GREENER BELLTOWN : BLUER SOUND

City / Nature for Climate Adaptation

Scan | Design Master Studio 2017

TODAY'S SCHEDULE

3:00 - 3:30 pm	**Introductions** *Nancy Rottle, Professor, Landscape Architecture* *TA: Tatyana Vashchenko, MLA Candidate* **Context Presentation** *Jess Vetrano, MLA Candidate* *Sophie Krause, MLA Candidate*
3:30 - 3:50	**Refreshments** **Gallery Walk**
3:50 - 5:50	**Small Group** **Reviews**
5:50 - 6:00	**Wrap up**

2017 Studio Schedule

September 1 - 17	**Study Tour** Copenhagen + Malmö Bornholm
September 27 - November 12	**Copenhagen Precedents** **District Analysis & Frameworks** **Site Scale / Schematic Design**
November 13	**Mid-review / Workshop**
November 14 - December 11	**Site Scale / Schematic Design**
December 11	**Final Review**

GREENER BELLTOWN: BLUER SOUND

City / Nature for Urban Resilience

Urban Greening

Stormwater Mitigation

Social Amenity

GREENER BELLTOWN : BLUER SOUND
City / Nature for Climate Resilience

2017 Studio Objectives

explore urban design strategies for climate adaptation and urban nature

working at various scales to **cultivate social resilience**, **biodiversity, human health**, and artfully integrate water into the cityscape for **hydraulic function and human delight**

2030 DISTRICT GOALS

Manage the combination of stormwater and potable water use to 50% below the District baseline

50% in Belltown is about

67 million gallons

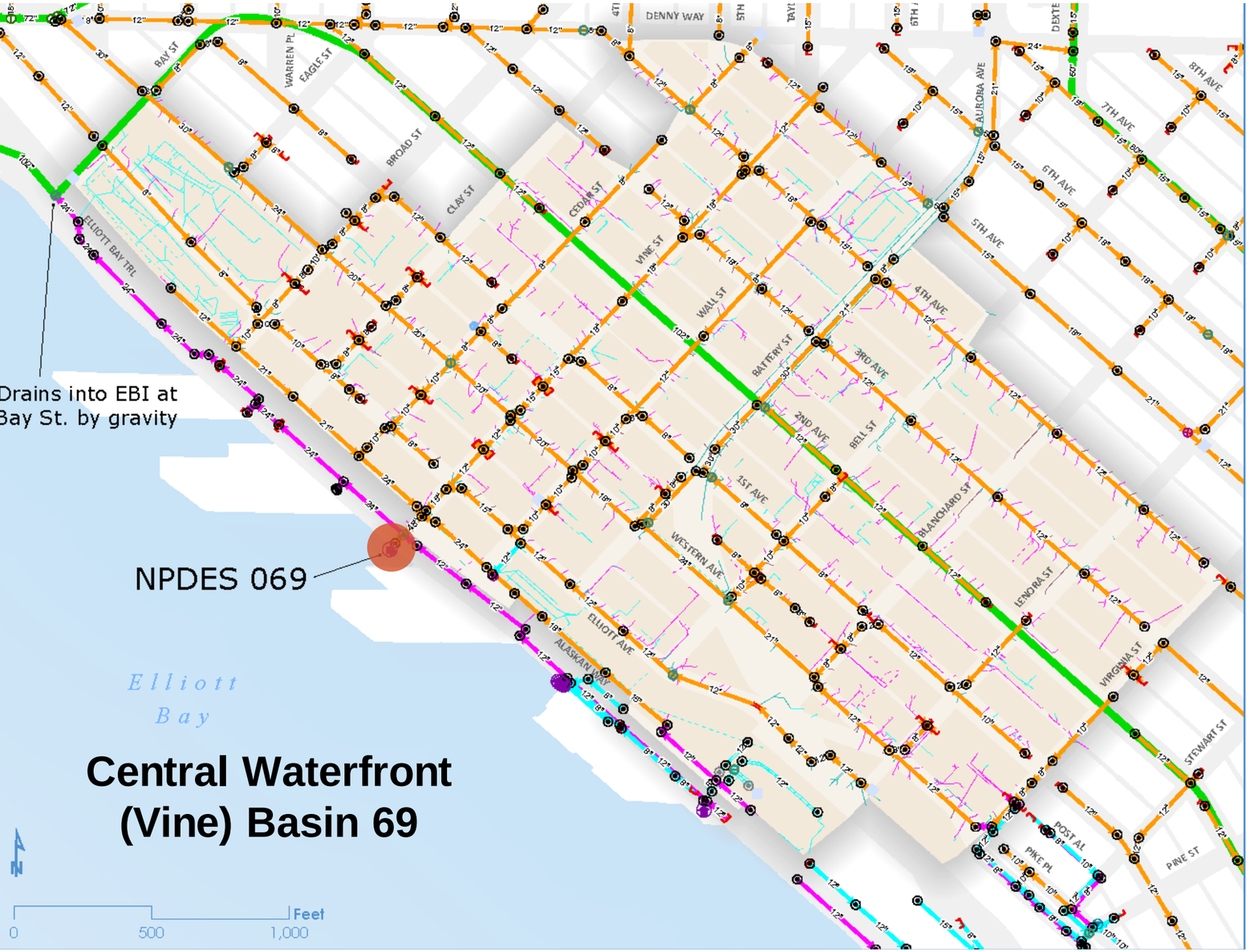
PRECIPITATION
161,300,000 GAL/YR

STORMWATER RUNOFF

124,500,000 GAL/YR
(22.8% Reduction;
5.8% additional
stormwater reduction)

2030 DISTRICT GOALS

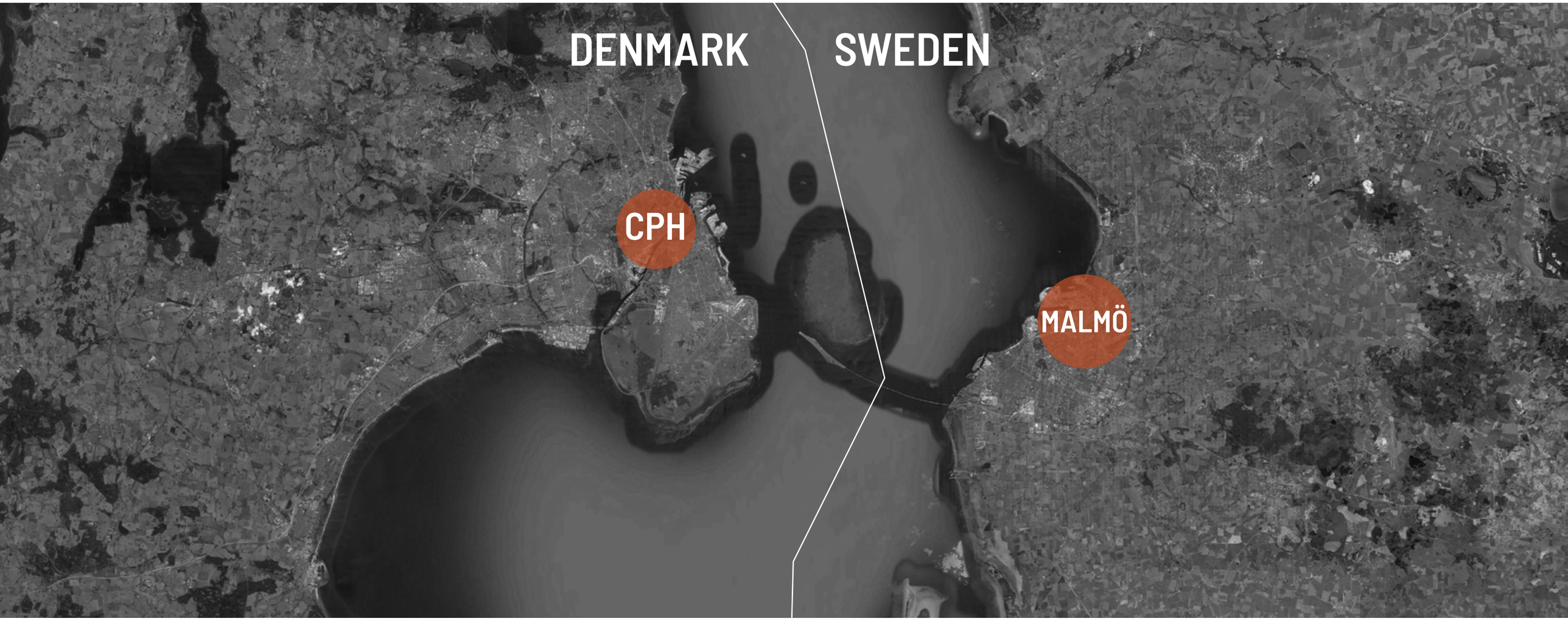
VINE STREET BASIN (165 ACRES)
80% GREEN ROOF
100% OF ALL NON-ROW PROPERTY



SPU STORMWATER STORAGE GOALS:

130,000 GALLONS

STUDY TOUR: 09/01 - 09/17



GREENER BELLTOWN : BLUER SOUND

City / Nature for Climate Resilience

The Trip: Copenhagen + Malmö

Cycling

Office Visits/Tours

Lectures

The Trip: Stormwater Management

Lindevangsparken

Taasinge Plads

Bo01

Augustenborg

Skt. Annae Plads

Israel Plads

Norreport Station

The Trip: Schulze + Grassov

International Work and
“People Parameters for Public Space”

