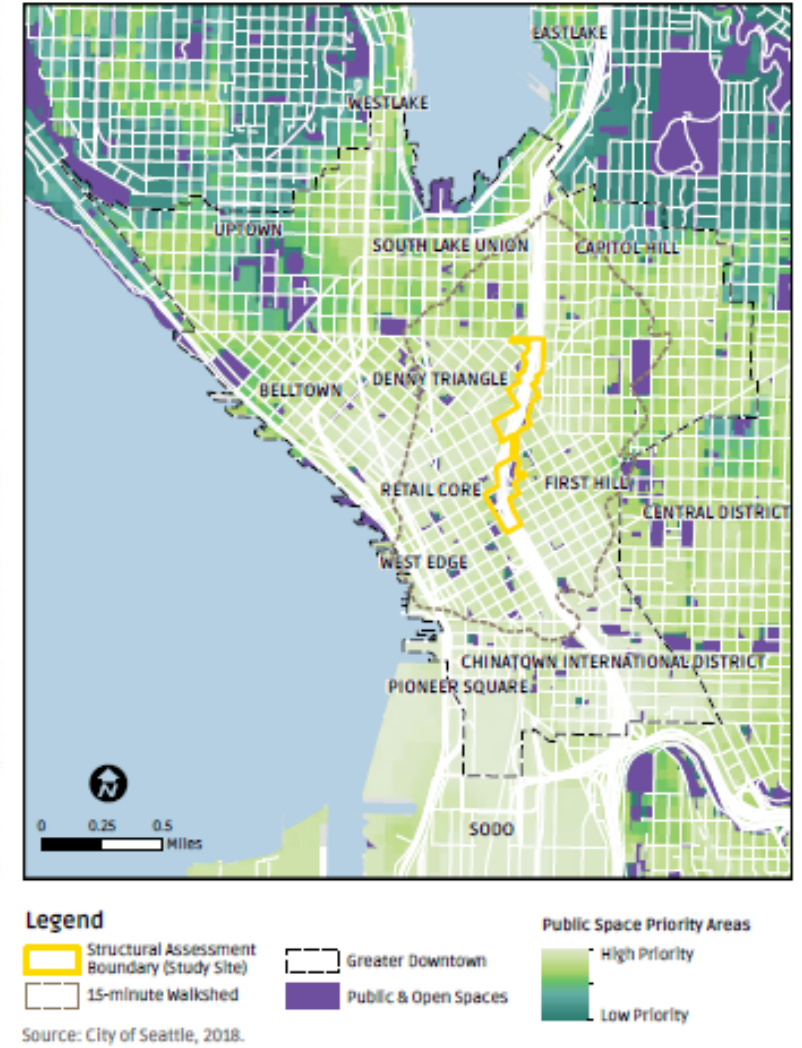
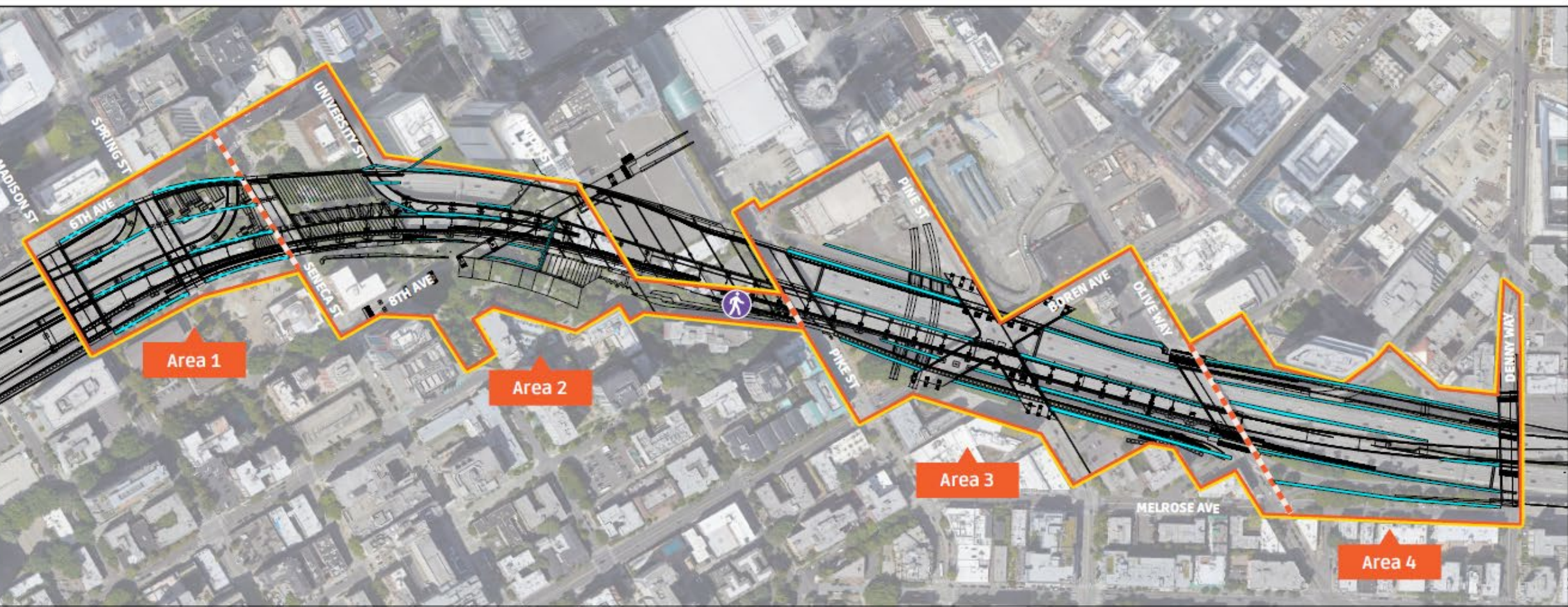


