

An aerial photograph of the I-5 highway in Seattle, showing multiple lanes of traffic moving in both directions. The highway is flanked by a concrete retaining wall on the right and a city skyline with various high-rise buildings in the background. The sky is clear and blue. The text "I-5 Lid Feasibility Study" is overlaid in large white letters across the center of the image.

# I-5 Lid Feasibility Study

Overview and Orientation

March 26, 2019

Seattle City Hall, Bertha Landes Room

# Sam Assefa

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OPCD, Director

# Meeting Purpose

- Provide study background, overview and orientation
- Establish expectations for collaboration and coordination
- Share study approach and timeline



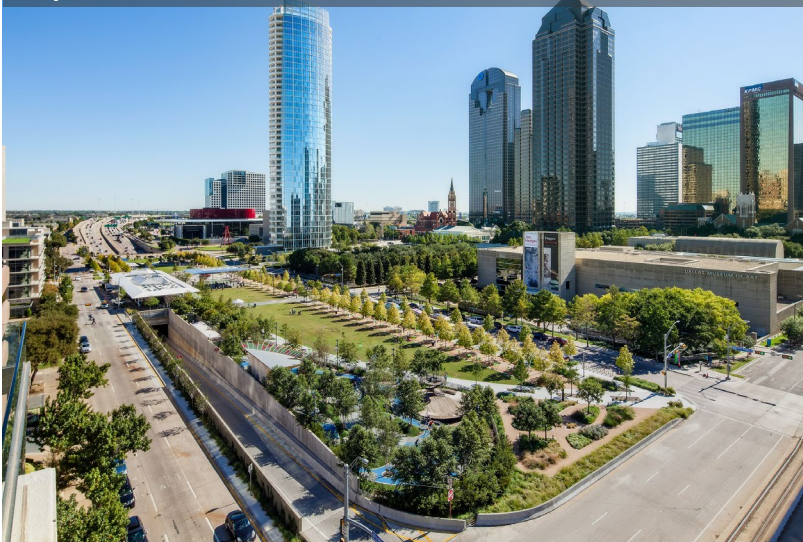
# I-5 LFS Consulting Team



*BergerABAM  
Envirolssues  
Framework*

*HR&A Advisors  
Rule Seven  
Shiels Obletz Johnsen*

*Klyde Warren Park*



*Back Bay Station*



*SR 520 Freeway Park*





# Introductions

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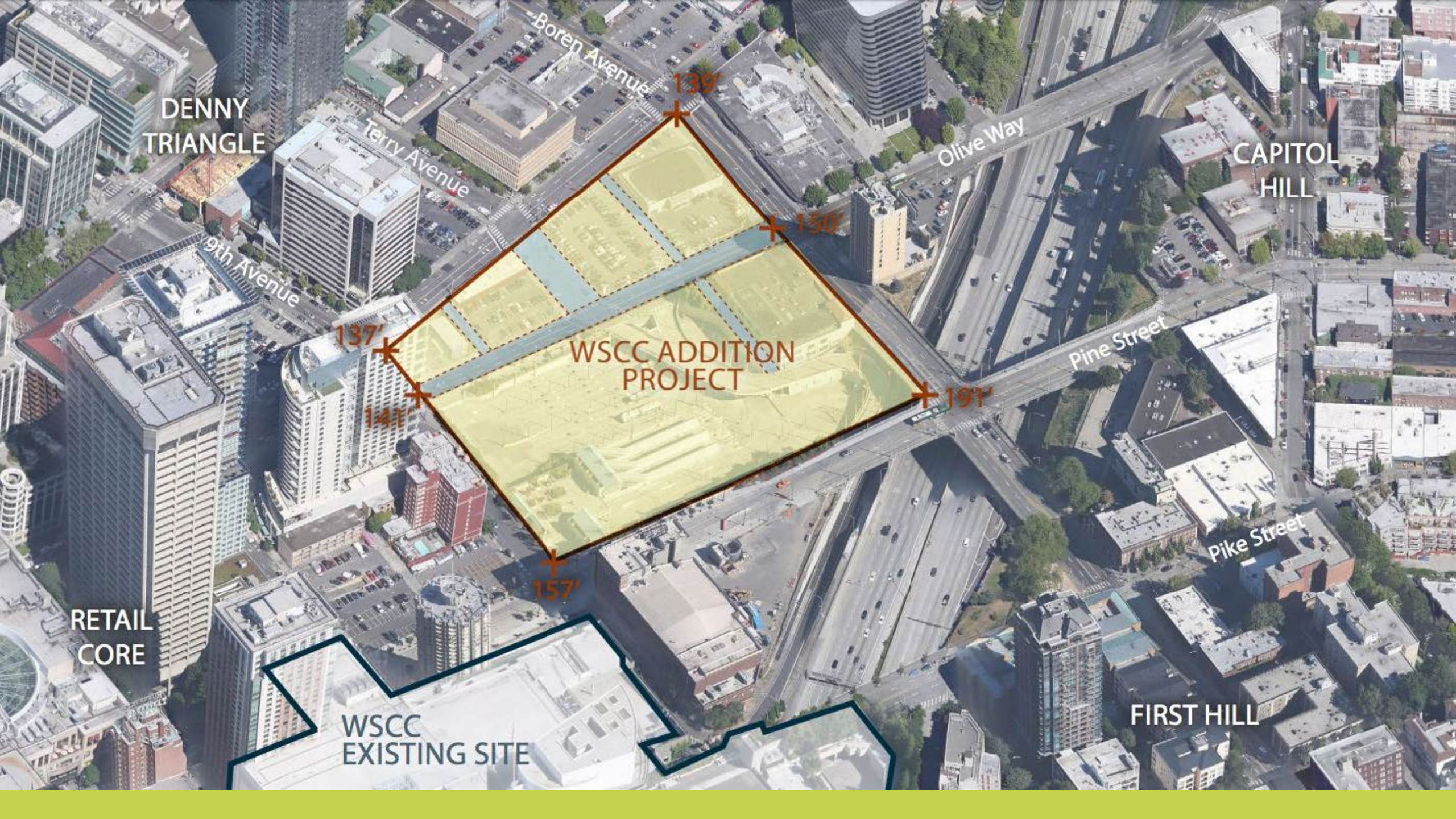
# Background and History











DENNEY  
TRIANGLE

CAPITOL  
HILL

RETAIL  
CORE

WSCC  
EXISTING SITE

FIRST HILL

Boren Avenue

Terry Avenue

9th Avenue

Olive Way

Pine Street

Pike Street

WSCC ADDITION  
PROJECT

139'

150'

191'

157'

137'

141'





























# Scott Bonjukian

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Lid I-5 Steering Committee





# **Lid I-5 Campaign Introduction**

*The Movement to Reconnect Seattle*



# Who We Are

We are volunteer Seattle residents advancing the concept of lidding Interstate 5 citywide to reconnect neighborhoods and expand public land.

## Steering Committee

Natalie Bicknell

Scott Bonjukian, Co-Chair

Jim Castanes

Cormac Diggins

Liz Dunn

John Feit, Co-Chair

Bruno Lambert

Thomas Pitchford

Sony Purba

## Coalition Partners

SEATTLE PARKS FOUNDATION

*Fiscal Sponsor*





# Grassroots Civic Engagement



DESIGN CHARRETTES



MEDIA COVERAGE



WALK/BIKE TOURS



COMMUNITY PRESENTATIONS



# Political Endorsements



Sally Bagshaw  
Seattle City Council District 7



Rob Johnson  
Seattle City Council District 4



Teresa Mosqueda  
Seattle City Council Position 8



Mike O'Brien  
Seattle City Council District 6



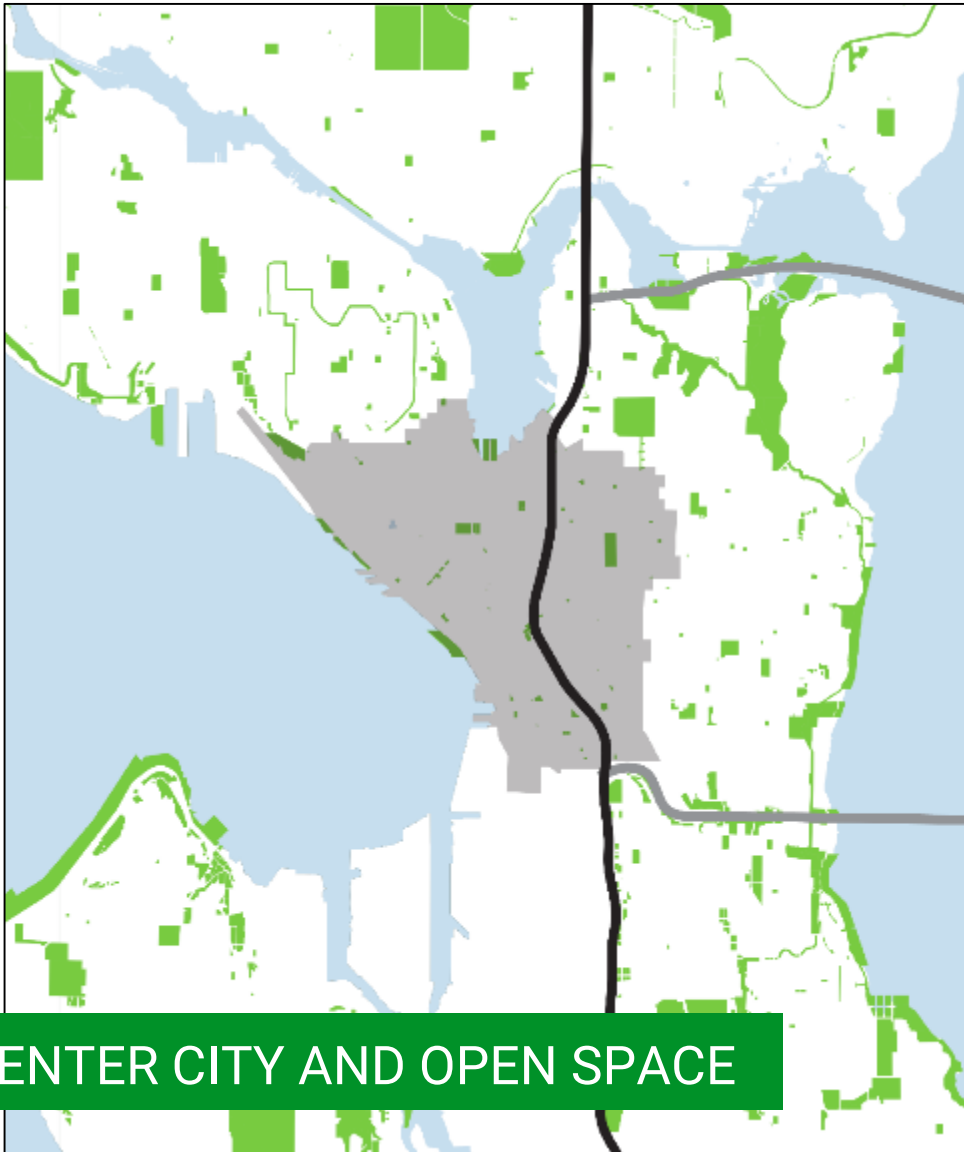
Rep. Nicole Macri  
Washington District 43



Sen. Jamie Pedersen  
Washington District 43



# Challenge: Rapid Growth & Scarce Public Land



Downtown, Capitol Hill, and First Hill are 3.5% of Seattle's land area and are absorbing **29%** of population growth without similar increases in parks, affordable housing, and schools.

*Calculated from OPCD Urban Village Indicators Monitoring Report, 2018*





# Challenge: Disconnections & Environmental Injustice



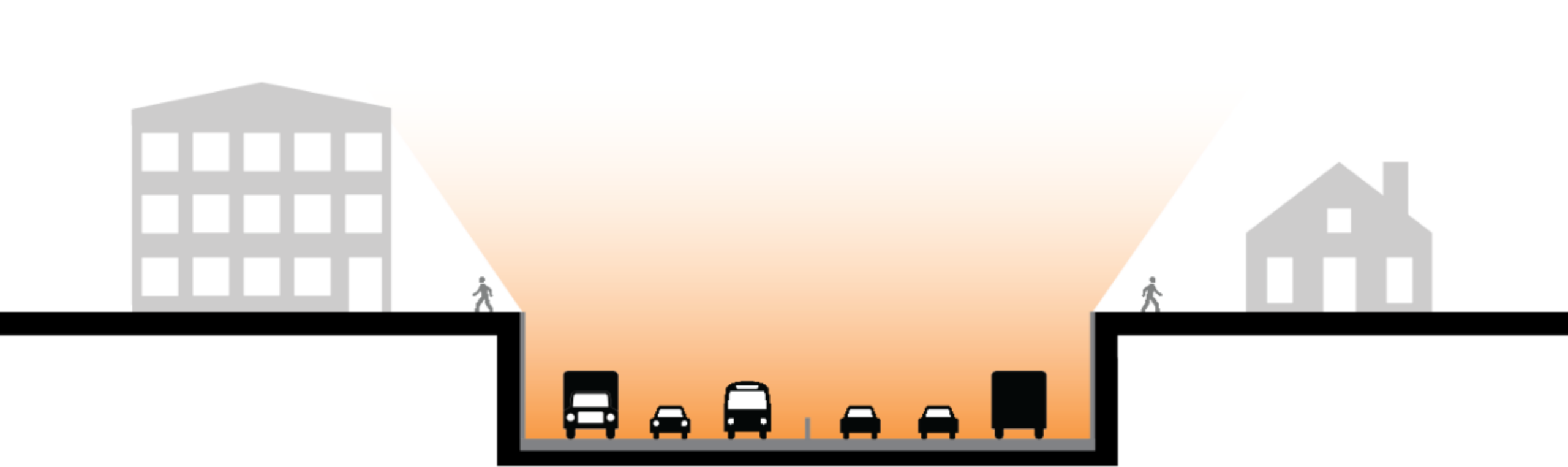
*“The drivers of cars and trucks might live in homes far from the highway and may suffer no negative health impacts from the pollution they help create. But city dwellers who live near the highway, and who might walk and take transit more so than they drive, are prone to pollution’s effect.”*

*- Darin Givens, ATL Urbanist*

**600+ AFFORDABLE HOMES NEXT TO I-5**

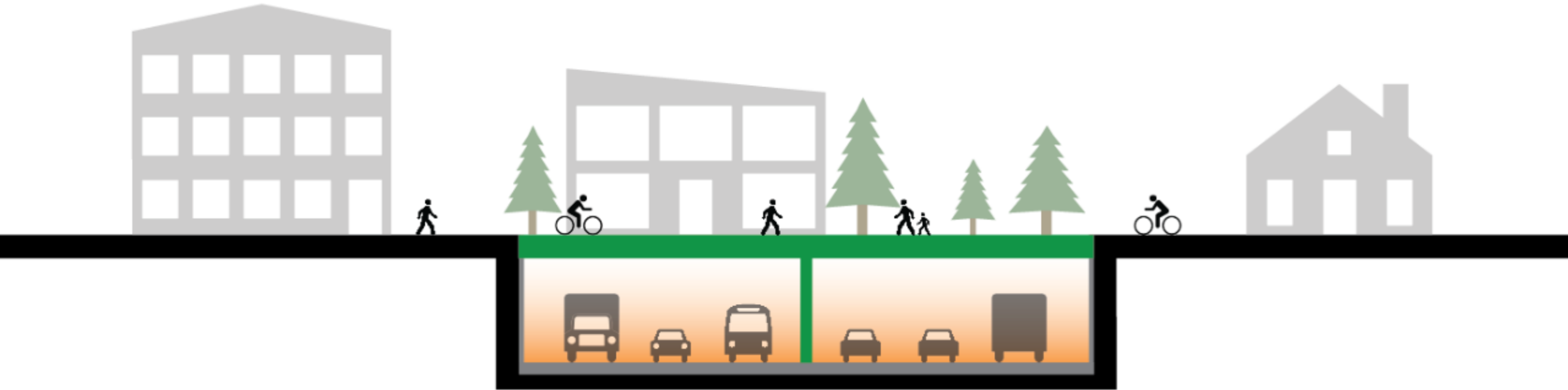


# Current Conditions





# Win-Win Opportunity





# Community Benefits

## Parks & Open Space

- Critical breathing room in a dense city
- Play areas for kids, seniors, pets
- Spaces for sports and active recreation
- Public health and economic benefits

## Affordable Housing

- New public land where it is needed most
- Proximity to jobs and social services
- Transit-oriented development potential
- Homes for families and low wage workers

## Community Facilities

- Multi-purpose community centers
- Downtown elementary and middle schools
- Childcare
- Public safety and utility infrastructure

## Walk/Bike Connections

- Opportunities for restoring the street grid
- Encourage more walking and bicycling
- Integrate with multi-modal trails
- Better connections to transit

## Public Health

- Cutting off sights and sounds of traffic
- Opportunity for improved stormwater quality
- Potential to capture or filter air pollutants
- Reduced urban heat island effect

## The Arts

- Studios, galleries, performance venues
- Activate new park spaces with programming
- Housing affordable to artists
- Outdoor public art



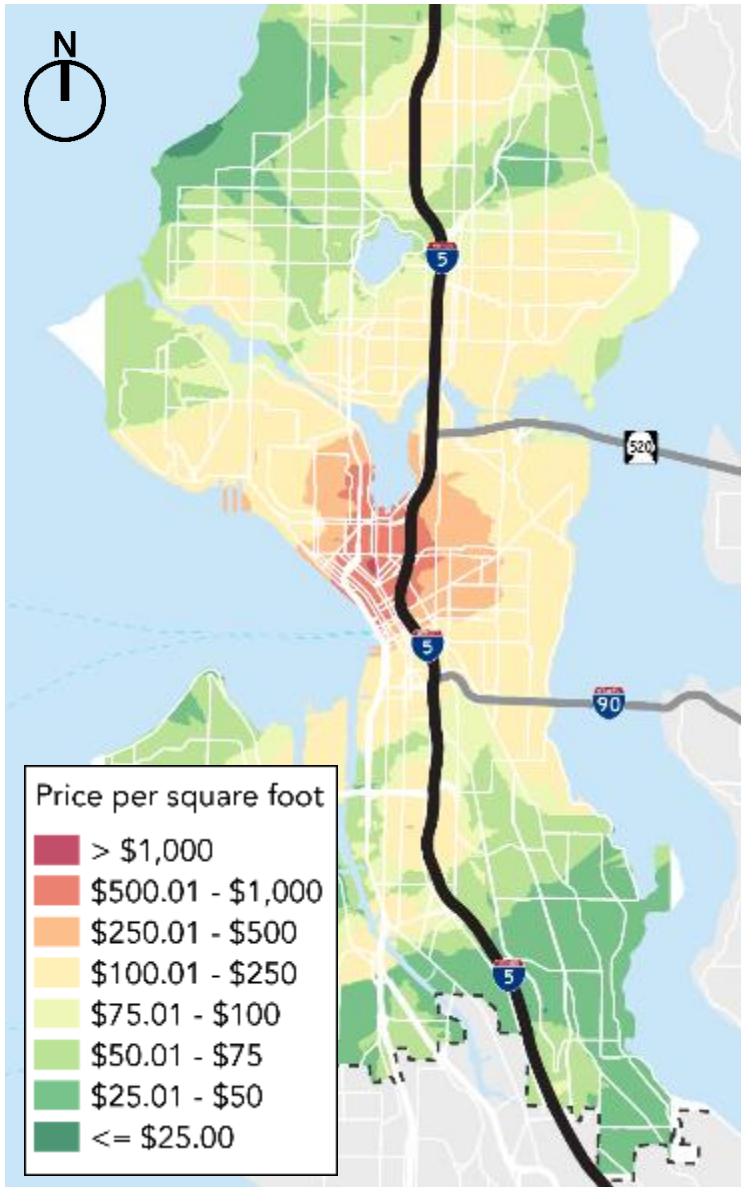
# Why Now?