The Trip: Green Solutions House, Bornholm

Living Machines

Constructed Wetlands

Green Walls

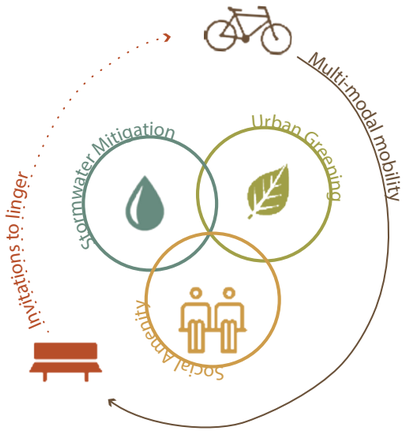
Renewable Energy

PRECEDENT STUDIES

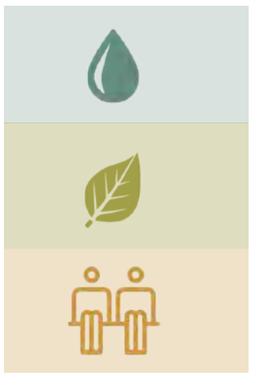
Precedent + Terrain Study

Scan|Design Master Studio 2017

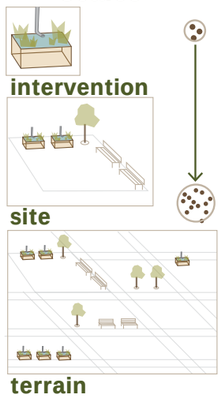
Urban Nature for Climate Resilience



Integrated Function



Scales



Due Dates + Deliverables

September 1: assignment given out

September 4: deadline to submit precedent site choices (one site will be assigned, choose 3 in order of preference and submit by email)

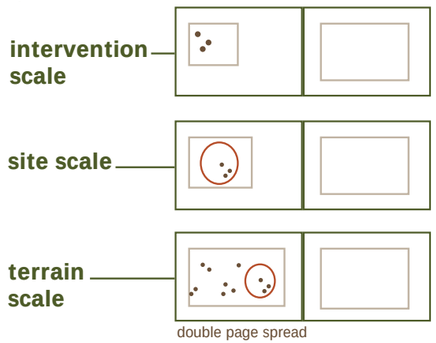
September 6: groups of 2 assigned to each site /start site and terrain research

September 16: final day to finish on-site research

October 2: in-class presentations /book pages due

in Copenhagen:
diagram, sketch, observe, interview, photograph, research, share on Instagram

in Seattle:
finalize case study, assemble book pages using specified template, present your research in 3-4 spreads total



double page spread

Precedent + Terrain Study

this assignment challenges you to move beyond the site and dig deeper into precedent studies through shifting scales and perspectives.

1.Begin by choosing your preferred sites from the list and submit these preferences by e-mail to sdstudio@uw.edu. You will receive your site assignment by September 6 .

2.When you visit your site - start by choosing a small scale intervention that exhibits one or more of the integrated site goals. Closely document its form and function.

3.Then move to the site scale, focused on how the integrated goals manifest - how are they interwoven with the site's forms and functions? Note movement through space, and where people are lingering. What are the key design elements of the site, and how are they working?

4.Next, start exploring the streets, sidewalk, parks, plazas and gardens around your site - documenting interventions that resonate with integrated goals and site intervention you have identified to develop a sense of the terrain around your site. Record how these contribute to stormwater, urban greening, social amenity and movement through space.

5.Keep track of how the integrated goals can be experienced at a range of scales through photos (social media #tags), sketches and diagrams - and any other visual media you feel compelled to use.

6.Compile your research into 3-4 double paged book spreads. Organize each page thoughtfully, preferably in order of magnitude (see back).

7. Turn in book pages and present research findings to the class.

see back for due dates + deliverables

Copenhagen Precedent

SUND Nature Campus Park

Enghaveparken Cloudburst Plan

Novo Nordisk Nature Park

OsterGRO

Skt. Kjeld's Plads

Norreport Station

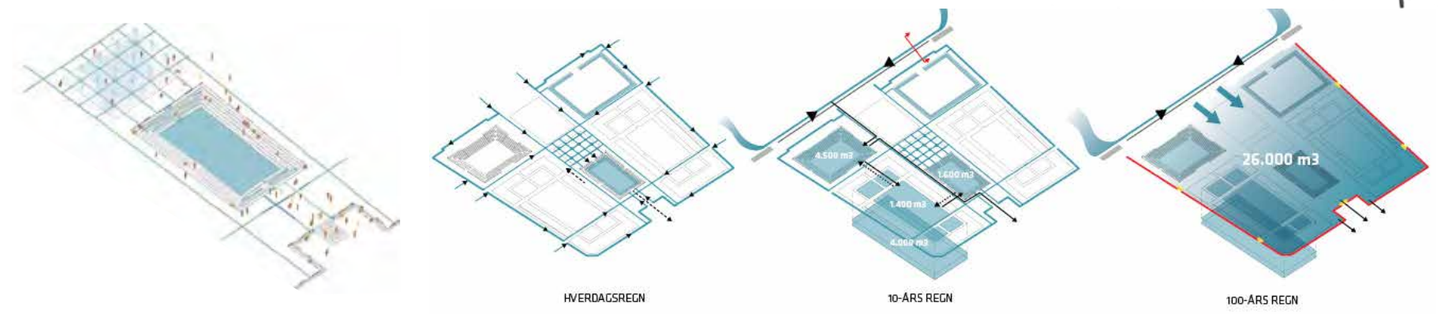
Hans Tavsen's Park

Biblioteket Plaza

Lindevangsparken

Israel Plads

SEB City Dunes



Copenhagen Precedents

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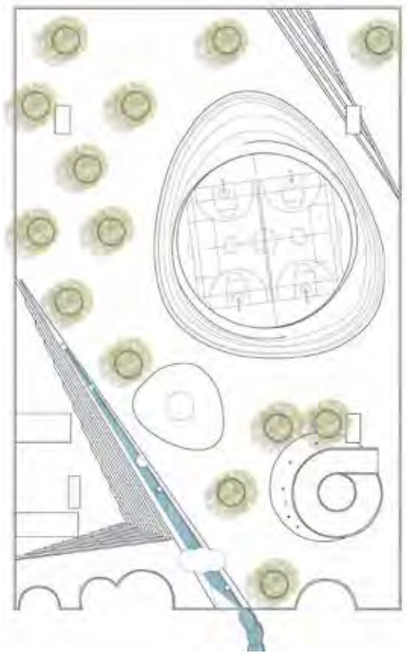

