RE-IMAGINING SEATTLE STREETS:

planting strips and street edge treatments for urban green infrastructure

Final Report for Seattle Public Utilities
November 2007

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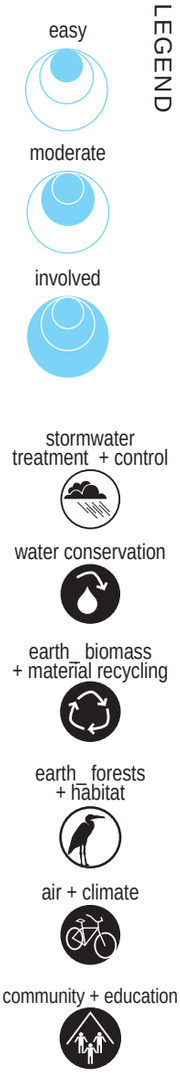
LEGEND



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1. PROJECT SUMMARY

Introduction

In Autumn of 2006 Seattle Public Utilities, the Green Futures Lab of the University of Washington Department of Landscape Architecture and Seattle's Magnolia Community joined together to explore how planting strips (otherwise known as parking strips) and **street edges could be designed to better conserve our life-sustaining natural and human resources of water, climate, urban forests, habitat and community**. Over the course of ten weeks, UW graduate planning and design students worked with Seattle City staff and Magnolia community partners to investigate how new street edge and planting strip treatments could contribute to effective and efficient conservation of local resources. Using **34th Avenue West as a test site**, students developed prototypical designs that individuals and communities throughout the city might adapt to their own conditions, thereby weaving a city-wide green infrastructure that would support a healthier Seattle and Puget Sound environment.

The idea for investigating the **resource conservation potential of planting strips** was initiated at the suggestion of Seattle Mayor Greg Nickels. This concept overlapped elegantly with the desire from the Magnolia community to express the underlying flow of a buried creek and to create a safer and more inviting pedestrian environment along the neighborhood's main thoroughfare. It also fit with recommendations from the Magnolia team working in the Open Space Seattle 2100 long-range planning process.

Project Description

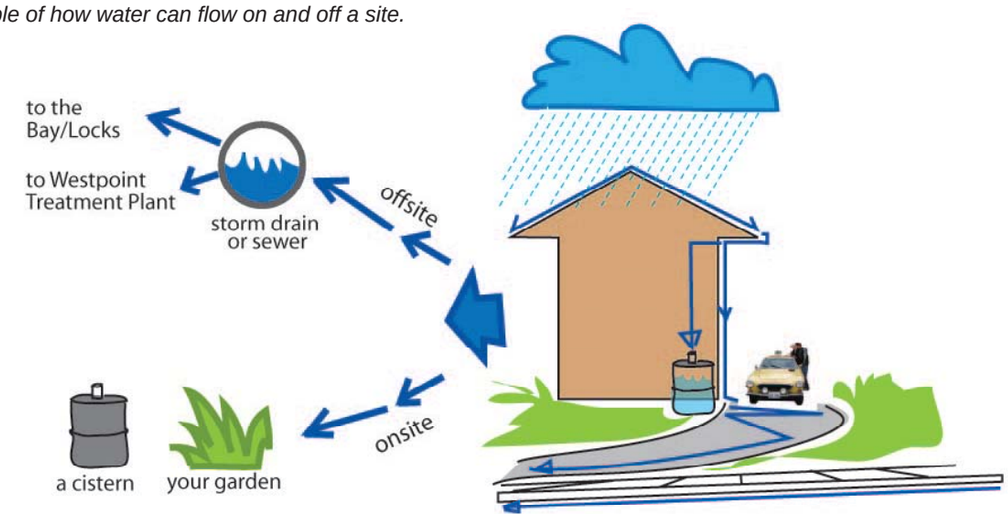
Why planting strips and street edges?

The notion of using planting strips as a key element of a city's "green infrastructure" is a compelling one. **More than 30% of Seattle's land cover is in the public right-of-way**, and on some streets the planting strip constitutes up to nearly half of the streetscape. Most of this land is impervious, contributing to urban runoff that damages aquatic life in streams, lakes and Puget Sound. **Planting strips and street edges may well comprise at least 10% of the city's land cover,** with most of these paved or planted in lawns that may contribute to winter stormwater runoff and encourage use of summer water, pesticides and herbicides while offering little in the way of habitat for urban wildlife or places for neighbors to enjoy. If these spaces are treated as public-private amenities they **might instead provide ecological services such as controlling and treating polluted stormwater, invite use by more diverse insect and avian life, and encourage residents to walk, ride bicycles and know their neighbors.**

While there is a growing trend of homeowners removing their planting strip lawn and planting gardens instead, this trend could also lead to increased water consumption, fertilizer and pesticide use. As citizens become more invested in their street-side gardens they may decide to use more water and chemicals to control diseases and pests, rather than designing them in ways that might encourage resource conservation and healthy habitat. **Right now, planting strips and street edges represent an opportunity to leverage the interests of citizens who are already changing these spaces and to guide them with conservation in mind.** These early-adopters are critical for establishing the way resident-teaches-resident and how **individual gardens might flow from one to the next in a river of open spaces.**

If homeowners, businesses, and civic-minded citizens were to take a conservation approach to planting strips and street edges, just imagine how **these spaces could incrementally add up to ecological corridors** that contribute to healthier water bodies and better fish habitat, more walkable neighborhoods, cooler urban environments, people gardening together, and stepping stones for birds and butterflies nesting and moving through the city.

Example of how water can flow on and off a site.



Magnolia Neighborhood as a Test Case

This imagining is what we undertook, approached as research via the design process and tested through our interactions with the Magnolia community. Our graduate students operated in teams that tackled various land uses and street conditions along 34th Avenue West in the Magnolia neighborhood, to develop prototypes that might be adapted for other streets across the city. The main thoroughfare of 34th Avenue West offered diverse issues and opportunities, and also demonstrated what might be accomplished when streets are approached as continuous corridors for movement of humans, water and wildlife. The street is well used by pedestrians: children walking to school, seniors walking and bussing to shopping areas, and commuters using bus transit and bicycles. The territory hosts the largest heron rookery in the city, adjoins the wilds of Discovery Park, and incorporates the commercial village of Magnolia, single-family residences, senior housing, and community institutions. Its exceptionally wide planting strips, multiple land-use types, and underlying water and habitat connections between Elliot Bay to the south and Kiwanis Ravine to the north all provided excellent conditions for developing prototypical ideas.

The neighborhood also represents inevitable relationships between the small unit and the broader environment. The large ecological patches at Discovery Park, Kiwanis Ravine, and Magnolia Park all stand to support each other as habitat by connecting them with corridors of urban forests. There is interest in daylighting Wolfe Creek at both its north and south ends, which could provide significant salmon habitat. The basin is partially served by storm sewers, partially by combined sewers, and partially by both: roof water drains into a sanitary sewer system that has increasingly overflown into Elliot Bay and street stormwater routinely flows untreated into the Bay. With the increasing combined sewer overflows in the southern basin, Metro is planning for costly upgrades to the combined system that may be mitigated by capturing roof water in local rain gardens (per John Phillips, King County 2007).

Beyond Magnolia for City-wide Prototypes

This work has potential for application well beyond 34th Ave. W., to streets and neighborhoods across Seattle. We approached our design testing with this goal in mind. To explore various prototypes that might be used throughout the city we divided the corridor into four land-use types:

- CURBED RESIDENTIAL_primarily consisting of 20'-wide planting strips that afford generous space for garden development. (Most of our proposed designs are scalable to more traditionally-sized planting strips);

- CURBLESS RESIDENTIAL & PARK_occurring at both the north and south ends of the corridor. As noted above, the north end is adjacent to the Kiwanis Ravine Natural Area, home to the city's largest Great Blue Heron colony and the above-ground length of Wolfe Creek that may someday be reconnected with the Ship Canal at the Ballard Locks. At the south end, the southward-flowing branch of Wolfe Creek runs underground through Magnolia Park before it outfalls from a pipe into Elliot Bay. While these conditions don't occur in every neighborhood, many areas of the city do have undeveloped street ends and curbless streets adjacent to parks and natural areas;

- CURBED BUSINESS DISTRICTS_ addressing a major intersection in Magnolia Village and a separate full mixed-use block with a grocery store;

- CURBED INSTITUTIONAL_including a school, community center, park, senior housing and a library.

The design explorations in the document are organized by these four land-use types. In addition, students have developed design ideas based upon ease and complexity of implementation. Designs within each team fall into the categories of "easy," "moderate," and "more involved," with the easiest solutions typically implementable by individual homeowners and the more involved ideas requiring substantial City participation. Our aim has been to create a diverse menu of ideas that will inspire adaptation to the unique conditions that exist on Seattle's street edges.

We hope that these solutions will help homeowners, neighborhoods, businesses, interest groups and government to positively impact the environment in simple ways that incrementally come together to provide a girding for the city's green infrastructure. By focusing on the small, underused units of planting strips, the intention is that citizens will be empowered to make changes to their own streets, garden by garden, block by block, which may add up to a whole city that is greater than the sum of its parts.

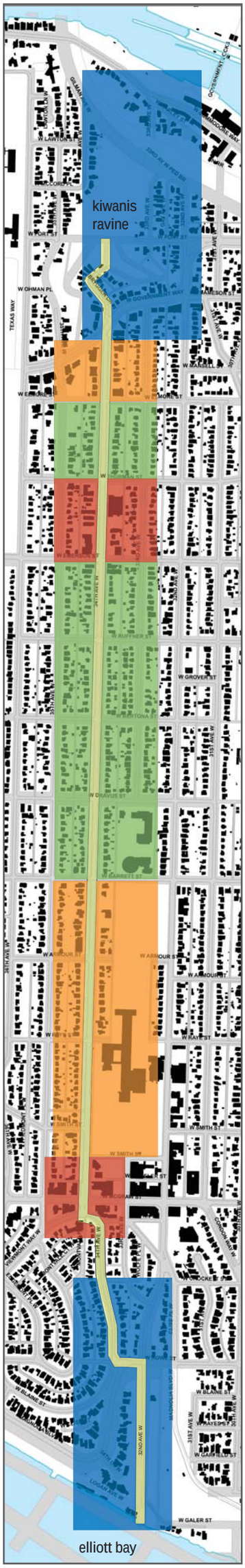
Diagram of Study Areas

CURBED RESIDENTIAL

CURBLESS RESIDENTIAL & PARK

CURBED BUSINESS DISTRICT

CURBED INSTITUTIONAL



ship canal
ballard locks
w fort st.
w. government way
w elmore st.
w. thurman st.
w. emerson st.
w. ruffner st.
w. bertona st.
w. dravus st.
w. barrett st.
w. armour st.
w. raye st.
w. smith st.
w. mcgraw st.
w. howe st.
w. galer st.

Resource Conservation & Street Edges

The Potential of Street Edges and Planting Strips as Green Infrastructure

Cities are seen by many as the solution to the enormous impacts that humans are having on the earth's climate, biodiversity and ability to support human health and well-being. Seattle has been on the forefront of this movement, intensifying urban life as an antidote to the damage wreaked by population growth in our surrounding agricultural and forest lands and to our global climate impacts. Experts advise that, in order for this strategy to succeed, cities must be good places to live, providing requisite amenities and environmental quality. With such amenities, cities hold potential for healthy, satisfying living, but without them may be the worst places, either trapping people or pushing them back out to consume resource lands in suburban sprawl.

Well-designed cities can reduce the human footprint on the planet by enabling people to drive and consume less, to walk more and share conservation practices, and to find reward in community building, exercise and environmental stewardship. With attention to amenities in the public realm, city streets establish local character, walkability and places for people to meet their neighbors, building community and social cohesion. Contact with nature is increasingly recognized as important for human health, education, and child development. Such nature can be enhanced by linking our patches of habitat with corridors of vegetation and limiting use of chemicals that indiscriminately kill beneficial and desired species along with pests. Fostering habitat for wildlife not only benefits other-than-human species, but also brings great potential for human pleasure, learning and rejuvenation through contact with nature, feeding a sense of wonder about the incredibly rich and diverse forms of life on the earth.

Cities typically have major regional relationships, and therefore larger ecological impacts too. Seattle sits at an important regional and global position for other life forms at the outlet of two watersheds - the Cedar and the Green - draining into Puget Sound. It is a critical threshold for salmon needing to twice run the gauntlet through the city, into these two major watersheds to spawn and back out to the sea as juveniles, resting in the urban waters into which neighborhoods drain their polluted stormwater. These migrating fish compete for clean, cool river flow with metropolitan residents who draw water for irrigation at precisely the time that spawning salmon need it most. Recent concerns about Puget Sound have identified urban stormwater as a major cause of its alarming declining health. Seattle also is located on the Pacific Flyway for migrating birds and as such is a potential resting and nesting location for many migratory species who are finding fewer and fewer stepping stones or summer/winter homes to support their life cycles.

The City of Seattle has recognized the need for new approaches to attain higher water quality in our surrounding water bodies, and appreciate the relationships between human health, municipal and global water supply, low-impact transportation and urban nature. Seattle Public Utilities helps citizens learn how to conserve resources through its educational programs and publications, and has implemented nationally-renowned urban retrofit projects that filter pollutants and reduce stormwater damage to streams through "natural drainage" swales on residential street edges. The utility also sponsors innovative rain harvesting and water conservation education programs. Seattle's Department of Transportation is advancing planning that will provide over 500 miles of new bikeways, and that will create safe walking routes throughout the city. The City's Department of Neighborhoods supports urban gardening, encourages grassroots initiatives for climate protection and funds neighborhood-driven projects that have community cohesion and improved neighborhood environments as their dual outcomes.

Street edges and planting strips provide unrecognized opportunities to merge these strengths in an urban green infrastructure through a multi-agency approach and a partnership with Seattle citizens. Through fresh attention to these small, multi-jurisdictional spaces, City agencies can collaborate to efficiently and simultaneously achieve several goals at once. Aimed at resource conservation, a new approach to planting strips would rework the current "lawn-only" standard that may invite wasting of precious summer water resources, encourage use of pesticides, herbicides and polluting lawnmowers and contribute to stormwater runoff in the rainy season. With a new aesthetic, neighbors might join together to create resource-conserving planting strips that would have overlapping benefits.

We have used a rubric of resource conservation goals that includes the following components of water, earth, air/climate and community:

WATER_
Stormwater Quality & Quantity

WATER_
Water Conservation & Harvest

EARTH_
Waste reduction; Composting; Soil preservation; Herbicide reduction

EARTH_
Habitat/ Urban Forest/ Pesticide reduction

AIR & CLIMATE PROTECTION
Walkability; Transit; Bicycle

COMMUNITY_
Art/Markers; Safety; Gathering; Process; Education

Potential Street Edge Solutions for Interdepartmental Resource Conservation Goals

Several of these conservation goals reflect Seattle Public Utilities (SPU) targets while others are encouraged and led by other City departments. SPU has explicit goals to conserve water (reducing per person water consumption by 1% every year for ten years by 2010), recycle solid waste (recycle and reduce 60% of all waste generated by residents and business by 2012 and 70% by 2025), protect surface water quality and aquatic habitat and reduce stormwater flows. The beauty of the street edge designs is that they bring together solutions that assist multiple departments while motivating citizens to partner with the City in making these solutions real.

Many of the design solutions for street-side gardens address several of these goals simultaneously, with the potential of helping multiple City agencies and departments achieve complementary goals. For example, a series of fine-grained, sensory-rich gardens along a street may encourage people to walk or take public transit, potentially reducing climate and air quality impacts. If the gardens are composed of drought-tolerant species, are irrigated by water harvested from adjacent roofs and planted in compost-rich, mulched soil, then potable water use for the gardens can be minimal. This is especially important during the summer when salmon in the Cedar and Tolt Rivers compete with Seattle residents for clean, cold water. In addition, when roof water is collected and used for irrigation, soil and plants cleanse it of zinc and other pollutants before it finds its way to Puget Sound and salmon-bearing lakes and streams.

If these gardens accept petroleum-laden water from the street through curb cuts in the planting strip, they can also filter and treat pollutants that would otherwise drain directly to our surrounding water bodies via the separated storm drainage system. Where there are combined sanitary and storm sewers, using these “raingardens” to hold water from entering the system all at once may prevent the combined systems from overflowing sewage into water bodies during high storm events. Infiltrating this water into the earth may help to recharge groundwater that is needed for maintaining critical water flows and cool temperatures in streams during the summer months.

Where these raingardens are planted in new curb bulb-outs and islands they can accept storm flows from the street gutters (providing that the soil drains adequately). Street raingardens have multiple benefits, detaining and filtering polluted street water while also providing pedestrian refuge, solving water quality issues while making streets safer and neighborhoods more walkable. Islands can be used to separate bike traffic from the vehicle lane, enhancing safety at street intersections for both pedestrians and cyclists.

Multiple benefits are also achieved through homeowner garden practices. In the streetside garden where compost and mulch are generated by organic materials from the property, then fossil fuels aren’t needed to transport yard waste away or bring new material back to the site. The “compost fence” provides an attractive way to define space while also aiding decomposition of yard waste into a useful garden amendment. If pest-resistant plants are selected for the garden then pesticides are typically not required. In addition, by avoiding grass and using the right types of plants, fertilizers are usually unnecessary. Since it is generally accepted that native plants will more effectively attract native species of insects, birds and amphibians, use of native plants will also enhance the habitat value of street corridors. Habitat features such as bird and bee nesting boxes and water-holding devices can further increase habitat value.

When street trees are incorporated into the planting strip design, there is substantive benefit to habitat structure of the urban forest, particularly when native species are used. Cities are often obstacles in regional wildlife flows, so providing

urban stopping places for migrating species can be critical to their life cycles. Large trees also provide an overarching canopy that shades heat-retaining streets, thereby mitigating the urban heat island effect, and conifers in particular can deflect and evapotranspire significant rainfall in winter storm events.

Planting strip gardens can also build community. In addition to the fine-grained character that encourages walkability, they can be spaces designed for outdoor gathering, eating, shopping and celebrating, spreading the recognized benefits of the summer "block party" throughout the year. Community bonds generated from such events have far-reaching effects. Neighbors knowing each other can help to reduce crime and provide critical assistance for residents during times of need. With the incorporation of art they can give the neighborhood a distinct identity and foster pride and a sense of community attachment. By example and with the incorporation of simple signage and reader boards these semi-public gardens become excellent opportunities to educate neighbors about sound gardening practices as well as community news and events.

In short, the multi-jurisdictional nature of planting strips provides exceptional opportunities to gain multiple benefits for Seattle residents as well as for the local and regional environment. If City agencies work together on transforming design and management practices of these spaces, they may simultaneously, synergistically and efficiently advance their distinct agency goals.

Design Prototypes for Four Land Use Types

Developing the Prototypes

Working with the Magnolia community over the course of a university term, our class of 17 second-year landscape architecture and urban planning students explored possibilities for resource-conserving planting strips along 34th Ave. West. To inform this work, we:

- analyzed the conditions of the corridor, mapping opportunities and constraints.
- developed a set of "precedent" studies of exemplary practices in Seattle and other cities, both to inform our own thinking and to help Magnolia residents imagine what might be possible. These addressed such topics as habitat and planting, composting, water collection, stormwater treatment, and street amenities. The community displayed our set of over 60 pages in a storefront window in Magnolia Village. These highly-illustrated precedent studies will be useful in many situations. To view and download them, go to: *http://www.seattle.gov/util/About_SPU/Yard_System/Reports/index.asp* and click on "Planting Strip Design Report."
- invited guest speakers to help us understand resource conservation issues and technologies. As our community liaison with proven expertise on planting strip gardening, Jennifer Carlson played a key role in helping us to understand community visions and concerns, as well as techniques for low-impact gardening strategies. Liz Fikejs and Carl Woestwin elucidated resource conservation goals for SPU, and Mike Broili of Living Systems Design showed ways that water can be conserved through rainwater harvesting.
- toured Seattle and Portland to see innovative street treatment in these two cities. In Seattle, Peg Staeheli of SVR Design showed us new natural drainage strategies in use at High Point, and Jim Johnson demonstrated the City's RainCatcher program at a resident's home in Fremont. In Portland, Tom Liptan explained the City's stormwater control policies, showing us green roofs and urban "green street" projects. Award-winning landscape designer Kevin Perry showed us his City-sponsored rain garden projects on commercial and residential streets and at Portland schools.

We facilitated two workshops and gave a final presentation to the Magnolia community, a collaborative design process which is described later in this document in the Appendix. Students were aided in their planning for these workshops by a session with a local master of community workshop facilitation, Milenko Matanovic of the Pomegranate Center, and coaching from Jennifer Carlson (community liaison) and Liz Fikejs (SPU).

Prototype Parameters

As one of the studio design criteria, each of the four teams was asked to represent a **range of solutions.** The definitions of these categories differed slightly for each team, but generally fit the following parameters:

EASY_ A homeowner can take on a project individually, without coordinating between other neighbors on the block or with the City.

MODERATE_ The design would require a curb cut and/or might involve several adjacent neighbors on a block.

INVOLVED_ The design would require leadership from the City, as it involves hydrological or transportation engineering or changes to the street itself, and may require cooperation between multiple agencies.

Designs in any of the categories may require permitting (planting a tree requires a permit), though complexity of agency approval increases with each category. Before property owners undertake any changes in their planting strips, they should be encouraged to consider preliminary steps such as checking in with neighbors, knowing where underground utilities are, understanding how to avoid tree root damage and assessing their soil type.

In addition, many of these student design ideas include “rain gardens” or bio-retention swales for stormwater management. Seattle, and other local municipalities, are currently revising stormwater codes to permit and encourage rain gardens and other Low Impact Development techniques. It will be important for property owners to check local codes and permit requirements before commencing any excavation in the public right of way (which includes planting strips - usually up to and including the sidewalk).

Two helpful web resources for property owners desiring to install natural drainage and rain gardens are:

www.seattle.gov/util/NaturalSystems

www.pierce.wsu.edu/Water_Quality/LID/

Students' Design Solutions

This chapter presents students' designs that fall into the four land use types of **curbed residential**, **curbless residential**, **business district**, and **institutional**, with **easy to involved** solutions for each type as shown in the matrix below.

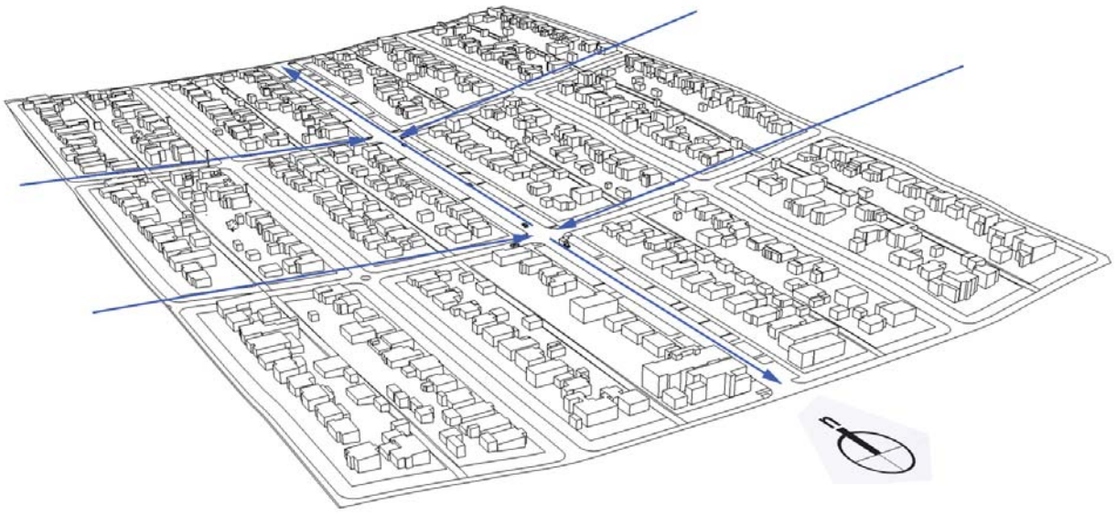
	EASY	MODERATE	INVOLVED
CURBED RESIDENTIAL			
	Easy Street	*Moderate Way*	*Involved Avenue*
	Go Native!	Growing Connections	Pedestrian Corners
	Flow I	Flow II	Water Gathering
	Resource Gardens	Wetland Wave	
	River of Tree		
CURBLESS RESIDENTIAL & PARK			
NORTH	Live Ends		
	Rapid Raingarden		Stormwater Ladder
SOUTH	Tracing the Water	Water Catchment	Daylight Movement
BUSINESS DISTRICT			
NORTH	Thriftway Garden Plaza		Thriftway Garden Plaza
	Senior Housing		Senior Housing
SOUTH		Magnolia Gateway	The History Walk
	Unlocking the Water	Slowing the Flow	Greening the Gateway
INSTITUTIONAL			
SENIOR HOUSING			Seasonal Steps
LIBRARY		Reading Spaces	Moving Channels
SCHOOL, COMMUNITY CENTER & PARK		Currents	Currents

“The streetscape is...a shared public real estate for the social and economic activity that enriches civic life. City streets double as play space and rallying grounds, while sidewalks serve as zones of casual interchange, shopping, dining and display...

...the right-of-way is also host to nature and natural processes. Trees, vegetation, and soil interspersed throughout the streetscape offset the sharp edges and hard surfaces of the built environment. Landscaped areas perform invaluable services by producing oxygen, improving air quality, providing shade and local cooling, and absorbing and treating stormwater.”

--from *High Performance Infrastructure Guidelines*
(New York October 2005, p. 6)

CONTEXT



The curbed residential area includes the majority of 34th Avenue in Magnolia, as outlined in red on the map on the lower right. The area consists mostly of single-family residences, with 20-foot-wide parking strips. Most parking strips are grass lawns, with some street trees or shrub beds. Utility wires run overhead along the west side of 34th. Surface water flow direction varies depending on the block's topography. There are bus stops on every block, and parallel parking along both sides of street, but no bike lane along the corridor.

The following design alternatives address multiple scales, from simple lot- or home-scale designs to components that are meant to be applied along a whole block or the entire 34th Avenue corridor. Simpler designs are intended to be achievable with a modest amount of work by an individual homeowner, whereas the intermediate and involved options will require greater levels of involvement between neighbors as well as the City. Ideally all designs will serve to inspire interest and promote broader action by those who see and experience them.

These designs are specific to many of the conditions found along 34th Ave, such as exceptionally broad parking strips; however they are meant to be applicable on a broader scale. Many of the basic ideas, such as building community through cooperation on yard waste composting, or working to connect swales and other ecological functions between lot boundaries can be carried over to other parts of the city. In order to demonstrate alternative configurations of many of the ideas proposed, we have included a number of "prototype" designs in the following pages.

LEGEND

easy

moderate

involved

stormwater treatment + control

water conservation

earth_ biomass + material recycling

earth_ forests + habitat

air + climate

community + education

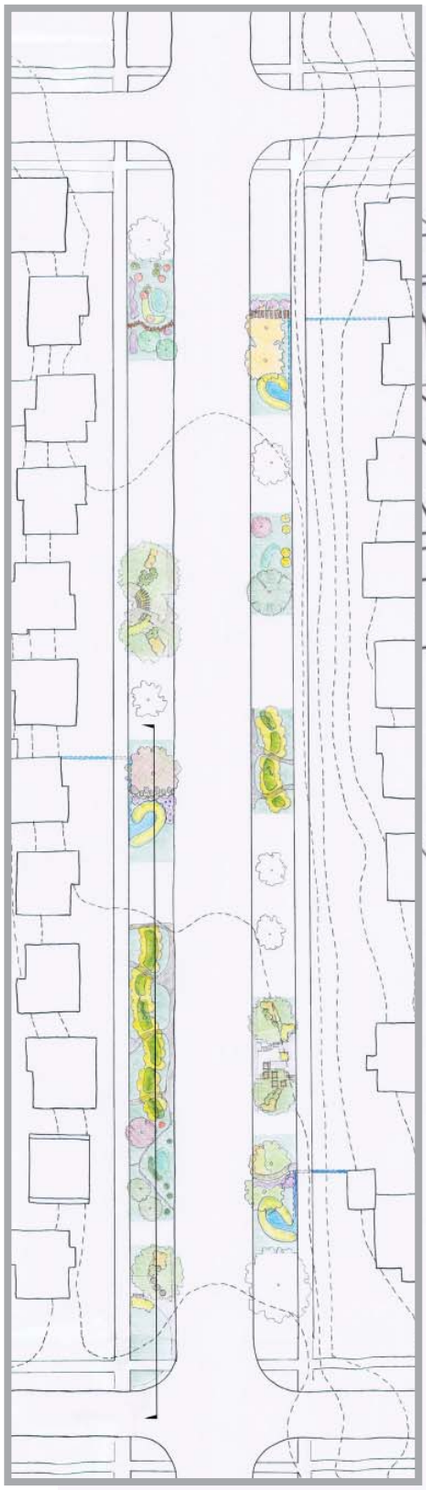
KEY

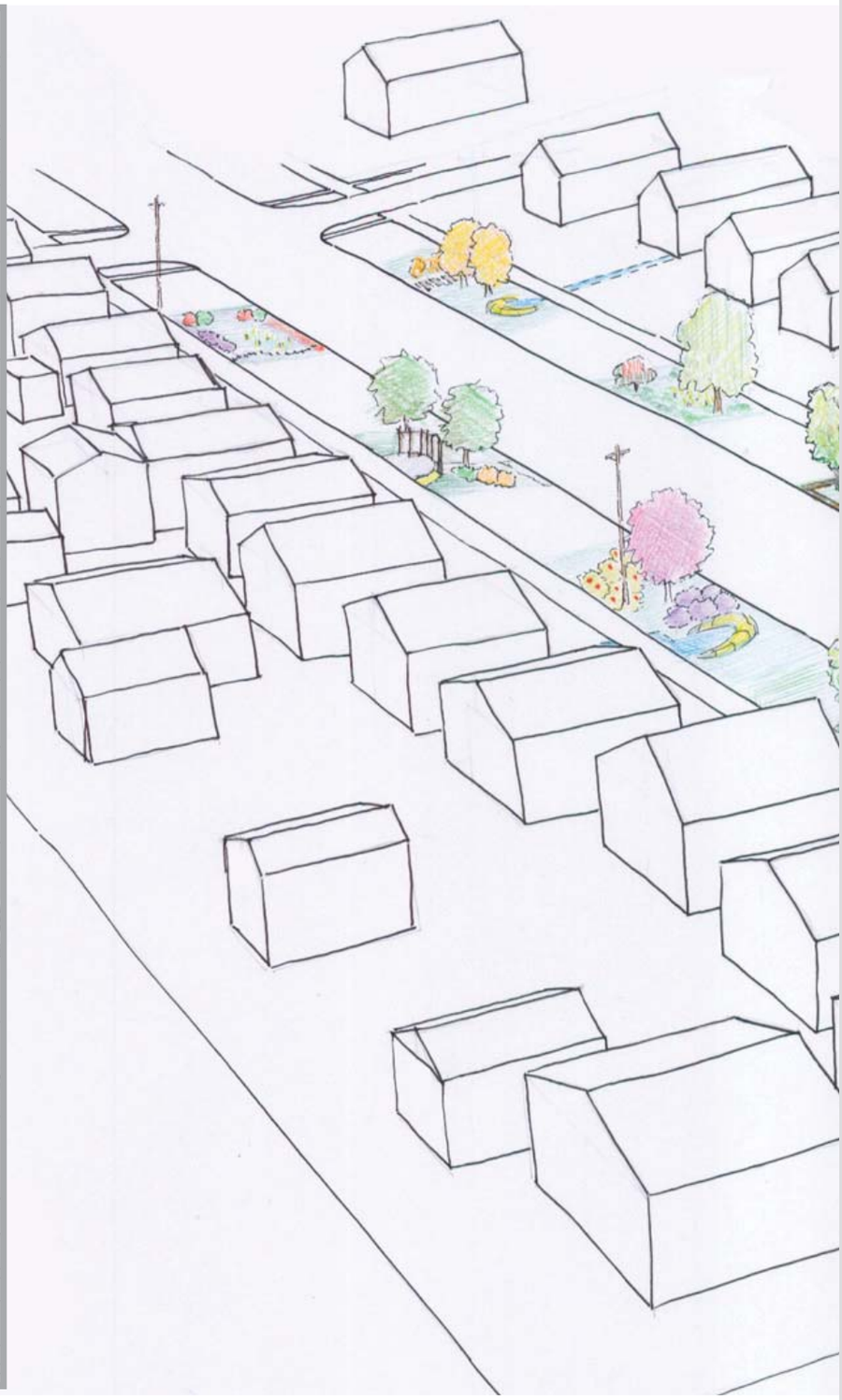
CURBED RESIDENTIAL AREA

BERG | MARTIN | MINNERY | THORNER

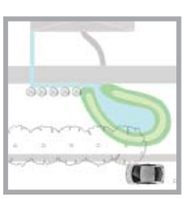
014 CURBED RESIDENTIAL

easy





GO NATIVE!
p. 16



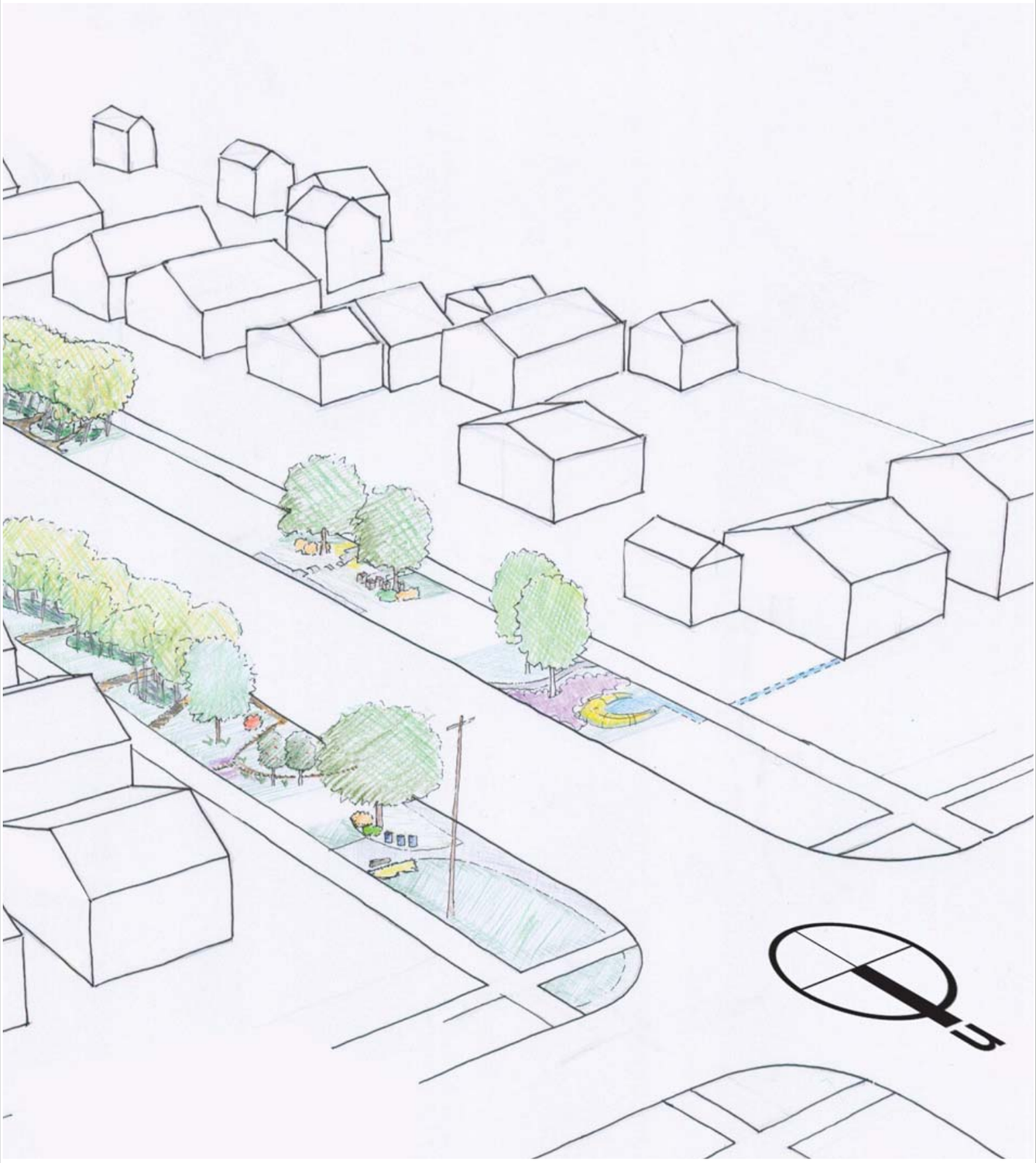
FLOW 1
p. 17

RESOURCE GARDENS
p. 18

RIVER OF TREES
p. 19

EASY Street

eric berg | justin martin
david minnery | ashley thorner



GOALS

IMPLEMENTATION BY SINGLE HOME OWNER

- Designs focus on single lot, and involve little or no permitting

ENHANCE COMMUNITY ENVIRONMENT

- Provide compost facilities that can be shared among neighbors
- Enhance pedestrian experience by providing more visual interest and improving air quality along street
- Surfaced gathering areas that create community interaction and gathering spaces
- Promote safety with vegetation that better separates street from pedestrians

CONSERVE RESOURCES & IMPROVE ECOLOGICAL FUNCTIONS

- Designs keep rainfall on the planting strip, reducing runoff to street & sewer system
- Local yard waste composting reduces need for waste removal
- Improve quantity, quality, and connectivity of wildlife habitat
- Increase tree canopy cover

PUBLIC EDUCATION & INSPIRATION

- Provide demonstration models to inspire broader action

easy

Go Native! david minnery

CONCEPT The Go Native plan is aimed at the individual homeowner to increase resource conservation in a small area. Through small interventions, an individual can make a positive impact on water conservation and habitat, subsequently adding to the aesthetic beauty of their yard and neighborhood.

GOALS

1. Catch all rainfall reducing runoff to street & sewer system
2. Adaptable to small scale and existing street trees
3. Use native vegetation
4. Improve quantity, quality, and connectivity of wildlife habitat
5. Enhance pedestrian experience, screen street
6. Promote safety through separation of street and pedestrians

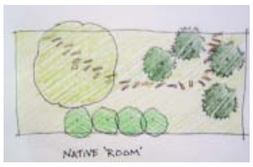
HOW IT WORKS

1. Soil acts as sponge for rainwater.
2. Vegetation attracts hummingbirds.
3. Native vegetation well suited for wet and dry conditions.
4. Path allows for easy access.

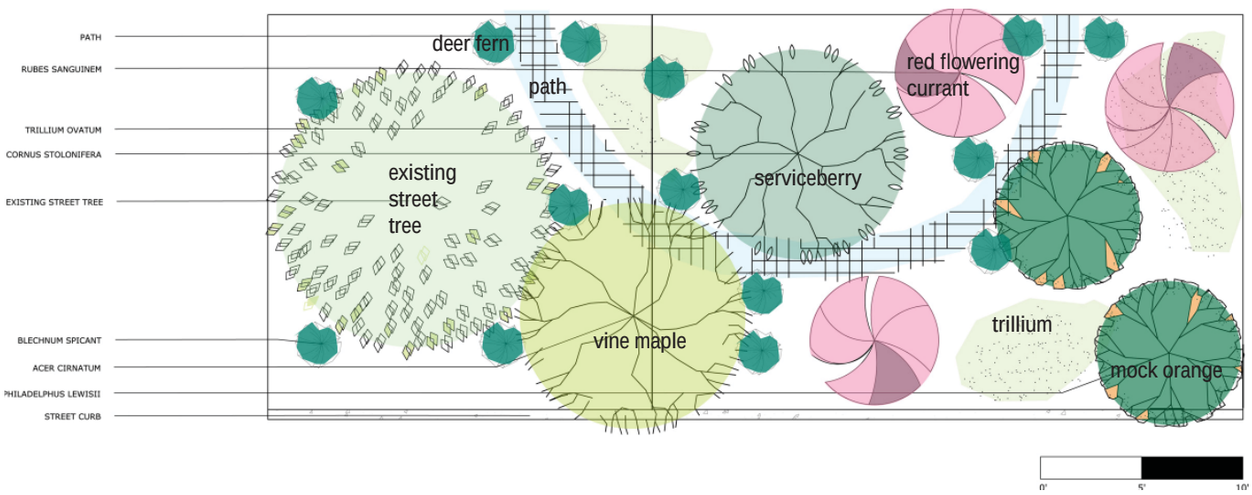
REQUIREMENTS

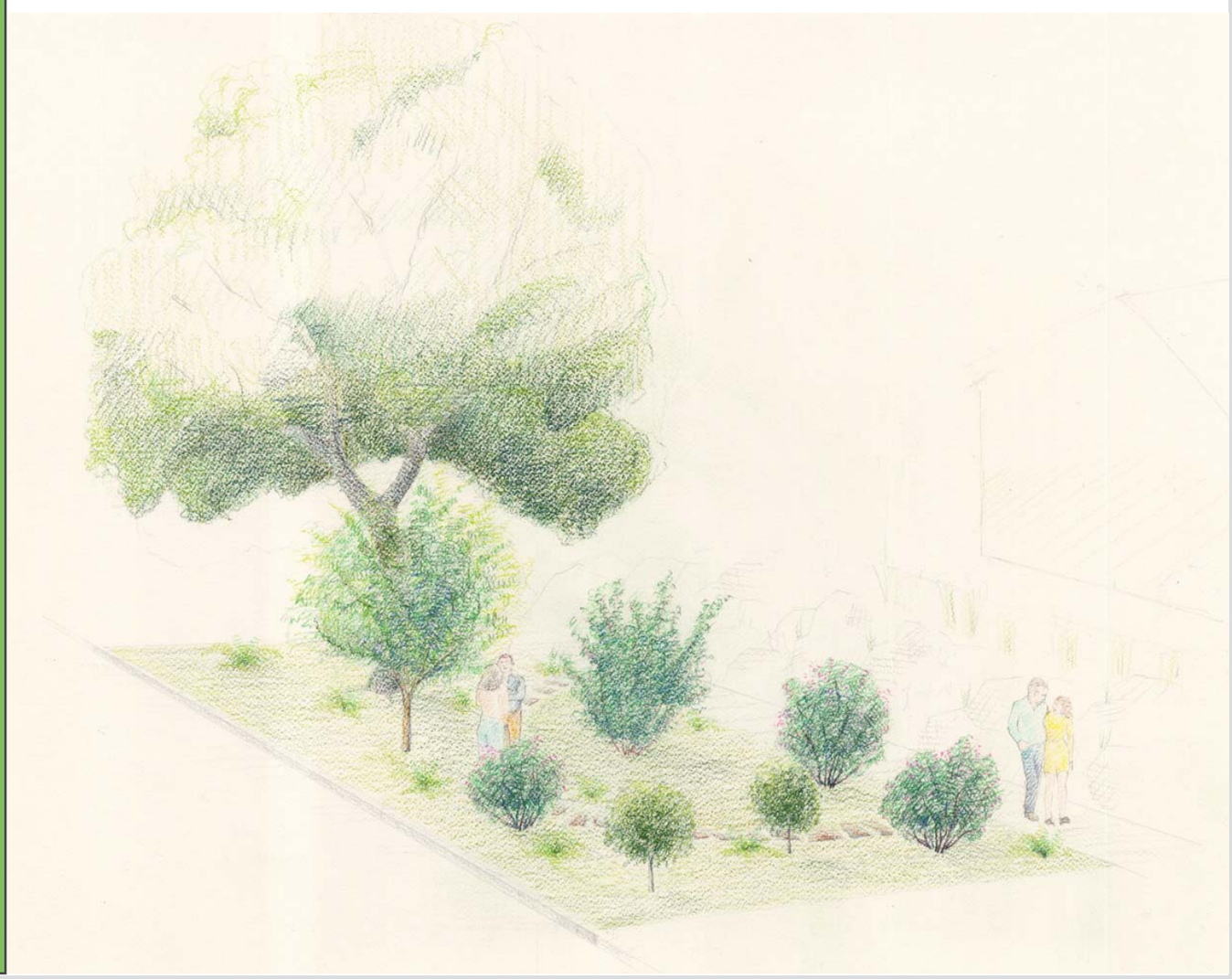
1. Soil amendment, 12” deep
2. Vegetation to match theme (native, color, low maintenance)
3. Path material (mulch, stepping stones, crushed rock, etc.)

PROTOTYPES



PLANTING PALETTE

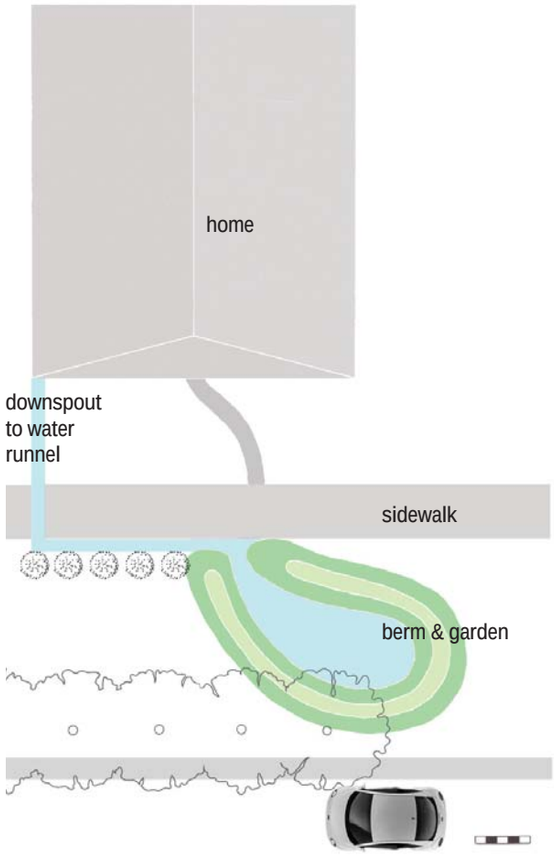




Flow

ashley thorner

CONCEPT FLOW is movement, the movement of water and of people through the urban landscape. The interconnected environmental design flows effortlessly through the neighborhood and in the process creates new habitats fed by the interconnected demands of urban water runoff, healthy ecosystems, and community livability.

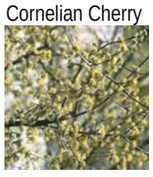


GOALS

- Achievable design for the individual homeowner
- Reveal natural drainage & improve water quality
- Create a healthy ecosystem/habitat
- Inspire surrounding community involvement & adaptation.

BERM & BUTTERFLY GARDEN PLANTING PALETTE

Cornus mas
Cornelian Cherry



Cornus mas
Cornelian Cherry

Rudbeckia cultivars
Black Eyed Susan

Echinacea purpurea
Purple Coneflower

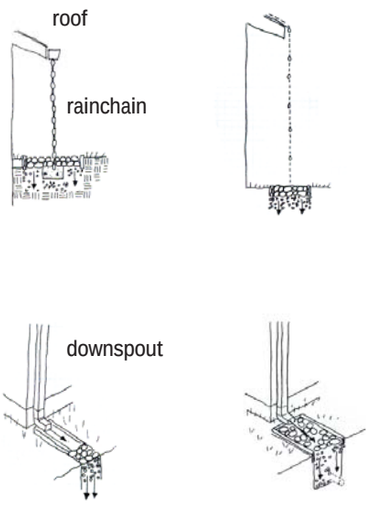
Echinacea purpurea
Purple Coneflower

Amelanchier alnifolia
Serviceberry

Asclepias tuberosa
Butterfly Milkweed

Carex aurea &
Nasturtium

DOWNSPOUT & WATER RUNNEL TEMPLATES



BERM & BUTTERFLY GARDEN (EAST-WEST)

Resource Gardens

eric berg

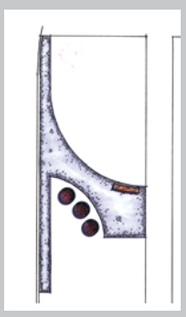
CONCEPT Based on the concept of cooperation between neighbors, Resource Gardens provide composting structures and planting areas for neighbors to share. Whether a vegetable patch, perennial garden, composting fence, or seating plaza, neighbors can cooperate to use, share, and maintain resources provided in the gardens.

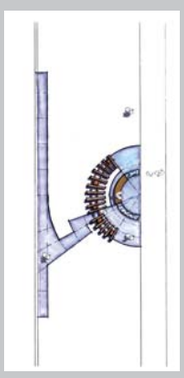
HOW IT WORKS (see diagram below)

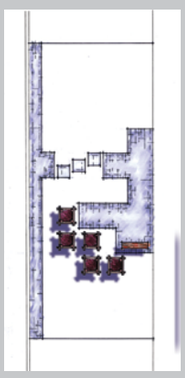
1. It's your planting strip, so you decide what LAYOUTS & PROTOTYPES best suit you.
2. Remove turf from area to be amended w/ COMPOST: a. sheet composting - lay cardboard over area & overlap, cover w/ 6" of compost/topsoil, top w/ 4-6" of wood chips and wait 3 - 5 months. Your soil will be ready to plant after a little tilling; b. sod cutter - rent a sod cutter and be sure to compost the sod you remove.
3. Layout and install PAVING.
4. Build / install composting COMPONENT (i.e.; composting fence).
5. PLANT trees, medium shrubs, short shrubs, annuals/perennials in that order (tallest to shortest).
6. Enjoy your resource conserving GARDEN!