- » Favorable economics
- » Planning ahead of private interests
- » WSDOT's long term I-5 corridor planning
- » Convention Center Addition

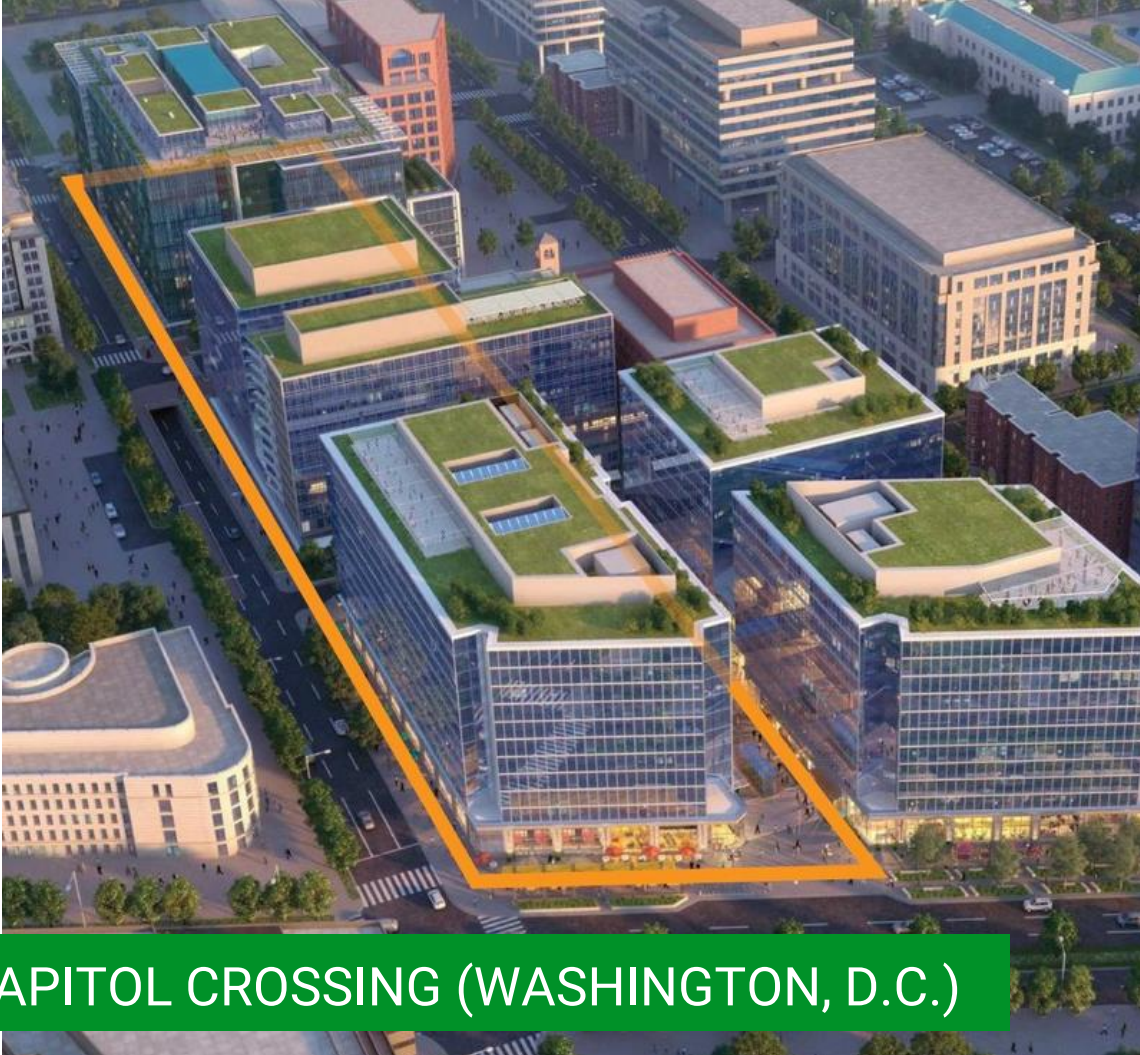


# Cost vs. Land Value

- » Building lids is likely cost-competitive with buying private land (if private land was even available)
- » This may facilitate value capture mechanisms and private-public partnerships for funding



# Private Lid Developments



CAPITOL CROSSING (WASHINGTON, D.C.)



FENWAY CENTER (BOSTON)



# I-5 Systems Partnership





# Recent WSDOT Precedents



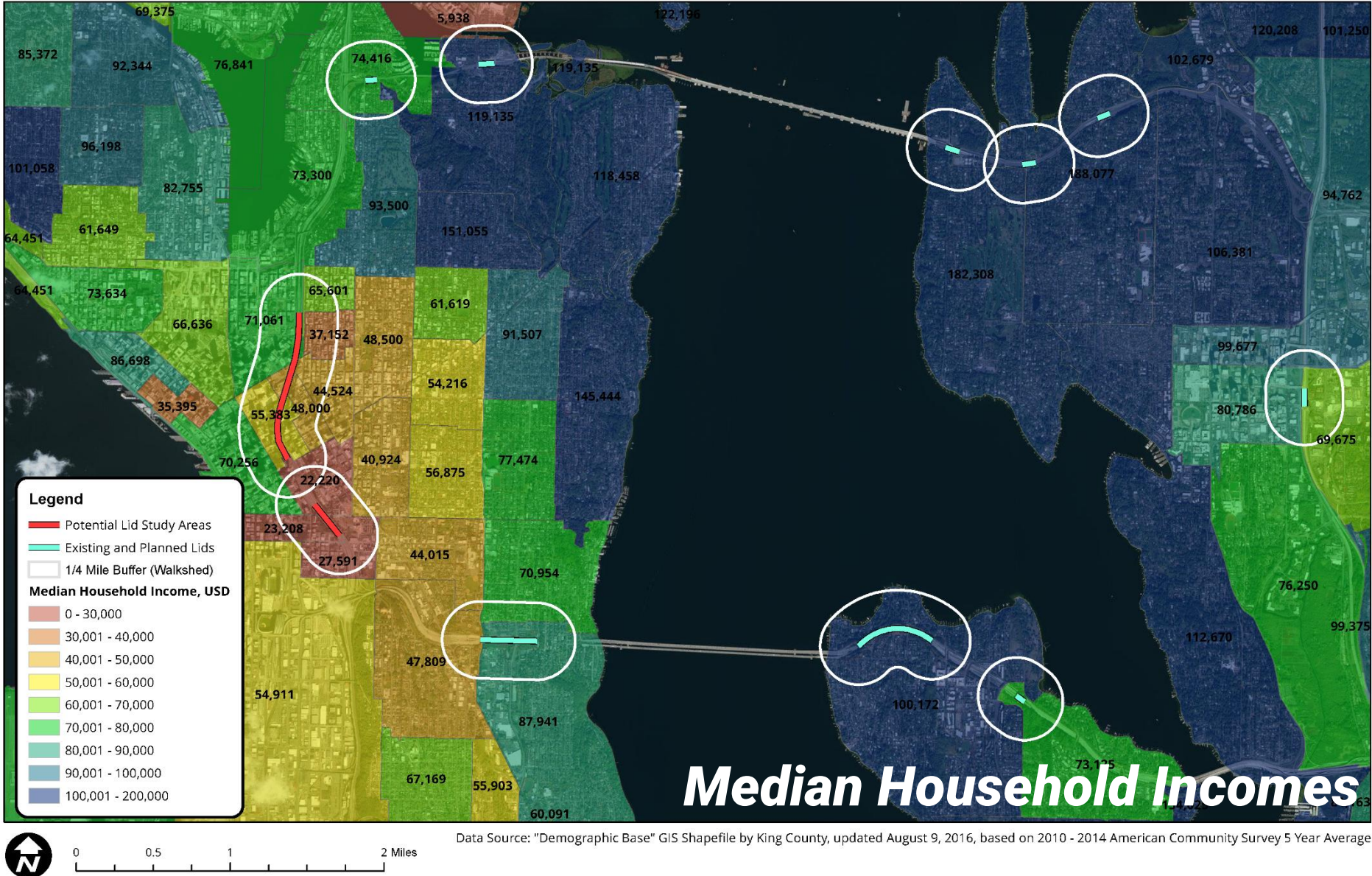
SAM SMITH PARK (1994)



STATE ROUTE 520 (2015)



# Equity Considerations





# Interstate 5 Footprint

*“...in the core of the Puget Sound region I-5 is permanently constrained geometrically as it passes into and through Seattle. That constraint is the architectural limit for freeway expansion in the region.”*

– Puget Sound Regional Council and WSDOT,  
“State Facilities Action Plan”, December 2017





# Convention Center Addition: Catalyst for Discussion





# Community Package Coalition

Lid I-5 Study

\$1.5M

Affordable Housing

\$29M

Freeway Park Improvements

\$10M

Terry Avenue Promenade

\$4.0M

Pike-Pine Protected Bike Lanes

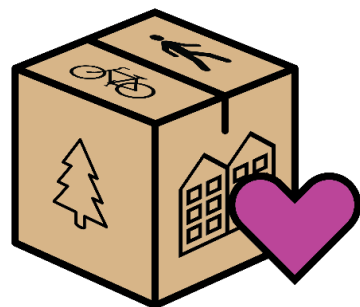
\$10M

8<sup>th</sup> Avenue Protected Bike Lane

\$6.0M

Olive Way Pedestrian Safety

\$0.5M

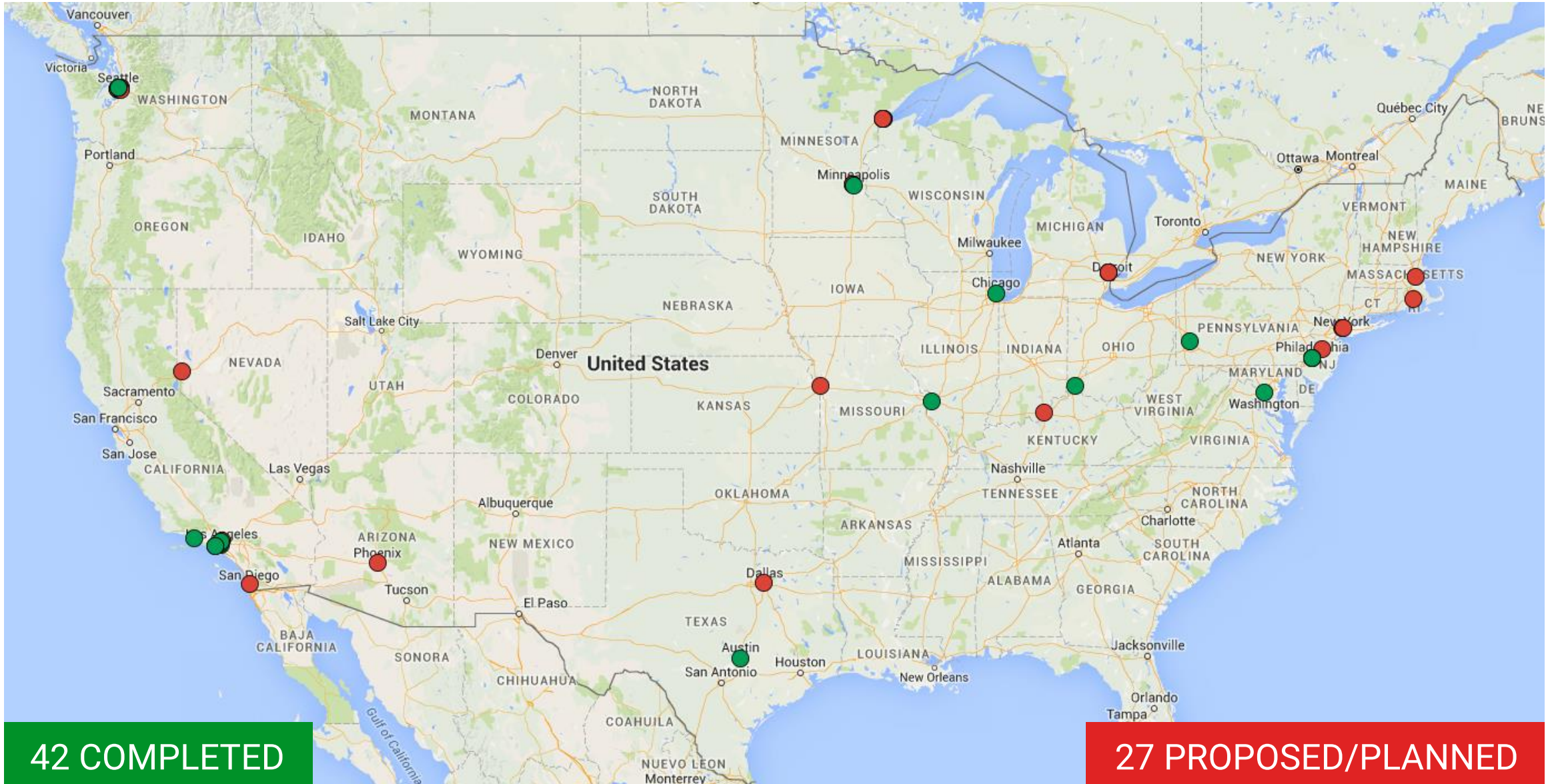


COMMUNITY  
PACKAGE  
COALITION





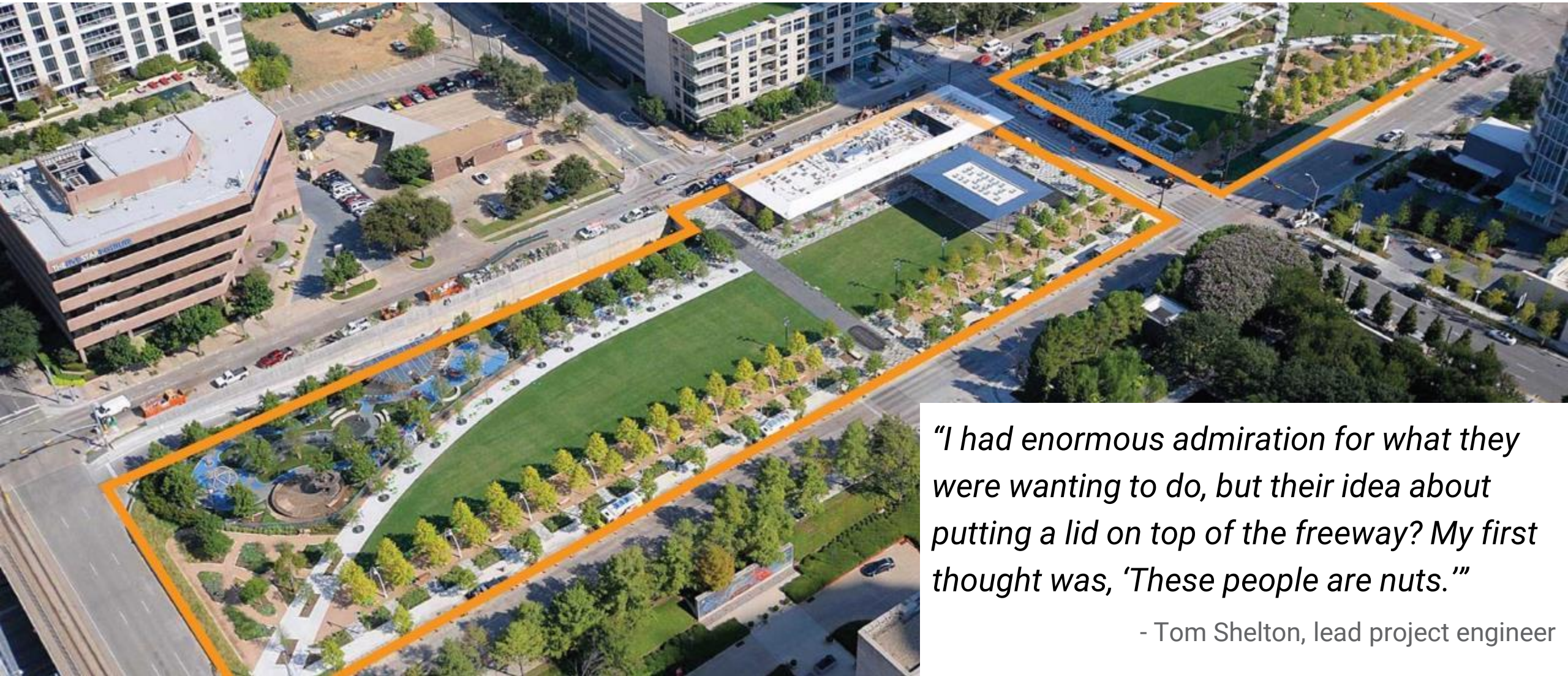
# National Trends and Case Studies





# Klyde Warren Park – Dallas (2012)

5.7 acre lid / \$490 per SF / Funding: 48% private, 52% public / Ranked #8 most visitors



*"I had enormous admiration for what they were wanting to do, but their idea about putting a lid on top of the freeway? My first thought was, 'These people are nuts.'"*

- Tom Shelton, lead project engineer



# Capitol Crossing – Washington, D.C. (opens 2021)

6.5 acre lid / \$706 per SF / Funding: 100% private / 2.2 million SF office, retail, residential



*"It's an urban planning victory to be able to reconnect the city street grid and make a highway disappear."*

- Robert Braunohler, Property Group Partners



**LEGEND:**

- 1. Yellow Paved Plaza
- 2. A Series of 40 Benches
- 3. Pedestrian Bridge
- 4. Water Features
- 5. New Landmark
- 6. New Landmark
- 7. New Landmark
- 8. New Landmark
- 9. New Landmark
- 10. New Landmark
- 11. New Landmark
- 12. New Landmark
- 13. New Landmark
- 14. New Landmark
- 15. New Landmark
- 16. New Landmark
- 17. New Landmark
- 18. New Landmark
- 19. New Landmark
- 20. New Landmark





















# **Lid I-5 Resources for the Feasibility Study**

- » Finger on the pulse of community needs and vision
- » Nationwide freeway lid inventory and case study data, graphics, histories, sources, and personal contacts
- » Public records and I-5/Freeway Park/WSCC history
- » References to recent freeway lid academic research
- » Collection of community-led design concepts and illustrations
- » Advisory Council of experts and community leaders
- » Neighborhood coalition, political connections, media contacts
- » Website, large mailing list, and social media presence



# Feasibility Study Area







# Thank You

Follow | Engage | Advocate

[www.lidi5.org](http://www.lidi5.org)





# Al Levine

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UW Runstad Department of Real Estate's Development Studio Report



# TRAVERSE







## REAL ESTATE DEVELOPMENT STUDIO

Master of Architecture  
Master of Landscape Architecture  
Master of Science in Real Estate  
Master of Urban Planning