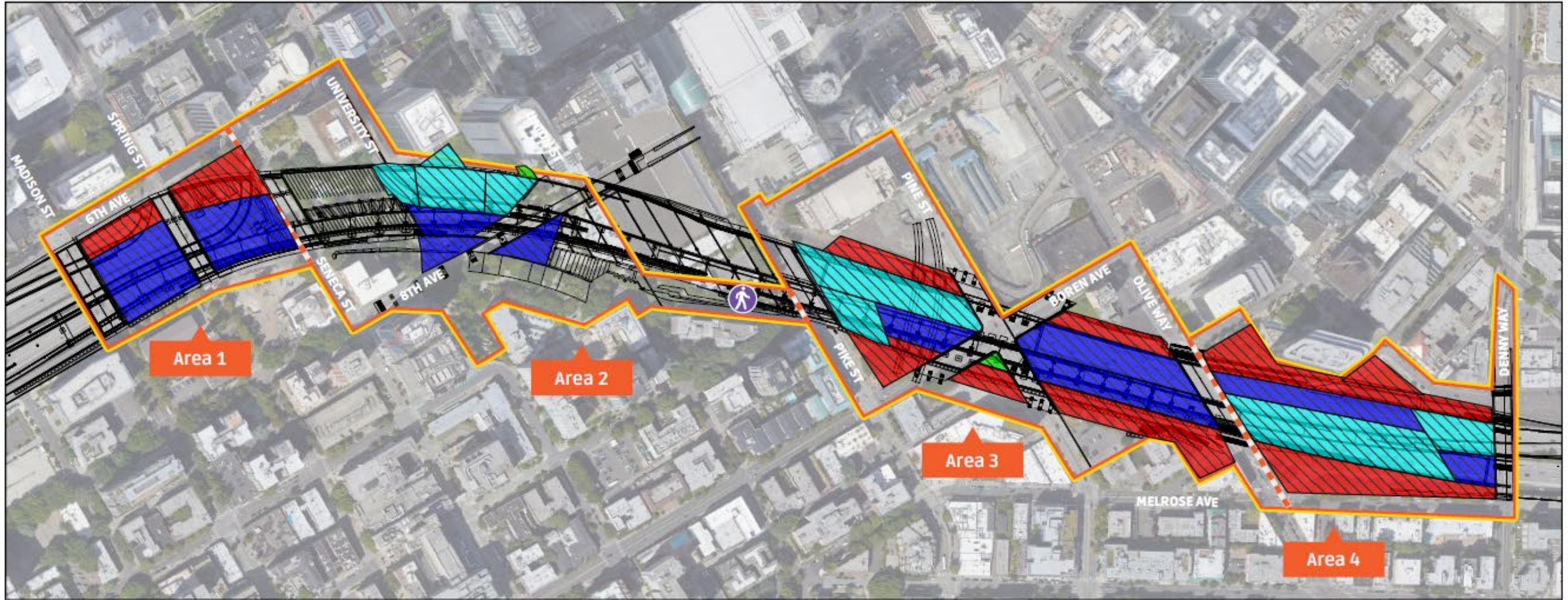
Figure 8-4. New Lid Structure Potential Pier Locations for a Robust Lid Project