A LOOK FROM THE SIDEWALK

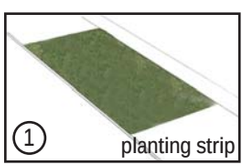
PROTOTYPES

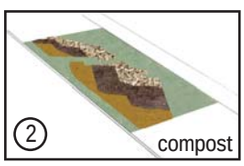


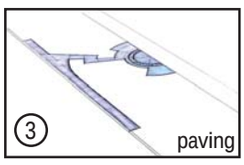


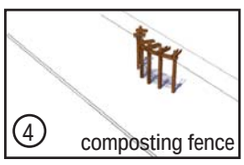


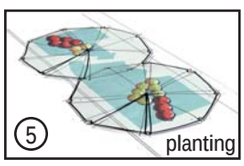
'HOW TO' DIAGRAM

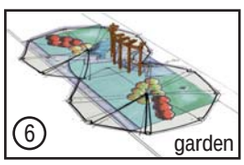




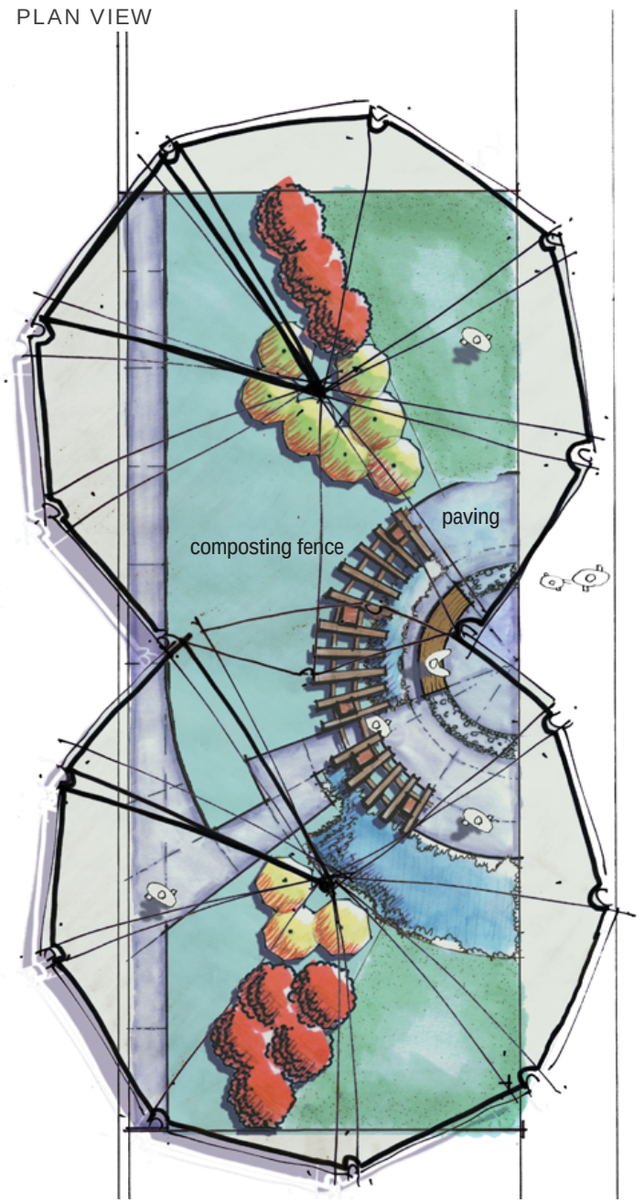






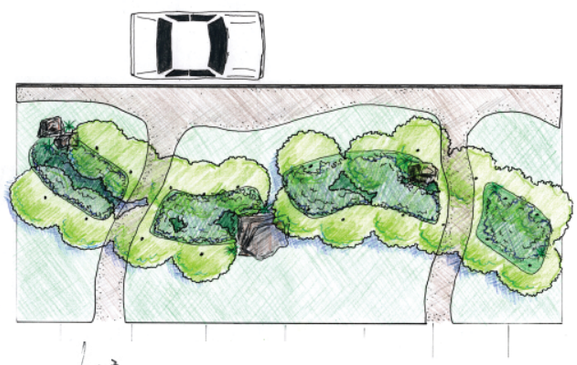


PLAN VIEW



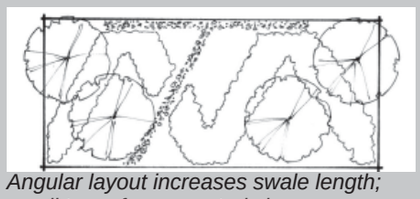
River of Trees

justin martin

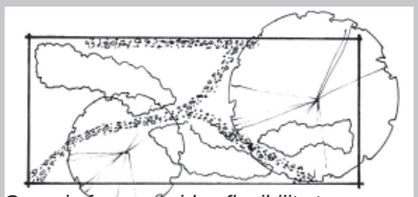


CONCEPT A simple streetscape design that could be implemented by an individual homeowner. The creation of a shallow meandering swale with amended soil will allow the site to absorb rainfall and minimize runoff to street and sewers. Plants in the swale are chosen for adaptability to moisture and drought tolerance as well as aesthetic appeal. Trees provide visual interest and increased urban canopy.

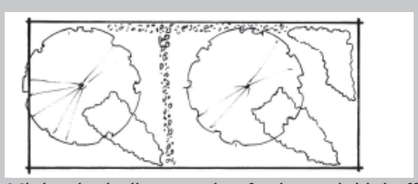
PROTOTYPE DESIGN TEMPLATES



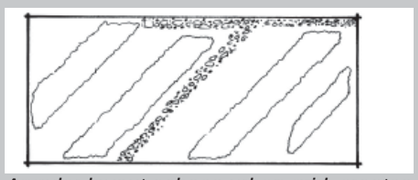
Angular layout increases swale length; small trees frame central view



Organic form provides flexibility to preserve existing mature trees



Minimal, shallow swales for lower initial effort; increases moisture for new or existing trees



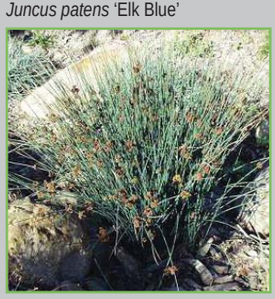
Angular layout echoes urban grid, creates rhythm, facilitates maintenance

SAMPLE 'RIVER OF TREES' PALETTE

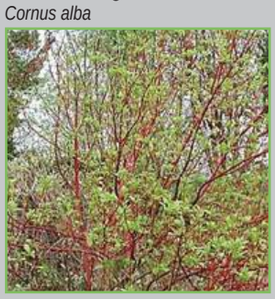
Heritage red birch
Betula nigra 'Heritage'

Variegated lilyturf
Liriope muscari '*variegata*'

'Elk Blue' California gray rush
Juncus patens 'Elk Blue'



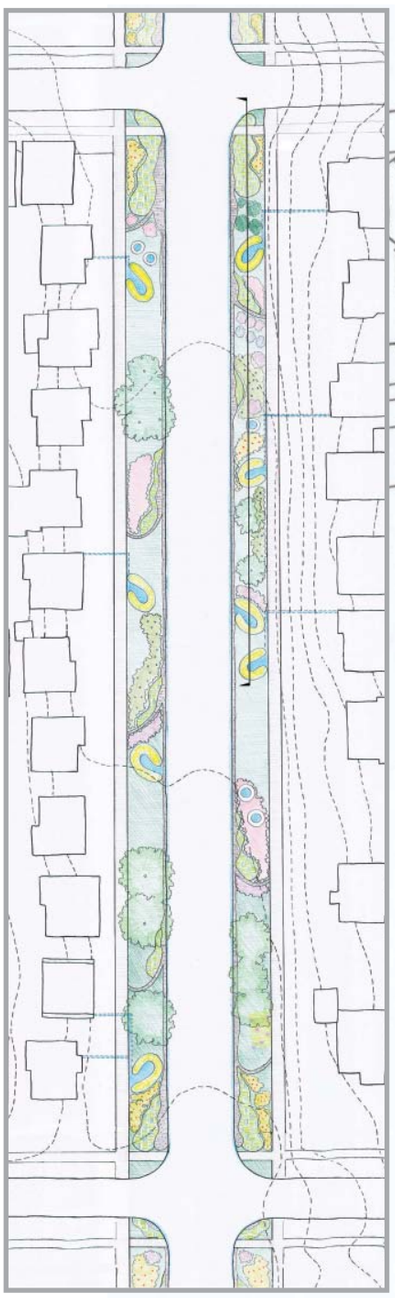
Tartarian dogwood
Cornus alba

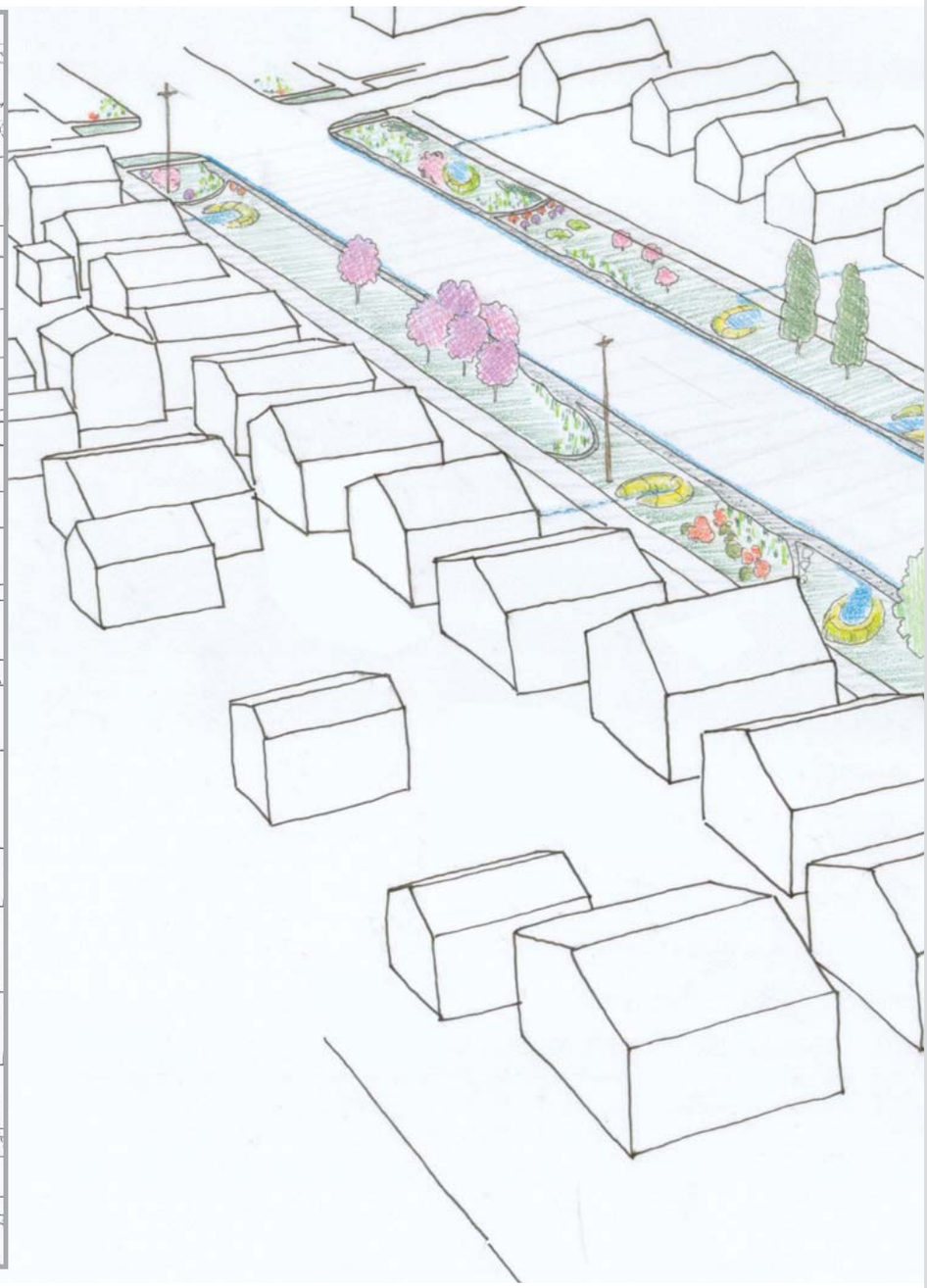


020

CURBED RESIDENTIAL

moderate





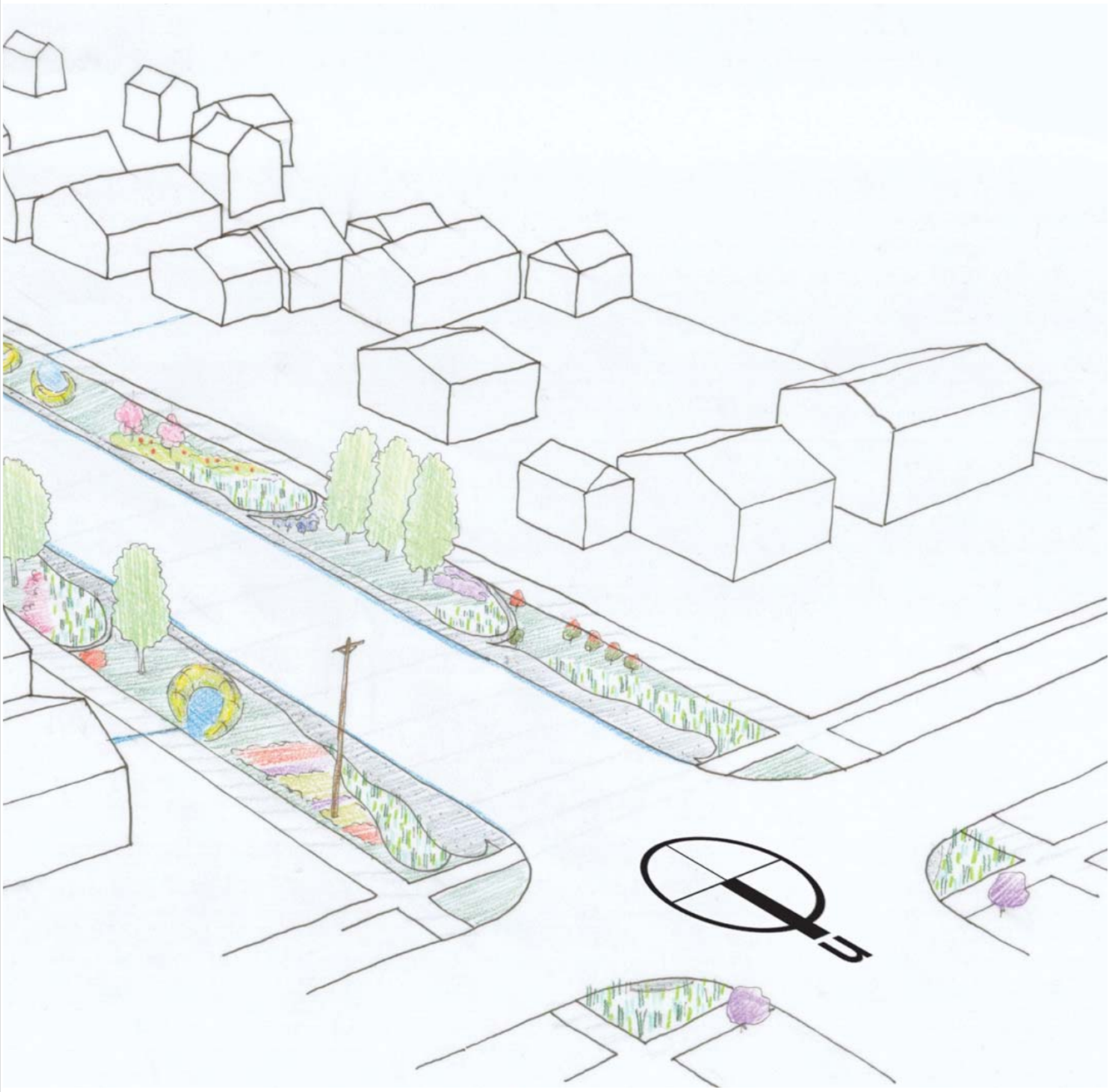
FLOW 2
pp. 022 - 023

GROWING CONNECTIONS
p. 024

WETLAND WAVE
p. 025

MODERATE Way

david minnery | ashley thorner



GOALS

IMPLEMENTATION BY MULTIPLE HOME OWNERS

ENHANCE COMMUNITY ENVIRONMENT

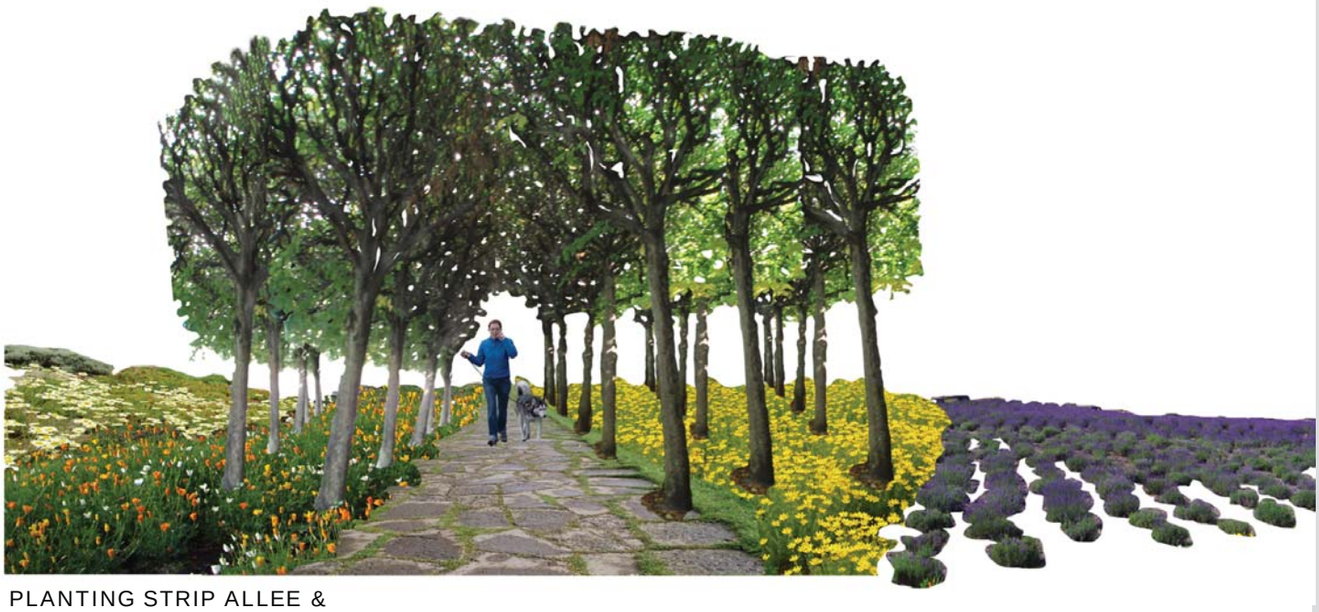
- Bring neighbors together to collaborate on streetscape plans
- Create gathering spaces along the street
- Help to create community identity through public art

CONSERVE RESOURCES & IMPROVE ECOLOGICAL FUNCTIONS

- Improve stormwater quality and quantity through filtration in swales
- Conserve water through rainwater harvesting
- Decrease load on sewer system by using roof runoff onsite
- Reduce waste and reuse material onsite through composting
- Improve quantity, quality, and connectivity of habitat through diverse planting palettes
- Increase canopy cover

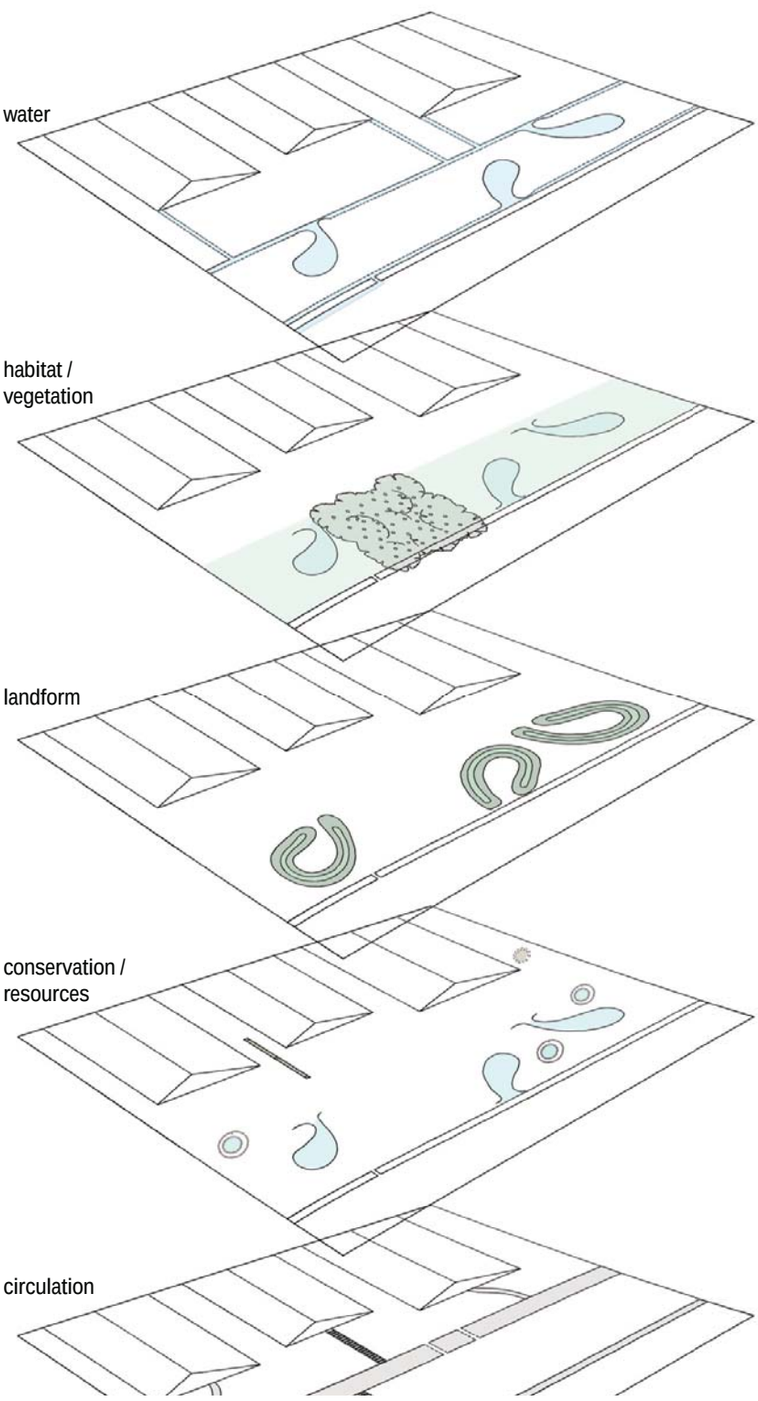
PUBLIC EDUCATION & INSPIRATION

- Reveal natural drainage processes

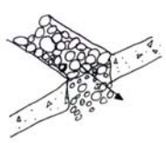


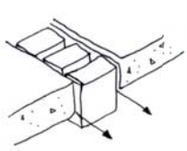
PLANTING STRIP ALLEE &
LAVENDER MOUNDS

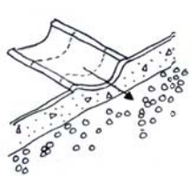
LAYERS OF FUNCTION

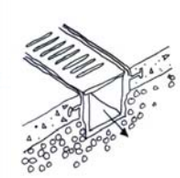


WATER RUNNEL TEMPLATES









RUNNELS, BERMS & SWALES
(NORTH-WEST)

moderate

Flow

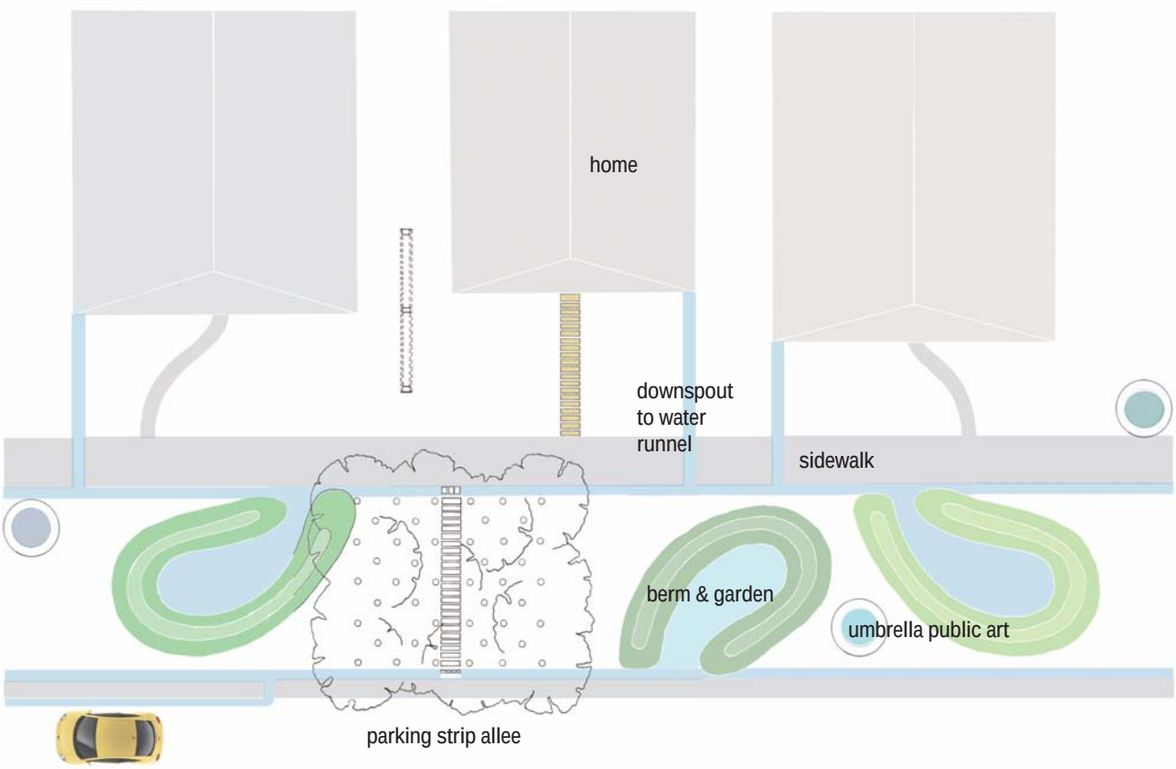
ashley thorner

CONCEPT FLOW is movement, the movement of water and of people through the urban landscape. The interconnected environmental design flows effortlessly through the neighborhood and in the process creates new habitats fed by the interconnected demands of urban water runoff, healthy ecosystems, and community livability. This “moderate” design adds rainwater harvesting via public art in the form of umbrellas.

GOALS

- Reveal natural drainage & improve water quality
- Create a healthy ecosystem/habitat
- Inspire surrounding community involvement & adaptation
- Educate community on water process
- Promote resource and water conservation through composting & water harvesting
- Encourage social interaction through neighborhood beautification, walkability, and individual expression
- Create a destination through public art and engaging design

RAINHARVESTING
UMBRELLA PUBLIC ART
BUTTERFLY GARDEN



moderate

Growing Connections

justin martin

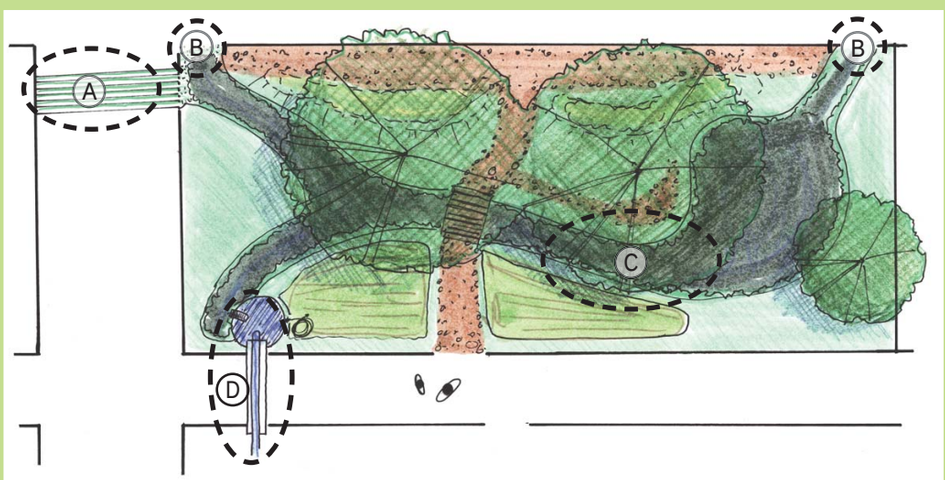
CONCEPT This plan illustrates various options that a homeowner or group of neighbors could implement, with additional funding and/or permits, to increase the environmental effectiveness of their streetscape designs.

Ⓐ GREEN DRIVEWAYS

Connecting driveways to a filtration swale or otherwise preventing runoff helps to eliminate vehicle pollutants from entering our streams and ocean.

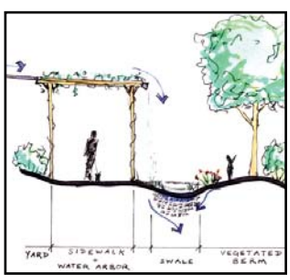
Ⓑ CURB CUTS TO CONNECT TO STREET

Curb cuts (permitted or implemented by the City) can allow streetside swales to clean and absorb street runoff. They can also be an option for an overflow from a swale or bog garden out to the street.



Ⓒ INFILTRATION SWALE

A properly designed swale can help maintain year-round soil moisture, conserve water, and reduce pollution and treatment system demand. The size of swale shown in this plan (approx. 300 ft², 6" depth + 1' amended soil), has the capacity to infiltrate runoff from over 10,000 ft² of impervious surface, or more than 8 times the size of this lot-scale parking strip.



Ⓓ HARVEST ROOF RUNOFF

Roof runoff could be collected and piped to the streetside swale (with City permission). Conveyance options could include a 'water arbor' over the sidewalk, or piping under it.

***water arbor** at Cascade People's Center, Seattle*

STORMWATER COLLECTION

Clean runoff could be collected in large cisterns and stored to use for irrigation during drier times of the year, conserving drinking water and reducing peak storm runoff.

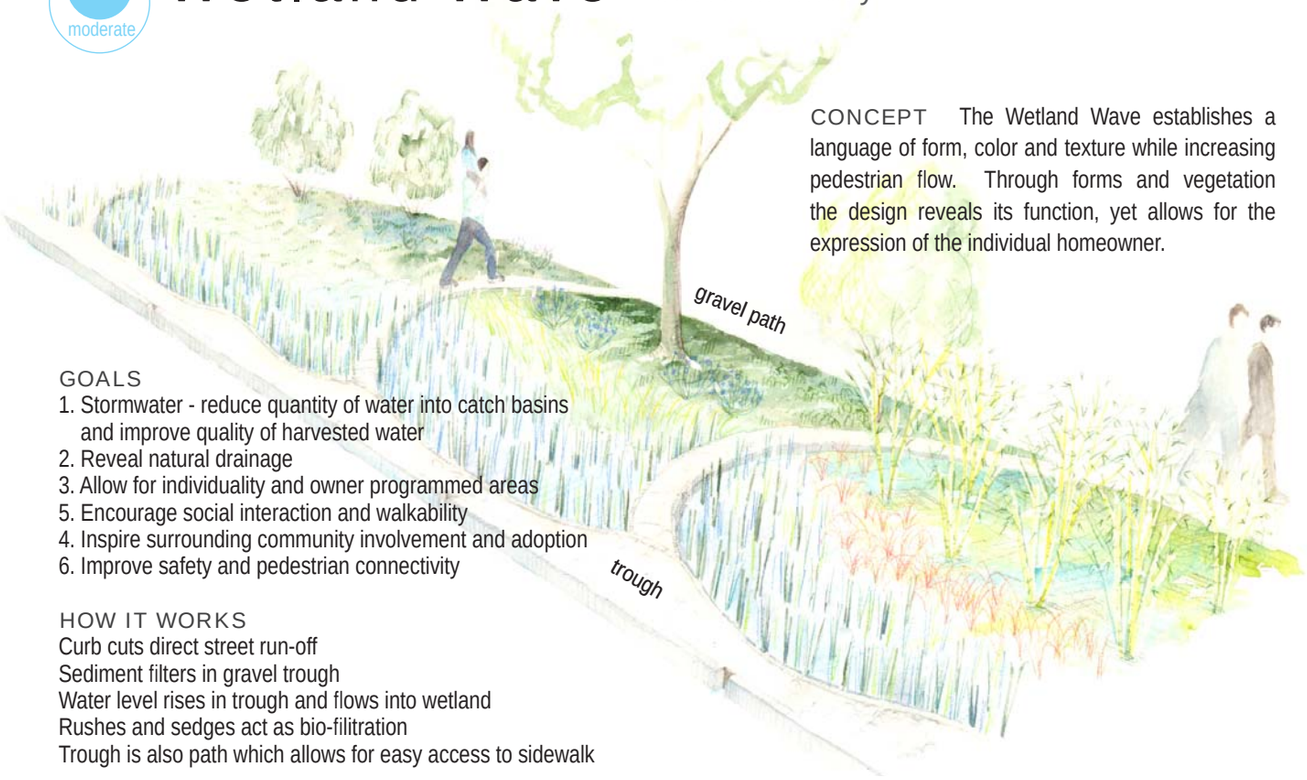
CURBED RESIDENTIAL

024

moderate

Wetland Wave

david minnery



CONCEPT The Wetland Wave establishes a language of form, color and texture while increasing pedestrian flow. Through forms and vegetation the design reveals its function, yet allows for the expression of the individual homeowner.

GOALS

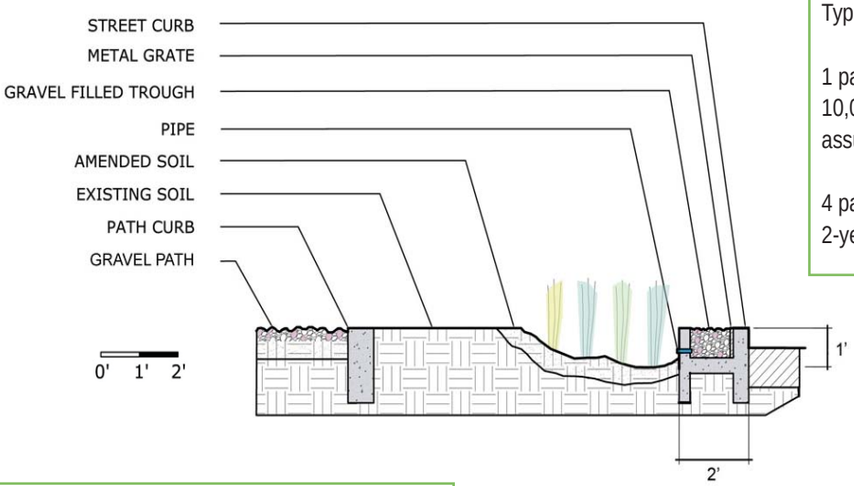
1. Stormwater - reduce quantity of water into catch basins and improve quality of harvested water
2. Reveal natural drainage
3. Allow for individuality and owner programmed areas
5. Encourage social interaction and walkability
4. Inspire surrounding community involvement and adoption
6. Improve safety and pedestrian connectivity

HOW IT WORKS

Curb cuts direct street run-off
Sediment filters in gravel trough
Water level rises in trough and flows into wetland
Rushes and sedges act as bio-filitration
Trough is also path which allows for easy access to sidewalk

REQUIREMENTS

Curb cuts
Concrete
Gravel and soil amendment



STORMWATER CALCULATION

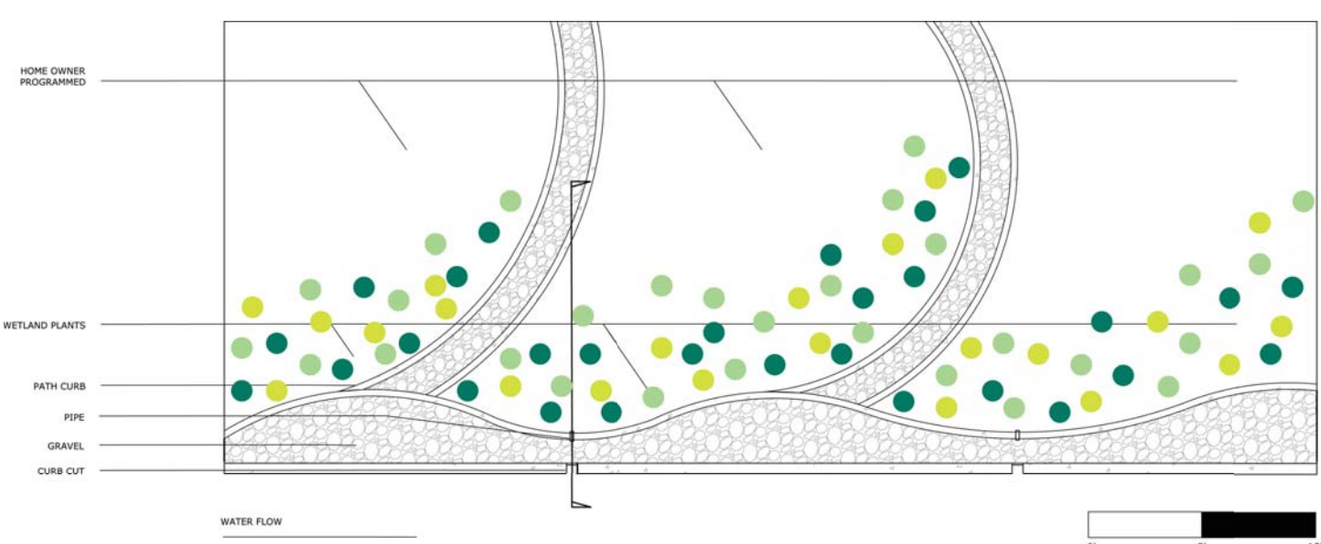
Typical parking strip: 20' x 50'

1 parking strip could handle over 10,000 sq ft of impervious run-off assuming soil with good drainage

4 parking strips per block could handle a 2-year storm event

PLANTING PALETTE

Juncus patens	Spreading Rush
Carex deweyana	Dewey's Sedge
Carex obnupta	Slough Sedge
Carex testacea	Orange Colored Sedge
Juncus ensifolius	Dagger-leaf Rush
Scirpus acutus	Hardstem Bulrush
Scirpus microcarpus	Panicled Bulrush
Carex albula	Frosty Curls Sedge



INVOLVED Avenue

eric berg | justin martin

GOALS

IMPLEMENTATION THROUGH COMMUNITY AND CITY COLLABORATION

ENHANCE COMMUNITY ENVIRONMENT

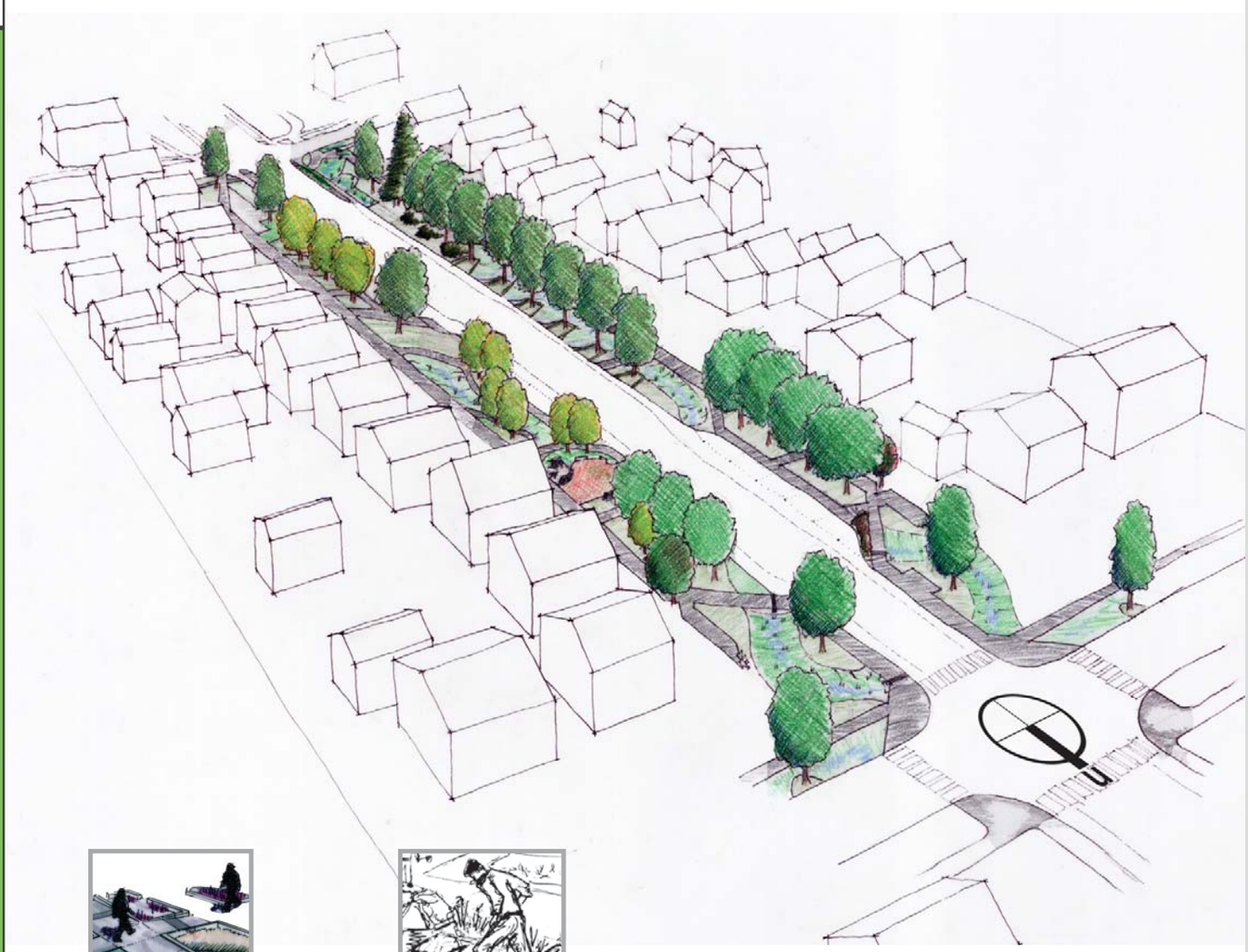
- Create a unified aesthetic along entire block, enhancing experience for all users
- Improve safety by moving pedestrian crossings closer to corners at intersections
- Provide marked crosswalk mid-block to facilitate pedestrian movement and encourage walking
- Include curb bulb-outs and shift in-street centerline to promote traffic calming
- Addition of bike lane to provide safer and more enjoyable route for cyclists
- Improve bus stops as public spaces by making access easier and providing more space & visual interest
- Provide mid-block pocket park for gathering, play, and other community functions

CONSERVE RESOURCES & IMPROVE ECOLOGICAL FUNCTIONS

- Capture and clean storm runoff from streets in streetside swales
- Natural drainage systems maintain more soil moisture to reduce or eliminate need for streetside irrigation
- Local yard waste composting structures reduce need for waste removal
- Improve quantity, quality, and connectivity of habitat through more plant diversity, including native plants
- Increase tree canopy cover

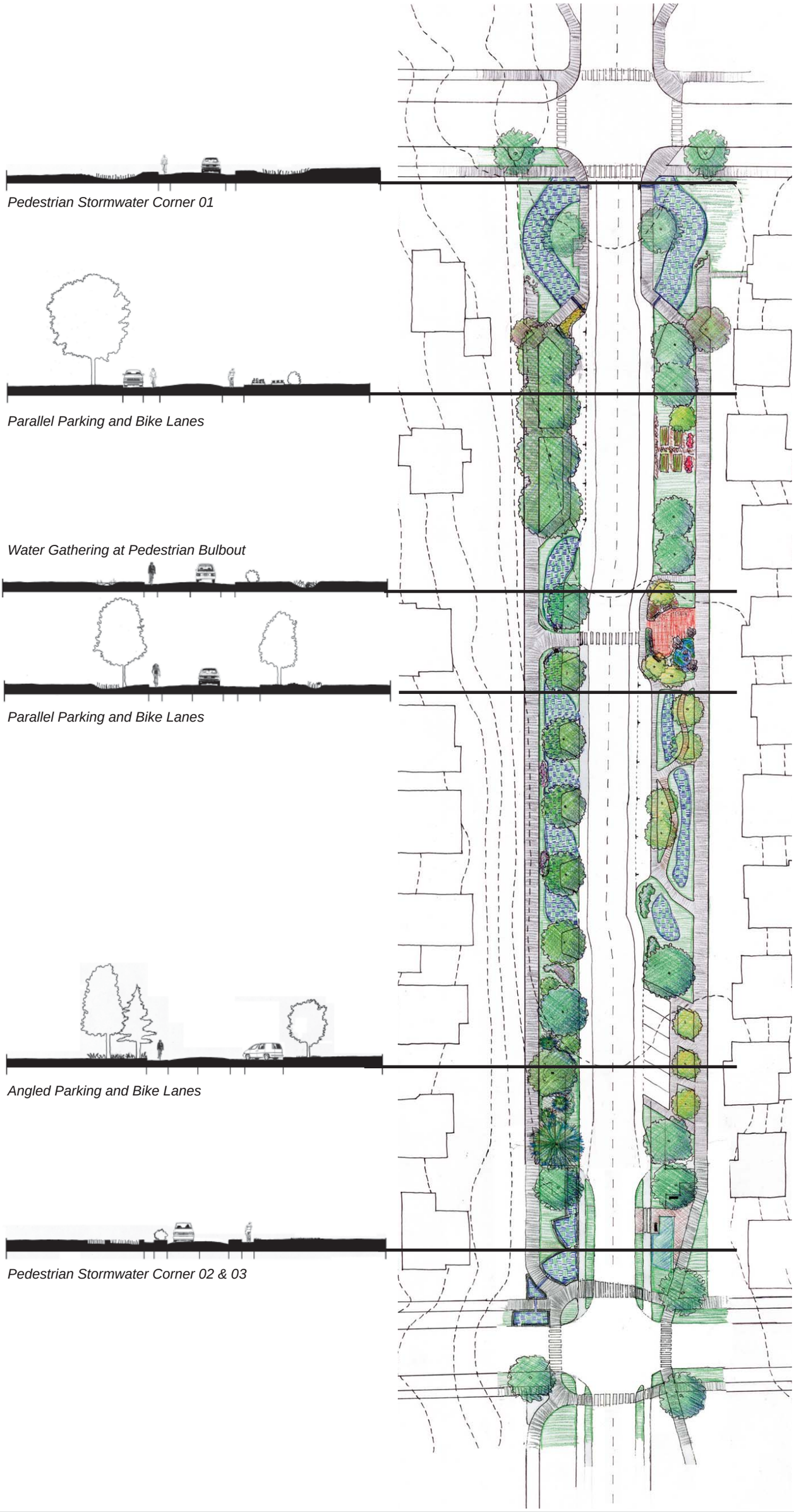
PUBLIC EDUCATION AND INSPIRATION

- Educate community on importance of and methods for conservation through local examples



PEDESTRIAN CORNERS
p. 028

WATER GATHERING
p. 029



Pedestrian Stormwater Corner 01

Parallel Parking and Bike Lanes

Water Gathering at Pedestrian Bulbout

Parallel Parking and Bike Lanes

Angled Parking and Bike Lanes

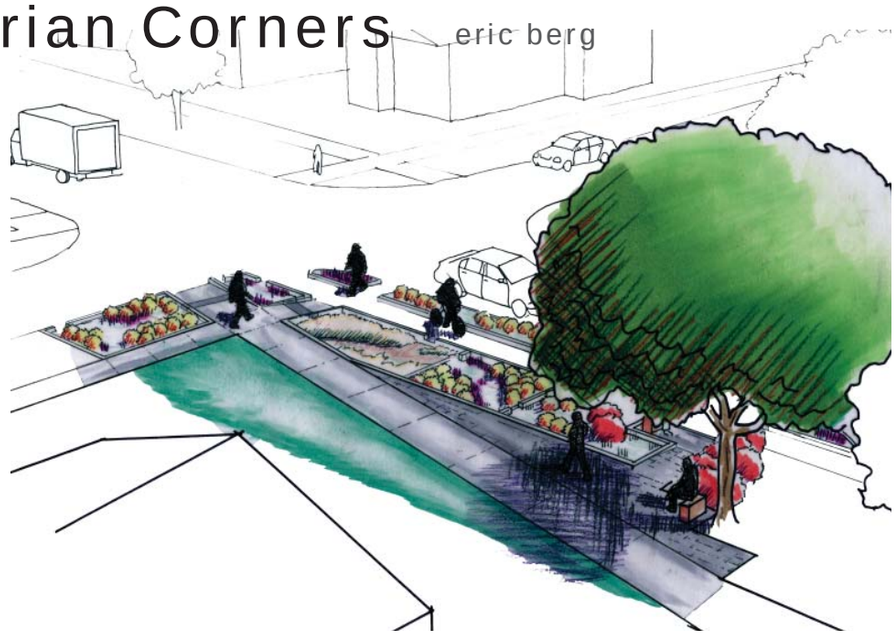
Pedestrian Stormwater Corner 02 & 03

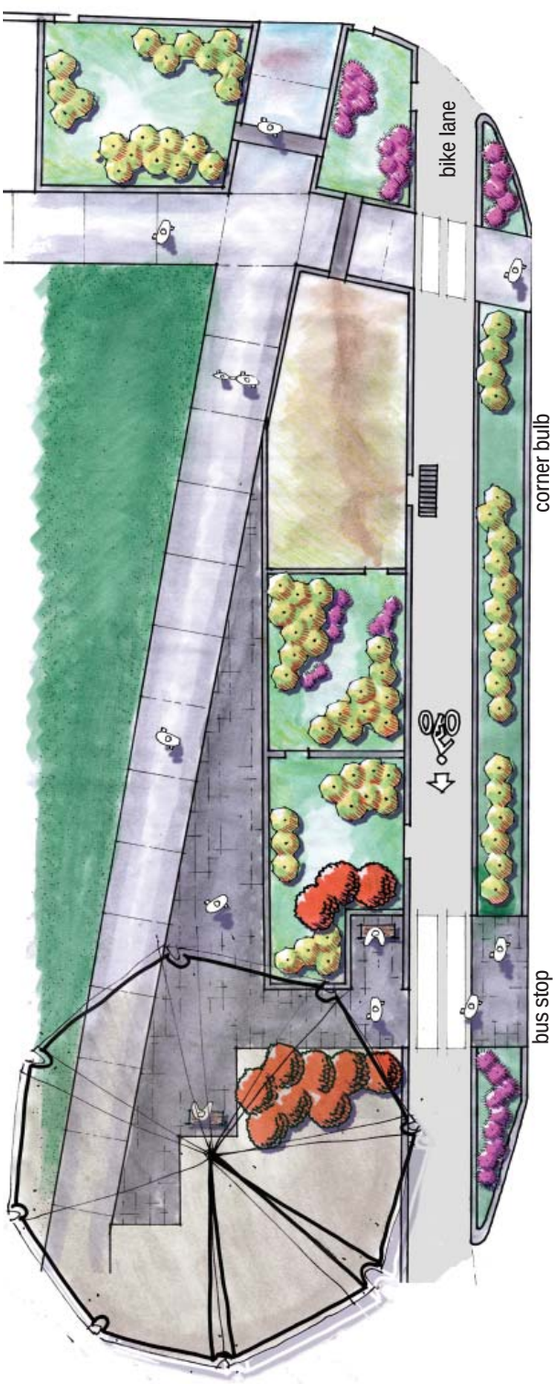
involved

Pedestrian Corners

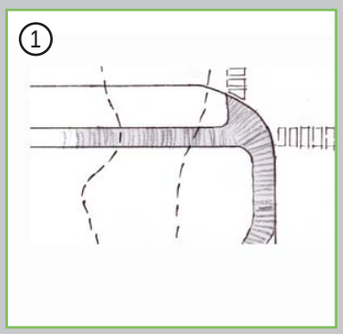
eric berg

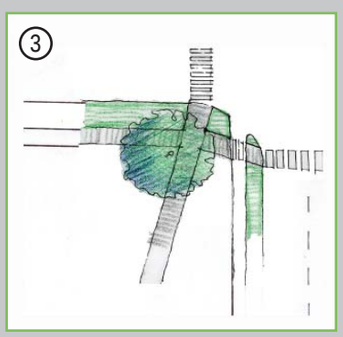
CONCEPT With bus stops every block, a unique opportunity to combine stormwater treatment, bus stop use, a new bicycle lane, and pedestrian safety presents itself. Pedestrian corners attempt to bring pedestrians closer to the street to increase crossing safety and promote walkability. A bump-out strategy is used to create room for the bike lane and calm traffic. Stormwater is integrated with a bus stop plaza, giving users an everyday look at stormwater management.