**W** UNIVERSITY of  
WASHINGTON





# OUTLINE

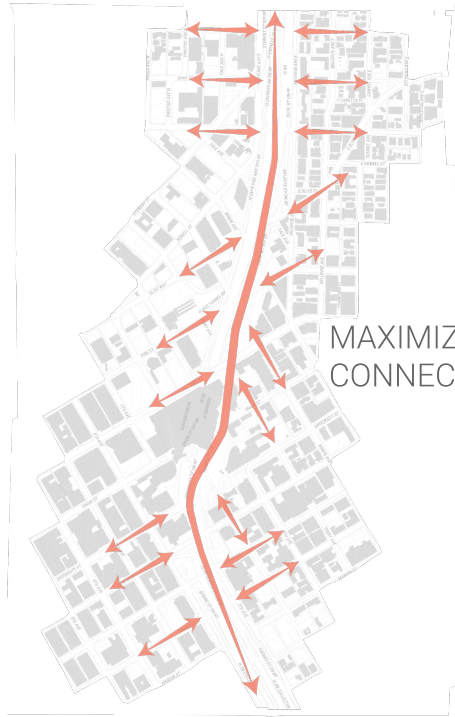
FRAMEWORK  
DENSITY  
PARTNERSHIPS  
FINANCIAL ANALYSIS  
PREFERRED APPROACH  
CONCLUSION



**FRAMEWORK**



# FRAMEWORK | Drivers



MAXIMIZE  
CONNECTIONS

-FEASIBILITY  
-ACCESSIBILITY



CREATE OPEN  
SPACE

-SUSTAINABILITY  
-WATER/LIGHT/AIR



HOUSING

-TRAFFIC FLOW  
-SURROUNDING USES

N

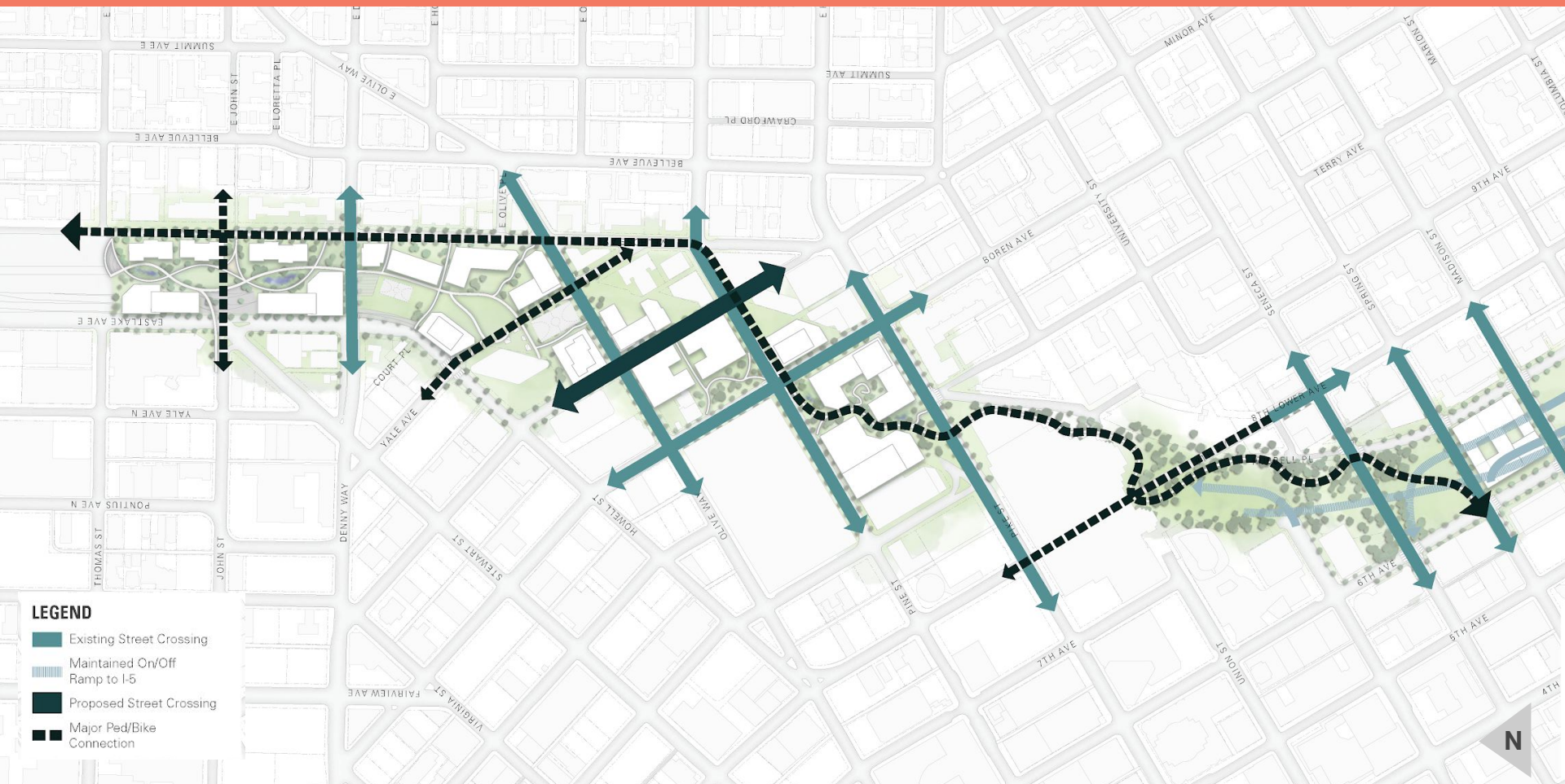


## BLOCKS





# FRAMEWORK | Connectivity



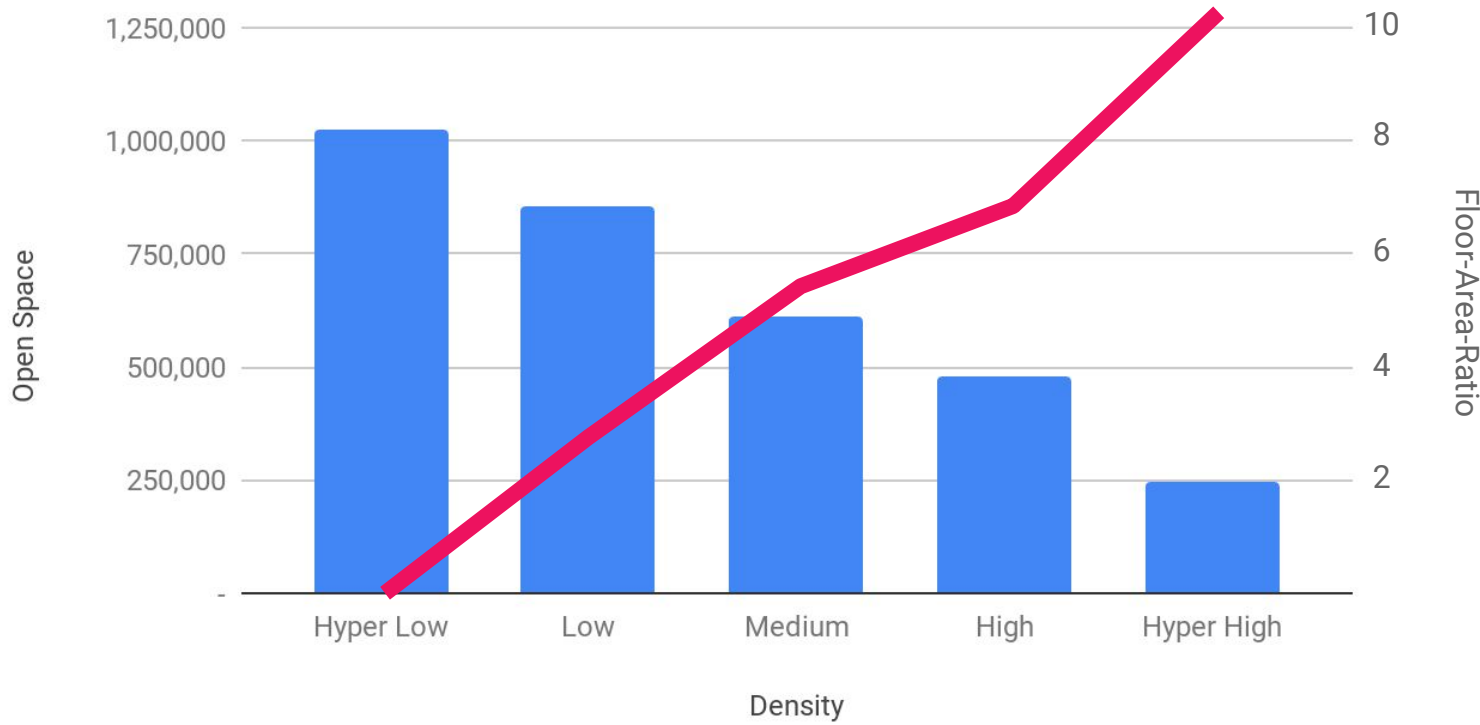


**DENSITY**



Open Space vs FAR

Total Land Area: 28.7 AC  
Total LID Area: 22.3 AC  
Percent LID: 77%



# DENSITY | Low

N



1,842 UNITS

1,345 MARKET  
497 AFFORDABLE

68% OPEN  
20 ACRES



# DENSITY | Medium

N



**3,689 UNITS**

**2,693**      **996**  
MARKET      AFFORDABLE

**49% OPEN**

**14 ACRES**

# DENSITY | High

N



4,531 UNITS

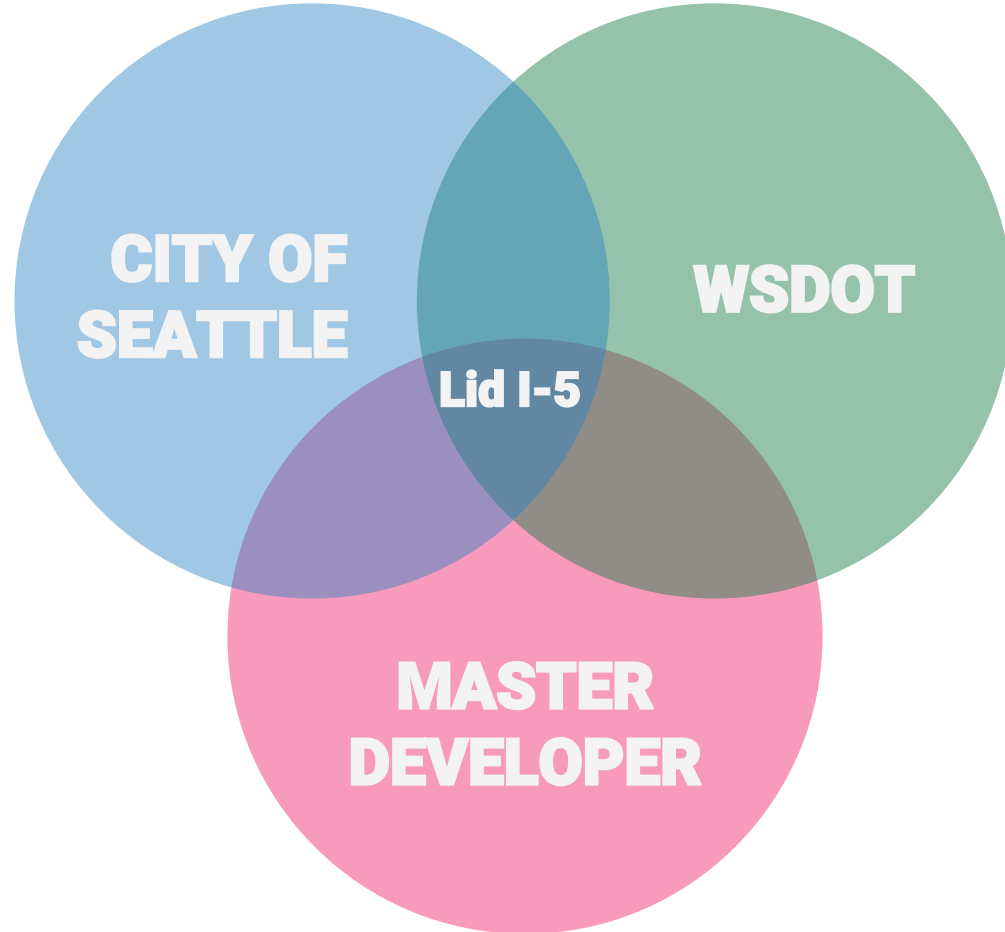
3,308 MARKET  
1,223 AFFORDABLE

38% OPEN

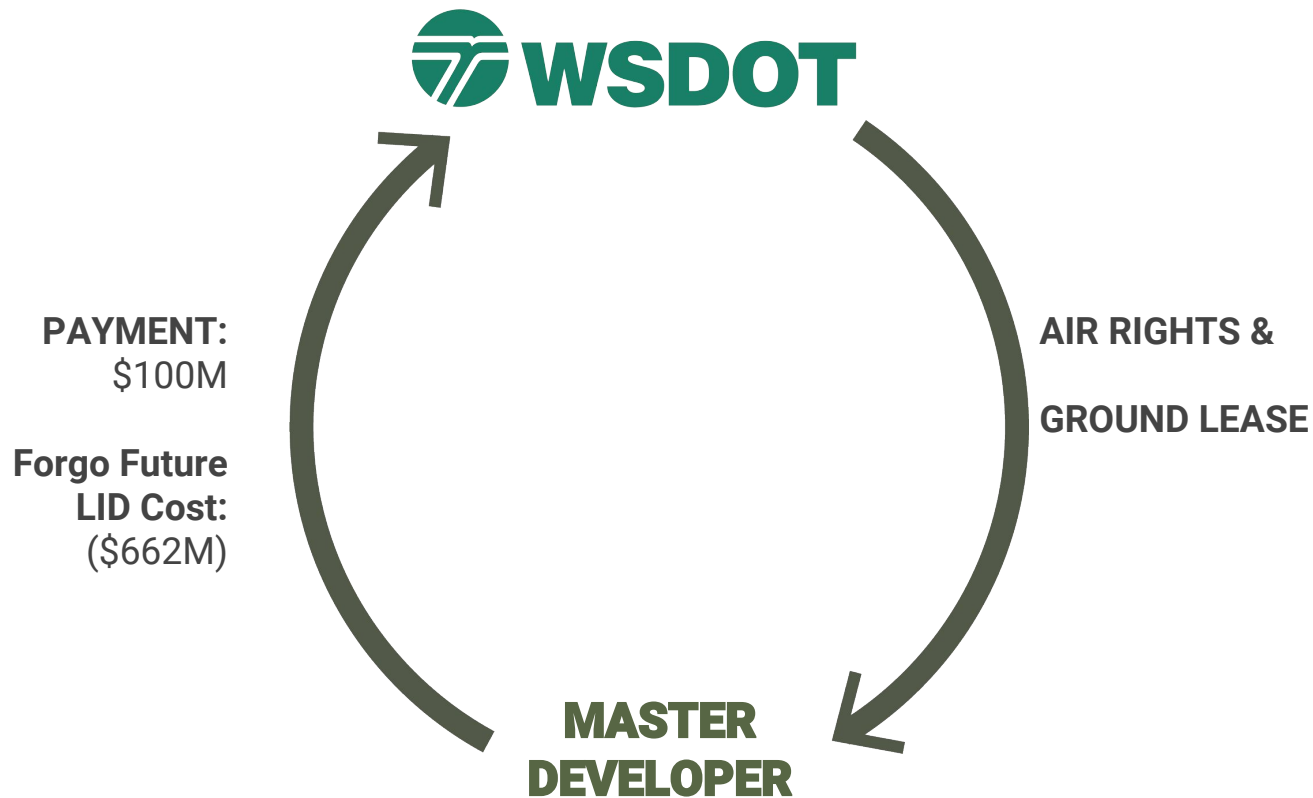
11 ACRES



**PARTNERSHIPS**









**City of Seattle**

**OPEN SPACE**

**AFFORDABLE HOUSING**

**FUTURE TAX REVENUE**

**FACILITATION**

**PUBLIC ENGAGEMENT**

**FUNDING**

**MASTER  
DEVELOPER**



A word cloud of transportation funding sources. The words are arranged in a roughly triangular shape, with 'Private Investment' at the top, 'Philanthropy' in the middle, and 'Public Contribution' at the bottom. The words are in various colors: pink, green, blue, and orange. The words 'SDOT' and 'WSDOT' are written vertically on the left side, and 'City of Seattle' is written vertically on the right side.