- Legend**
- Structural Assessment Boundary (Study Site)
  - Area of Analysis
  - Area Limit
  - Enhancement of the WSCC Pedestrian Walkway along Hubbell Place Considered
  - Potential Pier Location



Figure 8-7. Highest Load Levels for Maximum Developable Lid-Area Potential for the Robust Lid Project



**Legend**

-  Structural Assessment Boundary (Study Site)
-  Area of Analysis

-  Enhancement of the WSCC Pedestrian Walkway along Hubbell Place Considered
-  Area Limit

**Lid Load Levels**

-  Up to High-rise Load Level
-  Up to Mid-rise Load Level
-  Up to Low-rise Load Level
-  Up to Open Space Load Level

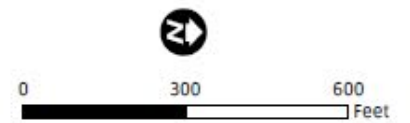
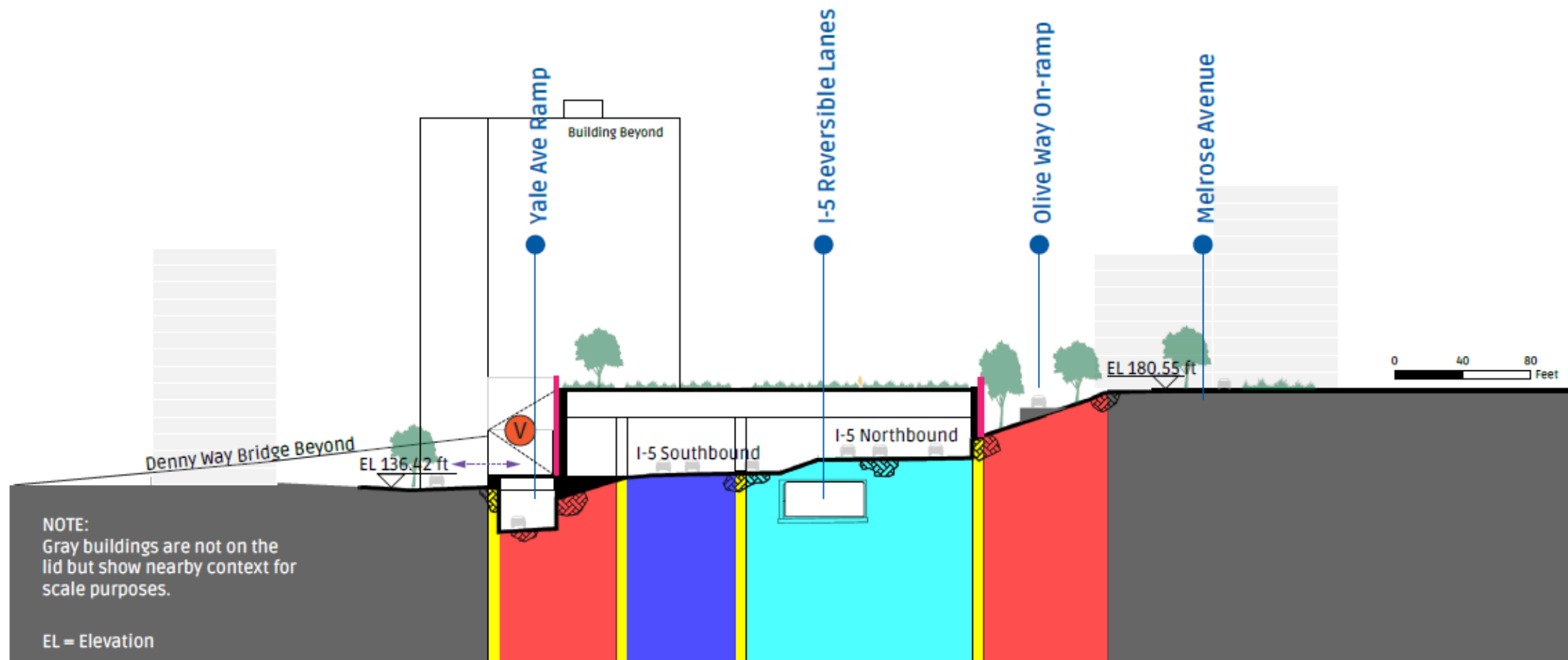