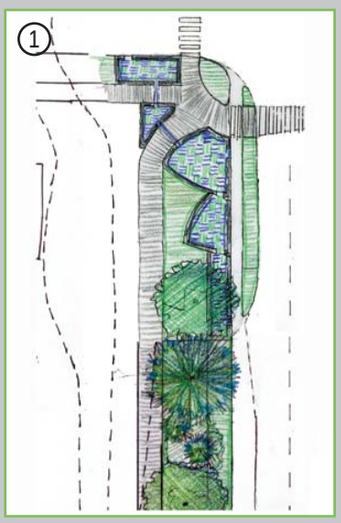


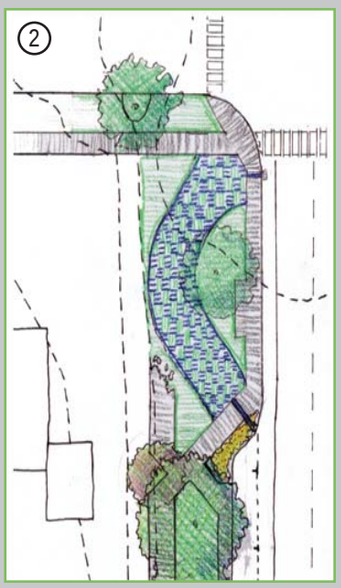
PEDESTRIAN CORNER PROTOTYPES





PEDESTRIAN CORNER & STORMWATER TREATMENT PROTOTYPES





Water Gathering

justin martin

CONCEPT A more involved option that would require city permitting and assistance. A curb bulb-out helps clean runoff from the street and also provides space and a safety buffer for a small block-park. A rain garden serves as a focal point for the gathering space and collects rainwater from a swale along the parking strip uphill.

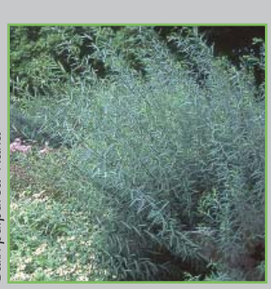
PLANTS FOR A PUBLIC RAIN GARDEN

Mock orange
Philadelphus lewisii

Oregon iris
Iris tenax

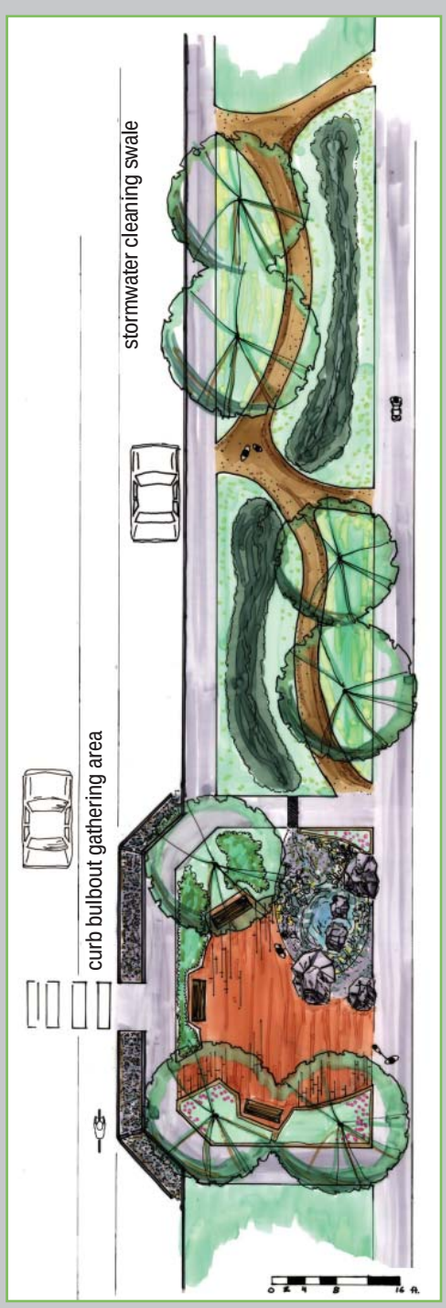
Columbine
Aquilegia formosa

Deer fern
Blechnum spicant



Dwarf blue willow
Salix purpurea 'Nana'

Japanese sweet flag
Acorus gramineus 'Ogon'



CONTEXT

The two curbless areas, though on opposite ends of Magnolia, possess remarkable similarities in conditions. They both include a significant change in grade as a result of ravines that eventually run into open water, Elliott Bay on the south end and Ballard Locks on the north end. The neighborhoods possess a certain informality that is expressed in the lack of curbs and sidewalks, limited access, and their proximity to natural areas. Despite their differences, sufficient similarities provide a scaffold for a set of common goals.

GOALS

- Enhance wildlife habitat where possible (esp. in/near Kiwanis Ravine, the largest heron rookery in the city);
- Preserve informal neighborhood character;
- Foster an awareness of natural systems;
- Encourage community interaction;
- Improve water quality through natural drainage;
- Mitigate the impact of major storm events;
- Use public art to inspire interest and play.

LEGEND

easy

moderate

involved

stormwater treatment + control

water conservation

earth_ biomass + material recycling

earth_ forests + habitat

air + climate

community + education

park • beach • ravine • informal • secluded • lush • quiet • cool

KEY

CURBLESS STUDY AREA

DANIEL | FU | PHILIPSEN

CONTEXT - NORTH END

LIVE ENDS
pp. 034 - 035

RAPID RAIN GARDEN
p. 036

STORMWATER LADDER
p. 037

The portion of Magnolia to the north of the main project corridor, 34th Avenue West, has Kiwanis Ravine as its most defining feature. Kiwanis Ravine offers little physical access due to steep slopes, but serves as home to the city's largest heron rookery. It also contains Wolfe Creek, which is currently diverted into a storm drain to West Point Treatment Facility, but may someday be connected to the Ship Canal to provide additional habitat for migrating salmon.

The area surrounding Kiwanis Ravine is made up of a neighborhood of single-family homes that feels somewhat suburban in character. Multiple dead ends abutting the ravine, limited and slow car traffic, coupled with the lack of sidewalks and curbs characterize this area as informal and alley-like. The roads in this neighborhood crown and drain into gravel parking strips where infiltration is relatively slow, a condition that is exacerbated by lack of storm drains--there is only one at the very north end where Gay and 32nd meet and the pedestrian/bike trail heads to the Ballard Locks.

live ends

easy

susie philipsen

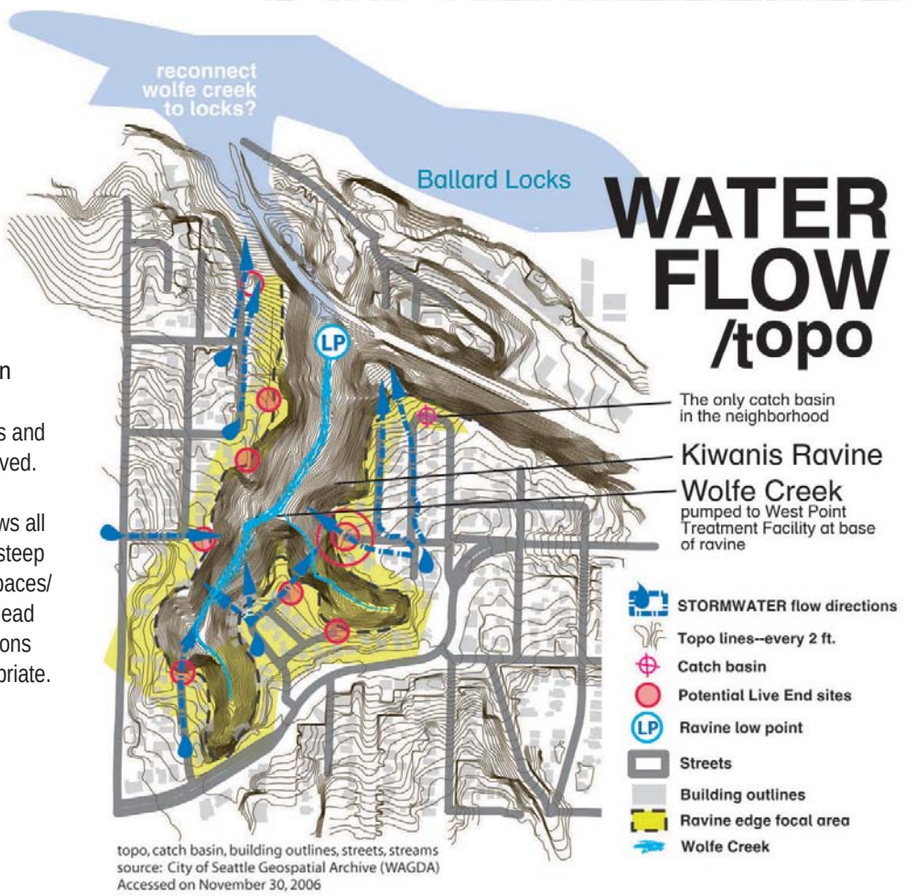
existing conditions

Natural areas and parks, while making our cities livable, cut streets off resulting in **dead ends**. These places often become dead zones prone to dumping, parking and informal yard waste composting. To improve these conditions and promote awareness of natural areas, **converting the dead ends to Live Ends** celebrates the positive aspects of these sites and also treats the existing problems.

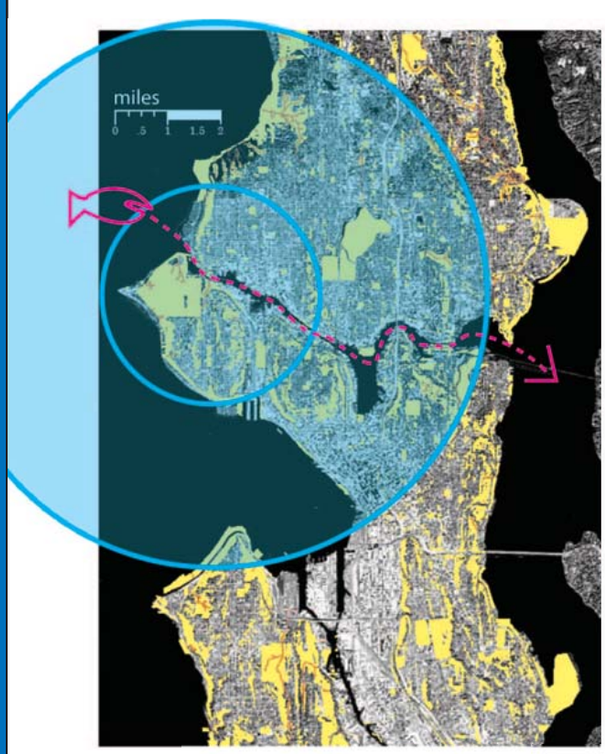
The Live End is a simple intervention that could be taken on by a small group of neighbors. A small path leading from the street into the Live End terminates at the **ravine or park's edge** where an **art piece allows visitors to listen** more closely to what is happening in the park, and **composting fences** provide a necessary amenity for neighborhoods. Two trees with a loose fence and low grasses punctuate the transition from the street to the Live End where benches provide a resting place for visitors.

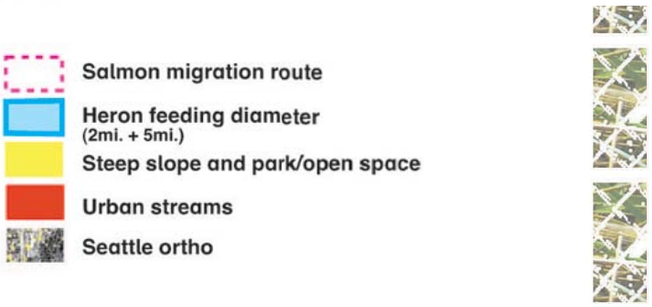
The following page has a list of ingredients for the Live End. They are mostly plants and used items that can be found at salvage stores. The Live End is **open to interpretation** and may vary depending on the neighborhood's existing conditions and the ideas produced by those involved.

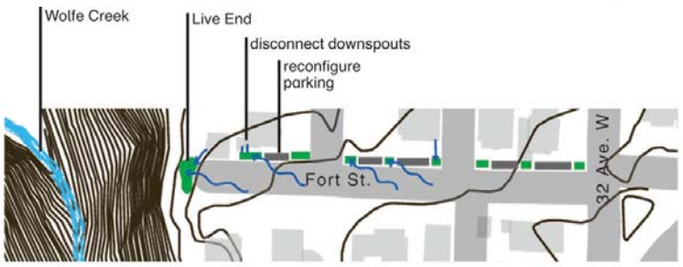
The map of Seattle (below) shows all the locations in Seattle that have steep slopes and all of Seattle's open spaces/ parks (places that often result in dead ends) to give you an idea of locations where this design might be appropriate.



topo, catch basin, building outlines, streets, streams
source: City of Seattle Geospatial Archive (WAGDA)
Accessed on November 30, 2006





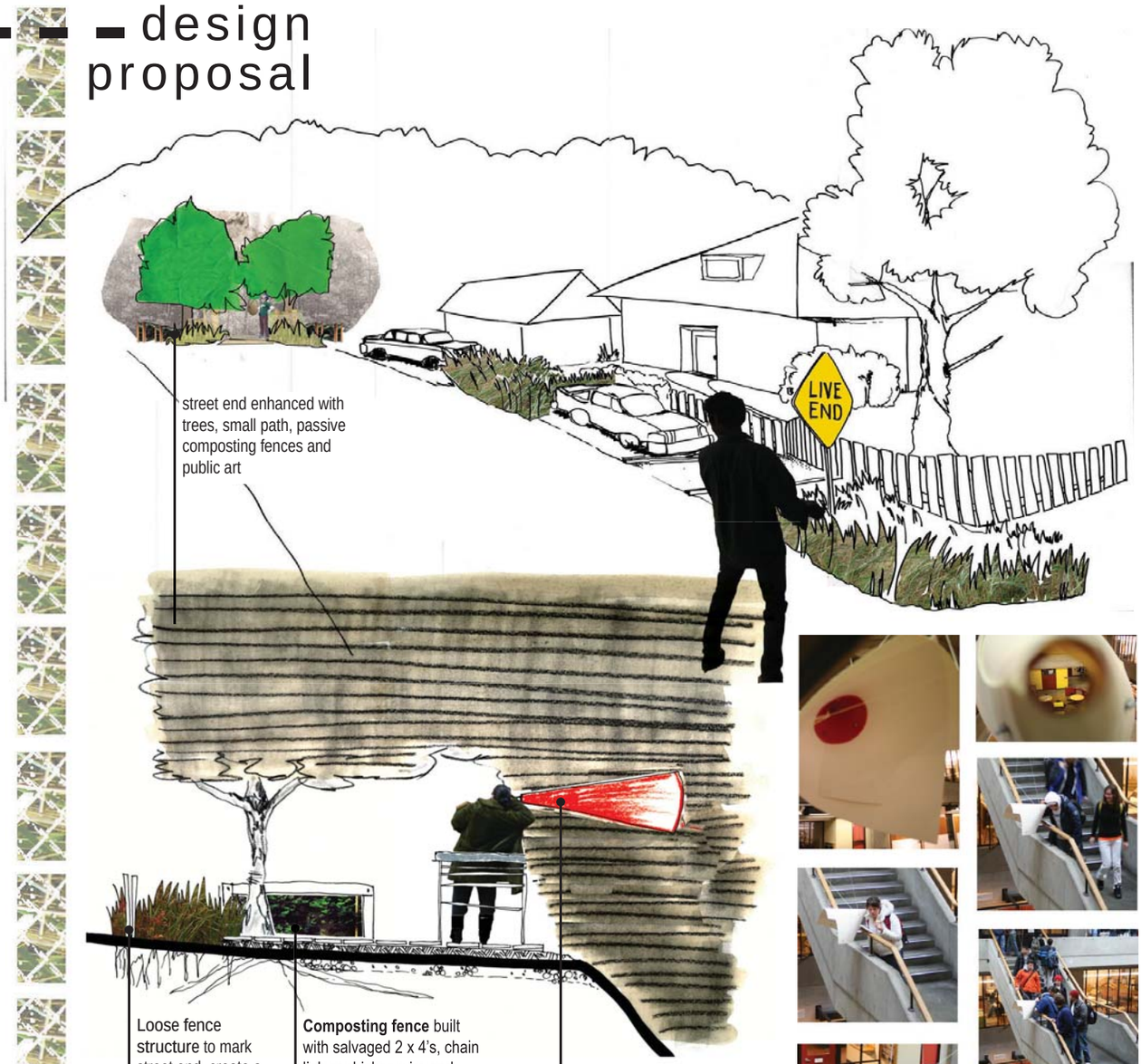


neighborhood

parking
rain garden / planting
runoff

This diagram shows how teensy lots of green might be interspersed between parking, creating a visual corridor to draw people to the Live End.

design proposal



street end enhanced with trees, small path, passive composting fences and public art

Loose fence **structure** to mark street end, create a barrier for cars, and use for hanging signs.

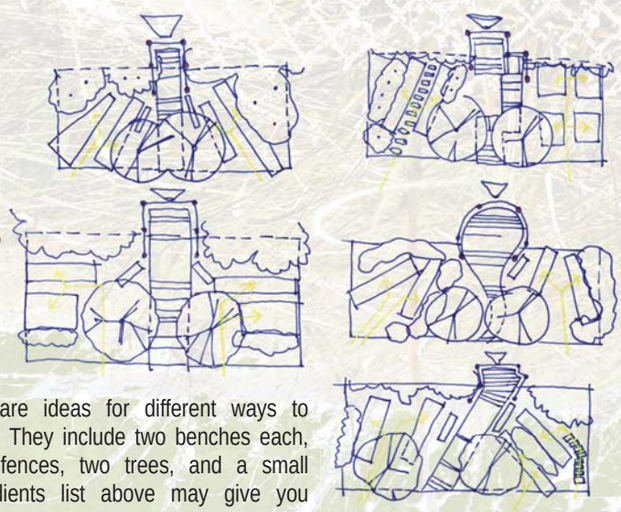
Composting fence built with salvaged 2 x 4's, chain link or chicken wire and precast concrete footing allows residents to deposit limbs into the top. As they settle, they decompose providing mulch to feed the ravine and retain water.

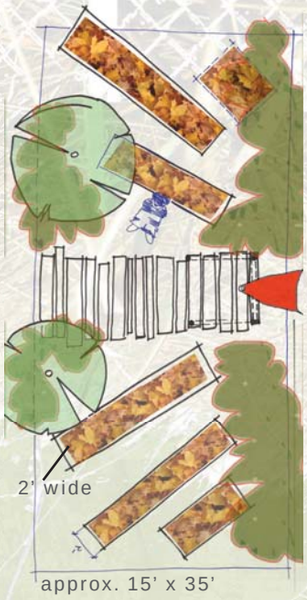
The **Heron Snooper** is a simple cone made of scrap metal that, when positioned toward the ravine, amplifies any noises emanated by birds, animals, leaves, water, etc...bringing visitors closer to the activities that occur within.

The Heron Snooper is meant to **heighten the visitor's awareness** of their surroundings by focusing on a particular set of sounds. In this case, it is the café below the central staircase in Gould Hall at the University of Washington.

PROTOTYPE

Ingredients:
- plants
- wood chips
- salvaged wood
- chain link
- deck screws/bolts
- concrete footings (for composting fence)
- recycled concrete
- two trees
- 1 or 2 benches
- gravel





The above drawings are ideas for different ways to configure the Live End. They include two benches each, two to four compost fences, two trees, and a small boardwalk. The ingredients list above may give you some idea of what you'll need to collect to make it. Most of the necessary items can be found at salvage stores or by asking neighbors what they've got in their yards.

rapid raingarden

mark daniel

easy

CURBLESS

036

north - easy

PROTOTYPE USES

This prototype could potentially be used in a wide variety of settings – for the most part, the only requirements are that a potential site has no curb and that water flows into, or could be directed into the site.

HOW IT WORKS

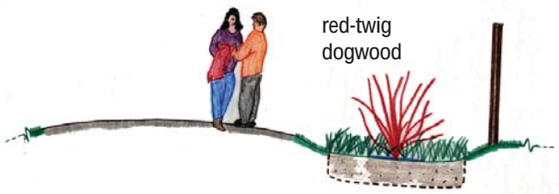
Water enters the site where it is cleaned by vegetation and infiltrated into the soil (which is aided by having about one foot of amended soil). In very large storm events, water that overflows the site behaves as it would have in the absence of a rain garden.

BENEFITS

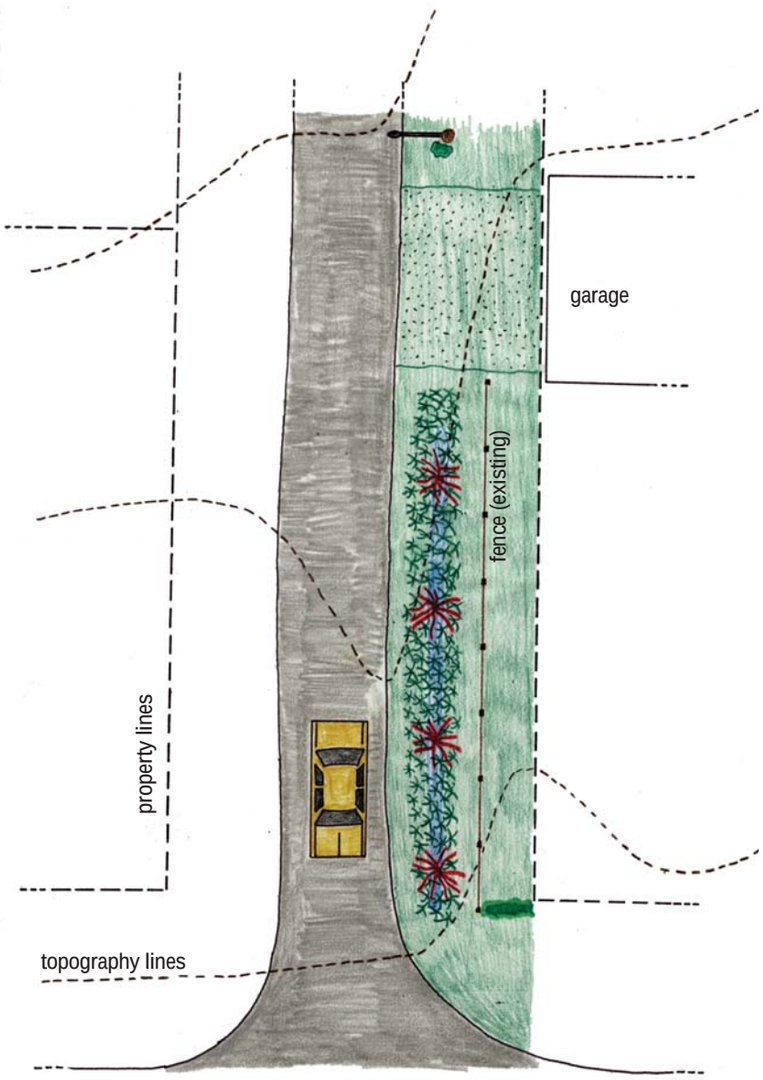
The benefits of this prototype potentially include: improved water quality; improved regulation of water quantity; and creation of habitat with native vegetation.

PROTOTYPE PERSPECTIVE

PROTOTYPE SECTION



PROTOTYPE PLAN VIEW



the stormwater ladder

mark daniel

PROTOTYPE USES

This prototype, strictly speaking, is not really a prototype as it was designed with the characteristics of a very unique location in mind. However, the prototype does serve to illustrate how stormwater structures might be designed to become community landmarks.

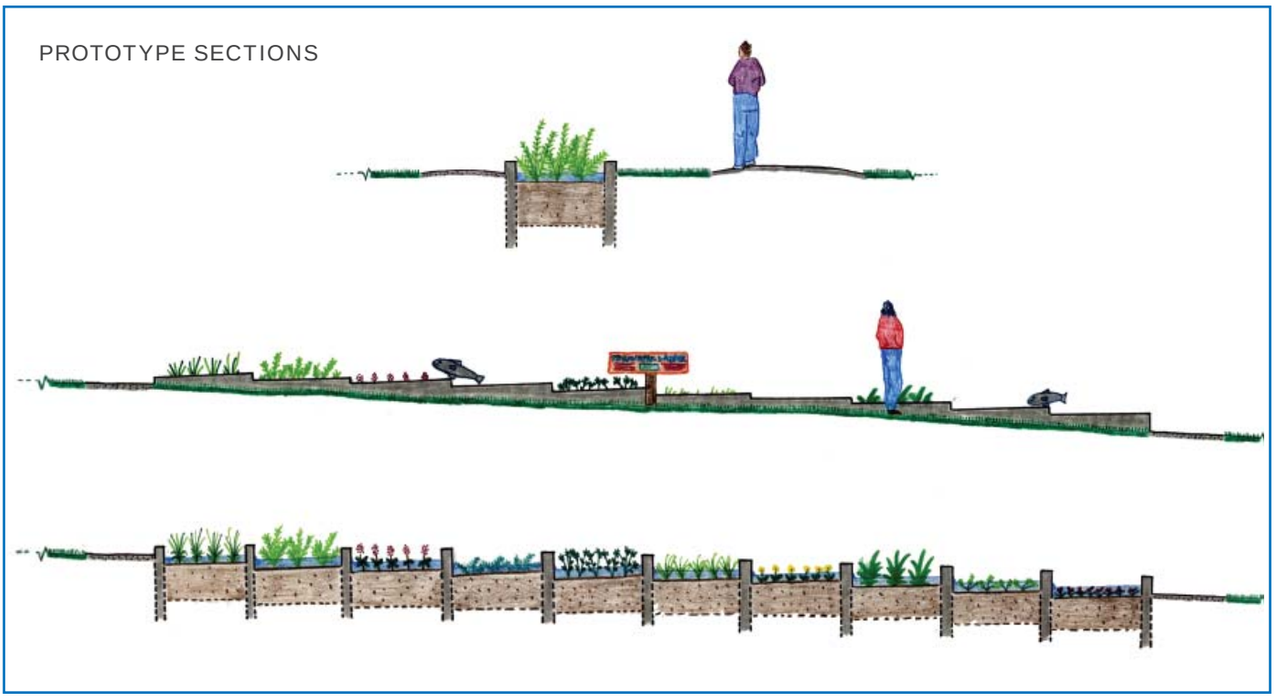
BENEFITS

The benefits of this prototype potentially include: improved water quality, improved regulation of stormwater quantity, an enhanced pedestrian corridor, environmental education, and community pride.

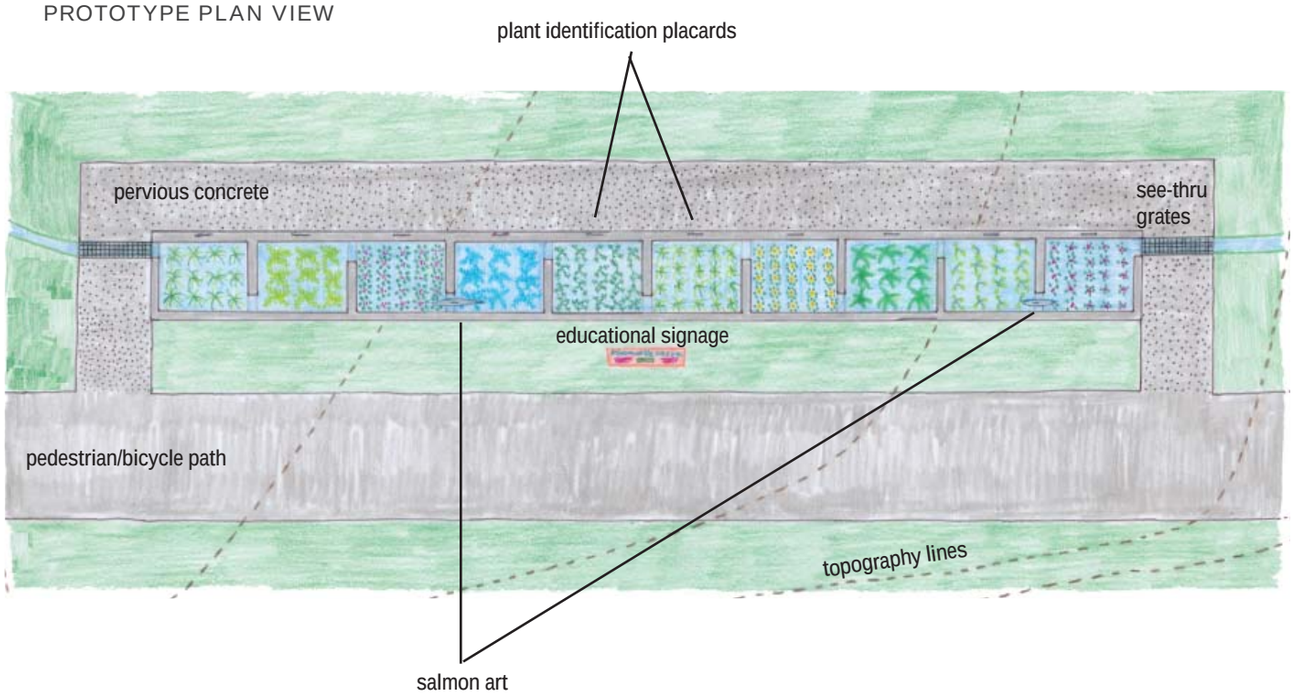
HOW IT WORKS

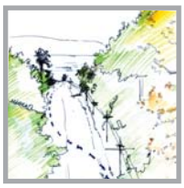
Stormwater from an existing catch basin is diverted to the structure. Water enters the first cell, where it is cleaned by vegetation and infiltrated into the soil (which is assisted by two feet of amended soil). When the infiltration rate of the soil in the first cell is exceeded, water cascades into the second cell via a cut in the divider that is six-inches below the top of the structure. This overflow process continues on into additional cells as needed. In big storm events all the cells would be full and cascading, making the structure look like the fish ladder at the Ballard Locks – from which the structure gets its name.

PROTOTYPE SECTIONS



PROTOTYPE PLAN VIEW



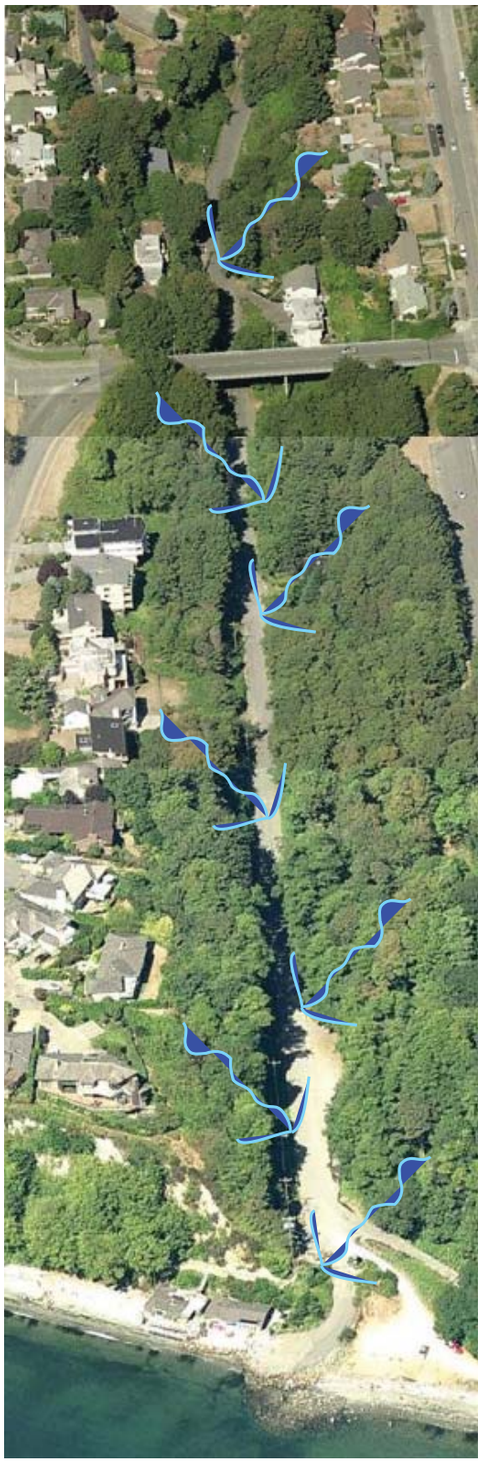


TRACING THE WATER
pp. 039

WATER CATCHMENT
p. 040

DAYLIGHT MOVEMENT
p. 041

CONTEXT - SOUTH END

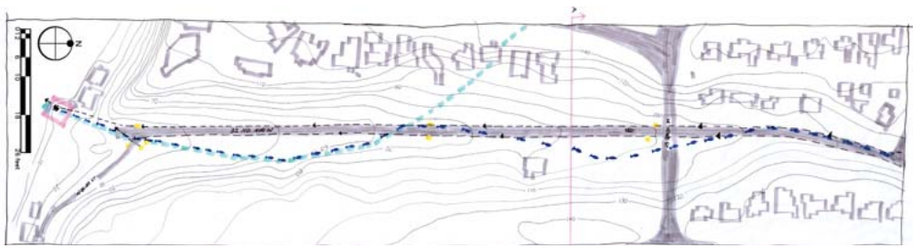


Wolfe Creek is diverted into a storm drain before exiting to Puget Sound, while other surface water is sent in a combined sewer to West Point for treatment. The combined system periodically overflows, and Metro is exploring options for redirecting the combined sewer overflows. Before Wolfe Creek was piped, salmon most likely spawned in its waters.

WOLFE CREEK BEACH

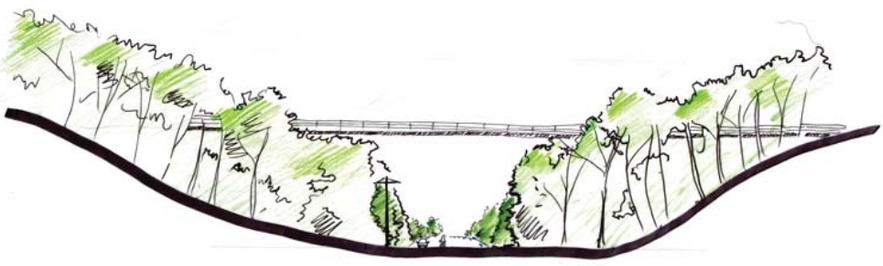
tracing the water

yachi fu



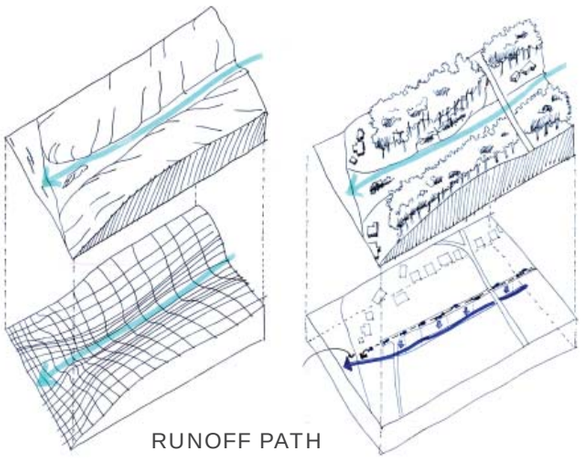
MAIN PLAN

PERSPECTIVE FROM
THE BRIDGE



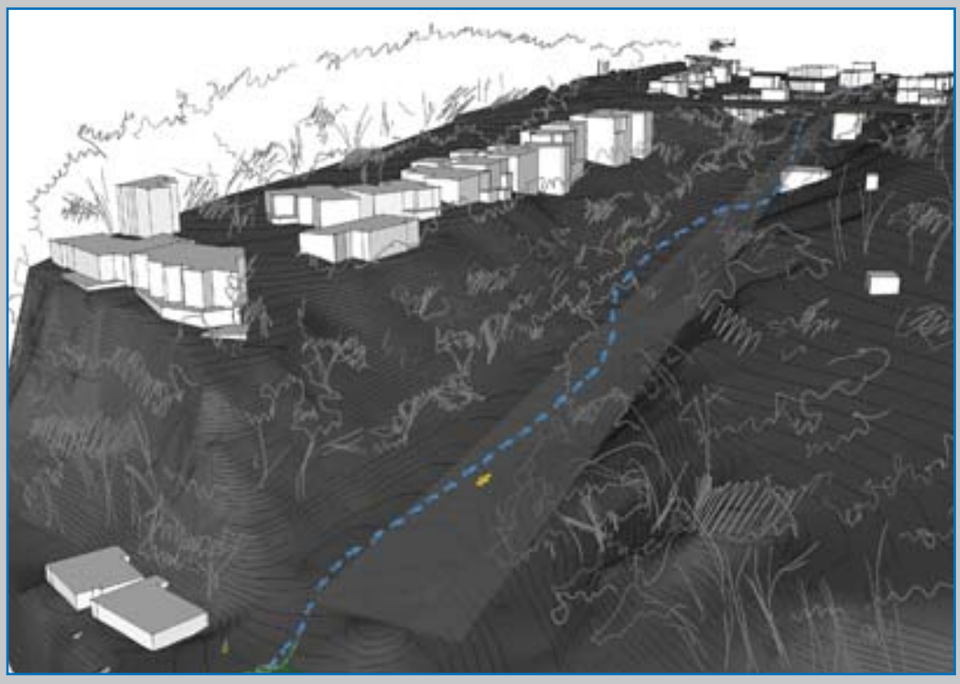
SECTION A-A’

BLUE FISH
“GRAFFITI”



RUNOFF PATH

HANG ART



BIRDSEYE VIEW

In the first phase, people are welcome to use all kinds of material to make blue fish, which show the path the creek took and symbolize the salmon that were there. Also, in order to attract people to the beach, a temporary “water tree” landmark is down the street on the beach.

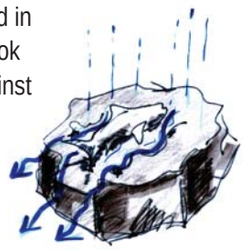
moderate

water catchment

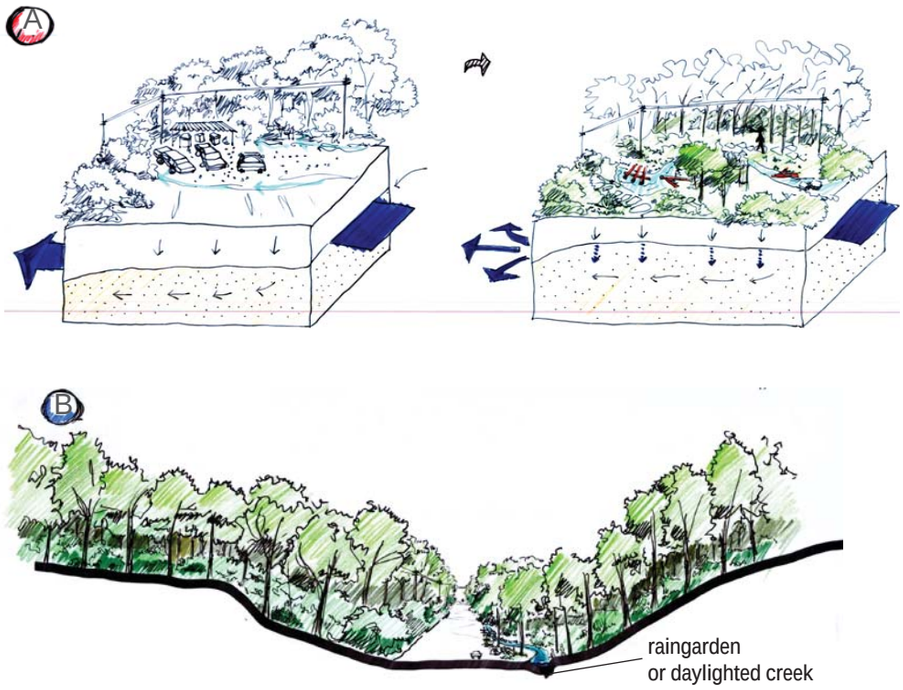
yachi fu

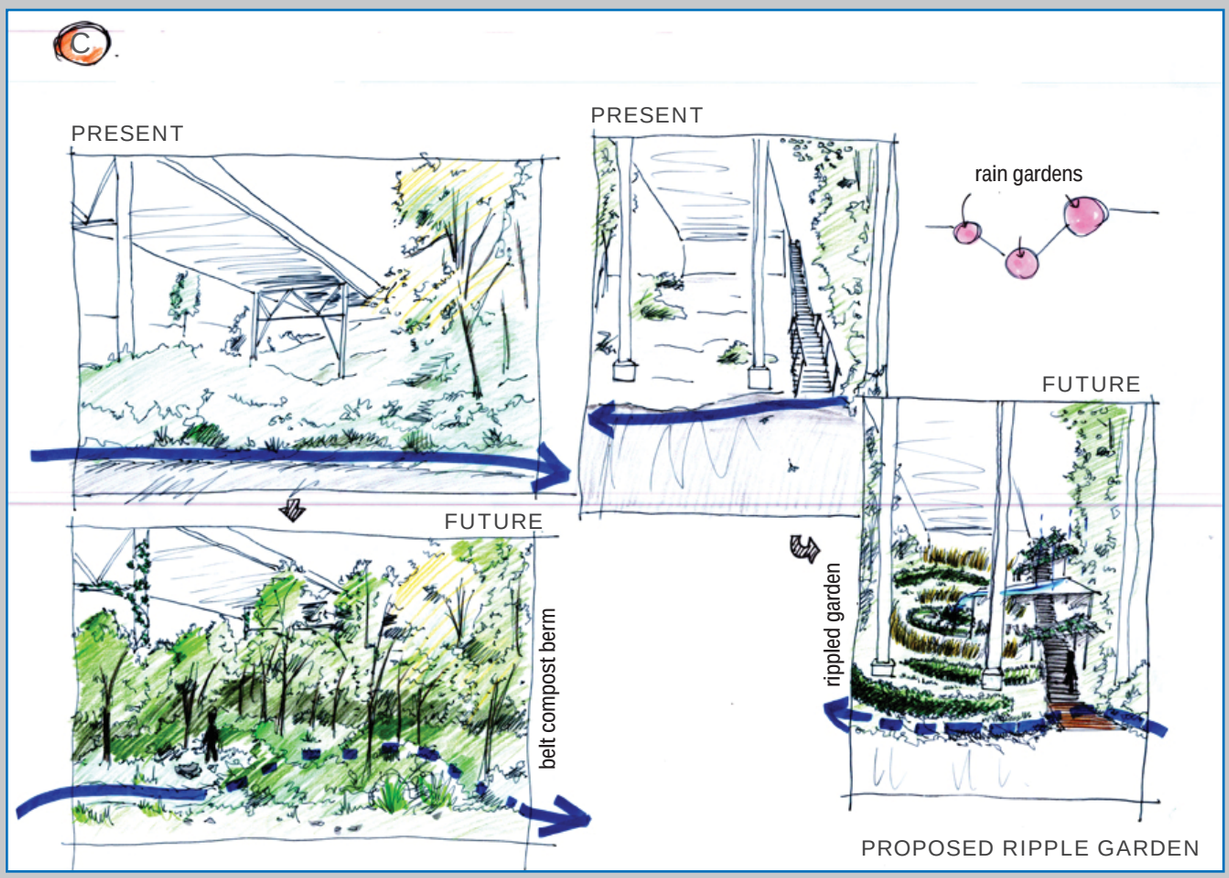
MAIN PLAN

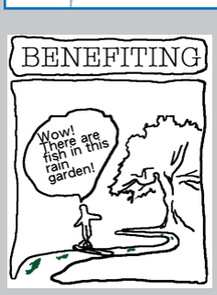
When it rains, the drops will run around the fish, and in this way, the fish will look like they are going against the current.



CAPTURING & INFILTRATING THE WATER







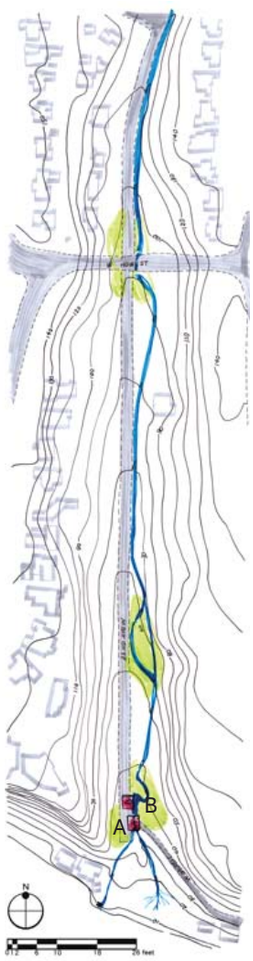
In the second phase, the stormwater will be collected in several rain gardens. The rain gardens will clean the water, slow it down and contribute to the ground water flow.

south - moderate

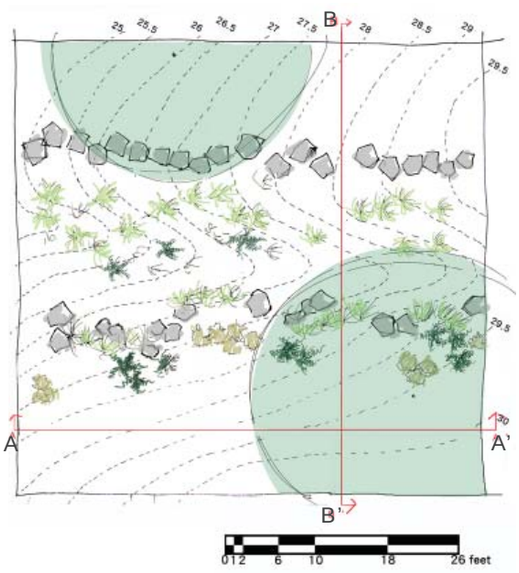
daylight movement

yachi fu

MAIN PLAN

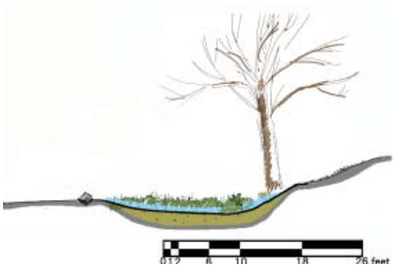


PLAN A



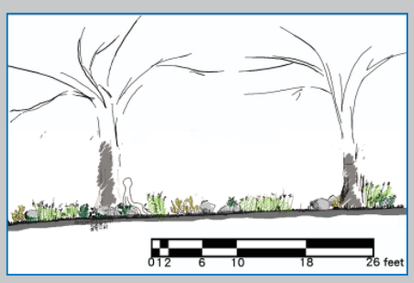
SECTION A-A'

SECTION B-B'

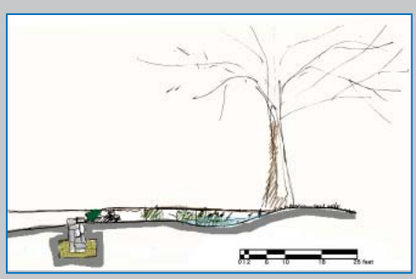


Through a fairly minor regrading of the channel, there lies an opportunity to daylight Wolfe Creek. If the substantial flows that are the old creek are part of the combined sewer system, then bringing this water to the surface and out of the drains could substantially relieve the combined sewer overflows, as well as provide an amenity to reduce stormwater impacts on the City's system.

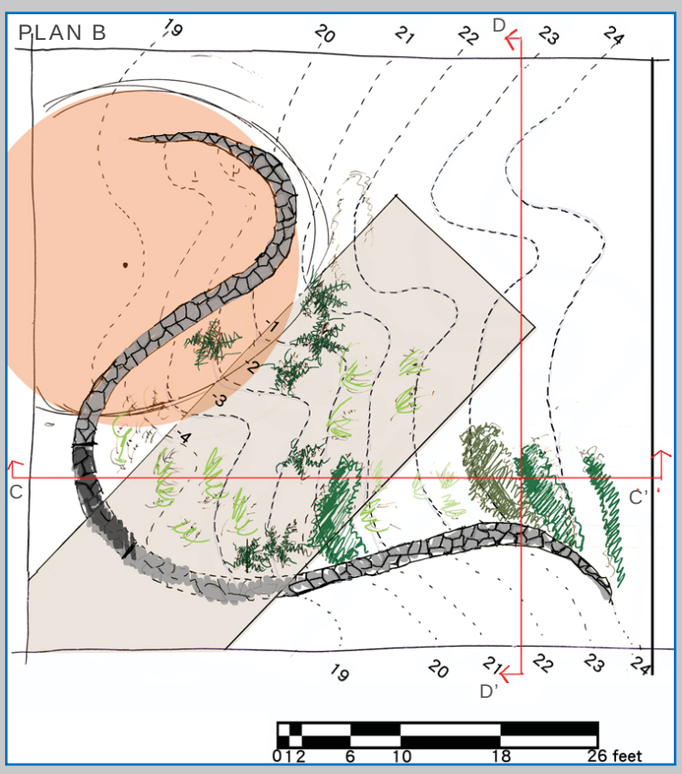
SECTION C-C'



SECTION D-D'

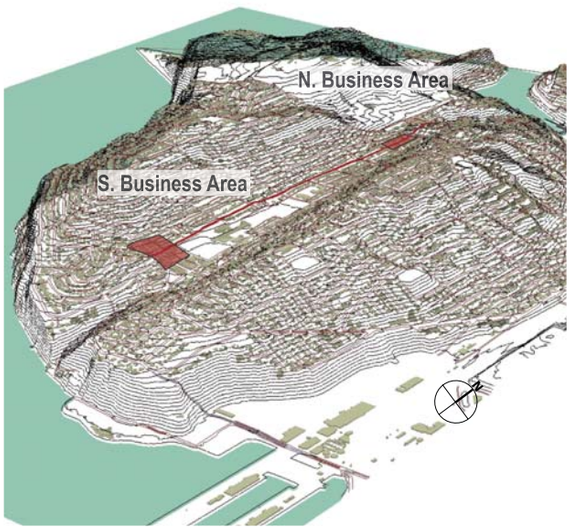


PLAN B



In the third phase, Wolfe Creek will be daylighted out of the storm drain. In this way, the water can be cleaned and infiltrated into the land; therefore, there will be better habitat for the ecological community by having higher quality water. Moreover, people will use the Wolfe Creek Beach again, so there will be closer interaction between the land and community of Magnolia.