Private Investment

SDOT WSDOT

Philanthropy

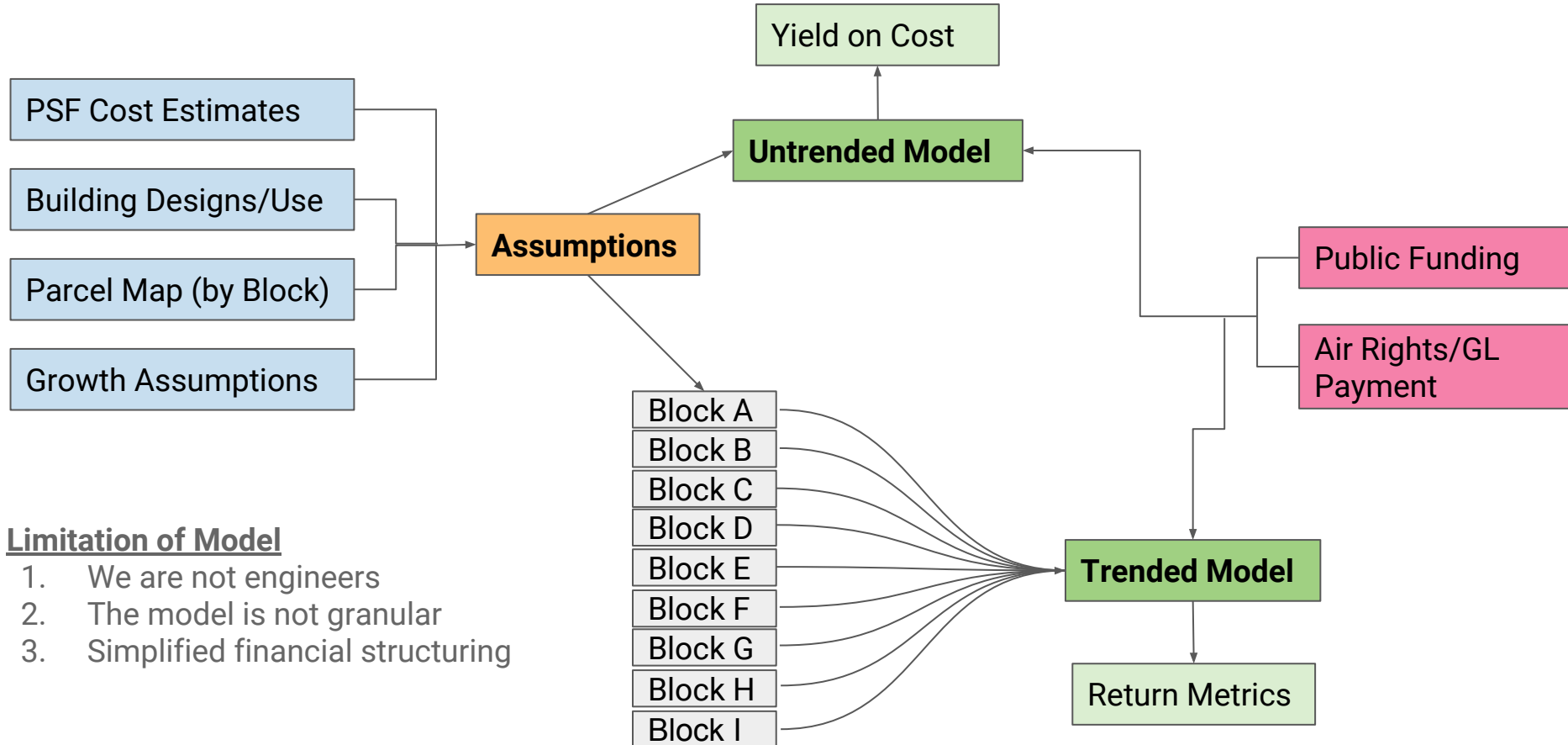
Public Contribution

City of Seattle

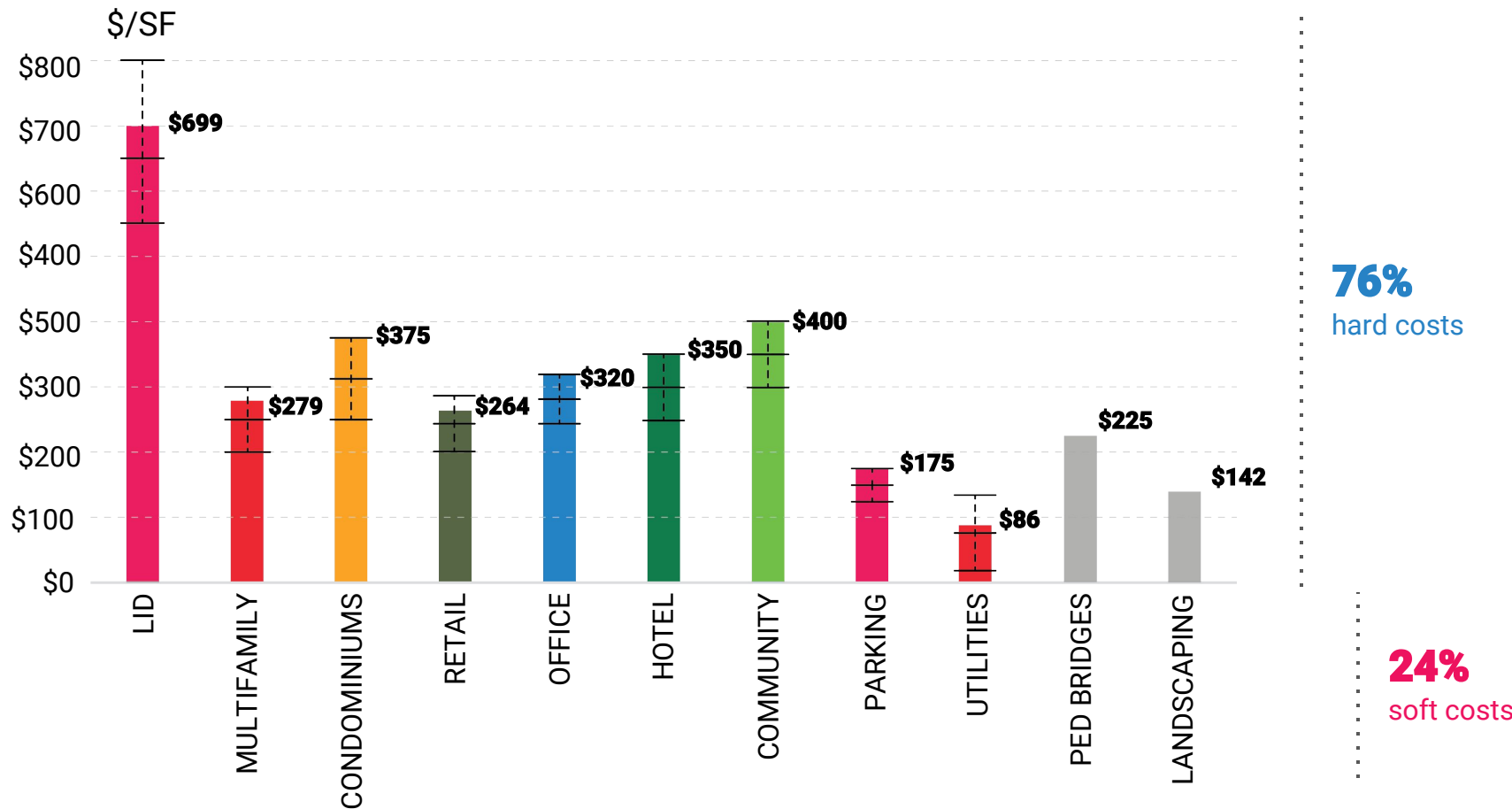
# FINANCIAL ANALYSIS



# FINANCIAL ANALYSIS | Model & Limitations

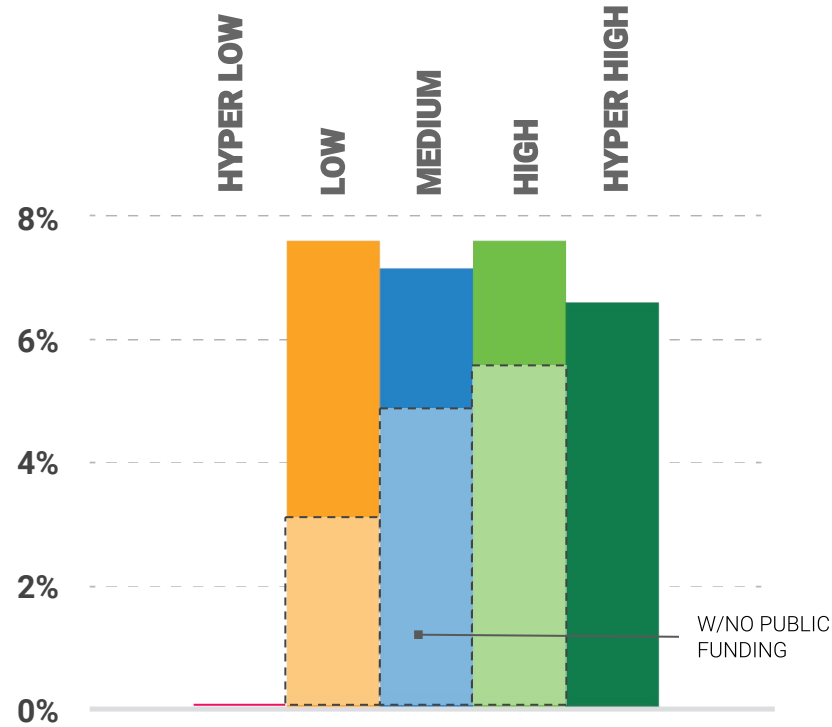


# FINANCIAL ANALYSIS | Untrended Costs PSF

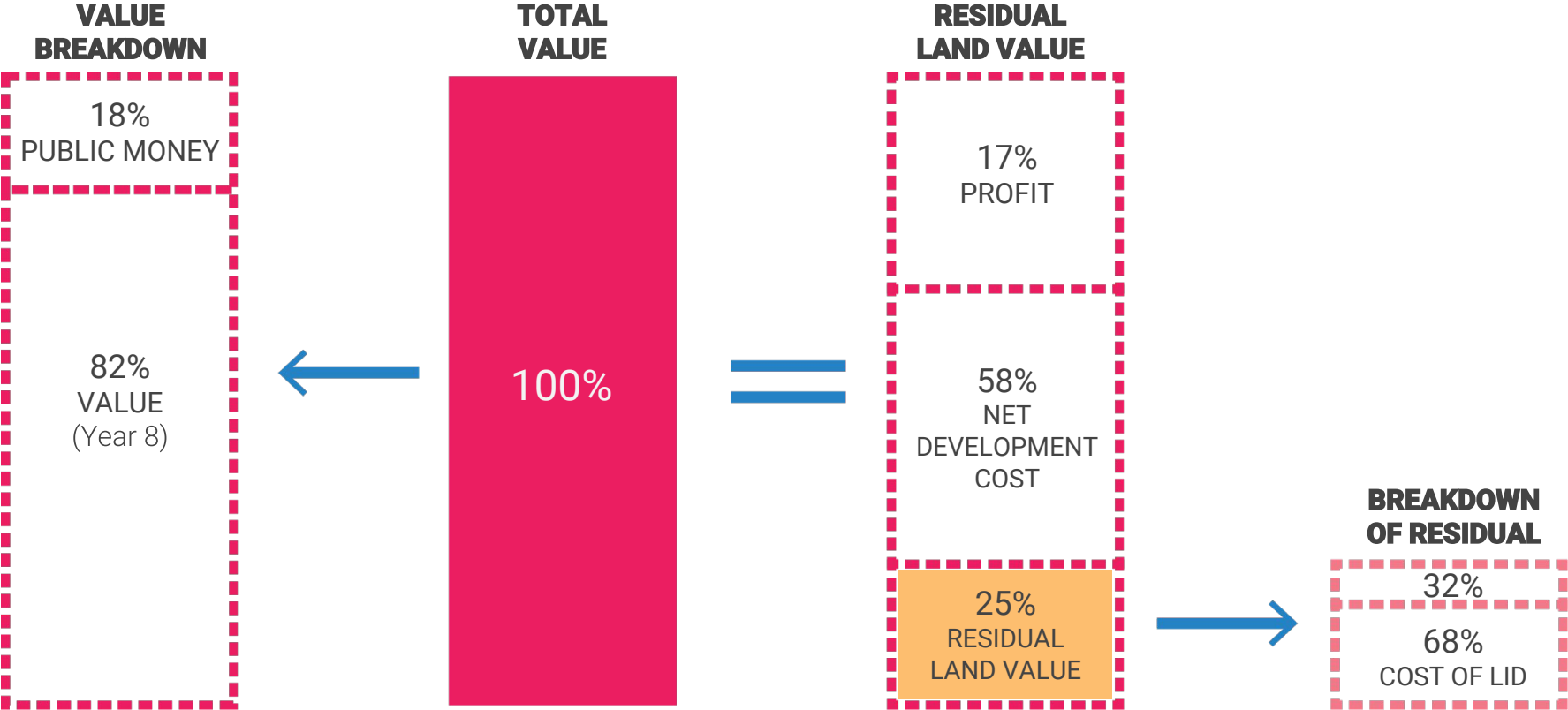




# FINANCIAL ANALYSIS | Untrended Yield on Cost

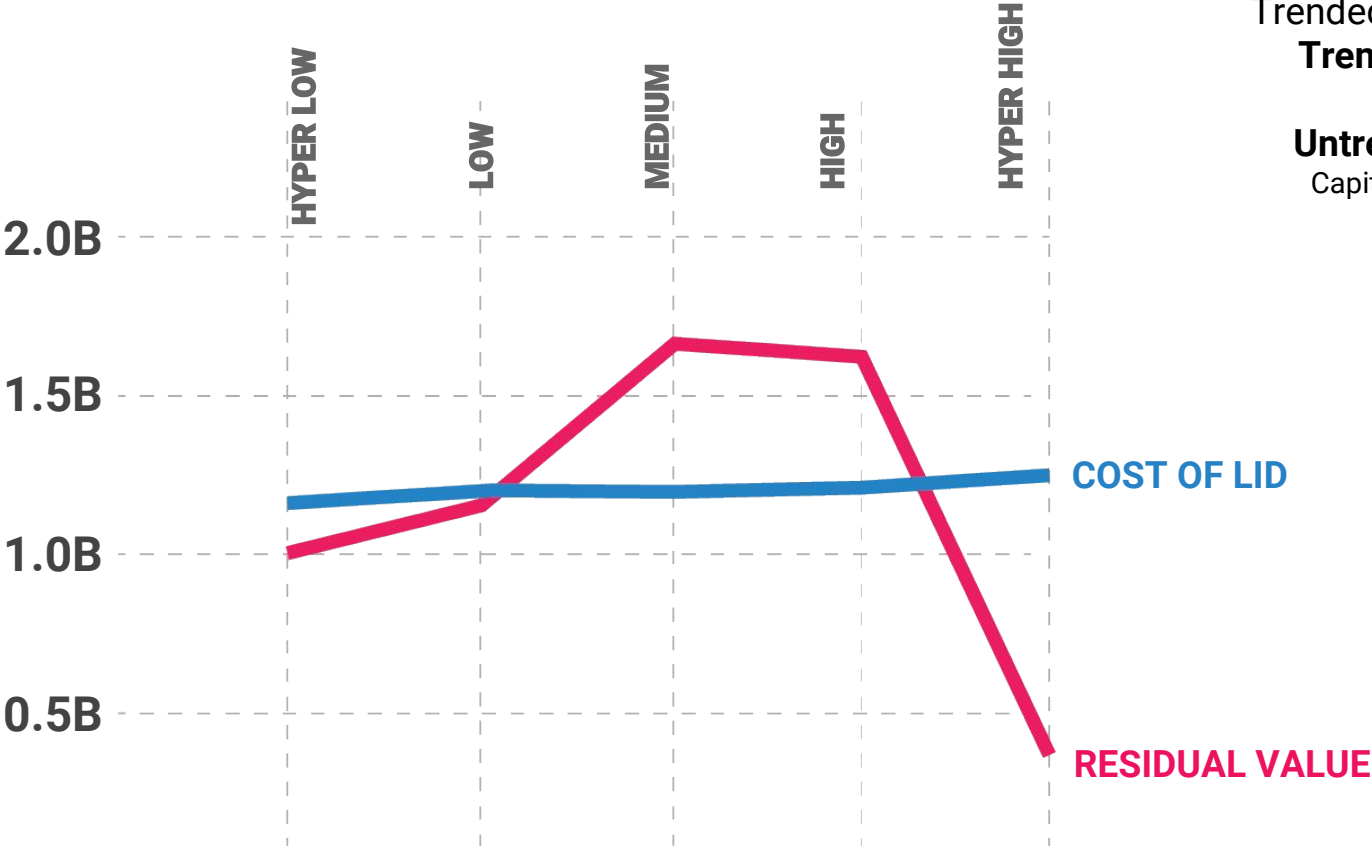


# FINANCIAL ANALYSIS | **Residual Land Value**





# FINANCIAL ANALYSIS | Residual Land Value



Air Rights/Ground Lease: \$100M

Trended Cost of LID: \$1.012B

**Trended Cost PSF: \$1,044**

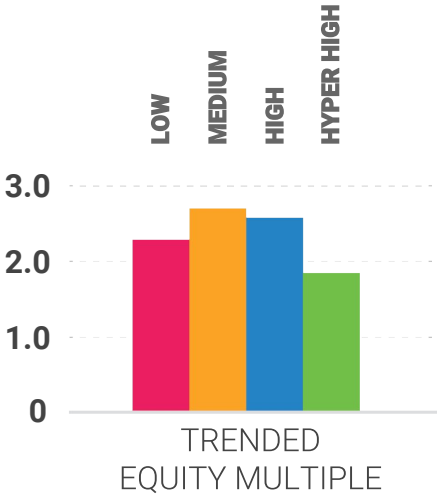
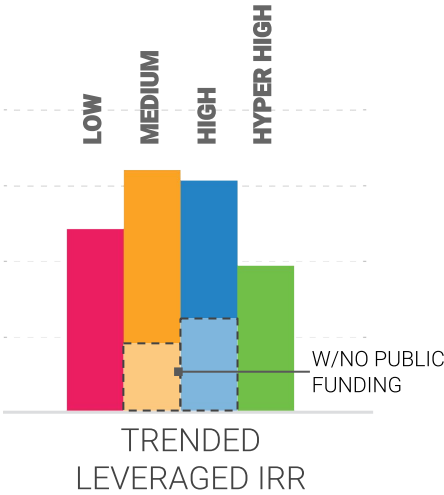
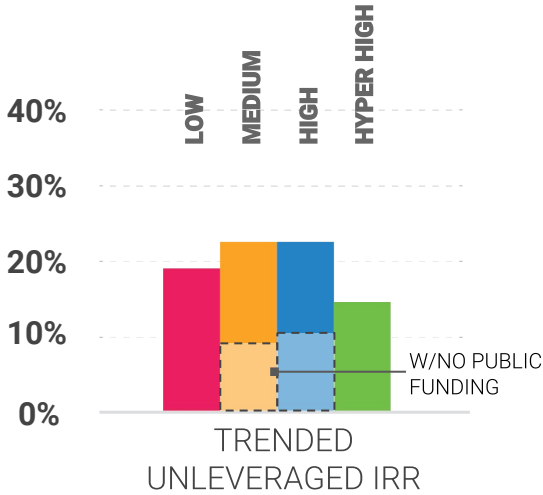
**Untrended Cost PSF: \$925**

Capitol Hill Land Price PSF: \$600

CBD Land Price PSF: \$1,000

# FINANCIAL ANALYSIS | Trended Summary

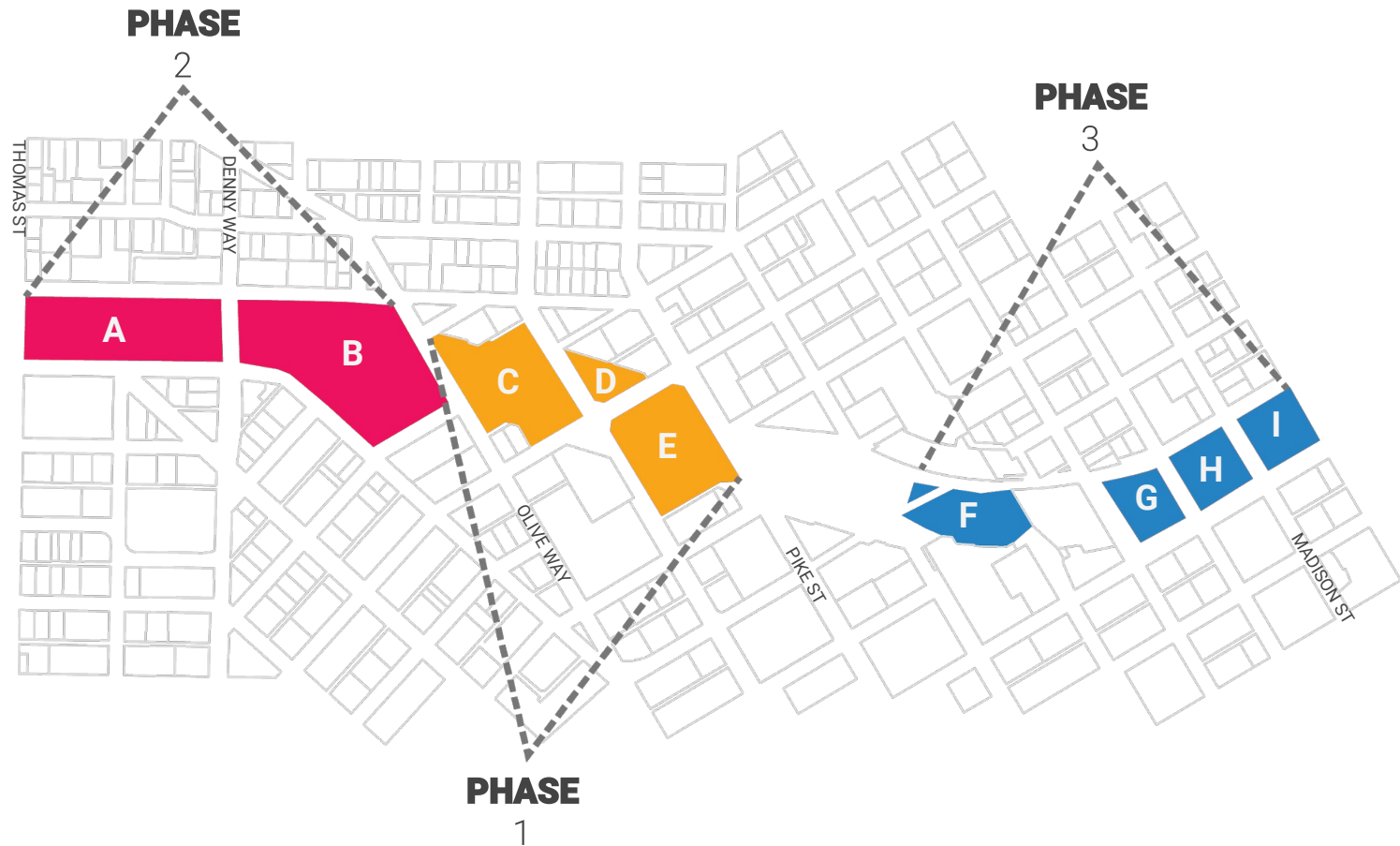
	HYPER LOW	LOW	MEDIUM	HIGH	HYPER HIGH
Public Funding	\$1,449,421,893	\$1,400,000,000	\$1,000,000,000	\$900,000,000	\$0
Private Equity	\$0	\$739,600,000	\$1,106,084,631	\$1,535,503,643	\$2,945,123,010
Residual Value	\$1,012,104,261	\$1,090,478,474	\$1,626,621,112	\$1,546,930,506	\$367,234,600