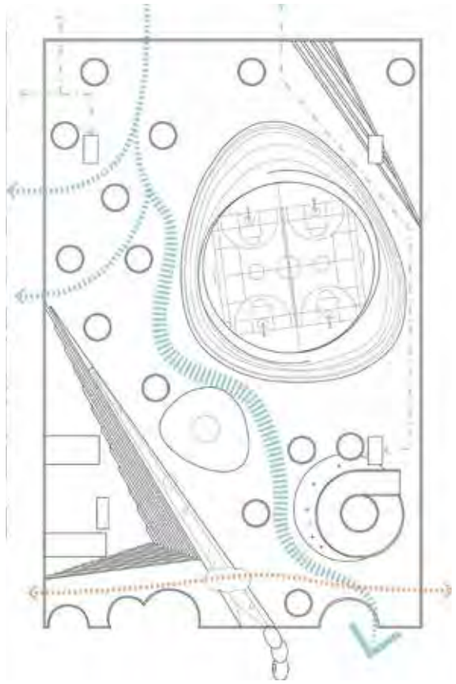

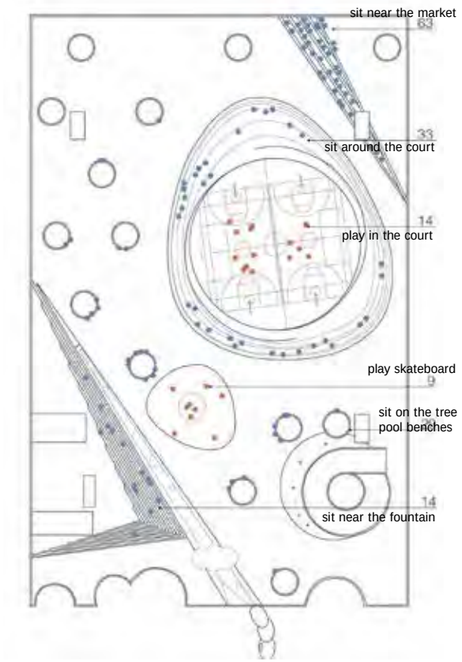

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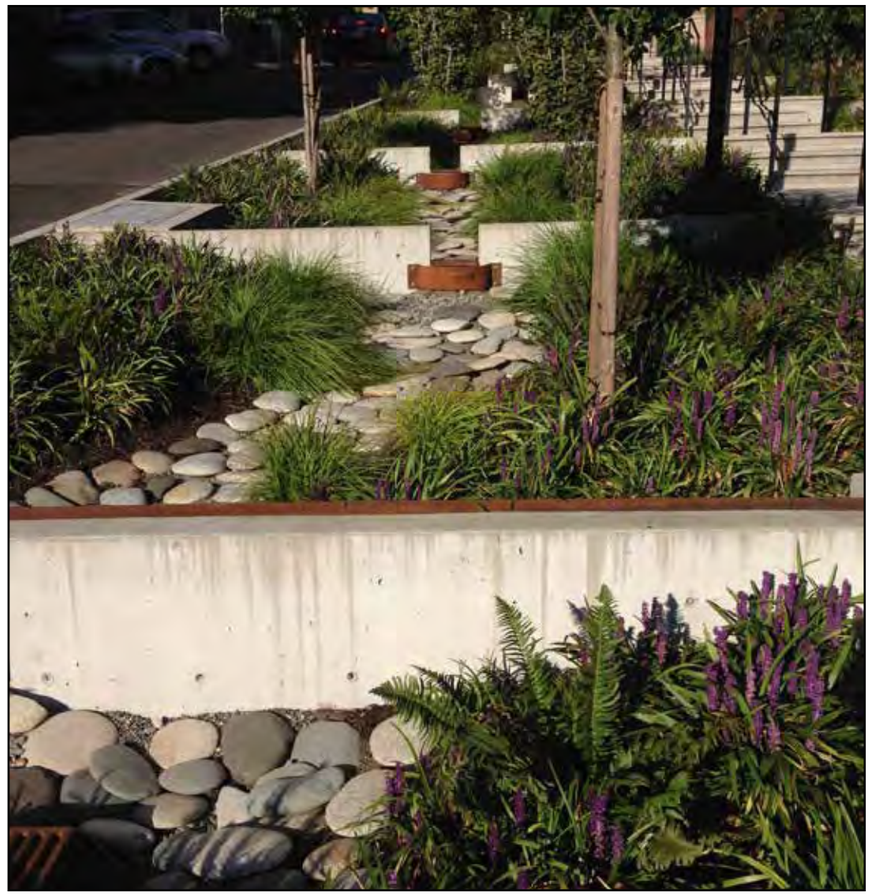
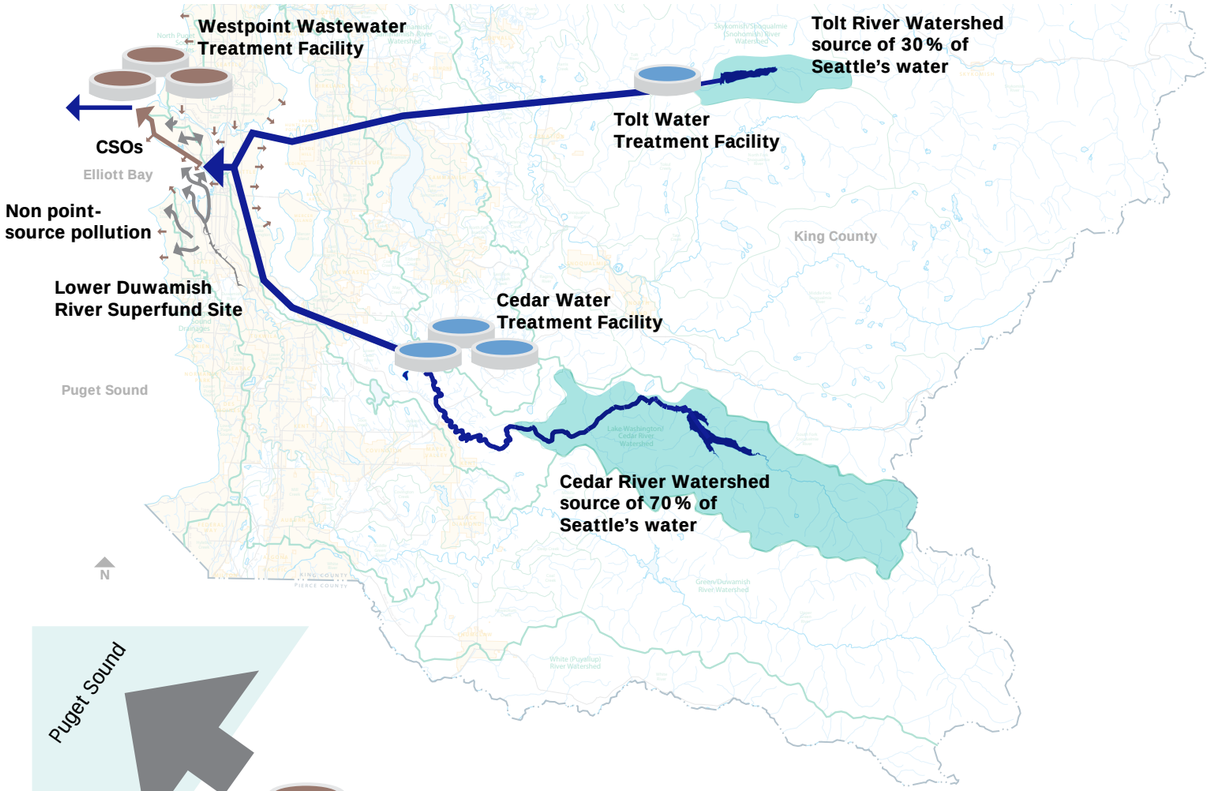
DISTRICT ANALYSIS

