RAIN AND WATER RESILIENCY

Mt. Baker Neighborhood : Staying In Place : BE Studio W18 : Rachel Wells

EVERYDAY CAPACITY.

LONG-TERM ADAPTATION.

SUDDEN DISTURBANCE.

RESILIENCE.

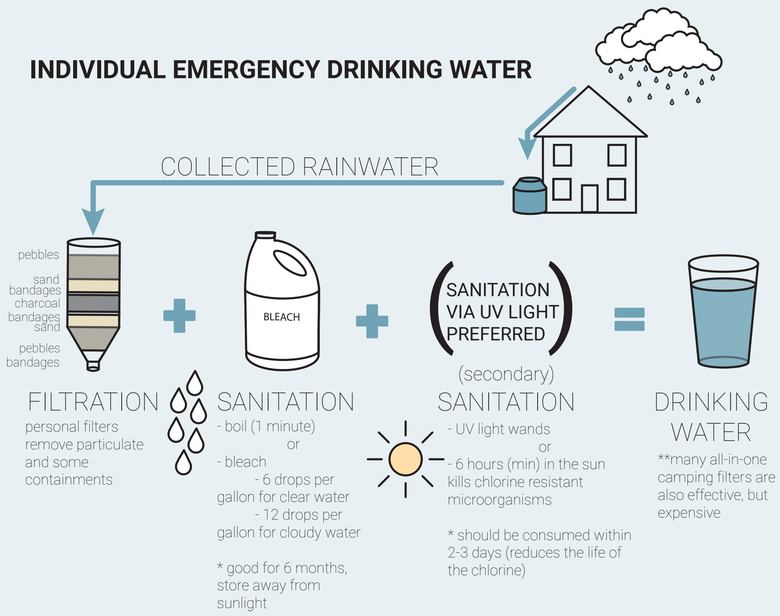
EARTHQUAKE RISK

"departments do not maintain caches of food, water, equipment and supplies in sufficient quantity to support the anticipated scale of operations after a major incident has struck."

- P. 9 Seattle Comprehensive Emergency Management Plan

14 - 60 days without water

INDIVIDUAL EMERGENCY DRINKING WATER



FILTRATION
personal filters remove particulate and some containments

SANITATION
- boil (1 minute) or
- bleach
  - 6 drops per gallon for clear water
  - 12 drops per gallon for cloudy water

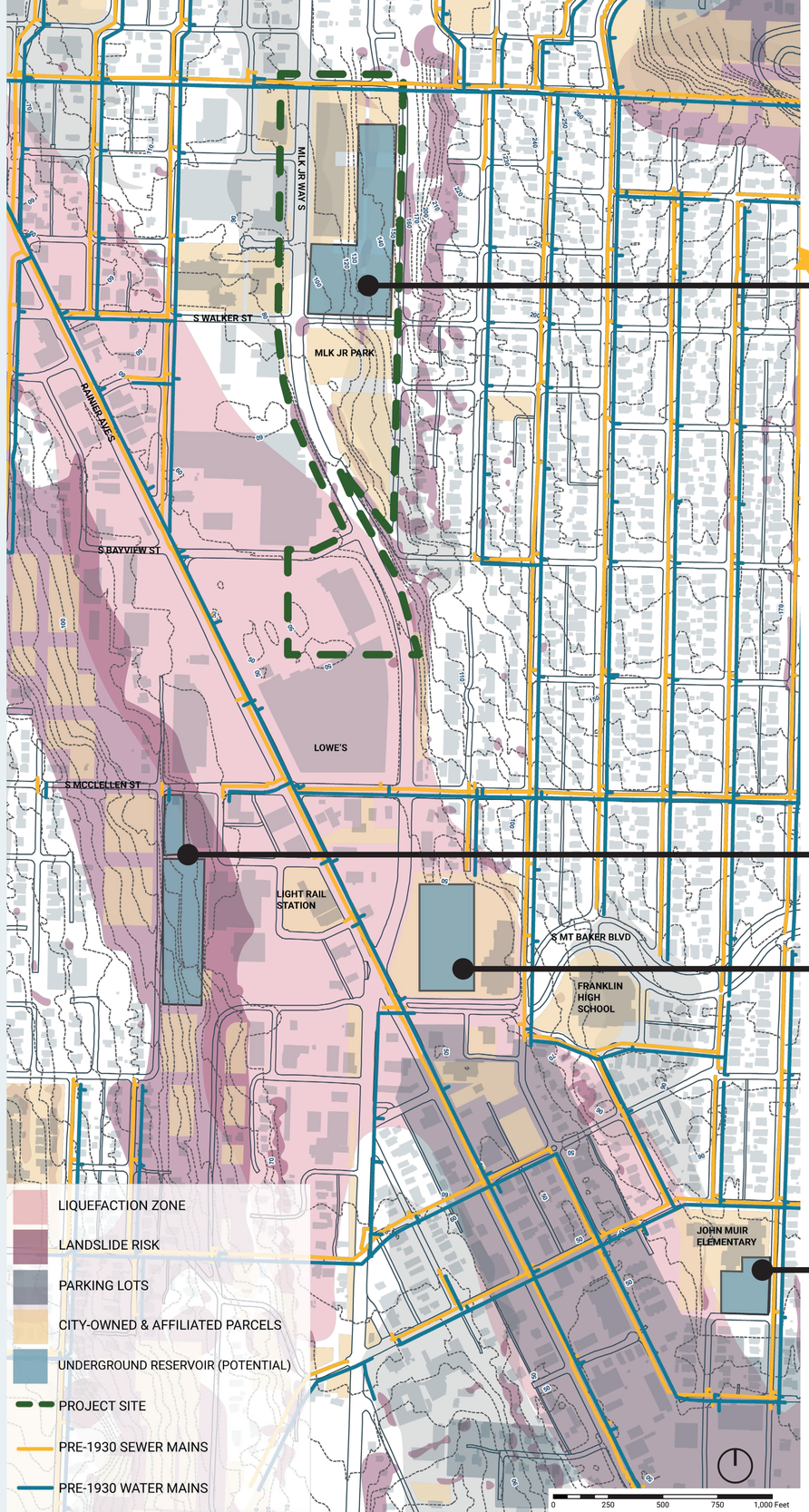
* good for 6 months, store away from sunlight

