

Montgomery County Maryland

High Point Case Study 2000 - 2008



Tracy Tackett, PE – Seattle Public Utilities (*Regulatory*)
Peg Staeheli, ASLA, LEED AP – SvR Design Company
Tom Phillips, APA – Seattle Housing Authority (*Owner*)

1. The City's Goal and Experience

- 2001 -

Why did Seattle Public Utilities decide to try natural systems at the 120 acre High Point Redevelopment site?

- 2002 - 2008

How have we worked with Seattle Housing Authority to implement this approach?

Seattle's Priority Watersheds

- Longfellow Creek

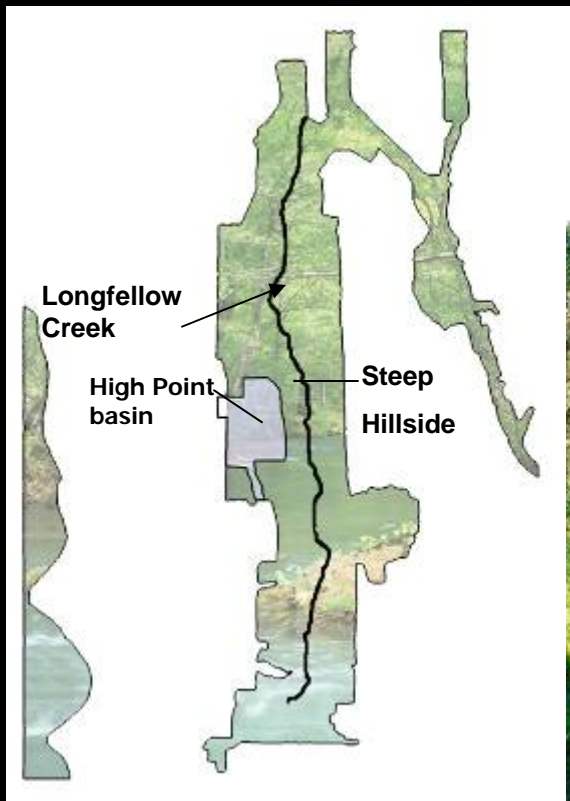


- High-priority, salmon-bearing watershed that has been identified by “the community and the City as a significant and valuable resource”
- Collects storm water runoff from an urban area of approximately 1,730 acres and eventually outfalls into Puget Sound



Urban Redevelopment

Partnering means opportunities for correcting the mistakes of the old development patterns



