BALLARD/SHIP CANAL

Screaming Orcas and Salmon City Portal

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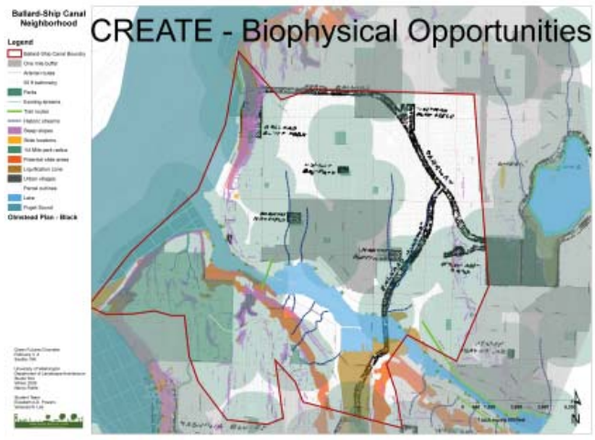
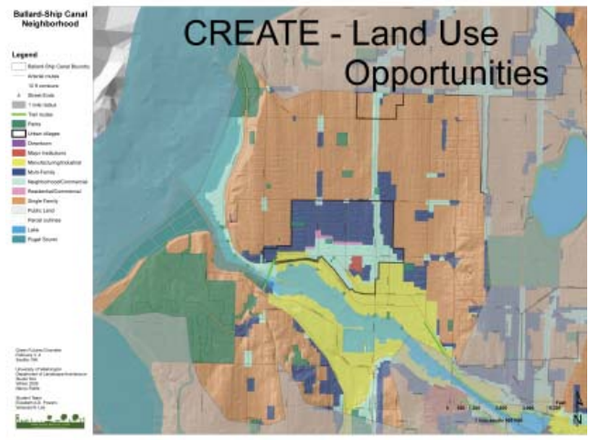
ANALYSIS

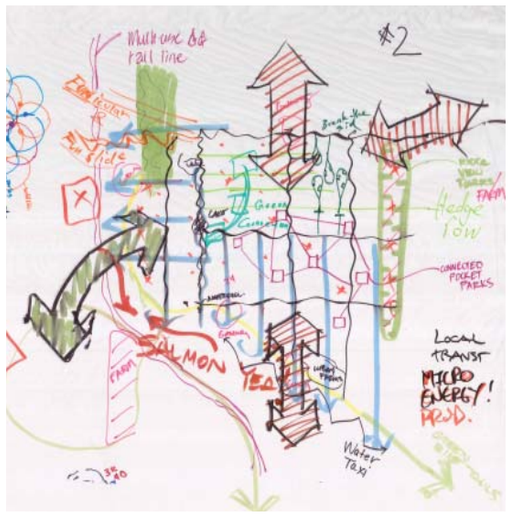


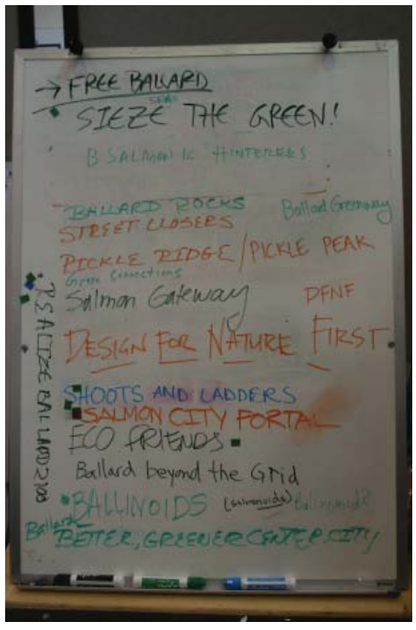


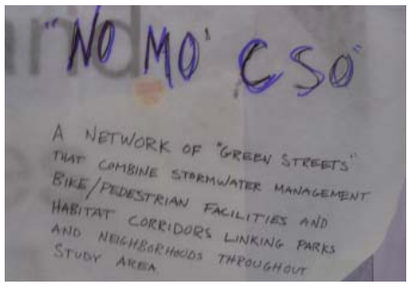
Analysis maps showing land use and biophysical properties helped identify opportunities.

CHARRETTE

Charrette processes involved 30-second design exercises, voting, prioritizing with Post-its, slogans, and lots of brainstorming.







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COMMUNITY

- Park
- Community Center
- Civic Space
- Farmers Market
- Neighborhood Service Center
- School
- Urban Agriculture
- View Corridor

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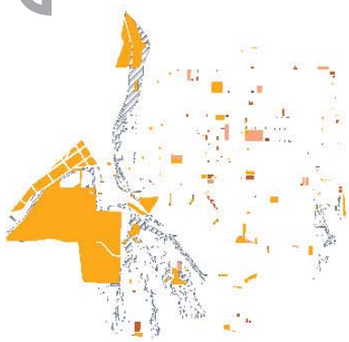
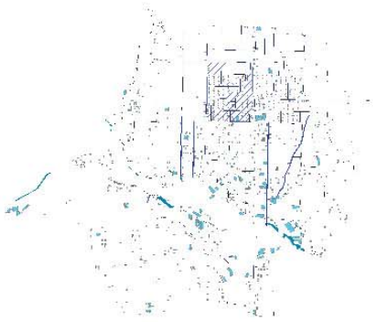


TRANSPO

- Bike/Ped Trail
- Green Street
- Mass Transit
- On Street Bike Route
- Street Car
- Water Taxi

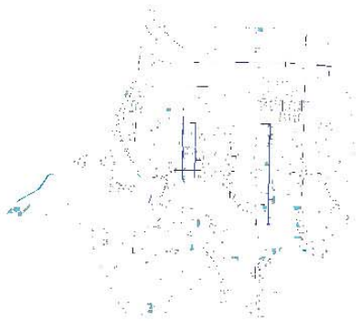
HABITAT

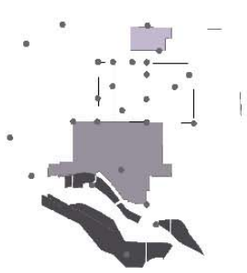
- Backyard Habitat
- Estuary
- Habitat Corridor
- Puget Sound Riparian
- Stream Riparian
- Steep Slope
- Waterfront Habitat



WATER

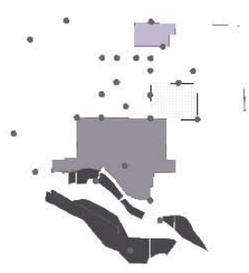
- Created Shoreline
- Reduced CSO Basin
- Daylighted Stream
- Green Roof
- Natural Drainage