(secondary) SANITATION
- UV light wands or
- 6 hours (min) in the sun kills chlorine resistant microorganisms

* should be consumed within 2-3 days (reduces the life of the chlorine)

DRINKING WATER
**many all-in-one camping filters are also effective, but expensive

For more information on how to prepare for emergencies see:
Neighborhood Resilience Series Zines (Fatema Maswood & Lauren Wong)
Disaster Labs Workshop Series 2018 (Lama Alsharif)
Seven Days of Survival (Nathan Stueve)
Seattle Office of Emergency Management: Disaster Kit



POTENTIAL RESERVOIR LOCATION ANALYSIS

AMY YEE TENNIS CENTER
+Large, city owned site
- Topography & regrading

SOUND TRANSIT VACANT LOT
+Large potential site
- landslide risk
-close to liquefaction zone

FRANKLIN HIGH SCHOOL TRACK
+ Centrally located
- Liquefaction prone

JOHN MUIR ELEMENTARY PLAYGROUND
- smallest site
- partially in liquefaction zone

EXISTING CONDITIONS

Proposed P-Patch relocation and orchard site

Proposed demonstration gardens and reservoir site

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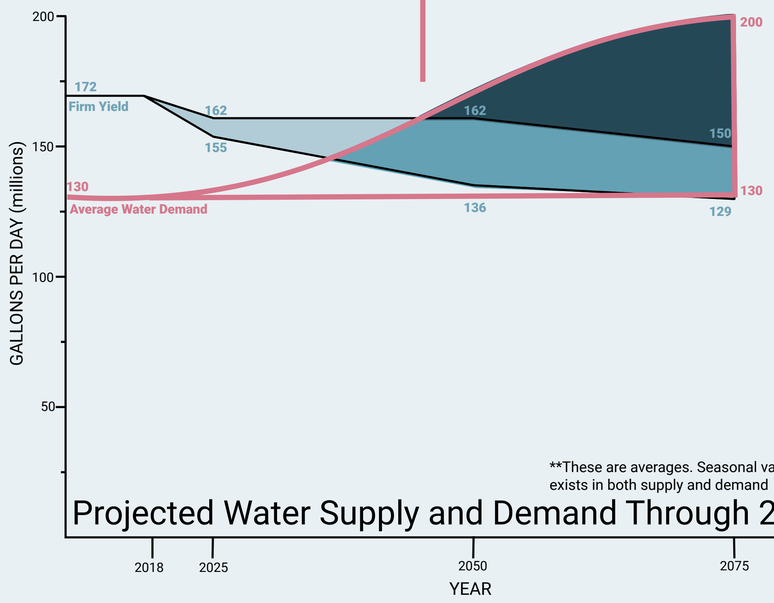
HOW MUCH WILL OUR POPULATION GROW ?

efficiency of water use

how much Seattle's population will grow

frequency of high temperatures and droughts correlated with higher water demand

There are so many population-based variables that exact forecasting demand beyond 2040 becomes difficult



HOW MUCH WILL WE LIMIT CARBON EMISSIONS ?

warmer, wetter winters & hotter, dryer summers

droughts become more common

more temperature extremes and unpredictability

less snowpack & earlier melt times

WHERE WILL WE GET MORE WATER?