CONTEXT



MAGNOLIA TOPOGRAPHY

General Intervention Areas

Local Intervention Areas

NORTH

34th Ave. W. from
W. Thurman to W. Emerson

LEGEND

easy

moderate

involved

stormwater treatment + control

water conservation

earth_ biomass + material recycling

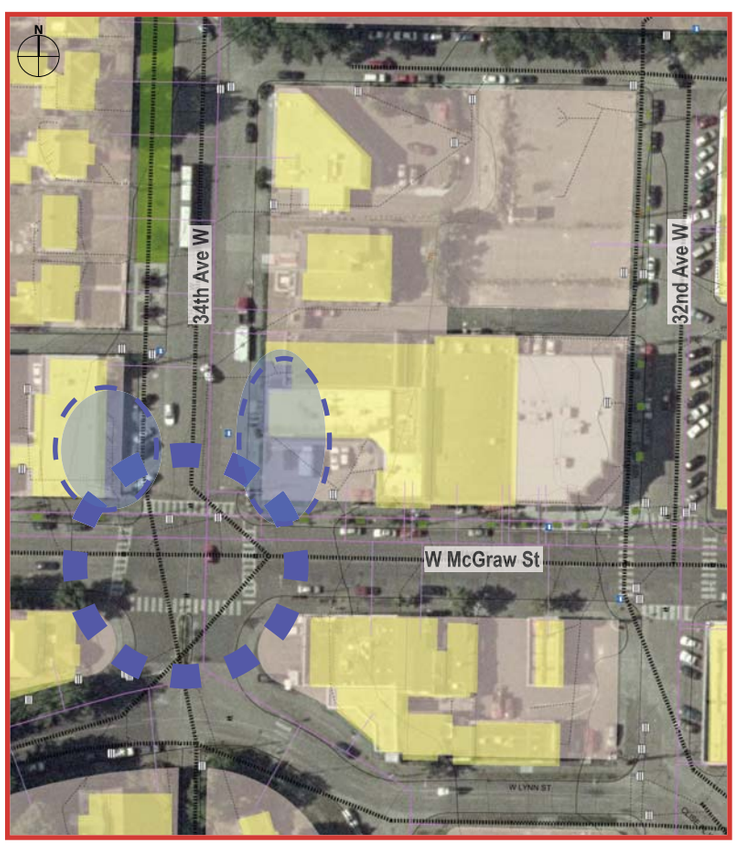
earth_ forests + habitat

air + climate

community + education

GOALS

- Increase Resource Conservation
- Better Storm Water Management
- Reveal and Enhance Community Identity
- Improve Connectivity between the N. and S. Business Districts
- Improve Streetscape Consistency & Pedestrian Safety



SOUTH

W. McGraw St. from
32nd to 34th Ave. W

KEY

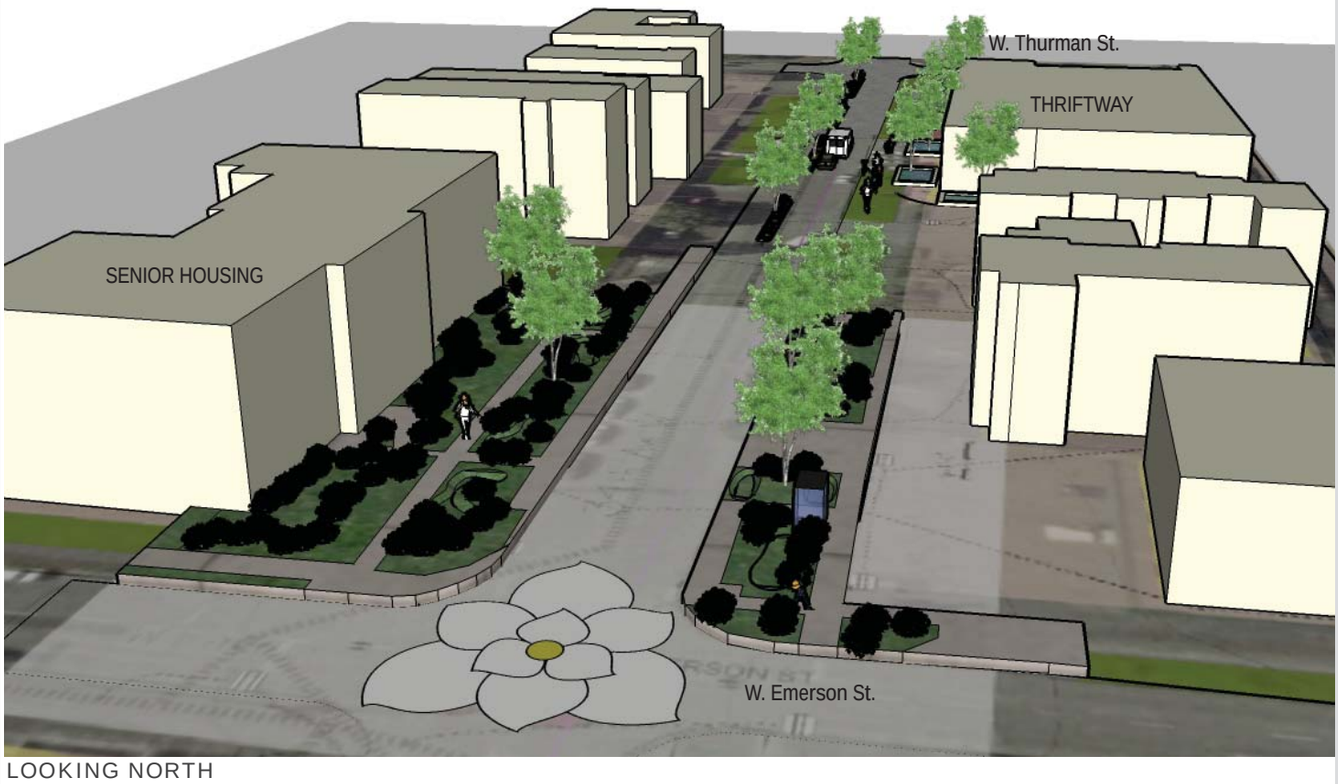
BUSINESS STUDY AREA

CHAUHAN | FLINT | LESTA | MARSHALL

NORTH 34th Ave. W. from W. Thurman to W. Emerson

easy

EASY INTERVENTION
BIRDS-EYE VIEW



LOOKING NORTH

moderate

MODERATE INTERVENTION
PLAN VIEW

• This site has the only remaining grocery store in Magnolia on the north end, and a nursing home on the south. We have taken quite a different approach on each end.

• A Magnolia symbol on the pavement at the intersections serves as a common uniting element on both ends. In order to implement this feature, there should be some traffic calming features such as bumps or pavement color changes before reaching the intersections for pedestrian safety.

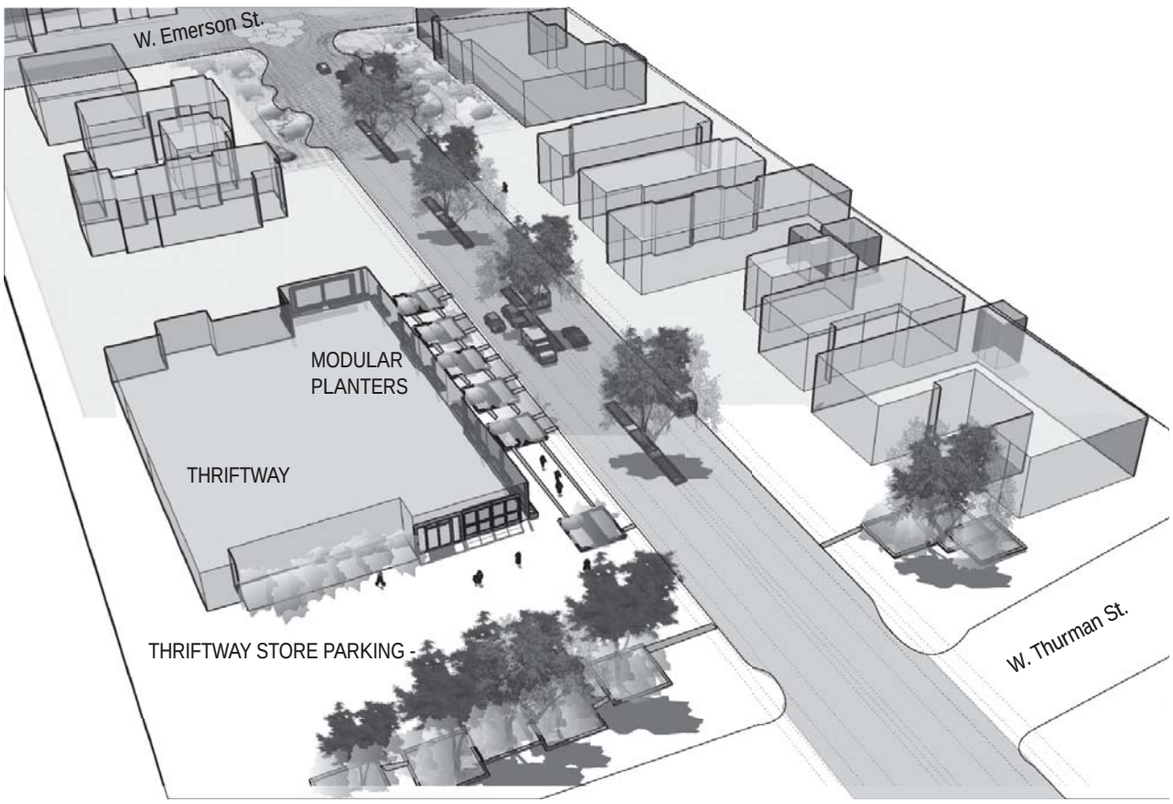
• Using the same elements throughout the northern and southern business areas would make a better connection between the two locales.

THRIFTWAY GARDEN PLAZA
pp. 046 - 049

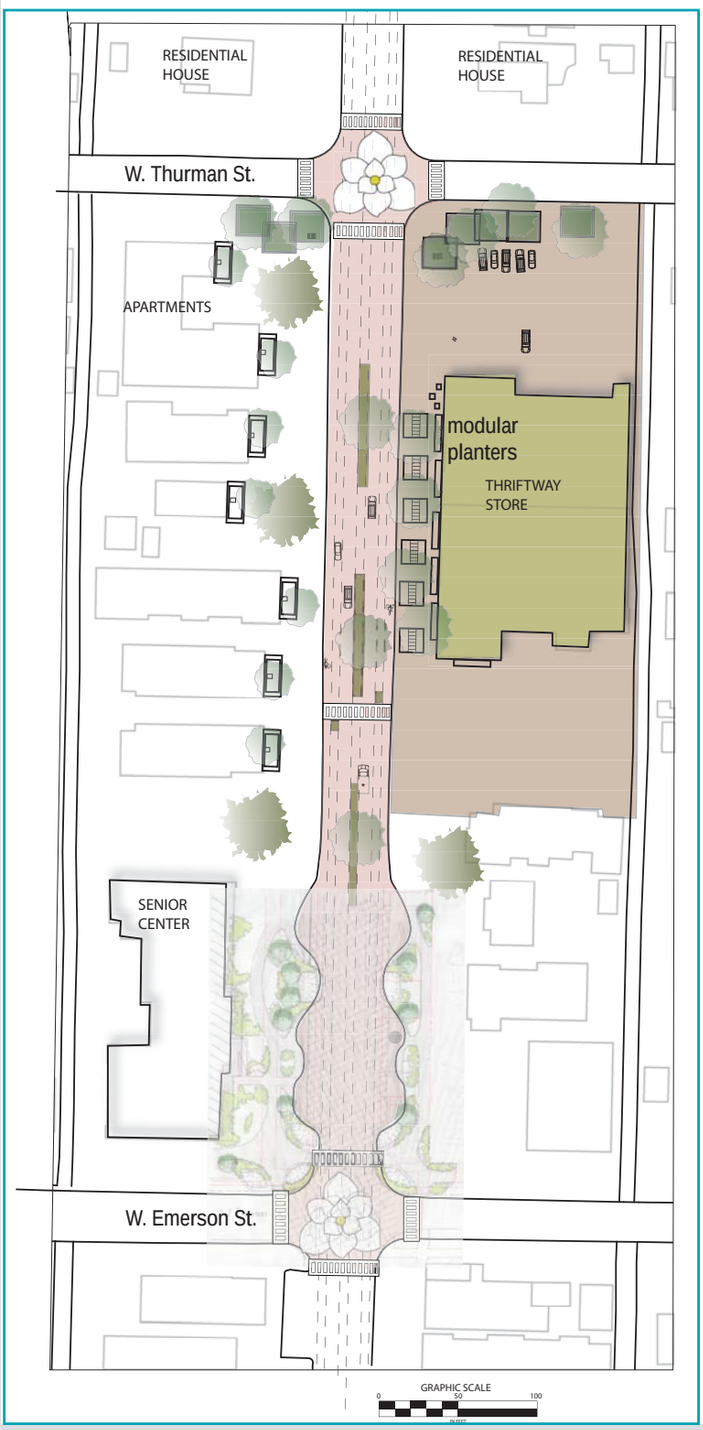
SENIOR HOUSING
pp. 050 - 053

involved

INVOLVED INTERVENTION
BIRDS-EYE VIEW



LOOKING SOUTH



involved

INVOLVED INTERVENTION
PLAN VIEW

* The north end is designed in order to provide a plaza where people can hang out. This design proposes easy-to-install modular concrete planters that can process storm water on site. The module also provides seats, garden beds, and reveals the "process" to raise people's awareness of living with water.

* The north end also has a vegetated median, so that people can cross the street safely.

* Since the nursing home needs to keep easy access in case of disasters such as fire, the landscape design is less intrusive. It has swales with smaller plants. The bioswales included in the design serve resource conservation purposes.

* The goal is to create a better pedestrian environment for the people who live in the senior housing, but still keep the easy access for disasters like fire, etc.

phytoremediation +
Thriftway garden plaza

noriko marshall

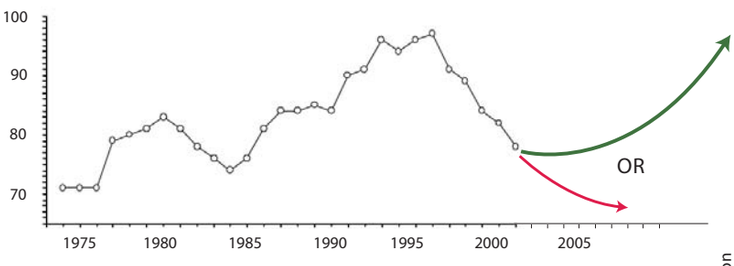
PUGET SOUND (PAST)

PUGET SOUND (FUTURE)
if no action is taken...

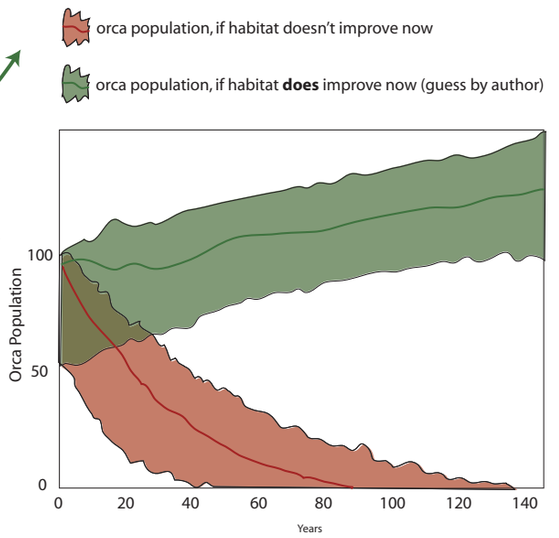
Why does it matter?

Puget Sound is deceivingly beautiful. However, the Sound is losing eelgrass rapidly. Salmon are endangered and a dead zone is spreading. The decline of the marine environment is mostly anthropogenic - caused by humans.

ORCA POPULATION DATA



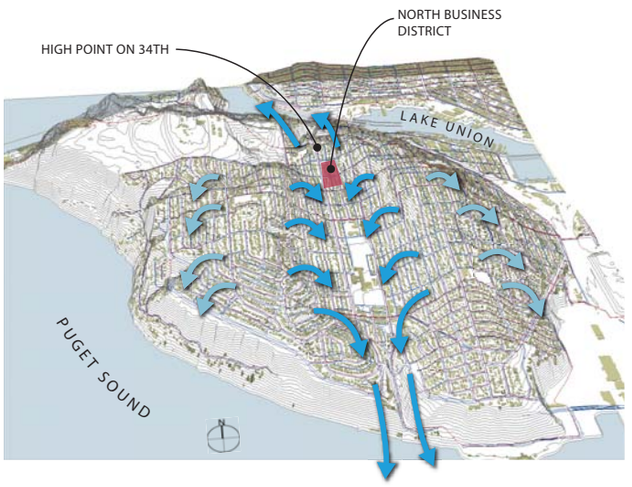
graph credit: www.biologicaldiversity.org published 2001, arrows added by author



With its current population trend, the Puget Sound killer whale will likely go extinct within 33 to 121 years. The median time to extinction is 74 years. If habitat conditions improve, it has good chance of surviving over 300 years.

graph credit: www.biologicaldiversity.org published in 2001, green portion added by author

STORMWATER FLOW IN MAGNOLIA



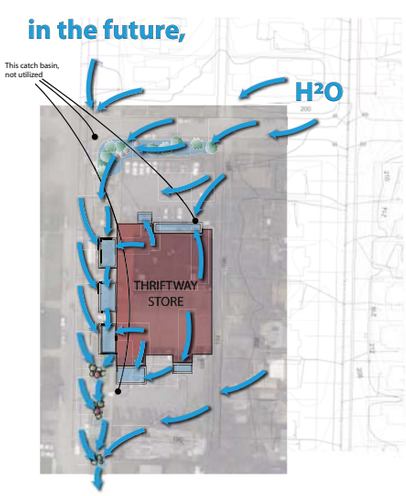
Puget Sound is dying. Scientists reported that the "food web of Puget Sound appears to be more seriously contaminated than previously anticipated. Orcas, at the top of the marine life food chain are one of the most chemically contaminated mammals in the world."

One of the worst causes for the pollution is storm water runoff. Precious rain water rushes down too quickly to the Sound taking pollutants with it.

WATER FLOW (PRESENT)

directly to the Puget Sound

WATER FLOW (FUTURE)
- if right action is taken...



filtered and purified before reaching to the Puget Sound

phytoremediation +
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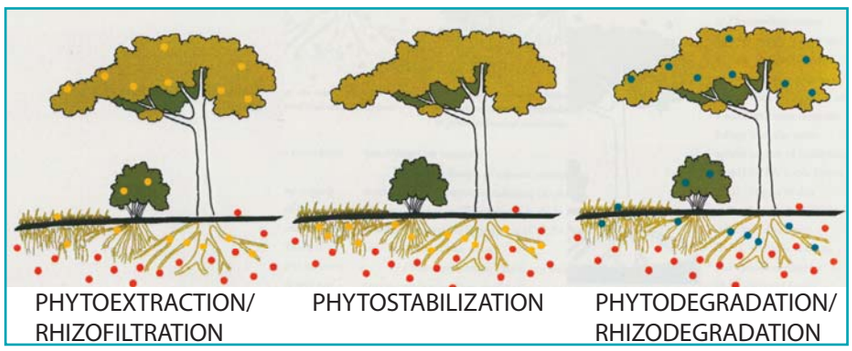
What can we do?

Phytoremediation diagram - illustrated by Laura Davis



Phytoremediation plants - just to name a few.

Pteris vittata
Chinese Brake Fern

Brassica family
Ornamental Kale

Brassica family
Canola

Lupinus
Lupin

Helianthus annuus
Common Sunflower

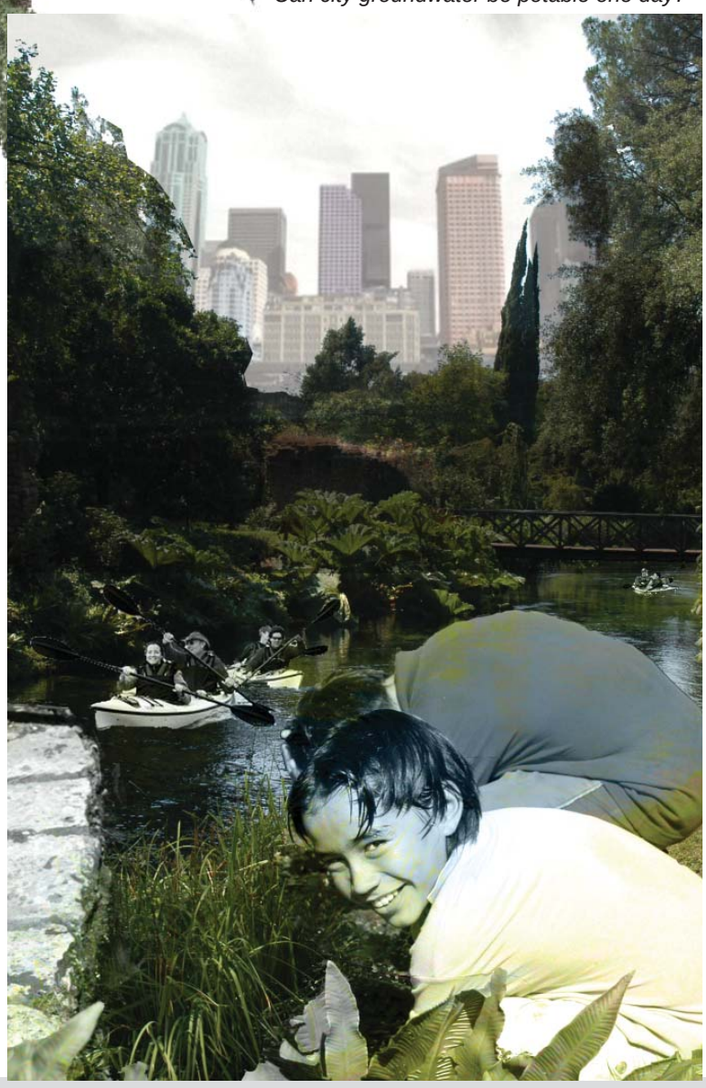
Well-loved Great Blue Herons eat fish and other aquatic species.

Phytoextraction
Accumulate contaminant in the plant shoots or roots.

Phytostabilization
The contaminant is absorbed, or reduced in mobility or availability.

Phytodegradation
The contaminant is metabolized by plants, or by microbes in plant-enhanced environment.

Can city groundwater be potable one day?



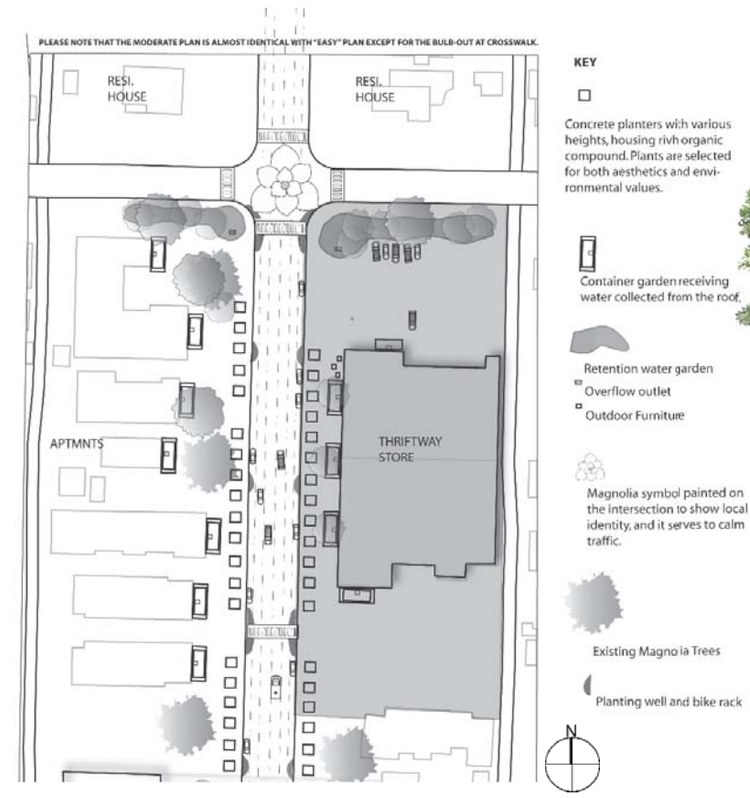
Phytoremediation depollutes contaminated soil, water or air with plants able to contain, degrade or eliminate metals, pesticides, solvents, explosives, crude oil and its derivatives, and various other contaminants, from the mediums that contain them.

It is more time-consuming and limited to operation during the plant growing season, but it is inexpensive, less invasive and better yet, it helps to create wildlife habitat.

With phytoremediation in mind, I created visual images of my dreams. The image above is a restored great blue heron population. The image on the right is about my children drinking spring water to their hearts' content. It was inspired by the visit to a garden called "Ninfa" near Rome where lush plants and streams clean water to be potable.

phytoremediation +
Thriftway garden plaza

noriko marshall

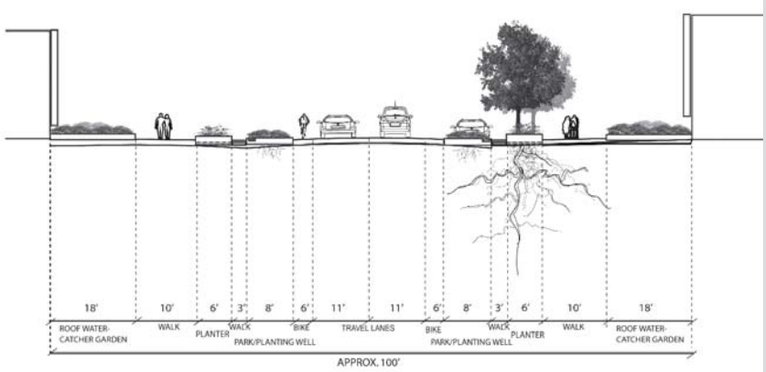


Bird's-eye-view - looking south from W. Thurman St.

Side street by Thriftway store

This "EASY" design proposes an immediate beautification of the site using combination of native, drought and wet-feet tolerant plants. Rain water is collected through the gutter to the garden where it is kept for a short time, but long enough to slow down the stormwater. The square planters by the road will be planted with phytoremediation plants such as Chinese Brake Fern, sunflowers or even colorful lupines.

The retention garden on the north side of the parking lot will be filled with phytoremediation plants. It will be deep enough when some plants such as Arctic Blue Willow fully manure. They don't interfere with drivers' visibility.



Plaza by Thriftway store with sitting area. Retention pond on the north side of parking lot.

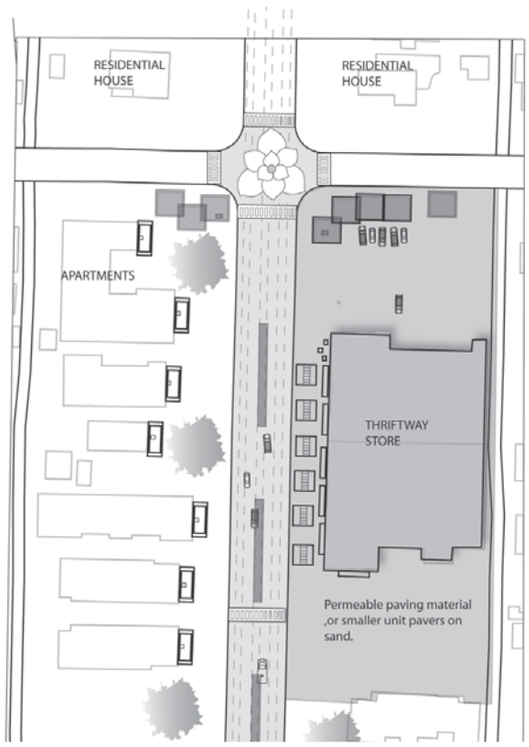
phytoremediation +
Thriftway garden plaza

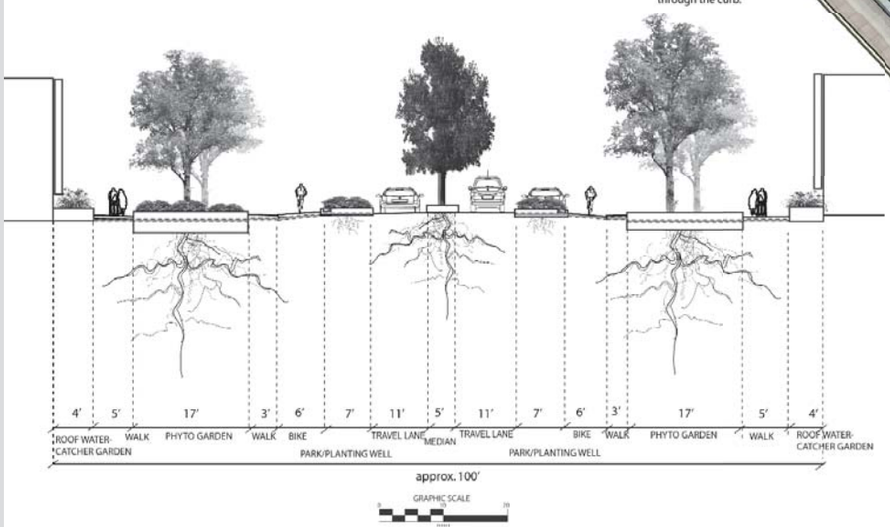
noriko marshall

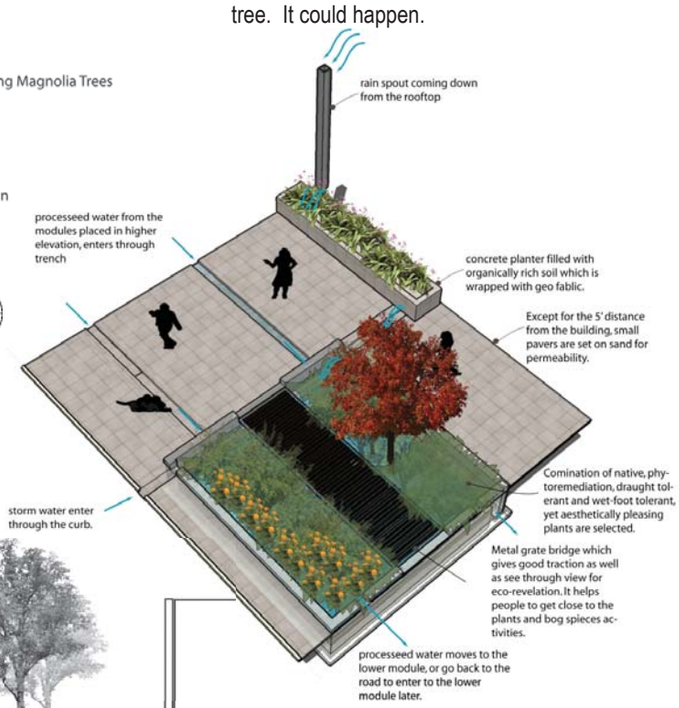
This involved design proposes a module that connects roof water, stormwater from parking and roads to the plant-filled phytoremediation garden.

The right selection of beautiful plants that thrive in both wet soil and drought conditions will provide a space that will attract shoppers and strollers to the north business area.

This system exposes the natural process to people for education and pleasure without giving the impression of "messy nature." Imagine a Great Blue Heron flying in to have insects for a snack when street musicians are playing music under a tree. It could happen.



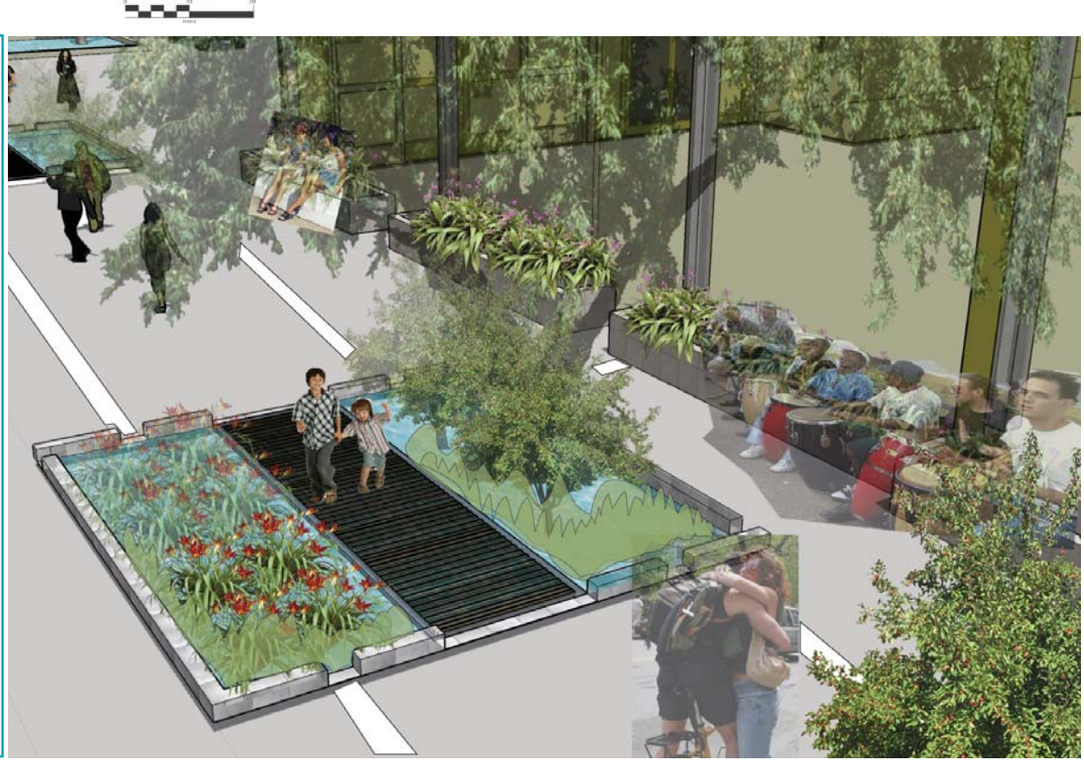




Module above can be narrower to accommodate the width of a sidewalk. This design is quite adaptable.

FUNCTIONALITY EQUATION

This large site has an impervious area of approximately 60,000 sq ft (Thriftway rooftop, parking, east half of the street on 34th between the catch basin on W. Emerson to the features). With this amount of impervious area, it requires 937 to 944 sq ft of swale space.



The module in use by the Thriftway store. With an installation of a coffee shop, it will be a popular gathering spot.

easy merit lesta

BUSINESS
050

north | senior housing - easy

EXISTING CONDITIONS

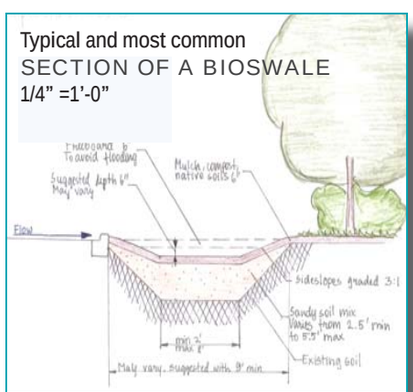
GOALS

- Resource conservation (bioswales)
- Community identity (painted flower shape at the intersection)
- Traffic calming
- Better streetscape (benches/seating areas)

SENIOR HOUSING - PLAN VIEW

1/8" = 1'-0"

Typical and most common
SECTION OF A BIOSWALE
1/4" =1'-0"

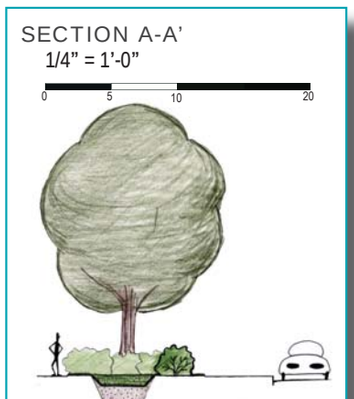


LEGEND

- Trees
- Shrubs
- Sidewalk
- Bus stop
- Lawn
- Utility pole
- Fire hydrant
- Bench
- Water movement
- Catch basin
- Red metal magnolia flowers

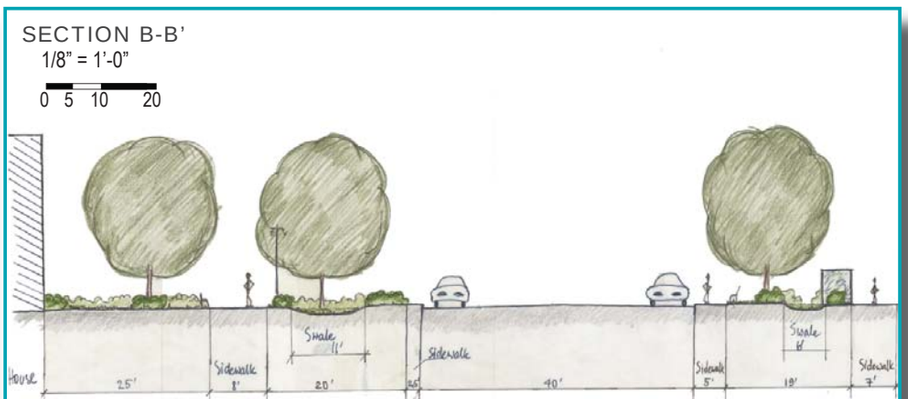
SECTION A-A'

1/4" = 1'-0"



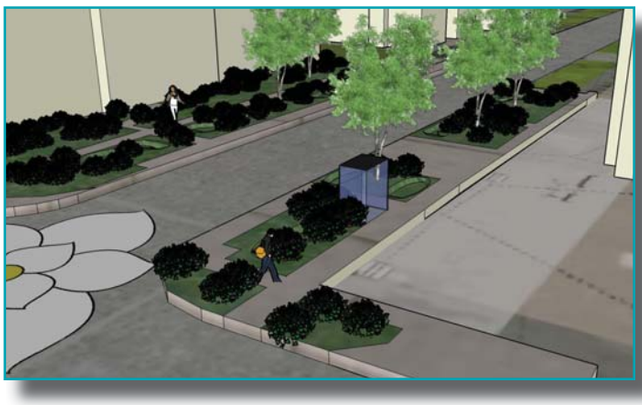
SECTION B-B'

1/8" = 1'-0"



FUTURE VISION

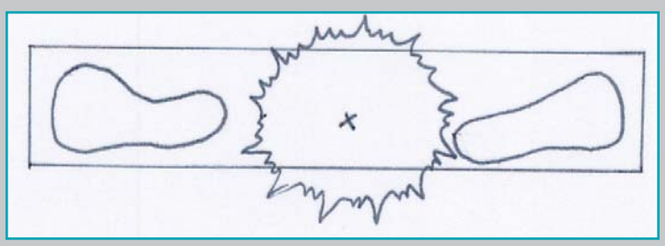
Aerial view of the intersection entrance.



Birdseye view of the new street environment in front of the senior housing.

PROTOTYPES

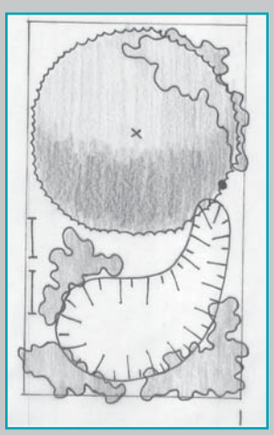
Paved or painted intersection marker



Prototypical solution that could be adopted in many places: swale-tree-swale

PLANTING PALETTE

Plant combinations for seasonally wet and dry areas



River Birch
Betula nigra
http://www.texarkanacollege.edu/~mstorey/plants/P000264.jpg

Redtwig Dogwood
Cornus sericea
http://www.odla.nu/artiklar/images/bilder/cornus-alba-sibirica-vinter.jpg

Bridal Wreath Spirea
Spiraea x vanhouttei
http://www.plantyfolia.com/photos61-75/spireaens.jpg

Wood Anemone
Anemone nemorosa
http://www.wildstauden.ch/pflanzen/bilder_db/AnemoneNemorosa2.jpg

Pin Oak
Quercus palustris
http://www.mobot.org/gardeninghelp/images/low/A904-0628051cs.jpg

Darwins Barberry
Berberis darwinii
http://www.castlebar.ie/photos/dailyphotos/floral/april2003/glry/dsc05442.jpg

Barren Strawberry
Waldsteinia ternata
http://www.mobot.org/gardening-help/images/low/T910-0901020.jpg

Red Osier Dogwood
Cornus stolonifera
http://www.nzplantpics.com/pics_shrubs/cornus_stolonifera_flaviramea_small_06.jpg

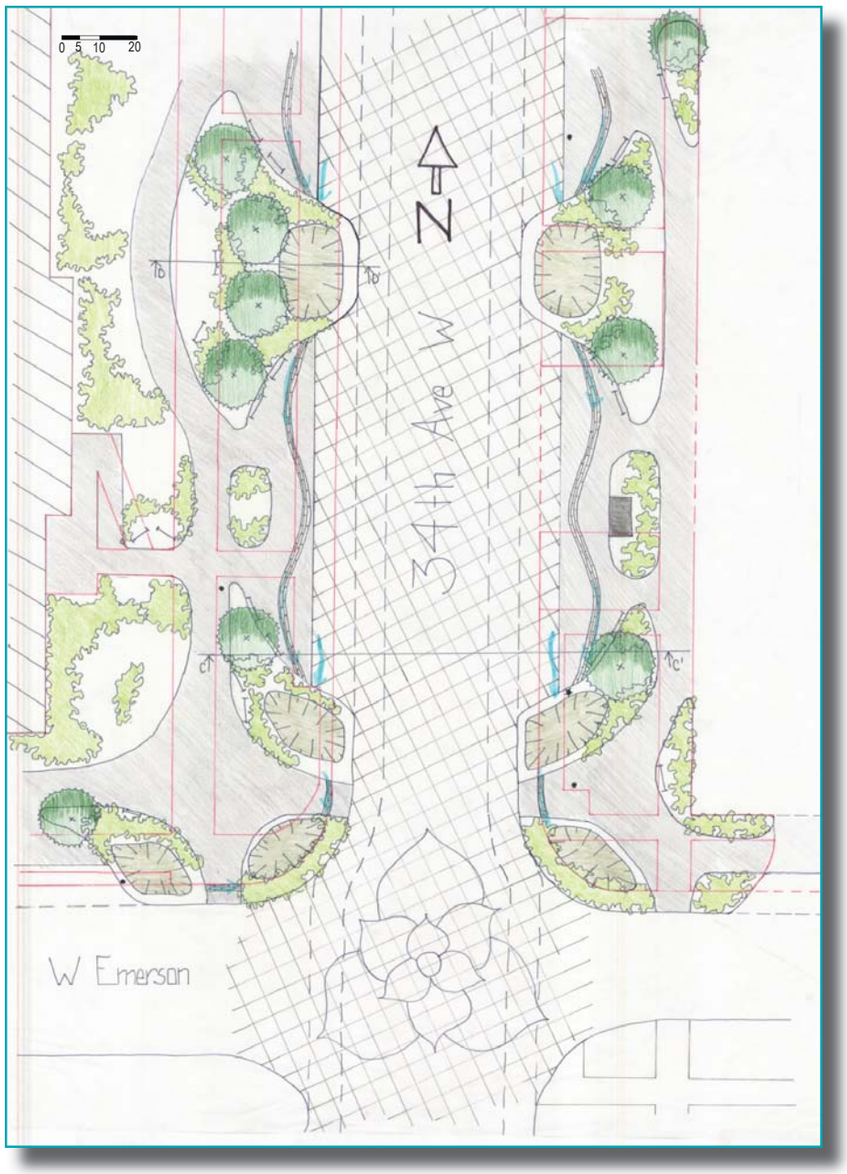
involved

merit lesta

GOALS

- Resource conservation (bioswales, bike route)
- Community identity (paved Magnolia flower)
- Traffic calming (change of pavement)
- Better streetscape (curvy paths, benches/seating areas)
- Traffic calming (curb extensions on the street corner)
- Pedestrian safety (curb extensions shorten the distance while crossing the street)

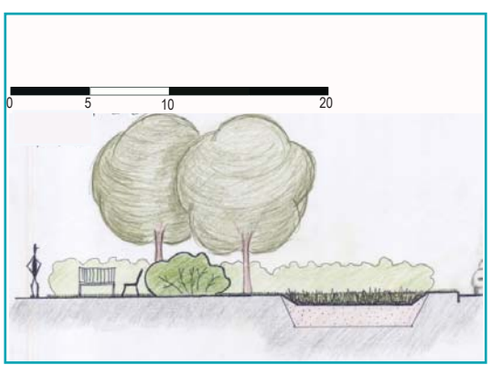
SENIOR HOUSING
PLAN VIEW
1/8" = 1'-0"



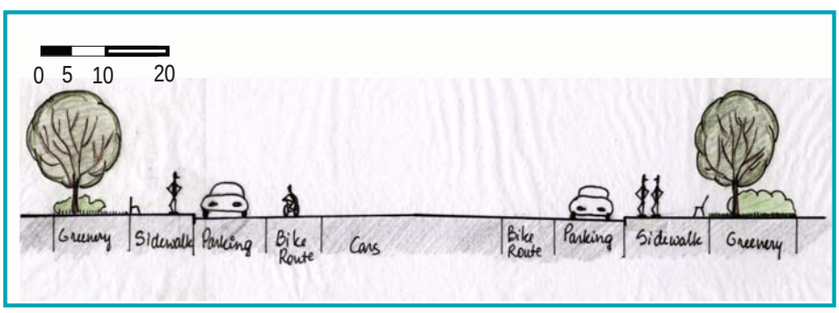
LEGEND

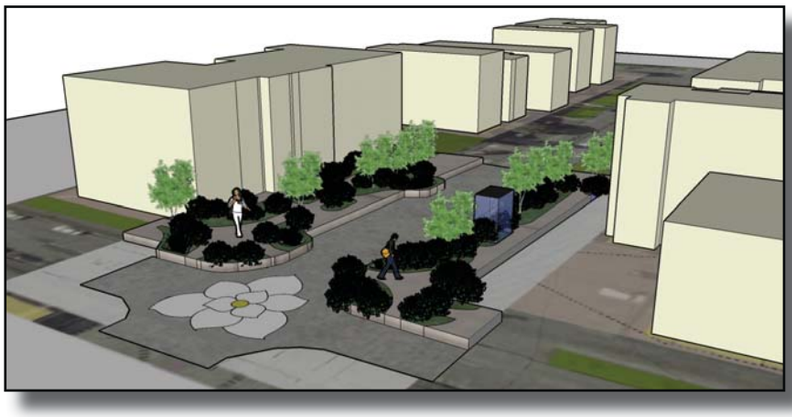
- Trees
- Shrubs
- Sidewalk
- Bus stop
- Lawn
- Low plants in swales
- Paved area
- Utility pole
- Fire hydrant
- Bench
- Water movement
- Catch basin
- Present situation

SECTION D-D'
1/4" = 1'-0"



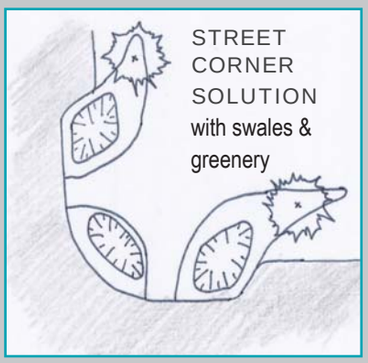
SECTION C-C'
1/8" = 1'-0"



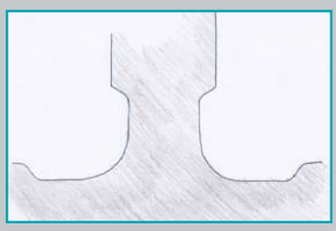


BIRDS-EYE VIEW

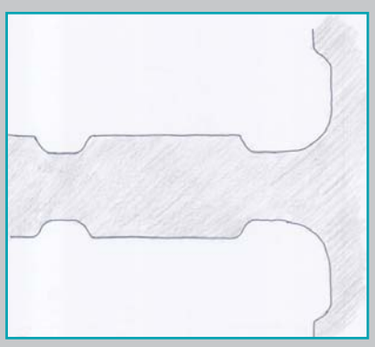
PROTOTYPE TEMPLATES



STREET CORNER SOLUTION with swales & greenery



CURB EXTENSIONS on the street corner and along the street - could be used as bioswales



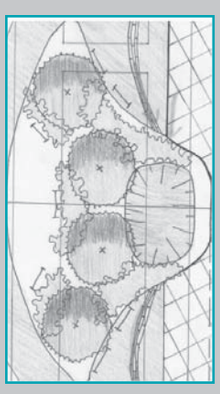
PLANTING PALETTE

Plant combinations for wet areas

Arctic Willow
Salix purpurea
Photo source: internet http://www.robsplants.com/images/portrait/Salix-Purpurea040709.jpg

Ostrich Fern
Matteuccia struthiopteris
Photo source: internet http://pics.davesgarden.com/pics/trilian15_1117991864_888.jpg

Bowles' Golden Sedge
Carex elata 'Aurea'
Photo source: internet http://www.hostas.com/images/grasses/carex-elata.jpg



RAINGARDEN FUNCTIONALITY MEASUREMENT

Impervious surface:
3492 sqft

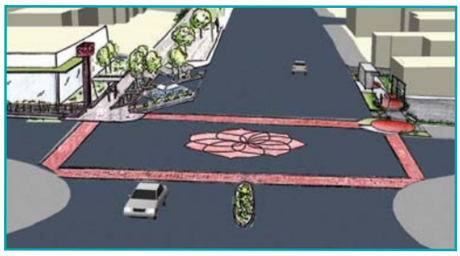
Necessary bioretention size (for 6-mo. storm):
53 sqft

Swale surface (in this design):
410 sqft

SOUTH W. McGraw St. from 32nd to 34th Ave. W

moderate

MODERATE INTERVENTION
BIRDSEYE VIEW



MAGNOLIA GATEWAY
p. 055

PLAN VIEW

HISTORY WALK
pp. 056 - 057

INTERSECTION
pp. 058 - 061

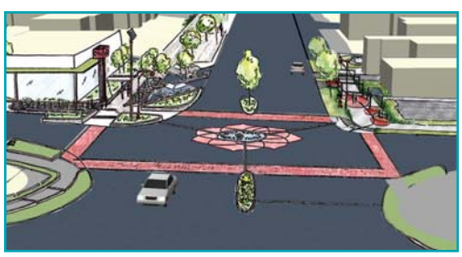
UNLOCKING THE WATER
p. 058

SLOWING THE FLOW
p. 058

GREENING THE GATEWAY
pp. 059-061

involved

INVOLVED INTERVENTION
BIRDS-EYE VIEW

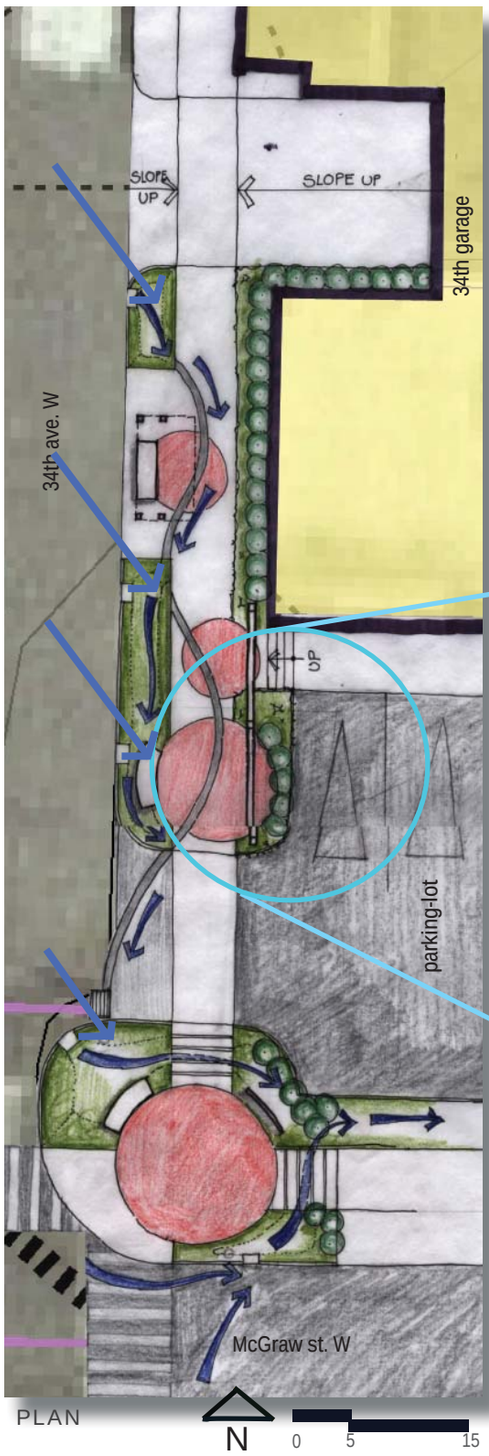


PLAN VIEW

moderate

magnolia gateway

shikha chauhan



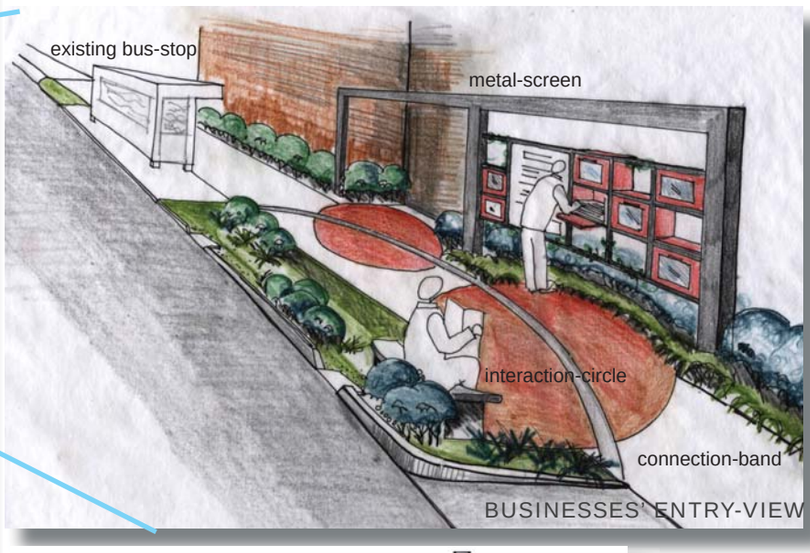
PLAN

AREA

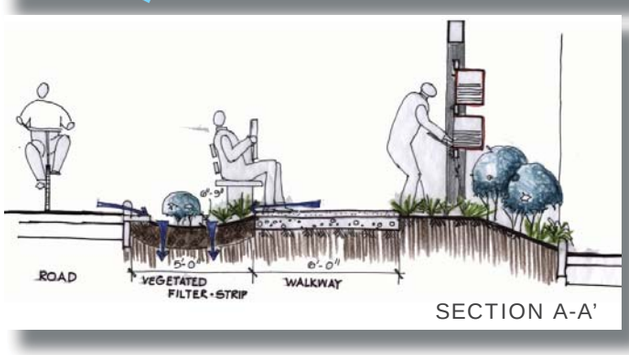
Eastern sidewalk on 34th Ave W adjoining the 34th Ave W and McGraw Street W intersection.