URBAN

- Ecovillage
- Industrial Area
- Urban Hub
- Urban Village
- Community Node



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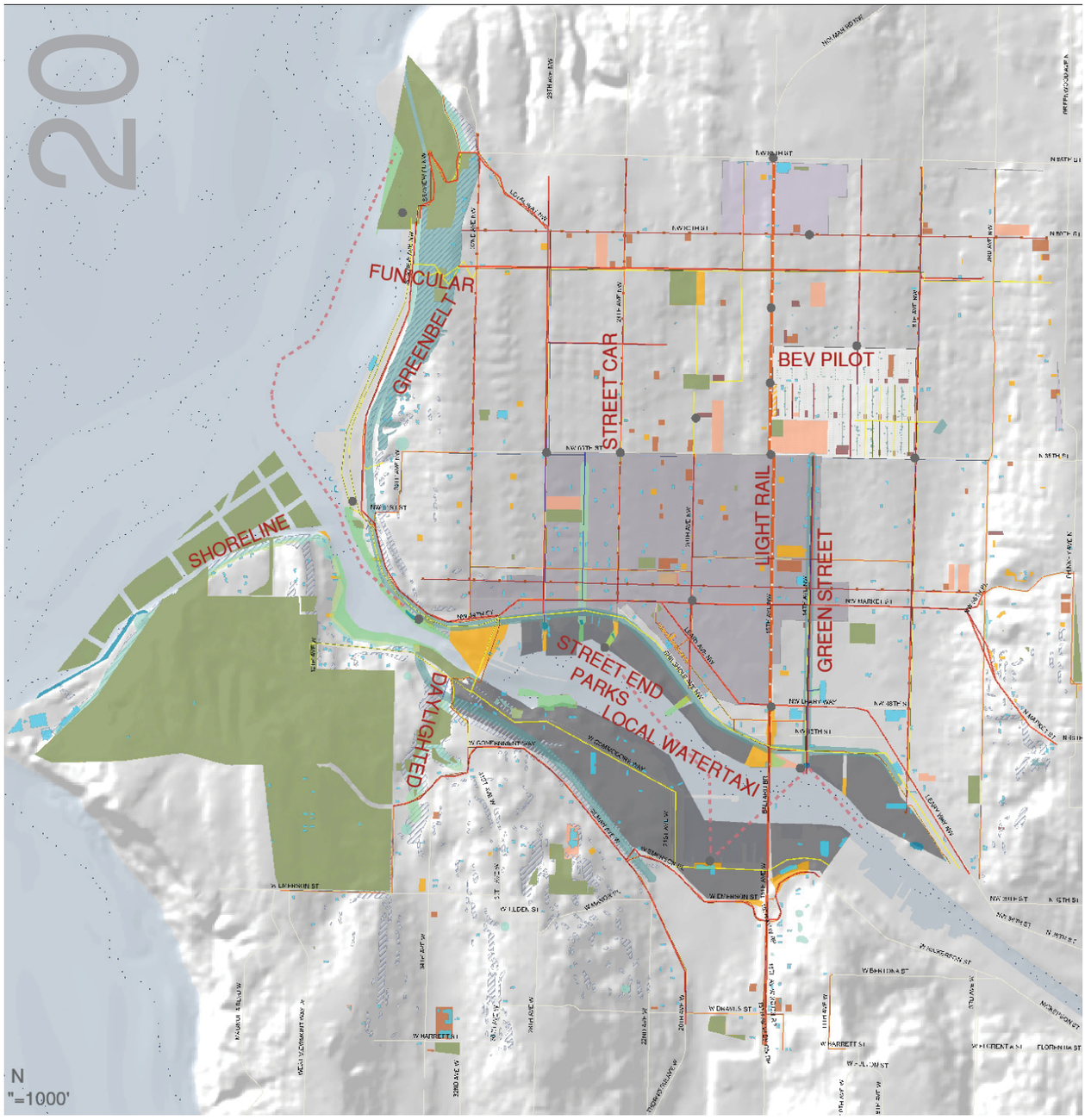


HIGHLIGHTS

community: all STREET END PARKS complete

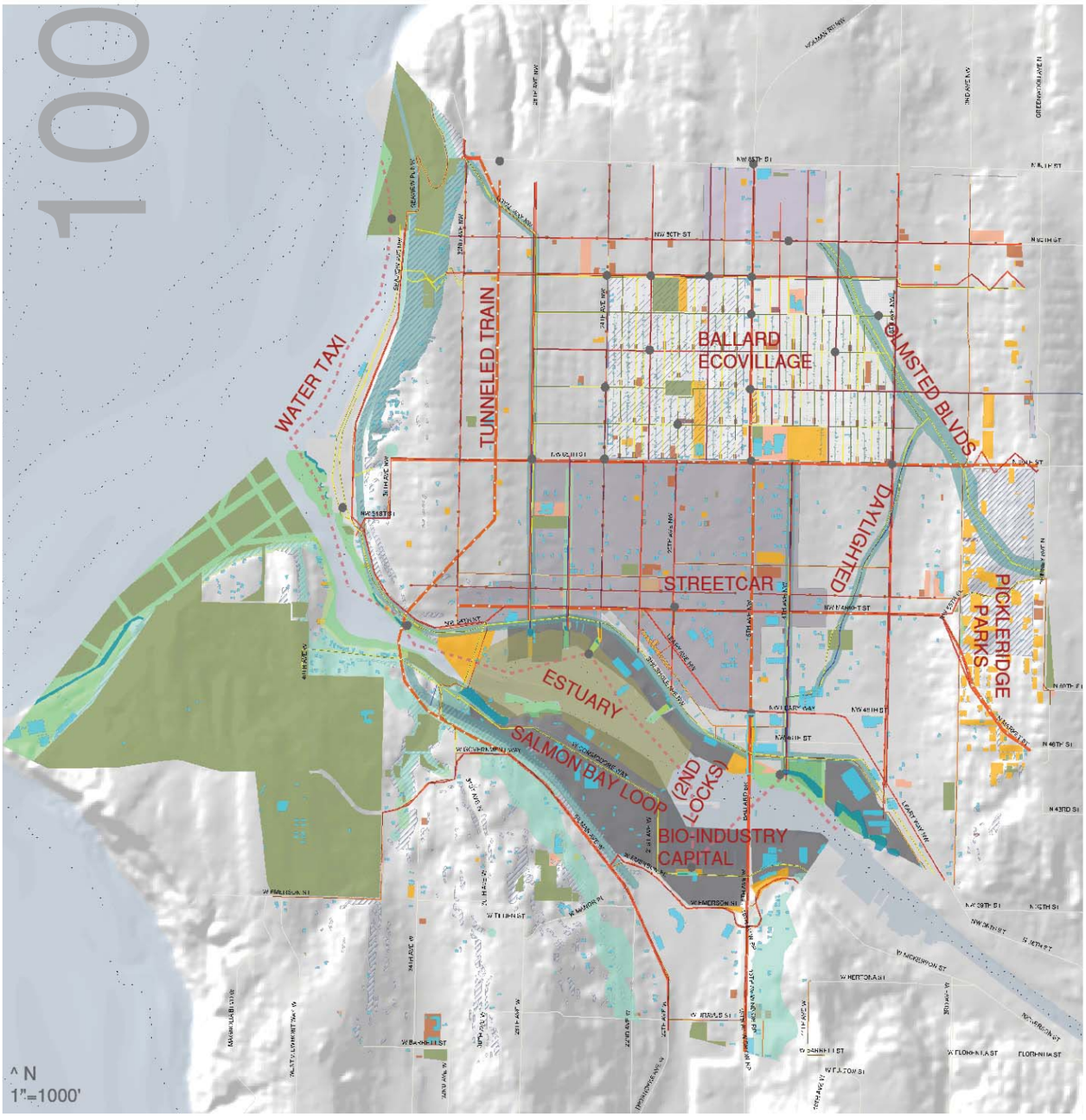
transpo: LIGHT RAIL on 15th; 8th + 14th ave GREEN STREETS; some BIKE TRAILS developing; FUNICULAR at sunset park

habitat: created SHORELINE, extended sunset GREENBELT

water: discovery park GREEN STREET PROJECT
WOLFE CREEK daylighted

urban: ECOVILLAGE PILOT project area, BIO-INDUSTRY developing

BREATHE
MOVE
LIVE
FLOW
GROW



HIGHLIGHTS

community: PICKLE RIDGE view parks; RAIL ROW park

BREATHE

transpo: TUNNELED TRAIN; continuous WATER TAXI; OLMSTED BOULEVARDS complete; SALMON BAY LOOP trail

MOVE

habitat: 2ND CANAL LOCKS; restored ESTUARY;
HEDGEROW BACKYARD SANCTUARIES (within BEV)

LIVE

water: GREEN ROOF adoption across the city;
GREEN STREET network
LIVING MACHINES + CONSTRUCTED WETLANDS reduce CSO areas
all STREAMS DAYLIGHTED

FLOW

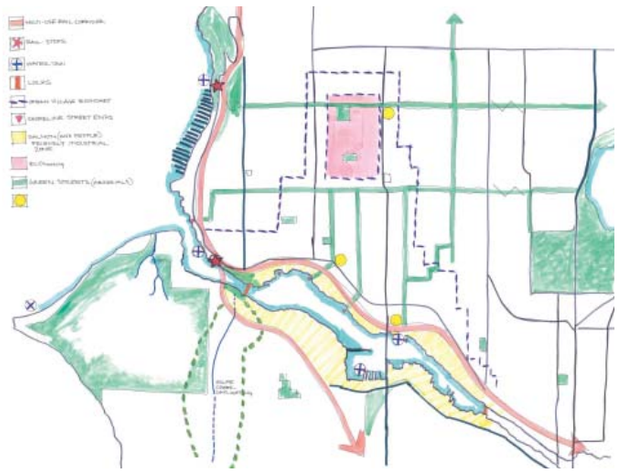
urban: ECOVILLAGE (BEV) fully developed;
ballard as the BIO-INDUSTRY CAPITAL

GROW

CHARRETTE PRODUCTS

Screaming Orca Vikings Team A

While both teams developed 100-year conceptual plans and a variety of vignettes, Screaming Orca Vikings Team A explored the modern hybrid of city and nature. As such, they assumed that Ballard will thrive as a walkable, bikeable, eco-technology hub, bounded by a reinvigorated shoreline that feeds and supports the regions primary salmon highway. The heart of Ballard will become more dense, a center of housing and commerce with rooftop and vertical gardens connecting canopy-covered multi-use green streets. Ballard will celebrate its heritage by preserving elements of the fishing and maritime industry along the Ship Canal, integrated with other green industry, bio-business, and public open space.