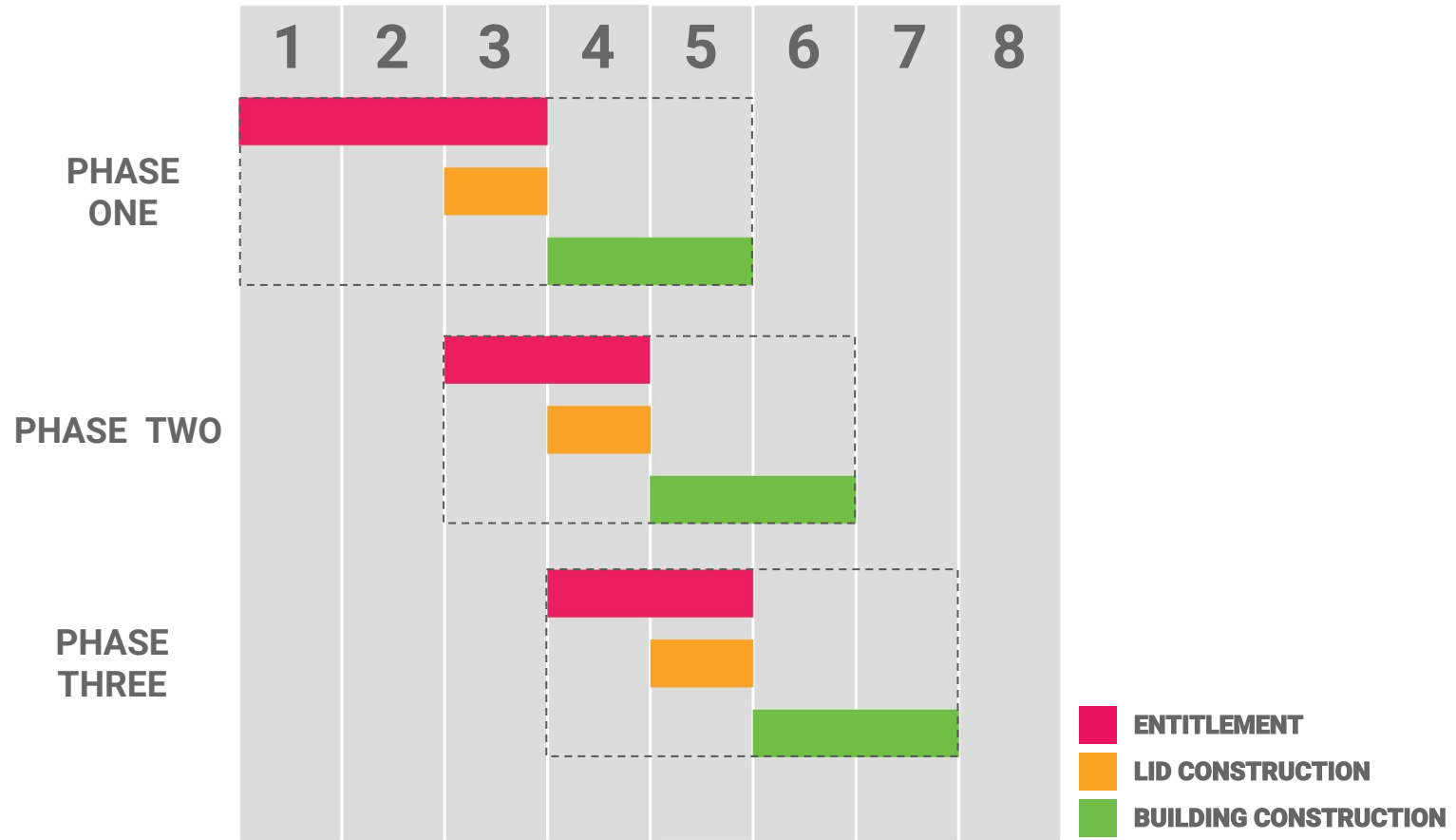
# PREFERRED APPROACH

# APPROACH | PHASING





# APPROACH | PHASING TIMELINE



# MEDIUM DENSITY | LAND USE



## LEGEND

- Residential
- Office
- Civic
- Retail Frontage



# MEDIUM DENSITY | OPEN SPACE



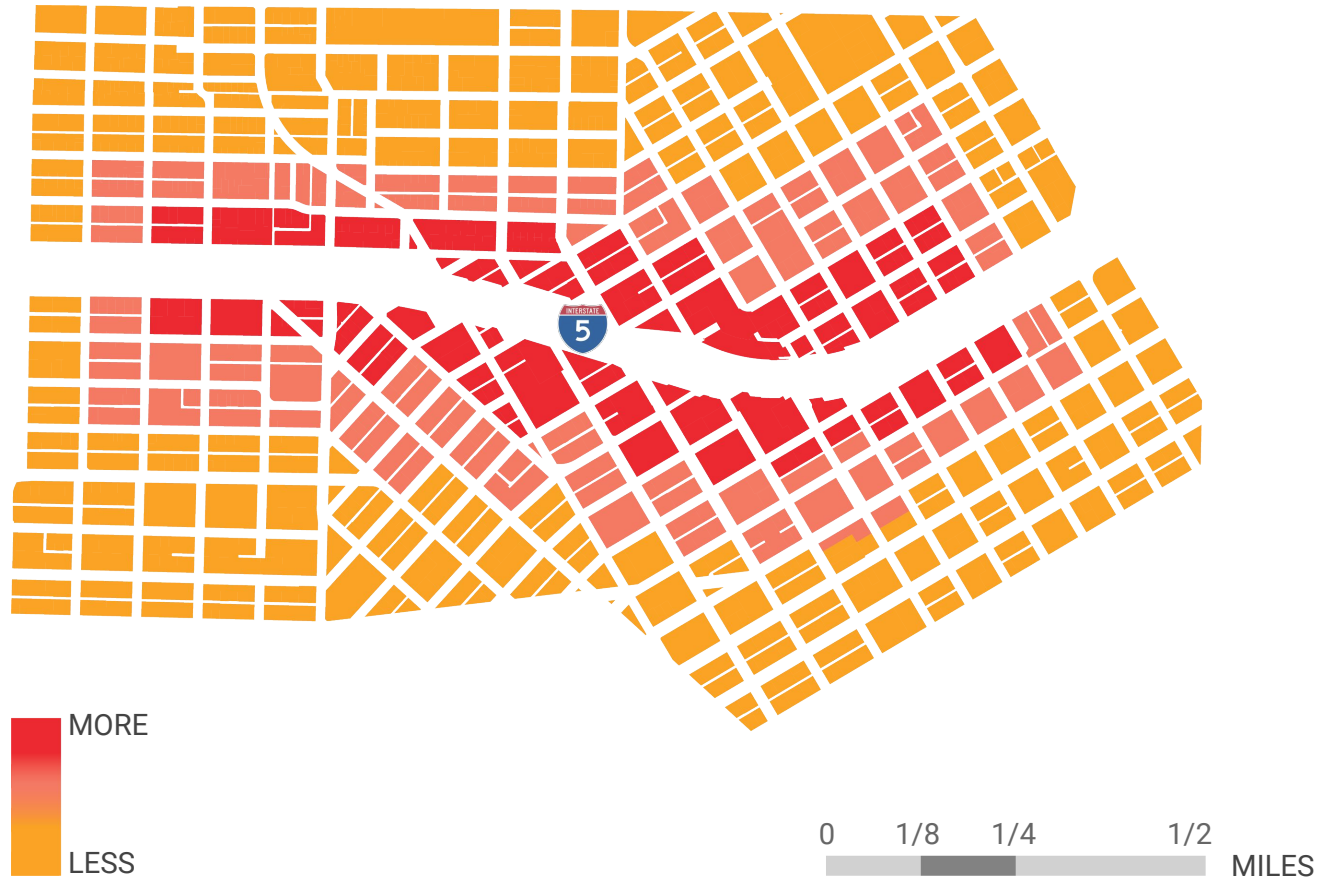
## LEGEND

- Publicly Owned Open Space
- Privately Owned Open Space

**CONCLUSION**



# CONCLUSION | **Benefits**



## CONCLUSION | **Benefits**



Tax Revenue



Affordable Housing



Park Space



Pollution, Noise &  
Stormwater Mitigation



Citywide Connectivity



Local Retail



# THANK YOU



**Final Report**

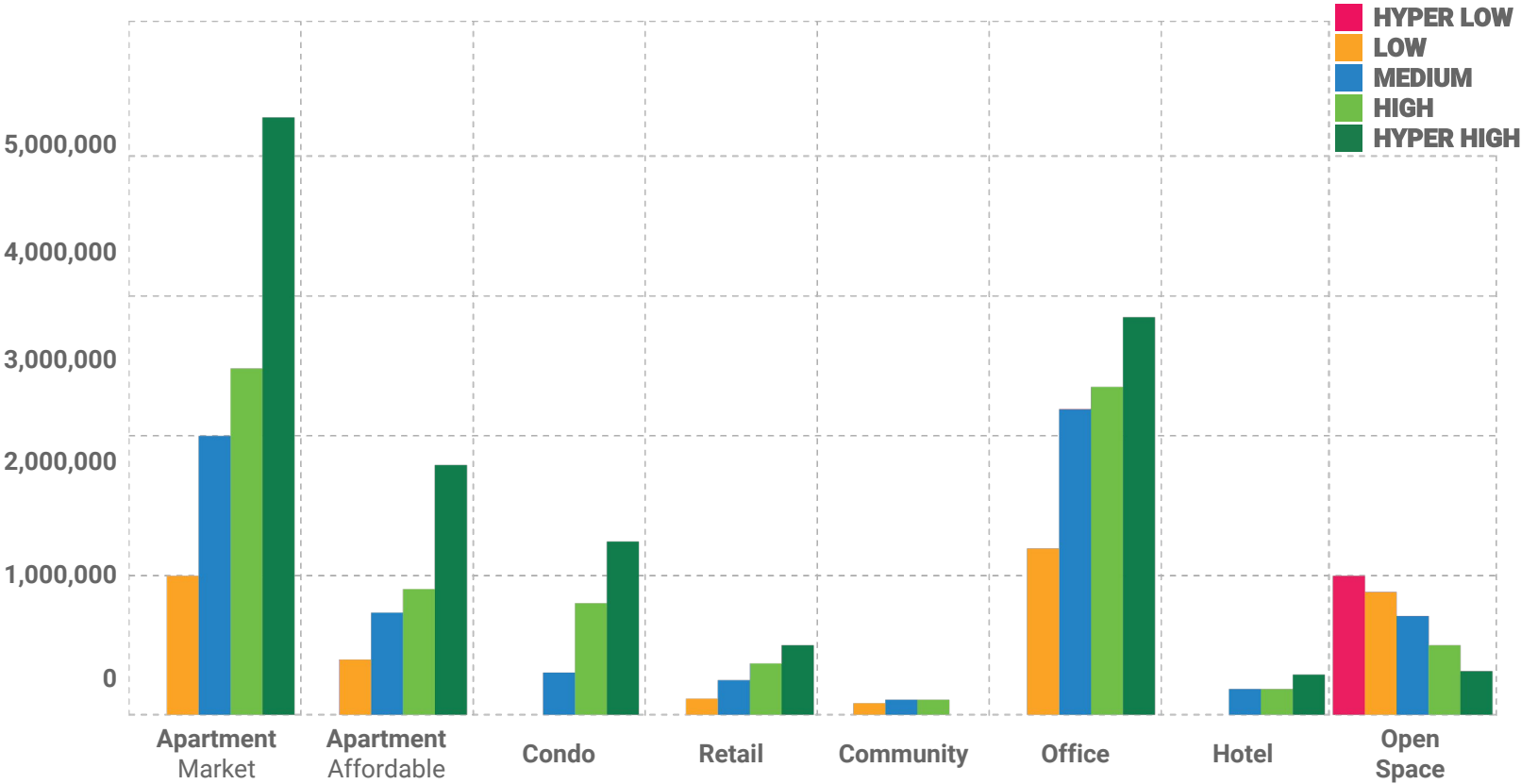
*[realestate.washington.edu/research/student-research/](https://realestate.washington.edu/research/student-research/)*