Longfellow Creek watershed



Longfellow Creek



High Point prior to redevelopment

Five Levels of Commitment between Seattle and Seattle Housing Authority

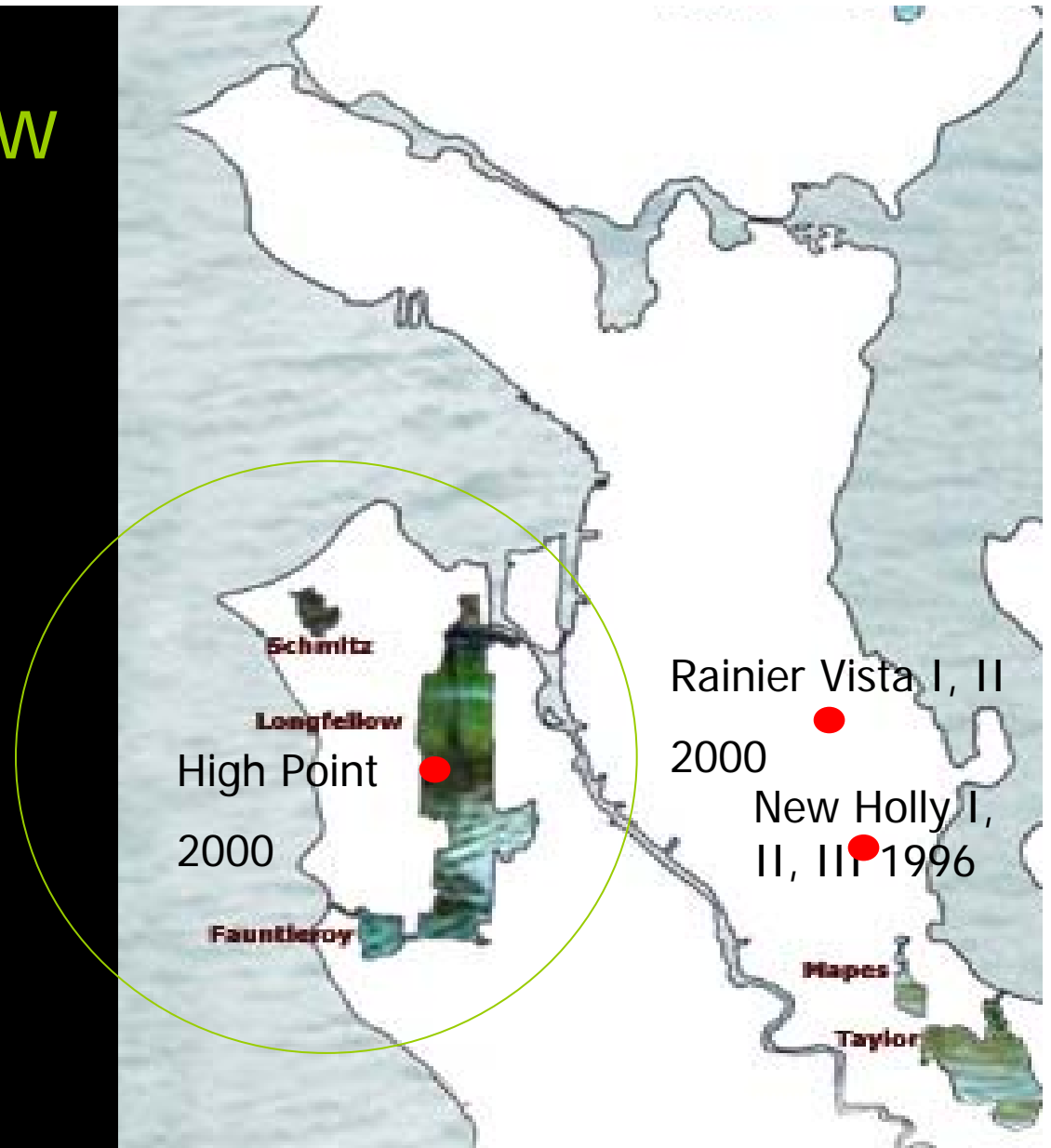
1. **Drainage thresholds** recorded in the plat. Each Lot had a set threshold to achieve overall goals
2. **Drainage Covenant** defined the regulatory and plat requirements
3. **Site Drainage Technical Standards** recorded with the plat for permitting private development and long term site conditions
4. **Maintenance Association** for natural drainage landscape, open space and rights of way. City shares the on going cost.
5. **Memorandum of Agreement** between the City and the Association and Approved by City Council

2. Designer's View of LID Test Case (*guinea pig*)

Design
Entitlement
Construction
Maintenance

Earlier Attempts of surface
storm drainage

High Point
2000 through 2008
and ongoing



What Seattle Public Utilities Wanted

try to make this...



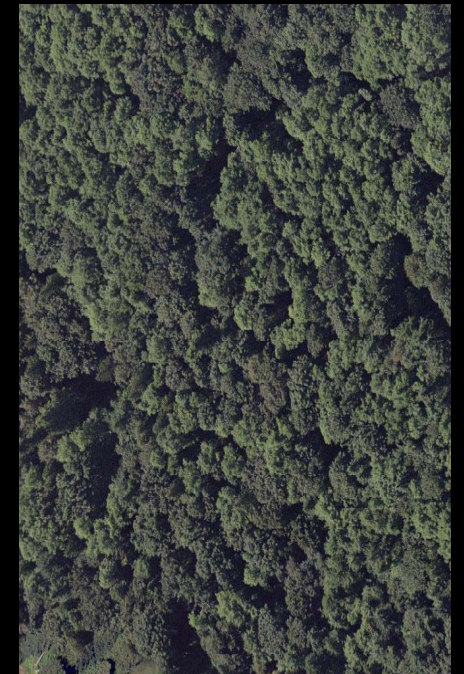
develop like
this...



be constructed
like this?



& function
like this...



What Seattle Housing Authority Wanted



Seattle Public Utilities, with Miranda Maupin as project manager, had a vision for a neighborhood with a naturalistic drainage approach.

Seattle Housing Authority, with Tom Phillips as development lead, had a vision for a diverse, sustainable neighborhood.

These two public agencies have worked hard to implement these visions.