Salmon Super Highway

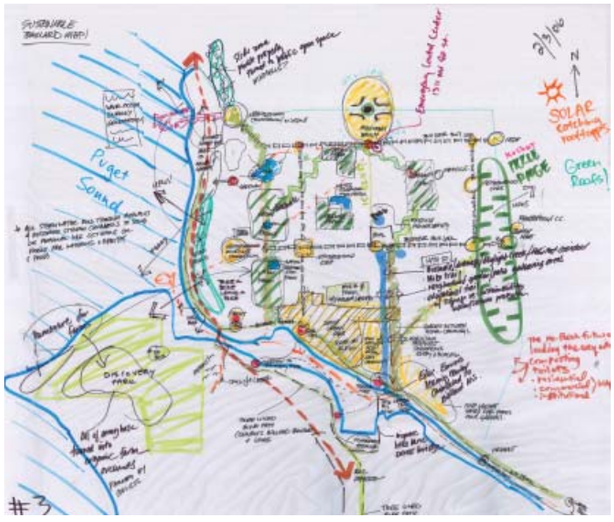
The Locks will be supplemented by a second set of Locks that together will create an estuary-like mixing chamber for the salmon and other species.

Completing the Hydrological Cycle

A network of green streets and block-based wetland pocket parks, bioswales, bike and pedestrian paths will provide wildlife habitat and eventually replace the stormwater sewer system eliminating CSO events.

Green and Blue Transportation

Ballard can improve its connections to other neighborhoods and the region by redeveloping rail and water transportation.



Salmon City Portal Team B

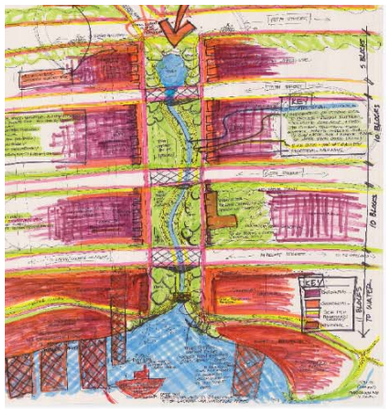
Central Themes

- Ecology and transportation
- Cultural and economic
- Democracy and respect

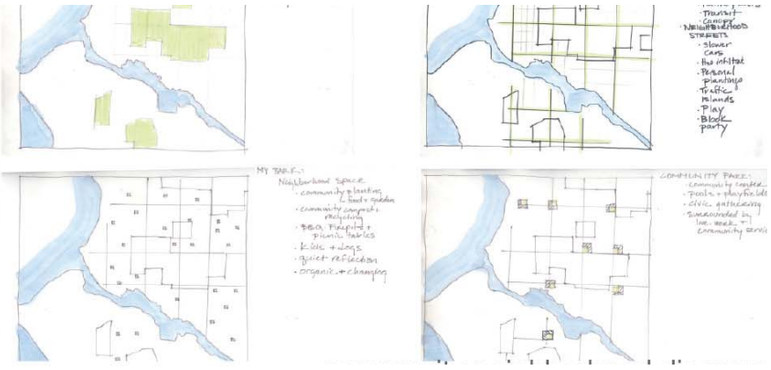
Specific Goals

- Fabric or quilt of urban forests and habitat including free flowing waters, hedgerows
- Green corridors for multiple modes and uses such as connected pocket parks, breaking the standard street grid pattern (walk, bike, storm water, habitat)
- Celebration of the unique character of Ballard (maritime culture, Salmon Bay, Fisherman's Terminal, Scandinavian and native history, physical and visual access to waterfront, views, water access, forestry, landmarks, fresh and salt water shoreline, water taxis)
- Clean jobs and thriving industry that support and respect local residents (including wildlife, micro-energy generation)
- Diversity of activity (work, play, habitat, industry, micro-energy generation, etc.) while encouraging interconnection and interaction
- Open space planned around existing parks and streams by daylighting and drainage patterns
- Organic community-based democratic implementation

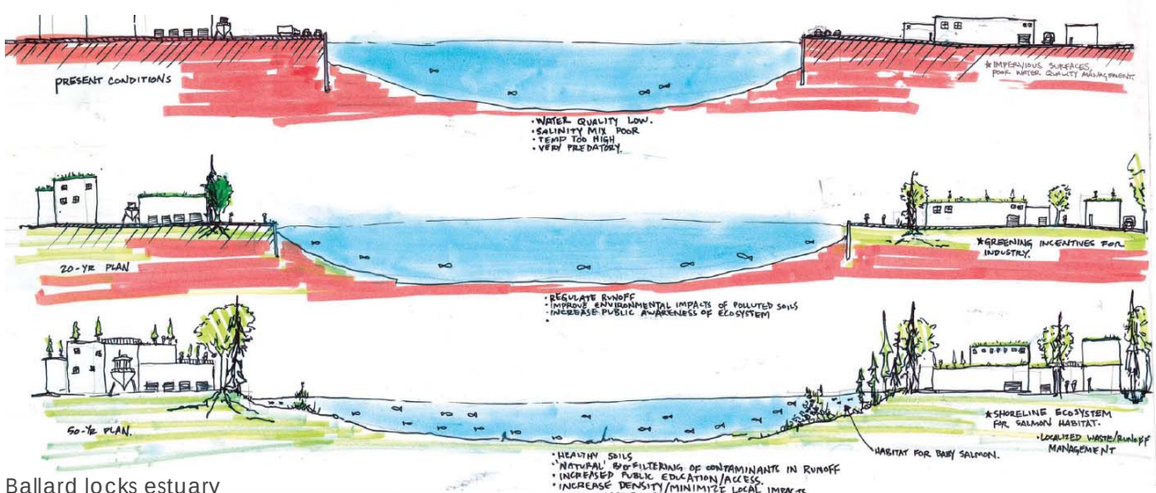
The Salmon City Portal team also developed a block level 100-year vision for an area between the two urban villages.