INTERVENTION

- Addition of 5'-0" wide **vegetated filter strips** on both sides of existing bus-stop.
- Enlivening the sidewalk with **interaction-circles** (paving-area designed and executed by community members) and **connection-band** (a wavy band of subsurface drain carrying vegetated filter strip overflow and covered with colorful tiles made by neighborhood children.
- Installation of **multi-utility metal screen** with vines framing shop entries, screening parking lot & integrating newsstands & community bulletin board.

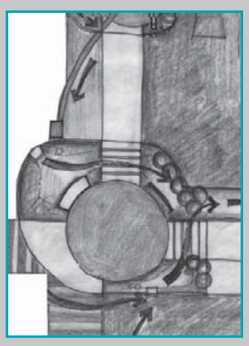


BUSINESSES' ENTRY-VIEW



SECTION A-A'

PLANTING PALETTE

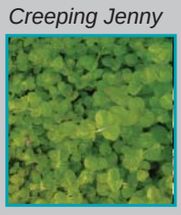


warm welcome strips

planting character: rich, vibrant, warm colors, wet winter-dry summer plants

Dwarf Dogwood

Golden Creeping Jenny



Nandina Dwarf

Ice Dance Sedge

PROTOTYPICAL ELEMENTS

vegetated filter strips

for narrow parking strips

multi-utility metal screen

framing shop-entries, screening parking-lot & integrating combined newsstands & community bulletin board

involved

the history walk

shikha chauhan

AREA

Eastern sidewalk on 34th Ave W adjoining the 34th Ave W and McGraw Street W intersection.

INTERVENTION

+ Widening the sidewalk to include 12'-0" wide **history-walk** having the following features:

-a series of **pergolas with history-markers** depicting Magnolia's history from Fort Lawton and Discovery Park to Magnolia Theater (demolished in 1961).

-a **bike-lane**

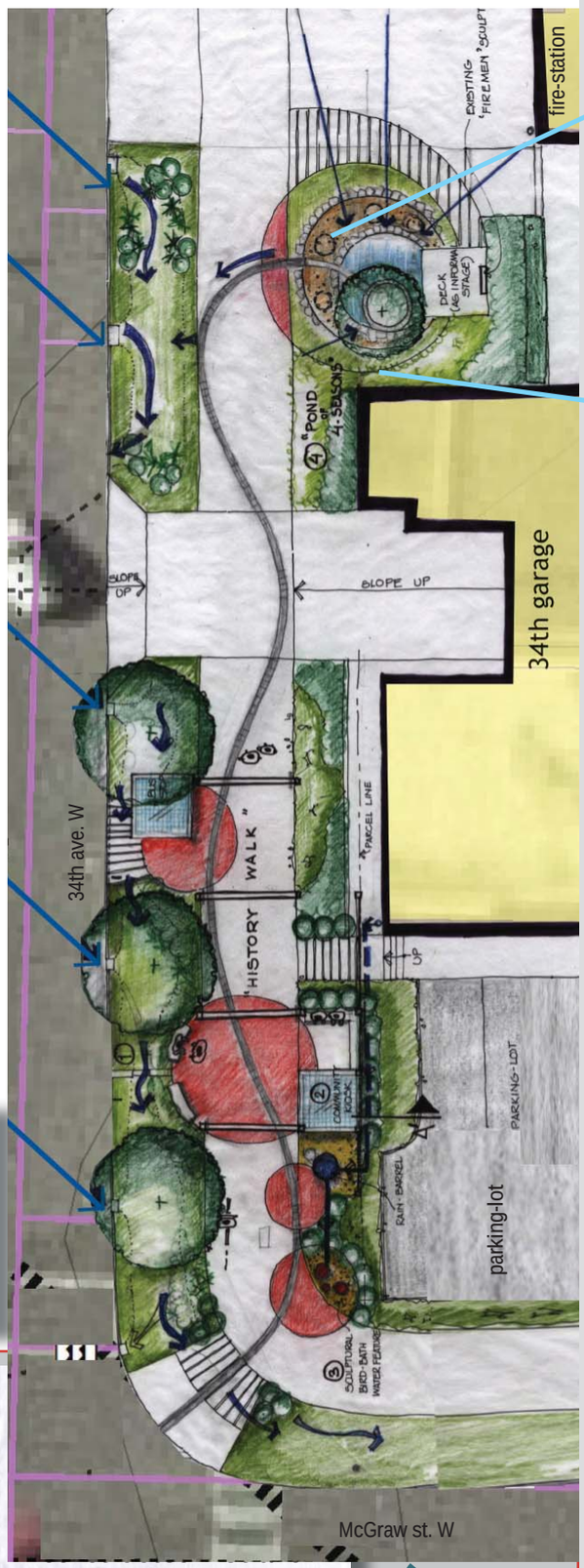
-**interaction-circles** (paving-area designed and executed by community members) and **connection-band** (a wavy band of subsurface drain carrying vegetated filter strip overflow & covered with colorful tiles made by neighborhood children.

+ Bus-stop with a **solar-panelled roof** to power the electronic bus-schedule indicators.

+ Collecting rain-water from flat roofs of shops into a **rain-barrel** and utilizing it for a sculptural water-feature.

+ **Community-kiosk** with solar-panelled roof and **multi-utility metal screen** with creepers framing shop- entries, screening parking-lot & integrating news- stands & community bulletin board.

+ Construction of **Pond of Four Seasons**, a detention pond, in front of existing "Marching-Soldiers" sculpture for treating the storm water from surrounding areas and also, for increasing community's awareness of natural storm water management.

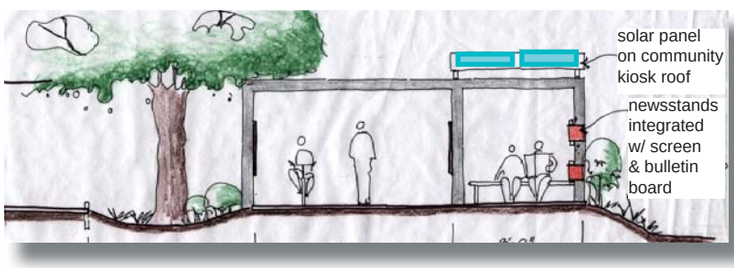


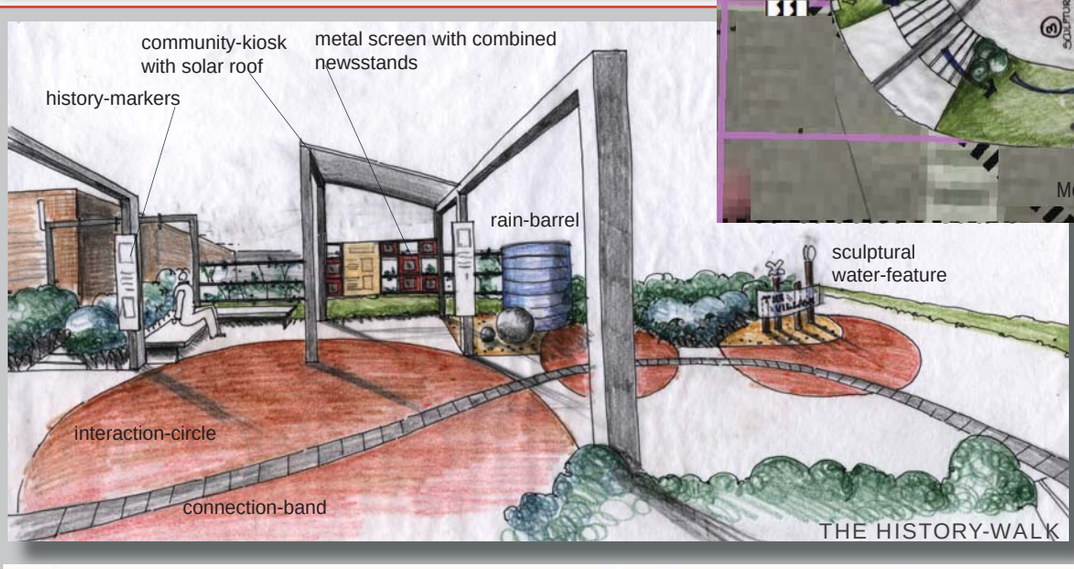
PLAN

N

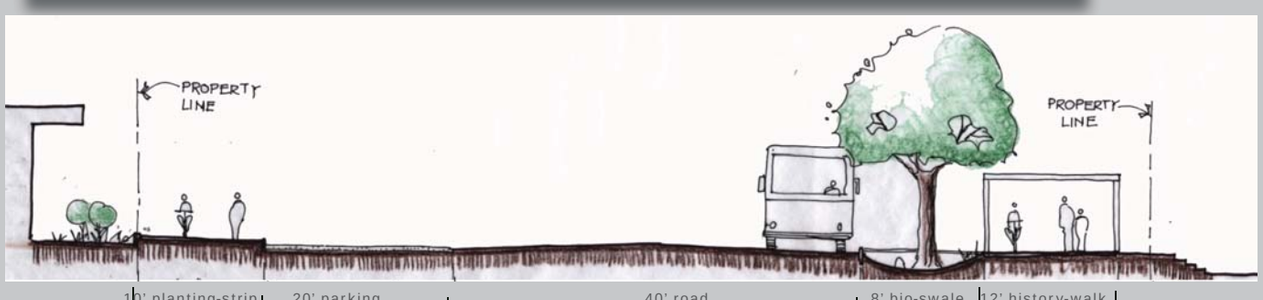
0 5 15

SECTION A-A'





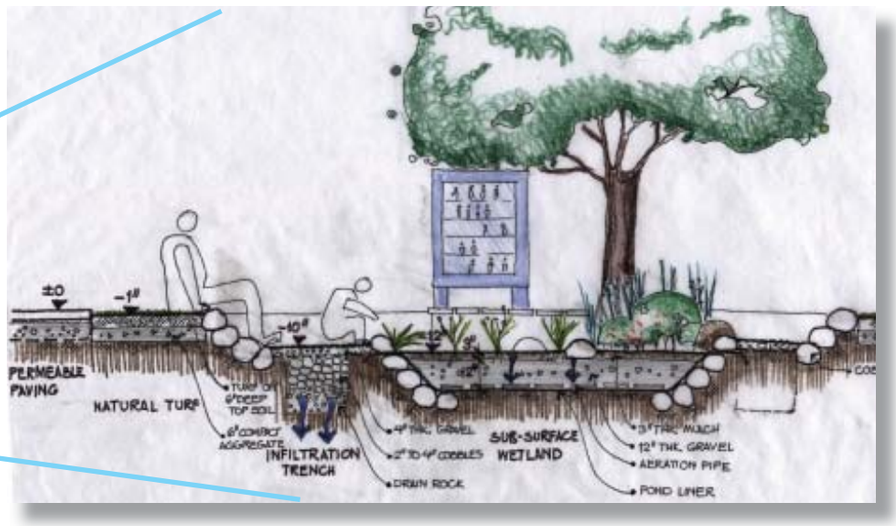
THE HISTORY-WALK



PROPOSED 34TH AVE W SECTION

south | gateway - involved

POND OF FOUR-SEASONS



MEASUREMENT OF FUNCTIONALITY FOR WATER-QUALITY

Total impervious area under consideration (road, lawn in front of fire-station and proposed sidewalk) is **8550 sft.** The designed bio-retention area in form of detention-pond and bio-swales is **1024 sft.** According to linear equations table for sizing bio-retention/ Rain Garden facilities as given by Clear Creek Solutions, Inc., for City of Seattle, Nov. 2006, bio-retention size for infiltration rate of 1 inch/hour for a 6-month storm event is approx. **135 sft.**

Thus, the bio-retention area provided in the design is sufficient for water quality treatment of the storm water runoff of the area under consideration.

PLANTING PALETTES

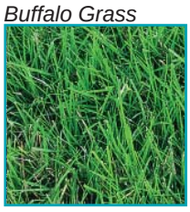
wetland & more...
planting character: vibrant, colorful, child-safe, aiding in phytoremediation

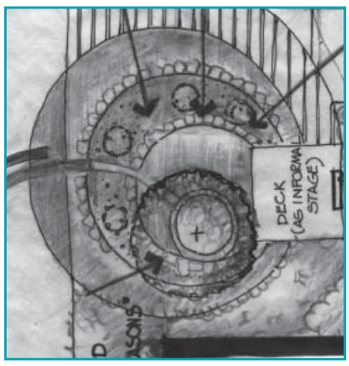
Dagger-leaf Rush

Western Columbine

Goldenrod Solidago

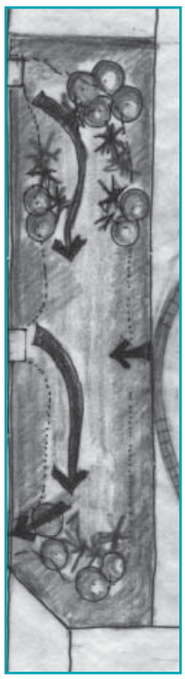
Buffalo Grass





Red Maple

calming strips
planting character: fresh, lush,damp-shade (under trees), cool colors



Deer Fern

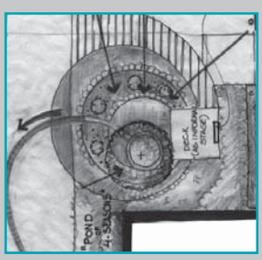
Wild Ginger

Creeping Thyme

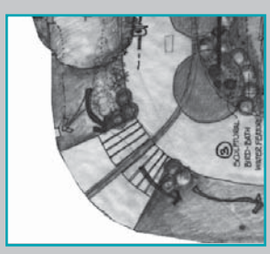
Blue Fescue

PROTOTYPICAL ELEMENTS

bio-swale
treating road & walkway run-off

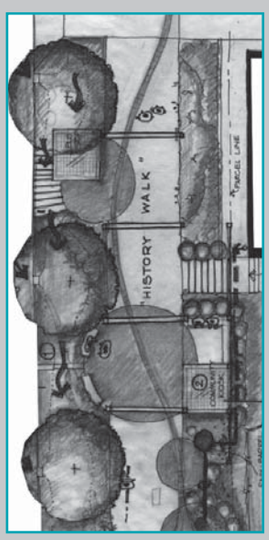


pond of four seasons
constructed wetland

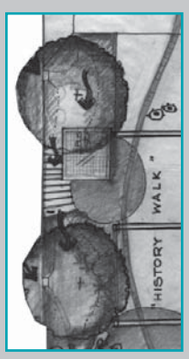


pedestrian bridges
uninterrupted run-off flow

rain-barrel & public-art
collected roof rainwater for scuptural water-feature



community-expression
through history, art, interaction-circles, bulletin boards



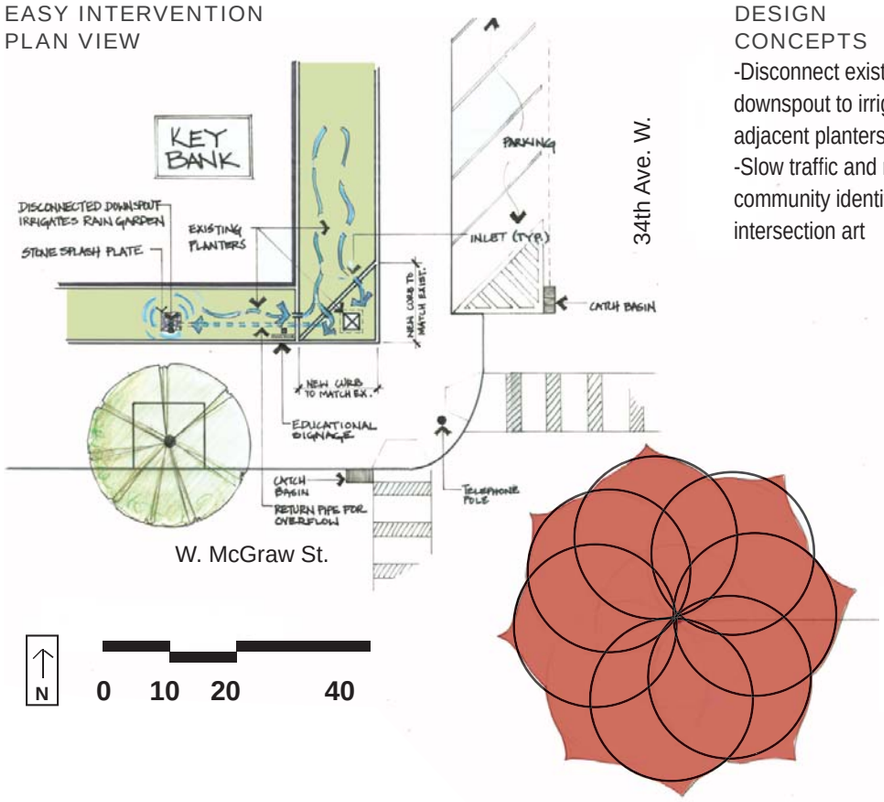
solar bus-stop
to power bus-schedule indicators

heather flint chatto

easy

unlocking the water
key bank - entrance improvements

EASY INTERVENTION
PLAN VIEW



DESIGN
CONCEPTS

-Disconnect existing downspout to irrigate adjacent planters

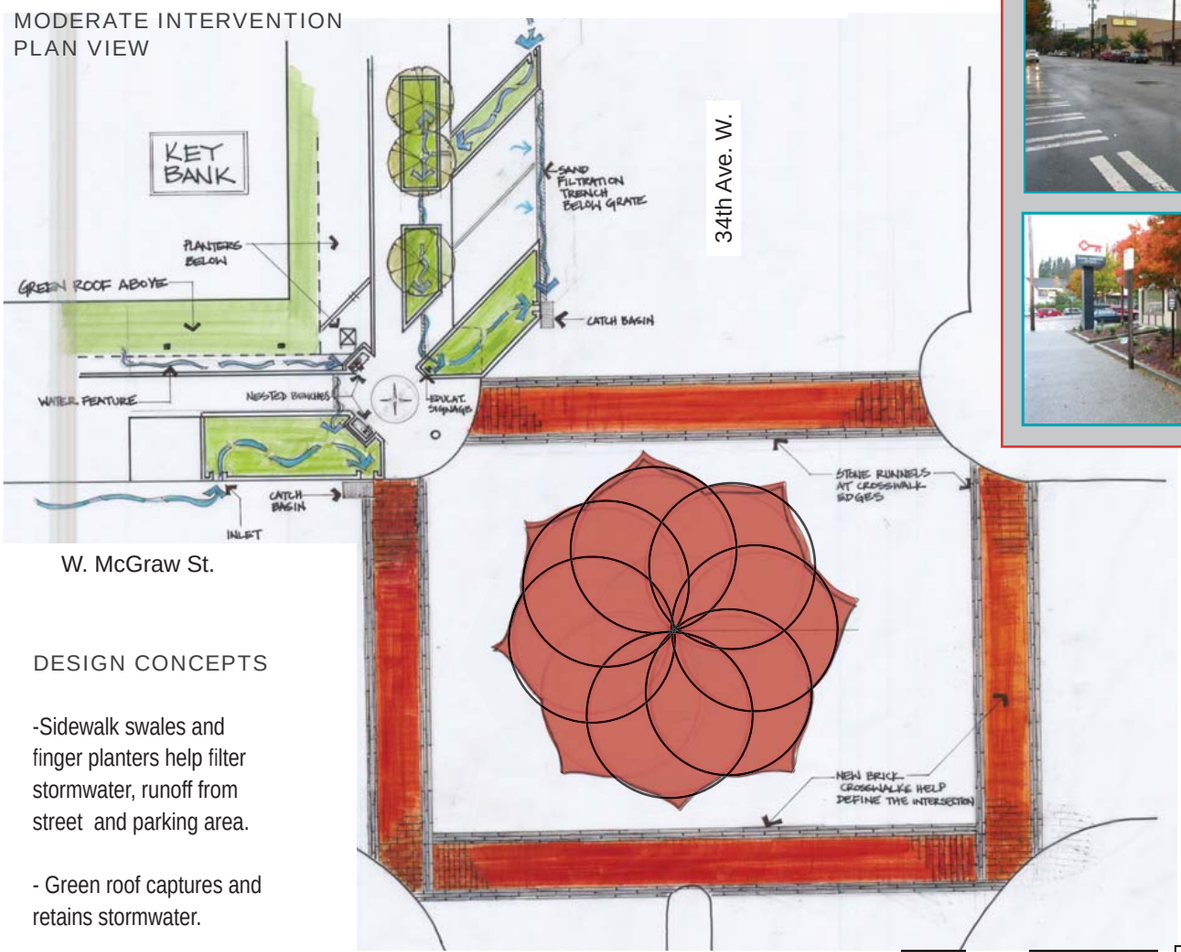
-Slow traffic and reflect community identity with intersection art

EXISTING CONDITIONS

moderate

slowing the flow
with greenroofs and swales

MODERATE INTERVENTION
PLAN VIEW

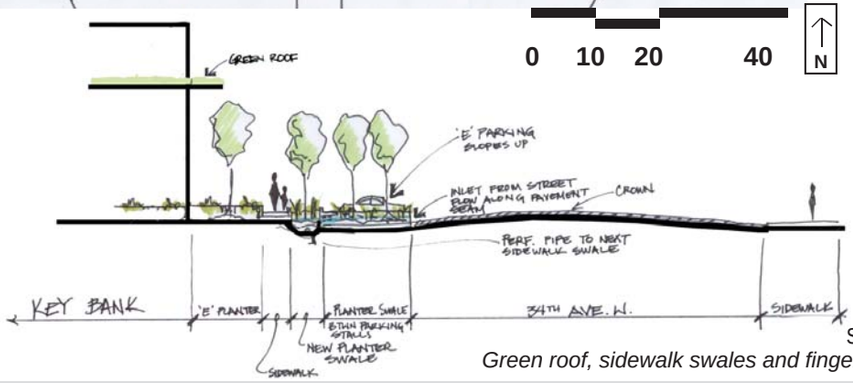


DESIGN CONCEPTS

-Sidewalk swales and finger planters help filter stormwater, runoff from street and parking area.

- Green roof captures and retains stormwater.

- New crosswallk paving creates definitions and provides surface change to slow motorists.



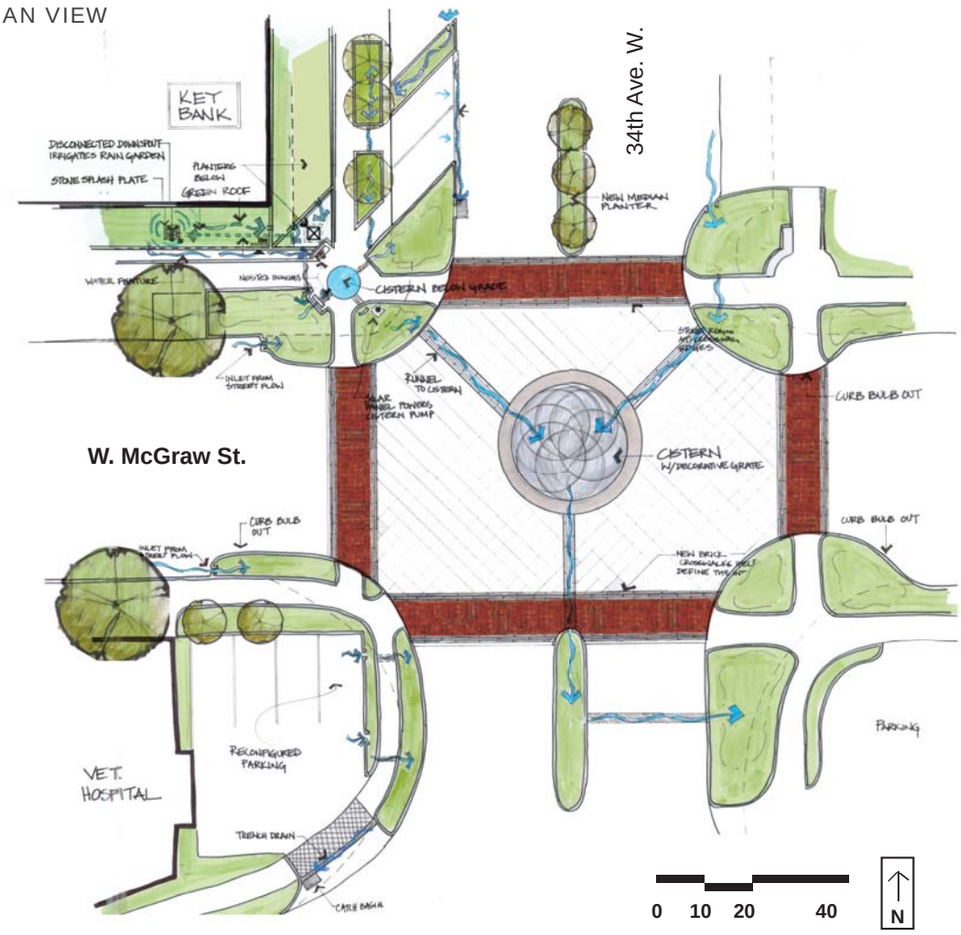
SECTION D
Green roof, sidewalk swales and finger planters

south | intersection - easy/mod

greening the gateway
with cisterns & corner bulb-outs

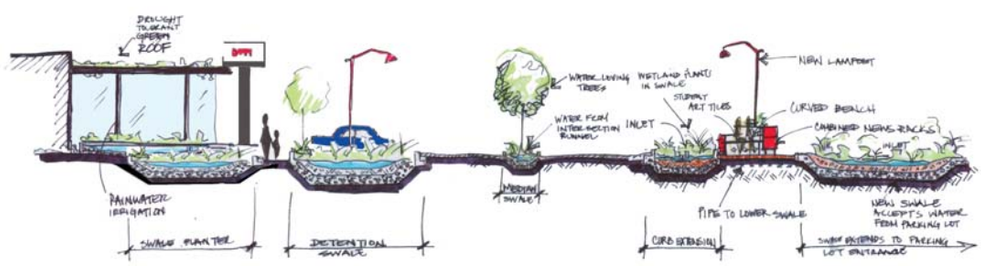
heather flint chatto

INVOLVED INTERVENTION
PLAN VIEW

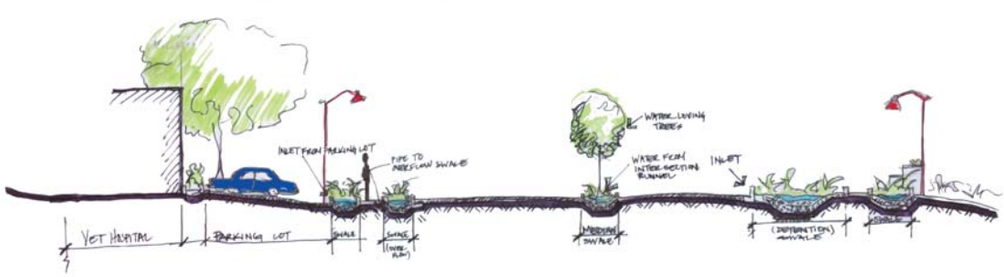


DESIGN CONCEPTS

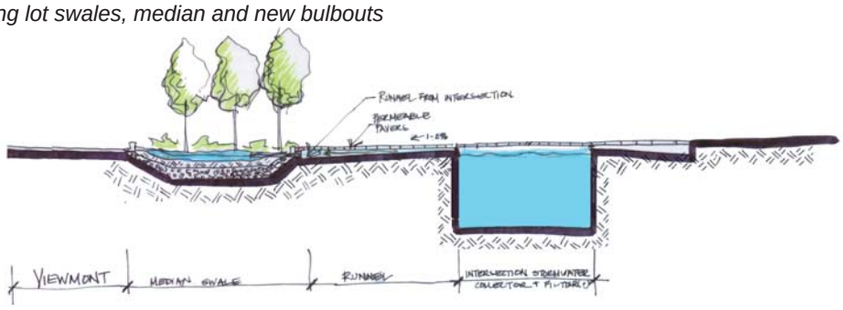
- Bulbouts at corners slow traffic and provide for slowing and filtering of stormwater.
- Runnels direct overflow to cisterns at corner and intersection.
- Solar panels power cistern pump to irrigate corner plantings in summer.



SECTION A
Green roof, swales, median and new streetscape furniture



SECTION B
Parking lot swales, median and new bulbouts



SECTION C
Intersection cistern and median swale

native plantings

(photo sources: http://dnr.metrokc.gov/wlr/pi/go-native/PlantDisplay.aspx)

sword fern *nodding onion*

w. columbine *thick headed sedge*

CORNER PLANTINGS - WET CONDITIONS

Groundcovers

WESTERN COLUMBINE - Aquilegia formosa; Perennial Groundcover - 2 ft. ht, sun- part shade, moist conditions, butterfly and hummingbird attractant, upright delicate red and yellow flowers.

NODDING ONION- Allium cernuum; Perennial Groundcover - 1 ft. ht, sun exposure, dry-moist conditions, attractive pink flowers, drought tolerant, fire resistant.

SWORDFERN- Polystichum munitum; evergreen groundcover, 3 ft, sun-shade, dry-moist. prefers organic soils.

THICK HEADED SEDGE- Carex pachystachya; deciduous grass, 2 ft., sun-part shade, dry-moist.

sword fern *thrift sea pink*

cascara *snowberry*

MEDIAN PLANTINGS - DRY AREAS

Trees

CASCARA - Rhamnus purshiana; deciduous tree, 30 ft, sun-shade, dry-moist. Small hidden flowers, but very attractive fruit. Both the flowers and fruit attract various wildlife. Attractive fall color.

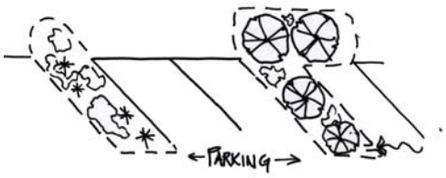
Shrubs

SWORDFERN- Polystichum munitum; evergreen groundcover, 3 ft, sun-shade, dry-moist. prefers organic soils.

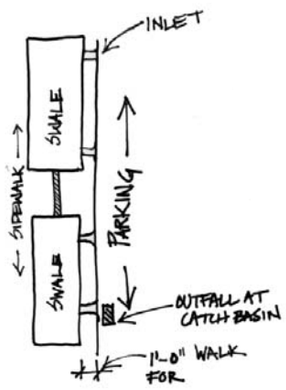
Groundcovers

THIRIFT - SEA PINK - Armeria maritim; perennial groundcover, drought tolerant, dry sunny conditions, 1 ft. height, attracts hummingbirds, upright pink flowers.

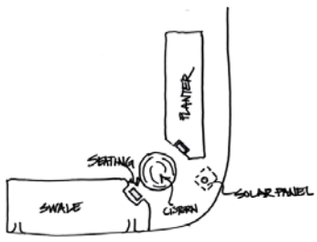
prototypes



Finger Planters to filter Street & Parking Runoff



Sidewalk Swales

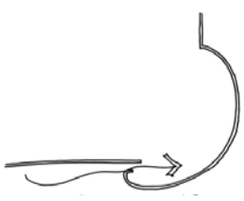


Green Corner:

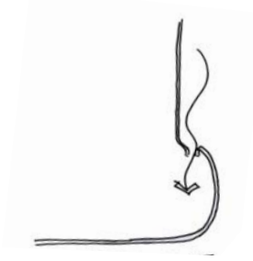
A - Swales & Cistern for Summer Irrigation

B- Solar Panels (e.g. for cistern and irrigation pump)

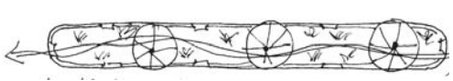
C - Educational Signage & Nested benches



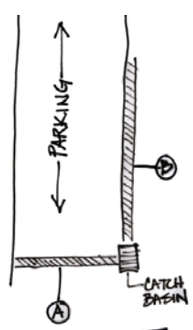
Rounded Bulb-out



Squared Bulb-out



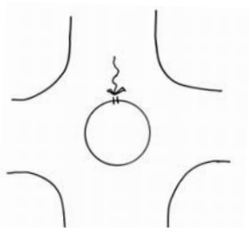
Median Swale Planter



Sand Filter Trenches

A - conveyance to swale or

B - conveyance to catch basin



Intersection Intervention

A - Cistern for summer irrigation of corner plantings

B - Traffic Circle Planer

C - Planter/Cistern Combination

interventions, benefits, & funding matrix

PROPOSED ACTIONS	BENEFITS	LOCATIONS	KEY POLICIES
STORMWATER TREATMENT AND CONTROL			
Biofiltration Swales	slow runoff from street, provide water quality treatment, pollution prevention, softened street edge and increased habitat	Parking strips, parking lot edges and street edges. (Infiltration can be used in Separated Storm systems, filtration and return to storm system for Combined systems)	EJ Collaborative Problem-Solving Cooperative Agreements Program, by Office of Environmental Justice- Clean water financing (State), Water Pollution Control Program Grants Washington State Department of Ecology- The Centennial Clean Water Fund(Centennial) The State Revolving Loan Fund (SRF) The Section 319 Nonpoint Source Grants Program (Section 319) The King County Water Quality Block Grant Fund
Roof Gardens	Absorb rainfall and help prevent combined sewer overflows	New or exisitng flat or angled roofs which are structurally sound enough to support added weight	
Rain Gardens	Absorb rainfall, provide water quality treatment; have potential to increase stream base flow	Separated storm drainage system and where there are good soils and drainage to absorb new stormwater.	
(In)Filtration Trenches	Clean water through sand or gravel. Filters water before it goes into the city storm system. If infiltrating to groundwater it may help increase stream base flow.	Separated System for infiltration trenches, filtration for Combined Systems. Good for use in parking areas and between swales.	
Water Runnels	Transmit water through stone or grate covered channels to areas for filtration	Between swales, from downspouts, along edges of crosswalks, to cisterns.	
Porous Pavement	Allow water to infiltrate between or into pavement, reduces "flashing" and flooding to streams	Separated storm drainage system that drains to lake, stream, river or bay	
RESOURCE CONSERVATION			
Cisterns	Allow for stormwater detention and reuse for irrigation (given appropriate filtration).	underground, including small cisterns at corners and at intersection centers (e.g. utility vault locations)	Washington's Natural Resources Conservation Service (NRCS) Conservation Innovation Grants (CIG) Environmental Quality Incentives Program (EQIP) funds Puget Sound Water Quality Work Plan Grants Program Northwest Solar Cooperative teamed with the Bonneville Environmental Foundation (BEF) Solar Starters King County -The Natural Resource Stewardship
Disconnected Roof Downspouts	Potential reduction of overflow events; less pressure on treatment plant	Combined sanitary and stormwater in basins with overflow events and where there is adjacent landscape area with good soil drainage to absorb new stormwater.	
Native & Drought Tolerant Landscaping	Use less water, more adapted to local climate conditions of the Northwest	Everywhere	
Solar Panels on roofs of streetscape structures and poles	Provide alternative power for irrigation, bus and kiosk lighting, and illuminated arrival signs for expected buses, provide demonstration feature for community education.	Bus shelters and community kiosks, irrigation and cistern pumps	
EARTH: HABITAT			
Roof Gardens	Provide food and habitat for birds and butterflies	New or exisitng flat or angled roofs which are structurally sound enough to support added weight	Home Depot Community Tree Planting Program The Environmental Protection Fund (MEPF) The Brainerd Foundation City of Seattle, Dept. of Neighborhoods Tree Fund
New Street Trees	Canopy for summer shade; stormwater interception; cooling of surfaces and buildings; reduced air conditioning and reduced heat island effect; enlargment of corridors, connection of patches, species support; human enjoyment.	Medians, swales, plazas and parking lot edges, specimen trees at areas needing focal points	
COMMUNITY, EDUCATION & SAFETY			
Living History Walk	Reveals local history and enforces community identity	Everywhere - especially at key interaction areas, "hubs" of community activity.	Environmental Protection Agency(EPA)- EE Grants, EPA's Environmental Education Division (EED), Office of Children's Health Protection and Environmental Education Washington State Art Commission -Community Art Development (CAD) program Project Support Program (PSP) The Natural Resource Stewardship Network 1% for art programs City of Seattle Department of Neighborhoods - Neighborhoods Matching Fund Small Sparks
Seating Areas	Creates gathering spots, provide places to meet, provivde places to rest and observe street life	Everywhere	
Community Kiosks	Creates gathering spots and places to share information about events, news, opportunities for engagements)	Corners, prominent or heavily trafficked businesses	
Gateways	Create a sense of arrival and identity, provide traffic calming	Intersections	
Improved Streetscape Furniture & Amenities (pedestrian scale lighting, benches, trash/recycling, drinking fountains, etc.)	Visual continuity encourages more pedestrian activity and a vibrant street life	Busy arterials, main business districts	
Medians - (short or full block)	Traffic calming, increased pervious surfaces, provide safe haven for pedestrians at crossings, narrows effect of wide streets	Near intersections and on overly wide streets	
Bulbouts	Create spaces for landscaping, help narrow the street, provide traffic calming	Intersections	

Notes:

Separated Systems - storm drainage and sewer systems are separate. Storm system may drain to lake, stream, river or bay.

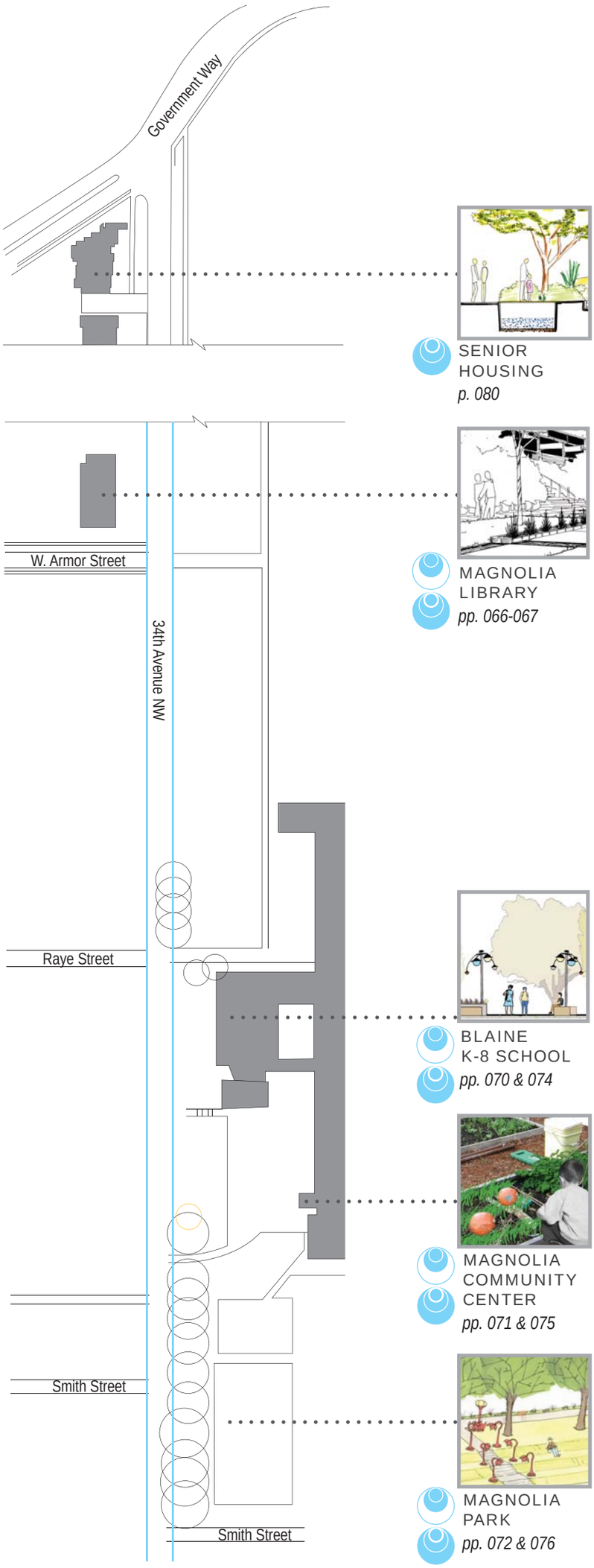
Combined Systems - sanitary and stormwater are combined and sent to treatment facility. More Stormwater can increase overflow events

stormwater treatment

design function in 6 month storm event

PERVIOUS AREA	~S.F.	Area Treating	Design Size needed	Capacity for Biofiltration
EASY	736			
Rain Garden at Key Bank corner	736	upper roof drainage	5	more than enough
MODERATE	1049			
Green Roof	480	direct rainfall	N/A	Slows and retains
Sidewalk swales on 34th	140	sidewalks	13	
N. Finger Planter	72	parking area, 1' edge strip, street	33	
S. Finger Planter	140	street, sidewalk, lower parking	19	
Swale on McGraw	216.5	1/2 McGraw	122	twice the size necessary
INVOLVED	1148			
Triangle swale on 34th	240	lower portion of street half, sidewalk, pkg	90	More than twice the size needed
Bulb out on McGraw	290	1/2 street	122	More than twice the size needed
NW corner planter	102	sidewalk	13	Not needed for biofiltration
bulbout on SW corner	136	South 1/2 of McGraw	122	Perfect size
Parking Swale 1 & 2	176	parking lot	12	

CONTEXT



SENIOR HOUSING
p. 080

MAGNOLIA LIBRARY
pp. 066-067

BLAINE K-8 SCHOOL
pp. 070 & 074

MAGNOLIA COMMUNITY CENTER
pp. 071 & 075

MAGNOLIA PARK
pp. 072 & 076

LEGEND

easy

moderate

involved

stormwater treatment + control

water conservation

earth_ biomass + material recycling

earth_ forests + habitat

air + climate

community + education

KEY

INSTITUTIONAL STUDY AREA

BELL | LOEW | LUOMA | ONO | SHINTAKU

Site Introductions

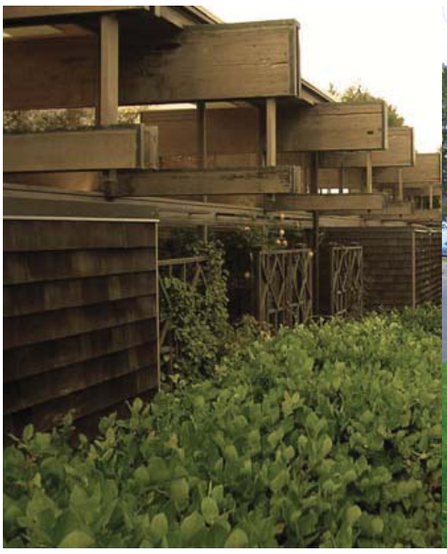
Senior Housing

CONCEPT This design provides not only access through nature strips but also interaction between people who live in front of them, particularly people in senior housing. It makes use of the existing scheme; such as color and texture.

GOALS

- Two functional purposes –storm water management and interaction between people and the site.
- To restore wildlife
- To use recycled materials
- To improve community activity through gardening or hanging out

Magnolia Library



GOALS

- Restore existing landscape with original intentions of designer (Richard Haag & Associates)
- Emphasize the architectural quality of the building
- Use a plant palette of only native species and those originally planned for
- Create functioning ecological systems to clean stormwater, while maintaining a pleasing aesthetic appearance
- Enhance pedestrian experience of the Magnolia Library
- Improve and increase existing wildlife habitat

Blaine K-8 School

Blaine Elementary is a K-8 school with roughly 350 students. This bleak and unmarked concrete patch along 34th is the main pedestrian access to the school and a well-used drop off/pick-up point for students.

GOALS

- Increase pedestrian safety at crosswalks
- Strengthen presence of school at street's edge
- Provide amenities for waiting students and passing pedestrians
- Improve connections with surrounding environment
- Enhance the site's function as an entrance and meeting point
- Reduce polluted run-off/Increase infiltration
- Accommodate flexible circulation
- Increase diversity of streetscape

Magnolia Community Center

Magnolia Community Center has a wide array of programs and special events from pre-school children to seniors. This community center is a perfect place to meet the community.

GOALS

- To build community for all ages and encourage community involvement that integrates multiple generations.
- To provide science education opportunities
- To improve connections from the sidewalk to the school entrance
- To increase public outdoor activities through a community garden
- To engender a sense of welcome to those entering the Community Center and School.

Magnolia Park

Magnolia Park is an outdoor community space for people of all ages and should feel welcoming to everyone.