Mt. Baker

Tolt River

30% of water supply

Rainwater?

less contaminated, decentralized and centralized implementation possible

Lake Washington?

polluted and energy intensive to pump and clean, requires centralized effort

A new reservoir?

made-made reservoirs contribute 1.3% of greenhouse gas emissions, reservoir construction damages our vulnerable ecosystems, an option of last resort.

Cedar River

18% of river flow

70% of water supply

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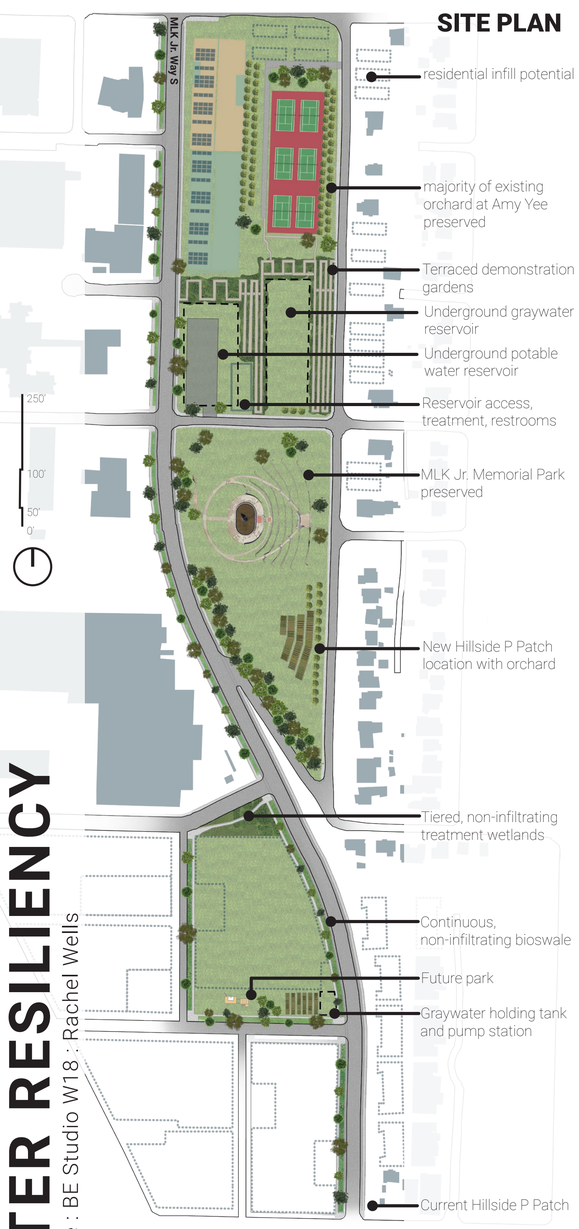
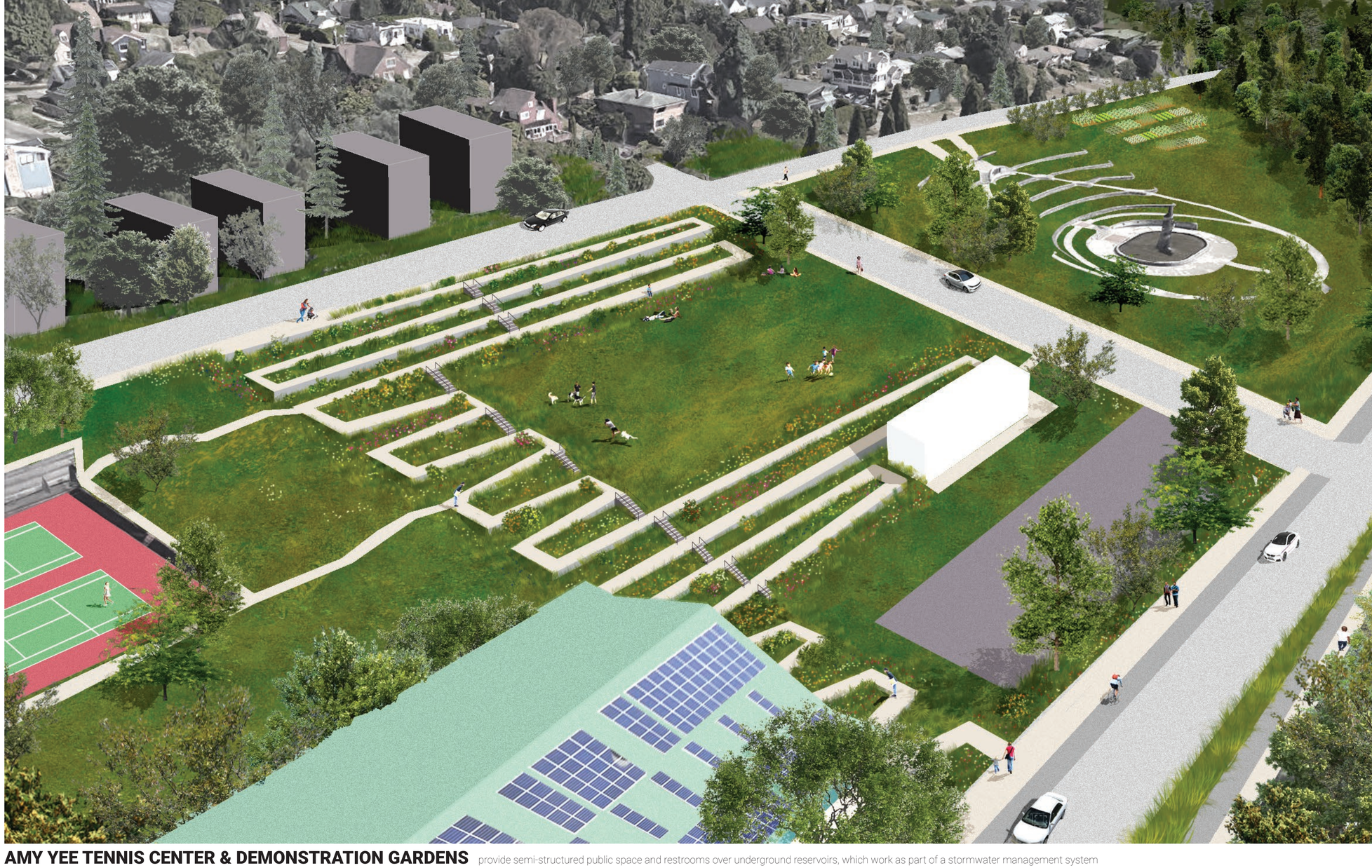
SITE PLAN