# Appendix

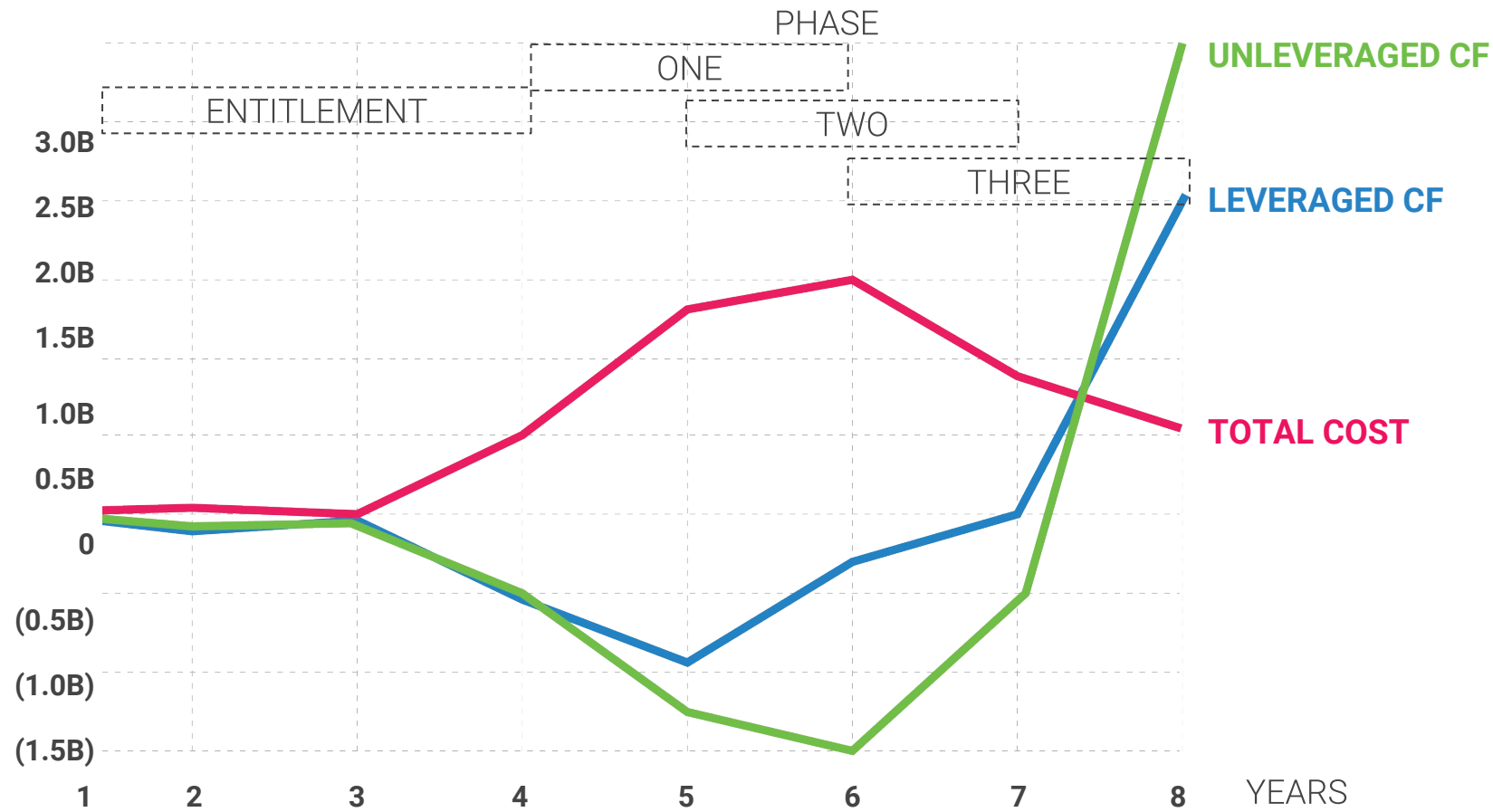


# DENSITY | Comparison

## SQUARE FOOTAGE BY USE

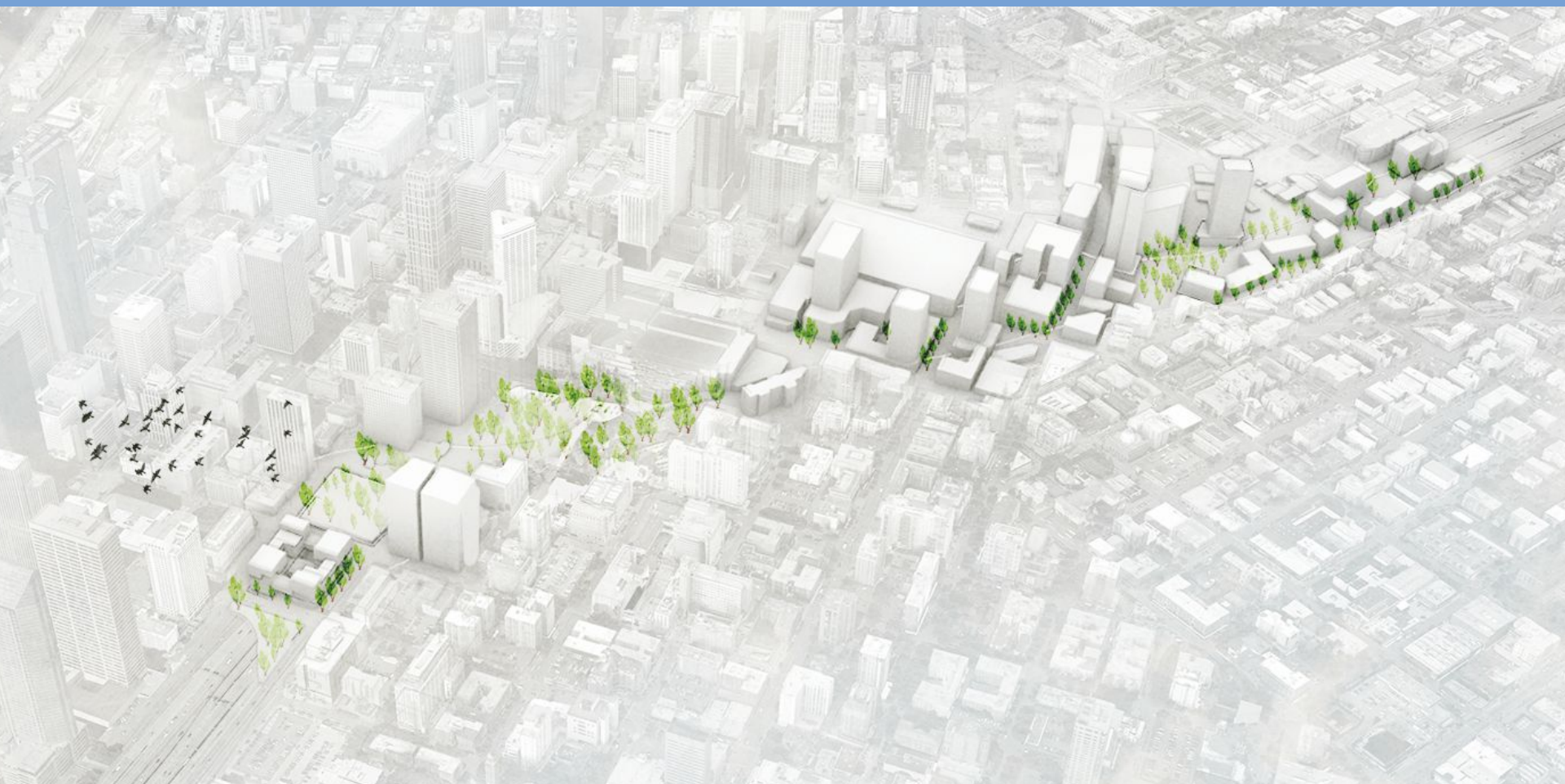


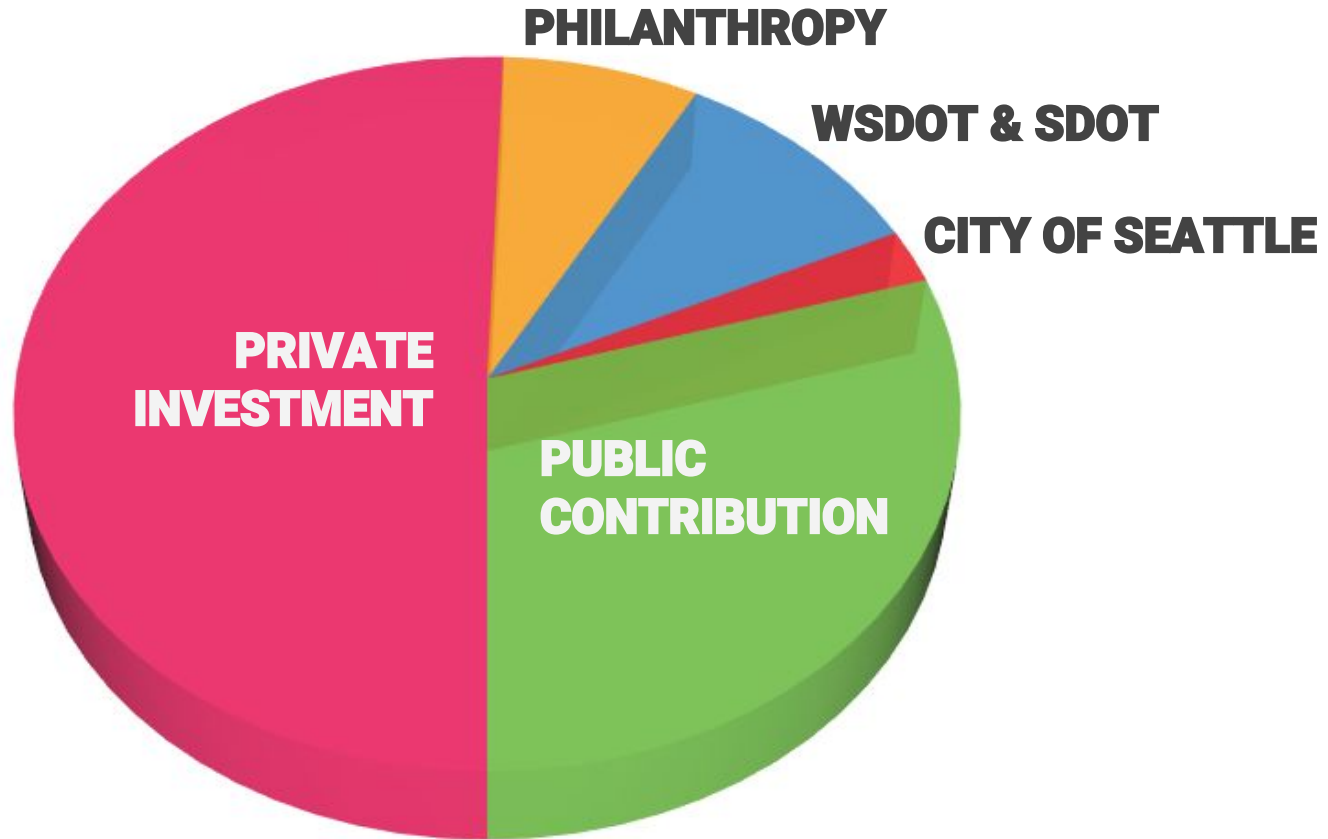
# FINANCIAL ANALYSIS | Combined Cash Flow





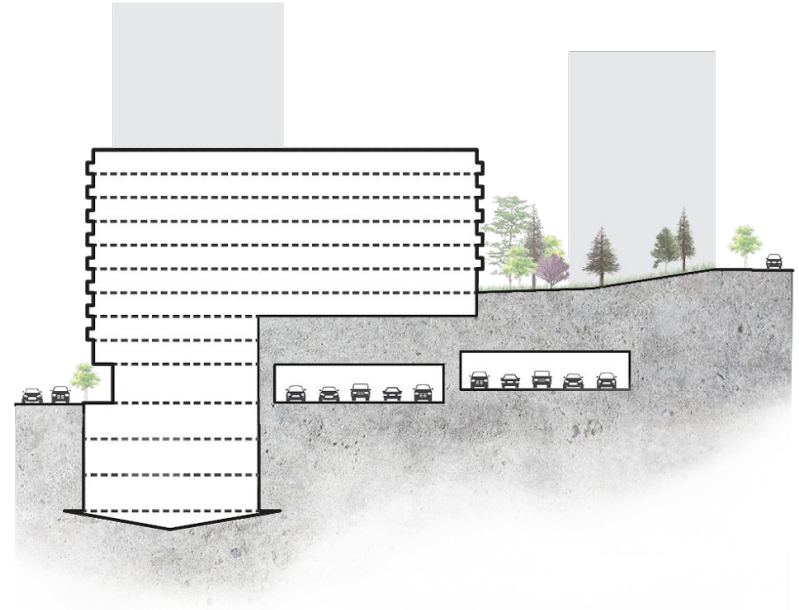
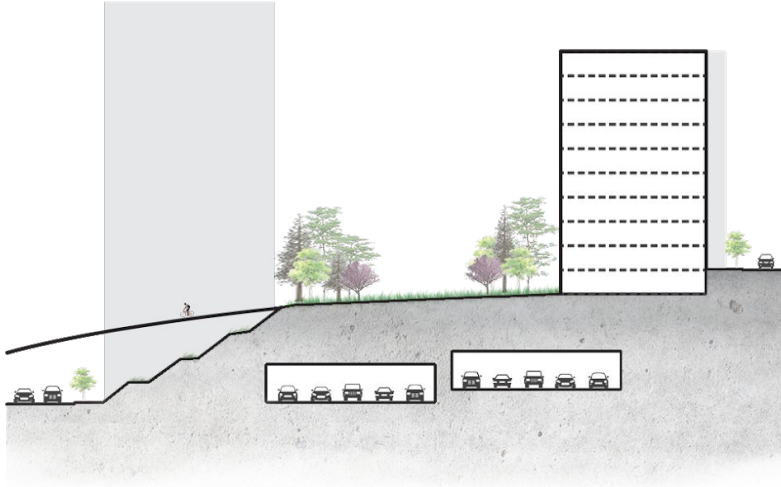
# APPROACH | MEDIUM DENSITY