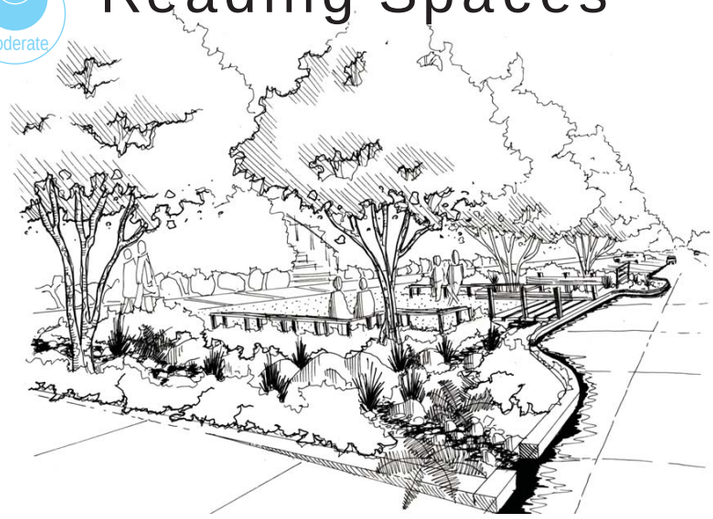
GOALS

- Create a sense of entry to the tennis courts and playfield
- Reduce street runoff in parking strip
- Improve pedestrian experience along 34th and to the park
- Improve public safety along 34th and when accessing the park

moderate

Reading Spaces

aaron luoma

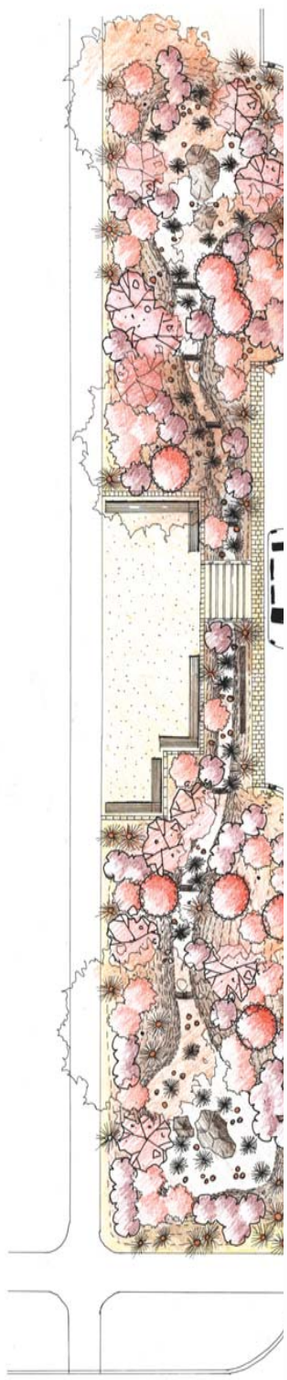


INSTITUTIONAL

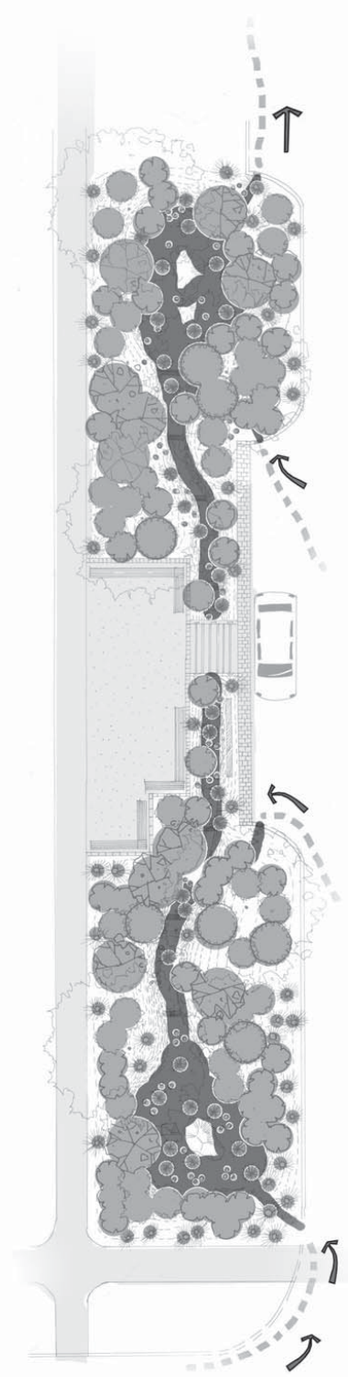
066

library - moderate

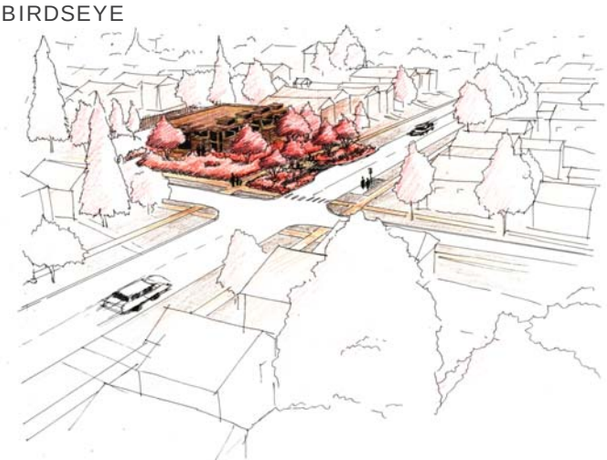
PLAN



PROTOTYPE



BIRDSEYE



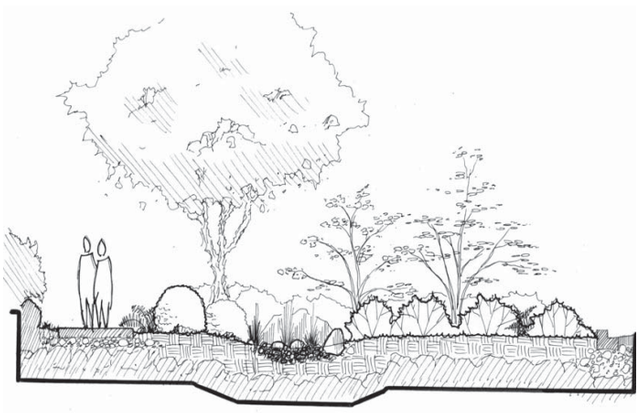
PROTOTYPICAL ELEMENTS

- Outdoor plaza within the planting strip

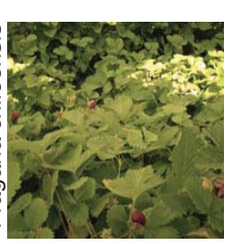
- Bump outs to calm traffic while creating a time limited parking area

- Combine historical preservation principles with modern ecological values

SECTION

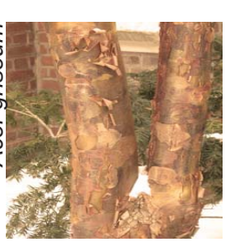


PLANTING PALETTE



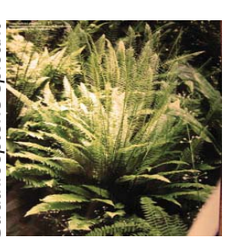
Fragaria chiloensis

STRAWBERRY



Acer griseum

PAPERBARK MAPLE



Struthicopteris spicant

DEER FERN

Vaccinium ovatum

BOX BLUEBERRY

Moving Channels

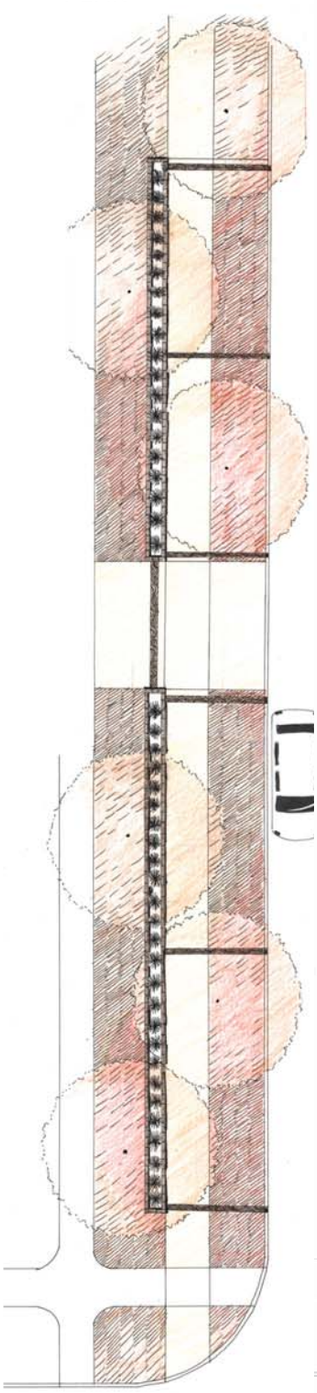
aaron luoma

STORMWATER CALCULATION

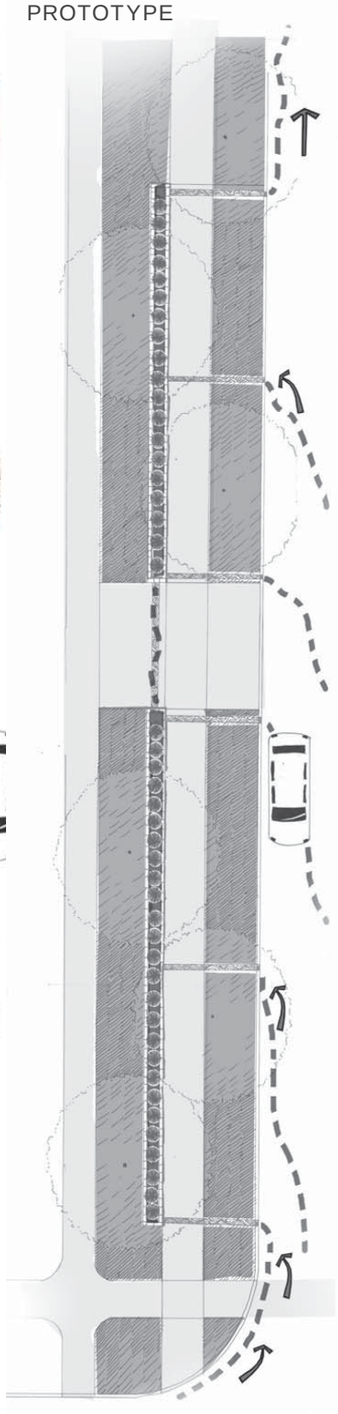
In a 25 year storm in Seattle a total of 617 cubic feet of water can potentially be collected and cleaned on site. This is equivalent to ~2,200 2-gallon milk jugs.

170X

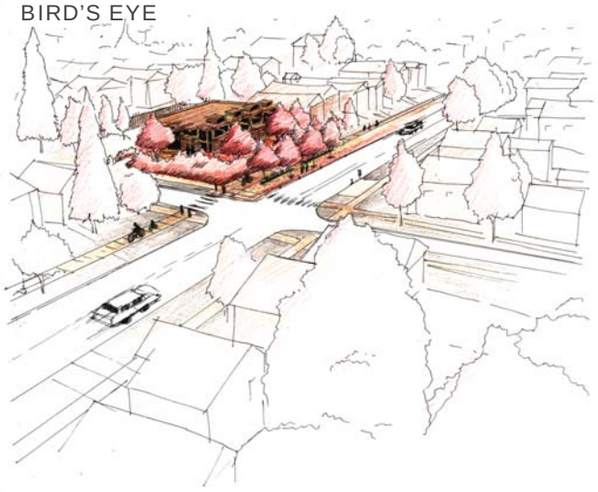
PLAN



PROTOTYPE



BIRD'S EYE



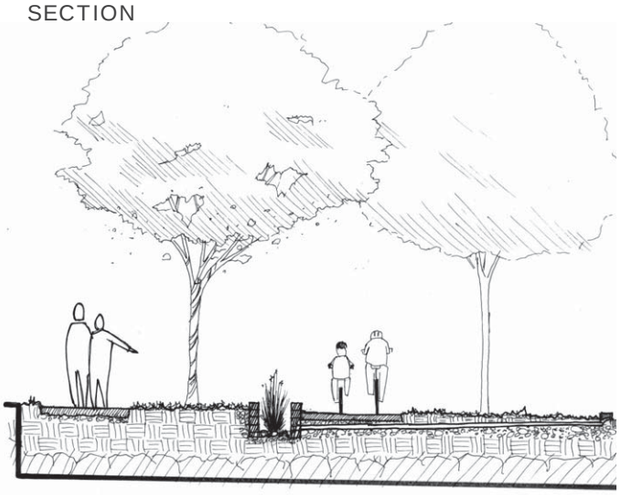
PROTOTYPICAL ELEMENTS

- Curb cuts to allow water to collect from street into exposed channels with iron grate

- Develop a bike path within the large planting strip

- If space is limited, use a small, lengthy channel for stormwater infiltration and cleansing

SECTION



PLANTING PALETTE

Asarum caudatum

WILD GINGER

Acer circinatum

VINE MAPLE

Gaultheria shallon

SALAL

Juncus patens

COMMON RUSH

Currents

amanda bell | george loew | mayu shintaku

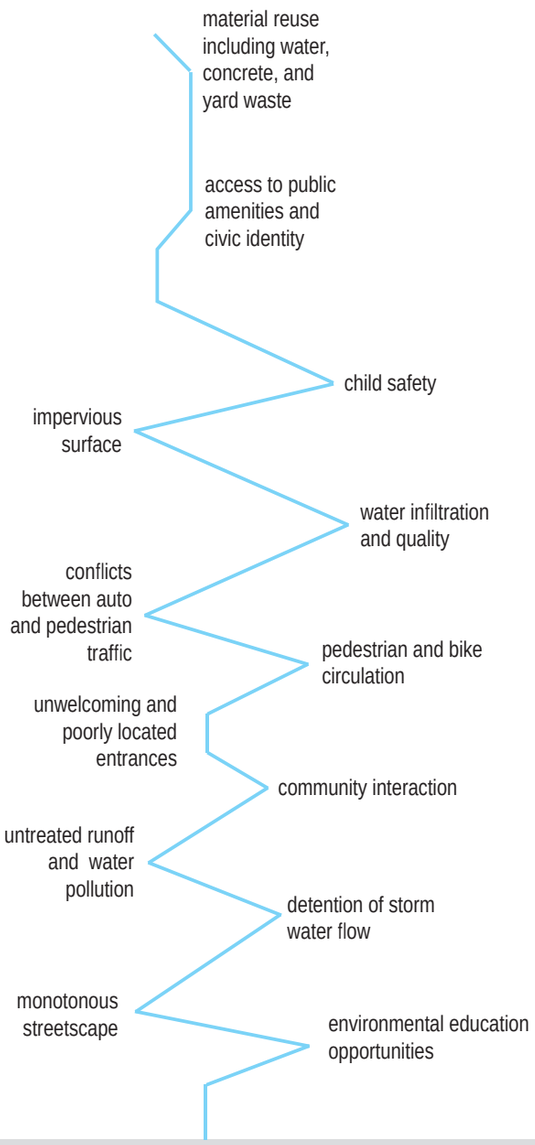
SCHOOL
pp. 70 & 74

COMMUNITY CENTER
pp. 71 & 75

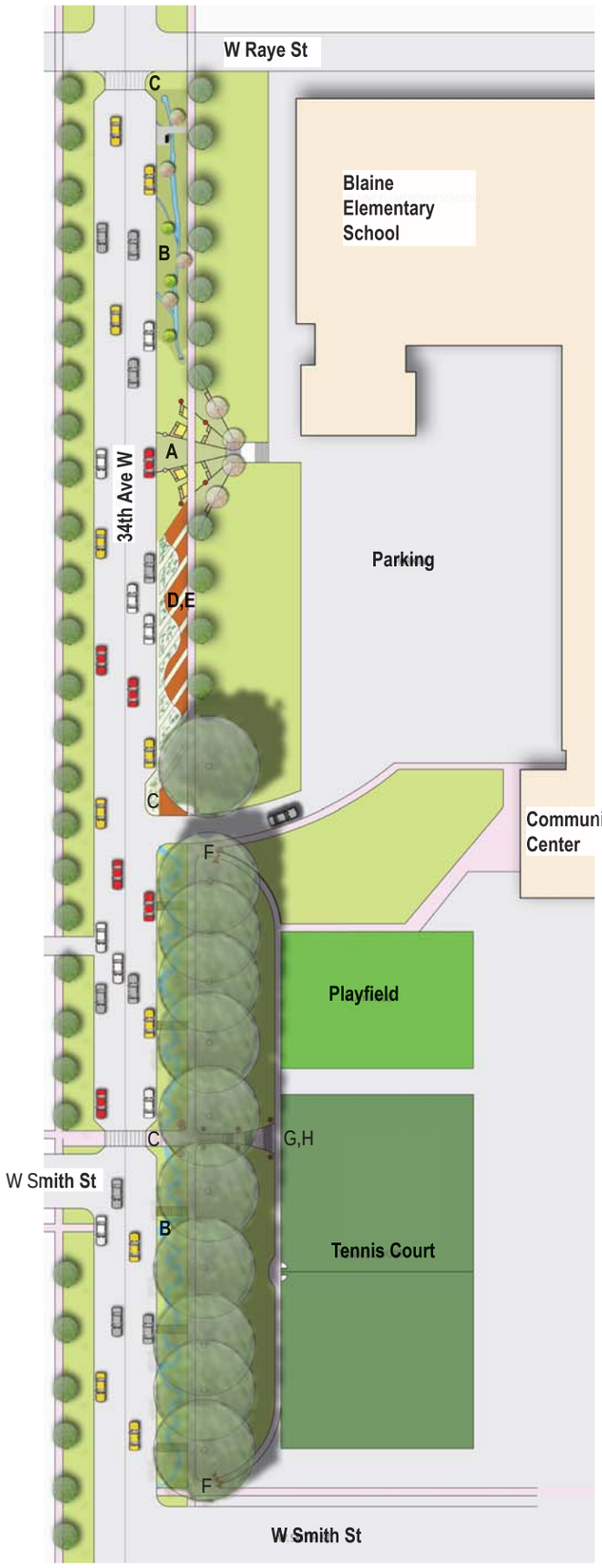
PARK
pp. 72 & 76

CONTEXT 34th Avenue W is home to Blaine School and Magnolia Community Center and Park. These central public amenities offer unique opportunities to simultaneously address ecological function, infrastructure design, and community building.

EXISTING
CONDITIONS & CONCERNS



Currents moderate plan



A_ School Plaza
- Seating
- Recycled Concrete Pavers
- Science Lighting
- Weather Sculpture

B_ Bioswale

C_ Corner Extension

D_ Community Garden

E_ Phytoremediation

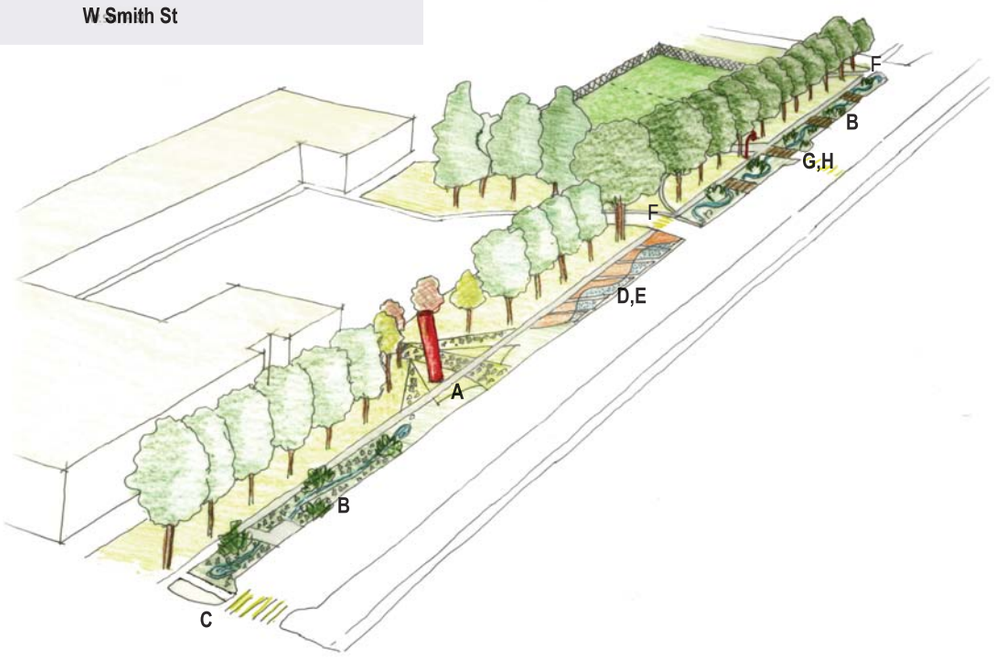
F_ Gateway Paths

G_ Trellis Lighting

H_ Stairs To Park

BEFORE CURB BULB-OUT

AFTER CURB BULB-OUT



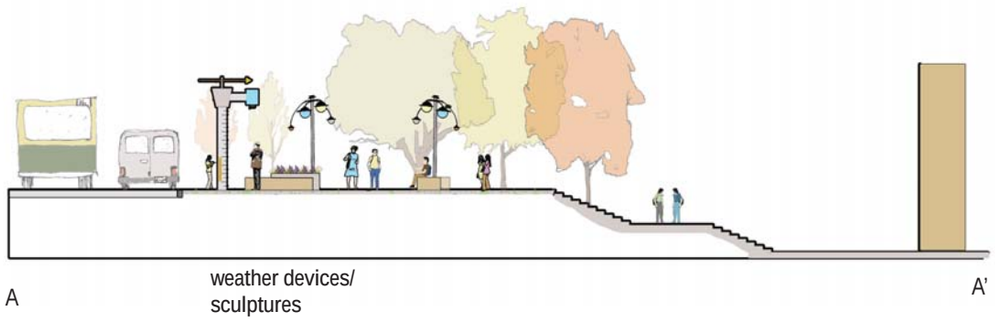
moderate

Currents

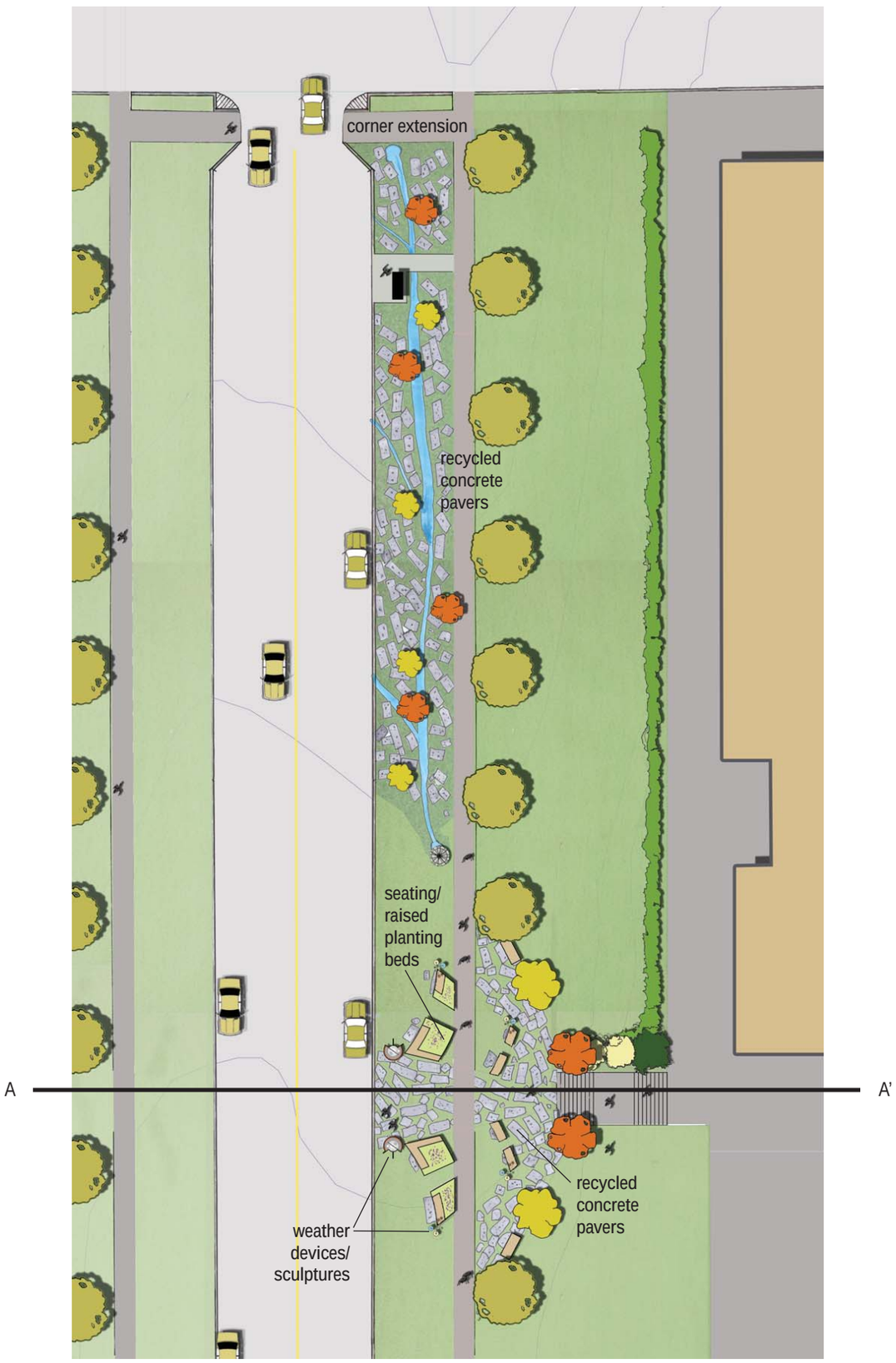
Blaine K-8 School

george loew

ENTRY PLAZA SECTION



ENTRY PLAZA PLAN



moderate

Currents

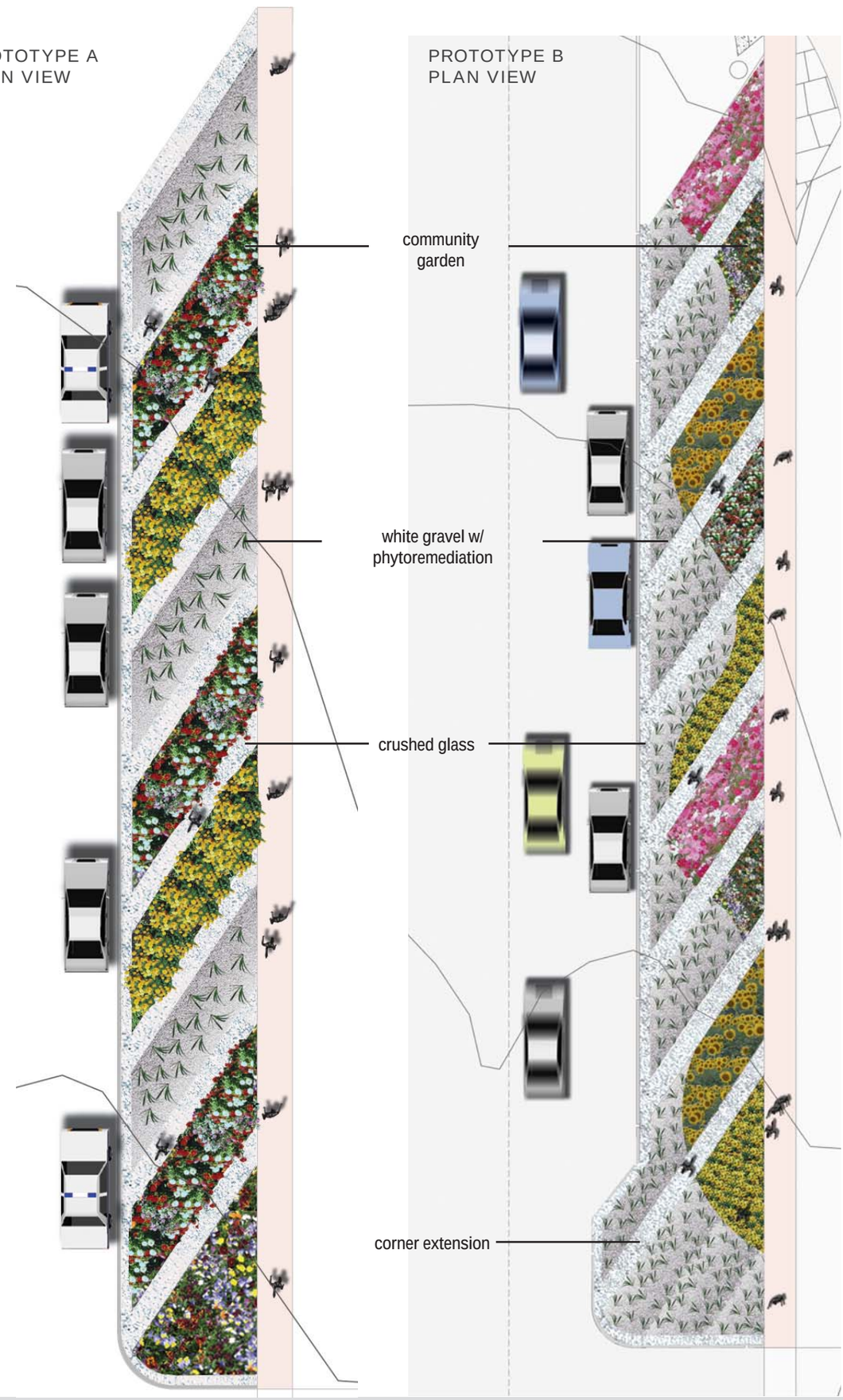
Magnolia Community Center

mayu shintaku

COMMUNITY GARDEN SECTION

PROTOTYPE A PLAN VIEW

PROTOTYPE B PLAN VIEW



Currents
Magnolia Park

moderate

amanda bell

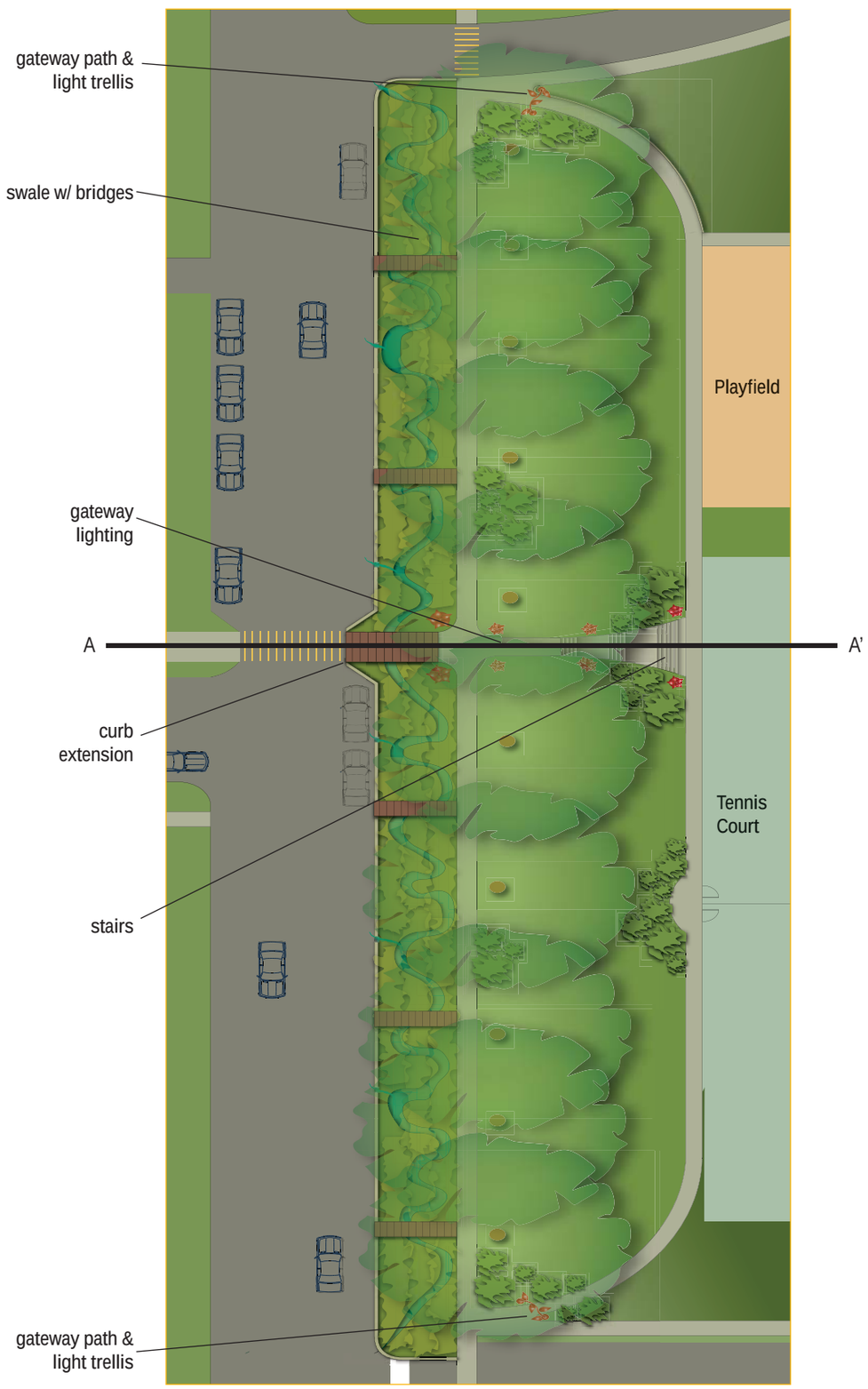
INSTITUTIONAL

072

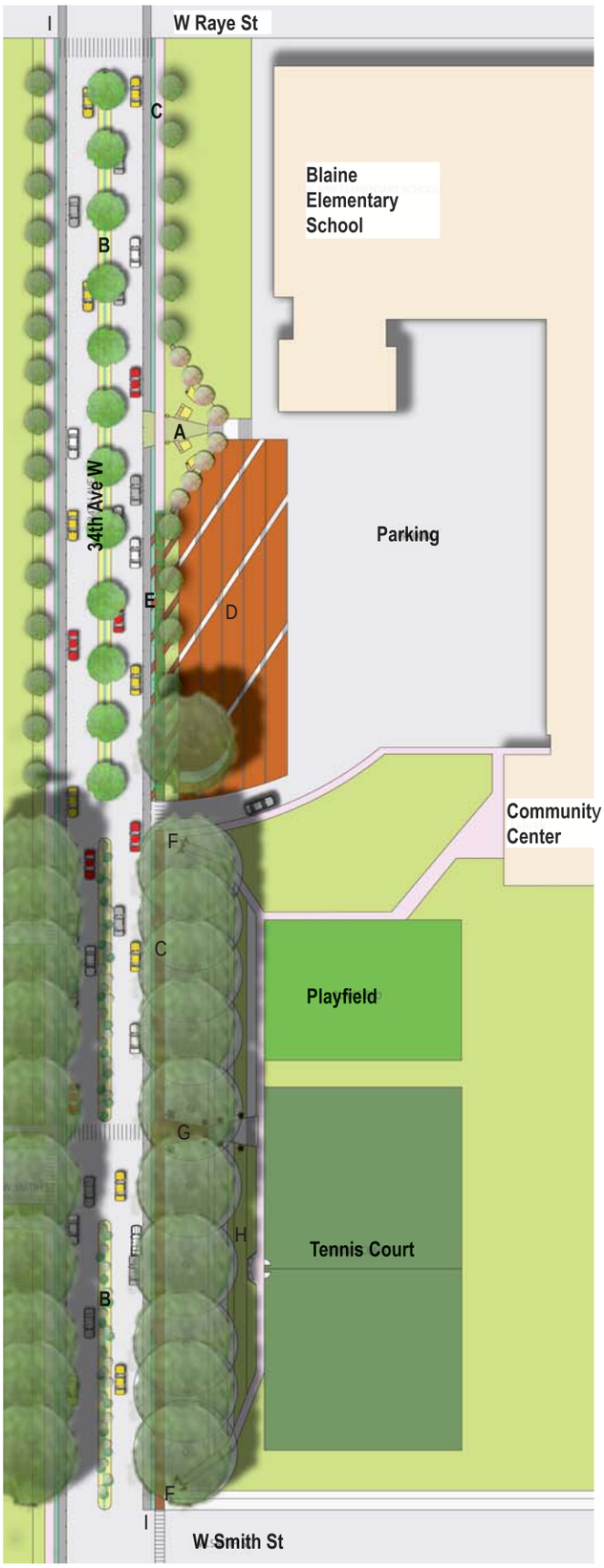
park - moderate

STAIRWAY SECTION

STAIRWAY PLAN



Currents involved plan



A_ School Plaza
- Seating
- Recycled Concrete Pavers
- Science Lighting
- Weather Sculpture

B_ Median Bioswale

C_ Nature Strip Bioswale

D_ Community Garden
- Solar Panel
- Cistern

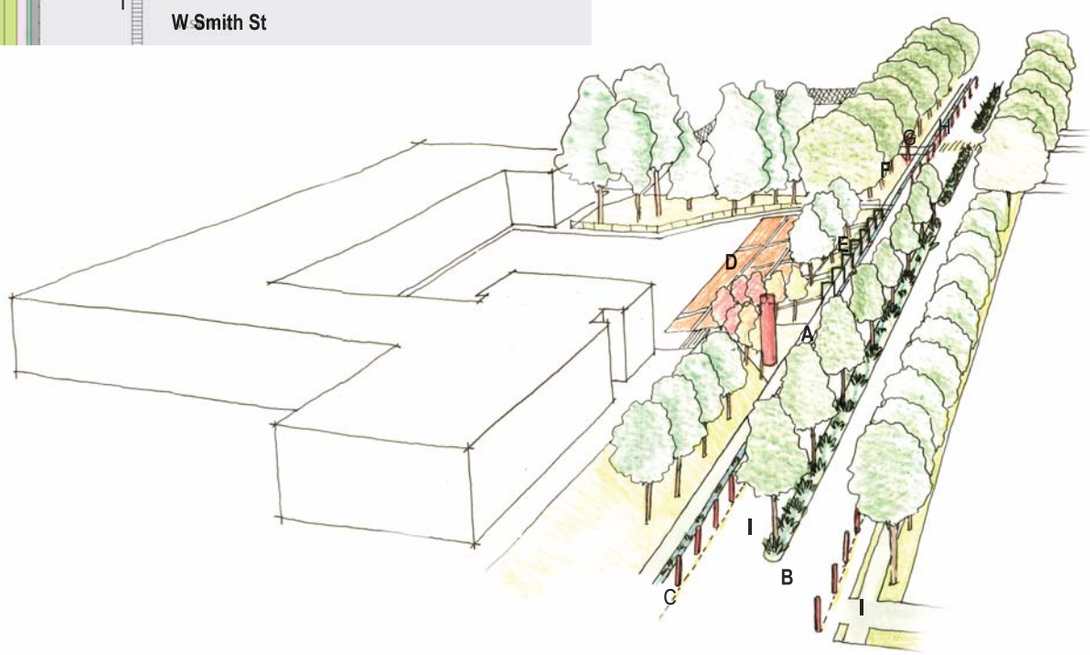
E_ Grapevine Boardwalk

F_ Gateway Paths

G_ Trellis Lighting

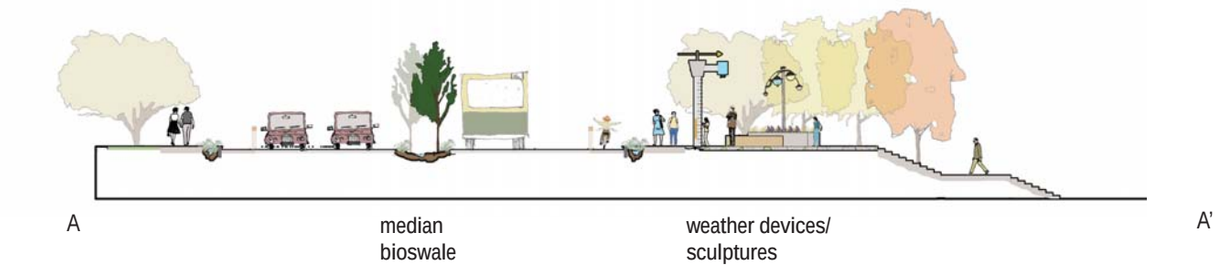
H_ Terraces

I_ Bike Lane

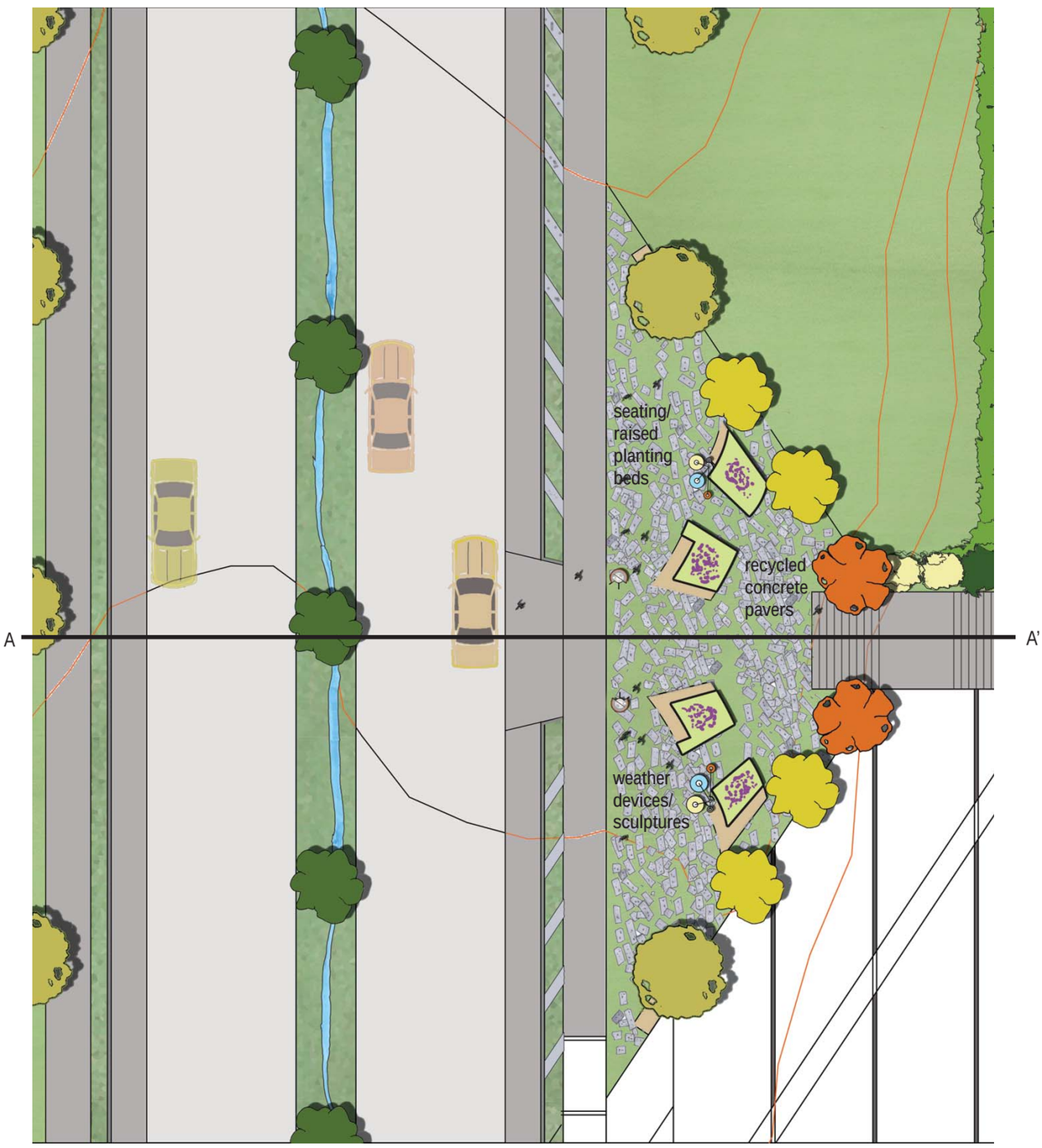


Currents
Blaine K-8 School

ENTRY PLAZA SECTION



ENTRY PLAZA PLAN

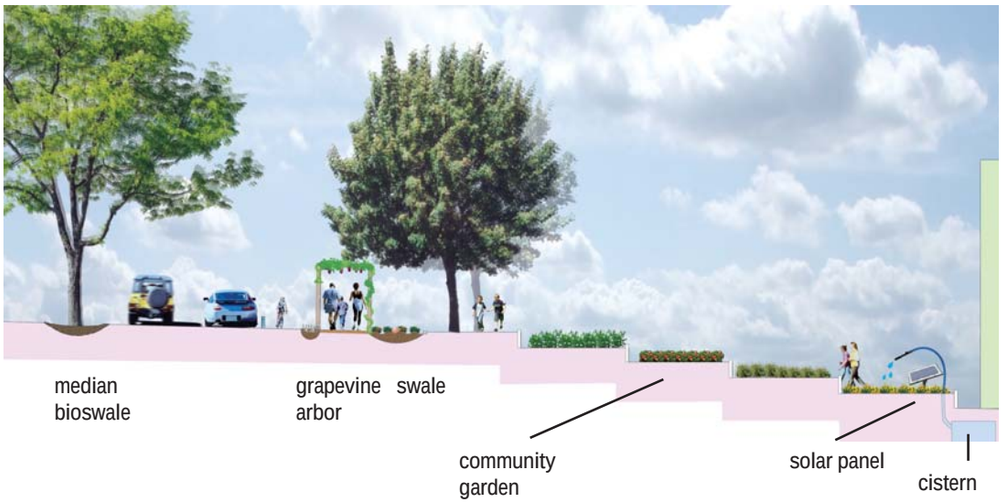


involved

Currents

Magnolia Community Center

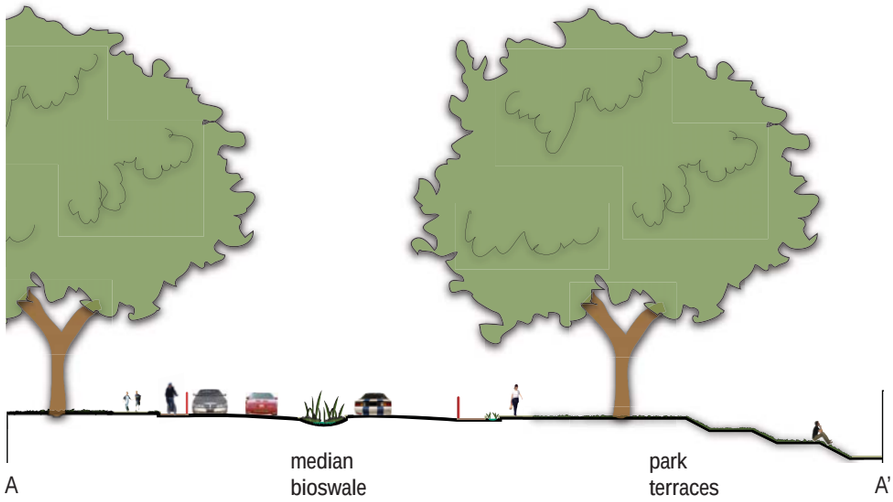
COMMUNITY GARDEN SECTION



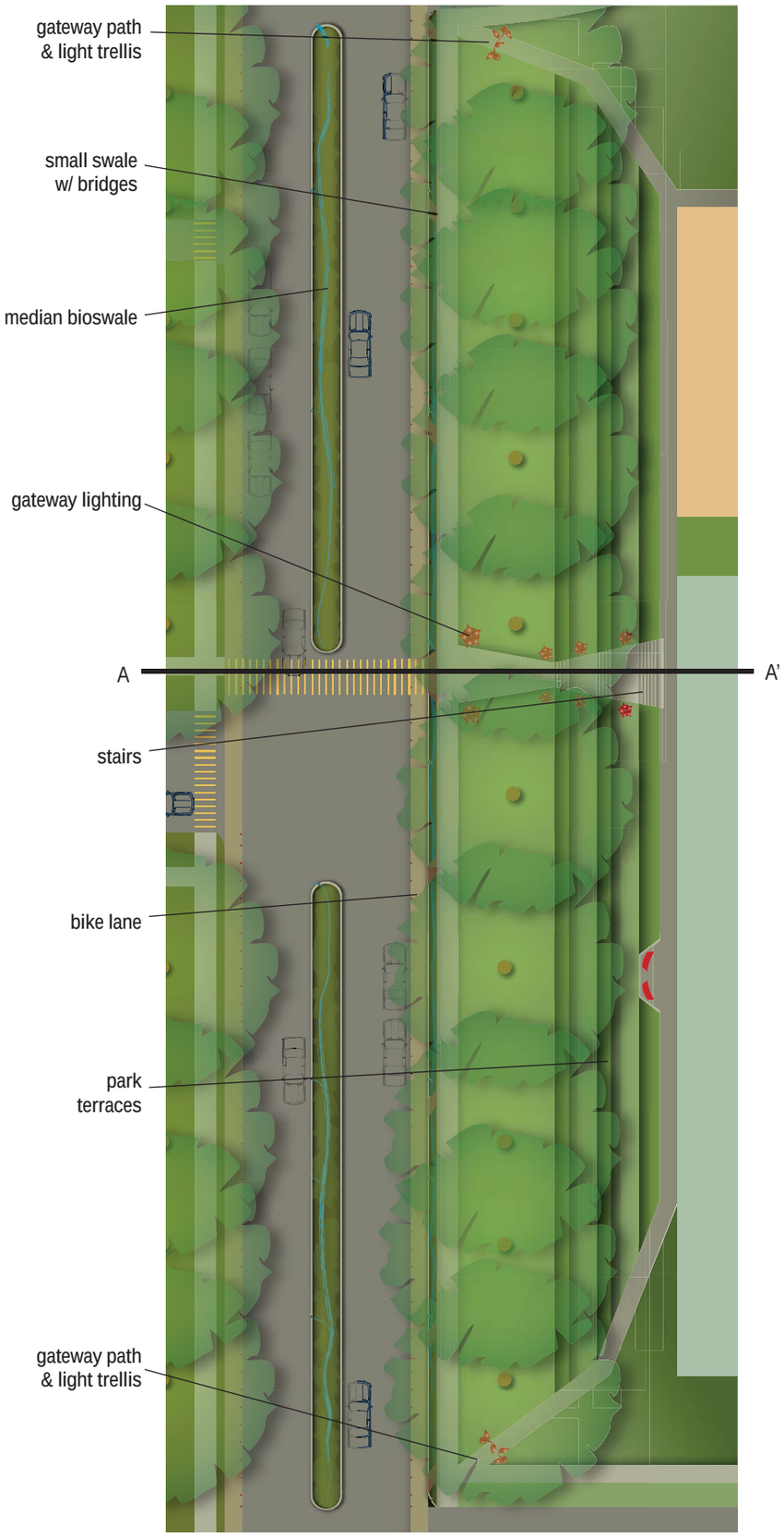
COMMUNITY GARDEN PLAN

Currents
Magnolia Park

TERRACE SECTION



TERRACE PLAN



INSTITUTIONAL

076

park - involved

Prototypical Elements

PLANTS

Trees, shrubs, plants and groundcover can be used to satisfy a number purposes, ranging from purely aesthetic to aiding in the filtering of stormwater runoff through phytoremediation. Vegetation along streets con provide safe corridors and habitat for animals and birds. Trees can help in sequestering carbon to reduce the greenhouse effect while also providing a canopy for shade.