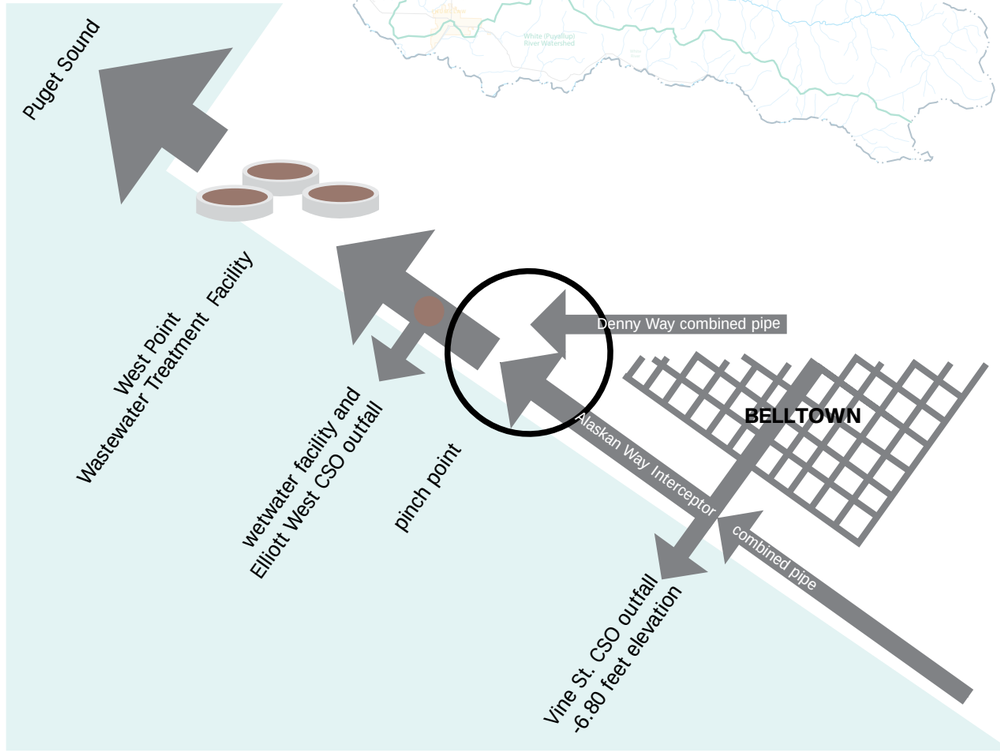
STUDY AREA: Belltown, Seattle

STUDY AREA: Belltown District

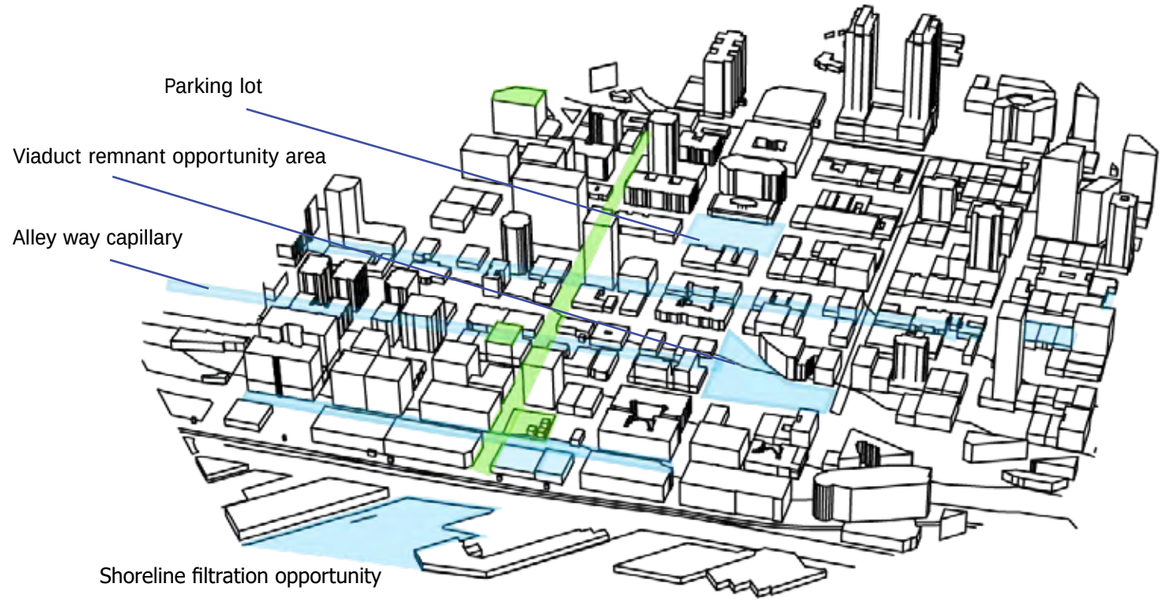


WATER





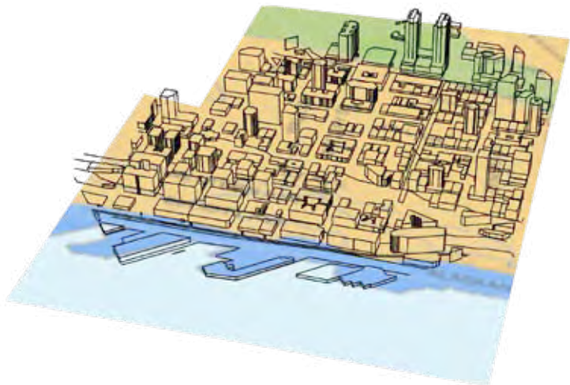
DISTRICT ANALYSIS



Infiltration Feasibility

Potentially suitable for infiltrating GSI Suitable for non-infiltrating GSI

Soil Infiltration Potential

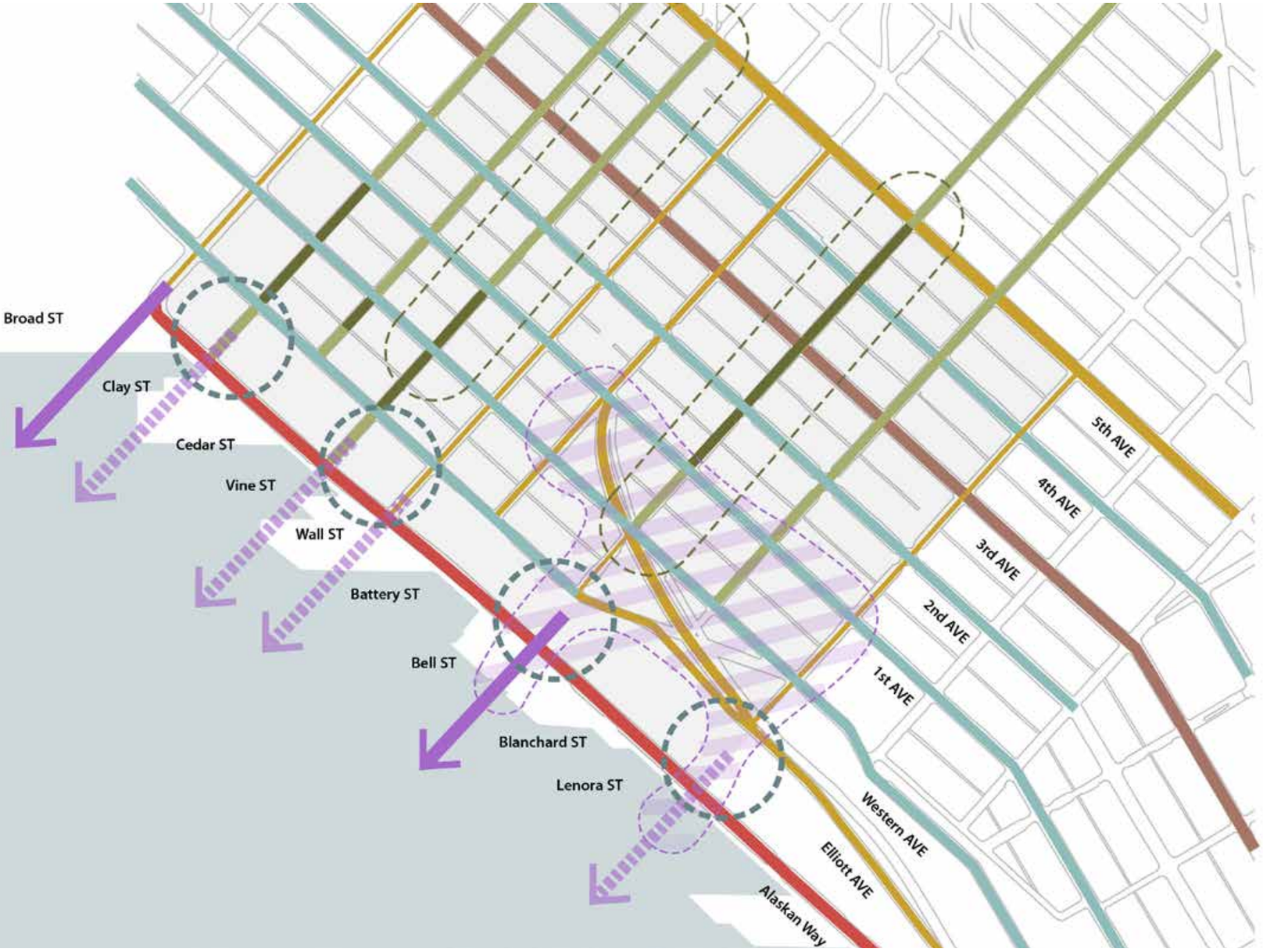


High Medium Groundwater table near surface

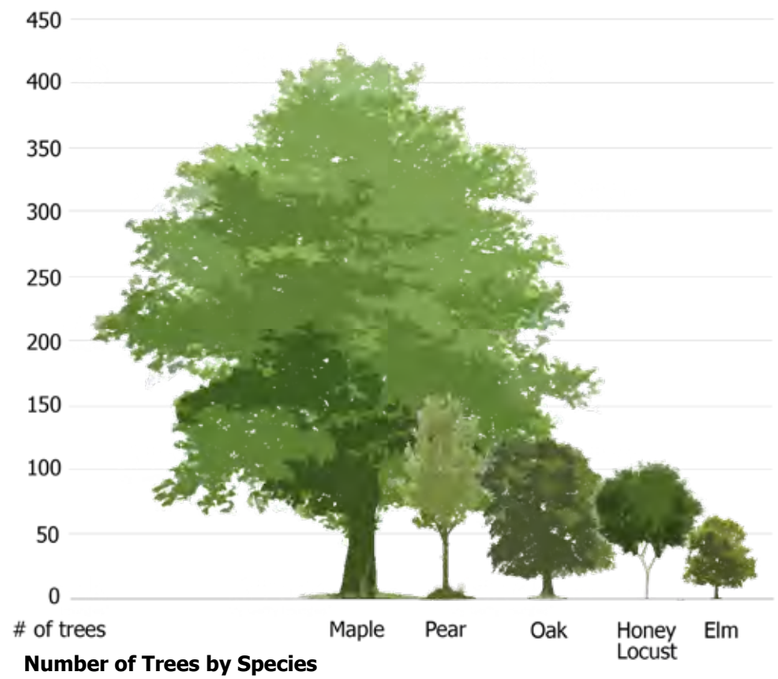
MOBILITY


Vine St


nd Ave


Broad ST
Clay ST
Cedar ST
Vine ST
Wall ST
Battery ST
Bell ST
Blanchard ST
Lenora ST
5th AVE
4th AVE
3rd AVE
2nd AVE
1st AVE
Western AVE
Elliott AVE
Alaskan Way

ECOLOGY



Number of Trees by Species

Yearly Ecological Impact Of Trees In Belltown

1,528 trees

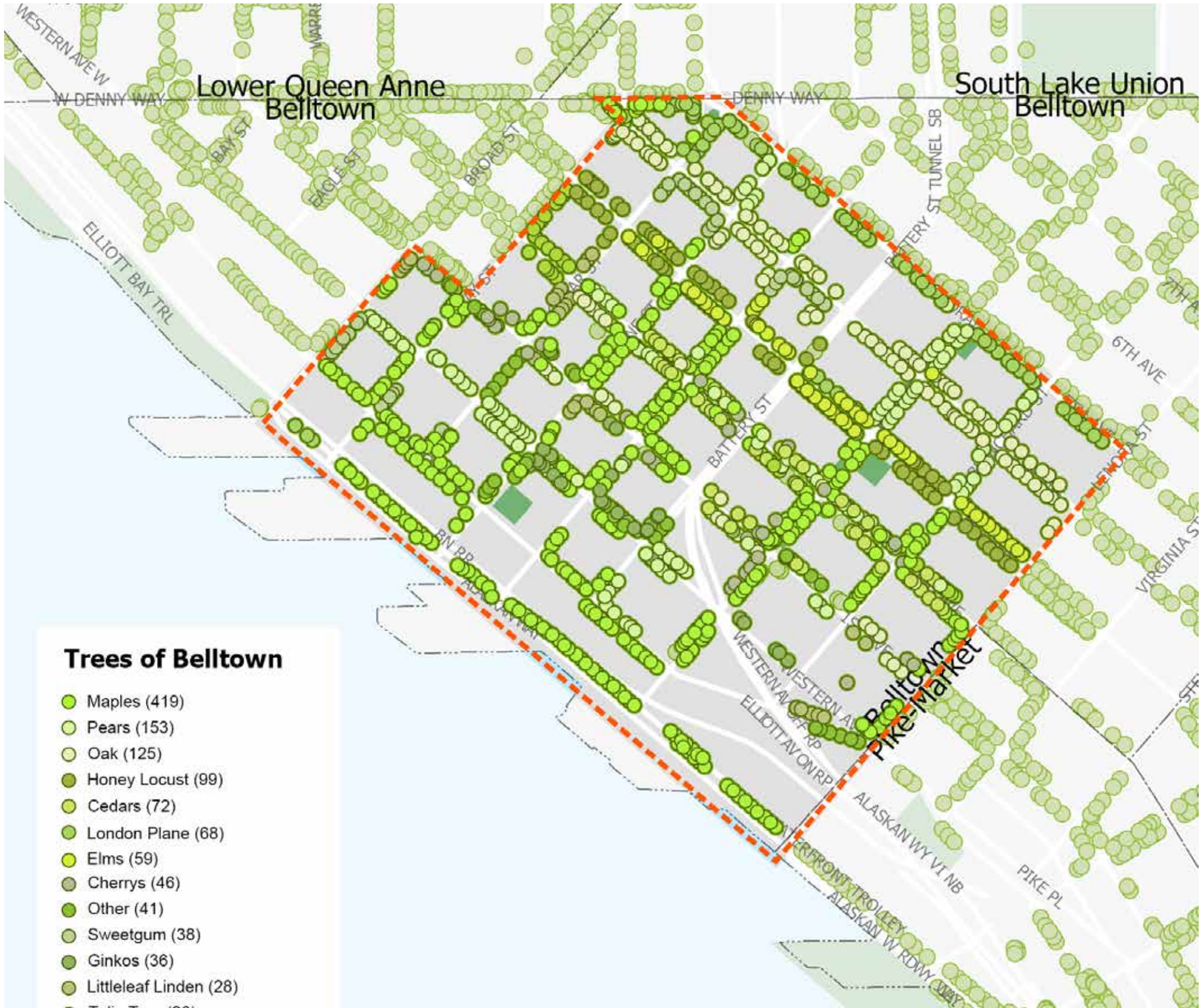
304,363.05 lbs of CO2 sequestered

816,826 gal of water conserved

38,095.23 kwh energy conserved

$28,244.51 saved

DISTRICT ANALYSIS



Trees of Belltown

- Maples (419)
- Pears (153)
- Oak (125)
- Honey Locust (99)
- Cedars (72)
- London Plane (68)
- Elms (59)
- Cherrys (46)
- Other (41)
- Sweetgum (38)
- Ginkos (36)
- Littleleaf Linden (28)
- Tulip Tree (26)