AMY YEE TENNIS CENTER & DEMONSTRATION GARDENS provide semi-structured public space and restrooms over underground reservoirs, which work as part of a stormwater management system

ACCESSIBLE MOUNT BAKER IMPLEMENTATION BEGINS

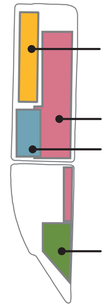
PHASE 1

PHASE 2

PHASE 3

UNPHASED

EARTHQUAKE



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THE NEW RESERVES: RAINWATER HARVESTING NETWORK & PROCESS

1 COLLECT WATER & ENERGY
Cleaner rooftop water is collected from adjacent buildings and sent directly to the graywater reservoir. Photovoltaic Panels on the Amy Yee roof store energy used to power UV sanitation on site.

1a COLLECT, TRANSPORT, CLEANSE
Stormwater runoff captured from roads and sidewalks and treated in a multi-block, connected, non-infiltrating bioswale.

1b SUBSURFACE WETLAND TREATMENT
Part of runoff is further slowed and treated in a subsurface, non-infiltrating wetland.

2 HOLDING TANK & PUMP
A subsurface holding tank collects sediment free, semi-treated graywater at the bottom of the bioswale. It is pumped back to the graywater reservoir.

2 3 GRAYWATER RESERVOIR
Graywater reservoir holds stromwater for non-potable reuse in irrigation or adjacent development or before final treatment.

4 ACCESS & SANITIZE
Final treatment UV and/or chlorination, creating potable water. Building access for reservoir maintenance or for emergency distribution.

5 POTABLE WATER RESERVOIR
Potable water reservoir stores clean water for use in the municipal water system or emergency supply.