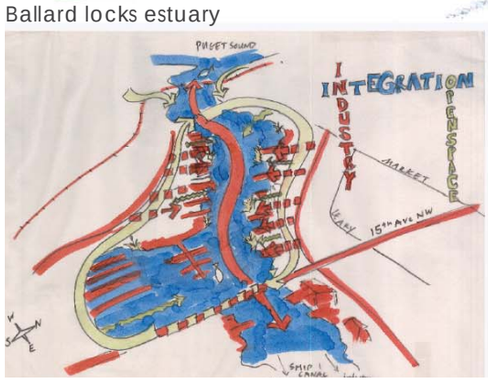
28th Avenue daylighted stream

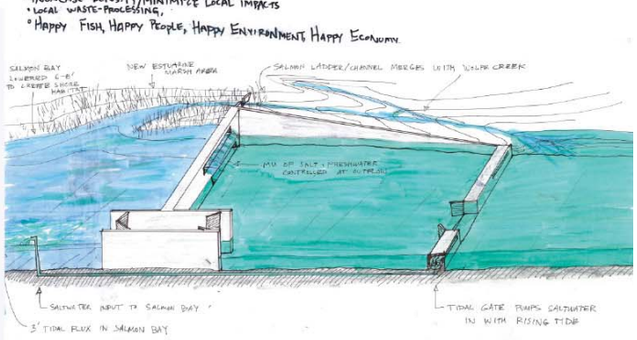


Community neighborhood diagrams

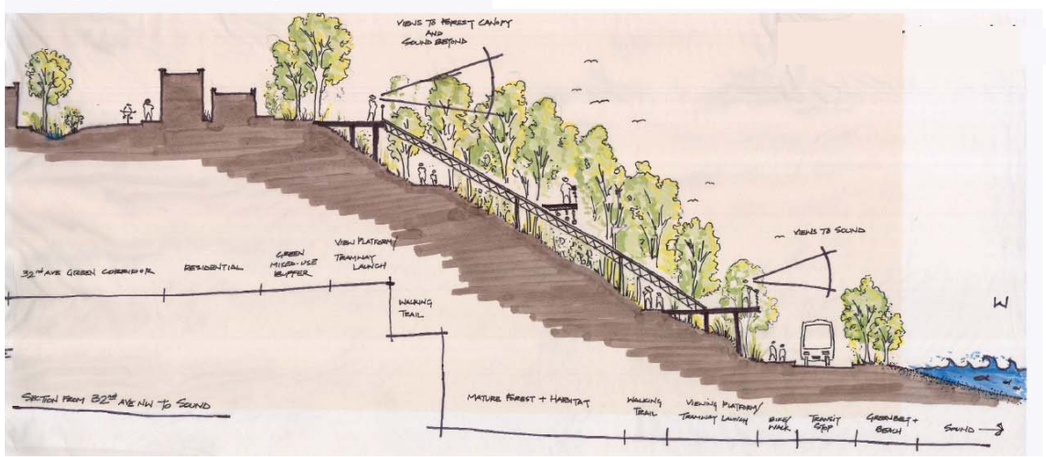


Ballard locks estuary

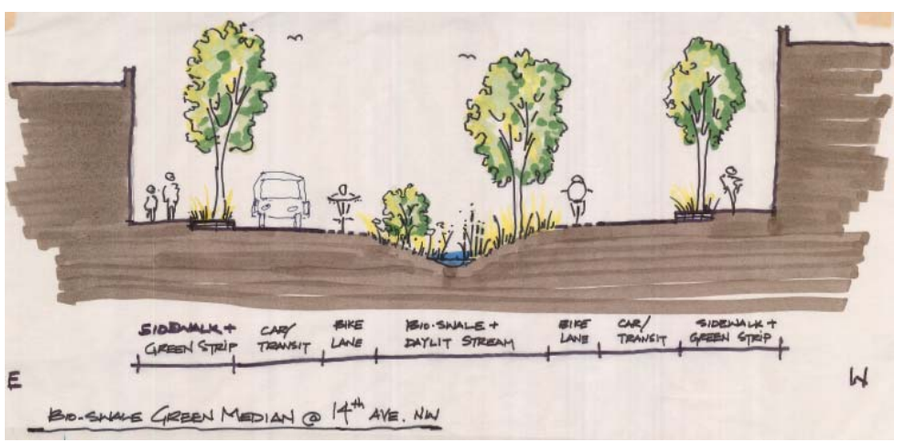




Industry open space integration



Funicular/ gondola access



Green street with daylighted stream

CHARRETTE TEAM ACTION PLANS

Implementation

[TEAM A]

LONG TERM GOALS

Transportation

- Multi-use rail corridors
- Mass water transit in Salmon Bay and all Seattle shores

Habitat

- Buy out of housing in cove Southeast of locks
- Optimize estuary using a second set of locks
- Complete Salmon Super Highway

Neighborhood/Community

- Daylight all hidden streams
- Finalize comprehensive network of green infrastructure

MID-TERM GOALS

Transportation

- Expand and connect Green Street network
- Enhance water taxi system
- Continue to shift from SOV transit towards foot and bike traffic along Green Streets

Habitat

- "Salmon Bay Shores" implementation
- Achieve zero CSO and low runoff in Ballard
- Further develop and interconnect bioswale network with Green Streets and lowlands
- Preserve bluffs and wild habitat connecting Ballard and Carkeek Park

Neighborhood/Community

- Establish extensive walkability
- Increase waterfront access with mixed use and habitat viewing
- Foster further utilization of green space for urban agriculture
- Convert guidelines and incentives to policies and laws to speed greening of city

SHORT TERM GOALS

Transportation

- Encourage biodiesel and other alternative, greener fuels for buses and personal transit
- Establish more transit hubs to connect Ballard via mass transit to neighborhood districts
- Establish a trial, seasonal water taxi service to downtown and West Seattle
- Implement Green Street models within Ballard (2 running East-West, 2 running North-South)
- Create seed park on site of former Azteca restaurant on Shilshole, serviced by water taxi and bus transit to begin alleviating coastline dependence on single-occupancy vehicles

Habitat

- Daylight Wolfe Creek and other hidden streams
- Strengthen educational outreach
- Develop local expertise in on-site waste and stormwater management to promote economic growth and development.
- Create a pilot bioswale along 14th Avenue NW

Neighborhood/Community

- Paint blue strips down streets where buried streams once existed
- Establish a legislative framework for acquisition and development of green infrastructure
- Create a community park stewardship program with incentives for participation
- Encourage more affordable housing intermixed in Ballard
- Extend Burke Gilman trail through Ballard
- Revitalize brownfields in Ballard
- Identify industrial uses that are beneficial to neighborhoods and encourage industrial Best Management Practices (BMPs)
- Strengthen LEEDS Green-built incentives for developers
- Stormwater utility fees, and management "service contracts" to renovate existing structures and neighborhoods
- Tax incentives and zoning code allowances to encourage private development of public spaces such as 2nd story plazas, courtyards

[TEAM B]

100 YEAR CONCEPT / APPROACH

The Salmon City Portal Team envisioned Ballard consisting of a network of connected parks and daylighted streams (storm water drainage) running along Ballard streets and flowing into the ship canal. A matrix of hedgerows and small wooded areas will provide habitat and natural amenities where properties met at back edges or four corners. There will be reduced car traffic on non-arterials which will make way for multi-use, local transport, walking, biking, and community areas in old right of ways. There will be additional nodes of mid-density concentrated at existing small commercial areas. There will be two dense focused areas of maritime industries, educational centers, water access, business and residential housing at the Ballard Urban Village and Shilshole Bay. There will be a few main multi-modal transportation corridors that connect with the rest of the city. Water taxis will also provide local and city transportation. Views and access to Puget Sound are enhanced from Sunset Hill, such as with the proposed funicular.

20 YEAR IMPLEMENTATION PLAN

Key Elements

- Build open space plan around existing green spaces, streams and shoreline.
- Connect existing parks+schools into greenway and break the grid.
- Revitalize Olmsted's Ballard Parkway concept
- Better connections within Ballard and to neighborhoods via land and water.
- Develop green spaces and water access points at Salmon Bay street ends: 14th Ave, 20th Ave, 24th Ave, 28th Ave, Ray's; water taxis
- Need more choices for east-west mobility
- Build population density to serve existing business districts and develop more community green space by converting existing residential intersections (20-50%) to include community amenities, i.e. P-patches, parks, playgrounds, kiosks.

20 YEAR PRIORITY PROJECTS

- Complete zoning law changes to better allow for smarter land use as proposed in 100 year plan ("Break the Grid")
- Complete Burke Gilman trail. Greenway along shoreline from Golden Gardens to industrial area to Fremont
- Complete "Salmon Bay Loop" project
- Start water taxi services from 14th Ave NW, Fisherman's Terminal, 24th Ave NW, west of Locks and connect to rest of Puget Sound
- Develop waterfront access to Puget Sound from Sunset View Park and Loyal Heights via funiculars and pedestrian stairways at Sunset View
- What schools are closing? Transform them into community farms
- Daylight Magnolia's Wolf Creek with Heron Habitat Helpers
- Develop 8th Avenue NW boulevard between Leary and NW 65th Street
- More integrated mass transit to reduce congestion.
- City to acquire more property for future green space.