SOCIAL

DENSITY OF BELLTOWN:
19,025
/ square mile

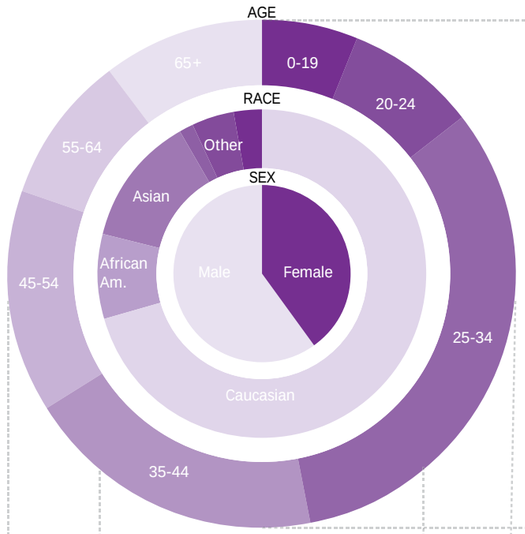
DENSITY OF SEATTLE:
8,161
/ square mile

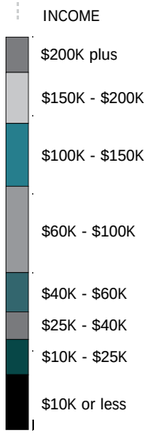
Belltown is the 6th fastest growing neighborhood in America