Figure 8-9. Schematic Cross-Section of a Low-Load Lid over I-5 (Area 4)



### Legend

- Ⓥ Vertical Circulation
- Vertical Edges Above Grade

- - - Pedestrian Access

### Lid Load Levels

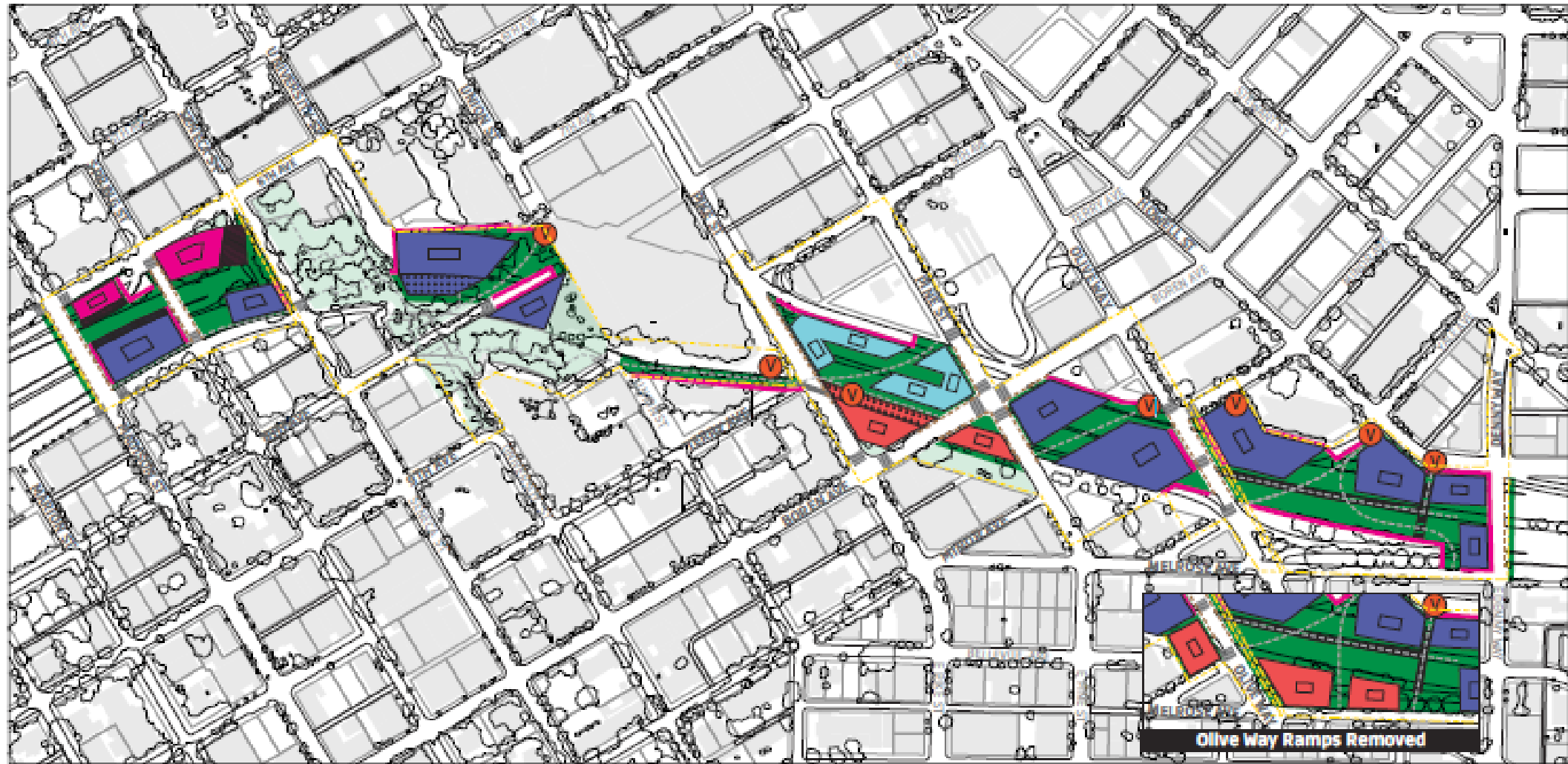
- Up to High-rise Load Level
- Up to Mid-rise Load Level
- Up to Low-rise Load Level
- Up to Open Space Load Level

Pink vertical lines represent vertical edges of the lid that would be above-grade and experienced as "balconies" from the lid level. This is a representative cross-section of a conceptual open-space lid in Area 4, between Denny Way and Olive Way, where the most notable grade separation would be experienced.