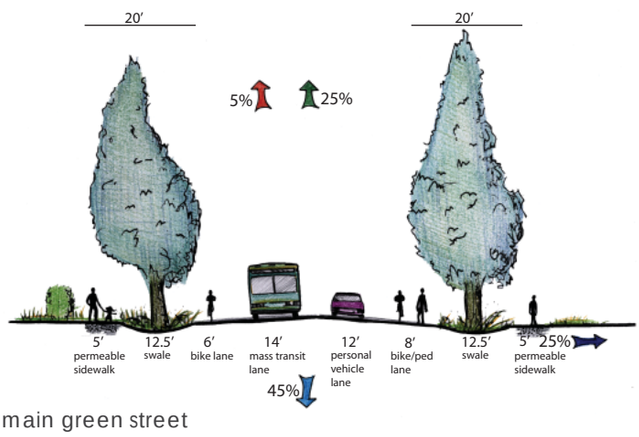
2-YEAR PRIORITY PROJECTS

- Improve 14th Avenue NW: Salmon Bay access point to NW 65th Street. Daylight stream.
- Develop greenway, bikeway.
- Plan for greenway from Golden Gardens to Loyal Way to 28th Ave NW to Salmon Bay. Daylight stream under 28th Avenue NW.
- Offer multiple modes of transportation.
- Plan for "Salmon Bay Loop" from Ballard to Magnolia.
- Discuss with Metro east-west bus service on NW 65th St.
- Develop smart zoning regulations to increase density and community amenities that reduce car ownership.

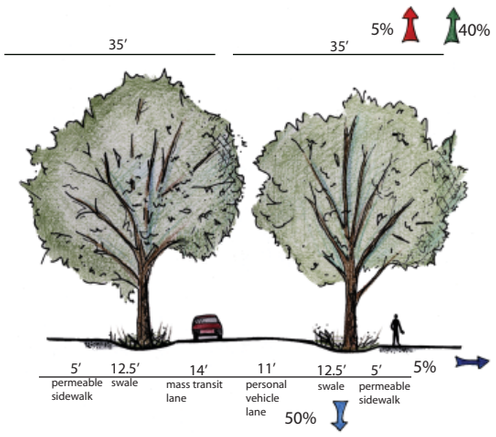
ECOLOGICAL BENEFIT EVALUATION

analysis of hydrological and habitat improvements: ballard and duwamish study areas