8,109
Households

100+
Restaurants, bars and Cafes

50+
Major employers

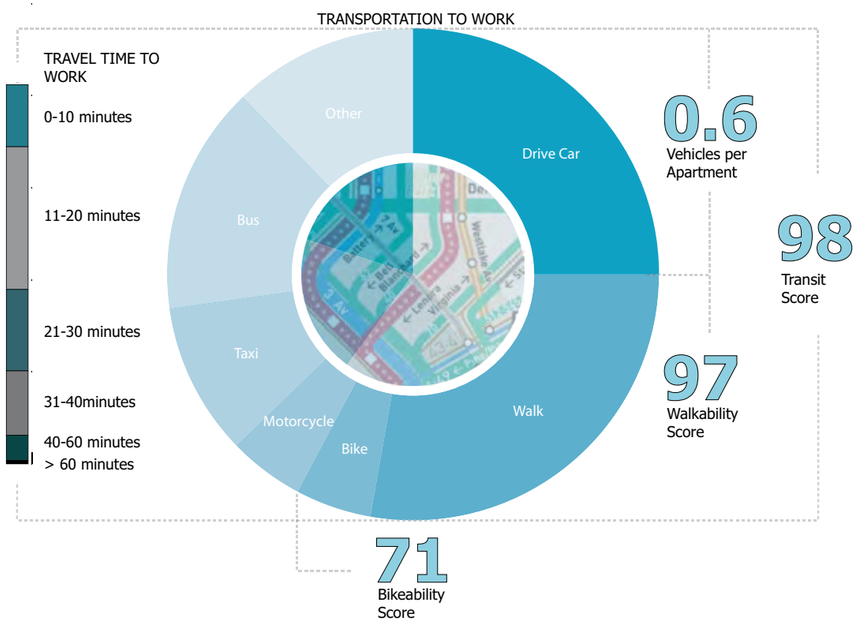




22.5% born in Washington
18.1% Non US Citizens

Total Population of Belltown ~ 12,000

16%
Family Households



0.6
Vehicles per Apartment

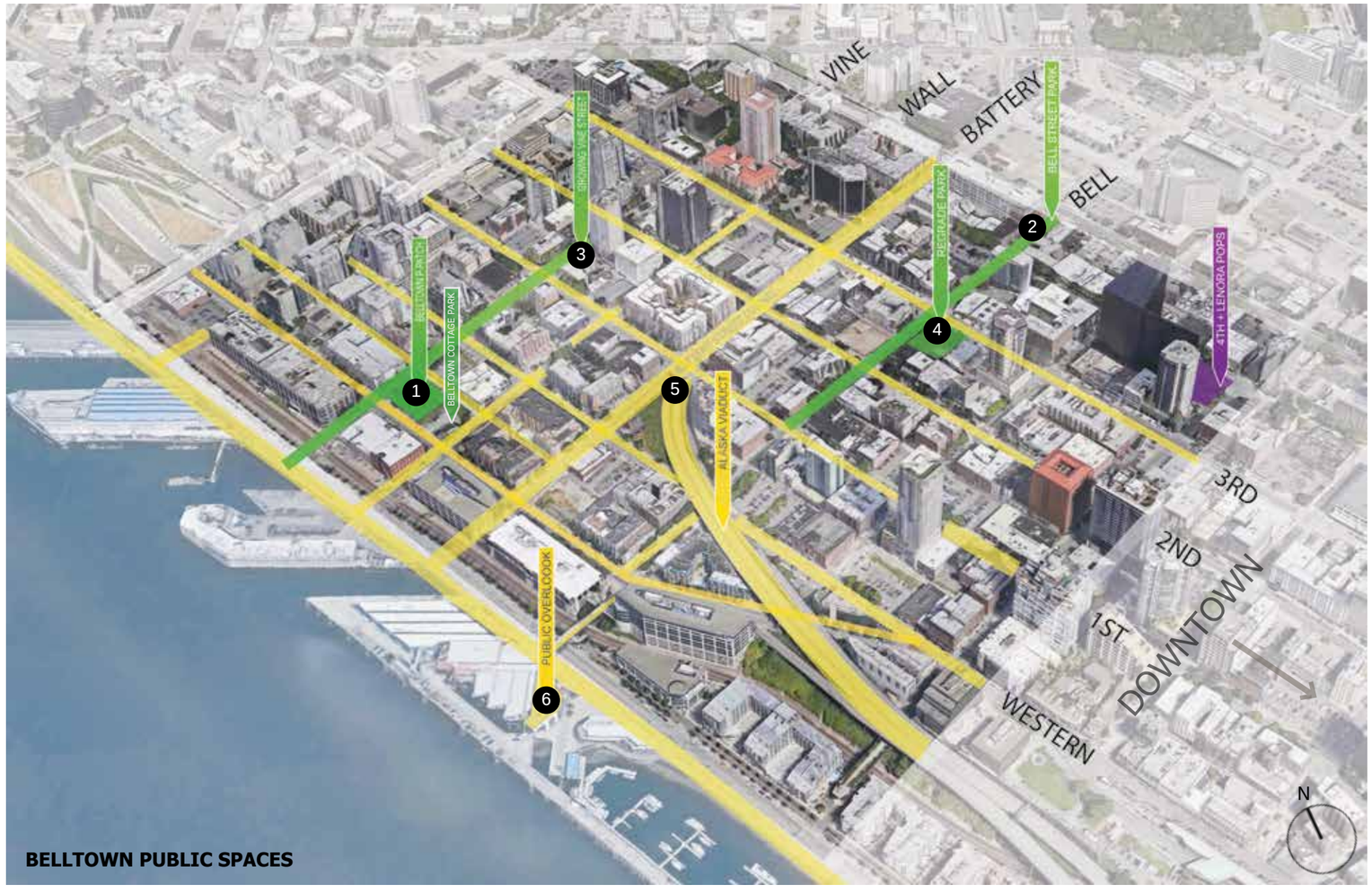
98
Transit Score

97
Walkability Score

71
Bikeability Score

DISTRICT ANALYSIS

PUBLIC GREEN SPACE
PUBLIC RIGHT OF WAY
PRIVATELY OWNED PUBLIC SPACE



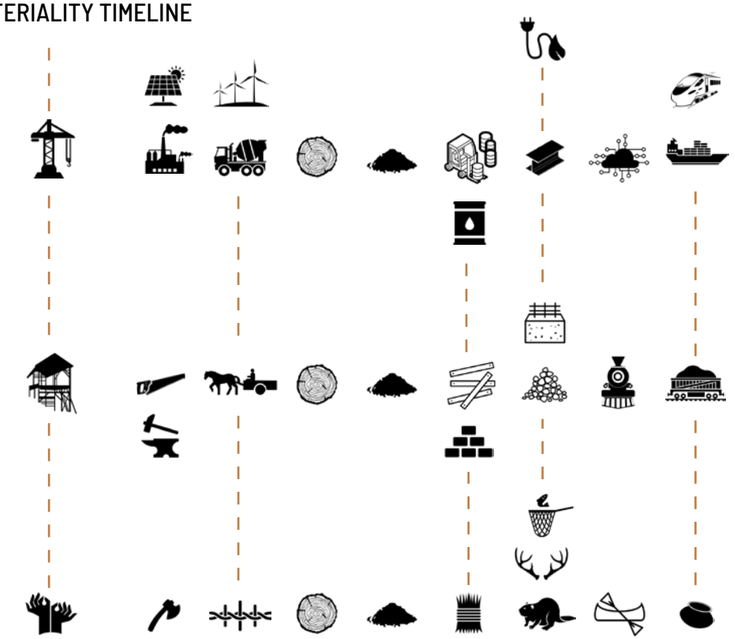
BELLTOWN PUBLIC SPACES

Drawings: Rachel Wells

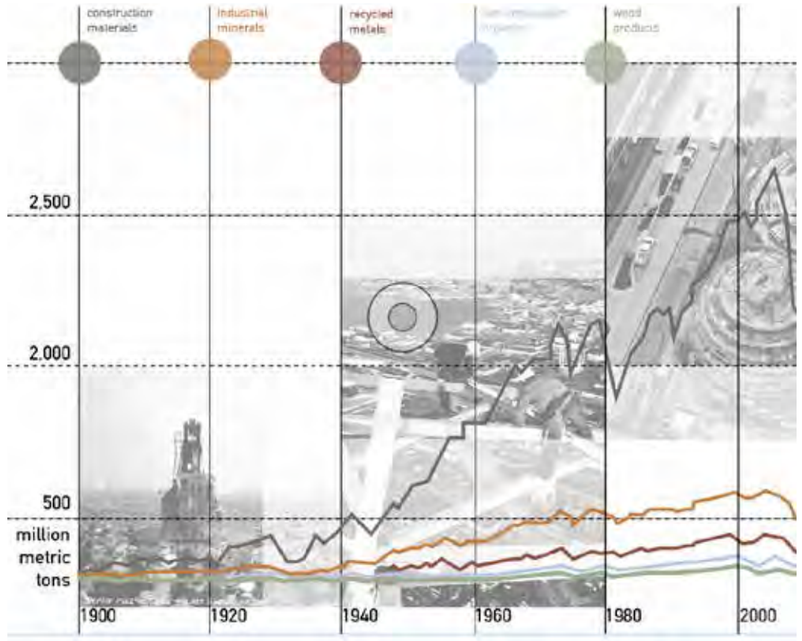
DEEP CONTEXT

DISTRICT ANALYSIS

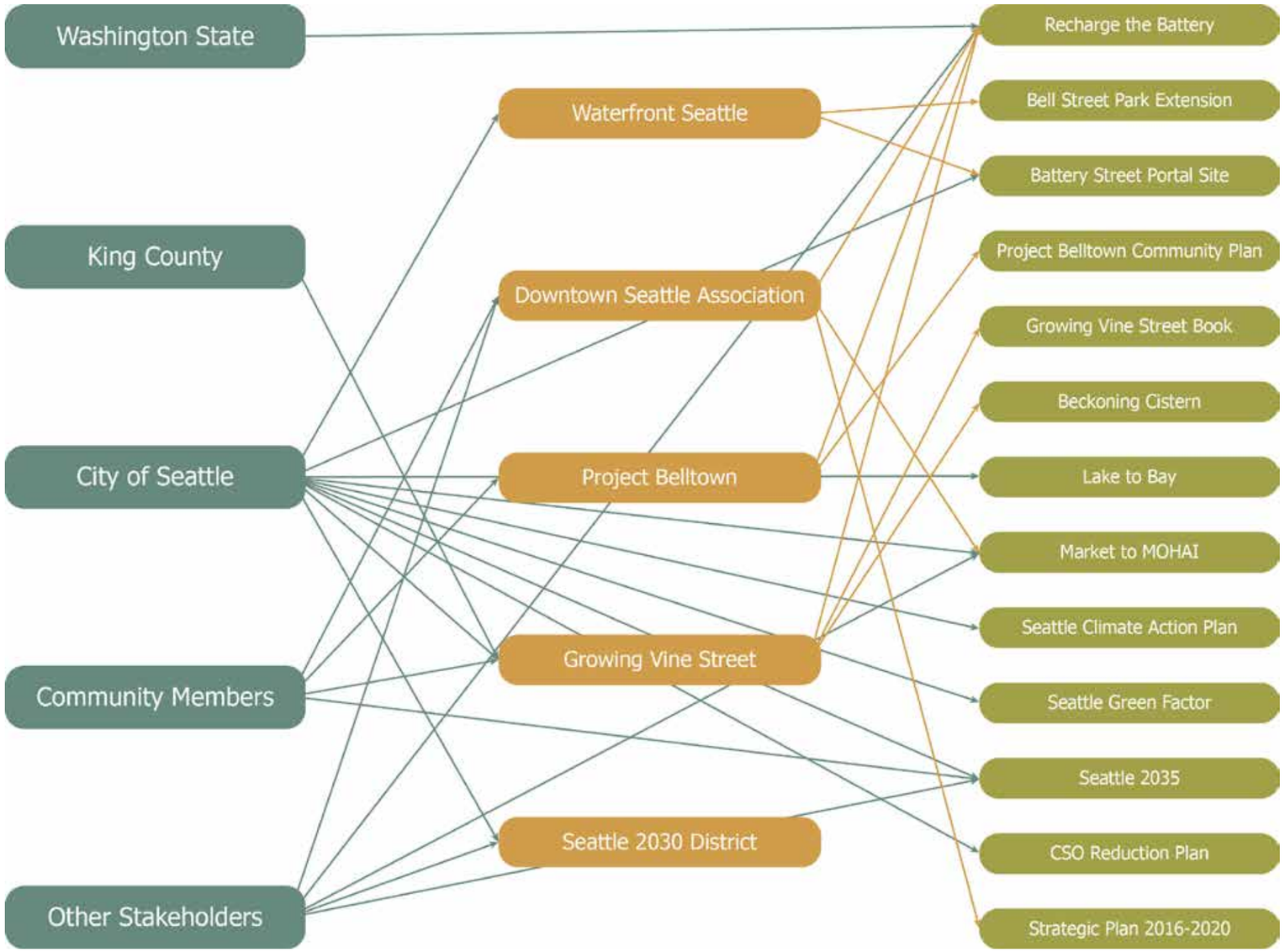
MATERIALITY TIMELINE



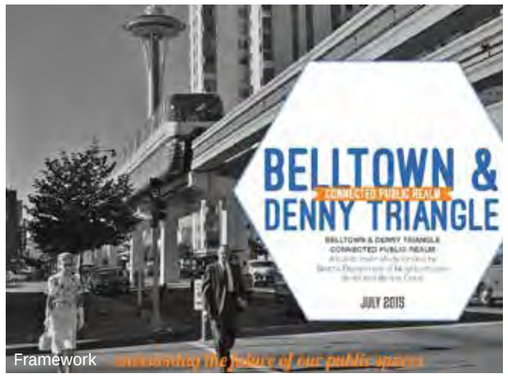
POPULATION GROWTH AND RESOURCE USE



PLANS

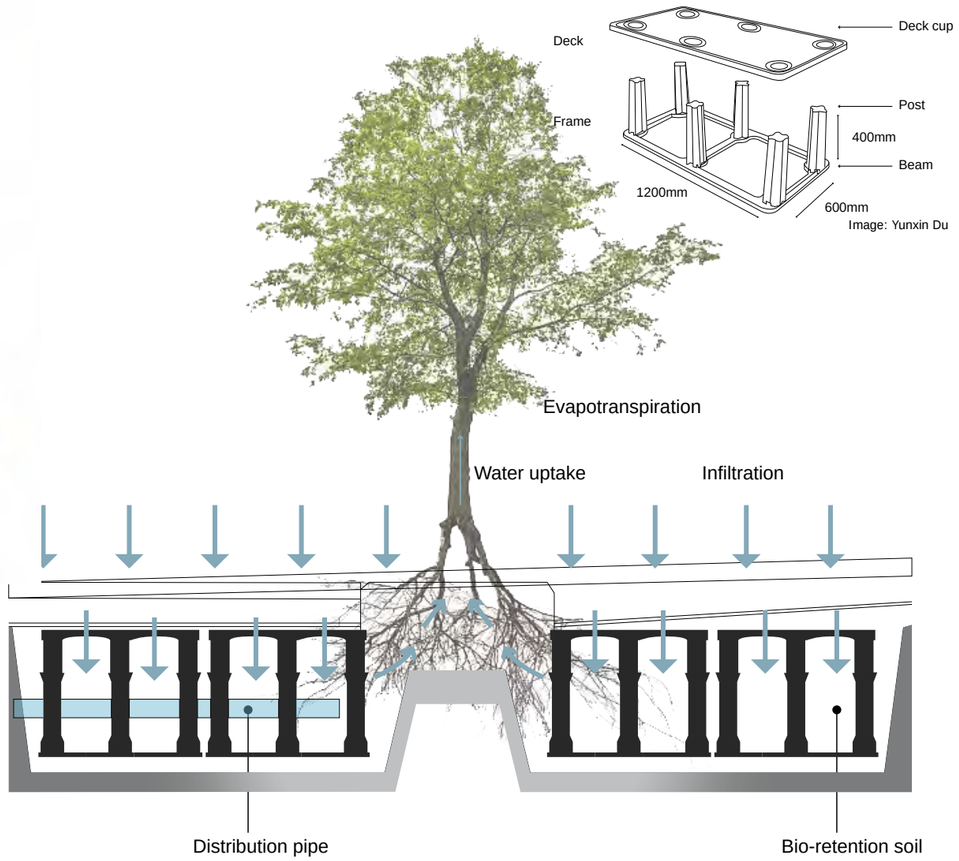


DISTRICT ANALYSIS



DISTRICT TOOLBOX

Collect rain water from roof and pavement to re-use it.