Figure 9-9. Test Case 2 – Maximum Private Investment

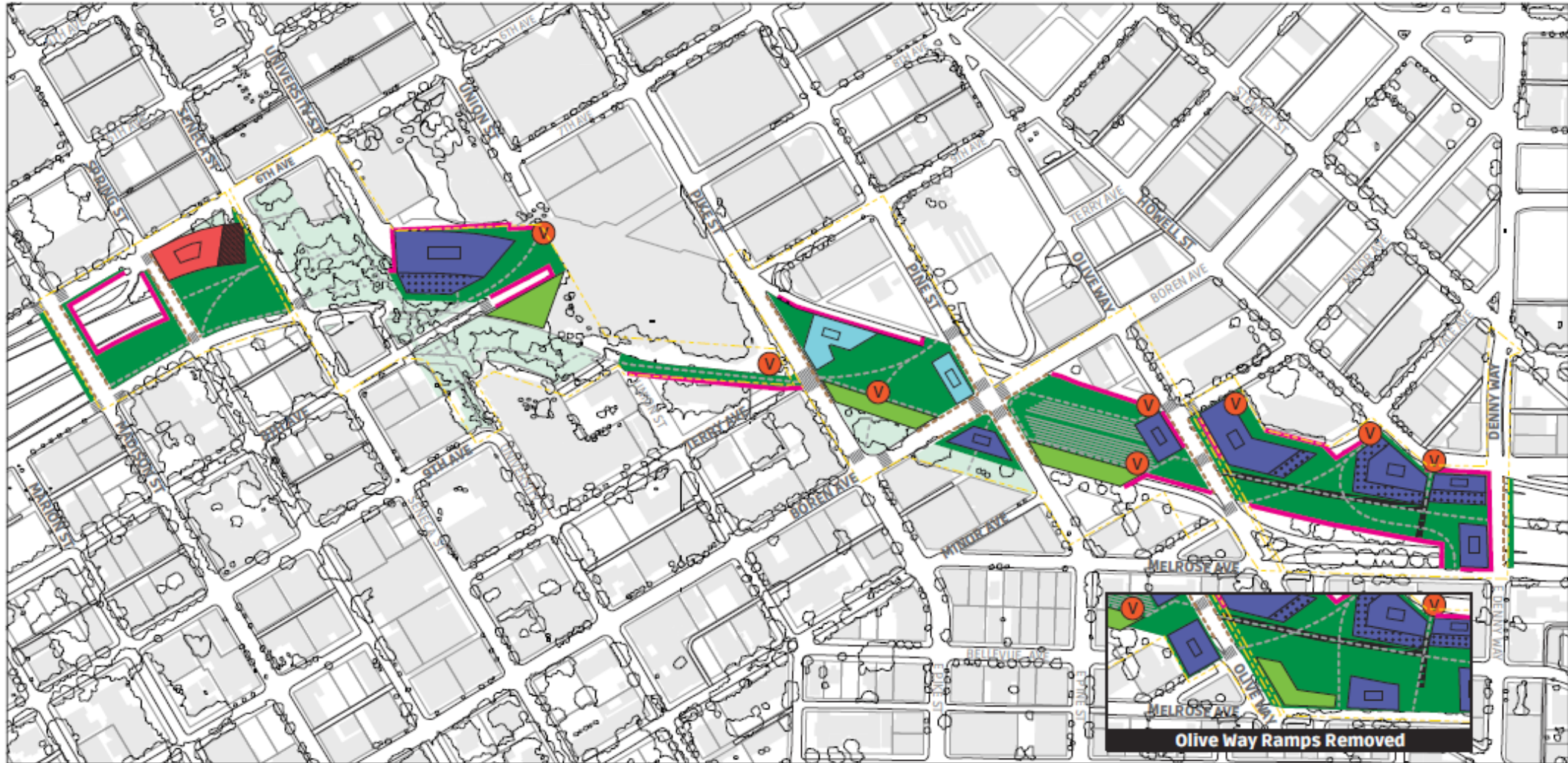


**Legend**

- |   |                              |                           |                         |
|---|------------------------------|---------------------------|-------------------------|
| Structural Assessment Boundary (Study Site) | Existing Open Space          | Pavilion: Up to 30ft      | Improved Pedestrian Way |
| Parcel Boundary                             | Test Case Lid Surface        | Low-Rise: 70ft            | New Pathways            |
| Roadway Pavement Edge                       | Existing Building Footprints | Mid-Rise: 200ft           | Crosswalks              |
| Vertical Edges Above Grade                  | Building Pinnacle            | High-Rise: 400ft          | Vertical Circulation    |
| Bridge Connection                           | Building Cantilever          | Downtown: 680ft High-Rise | Fire Lane               |