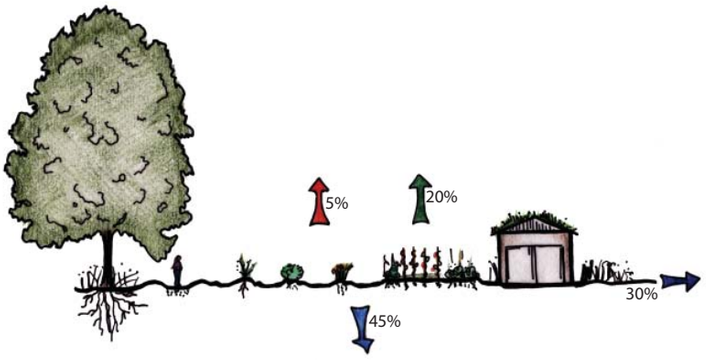
Ecological Function Typologies



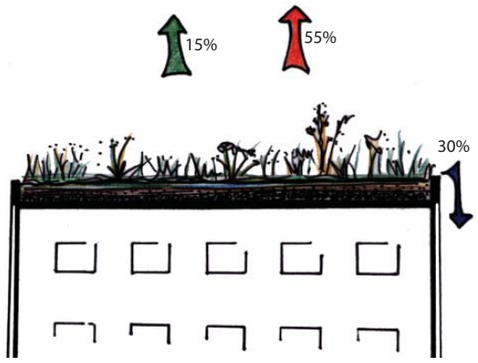
main green street



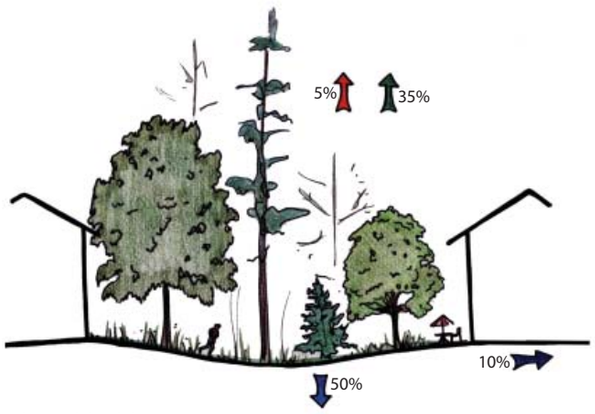
neighborhood green street



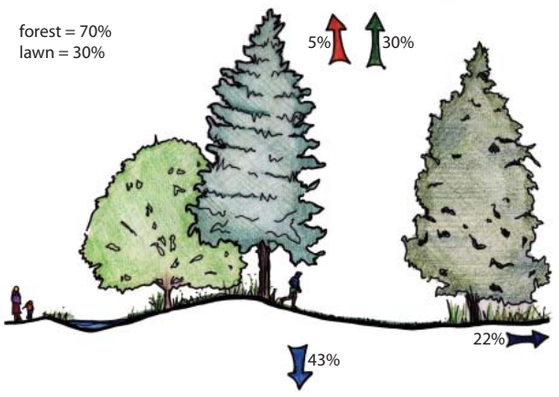
Urban agriculture



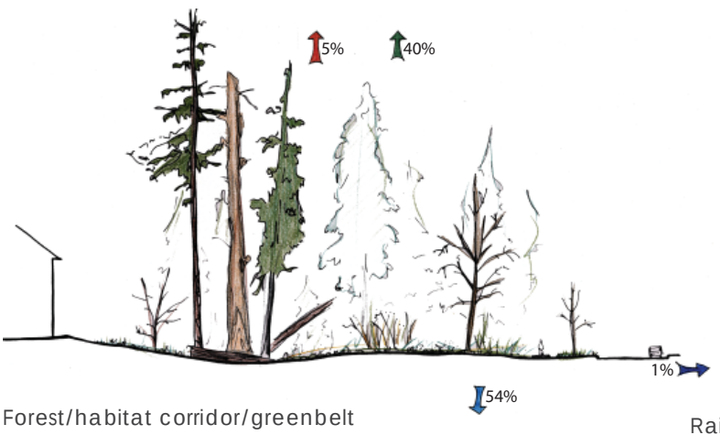
Green roof/lidded habitat



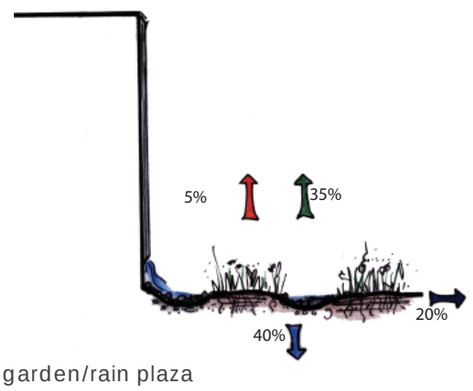
Backyard habitat



Passive park

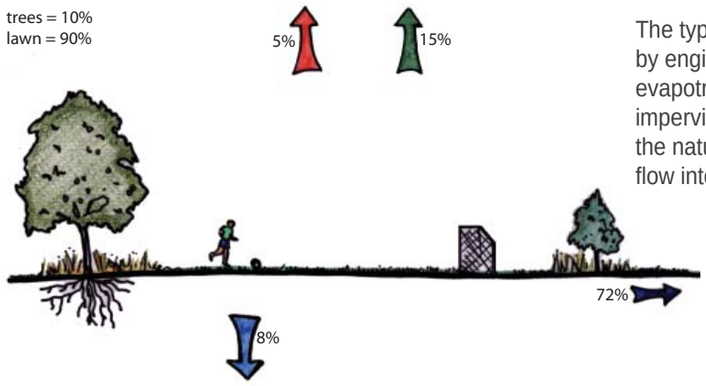


Forest/habitat corridor/greenbelt



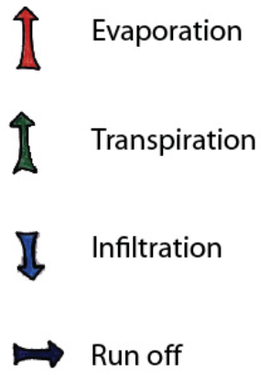
Rain garden/rain plaza

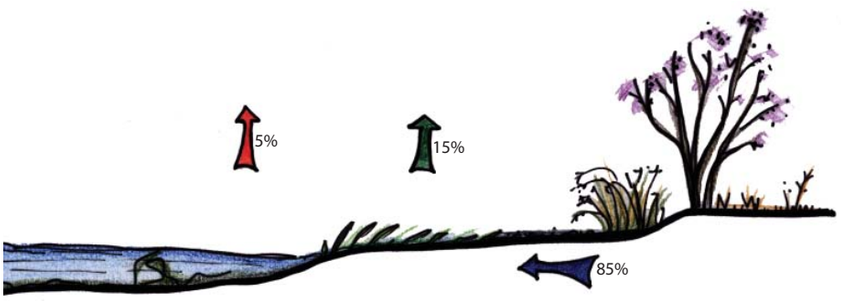
Ballard / Ship Canal



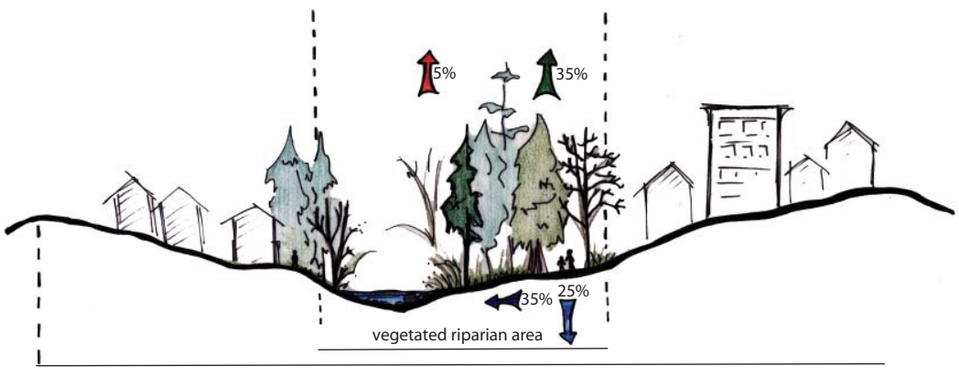
Recreational area

The typologies on the left try to mimic natural conditions by engineering ways to increase water infilitration and evapotranspiration, creating areas that contain some impervious surface but effectively pervious. This helps restore the natural hydrological cycle and reduce the volume of water flow into combined and separate stormwater sewer systems.





Intertidal/estuary/shallow water habitat



Stream with riparian area

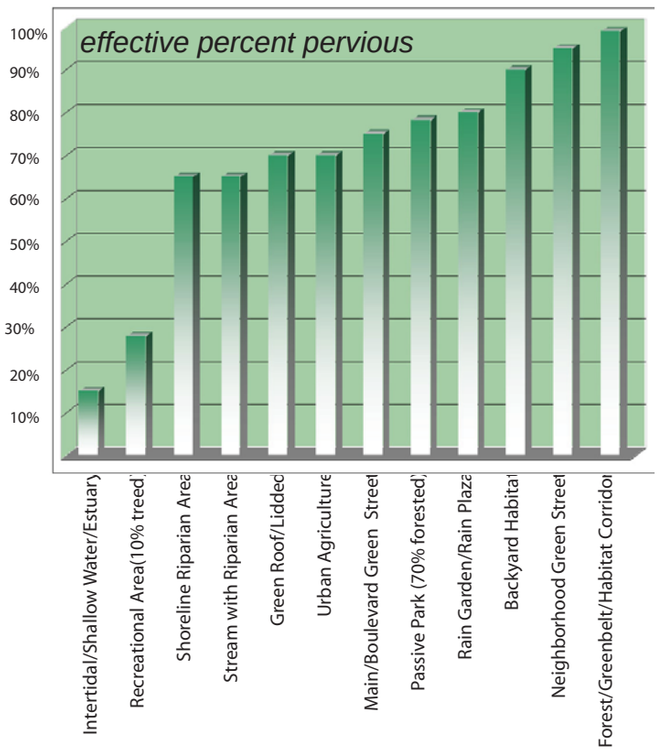
Area draining to stream (reduced volume to pipe)

Shoreline with riparian area

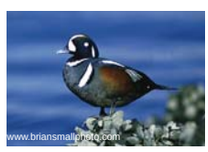
ECOLOGICAL BENEFIT EVALUATION

Analysis of hydrological and habitat improvements: Ballard Open space 2100 study areas

hydrology



habitat

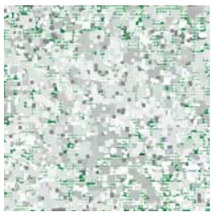


Throughout the world, cities fragment, isolate, and degrade natural habitat. Application of the principles of landscape ecology, including interactions among patches, corridors, and metapopulation habitat networks, is valuable for enhancing urban ecological health. By improving habitat quantity, quality, and connectivity, it is possible to conserve and protect native plant and animal species.

Ballard Study Area Results

study area size: 706,053 acres
area of improvements (20 years): 8,284 acres
area of improvements (100 years):14,149 acres

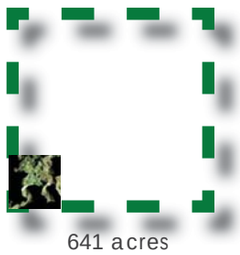
current



3,129 acres effective pervious surface

1,663,937 CCF

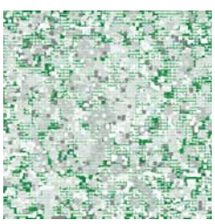
current



641 acres

- limited corridor connectivity
- few stepping stones
- low habitat quality outside of Discovery Park

20 year



5,828 acres effective pervious surface

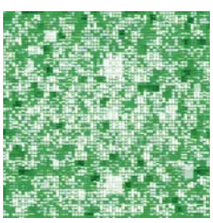
852,779 CCF

20 year

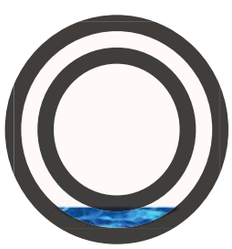
8,284 acres

- improved corridor connectivity
- more riparian habitat

100 year

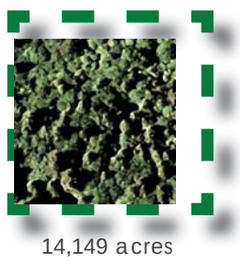


11,617 acres effective pervious surface



285,881 CCF

100 year



14,149 acres

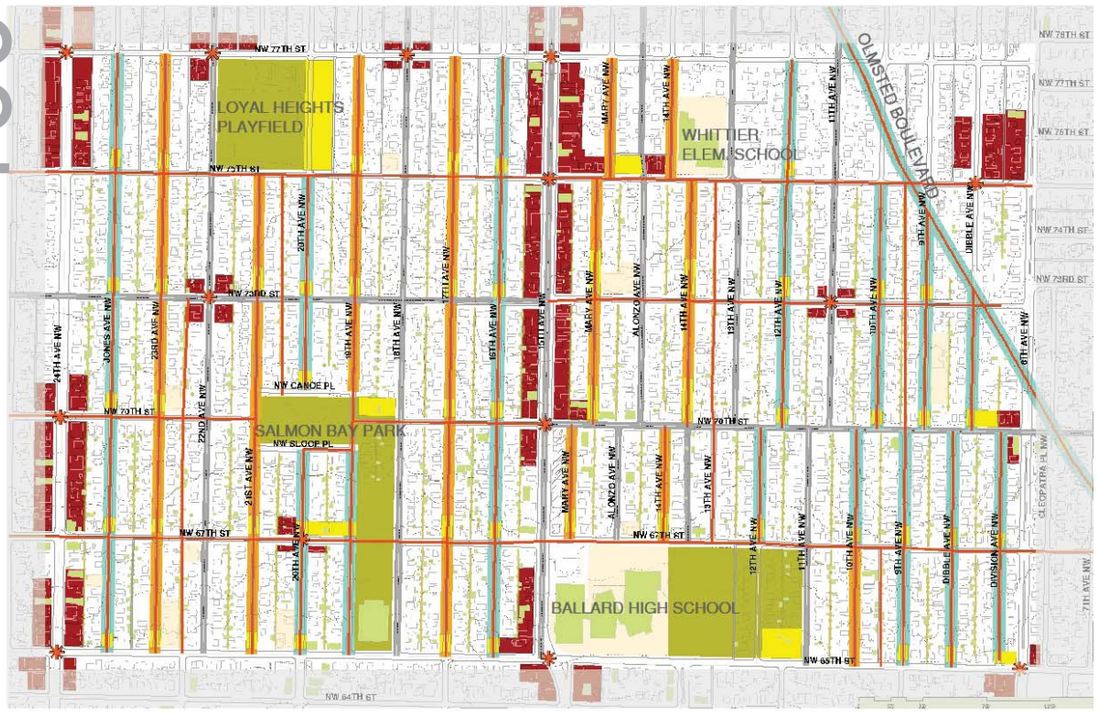
- additional high quality corridors
- matrix of stepping stones
- improved quality