Rosa nutkana

Nootka Rose

Carex albula

Frosty Curls Sedge

Polystichum munitum

Sword Fern

Solanum melongena

Eggplant

Nyssa sylvatica

Sour gum

Ipomoea batatas

Sweet Potato Vine

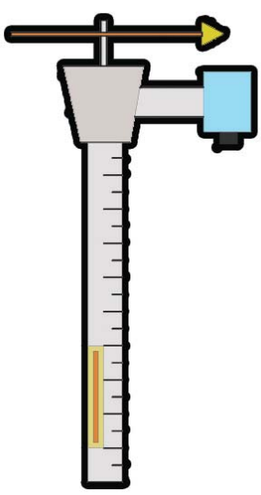
Thlaspi caerulescens

Alpine Pennycress

Acorus gramineus

WEATHER

Weather measuring/monitoring devices are an educational tool that can connect students to their environment. Data collection and analysis can be used to support math and science curriculum or website design. A variety of instruments are available, ranging from simple rainfall measuring canisters that elementary students can build to all-in-one stations that send data remotely.



RECYCLED CONCRETE

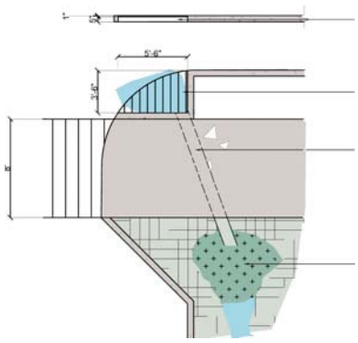
Broken recycled concrete can be used to replace the solid concrete walkway to the school and in other high traffic areas. Using recycled concrete reduces unnecessary impervious surface and energy consumption while maintaining durability. It also makes use of a readily available recycled material.

BEFORE

AFTER

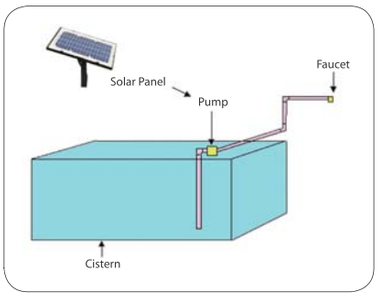
CORNER EXTENSIONS

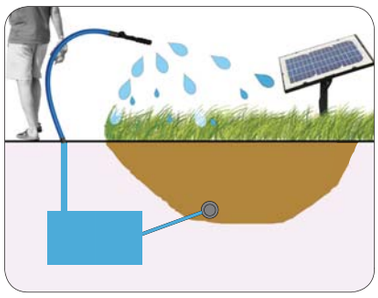
A corner extension narrows the crosswalk to a more pedestrian friendly dimension (to 24' from 40').
Polluted street water reaches the swale in the nature strip via a curb cut and submerged drain pipe.



SOLAR PANEL CISTERN SYSTEM

A solar panel can help provide power for a pump irrigation system that makes use of an underground cistern to capture water from the roof of the school.



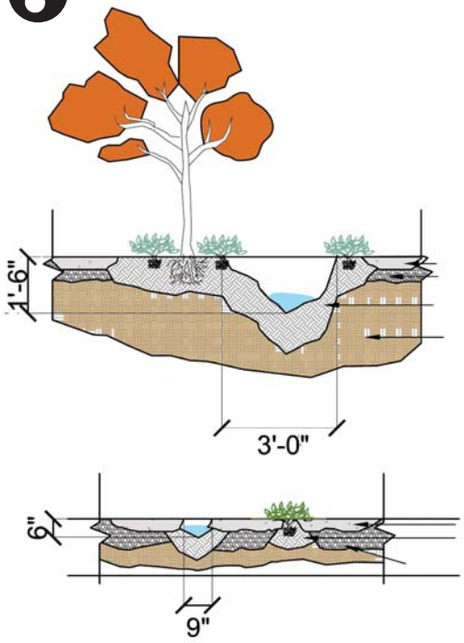


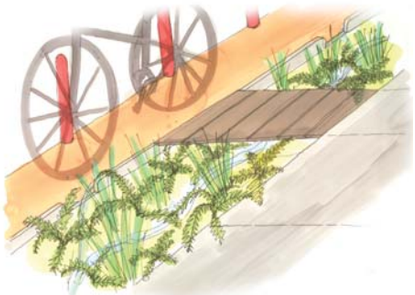
COMMUNITY GARDENS & COMPOSTING

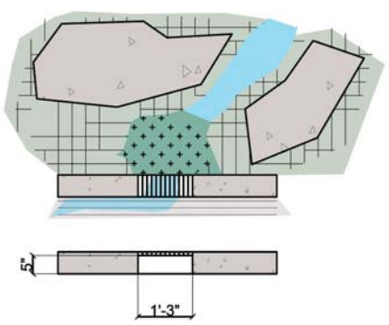
Community gardens can benefit adults and children alike. Portions of the gardens can be managed by the school as an educational component for children to learn about the science of growing vegetables. Using compost from the community center, school and surrounding grounds can provide nutrients for the garden without creating additional waste.

BIOSWALES

Bioswales can help reduce amounts of stormwater runoff from impervious surfaces by directing them into planted beds where water can be soaked up by the soil or can be slowed down by filtering through the organic matter. Periodic curb cuts along 34th Ave allow polluted street runoff to enter the nature strip and infiltrate into the ground or be cleansed through the swale.

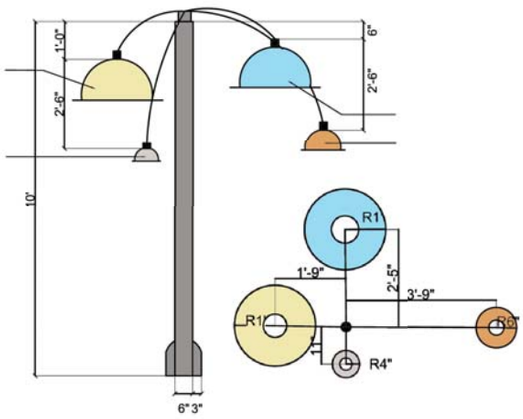






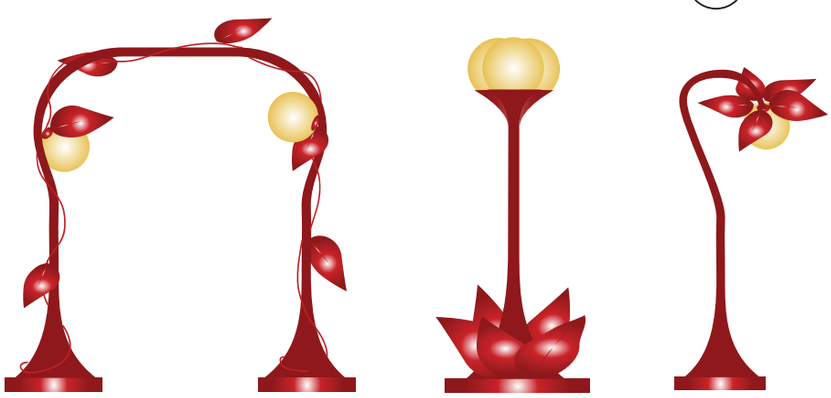
LIGHTING & TRELLIS

Improvements for lighting at higher traffic areas is needed along 34th at the school where children are beginning the school day during the dark and near the park where trees block most of the street lighting and cause safety concerns.



Light fixtures around the plaza are inspired by our solar system. The fixtures are spaced from the central pole and sized according to dimensions of the first four planets.

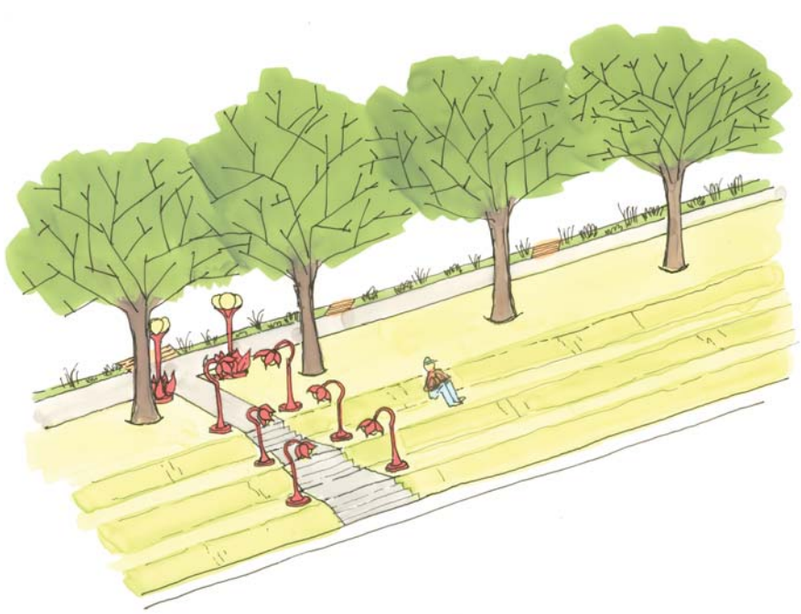
A trellis over the sidewalk with vegetation or grapevines can reduce urban heat-island effects and provide an additional natural canopy and a sense of verticality.



Lighting at new proposed entry paths accessing the playground and tennis courts can be additional works of public art in a similar manner to the artistic magnolia and madrona flower posts installed in the park in 2005 while also providing a welcoming gateway for those entering the park from 34th.

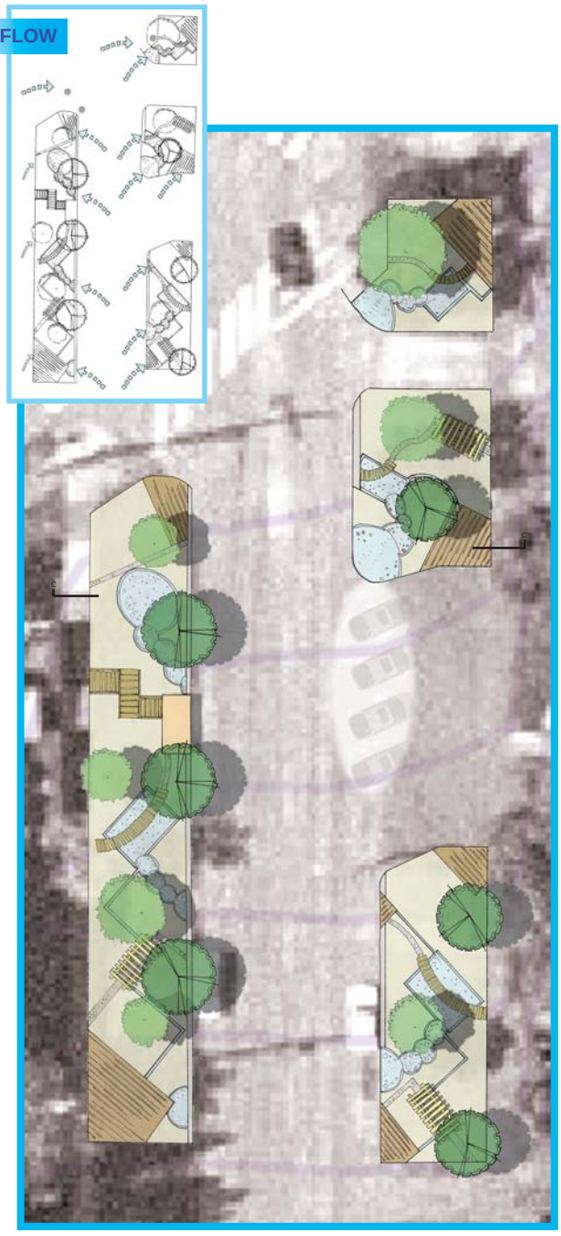
TERRACES

Terraced community gardens make productive use of the space between 34th and the community center as an integral part of the Summer Farmers Market and have potential for educational use by the school children as well. Terraced slopes at the tennis courts and playground provide usable spaces for those wishing to watch the tennis players or children at the playground. Flat patches give the community a place to have a picnic and bring the park a little closer to 34th.



Seasonal Steps

yuko ono



CONCEPT This design is engaging year round -- from wet winters to dry summers. You can see water flowering down to the pond in winter, and when it gets dry in spring or summer you can step down to it and sit on the edge of pond. Additionally, you can see embedded colored glass into the step basin and pond as an aesthetic point of view when it's dry.

MATERIALS

• Recycled deck: made of 50 percent recycled wood and 50 percent recycled plastic. The plastic, a mix of low and high-density material originated from foam plates (low) and grocery bags (high). The wood used is from waste products in the perfume, trucking and building industries. Called ChoiceDek and manufactured by Weyerhaeuser, it is guaranteed for ten years and is not affected by termites. It will grey out to look like wood in a few weeks or can be stained. It is almost impervious to moisture so it does not need to be stained or sealed, however if it is stained it will require regular maintenance like traditional wood decks

• Colored glass: from waste industrial glass manufacture or demolished buildings

• Gravel paving

Gravel PAVE

PLANT COMBINATIONS

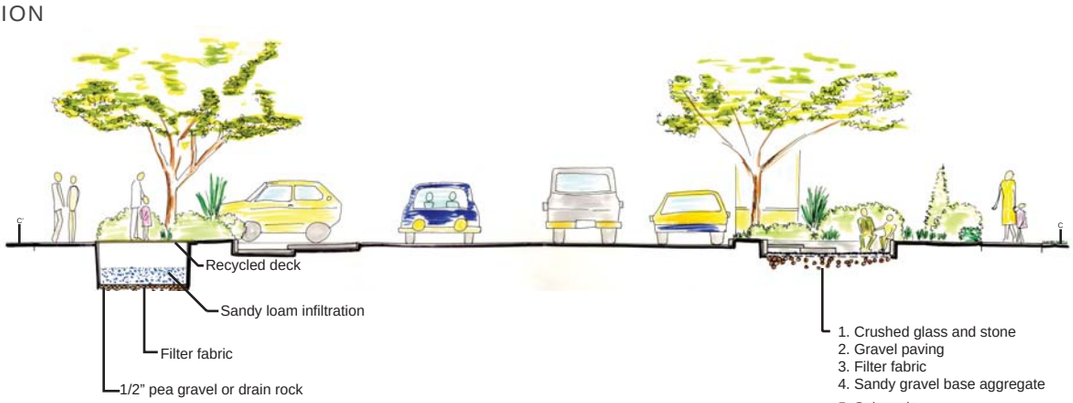
Plants for fragrances

Winter color

Plants for birds

Flowering plants

SECTION



3. RESOURCES / APPENDICES

Contents

Community Process
& Implementation Recommendations

Final Presentation Survey

Precedent Studies

Grant Programs
& Policy Recommendations

Sample Plant Lists / Combinations

Bibliography & Web links

Community Process & Implementation Recommendations

Magnolia community members were invited through fliers, posters, articles and neighborhood tours to participate in the planting strip design process. All four of the meetings were held at the Magnolia Community Center. Attendees ranged from Magnolia parents and PTA members, residents along 34th Ave W, owners and employees of Magnolia businesses, members of the Magnolia Community Club and residents involved in other community-based projects. Participants worked in groups with the students to initially voice their perspectives, challenges, hopes and much more. Later, participants critiqued the initial designs and provided comments on the final prototypes. A summary of the survey collected at the final design presentation follows on the next page. Additional comments during the four meetings as well as the survey results show:

• strong interest in making changes to planting strips;

• assistance desired in making these changes easier ("how-to" steps that would include a planting plan, plant list and permitting guidelines); and

• primary barriers to making the changes included uncertainty about how to accomplish the changes, inability to visualize without a design and knowledge about proper plants to select.

Final Presentation Survey

RE-IMAGINING SEATTLE PLANTING STRIPS AND STREET EDGES

Please help us understand what would make for a successful planting strip program.

Nine surveys completed – responses below in bold

1. Are you interested in making changes to your planting strip or another one in the neighborhood?

7 Yes If so, where is it?
- 5 - residential planting strips along 34th or perpendicular to 34th
- 1 - lives outside Magnolia, but works on restoration in Discovery Park
- 1 - interested in south business area

2 No (2 respondents already have taken grass out and planted)

2. What would help you make changes to your planting strip?

- **4** Planting plan (layout, number of plants, etc)
- **6** Plant list
- **5** Permitting guidelines
- **3** Resources (Tree Fund to obtain free trees, community grants)
- **4** How-to steps for designing, selecting plants, soil prep and maintaining a planting strip

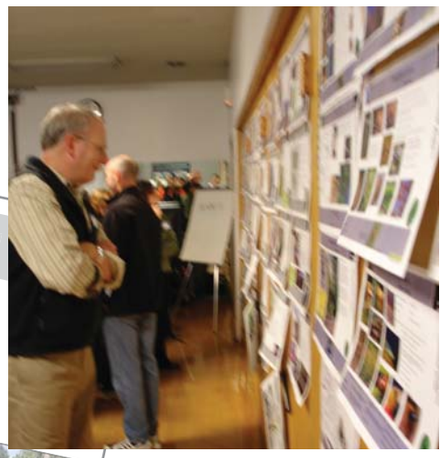
Others:
- Stay in loop for similar ideas for my neighborhood (North Beach)

3. What do you see as barriers to your making changes to your planting strip?

- **0** Prefer the existing aesthetic of grass and street trees
- **5** Not sure how to accomplish the changes (don't know which steps to take)
- **6** Need a design so I can visualize what it could become
- **6** Need to understand which plants to select
- **2** Concerned about cost (to install and/or maintain)
- **1** Concerned about being able to maintain planting strip
- **0** Concerned about what my neighbors might think
- **1** Want to involve my neighbors but don't know how
- **0** Other barriers?

4. What excites you about changing your planting strip or the neighborhood's planting strips as a whole?

- Treeroots have come up through the grass and make mowing difficult and look bad. We'd like to take out the grass and put in easy-care plants and bushes and a few nice rocks or large stones or even natural art.
- Improving water, city forest, habitat, air, amount of time for upkeep (vs lawn).
- Having something eye-catching other than grass we always have to cut.
- Aesthetics – nice to look at. Keep water on-site.
- Being able to expand usage of basically empty space.
- Increase native plant habitat and water capture.
- Promoting water infiltration and native plant habitat – only native plants.
- Tall trees pruned up so you can see when driving but tall enough for shade.



Precedent Studies

The students developed a set of "precedent" studies of exemplary practices in Seattle and other cities, both to inform our own thinking and to help Magnolia residents imagine what might be possible. These addressed the following topics:

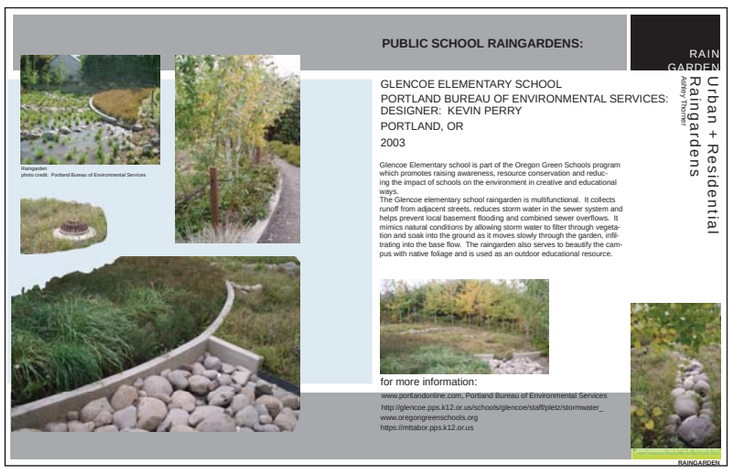
Rainwater Harvesting / Storage
Urban & Residential Rain Gardens
Stormwater Detention & Cleansing
Edges & Parking Strips
Community & Street & Environmental Art
Great Streets / Complete Streets
Pedestrian Environments - Materials & Amenities
Urban Habitat Features
Street Trees / Urban Forest
Planting for Special Situations
Compost & Waste Recycling
Urban Wildlife Habitat - Residential Scale

The community displayed our set of over 60 pages in a storefront window in Magnolia Village. These highly-illustrated precedent studies will be useful in many situations. To view and download them, go to *http://www.seattle.gov/util/About_SPU/Yard_System/Reports/index.asp* and click on "Planting Strip Design Report."

http://www.seattle.gov/util/About_SPU/Yard_System/Reports/index.asp

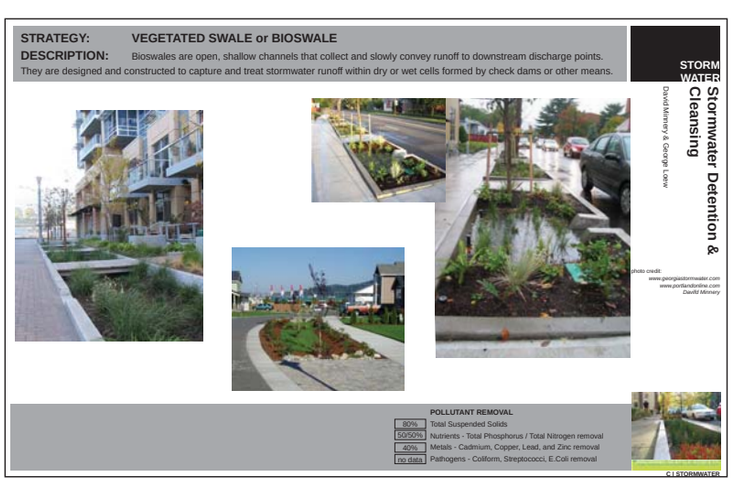
Rainwater Harvesting / Storage

Growing Vine Street – Beckoning Cistern
Carkeek Park – Environmental Learning Center
Cascade People's Center –
Cascade Adopt-a-Park
Portland State University –
Stephen Epler Hall Rain Garden
Seattle Rain Catchers –
Seattle Public Utilities Pilot Project



Urban & Residential Raingardens

Oregon Convention Center Raingarden
SEA Street – Street Edge Alternative
Residential Raingardens
Public School Raingardens –
Glencoe Elementary School; Portland OR

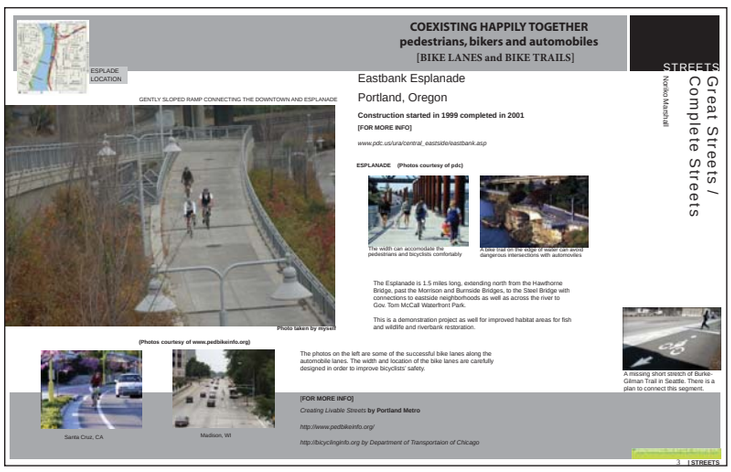


Stormwater Detention & Cleansing

Wet Pond
Constructed or Pocket Wetland
Vegetated Swale or Bioswale
Infilitration Trench
Sand Filters
Bioretention Area

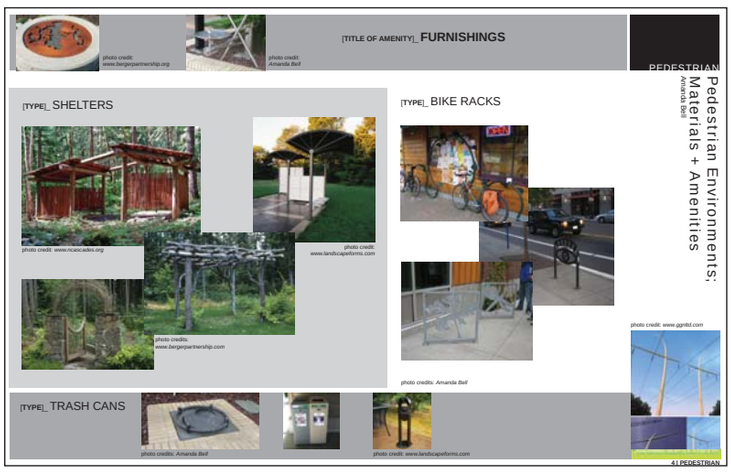
Community & Street & Environmental Art

Street Art
Sunnyside Plaza; Portland, OR
Colour Pencils; Pedvale, Latvia
Plastic Garden; Helsinki, Finland
The Stones Like Mushrooms; Pedvale, Latvia
Hydroglyph; Utah



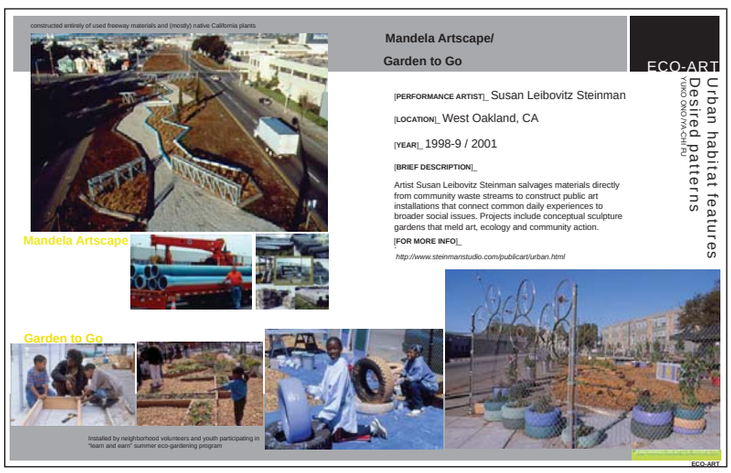
Great Streets/ Complete Streets

Pedestrian Safety –
In-Pavement Lighting; Kirkland, WA
Traffic Calming Treatments – SEA streets
Bike Lanes + Trails – Eastbank Esplanade; Portland, OR
Integration; Vancouver, BC
Green Street Design



Pedestrian Environments - Materials & Amenities

Ground Treatments
Lighting
Seating
Furnishings



Urban Habitat Features

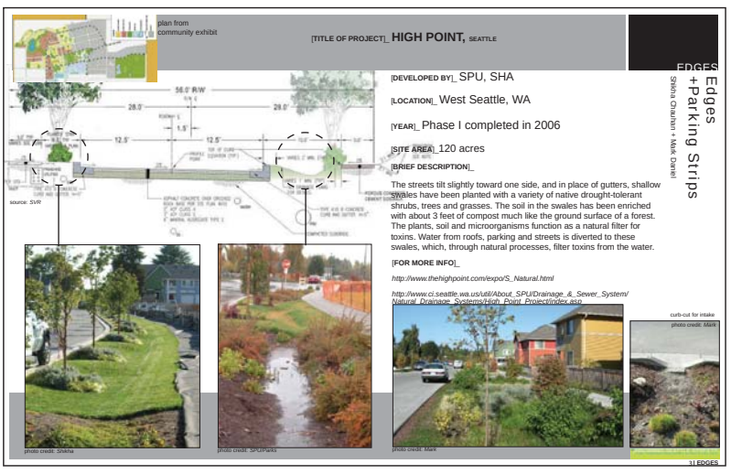
Desired Patterns
Types of Corridors
Mill Creek Canyon Earthworks; Kent, WA
The Living Garden; Sichuan, China
Fair Park Lagoon; Dallas, TX
Endangered Garden; San Franciso, CA
Mandela Artscape; West Oakland, CA
Turtle Island – Lincoln Memorial Gardens; Springfield, IL

Urban Forestry & Street Trees

Choosing the Right Tree
Tree Placement & Function
Design Opportunities
Tree Protection & Care
Special Considerations

Planting for Special Situations

Deciduous Trees
Coniferous Tree & Shrubs
Deciduous Shrubs
Vines & Ground Covers
Example Gardens
Parking Strip Examples

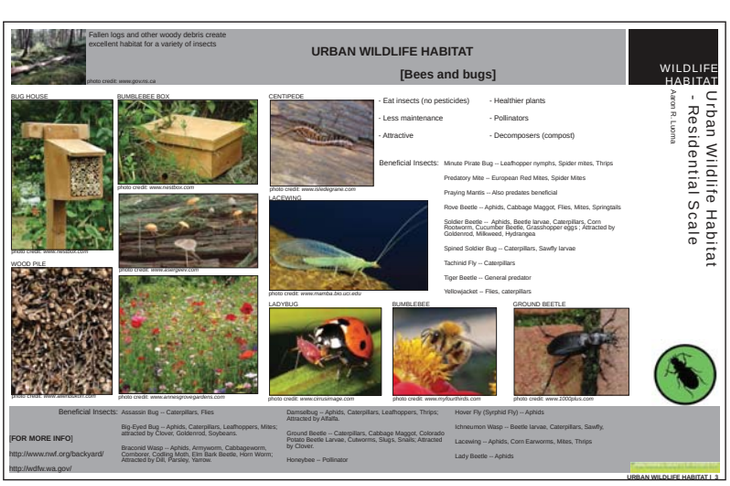


Edges & Parking Strips

Parking Strips
SEA Streets; Seattle, WA
High Point; West Seattle, WA
SW 12th Avenue; Portland, OR
Siskiyou Street; Portland, OR
New Seasons Market; Portland, OR
People's Food Co-op; Portland, OR
Gladstone South; Maplewood, MN
Aesthetic Strips & Edges

Compost & Waste Recycling

Composting Basics
DIY
Mulch
Composting Fence



Urban Wildlife Habitat – Residential Scale

Birds
Bees & Bugs
Butterflies
Other Wildlife
Tukwila Wildlife Habitat Project; Tukwila, WA

Grant Programs & Policy Recommendations

RESIDENTIAL_ CURBED & CURBLESS

POLICY

• Seattle DOT funding the CRF/NSF – Cumulative Review Fund / Neighborhood Street Fund - earmarked for maintenance / curb bulbs.

• Challenge for City support for natural drainage is if you can show/prove neighborhood collaboration and interest! Or- it needs to get into the city's CIP (Capital Improvement Program).

• Ride on the coattails of larger transportation

• Pilot solutions for trees, utilities, natural drainage, habitat, etc

• Mayor's Urban Forestry policy may provide opportunities.

• Seattle's Comprehensive Plan (SCP), Land Use Policy LU37: "Explore setting limits on impervious surfaces or encouraging the use of other tools to increase storm water infiltration in appropriate areas."

• Seattle's Climate Action Plan attempts to allocate funds for future improvements including: doubling the amount of bike transportation, improving pedestrian facilities, and supporting green infrastructure citywide.

• SCP Transportation Policy T52: "Design and operate streets to promote healthy urban environments while keeping safety, accessibility and aesthetics in balance."

• SCP Environment Policy E8: "In order to reduce the financial investment in built infrastructure while controlling the environmental impacts that infrastructure can cause, explore opportunities to restore or productively use the functions that a healthy ecosystem can provide in conjunction with, or as a substitute for, built infrastructure."

• SCP Environment Policy E10: "Strive to increase the amount of permeable surface and vegetative cover in the city in order to mitigate the heat island effect of developed areas, control storm water flows and reduce pollution."

POLICIES NEEDED

Streamline the process for permitting to make changes to landscape in public ROW – publish guidelines and goals that the City would like to meet through private action in these areas.

Policy should clearly allow for routing of stormwater from private property to City ROW if it is done in a way that reduces input to sewer system and/or conserves water or otherwise improves ecological function over existing conditions.

Mandatory Consideration of Natural Drainage
With this policy, jurisdictions would be required to consider natural drainage solutions when considering stormwater management. And if a natural drainage solution to a given problem was not chosen, the agency must document why not.

To add further impetus to natural drainage projects, cost would not be allowed as a reason to reject a natural drainage project unless the cost was at least 25 percent more than other options.

Public Right-of-Ways Adjacent to Environmentally Critical Areas
Where public right-of-ways are located next to environmentally critical areas, priority for their use should be given to protecting and enhancing the critical areas.

GRANT FUNDING PROGRAMS

Bullitt Foundation
The mission of The Bullitt Foundation is to protect, restore, and maintain the natural physical environment of the Pacific Northwest for present and future generations.

The Foundation has the following program areas:
• Aquatic Ecosystems
• Terrestrial Ecosystems
• Conservation & Stewardship in Agriculture
• Energy & Climate Change
• Growth Management & Transportation
• Toxic & Radioactive Substances
• Training, Communications, & Unique Opportunities

Grant application deadlines are May 1 and November 1. The Foundation does not use a letter of inquiry pre-screening process. However, prospective applicants are urged to contact the appropriate program officer to discuss their request prior to submittal.

The Russell Family Foundation
The Russell Family Foundation is committed to improving protection of the environment in western Washington, with an emphasis on the waters of Puget Sound. To this end, the foundation features an Environmental Sustainability grant program which includes the topic areas of Puget Sound and Environmental Education.

The goals of the Puget Sound topic area are to:
• Broaden and deepen citizen support for individual,

corporate, and societal practices that will sustain a healthy ecosystem in Puget Sound
• Preserve, restore, and improve protection of the Sound's nearshore and estuarine habitat
• Create a coherent and well-managed system of marine protected areas
• Eliminate and reduce sources of pollution, especially toxic pollution
• Ensure that comprehensive plans and critical areas ordinances for cities and counties in the Puget Sound basin will protect the environment, especially the Sound's habitat and water quality

The goals of the Environmental Education topic area are to:
• Improve and broaden education about sustainability
• Improve and broaden education about Puget Sound – especially nearshore and estuarine habitat, sources of and prevention of pollution, and marine protected areas
• Make lasting, systemic, and positive change in the provision of education about the environment and sustainability
• Improve teaching and learning (e.g., curricula, methods, assessment, connections across disciplines)
• Use school facilities and campuses as learning laboratories (e.g., green design, habitat restoration, elimination of the use of toxic substances)
• Connect schools with the communities around them to give students real-world experience in addressing environmental and sustainability issues (e.g., assisting nonprofit groups and other organizations with projects, carrying out research, and learning about how government addresses issues)
• Better educate the public about sustainability, environmental protection, and Puget Sound.

There are two cycles each year during which the foundation will accept proposals for grants from its Environmental Sustainability Program.

Aquatic Habitat Grants
http://www.seattle.gov/util/Services/Drainage_&_Sewer/Get_Involved/Aquatic_Habitat_Grants/index.asp

Seattle Public Utilities has a new program that provides matching grants for individuals or groups to help improve Seattle's aquatic habitat.

Awards amounts begin at $2,000 per project, with $300,000 in total awards available. Projects require a 1:1 match. Applications are accepted once a year, and rated based on eligibility and rating criteria. The Aquatic Habitat Matching Grant Review Board will determine the awards, which will then be approved by the Mayor and Seattle City Council. Notice of award will be made 2 months after application deadline.

The King County Water Quality Block Grant Fund
http://dnr.metrokc.gov/wlr/pi/grant-exchange/waterworks.htm

Grants up to $50,000 are available for community projects that protect or improve watersheds, streams, rivers, lakes, wetlands and tidewater. Projects must have a demonstrable positive impact on the waters of King County and must :
• Improve or protect water quality and water dependent habitats; or
• Demonstrate the beneficial use of biosolids or reclaimed water.

Examples of Fundable Projects
• Preservation, such as a conservation or access easement to a body of water
• Water quality protection measures, such as non-polluting landscaping or livestock management
• Water re-use or biosolids demonstration project
• Stream, lake, wetland and shoreline restoration
• Long-term stewardship of a body of water
• Water quality monitoring

The Urban Reforestation and Habitat Restoration Grant Fund
http://dnr.metrokc.gov/wlr/pi/grant-exchange/wildplaces.htm

Wild Places in City Spaces provides grants up to $10,000 to volunteer organizations, community groups and government agencies for projects reforesting urban areas and restoring habitat within the Urban Growth Area of King County.
Examples of Fundable Projects
• Removing invasive species and planting native plants in wooded area near another natural area.
• Stream and upland restoration including stewardship training, placement of woody debris, invasive plant removal, and special educational activities.

Youth in Forestry Grants
http://dnr.metrokc.gov/wlr/pi/grant-exchange/NRSN.htm
The Natural Resource Stewardship Network connects communities with the help they need to improve neighborhood green spaces and community forests. Help may be in the form of grants, project assistance or both. In 2006 the program will provide grants and technical assistance only to projects that provide youth with after school activities related to forests. For complete information, see our Guidelines and application.

Overview
Grants of up to $20,000 will be awarded to reimburse up to 50% of labor and materials costs. Volunteer labor may be used to fulfill a portion of the grantee's share of project costs.

Projects must be community-based efforts to improve community trees, forests, greenbelts and wooded areas. Projects must be located in King County and accomplish all of the following objectives:
• Enhance urban forests or forested habitats by planting, managing, maintaining and/or monitoring trees and associated understory;
• Develop skills and abilities in citizens that will empower them to protect, conserve or manage trees and/or forested areas;
• Improve public understanding of the benefits and importance of trees in maintaining watershed health;
• Involve youth activities related to forests outside of school hours; and
• If the project involves habitat restoration or tree planting, the project must ensure long-term

maintenance of project sites.
Examples: Projects that involve youth in reforesting stream banks or upland habitat, projects that help young people build skills in forestry, projects that establish a nursery as a sustainable source of trees, or projects that develop new approaches to incorporating forest activities into after school programs.

Type	Organision	Project	Grant Amount	Link
ART	Washington State Arts Commission	Public Art Program, Washington State Arts Commission	variable	http://www.arts.wa.gov
	4culture	The 4Culture ARTIST REGISTRY	variable	http://www.4culture.org/publicart/registry/default.asp
	Office of Arts & Cultural Affairs - City of Seattle	PUBLIC ART ROADMAP	variable	http://www.artsresourcenetwork.org/public_art/publicartroadmap/
	Sound Transit	Start Public Art Program	variable	http://www.soundtransit.org/x155.xml
	Artist Trust – Possibilities		variable	http://www.artisttrust.org/4artists/information/opportunities/possibilities.html
WATER	Savng Water Partnership	Sprinkler Rebates Overview	Custom rebates up to 50% of the cost ~ $450	http://www.savingwater.org/outside_sprinklers.htm
	Seattle Public Utilities	Rain Barrels	$59 each plus tax.	http://www.seattle.gov/util/Services/Yard/Natural_Lawn_&_Garden_Care/Rain_Barrels/index.asp
	Dept. of Natural Resources & Parks - Water & Land Resources Division	The King County Water Quality Block Grant Fund	up to $500	http://dnr.metrokc.gov/wlr/pi/grant-exchange/waterworks.htm
HABITAT	Dept. of Natural Resources & Parks - Water & Land Resources Division	The Urban Reforestation and Habitat Restoration Grant Fund	grants up to $10,000	http://dnr.metrokc.gov/wlr/pi/grant-exchange/wildplaces.htm
	King County Department of Natural Resources and Parks	The Natural Resource Stewardship Network	up to $20,000	http://dnr.metrokc.gov/wlr/pi/grant-exchange/NRSN.htm
	National Fish and Wildlife Foundation National Office	King County Community Salmon Fund		http://www.nfwf.org/programs/csf/king.cfm
	Fund for Wild Nature	The Fund for Wild Nature (Fund)		http://www.fundwildnature.org/proposal.html
	The National Science Foundation	The Environmental Sustainability Program		http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501027
	Seattle Public Utilities	Aquatic Habitat Grants	$2,000 per project, with $300,000 in total awards available	http://www.seattle.gov/util/Services/Drainage_&_Sewer/Get_Involved/Aquatic_Habitat_Grants/index.asp
	The Natural Resource Stewardship Network	Youth in Forestry Grants	up to $20,000	http://dnr.metrokc.gov/wlr/pi/grant-exchange/NRSN.htm
COMMUNITY	The Seattle Foundation	Community Grantmaking Program		http://www.seattlefoundation.org/page28168.cfm
	the Paul G. Allen Family Foundation	Community Development and Social Change Program		http://www.pgafoundations.com/TemplateMain.aspx?contentId=29
	Department of Neighborhoods	Neighborhood Matching Fund	The Large Projects Fund - $15,000, up to $100,000 The Small and Simple Projects Fund - up to $15,000 The Tree Fund	http://www.seattle.gov/neighborhoods/nmf/

Type	Organision	Project	Grant Amount	Link
	Green Communities	Enterprise Foundation Green Communities Program		http://enterprisefoundation.org/resources/green/index.asp
	The Bruner Foundation,	Rudy Bruner Award for Urban Excellence		http://www.brunerfoundation.org/rba/
MATERIALS	King County Metro	Northwest Natural Yard Days	environmentally preferable yard care products at a discount price	http://www.metrokc.gov/dnrp/swd/naturalyardcare/retail.asp
SPECIAL	King County Metro	Bus Shelter Mural Program, King County Metro		http://transit.metrokc.gov/prog/sheltermural/shelter_mural.html
	Immediate Office of the Assistant Administrator	US EPA Office of Solid Waste and Emergency Response (OSWER) Innovation Pilot Projects Grants		http://www.epa.gov/oswer/grants-funding.htm#oswerinnovations

INSTITUTIONAL_

GENERAL GRANT FUNDING

The Seattle Foundation

http://www.seattlefoundation.org

Provides grants for Neighborhoods & Communities and The Environment in King County.

NOAA Environmental Literacy Grants

Sarah Schoedinger

Sarah.Schoedinger@noaa.gov

NOAA's Office of Education is requesting applications for environmental literacy projects that clearly convey how the Earth system influences the human population, how the human population is influencing the Earth system, and how an environmentally literate public can make informed decisions.

Five awards ranging from $200,000 to $750,000 are expected with total program funding of $1,500,000.

Institutions of higher education, other nonprofits, and State, local and Indian tribal governments, K through 12 public and independent schools and school systems, and science centers and museums are eligible.

Bonneville Environmental Foundation – Model Watershed Grants

Todd Reeve

toddreeve@b-e-f.org

The BEF Model Watershed Grant Program supports science-based watershed restoration initiatives that demonstrate strong community engagement and strive to implement a long-term and monitoring-intensive restoration approach. For select Model Watersheds, BEF commits to provide financial and scientific support for monitoring, evaluation, and assessment over a 10-year period. Eligibility: Any private person, organization, tribe, or local government within the Pacific Northwest. $5,000 to $40,000 annually.

Centennial Clean Water Fund, State Revolving Fund, and Federal Nonpoint-Source Management grants

Kim McKee

(360)407-6566

kmck461@ecy.wa.gov

These three funding programs provide low-interest loans and grants for projects that protect and improve water quality. Grants are available for comprehensive stormwater planning. Low-interest loans are available for site specific stormwater project design and construction. Eligibility: Any public body. Certain non-profit groups.

Community Development Block Grant - General Purpose Grant Program

Bill Prentice - Office of Community Development

(360) 725-3015

billp@cted.wa.gov

Significant community and economic development projects, including wastewater and storm sewers, that principally benefit low- and moderate-income persons. Low- and moderate-income is defined as 80 percent of county median income. Cities and towns with populations less than 50,000, or counties with populations less than 200,000 that are non-entitlement jurisdictions or are not participants in a U. S. Department of Housing and Urban Development (HUD) Urban County Entitlement Consortium.

Public Works Trust Fund, Construction Loan Program

Cecilia Gardner - Marketing and Information

(360) 725-5006

cecilia.gardener@pwb.wa.gov

- Funds can be used for stormwater collection systems and other stormwater projects.
- Loans are available for counties, cities and towns, and special purpose districts meeting certain requirements.
- Ten million dollars is available per jurisdiction, per biennium.
- Interest rate is linked to percentage of local match.
- Applications accepted every June.

Transportation Equity Act for the 21st Century (TEA-21)

Kathleen Davis - Surface Transportation Program

Washington State Department of Transportation

(360) 705-7377

davisk@wsdot.wa.gov

Washington Surface Transportation Program

- These funds can be used for environmental

restoration and pollution abatement projects associated with transportation projects, including the construction of stormwater treatment systems.
• For public or private, profit or nonprofit entities or individuals, local government agencies, universities, colleges, technical schools, and institutes.
• Funding as grants.

Watershed Protection and Flood Prevention

Larry Johnson - The U.S. Department of Agriculture Natural Resources and Conservation Service
(509) 323-2955
larry.johnson@wa.usda.gov

Watershed Protection and Flood Protection
• This program provides assistance in planning and implementing watershed projects for: flood prevention; water quality improvement; agricultural water management; water-based recreation; municipal and industrial water supplies; and fish and wildlife habit.
• Any particular or group of local or tribal governments, soil and water conservation district, flood prevention or flood control district, or any other nonprofit agency with authority under State law to carry out, maintain, and operate watershed works of improvement may apply for assistance.

Land and Water Conservation Fund (LWCF)

http://www.iac.wa.gov/iac/grants/lwcf.htm

The Land and Water Conservation Fund (LWCF) provides funding to assist in preserving, developing, and assuring accessibility to outdoor recreation resources including but not limited to parks, trails, wildlife lands, and other lands and facilities desirable for individual active participation. Though the main source is from lease payments made for federal offshore oil and gas resources, funds are also derived from federal recreation fees, sales of federal surplus real property, and federal motorboat fuel taxes. Though the main source is from lease payments made for federal offshore oil and gas resources, funds are also derived from federal recreation fees, sales of federal surplus real property, and federal motorboat fuel taxes.

Washington State DNR - URBAN & COMMUNITY FORESTRY

urban_forestry@wadnr.gov

2006 Community Forestry Program Development Grant

The United States Department of Agriculture (USDA) Urban and Community Forestry Assistance Program is designed to encourage projects that promote tree planting, the care and maintenance of trees, and education on tree issues in cities, towns, and communities across the nation. Washington State grants are awarded through this program to encourage citizen involvement in creating and supporting long-term and sustainable urban and community forestry programs at the local level.

The expanded forestry title of the 1990 Farm Bill included authorization of the Community Forestry Assistance Program. This program has been re-authorized in the most recent Farm Bill (March 1996) and funding has been provided to the USDA Forest Service to implement the program. The USDA Forest Service, in turn, has allocated funds to Washington for urban and community forestry projects. These funds will be distributed and administered by the Washington Department of Natural Resources (DNR).

The following are the Urban & Community Forestry Program's Purpose and Mission as stated in its Five Year Strategic Plan. The maximum amount that can be requested for a project will be $10,000. The minimum amount that can be request will be $3,000. Total project cost (including recipient matching funds or donated match) should be at least twice the amount requested.

The King County Water Quality Block Grant Fund

Ken Pritchard, Grant Exchange Coordinator
800-325-6165 ext. 68265
ken.pritchard@metrokc.gov

Grants up to $50,000 are available for community projects that protect or improve watersheds, streams, rivers, lakes, wetlands and tidewater. Projects must have a demonstrable positive impact on the waters of King County and must :
• Improve or protect water quality and water dependent habitats; or
• Demonstrate the beneficial use of biosolids or reclaimed water.

Examples of Fundable Projects
• Preservation, such as a conservation or access easement to a body of water
• Water quality protection measures, such as non-polluting landscaping or livestock management
• Water re-use or biosolids demonstration project
• Stream, lake, wetland and shoreline restoration
• Long-term stewardship of a body of water
• Water quality monitoring

Grant Types:
There are three types of WaterWorks grants, depending on level of funding, with corresponding application processes:

The Urban Reforestation and Habitat Restoration Grant Fund

Ken Pritchard, Grant Exchange Coordinator
800-325-6165 ext. 68265
ken.pritchard@metrokc.gov

Wild Places in City Spaces provides grants up to $10,000 to volunteer organizations, community groups and government agencies for projects reforesting urban areas and restoring habitat within the Urban Growth Area of King County.

Examples of Fundable Projects
• Removing invasive species and planting native plants in wooded area near another natural area.
• Stream and upland restoration including stewardship training, placement of woody debris, invasive plant removal, and special educational activities.

Washington State Department of Ecology - Water Quality Program

http://www.ecy.wa.gov/programs/wq/funding/
Jeff Nejedly - Department of Ecology
(360) 407-6566
jnej461@ecy.wa.gov

The Department of Ecology's Water Quality Program

administers three major funding programs that provide low-interest loans and grants for projects that protect and improve water quality in Washington State (several other programs address related issues; contact us for more information). Ecology acts in partnership with state agencies, local governments, and Indian tribes by providing financial and administrative support for their water quality efforts. As much as possible, Ecology manages the three programs as one; there is one funding cycle, application form, and offer list. This brochure is a guide to introduce these financial assistance programs and to direct you to the information sources that can give further assistance with planning to meet your funding needs.

The three programs sharing guidelines, application, and funding cycle are:

• The Centennial Clean Water Fund (Centennial), which provides low-interest loans and grants for wastewater treatment facilities and fund-related activities to reduce nonpoint sources of water pollution.

• The State Revolving Loan Fund (SRF), which provides low-interest loans for wastewater treatment facilities and related activities, or to reduce nonpoint sources of water pollution.

• The Section 319 Nonpoint Source Grants Program (Section 319), which provides grants to reduce nonpoint sources of water pollution.

SENIOR/LOW INCOME HOUSING GRANT FUNDING

SouthEast Effective Development

http://www.seedseattle.org/aboutus.htm

SEED's enterprise is consistent with trends in areas that are not often found working in tandem: affordable housing, economic development, arts and cultural programs. In Southeast Seattle, SEED has proven to be effective by influencing these community-based business dimensions through stewardship resulting in:

• Increased affordable housing stock,

• Improved and additional retail and commercial enterprises, and

• Increased cultural facilities and entrepreneurial opportunities

Additionally, SEED provides support and fiscal agency services for new and emerging coalitions and grass roots organizations. SEED seeks to build upon existing successes and extend our reach through expansion of housing, economic development, arts and cultural opportunities. The phases of this strategy include continuous improvement to the infrastructure of the organization, systematically adding housing programs, and expanding of retail, cultural and commercial ventures.

Housing and Urban Development
Financial Feasibility Analysis Model

http://www.hud.gov/offices/pih/pihcc/financialmodel.cfm

Designed as a free tool to assist local organizations in self-assessing the initial viability of an affordable elderly public housing project. The model guides organizations through the process of obtaining and analyzing the information they will need to make an informed decision about whether or not to spend funds to pursue a formal project analysis.

The model provides a preliminary spreadsheet analysis of operating and real estate development costs based on generic models of senior housing. The analysis may be customized for a specific project by the local organization's input of facility size, locally supportable private pay rates, state reimbursements for publicly-supported tenants, local costs, and labor rates. The model includes step-by-step instructions detailing how to obtain the project-specific inputs as well as an explanation of the assumptions.

Adobe Community Investment Grant

http://www.adobe.com/aboutadobe/philanthropy/commgivingprgrm.html

Adobe supports strategic programs and partnerships that help make these communities better, stronger, and more vibrant places to live, work and do business. Adobe's focus areas for giving and grants programs are designed to:

• Increase Adobe's impact in the community through support of more organizations

• Strengthen our role as a corporate partner by creating deeper, stronger, and richer partnerships

Adobe also supports nonprofit organizations and programs located in Adobe communities that address community-specific needs, with an emphasis on the following criteria:

• Arts and cultural organizations with the mission or principal focus on the creation, promotion and exhibition of visual arts, multimedia or video.