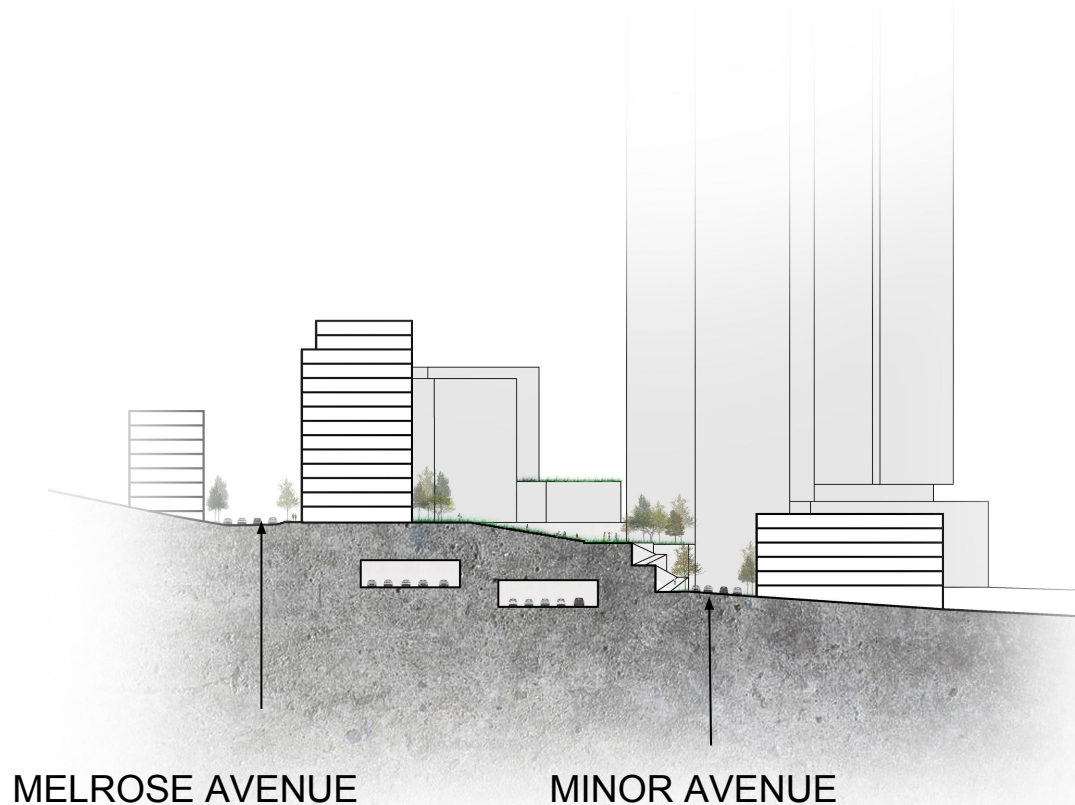




# FRAMEWORK | **Block A Section**

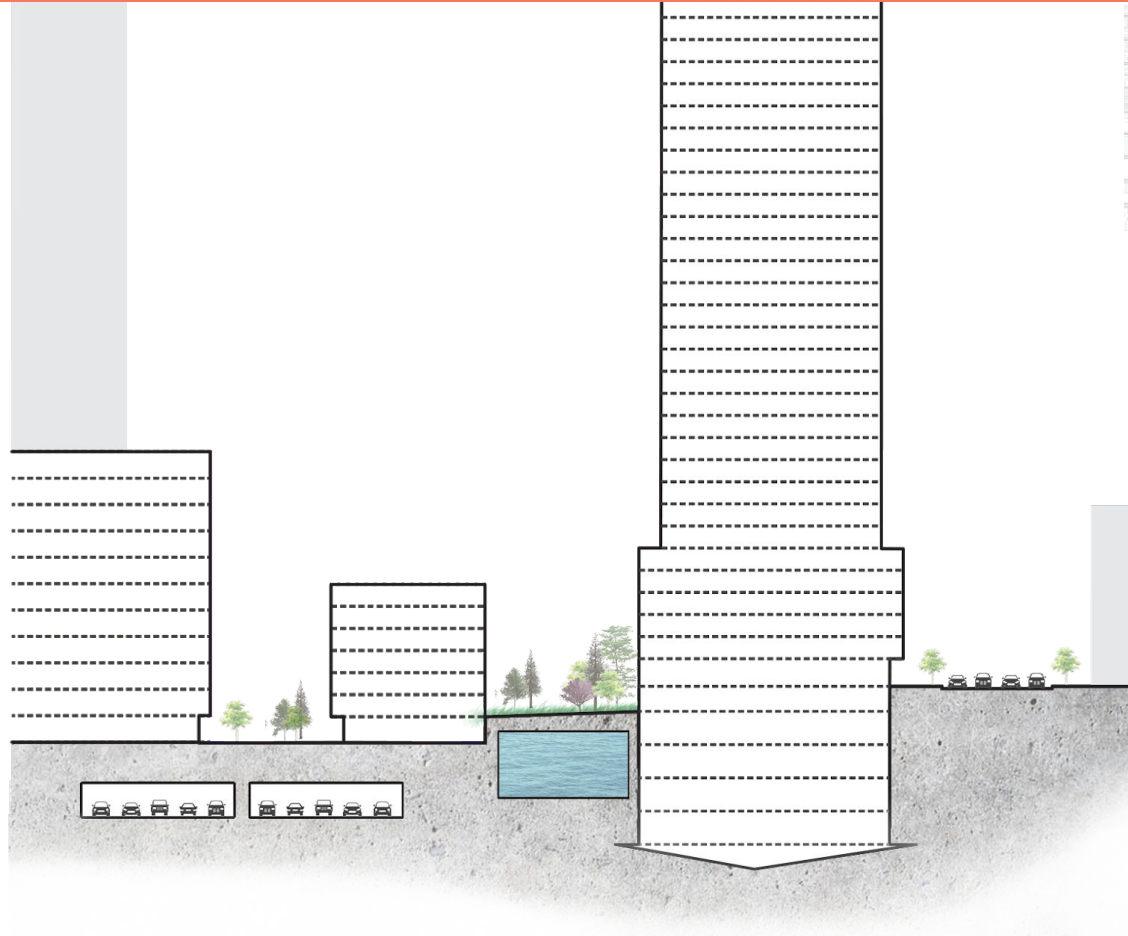


# FRAMEWORK | **Block B Section**

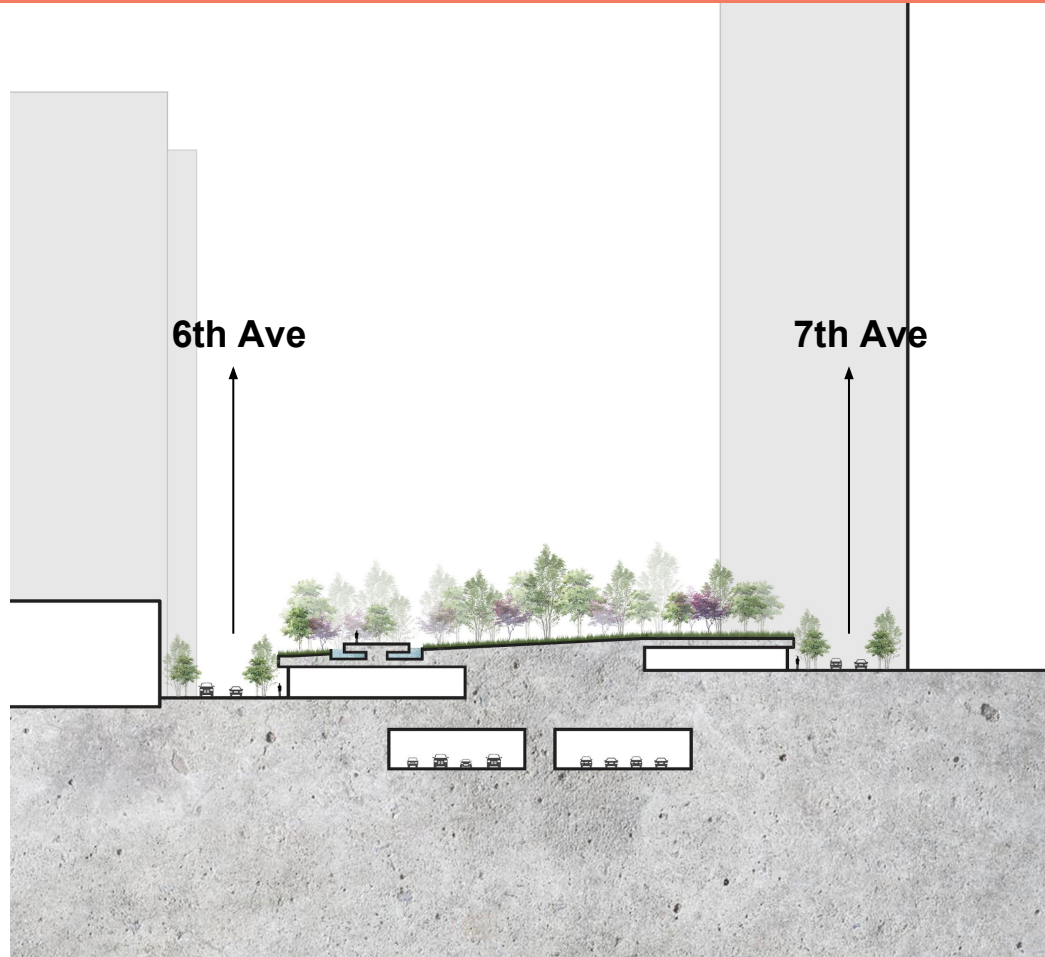




# FRAMEWORK | **Block D/E Section**

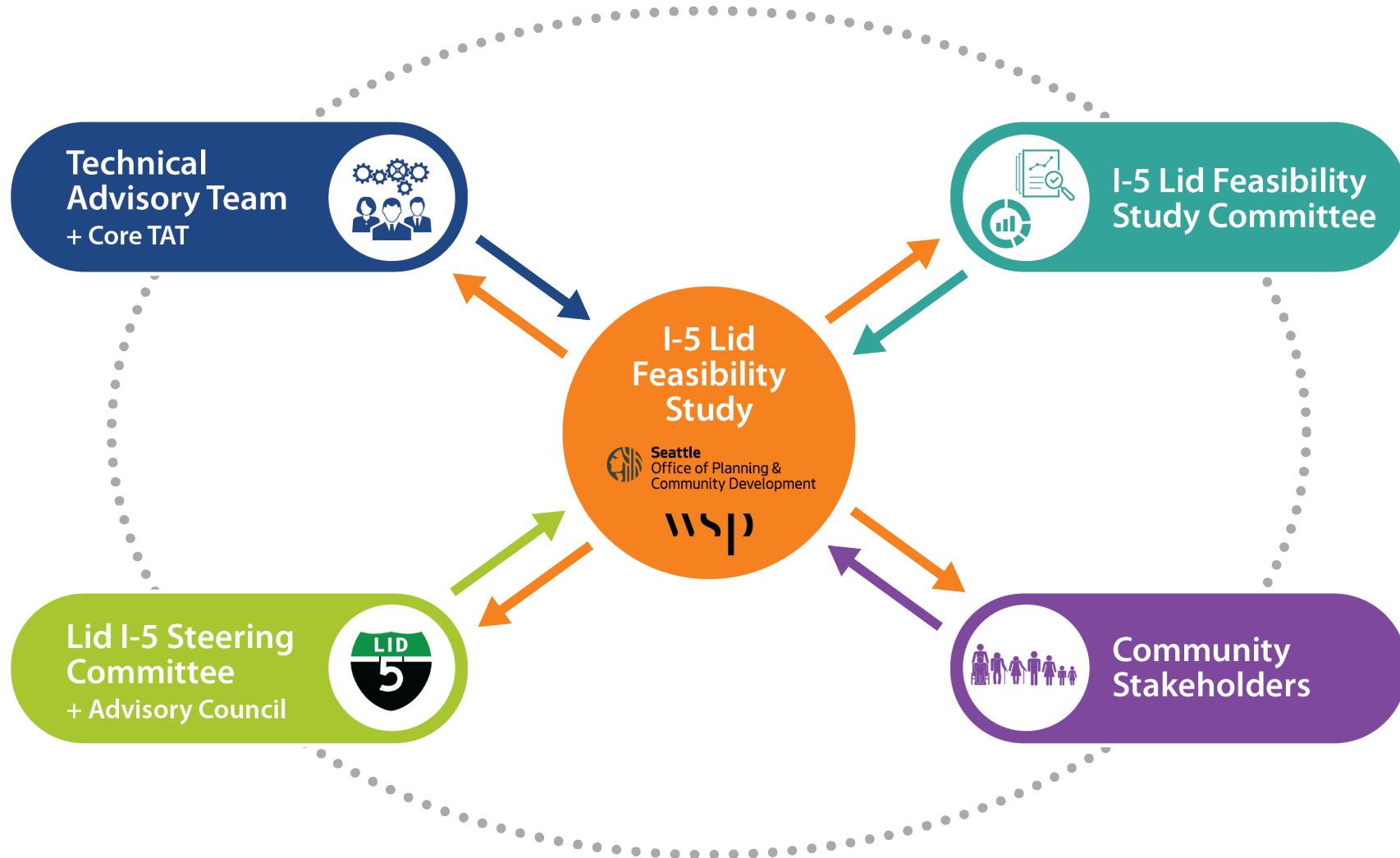


# FRAMEWORK | **Block G Section**





# Study Community and Coordination



# Study Community Collaboration Goals

- Keep stakeholders informed of the LFS process
- Access community knowledge, expertise and information
- Understand community goals and priorities related to the LFS
- Identify long-term opportunities and constraints related to the study area
- Test ideas together



# Study Collaboration and Coordination



# Study Approach

- Evidence-based approach
- Support City's goal to lead with equity



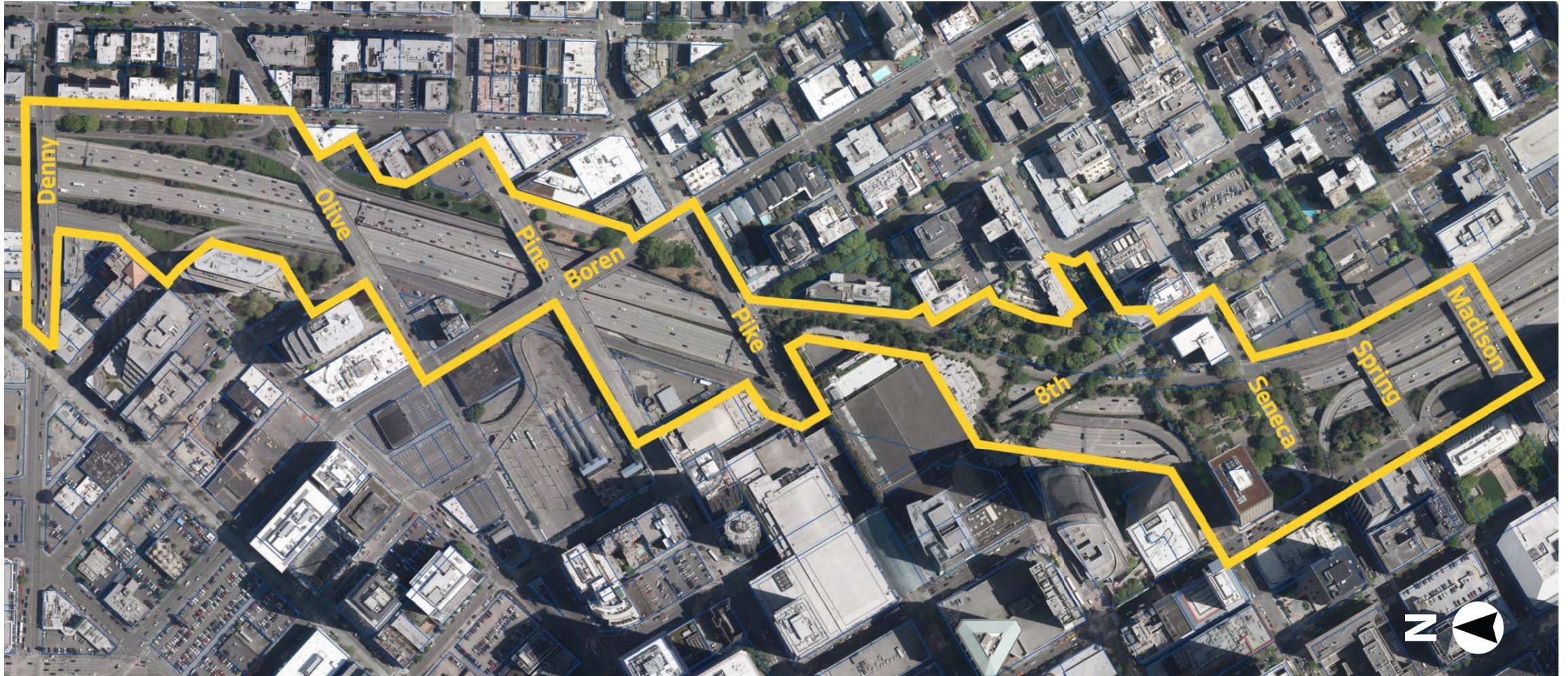
# Study Purpose

- Two overarching goals:
  1. Explore the **range of feasibility**—technically and financially
  2. Create a framework to maximize benefits for all.



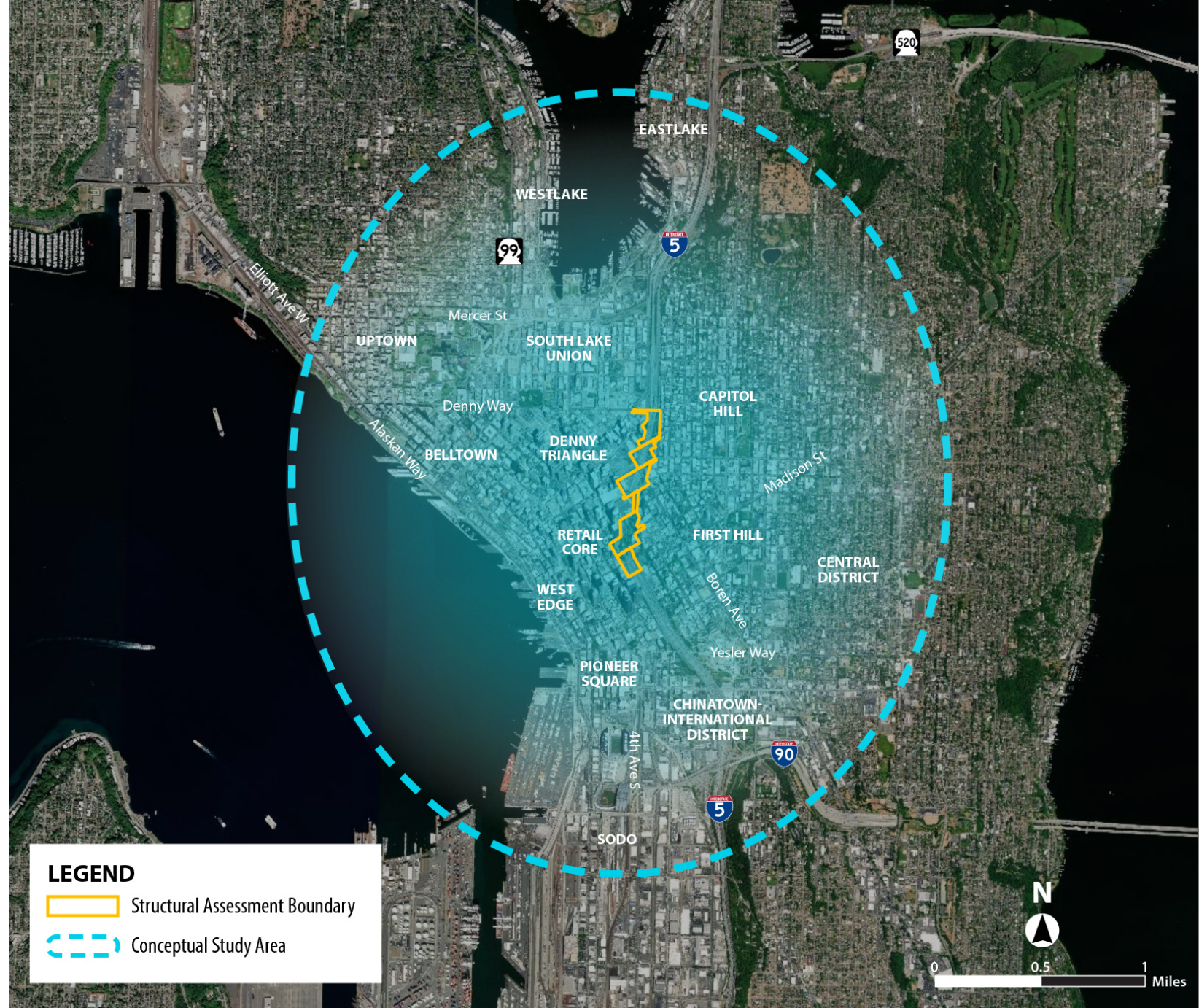


# Structural Assessment Boundary





# Conceptual Study Area



# I-5 Lid Feasibility Study Approach

**KEY STEP 1:**  
Define the Focus

**KEY STEP 2:**  
Scenario Planning

**KEY STEP 3:**  
Scenario Analysis



# I-5 Lid Feasibility Study Approach

## KEY STEP 1: Define the Focus

- What is our approach to the study?
- What are the important assumptions?
- Where can a lid be built?

## KEY STEP 2: Scenario Planning

## KEY STEP 3: Scenario Analysis

# I-5 Lid Feasibility Study Approach

## KEY STEP 1: Define the Focus

- What is our approach to the study?
- What are the important assumptions?
- Where can a lid be built?

## KEY STEP 2: Scenario Planning

- What can a lid support?

## KEY STEP 3: Scenario Analysis



# I-5 Lid Feasibility Study Approach

## KEY STEP 1: Define the Focus

- What is our approach to the study?
- What are the important assumptions?
- Where can a lid be built?

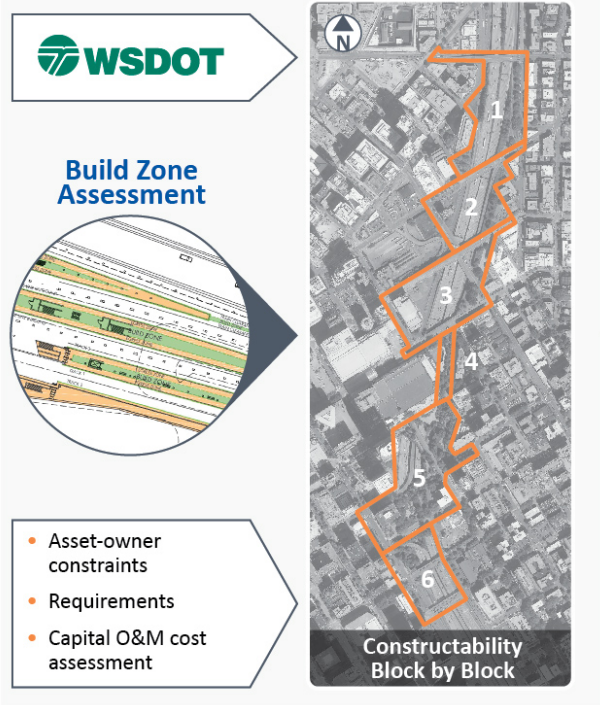
## KEY STEP 2: Scenario Planning

- What can a lid support?

## KEY STEP 3: Scenario Analysis

- How might different scenarios perform?
- What are the next steps?

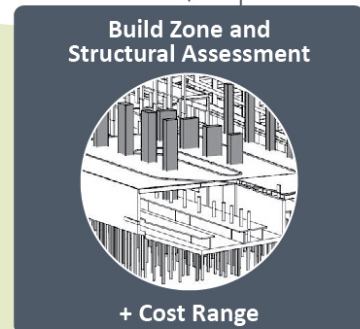
## KEY STEP 1: Define the Focus



## KEY STEP 2: Scenario Planning



## KEY STEP 3: Scenario Analysis



**Sample Feasibility Matrix**

	Lid	Type	Cost	Use
1	✓	A-D	\$\$	1-4
2	✓	A, B	\$	2-4
3		A	\$	1, 2
4	✓	C, D	\$\$\$	1-4
5	✓	B-D	\$\$	3, 4
6		B	\$\$	3
7	✓	A-D	\$	1-4



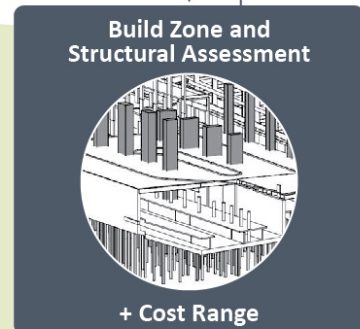
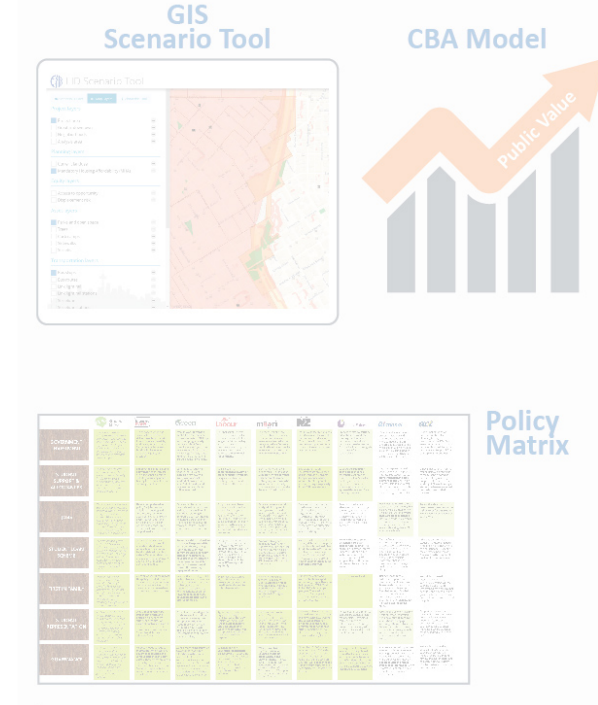
## KEY STEP 1: Define the Focus



## KEY STEP 2: Scenario Planning



## KEY STEP 3: Scenario Analysis



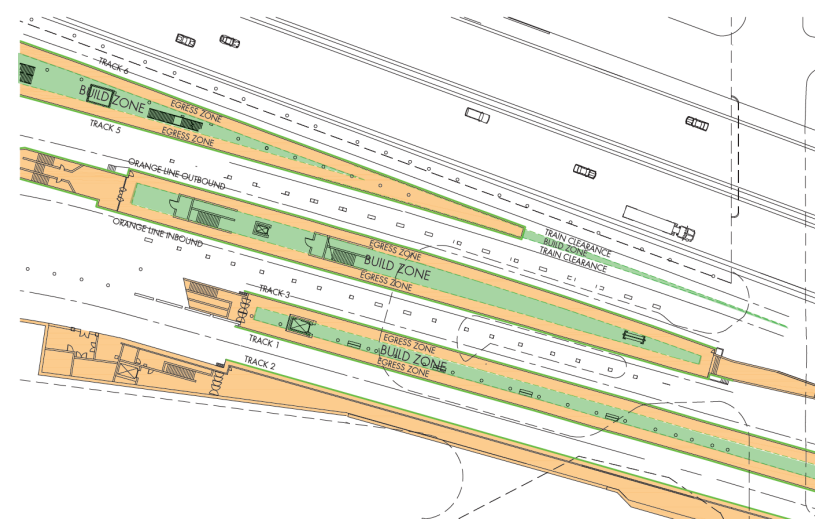
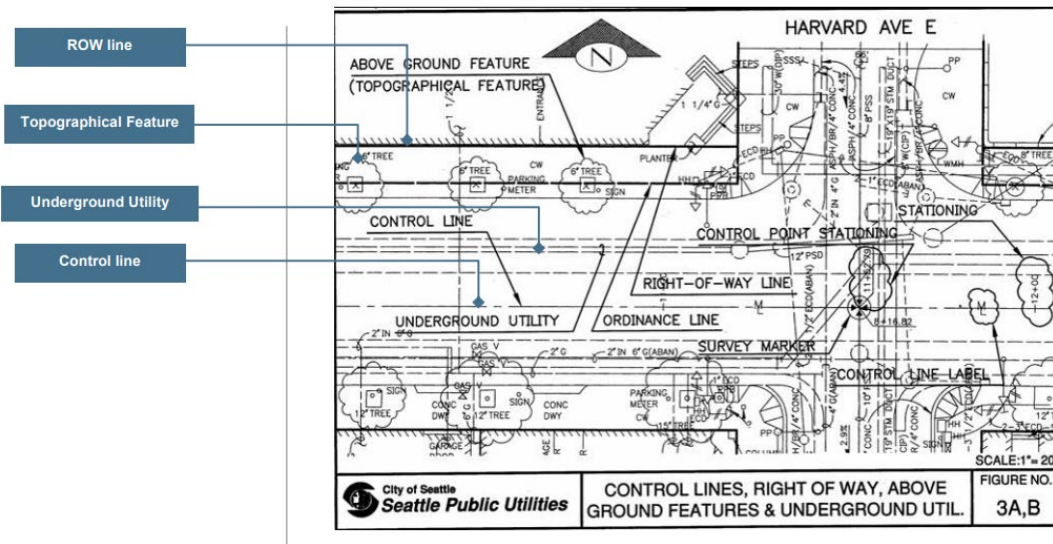
**Sample Feasibility Matrix**

	Lid	Type	Cost	Use
1	✓	A-D	\$\$	1-4
2	✓	A, B	\$	2-4
3		A	\$	1, 2
4	✓	C, D	\$\$\$	1-4
5	✓	B-D	\$\$	3, 4
6		B	\$\$	3
7	✓	A-D	\$	1-4