Ballard / Ship Canal

BALLARD ECOVILLAGE (BEV) PLAN

Self-sustaining blocks between the Ballard and Crown Hill urban villages

100

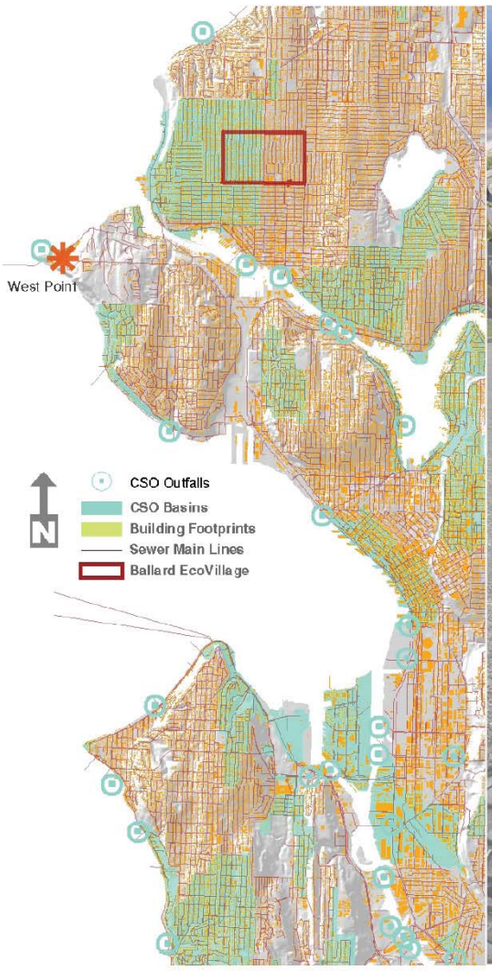


- Community Node
- Dense/Commercial Area
- Church/School
- Farmer's Market
- Park/Habitat
- Hedge Row
- Green Roof
- Pedestrian/Bike Corridor
- Vehicular Access
- Constructed Wetland Street
- Living Machine Street
- "PeePee" Patches

20

local service nodes expanded parks urban agriculture limited vehicular access no mo' cso

Ballard / Ship Canal



EXISTING SYSTEM

MUNICIPAL TREATMENT

WESTPOINT TREATMENT FACILITY
King County REGIONAL SYSTEM
420 sq miles

90 ppl per block

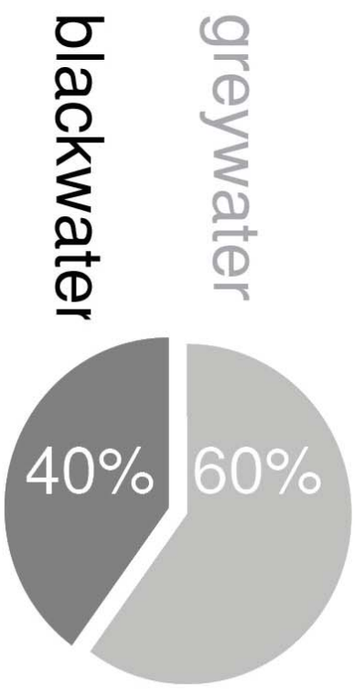
110 gpd used per person

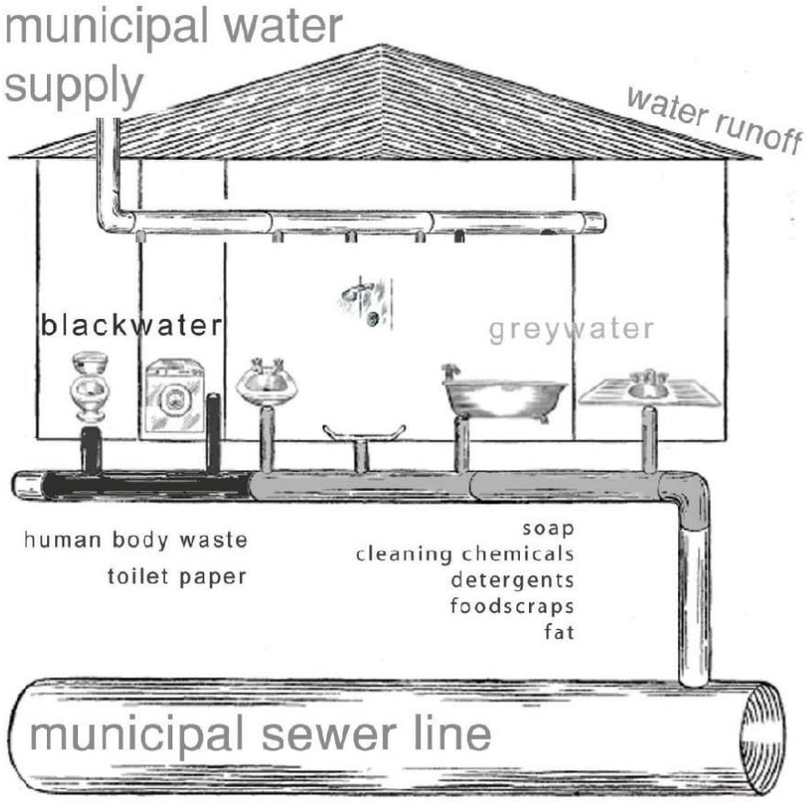
10,000 gpd per block

HOUSEHOLD WATER USE:

330 gpd used per house

used per house



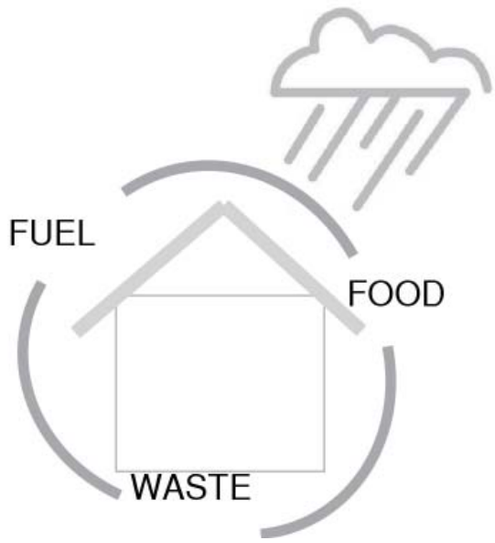


Ballard / Ship Canal

PROPOSED
SYSTEM

LOCAL TREATMENT
BALLARD ECOVILLAGE
P.E.E. STREETS

32,000 sq ft ROW per block

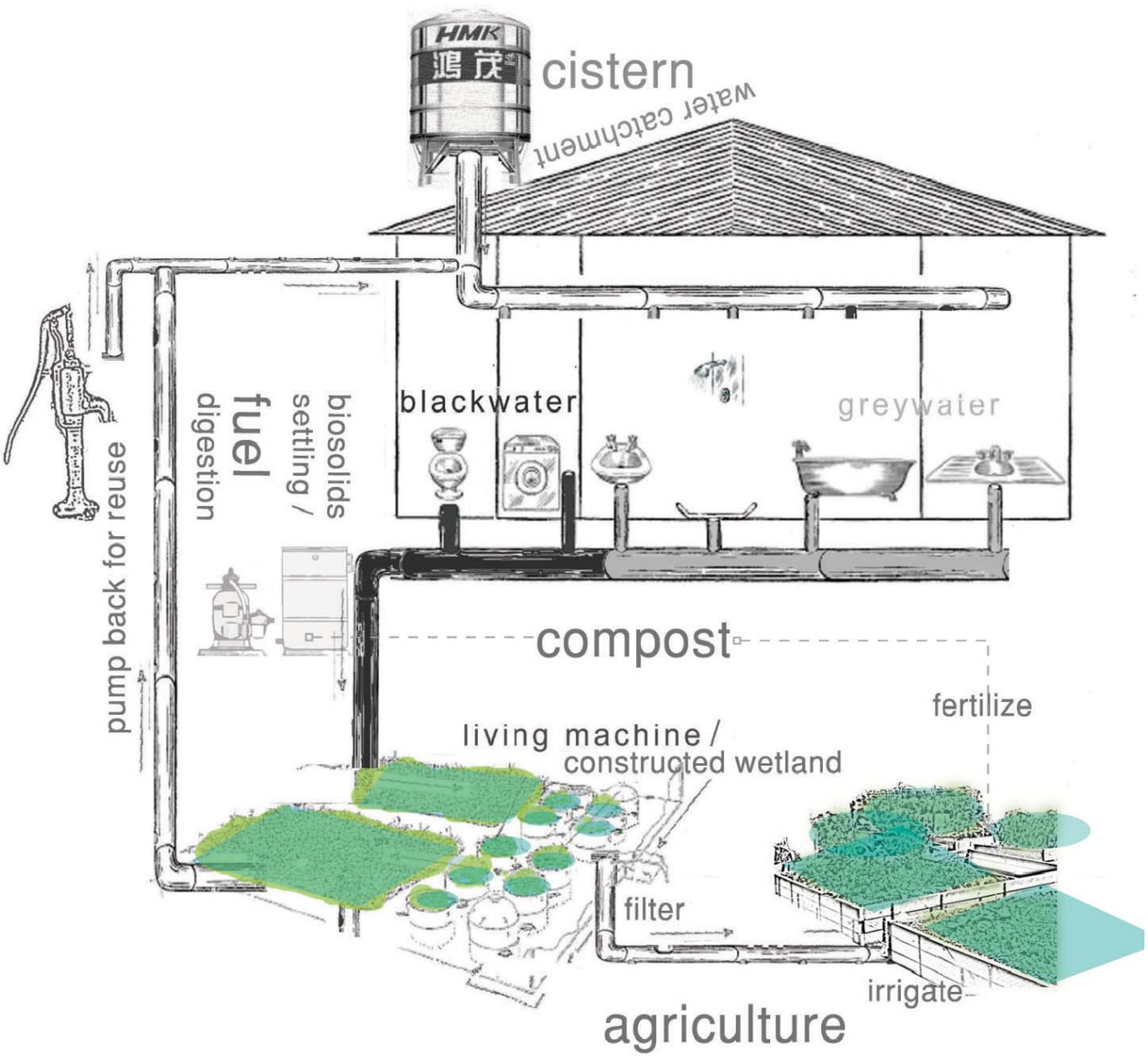


2100

180 ppl per block (double the population)

70 gpd used per person (better water-saving technologies)

13,000 gpd per block



BALLARD P.E.E. [PROGRESSIVE.ECOLOGICAL.EDGE] STREETS

CONSTRUCTED WETLAND
cost:
$10 per sq ft
$230,000
source: Reed, Crites, and Middlebrooks

LIVING MACHINE
cost:
$300 per sq ft
$500,000
source: Living Machine product sheet

area required:
23,000
sq ft

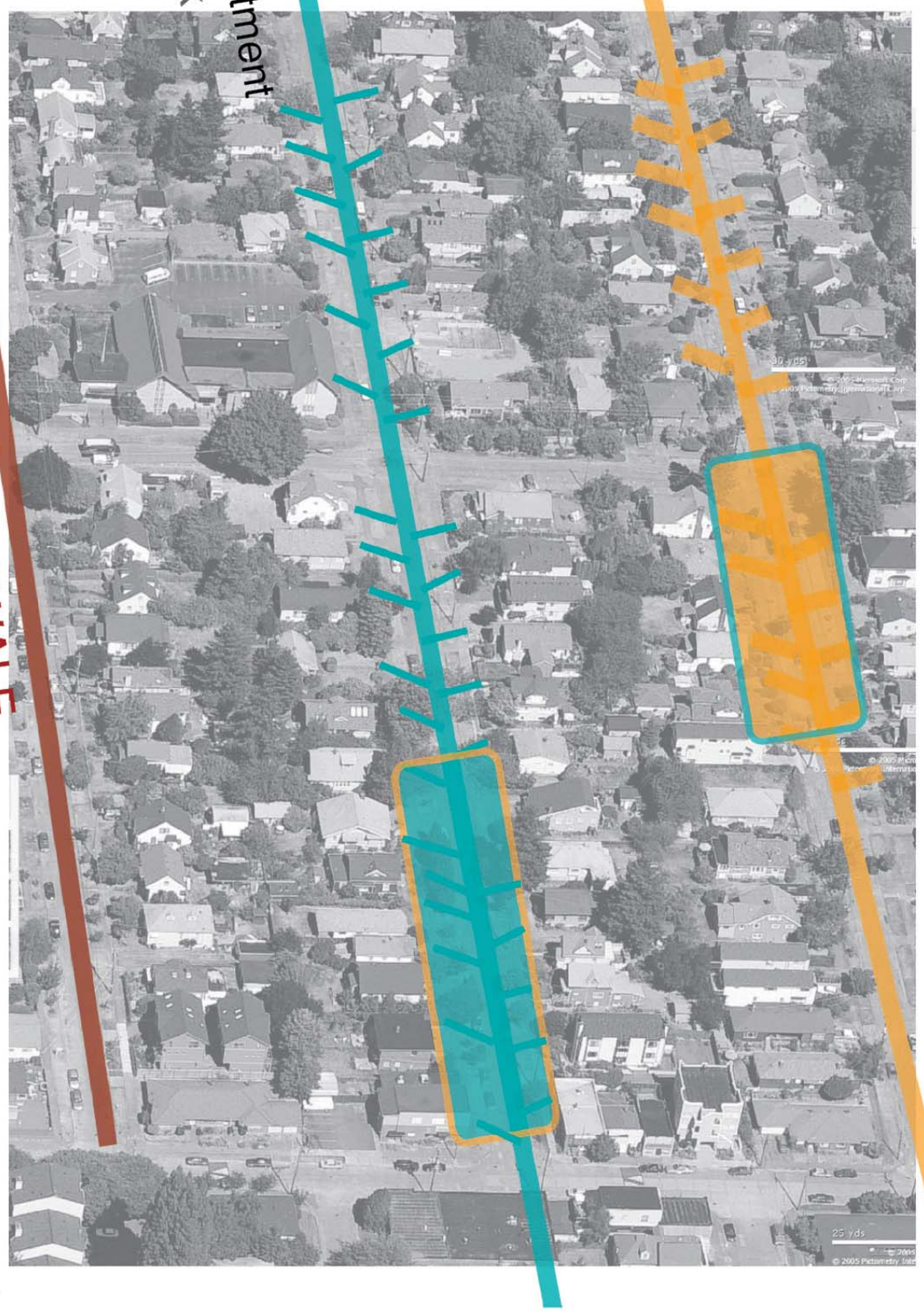
CONSTRUCTED WETLAND
black+greywater treatment
13,000 gpd per block

LIVING MACHINE
black+greywater treatment
25,000 gpd per block

360 ppl
(denser area serving 2x population)
per block

25,000
gpd per block

area required:
biosolids holding:
100 sq ft
greenhouse:
1600 sq ft
system:
1500 sq ft



BIOSWALE
stormwater retention
on limited narrow roads; the closed streets are now for local waste treatment + recycling... pee streets + peepee patches!

Ballard / Ship Canal

LIVING MACHINE

black+greywater treatment

CONSTRUCTED WETLAND

black+greywater treatment

Ballard / Ship Canal