• Providing services to reduce hunger and homelessness and provide affordable housing

• Protecting the natural environment and improving public spaces for the enjoyment of the community

• Improving access to electronic information for people with disabilities

The Paul G. Allen Family Foundation

http://www.pgafoundations.com/TemplateProgramArea.aspx?contentId=17

The Paul G. Allen Family Foundation supports a selection of research and development projects which focus on the pursuit of new knowledge and the development of new tools with the potential for broad, long-term public benefit. Foundation grants support projects with defined milestones and a high likelihood of producing near and mid-term results. Because projects address a broad range of topic areas, Foundation staff work closely with grantees to develop implementation plans and performance metrics.

The Foundation solicits proposals directly from applicants; typically, they are research, academic, or scientific institutions with demonstrated track records and deep expertise in the Foundation's areas of interest. Proposals in this priority area are by invitation only. Unsolicited proposals and letters of inquiry are not accepted.

Jennie S. Baker Fund
www.seattlefoundation.org
Lori Byrne
(206) 515-2134
l.byrne@seattlefoundation.org

The Jennie S. Baker Fund awards grants to organizations in Washington state that primarily serve low-income individuals, particularly seniors and children. The Fund distributes grants for equipment, capital campaigns and facility renovation projects on an annual basis in the third quarter. Grants to any one organization will generally not be approved more often than once every two years. $1000-$5000 grants.

HISTORICAL PRESERVATION GRANT FUNDING: MAGNOLIA BRANCH LIBRARY

Advisory Council on Historic Preservation
Sources of Financial Assistance for Historic Preservation Projects
http://www.achp.gov/funding.html
The Federal Government supports historic preservation through a variety of funding sources and technical assistance programs. The National Park Service is a major source of support, but preservation assistance is also available, either directly or indirectly, from many other agencies. This guide is a clearinghouse of information on Federal historic preservation support, and also touches upon State, tribal, local, and nonprofit funding sources.

Getty Trust (J.P.) Architectural Conservation Grants
http://www.getty.edu/grants/conservation/
Architectural Conservation Grants support organizations throughout the world in their efforts to preserve buildings or sites of outstanding architectural, historical, and cultural significance. Planning Grants assist in the initial development of an overall architectural conservation plan. Support is also available on a selective basis for the development of archaeological site management plans. Implementation Grants assist in the actual conservation of a building's historic structure and fabric.

Historic Building Renovation
http://www.libraryhq.com/renovation.html
Links courtesy of LibraryHQ.Com

Historical Preservation Grants from the U.S. Government
http://12.46.245.173/pls/portal30/CATALOG.FIND_ASSISTANCE_PROGRAM_DYN.show
Courtesy of the Catalog of Federal Domestic Assistance (CFDA). Choose the keyword option and type in historic preservation.

History Channel 'Save Our History' National Grant Program
http://www.saveourhistory.com/pres_org/index.html
The History Channel is proud to announce the first year of its Save Our History National Grant Program. This year, $250,000 in grants will be awarded to historical organizations that partner with educators on unique, rewarding projects that help students learn about and appreciate the history of their local communities...
Listed under Grants for Nonprofits - Education; Historic Preservation.

James Marston Fitch Charitable Foundation
http://www.fitchfoundation.org/
Deadline: Sept. 15
The Foundation will award up to a $25,000 research grant to mid-career professionals who have an advanced or professional degree and at least ten years experience in historic preservation or related fields, including architecture, landscape architecture, architectural conservation, urban design, environmental planning, archaeology, architectural history, and the decorative arts. Other, smaller grants, up to $10,000, are made at the discretion of the trustees. The grants are intended to support projects of innovative original research or creative design that advance the practice of historic preservation in the United States. These grants are partially made possible in part through the generosity of the Samuel H. Kress Foundation.

National Historical Publications and Records Commission (NHPRC)
http://www.archives.gov/nhprc/apply/program.html
Congress established the NHPRC grants program to promote the preservation and use of America's documentary heritage. Makes grants to state and local archives, colleges and universities, libraries, historical societies, and other nonprofit organizations in the U.S. to help identify, preserve, and provide public access to records, photographs, and other materials that document American history.
Also listed under Arts and Cultural Activities; Humanities.

National Park Service
Heritage Preservation Services
http://www.cr.nps.gov/hps/
The Heritage Preservation Services programs of the National Park Service provides a number of funding programs for historical preservation scattered throughout this web site.
National Trust for Historic Preservation
http://www.nationaltrust.org/index.html
Sponsors a number of programs including: Community Partners Program, Preservation Services Fund, The Johanna Favrot Fund for Historic Preservation, and The Cynthia Woods Mitchell Fund for Historic Interiors. For more information, contact the trust via mail at 1785 Massachusetts Avenue, NW, Washington, DC 20036; telephone: (202) 588-6054; fax: (202) 588-6038; E-mail: commpartners@nthp.org

Preserve America Grants
http://www.cr.nps.gov/hps/hpg/PreserveAmerica/index.htm
Preserve America grants offer a new type of funding from the Federal Government to support communities that have demonstrated a commitment to recognizing, designating, and protecting local cultural resources.

Restore America Grants Program
http://www.nationaltrust.org/restore_america/index.html
HGTV's Restore America is a partnership between the National Trust for Historic Preservation and Home & Garden Television (HGTV). Since 2003, HGTV's Restore America has provided 36 grants to projects across America that highlight the work of preservation. HGTV has told the story of these historic places through on-air and on-line content. In 2006 HGTV's Restore

America will focus on the revitalization of places where people live, through grants for residential projects. Nonprofit organizations and public agencies are invited to apply for grants. Approximately 6 to 12 grants will be awarded for projects such as rehabilitation of single-family residences or adaptive use of historic buildings for housing, creation of upper-floor apartments in Main Street communities, or restoration of Save America's Treasures sites that continue to have a residential use.

PARKS GRANT FUNDING: MAGNOLIA PLAYFIELD/ COMMUNITY CENTER

Seattle Pro Parks Levy

The Pro Parks Levy, approved by Seattle voters in November 2000, will provide $198.2 million to help implement more than a hundred projects and programs planned by citizen groups throughout the city. The Parks and Green Spaces Levy Oversight Committee ("Pro Parks Levy Oversight Committee") will help ensure successful implementation of the projects and programs included in the levy. Funding for environmental stewardship: Tree and Natural Area Crews, environmental steward in our development and operations, and creating more environmental stewards among our users.

REI

www.rei.com

Funding for Community Parks

On the heels of their most successful year ever, REI shared their success with communities by dedicating $1 million to 100 community parks across the country, above and beyond the $3 million previously earmarked this year for outdoor recreation and conservation causes.

Grants

Annually, REI dedicates a portion of its operating profits to help protect and restore the environment, increase access to outdoor activities, and encourage involvement in responsible outdoor recreation. REI employees nominate organizations, projects, and programs in which they are personally involved to receive funding or gear donations.

Starbucks

www.starbucks.com

Starbucks proudly supports organizations in our local communities with cash and product contributions through corporate giving. They support local community organizations and events that promote one of the following: Arts & Culture, Education, Environment. They fund Environmental Literacy programs that:

- Offer innovative, place-based approaches to addressing environmental literacy in communities.
- Possess strong educational programming with follow-up opportunities for learning.
- Create new ways of thinking or acting.
- Empower youth to be "heroes" (educators/stewards/ advocates) for a sustainable environment in their own communities.
- Encourage partnerships among formal and informal education systems.
- Embrace diversity and build bridges of understanding among youth of diverse ethnic, racial and socio-economic backgrounds

Washington State Department of Health: Healthy Communities projects

http://www.doh.wa.gov/publicat/2006_news/06-113.htm

Healthy Communities projects involve all parts of the community including city planning, public works, schools, parks, and employers to improve access to healthy foods and physical activity opportunities. Healthy Communities projects work to develop safe sidewalks, trails and bicycle lanes. They also find ways to improve access to healthy foods in schools, restaurants, worksites, and through food banks and neighborhood farmers markets. The communities were selected from among six applicants throughout the state. The Department of Health selected three communities that will share $100,000 in funding. These communities involved businesses, city government, hospitals, school officials and residents to identify changes needed to make it easier for people to be physically active and choose healthy foods.

Association for Supervision and Curriculum Development (ASCD) –NPO

http://www.ascd.org/portal/site/ascd/menuitem.c805ffddf572a549a62c2d69e3108a0c/

The Association for Supervision and Curriculum Development will award ten Healthy School Communities grants of $10,000 each to help schools and communities work together to create a healthy school environment. The selected schools will demonstrate the capacity for best practice in leadership and instruction, support comprehensive health programs, and create strong collaborations with other community institutions. Applications are due by November 15, 2006.

POLICIES TO SUPPORT BUSINESS IMPROVEMENTS

POLICY TYPE	RECOMMENDED POLICY	EXISTING POLICY
IRRIGATION ACCESS AT STREET/SIDEWALK	Provide or allow accessible water outlets near the sidewalk Right-of-Way to water newly established plantings. This can be made accessible only using a key or other mechanism to discourage abuse.	
CURB BULB-OUTS	When retrofitting exisitng curbs or building new curbs consider adding "bulb-out planters" with landscaping that provides aesthetics and if possible, stormwater filtration functions.	
CURB ALTERATIONS	The curb needs to be curved to mitigate water to the planting area. It is important that there is restrictions. Provide guidelines to accommodate the needs for water resources.	
INTERSECTION IMPROVEMENTS - Art & Traffic Calming	Provide permit and implementation assistance with "Intersection Repair Projects" where neighbors demonstrate they me et community need (e.g. safety) and general neighbor/community support requirements.	Seattle Public Utilties pilot project ("Wallybug") may lead to new program assistance on future intersection improvement projects
ART		1% for art programs require a percentage of development fees go towards art projects.
RAINWATER HARVESTING	Encourage the use of rainwater harvesting and storage for irrigation.	
CREEK DAYLIGHTING	Encourage opportunities to daylight, improve or restore a historic stream as part of new privat or public development .	
URBAN AGRICULTURE	Support urban gardens, and edible landscape where appropriate. Encourage the use of rainwater harvesting and storage for agricultural irrigation.	
HISTORIC PRESERVATION	When possible, provide markers and information at locations of historic significance	

DOWNTOWN IMPROVEMENT FUNDING PROGRAMS

Funder	Program Name	Short Summary (1-2 sentences)	ELIGIBLE TECHNOLOGIES -What they fund	APPLICABLE SECTORS -Who they fund (indiv., 501c3, city/state, etc.)	Funding Amount	Duration/Renewable Cycle?	Contact Name number, website, etc.
STATE							
Washington State Department of Ecology	· ***The Centennial Clean Water Fund*** **(Centennial)** · ***The State Revolving Loan Fund*** **(SRF)** · ***The Section 319 Nonpoint Source Grants Program*** **(Section 319)**	The three programs sharing guidelines, application, and funding cycle are: The Centennial Clean Water Fund (Centennial), which provides low-interest loans and grants for wastewater treatment facilities and fund-related activities to reduce nonpoint sources of water pollution. The State Revolving Loan Fund (SRF), which provides low-interest loans for wastewater treatment facilities and related activities, or to reduce nonpoint sources of water pollution. The Section 319 Nonpoint Source Grants Program (Section 319), which provides grants to reduce nonpoint sources of water pollution.	Planning, design, and construction of wastewater and stormwater treatment facilities Agricultural best management practices projects Stream and salmon habitat restoration, local loan funds for water quality projects, watershed planning, water reuse planning and facilities, water quality monitoring, lake restoration *Publicly owned treatment works (wastewater treatment plants) *Projects that implement nonpoint source water quality plans (management programs developed under §319 of the Clean Water Act). This includes plans developed by both states and Indian Tribes. 1. Puget Sound 2. Tillamook Bay 3. Lower Columbia River Estuary	Local governments Recognized Indian tribes Special purpose districts such as sewer, health, and conservation districts Not-for-profit groups (limited funding; contact us for details)	Low-interest loan and grant combinations may be available for up to 100 percent of eligible project costs.	Annual	Jeff Nejedly, Department of Ecology PO Box 47600 Olympia, WA 98504-7600 (360) 407-6566 (360) 407-6006 TDD jnej461@ecy.wa.gov Brian Howard 360-407-6510 brho461@ecy.wa.gov http://www.ecy.wa.gov/programs/wq/funding/
Washington State Art Commission	**Community Art Development (CAD) program**	The Community Arts Development (CAD) program provides opportunities and information about arts management to arts organizations and artists, so that they, in turn, can most effectively bring the arts to the public.	CAD works to build the capacity of artists and organizations so that they are stable, continuous arts resources for their communities. CAD provides management information and assistance (sometimes called 'technical assistance' or TA) as well as guidance and encouragement.	Arts organizations, artists, local arts councils and commissions, municipal governments and the general public		-NA-	Bitsy Bidwell, Program Manager (360) 586-2421 CAD Program Washington State Arts Commission PO Box 42675 Olympia, WA 98504-2675
Washington State Art Commission	**Project Support Program (PSP)**	Grants for specific arts events targeted to a general public audience	**Project Funding** can include concerts, theater productions, visual art exhibits, arts festivals, or a broad range of arts-related services to Washington citizens, artists or ethnic communities. Funds are also available to nonprofit arts organizations for **Staff Support** for the creation or expansion of a key administrative or artistic position.	Small arts organizations and community service groups	$1,000 or less and will not exceed $4,000.	There are two deadlines each year, for the next funding cycle Fiscal Year 2007, deadlines are: February 2006 and October, 2006	http://www.arts.wa.gov/progGTO/pdf/PSP_Guidelines2007.doc
Washington's Natural Resources Conservation Service (NRCS)	**Conservation Innovation Grants (CIG) Environmental Quality Incentives Program (EQIP) funds**	A voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection,	Projects using innovative technologies or approaches, or both, to address a natural resource concern or concerns.	Non-Federal governmental or non-governmental organizations, Tribes, or individuals	Up to $150,000	Annual	http://www.wa.nrcs.usda.gov/programs/cig/index.html ftp://ftpfc.sc.egov.usda.gov/WA/PROGRAMS/CIG/06_State_CIG_Announcement.pdf
Washington State Conservation Commission	**Puget Sound Water Quality Work Plan Grants Program**	A partnership between the Conservation Commission and the twelve conservation districts bordering Puget Sound that promotes and supports implementation of the current Puget Sound Water Quality Work Plan (Work Plan) prepared by the Puget Sound Action Team	Projects conducting outreach activities, providing technical and financial assistance to landowners for implementation of best management practices , participating in watershed planning, and coordinating water quality monitoring activities for high priority Puget Sound water quality problems	Twelve Puget Sound Conservation Districts		Annual	http://www.scc.wa.gov/programs/puget_sound/ Debbie Becker, Administrative Services dbec461@ecy.wa.gov (360) 407-6211
REGIONAL							
Bonneville Environmental Foundation (BEF)	**Renewable Energy Grant**	Using revenues generated from the sales of Green Tags, Bonneville Environmental Foundation (BEF), a not-for-profit organization, accepts proposals for funding for renewable energy projects located in the Pacific Northwest (OR, WA, ID, MT).	Eligible Renewable/Other Technologies:Solar Thermal Electric, Photovoltaics, Wind, Biomass, Hydroelectric, Geothermal Electric, Anaerobic Digestion	Nonprofit, Local Government, Tribal Government	Up to 33% of total capital costs	- NA -	http://www.b-e-f.org/grants/renew_intro.shtm

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Northwest Solar Cooperative teamed with the Bonneville Environmental Foundation (BEF)	**Solar Starters**	A unique program that allows participating small-scale PV installations to earn 10 cents per kWh for every kWh produced and net-metered back into the energy grid.	Residential and small businesses customers	All grid-tied PV solar system owners with systems installed in Oregon or Washington	Average customers may receive $1000 over the life of the program on a 2 kW system	Systems are eligible for 5 years and annual payments begin to accrue as soon as a contract is signed and the solar system starts generating energy	Solar Starters c/o Northwest Solar Co-op Doug Boleyn 503.655.1617 doug@cascadesolar.com www.cascadesolar.com
Puget Sound Action Team	**Public Involvement & Education (PIE) Funding**	Conservation programs to protect and restore Puget Sound. Funding is used to help implement the Puget Sounds Conservation & Recovery Plan	Funding Priorities: Pollution, habitat & salmon recovery	Residents of Washington state, businesses, organizations, watershed or salmon groups, tribal or local governments, schools or educators. Federal Agencies not eligible.	Max. Funding: $45,000, mathching funds encouraged but not required.		Puget Sound Action Team Mary Knackstedt PO Box 40906
River Network	**Watershed Assistance Grant (WAG)**	Fund local watershed partnership projects for restoration or organizational developments					www.rivernetwork.org, For more infor, contact: River Network 520 SW 6th Avenue Portland, OR 97204
CITY							
City of Seattle Department of Neighborhoods	**Neighborhood Matching Fund**	Provides project money and technical assistance to neighborhood groups in Seattle to implement neighborhood-based projects, including those that improve the environment, provide community education, or "green" the Neighborhood.	Seattle neighborhood groups and organizations for a broad array of neighborhood-initiated improvement, organizing or planning projects.	Seattle neighborhood groups and organizations	up to $100,000.	application deadlines every two months	http://www.seattle.gov/neighborhoods/nmf/
City of Seattle Department of Neighborhoods	**Neighborhoods Matching Fund Large Projects Fund**	The Large Projects Fund is for projects that request more than $15,000, up to $100,000, and can be completed within a 12-month timeframe.	Race Relations and Social Justice, Neighborhood Planning and/or Design Project, Capacity Building Project, Neighborhood Physical Improvement Project, Neighborhood Non-Physical Improvement Project, Public School Partnership Project	Applications are accepted from: - Neighborhood-based organizations of residents or businesses. - Local, community -based organizations that advocate for the interests of people of color. - Ad-hoc groups of neighbors who form a committee solely for the purpose of carrying out a specific project. - All applicants groups must have an open membership and must actively seek involvement from area residents and/or businesses.	$15,000, up to $100,000		http://www.seattle.gov/neighborhoods/nmf/largeproject.htm
City of Seattle Department of Neighborhoods	**Neighborhoods Matching Fund Small & Simple Projects Fund**	The Small and Simple Projects Fund accepts applications four times each year for projects that request up to $15,000 and that can be completed in six months.This Fund is intended to make awards for smaller, less complex projects, allowing neighborhood groups to plan, start and finish a project within a reasonable amount of time.	Race Relations and Social Justice, Neighborhood Planning and/or Design Project, Capacity Building Project, Neighborhood Physical Improvement Project, Neighborhood Non-Physical Improvement Project, Public School Partnership Project	Applications are accepted from: - Neighborhood-based organizations of residents or businesses. - Local, community -based organizations that advocate for the interests of people of color. - Ad-hoc groups of neighbors who form a committee solely for the purpose of carrying out a specific project. - All applicants groups must have an open membership and must actively seek involvement from area residents and/or businesses.	up to $15,000		http://www.seattle.gov/neighborhoods/nmf/smallandsimple.htm
City of Seattle Department of Neighborhoods	**Neighborhoods Matching Fund Tree Fund**	The Tree Fund, a component of the Neighborhood Matching Fund, provides trees to neighborhood groups to enhance the City's urban forest.	The City provides the trees, and neighbors share the work of planting and caring for the trees. Tree Fund projects are a great way to build a stronger sense of community.	Groups of neighbors that represent a minimum of 5 households on the block can receive trees for planting strips on residential streets.	10 to 40 trees for their projects		Wendy Watson at (206) 684-0719 http://www.seattle.gov/neighborhoods/nmf/treefund.htm

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City of Seattle Department of Neighborhoods	**Neighborhoods Matching Fund Outreach Fund**	The goals of the Neighborhood Outreach and Development Fund are to 1) help neighborhood-based organizations increase their membership or 2) provide leadership training and technical assistance to help enhance the skills of its members. The Fund offers established neighborhood organizations one-time awards of up to $750.00 for special membership expansion or leadership development projects.	Types of Projects: - Membership Expansion - Leadership Development:	Established neighborhood organizations (e.g. community councils, neighborhood business organizations), primarily run by volunteers and with an annual operating budget of $20,000 or less, can apply. The groups must have an open membership	of up to $750.00		Allynn Ruth at 684-0301 http://www.seattle.gov/neighborhoods/nmf/smallsparks.htm
City of Seattle Department of Neighborhoods	**Neighborhoods Matching Fund Small Sparks**	Small Sparks is a unique program designed to encourage community members, who may not be involved in neighborhood activity, to use their personal interest and creativity to do something fun and beneficial in the neighborhood. Small Sparks organizers involve new people in their neighborhood project. Small Sparks projects are intended to "ignite imagination, create community, and make a difference" in neighborhoods across the City	Small Sparks projects . . . - Build on what you enjoy Involve new people - Benefit the neighborhood - Make the most of existing neighborhood resources - Take no more than two months to complete - Receives assistance from a neighborhood Small Sparks coach	Any individual with an idea for "sparking" involvement in their neighborhood can be considered for a Small Sparks award	up to $250.00		For more information about Small Sparks, call 733-9586. http://www.seattle.gov/neighborhoods/nmf/smallsparks.htm
Seattle Public Utilities	**Grant Central Station**	SPU - Grant Central Station is the City's one stop shopping for environmental grants.	Projects that protect clean water, restore habitat, remove litter and graffiti, improve public spaces, or involve youth in environmental issues, etc.	fund community projects	$1,000		Seattle Public Utilities (SPU) 700 5th Ave Suite 4900 PO Box 34018 Seattle, WA 98124-4018 Anthony Matlock, 206-386-9746, anthony.matlock@seattle.gov http://www.seattle.gov/util/Services/Drainage_&_Sewer/Get_Involved/Environmental_Grants/RECENTPRO_200312041113503.asp
Seattle Public Utilities	**Graffiti and Litter Matching Fund Program**	Provides up to $1,000 match of community contributions of cash, supplies, or in-kind services and labor for cleanups of litter and graffiti in business districts.	These projects reduce and remove graffiti and litter in and around business districts in Seattle.	community contributions	up to $1,000		Anthony Matlock 206-386-9746, anthony.matlock@seattle.gov
	Business Improvement Area (BIA)	A Business Improvement Area (BIA) provides a mechanism for businesses, property owners or a combination to collectively obtain the improvements they want to see in their district.	The BIA funds can be used for parking, joint marketing, cleanup and maintenance, security, special events, beautification and management and administration.	The process of getting a BIA: you must have a petition signed by potential ratepayers representing 60% of the assessable value in the district. There are currently 6 BIA districts in the city, each with a unique set of goals and programs.			http://www.seattle.gov/economicdevelopment/biz_district_guide/biz_dist_pages/form_bia.htm
	smART ventures	Small investments can have big impacts. A new pilot funding program of the Office of Arts & Cultural Affairs, smART ventures is intended to create new access for individuals and groups not served by our other funding programs. We've designed smART ventures to be flexible, inclusive and simple. You can apply anytime with an innovative idea or one-time opportunity.	The goal of expanding arts and cultural participation, particularly among diverse and underserved communities.	individuals and groups	$250 to $1,000		Steven Larson, (206) 615-1801 http://www.seattle.gov/arts/fundingapplications/default.asp

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	Allied Arts Foundation	Provides grants to artists, arts groups, and community organizations. The completed work must be available to local audiences. The Foundation also offers sponsorship to artists, groups, and organizations seeking non-profit status.	We've been supporting the Arts, Architecture, Historic Preservation, and Urban Environment efforts in the Pacific Northwest since 1967	small grants to individuals and organizations			http://alliedartsfoundation.org/indexVI.html#
	Municipal Arts Fund	The Municipal Art Fund is used to create site-integrated art projects in City capital construction projects including buildings, streetscapes and parks; portable artworks to be displayed in City buildings; freestanding commissioned artworks on public sites, and special projects such as artist residencies in City departments, publications, exhibitions and films.	fund works for art through an appropriation of 1% of City construction projects				http://www.seattle.gov/financedepartment/0102Adopted/sac.pdf
	The Arts Account General Fund Arts Account	The Arts Account was established by Ordinance 120183 to fund initiatives to keep artists living, working, and creatively challenged in Seattle; initiatives to build community through the arts and create opportunities for the public to interact with artists and their work; and for each new generation initiatives that include arts opportunities for youth in and out of school.		Appropriations are shown within the respective programs of the Commission as a distinct fund source.			http://www.seattle.gov/financedepartment/0102Adopted/sac.pdf
COUNTY							
King County	**The Youth Sport Facility Grant Program**	Program provides matching grant funds to rehabilitate or develop sports fields and facilities serving youth in King County.	new or improved youth sports facilities projects will be funded each year in King County.	sports or community organizations that partner with a school district or park agency	grants up to $75,000		Butch Lovelace, Progam Manager (206) 263-6267 http://www.metrokc.gov/parks/ysfg/
King County	**The Natural Resource Stewardship Network**	The Natural Resource Stewardship Network connects communities with the help they need to improve neighborhood green spaces and community forests	. Help may be in the form of grants, project assistance or both. Projects must be community-based efforts to improve community trees, forests, greenbelts and wooded areas.	In 2006 the program will provide grants and technical assistance only to projects that provide youth with after school activities related to forests. Non-profit organizations, schools, cities, tribes, and special districts are eligible for assistance. If your community organization does not have tax exempt status, you must designate a qualifying sponsor. King County departments, individuals and businesses are not eligible.	Grants of up to $20,000 will be awarded to reimburse up to 50% of labor and materials costs.		Linda Vane, Urban Forestry Program Coordinator King County Department of Natural Resources and Parks 206-296-8042 800-325-6165 ext. 68042 http://dnr.metrokc.gov/wlr/pi/grant-exchange/NRSN.htm

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King County	**The Rural Community Partnership Grants**	The Rural Community Partnership Grants (RCPG) is a community service of the Rural Drainage Program of the King County Water and Land Resources Division. It provides small grants to work in collaboration with the county to solve drainage, water quality, or habitat problems in rural King County.	Filtering storm water through vegetated swales and naturalized retention ponds. Reducing down-cutting of streambeds. Enlisting rural residents to minimize their impact on surface water through landscaping and gardening practices	Proposals must meet the following criteria: - Protect or restore water quality or water dependent habitat, or address a drainage issue. - Foster community stewardship by engaging community volunteers. - Leverage resources; a minimum of 10 percent cash match is required for awards more than $2,500. - Develop long-term partnerships. - Provide a long-term benefit or assure continuity. - Projects must be inside the Rural Drainage Program Service Area, exclusive of incorporated areas (unless approved by the Water and Land Resource Division).	$2,500 and over		Ken Pritchard, Grant Exchange Coordinator 206-296-8265 800-325-6165 ext. 68265 ken.pritchard@metrokc.gov http://dnr.metrokc.gov/wlr/pi/grant-exchange/RCPG.htm
King County	**The King County Water Quality Block Grant Fund**	Waterworks grants up to $50,000 are available for community projects that protect or improve watersheds, streams, rivers, lakes, wetlands and tidewater.	Projects must have a demonstrable positive impact on the waters of King County and must : Improve or protect water quality and water dependent habitats; or Demonstrate the beneficial use of biosolids or reclaimed water.	Community projects. Projects must take place inside the Wastewater Treatment Division Service Area. Projects that are located outside the Service area may be eligible under certain conditions, and should inquire with the WaterWorks grant program before applying.	$2,500 and over		Ken Pritchard, Grant Exchange Coordinator 206-296-8265 800-325-6165 ext. 68265 ken.pritchard@metrokc.gov http://dnr.metrokc.gov/wlr/pi/grant-exchange/waterworks.htm
King County	**The Urban Reforestation and Habitat Restoration Grant Fund**	Wild Places in City Spaces provides grants up to $10,000 to volunteer organizations, community groups and government agencies for projects reforesting urban areas and restoring habitat within the Urban Growth Area of King County.	Examples of Fundable Projects - Removing invasive species and planting native plants in wooded area near another natural area. - Stream and upland restoration including stewardship training, placement of woody debris, invasive plant removal, and special educational activities. - Projects must be located within the Urban Growth Area of King County.	Volunteer organizations, community groups and government agencies	$2,500 an over		Ken Pritchard, Grant Exchange Coordinator 206-296-8265 800-325-6165 ext. 68265 ken.pritchard@metrokc.gov http://dnr.metrokc.gov/wlr/pi/grant-exchange/wildplaces.htm
The National Fish and Wildlife Foundation (NFWF) and Salmon Recovery Funding Board (SRFB)	**King County Community Salmon Fund**	GOAL: To stimulate small-scale, voluntary action by community groups, in cooperation with landowners and businesses, to support salmon recovery on private property* in the Cedar River, Lake Washington, Sammamish Watershed (WRIA 8) and the Green/Duwamish & Central Puget Sound Watershed (WRIA 9), and southern Snohomish County.	The following costs are eligible: Restoration of habitat within and along salmon-bearing rivers and streams. Project design and development that is anticipated to lead to an on-the-ground restoration project within 18 months. Some funds are also available for less than fee acquisition.	The program's primary focus is smaller, community-based restoration projects, so requests for funds for large-scale restoration projects (such as SRFB proposals) will not be considered. Funding is also available to establish creative partnerships and engage new communities in salmon restoration in King County and southern Snohomish County. Applicants may be non-profits, educational institutions, tribes, or local governments. Community groups without non-profit status are encouraged to seek an eligible sponsor.	The Fund will award grants of up to $75,000. Grant requests in the $10,000-$20,000 range are strongly encouraged.		http://www.nfwf.org/programs/csf/king.cfm
King County	**Voucher Incentive Program**	We'd like to invest in your business. King County supports businesses that support the environment. Over the past few years, hundreds of local businesses have benefited from the Voucher Incentive Program (VIP) by partnering with our waste management consultants to reduce the amount of chemicals going down the drain, into landfills, on the ground and into the air.	Commitment to long-term change can earn your company 50% matching funds for every dollar wisely spent on hazardous materials management, up to a ceiling of $500. The voucher can reimburse half of what a business spends - up to $500 total rebate - to manage, dispose of, reduce or recycle hazardous wastes.	To be eligible, a business must: - have a business license and be located in King County; - generate only small amounts of hazardous waste*; - receive a consultation visit from Local Hazardous Waste Management Program representative; and - follow agreed-on recommendations for waste management, storage or prevention.	up tp $500		http://www.govlink.org/hazwaste/business/financial.html

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King County	**Small Habitat Restoration Program**	King County's Small Habitat Restoration Program (SHRP) builds low-cost projects in rural and urban King County that enhance and restore streams and wetlands.	Projects are selected based upon the benefit they will provide to the environment and the cost-efficiency with which they can be implemented. Typical projects include streamside and wetland planting, livestock fencing, in-stream habitat improvements, removal of barriers to fish migration and removal of invasive/non-native plants	property owners and other agencies			http://dnr.metrokc.gov/wlr/cposa/shrp/
King County	**The Urban Reforestation and Habitat Restoration Grant Fund**				In-kind ($585 Value)		http://dnr.metrokc.gov/wlr/pi/carwash.htm
King County	**The King County Water Quality Block Grant Fund**	For community projects that protect or improve watersheds, streams, rivers, lakes, wetlands and tidewater.	# Improve or protect water quality and water dependent habitats; or # Demonstrate the beneficial use of biosolids or reclaimed water				Ken Pritchard, Grant Exchange Coordinator 206- 296-8265 800-325-6165 ext. 68265 ken.pritchard@metrokc.gov
King County	**The Urban Reforestation and Habitat Restoration Grant Fund**	for projects reforesting urban areas and restoring habitat within the Urban Growth Area of King County.			up to $10,000		Ken Pritchard, Grant Exchange Coordinator 206- 296-8265 800-325-6165 ext. 68265 ken.pritchard@metrokc.gov
King County by Earth Corps	**Conservation Corps Crew Day**				Grants up to $50,000,		
King County	**Natural Resource Stewardship Network**	Grants and technical assistance only to projects that provide youth with after school activities related to forests.			up to $20,000		Linda Vane, Urban Forestry Program Coordinator King County Department of Natural Resources and Parks 206-296-8042 800-325-6165 ext. 68042 linda.vane@metrokc.gov http://dnr.metrokc.gov/wlr/pi/grant-exchange/NRSN.htm
NATIONAL							
US. Department of Housing and Urban Development	**Community Development Block Grant Program - CDBG**	A flexible program that provides communities with resources to address a wide range of unique community development needs.	**the Community Renewal Initiative** to have hope for the future through economic and social renewal; State Adminitstered funds.			The State must ensure that at least 70 percent of its CDBG grant funds are used for activities that benefit low- and moderate-income persons over a one-, two-, or three-year time period selected by the State	http://www.hud.gov/offices/cpd/communitydevelopment/programs/
Environmental Protection Agency (EPA)	**EE Grants, EPA's Environmental Education Division (EED), Office of Children's Health Protection and Environmental Education**	Supports environmental education projects that enhance the public's awareness, knowledge, and skills to help people make informed decisions that affect environmental quality			Annual funding for the program ranges between $2 and $3 million. More than 75 percent of the grants awarded by this program receive less than $15,000. [Congress hasn't approved yet for 2007 grants as of 11/19/2006]		Sally Hanft U.S. EPA, Region 10 Environmental Education Grants Public Environmental Resource Center 1200 Sixth Avenue (ETPA-086) Seattle, WA 98101 hanft.sally@epa.gov http://www.epa.gov/enviroed/grants.html
Environmental Protection Agency (EPA)	**EJ Collaborative Problem-Solving Cooperative Agreements Program , by Office of Environmental Justice**	EJ CPS Model is to assist affected communities so that they can develop proactive, strategic, and visionary approaches to address their environmental justice issues and to achieve community health and sustainability					http://www.epa.gov/Compliance/resources/publications/ej/grants/rfa-cps-grant-6-13-06.pdf

Funder	Program Name	Short Summary (1-2 sentences)	ELIGIBLE TECHNOLOGIES -What they fund	APPLICABLE SECTORS -Who they fund (indiv., 501c3, city/state, etc.)	Funding Amount	Duration/Renewable Cycle?	Contact Name number, website, etc.
Environmental Protection Agency (EPA)	**EJ Small Grants Program, by Office of Environmental Justice**	To support and empower communities that are working on local solutions to local environmental and/or public health issues. designed to assist recipients in building collaborative partnerships that will help them understand and address the environmental and/or public health issues in their communities. Successful collaborative partnerships with other stakeholders involve well-designed strategic plans to build, maintain and sustain the partnerships, and to work towards addressing the local environmental and/or public health issues.					http://www.epa.gov/Compliance/resources/publications/ej/grants/rfa-sg-grant-6-13-06.pdf
Environmental Protection Agency (EPA)	**NNEMS (various)**	Provide students with practical research opportunities and experiences in an EPA office or laboratory Increase public awareness of and involvement in environmental issues Encourage qualified individuals to pursue environmental careers Help defray the costs associated with the pursuit of academic programs related to the field of environmental protection, such as pollution control, science, engineering, technology, social science, and specialty areas					http://www.epa.gov/enviroed/NNEMS/pdf/catalog2006.pdf
EPA, The United States Environmental Protection Agency's Office of Wastewater Management (OWM)	**Clean water financing (state), Construction Grants Program, Water Pollution Control Program Grants**	programs contributing to the well-being of the nation's waters and watersheds, Construction Grants Program offers grants for publicly-owned wastewater treatment facilities, Water Pollution Control Program Grants for Prevention and control measures supported by State Water Quality Management programs include permitting, pollution control activities, surveillance, monitoring, and enforcement; advice and assistance to local agencies; and the provision of training and public information.					http://www.epa.gov/owmitnet/, http://www.epa.gov/owmitnet/cwfinance/construction.htm
NATIONAL GARDENING ASSOCIATION	**Healthy Sprout Award**	Provides supplies to schools and community organizations that use gardens to teach nutrition and hunger issues in the United States.	Provides seeds, tools, garden products, and educational resources for growing a vegetable garden. 5 Programs receive $500 and $200 certificate for gardening supplies.	schools and community organizations	Garden Supplies. 5 Programs receive $500 and $200 certificate for gardening supplies.	Annual Application Deadline : March 31st.	www.kidsgardening.com/grants.asp#sprouts 100 Dorset St. South Burlington, VT, 05403, Phone: 802-863-5251, Fax: 802-864-6889
FOUNDATIONS							
Home Depot	**Community Tree Planting Program**	Home Depot may fund neighborhood tree planting projects if they meet eligibility criteria	Tree planting	nonprofits			For information, contact: The Home Depot Foundation hd_foundation@homedepot.com 2455 Paces Ferry Road Atlanta, GA 30339 Toll-Free Phone: 1-866-593-7019 Toll-Free Fax: 1-866-593-7027
Honda	**American Honda Foundation**						http://corporate.honda.com/images/banners/america/AHF_app.pdf

Funder	Program Name	Short Summary (1-2 sentences)	ELIGIBLE TECHNOLOGIES -What they fund	APPLICABLE SECTORS -Who they fund (indiv., 501c3, city/state, etc.)	Funding Amount	Duration/Renewable Cycle?	Contact Name number, website, etc.
TIDES FOUNDATION	The Moloka'i Environmental Protection Fund (MEPF)		* Educational outreach * Reforestation * Sustainable/diversified agriculture * Native plant and species propagation * Environmental studies * Sustainable economic development	must be a non-profit organization or be fiscally sponsored by a non-profit organization.	from $1,000 to $5,000		
the Andrew W. Mellon Foundation	Conservation and the Environment	the program supported basic research on how natural ecosystems work.	Within the broad field of ecosystems research and training, we generally limited our grants to botany and terrestrial ecosystems				
RUSSELL FAMILY FOUNDATION	Environmental Sustainability Grants	Protection, enhancement and restoration of the Greater Puget Sound	Funding Priorities: Puget Sound improvement in Water Quality health and reduction of marine impacts, education, sustainable practices.				www.russellfamilyfdn.org/ PO Box 2567 Gig Harbor, WA 98335 Phone: 253-858-5050
Bullitt Foundation		Environment of the Pacific Northwest for present and future generations. The Foundation invites proposals from nonprofit organizations that serve Washington, Oregon, Idaho, western Montana (including the Rocky Mountain range), coastal Alaska from Cook Inlet to the Canadian border, and British Columbia.					http://www.bullitt.org/
The Brainerd Foundation		Protects the environmental quality of the Northwest and builds broad citizen support for environmental protection			from $250 to $3,000 US		http://www.brainerd.org/default.php
National Fish and Wildlife Foundation	King County Community Salmon Fund	The National Fish and Wildlife Foundation (NFWF) and Salmon Recovery Funding Board (SRFB) have established the Community Salmon Fund to stimulate small-scale, voluntary action by community groups, in cooperation with landowners and businesses, to support salmon recovery on private property* in the Cedar River, Lake Washington, Sammamish Watershed (WRIA 8) and the Green/Duwamish & Central Puget Sound Watershed (WRIA 9), and southern Snohomish County. Grants will be jointly selected by NFWF and King County and administered by the Foundation. *Also includes projects on public property that serve as a pilot for similar projects on private property. Proposals must specifically state how projects on public property will serve as a demonstration site and include an outreach plan for engaging private property owners in similar restoration projects			The Fund will award grants of up to $75,000. Grant requests in the $10,000-$20,000 range are strongly encouraged		National Fish and Wildlife Foundation National Office 1120 Connecticut Ave., NW Suite 900, Washington, DC 20036 Phone: 202-857-0166 Fax: 202-857-0162 http://www.nfwf.org/programs/csf/king.cfm
LAIRD FOUNDATION	Sustainable Watershed Management Funding	Funds efforts to quantify and disseminate information on the value of water-based ecological assets at the community level with an emphasis on ecosystem economics; creation of innoventive community based strategies to create incentives for sustainable watershed management;	Restoration project implementation to improve surface water and groundwater quality, enhance flood control and provide healthy evosystems through ecological engineering and maximizing the use of natural proceses.	Federal, state and local			www.lairdnorton.org/lnfundingfocus.htm For more information: Laird Norton Endowment Foundation, 801 Second Avenue, Suite 1300, Seattle, WA 98104-1516 Phone: 206-464-5224
NEIGHBORHOOD ORGANIZATIONS							
Local groups to partner with or provide sponsorship:	Local Chambers of Commerce Local Plant Nurseries Rotary Clubs Neighborhood Beautification Society/Org	May have multiple programs to assist with neighborhood projects and/or funding					

Sample Plant Combinations

River of Birch

Plants for a moist, seasonally inundated environment with partial shade

Heritage red birch
Betula nigra ‘Heritage’

Variegated lilyturf
Liriope muscari '*Variegata'*

Heritage red birch
Betula nigra ‘Heritage’

Elk Blue California gray rush
Juncus patens ‘Elk Blue’

Tartarian (redtwig) dogwood
Cornus alba

Shaded Northwest Woodland

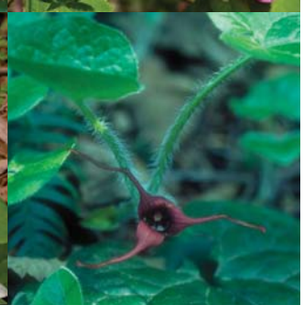
Northwest native plants for cooler, moist areas

Western red cedar
Thuja plicata

Salal
Gaultheria shallon

Evergreen huckleberry
Vaccinium ovatum

Clustered wild rose
Rosa pisocarpa



Vanilla leaf
Achlys triphylla

Western sword fern
Polystichum munitum

Trillium
Trillium ovatum

Wild ginger
Asarum caudatum

Corner Gardens

Visual interest, durability, lower-growing, wet/dry tolerant

Beach strawberry
Fragaria chiloensis

Cranesbill
Geranium x magnificum

Nootka rose
Rosa nutkana
(may require pruning)

Burning bush
Euonymus alatus 'Compactus'

Lavender
Lavadula angustifolia

Cascade barberry
Mahonia nervosa

Woolly thyme
Thymus pseudolanuginosus

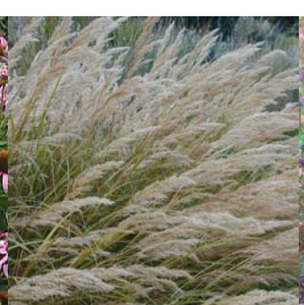
Western sword fern
Polystichum minutum

Beauty on a Berm

Attractive plants for a higher and drier streetside environment (sun to part shade)

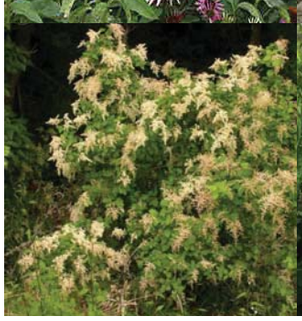
Purple coneflower
Echinacea purpurea

Feather grass
Stipa calamagrostis



Henri Desfosse Ceanothus
Ceanothus x dlilianus 'Henri Desfosse'

Turkish filbert
Corylus colurna



Oceanspray
Holodiscus discolor

Calendula
Calendula officinalis

Sea pink
Armeria maritima

King's spear
Asphodeline lutea

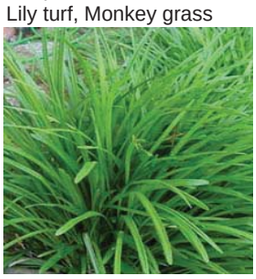
MOUND GARDEN : sunny, wet and dry

Pyrus calleryana 'Capital'
Flowering pear

Allium karataviense
Ornamental onion

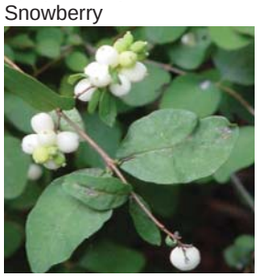
Allium christophi
Ornamental onion

Liriope muscari
Lily turf, Monkey grass



Viburnum opulus
Snowball

Symphoricarpos albus
Snowberry



Festuca glauca
Blue fescue

Carex stricta
Tussock sedge

Callicarpa profusion
Beautyberry

HERB & SCENT GARDEN: sunny and dry

Hamamelis mollis
Chinese witch hazel

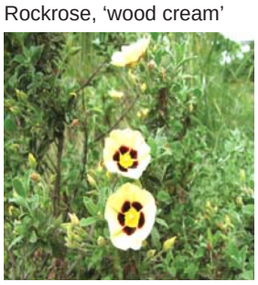
Philadelphus lewisii
Mock Orange

Rosmarinus
Rosemary

Lavandula
Lavender

x Halimiocistus "Merrist wood'
Lavandula and Rockrose

x Halimiocistus "Merrist wood'
Rockrose, 'wood cream'



Salvia officinalis
Kitchen sage

Thymus pseudolanuginosus
Woolly thyme

NORTHWEST FUSION: seasonally wet (winter) and dry (summer)

Acer palmatum
Japanese maple

Cornus stolonifera
Red Osier Dogwood

Symphoricarpus albus
Snowberry

Mahonia aquifolium
Tall Oregon Grape

Carex testacea
Orange New Zealand sedge

Carex stricta
Tussock sedge

STRIKINGLY STRUCTURAL : sunny, wet and dry

Pinus ponderosa
Ponderosa Pine

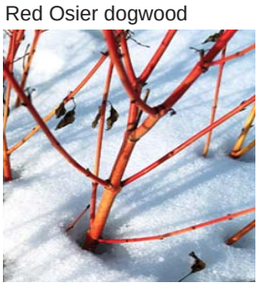
Polystichum munitum
Western sword fern

Cotoneaster horizontalis
Fishbone cotoneaster

Euphorbia characias wulfenii
Spurge milkweed

Carex aurea & Nasturtium

Cornus sericea
Red Osier dogwood



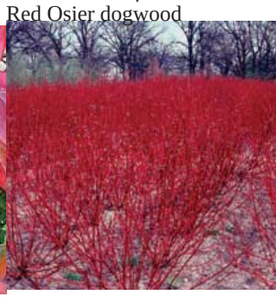
Carex stricta
Tussock sedge

Crocosmia

Boggy Garden

Nyssa sylvatica
Sour Gum

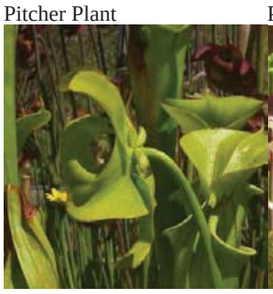
Cornus stolonifera
Red Osier dogwood



Scirpus acutus
Hardstem bulrush

Athyrium filix-femina
Lady fern

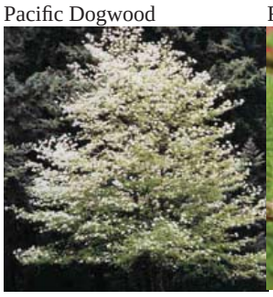
Sarracenia alata
Pitcher Plant



Sarracenia leucophylla
Pitcher Plant

Garden with Native Beauties

Cornus nuttallii
Pacific Dogwood



Ribes sanguineum
Red Flowering Currant

Aruncus sylvester
Goat's beard

Trillium ovatum
Western Trillium (Wake-Robin)

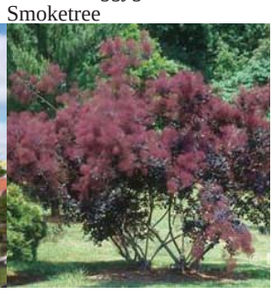
Polystichum munitum
Western sword fern

Aquilegia canadensis
Columbine

Sunny Garden with Warm Color

Catalpa bignonioides 'Aurea'
Catalpa (keep it trimmed!)

Cotinus coggygria
Smoketree

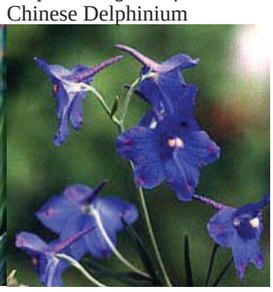


Hemerocallis
Daylily

Carex tenuiculmis
Cappuccino Hair Sedge

Crocosmia
Crocosmia (any variety)

Delphinium grandiflorum
Chinese Delphinium



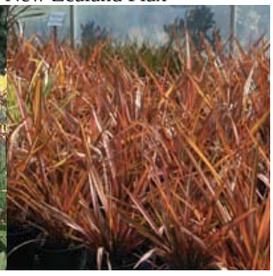
Xerispace Garden

Olea europaea
Olive

Agastache 'Firebird'
Hyssop

Hemerocallis
Daylily

Phormium tenax'Rainbow sunrise'
New Zealand Flax



Hebe 'Red edge'
Hebe

Lavandula stoechas
Spanish Lavender

Bibliography & Web Links

Resource List

Books with an asterisk (*) will be on Reserve in the CAUP library.

Urban Design, Streets and Stormwater

*Augustin, Viola, A Water Boulevard Vision for Jackson Street: Getting Stormwater out of the Pipes and into People's Minds, Seattle: University of Washington, 2004.

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*Beatley, Timothy, Green Urbanism, Learning from European Cities. Washington, D. C.: Island Press 2000

*Beatley, Timothy, Native to Nowhere, Sustaining Home and Community in a Global Age. Washington, D. C.: Island Press 2004

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*Childs, Mark, Parking Spaces. McGraw-Hill, New York, 1999.

City of Seattle, Stormwater Control Manual (should be available from the City's website, updated in 2001}

*Dramstadt, Wenche et al, Landscape Ecology Principles for Landscape Architects.

*Dreiseitl, Herbert, and Dieter Grau, Karl Ludwig, Waterscapes : planning, building and designing with water, Basel ; Boston : Birkhäuser, 2002.

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*Portland Metro, Creating Livable Streets Street design guidelines for 2040, order from 2040@metro-region.org

*Portland Metro, Green Streets, Innovative solutions for stormwater and stream crossings, order from 2040@metro-region.org

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http://www.cityofseattle.net/UTIL/stellent/groups/public/@spu/@esb/documents/spu_informative/cos_004558.pdf#search='practically%20easy%20landscape%20maintenance'

High Point:
http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/High_Point_Project/index.asp

King County, WRIA 9 (on-line) (Duwamish Basin)

Natural Drainage Systems Overview:
http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Natural_Drainage_Overview/index.asp

Natural Gardening Documents:
http://www.seattle.gov/util/Services/Yard/Natural_Lawn_&_Garden_Care/index.asp

Stormwater Treatment Technical Requirements Manual:
http://www.cityofseattle.net/dclu/Codes/Dr/Dr2000-27.pdf

Great set of resources on natural drainage and water collection from recent stormwater workshop at CUH:
http://depts.washington.edu/urbhort/html/education/stormwater.htm

please visit us at:
http//:courses.washington.edu/greensts/community.shtml