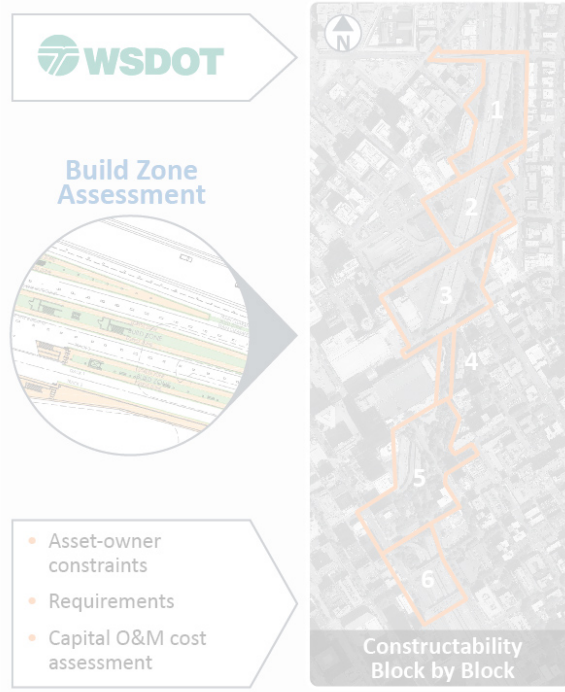


# Preliminary Structural Assessment



*Representative example*

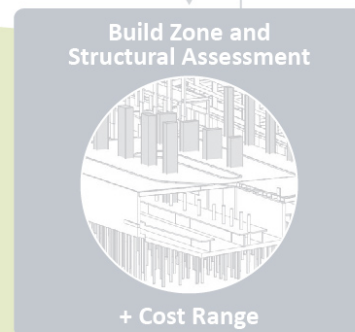
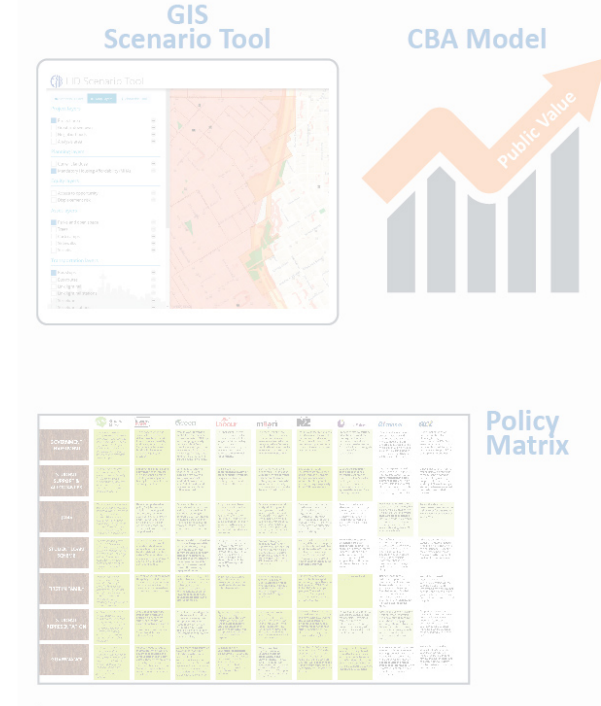
## KEY STEP 1: Define the Focus



## KEY STEP 2: Scenario Planning



## KEY STEP 3: Scenario Analysis



**Sample Feasibility Matrix**

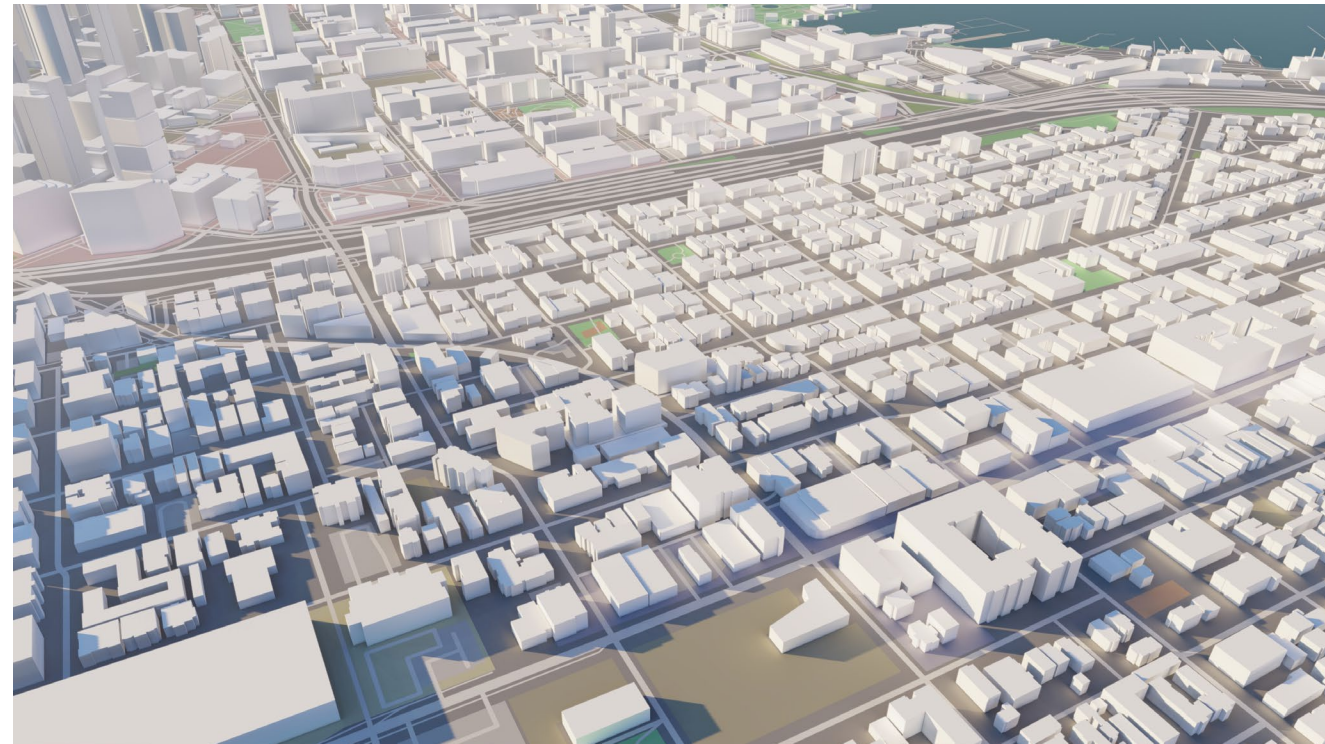
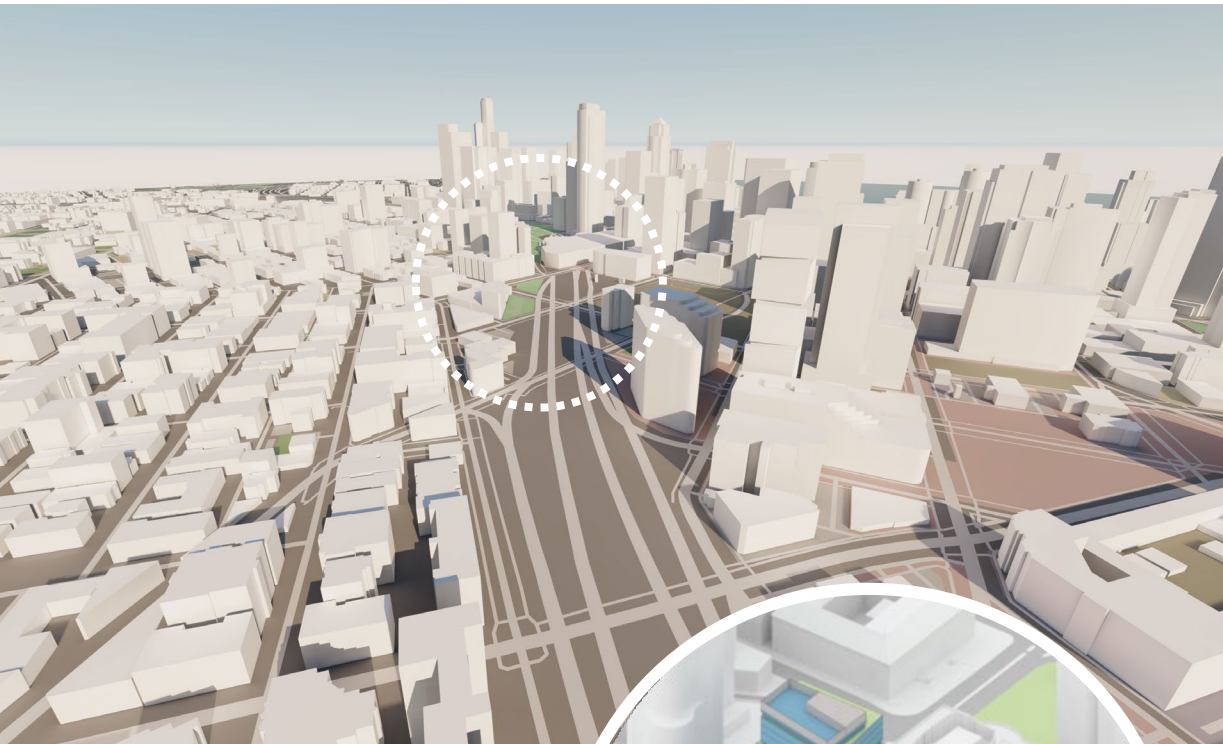
	Lid	Type	Cost	Use
1	✓	A-D	\$\$	1-4
2	✓	A, B	\$	2-4
3		A	\$	1, 2
4	✓	C, D	\$\$\$	1-4
5	✓	B-D	\$\$	3, 4
6		B	\$\$	3
7	✓	A-D	\$	1-4





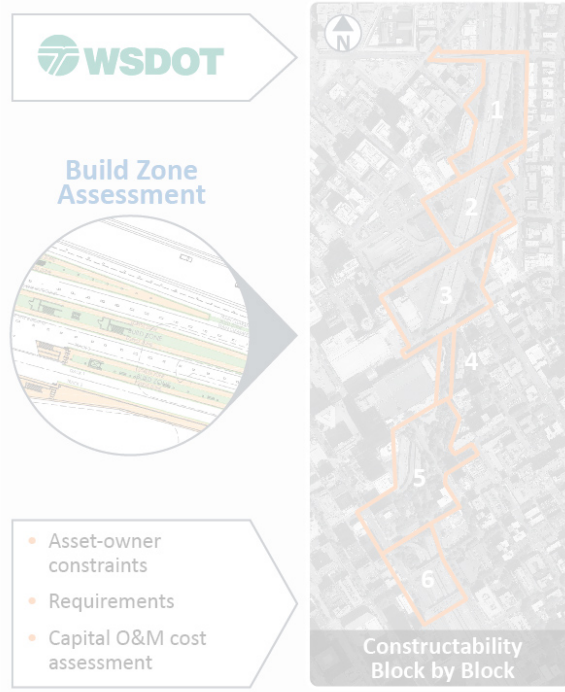
*Representative example*





*Representative example*

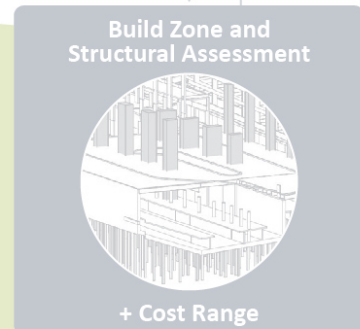
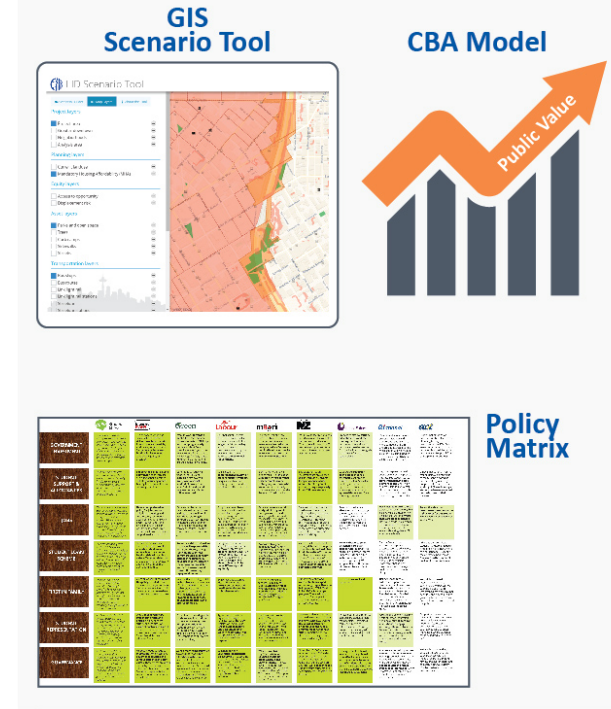
## KEY STEP 1: Define the Focus



## KEY STEP 2: Scenario Planning



## KEY STEP 3: Scenario Analysis

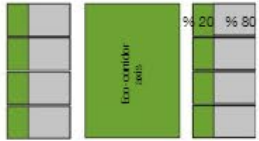


**Sample Feasibility Matrix**

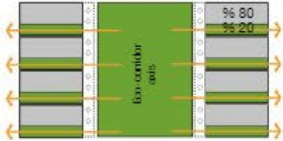
	Lid	Type	Cost	Use
1	✓	A-D	\$\$	1-4
2	✓	A, B	\$	2-4
3		A	\$	1, 2
4	✓	C, D	\$\$\$	1-4
5	✓	B-D	\$\$	3, 4
6		B	\$\$	3
7	✓	A-D	\$	1-4







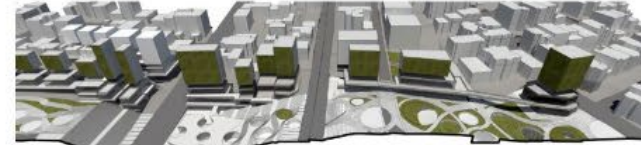
Distribution of open indoor and out door spaces in adjacent lots of corridor



Strengthen the physical and visual connections with the surrounding buildings



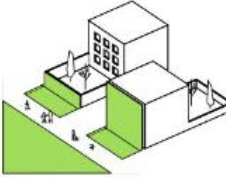
Create urban terraced with step down surrounding buildings



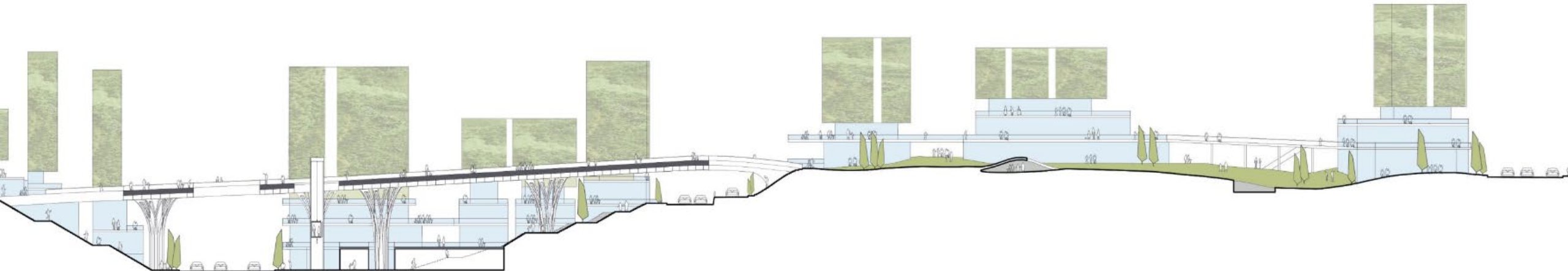
The public plaza under the corridor



Eco-corridor promenade above east-west direction above the public plaza



As building façades are inseparable part of an urban landscape project, green façade is proposed to conceptually integrate the landscape with the fronting façades.



*Representative example*



3/1

4/1

7/1

10/1

1/15  
2020

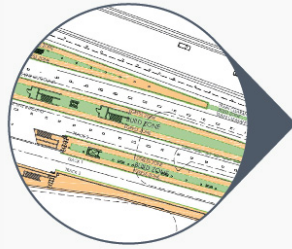
4/30

Work Plan

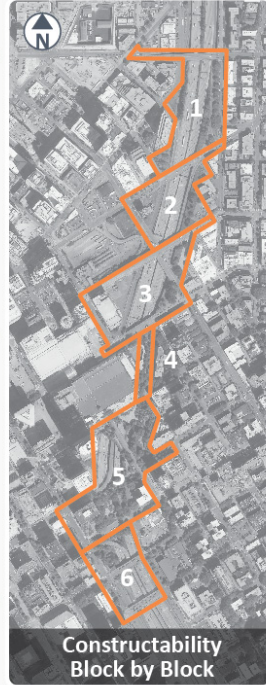
## KEY STEP 1: Define the Focus



### Build Zone Assessment



- Asset-owner constraints
- Requirements
- Capital O&M cost assessment



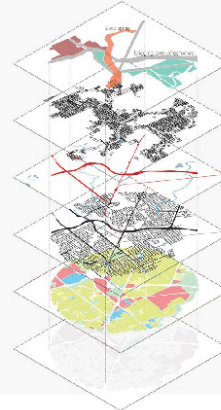
Constructability  
Block by Block

## KEY STEP 2: Scenario Planning

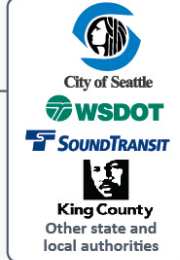
### Community and Stakeholders



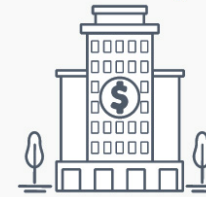
### Layered Urban Analysis



### Partner Agencies

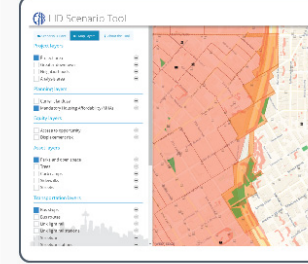


### Real Estate and Development Market Analysis



## KEY STEP 3: Scenario Analysis

### GIS Scenario Tool



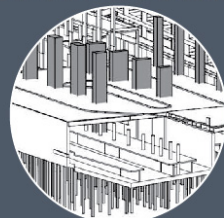
### CBA Model



### Policy Matrix



### Build Zone and Structural Assessment



+ Cost Range

### Sample Feasibility Matrix

	Lid	Type	Cost	Use
1	✓	A-D	\$\$	1-4
2	✓	A, B	\$	2-4
3		A	\$	1, 2
4	✓	C, D	\$\$\$	1-4
5	✓	B-D	\$\$	3, 4
6		B	\$\$	3
7	✓	A-D	\$	1-4

### Implementation Strategy



Scenarios

I-5 Lid  
Feasibility  
Study Approach

Inclusive Communication and Engagement Process  
Iterative Technical, Urban, Social and Economic Analysis

# Discussion

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An aerial photograph of a multi-lane highway in Seattle, likely I-5. The highway has several lanes in both directions, with cars and trucks visible. In the background, a dense city skyline with various skyscrapers is visible under a clear blue sky. A large, bold, white text "THANK YOU" is overlaid on the left side of the image.

# THANK YOU

**I-5 Lid Feasibility Study  
Overview and Orientation**  
March 26, 2019  
Seattle City Hall, Bertha Landes Room