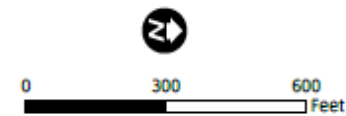


Figure 9-10. Test Case 3 – Mid-Density Hybrid



**Legend**

- |   |                              |                           |                         |
|---|------------------------------|---------------------------|-------------------------|
| Structural Assessment Boundary (Study Site) | Existing Open Space          | Pavilion: Up to 30ft      | Improved Pedestrian Way |
| Parcel Boundary                             | Test Case Lid Surface        | Low-Rise: 70ft            | New Pathways            |
| Roadway Pavement Edge                       | Existing Building Footprints | Mid-Rise: 200ft           | Crosswalks              |
| Vertical Edges Above Grade                  | Building Plinth              | High-Rise: 400ft          | Vertical Circulation    |
| Bridge Connection                           | Building Cantilever          | Downtown: 680ft High-Rise | Fire Lane               |



**Table 10-1. Capital Cost Breakdown per Lid Area for the Project Bookend Analysis (2019 USD)**

Lid Area of Analysis	Robust Lid Project (Maximum lid area and load considered)			Leanest Lid Project (Minimum lid area and load considered)			Lid Project Cost Range
	Area (SF)	Cost including 20% construction contingency (\$)	Cost including 20% construction contingency & 30% risk allowance (\$)	Area (SF)	Cost including 20% construction contingency (\$)	Cost including 20% construction contingency & 30% risk allowance (\$)	Cost Range (\$)
Area 1	133,640	472M	614M	67,740	103M	134M	103M – 614M
Area 2	85,550	221M	286M	N/A	*33M	*42M	*33M – 286M
Area 3	279,590	791M	1,027M	215,120	361M	468M	361M – 1,027M
Area 4	257,640	721M	936M	217,280	358M	464M	358M – 936M
<b>Total</b>	<b>756,420</b>	<b>2,205M</b>	<b>2,863M</b>	<b>500,140</b>	<b>855M</b>	<b>1,108M</b>	<b>855M – 2,863M</b>

\*Cost consideration for enhancement of the WSCC pedestrian walkway along Hubble Place.

Range of financial bookends of analysis, expressed in capital costs per lid area corresponding to the maximum (Figure 8-5) and minimum (Figure 8-6) potential developable lid area considered in the technical feasibility assessment. Cost breakdown does not include right-of-way costs and federal and state asset replacement but does include other variable costs expressed in 2019 USD.

**Table 10-2. Test Case Average Capital Cost Breakdown per Lid Area (2019 USD)**

Lid Area of Analysis	Test Case 1 All Ramps Remain		Test Case 2 All Ramps Remain		Test Case 2 Removal of Olive Way Ramps		Test Case 3 All Ramps Remain		Test Case 3 Removal of Olive Way Ramps	
	Area (SF)	Cost (\$)	Area (SF)	Cost (\$)	Area (SF)	Cost (\$)	Area (SF)	Cost (\$)	Area (SF)	Cost (\$)
Area 1	58,735	103M	143,405	641M	143,405	641M	116,530	224M	116,530	224M
Area 2	N/A	*37M	85,550	254M	85,550	254M	85,550	204M	85,550	204M
Area 3	231,850	449M	239,035	779M	251,500	820M	230,850	489M	245,745	521M
Area 4	198,790	377M	193,735	624M	250,090	805M	202,355	587M	257,820	748M
<b>Total</b>	<b>489,375</b>	<b>966M</b>	<b>661,725</b>	<b>2,298M</b>	<b>730,545</b>	<b>2,520M</b>	<b>635,285</b>	<b>1,505M</b>	<b>705,645</b>	<b>1,698M</b>

\*Cost consideration to enhance the WSCC pedestrian walkway along Hubble Place.