Typical Green Wall Components

Waterproof Layer

Steel Structure

Irrigation

Growing Planters

STORMWATER TOOLBOX

PERVIOUS PAVEMENT

STRATA/STRATA CELLS

URBAN FOREST

BIOFILTRATION CELLS/PLANTERS

GRASSPAVE

GREEN FACADES

GREEN ROOFS

GREEN WALLS

SPLASH BOXX

CISTERNS

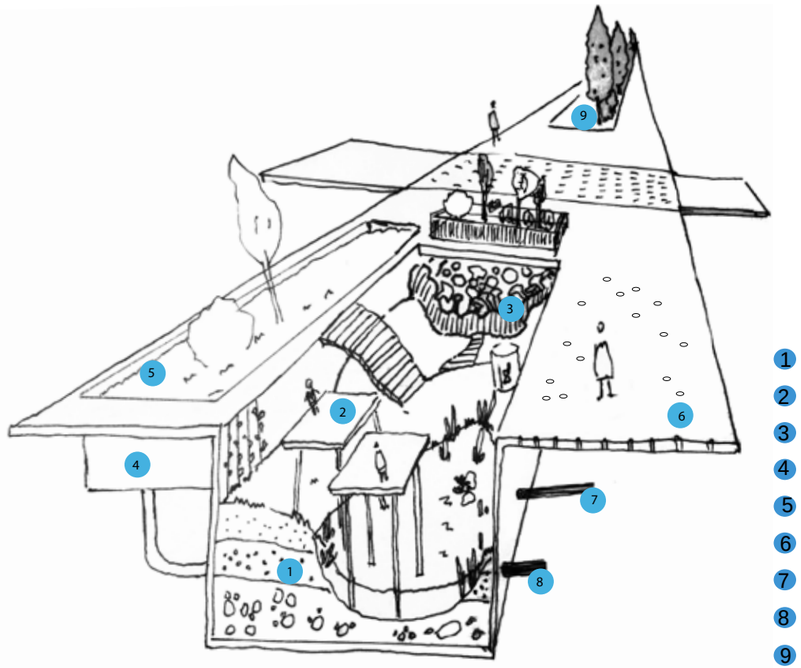
CONSTRUCTED WETLANDS

DISTRICT FRAMEWORKS

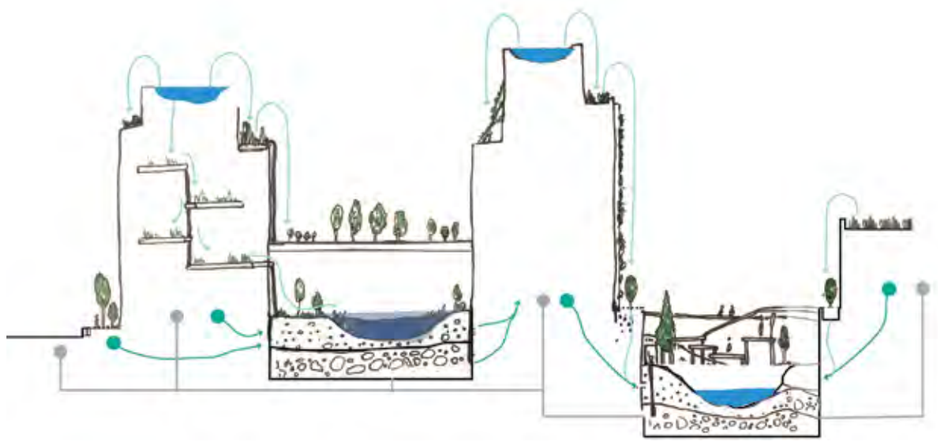
WATER

Yutong Hu, GIS Base Files Resource

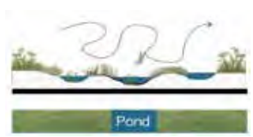
Daylighted portions of the Battery Street Tunnel

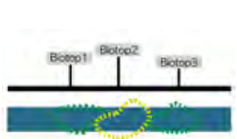


1. Vertical Flow Constructed Wetland
2. Pedestrian access to interior of tunnel
3. Mycoremediation areas in portions remaining capped
4. Greywater collection basin for sidewalk planters
5. Bioretention sidewalk planter boxes
6. Permeable pavement
7. Greywater outflow
8. Blackwater inflow to lower levels of constructed wetland
9. Lowland riverine forest