Capital costs assumed for the lid in each test case are expressed as the median value of lid capital costs within the value range of 20 percent design and construction contingency (low-end of cost range) and the compounded 50 percent contingency and risk factor (high-end of cost range). Cost breakdown does not include right-of-way costs and federal and state asset replacement but does include other variable costs expressed in 2019 USD.

# Next Steps



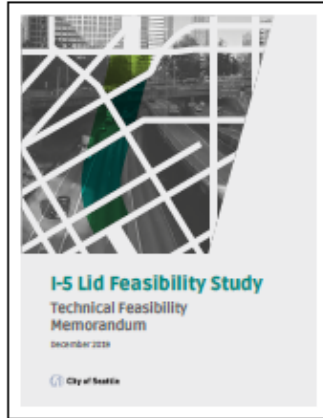
**Table 12-1. Primary Revenue Packages and Levies**

Source	Agency	Name of the Funding Package	Required Voter Approval?	Start Year	End Year	Value	Tax/Fee Funding Source(s)
State	Washington Department of Transportation	Connecting Washington	No	2015	2031	\$16.0B	Gas Tax
State	Washington Department of Transportation	Statewide Transportation Improvement Program (STIP)	No	2020	2023	\$3.3B	Existing Funding
State	Washington Department of Commerce	CERB Local Infrastructure Financing Tool (LIFT)	No	Annual Funding	Annual Funding	\$7.5M	Existing Funding
State	Washington Department of Commerce	Community Economic Revitalization Board	No	2017	2019	\$28.8M	Existing Funding
State	Washington Department of Transportation	Transportation Partnership Program	No	2005	2021	\$7.1B	Existing Funding
Regional	Sound Transit	Sound Transit 2	Yes	2008	2023	\$13.4B	Sales Tax, MVET
Regional	Sound Transit	Sound Transit 3	Yes	2017	2041	\$53.8B	Sales Tax, MVET, Property Tax
Regional	Port of Seattle	Annual Funding Package	No	2020	2021	\$76.4M	Property Tax
County	King County Metro Transit	Metro Connects	No	2017	2040	\$2.0B	Sales Tax
County	King County Parks and Recreation	Parks, Recreation, Trails and Open Space Levy	Yes	2020	2025	\$810M	Property Tax
City	City of Seattle	MOVE Seattle Levy	Yes	2015	2024	\$930M	Property Tax
City	City of Seattle	Parks & Recreation Capital Improvement Program	No	2020	2025	\$87.3M	Property Tax, REET
City	City of Seattle	Transportation Capital Improvement Program	No	2020	2025	\$4.2B	Property Tax, REET
City	City of Seattle	Seattle Public Utilities Capital Improvement Program	No	2020	2025	\$1.5B	Property Tax, REET
City	City of Seattle	Seattle Housing Levy	Yes	2016	2023	\$290M	Property Tax
City	City of Seattle	Seattle Transportation Benefit District	Yes	2015	2020	\$50M	Sales Tax, Vehicle License Fee
City	City of Seattle	Families, Education, Preschool, and Promise Levy	Yes	2019	2026	\$619M	Property Tax

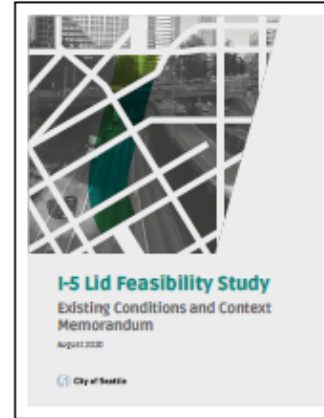
# I-5 Lid Feasibility Study Supporting Memorandums

Revised March 2021

## Technical Feasibility Memorandum



## Existing Conditions and Context Memorandum



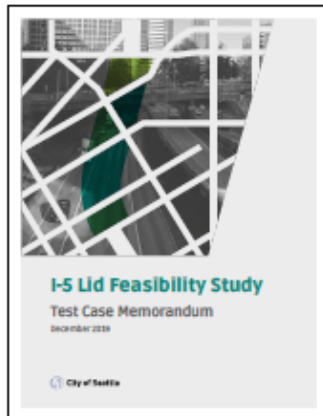
## Economic and Financial Feasibility Memorandum



## Project Funding Efforts



## Test Case Memorandum



## Real Estate Market Scan



## For further information about this report, contact:

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# Discussion