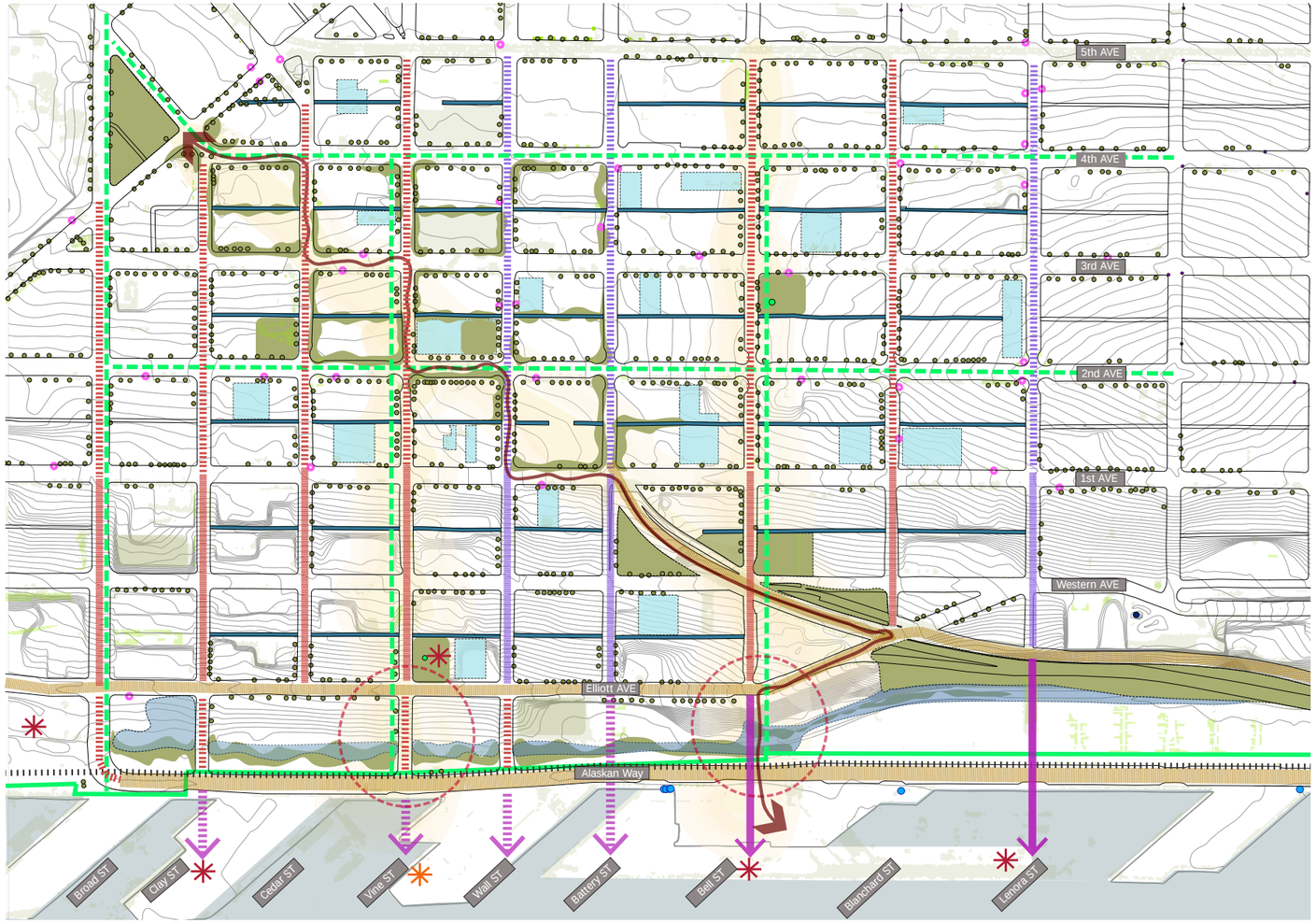


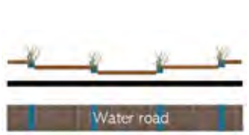
MOBILITY

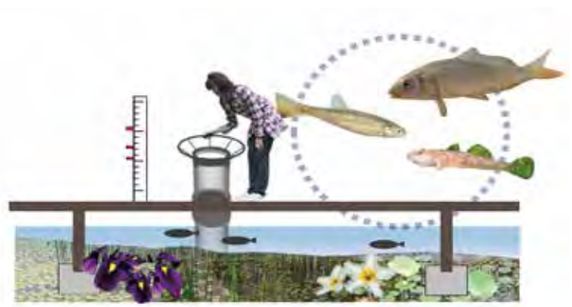




DISTRICT FRAMEWORK

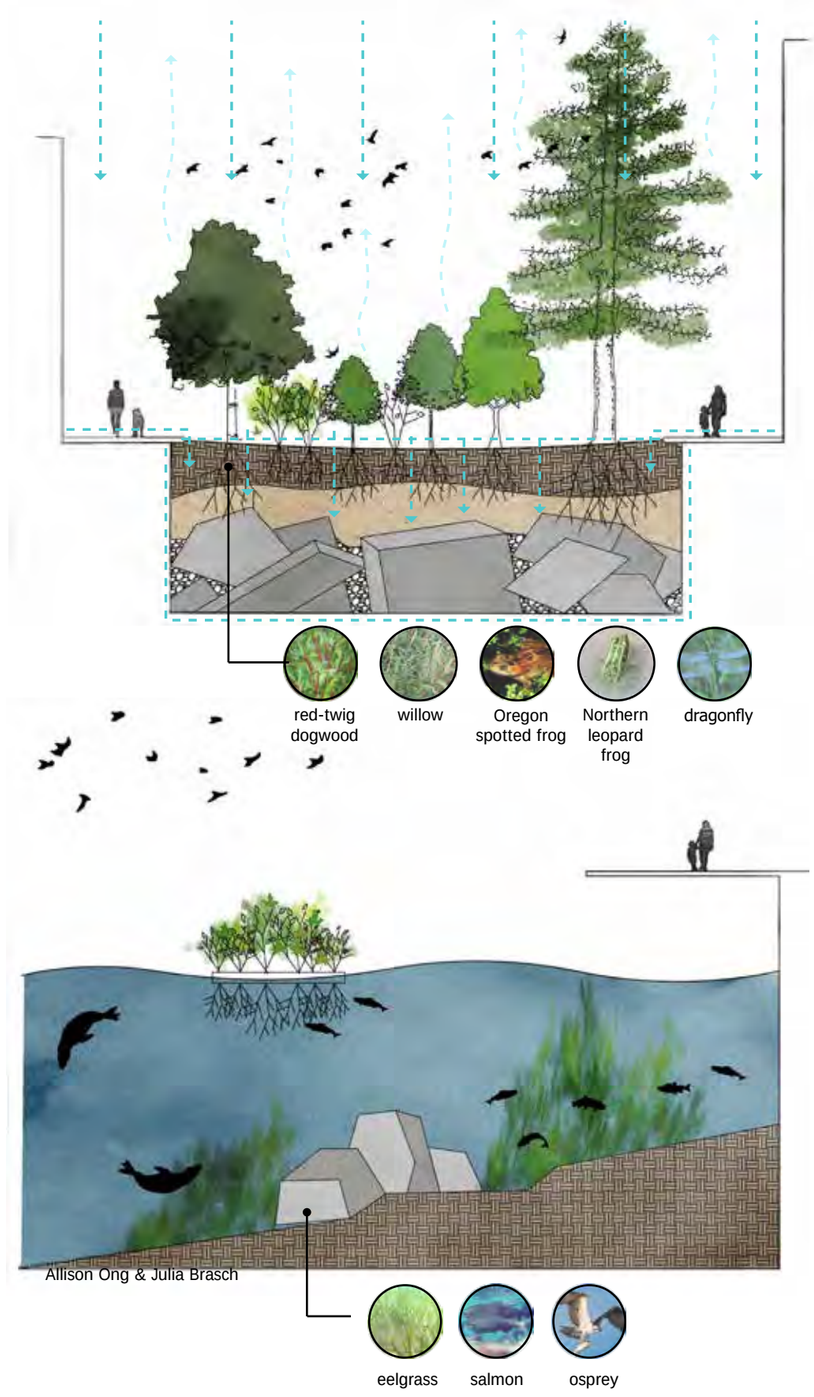






ECOLOGY

DISTRICT FRAMEWORK



Allison Ong & Julia Brasch

SOCIAL

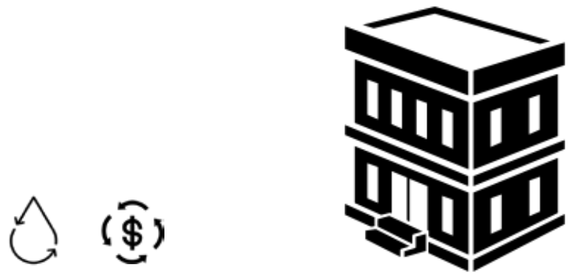
DISTRICT FRAMEWORK

Maximizing Wide Sidewalks:

Green walls on the neighborhoods building facades utilize and slow stormwater runoff from rooftops. The north-east side of the buildings supports healthy management of the vegetation due to the orientation to the sun and managed water access from rooftop cisterns. These wide sidewalks on the shadier side of the street allow for large and continuous bioretention cells to manage water from all surrounding impervious surfaces.

DEEP CONTEXT

DISTRICT FRAMEWORK



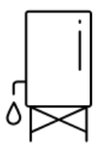
What if every historic building in Belltown had...

A Blue Roof...

Historic Buildings	23
Average Roof Area Per Building	7,000 sq. ft.
Avg. Depth of Blue Roof	3”
Volume of Water Per Building	13,090 gallons
Total Volume of Water	

301,070 gallons

An External Cistern...



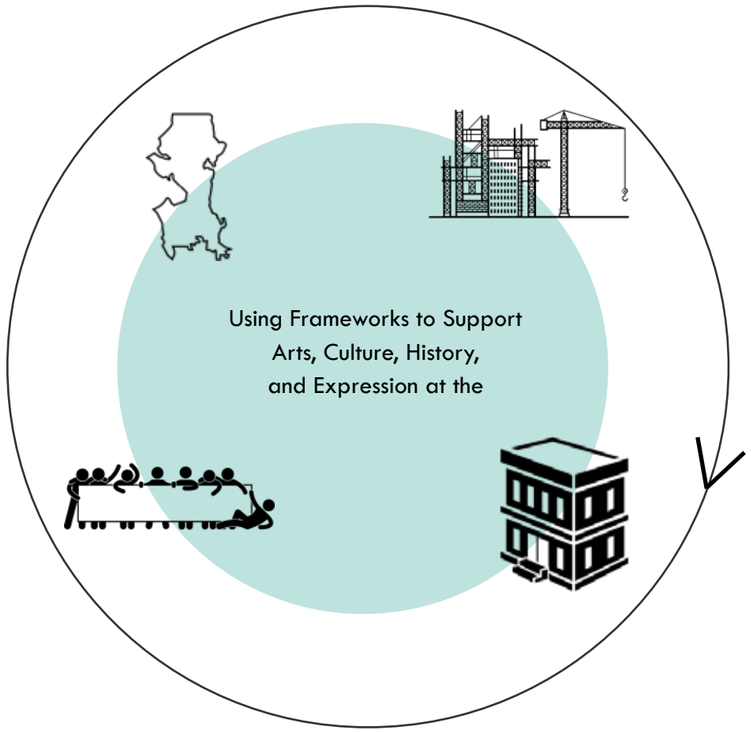
Potential Site Area	206,667 sq. ft.
Average Water Storage Depth	4”
Cubic Feet of Water	68,900
Volume of Water Per Building	13,090 gallons
Total Storage In Potential Sites	

515,400 gallons

A Raingarden...

Historic Buildings	23
Average Size Garden	30 sq. ft.
Avg. Depth	6”
Rainfall Captured in Rain Event	70 gallons
Total Volume of Water	

1,610 gallons



STORMWATER METRICS

POTENTIAL IF FRAMEWORKS IMPLEMENTED

2,338,670 GALLONS
STORMWATER STORAGE

894,413,635 GAL.
STORMWATER MANAGED

468,819,140 GAL.
POTABLE WATER SAVED

TARGET

130,000 GALLONS
STORMWATER STORAGE

67,000,000 GALLONS OF
POTABLE WATER SAVED +
STORMWATER MANAGED

SITES: BELLTOWN

1 Alleyways

2 Small-Scale Interventions

3 Battery Street Portal

4 Battery Street

5 Waterfront and Connections

6 P-Patch Parking Lot

CONCEPT DEVELOPMENT + PROGRAMMING

WORKING W/ MASTER TEACHER: LOUISE GRASSOV

SCHEMATIC DESIGN MID-REVIEW // 2030 DISTRICT WORKSHOP

FINAL REVIEW
TODAY'S SCHEDULE

Reviewer Groups

3:30 - 3:50

3:50 - 5:50

Group A:
Jim Brennan, J.A. Brennan Associates
Lesley Bain, Framework
Rick Johnson, SPU
Buster Simpson, Artist
Ben Spencer, UW LA Faculty
Jesse Williams, CH2MHill

Group B:
Vaughn Rinner, ASLA Immediate Past President
Noriko Marshall, Noriko Marshall L.A.
Lily Siu, MKA
Steve Hall, Point Consulting
Ken Yocom, UW LA Faculty

3:50 - 4:30

Group C:
Aaron Asis, Recharge the Battery
Ryan Storkman, Site Workshop
Amalia Leighton, Toole
Jon Kiehnau, Project Belltown/Growing Vine Street
Jeff Hou, UW LA Faculty
Shailee Stern, SPU

4:30 - 5:10

Group D:
Barbara Oakrock, Growing Vine Street
Diana Hasegan, Osborn Consulting
Brice Maryman, MIG/SvR
Laure Heland, UW Affiliate Faculty
Julie Johnson, UW LA Faculty

5:10 - 5:50

At Large:
Lee Loveland, DSA Development
Robin Thaler, Mayfly Consulting
Paul Olson, Architect
Matthew Combe, Seattle 2030 District
Evan Clifthorne, Project Belltown

5:50 - 6:00

Refreshments/Gallery Walk

Reviews

Team 1	Team 2	Team 3	Team 4	Team 5	Team 6
A	C	B	D		
	A		B	D	C
C		A		B	D

Wrap up

GREENER BELLTOWN : BLUER SOUND

City / Nature for Climate Adaptation

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