Recognition:

Seattle Housing Authority

Seattle Public Utilities

Other agencies:

Washington State Department of Ecology

US Dept of Housing and Urban Development

Seattle Department of Planning and Development

Seattle Department of Transportation

Seattle City Light

Seattle Parks Department

Seattle School District

Seattle Fire Department

Seattle Office of Housing

Artist: Myersculpture

NDS Contractors:

Gary Merlino Construction Company – Phase I

T. Yorozu Gardening Co. – Phase I & II

TriState Construction – Phase II

Integrated Consultant Team:

Mithun Architects, Planners, Landscape Architects

Design Team Lead

SvR Design Company Civil Engineers & Landscape Architects
Infrastructure, Natural Systems, ROW Landscape and Site civil

Resource consultants:

Shannon and Wilson- Geotechnical

McCoullough Hill PS- Land Use Attorney

Bush Roed Hitching - Survey

Stoneway Concrete

NW Chapter ACPA

Cedar Grove Composting

Concrete Specifications Council

Nakano Associates- Rental Landscape Design

Urban Forestry Resources

RW Beck- Hydrologic Modeling

Herrera-Hydrological Modeling

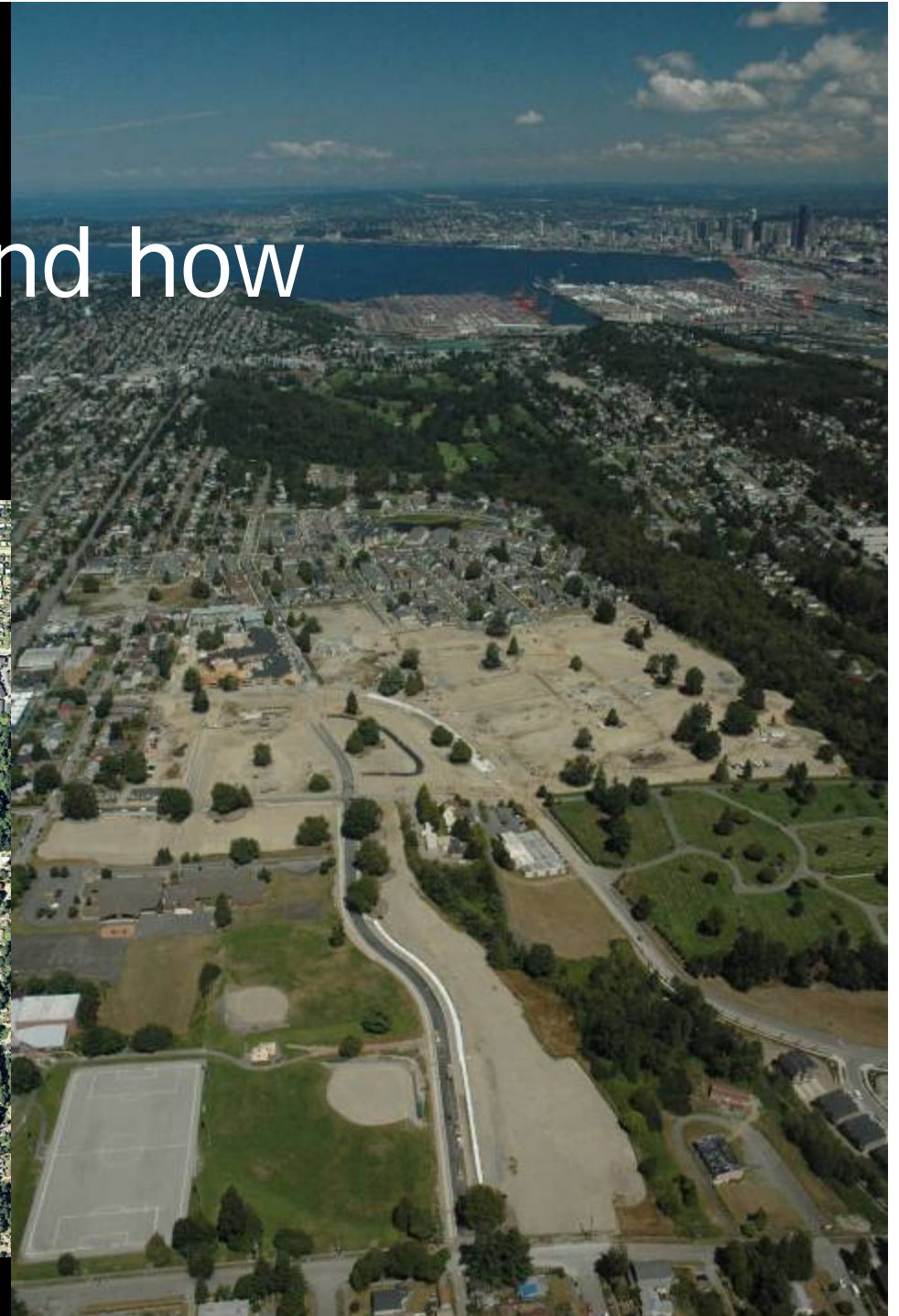
PRR- Public Outreach

Fusion-Branding

www.svrdesign.com

www.seattle.gov/util/naturalsystems

The Story: 1940's to 2008 and how



The Program

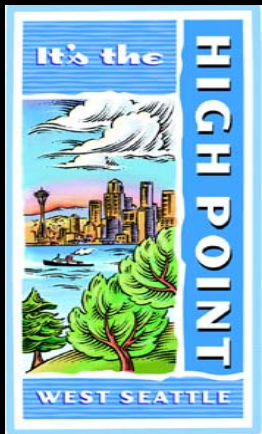
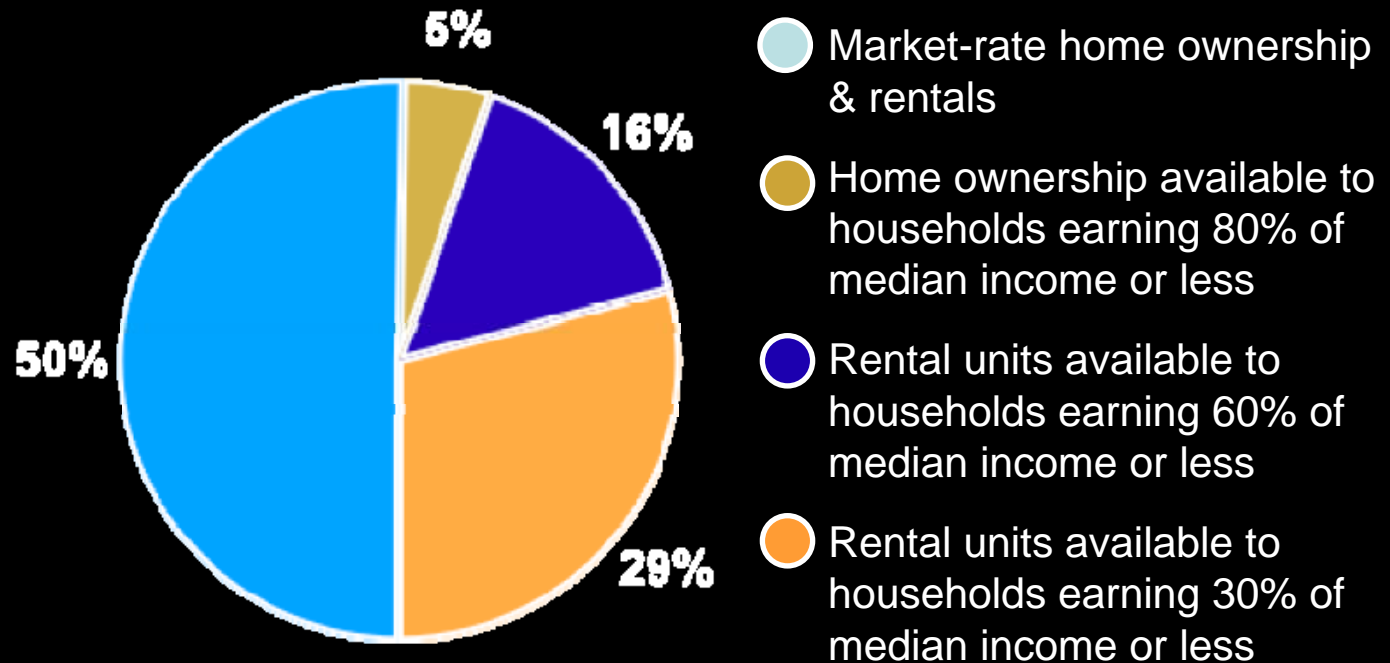
- **1,600 total units**
 - 350 Low income rentals
 - 884 Market housing
 - Market rate- for sale homes
 - Affordable- for sale homes
 - Senior – rental apartments
 - 250 workforce rentals
 - 75 low income senior rentals
- **30,000 Gross SqFt office/ commercial space**
- **Parks**
- **Rolling, steep hillside, salmon bearing creek**



Mithun Architects and Planners

A Diversity of Housing Opportunities

■ 1,600 mixed-income households



"Nature Must Be Constructed in New Ways...."

- *Reveal natural cycles*
- *Intersect with social routines and spatial practices*
- *Design of experiences, design of form, design of ecosystems. These experiences are vehicles for connecting with and caring for the world around us"*

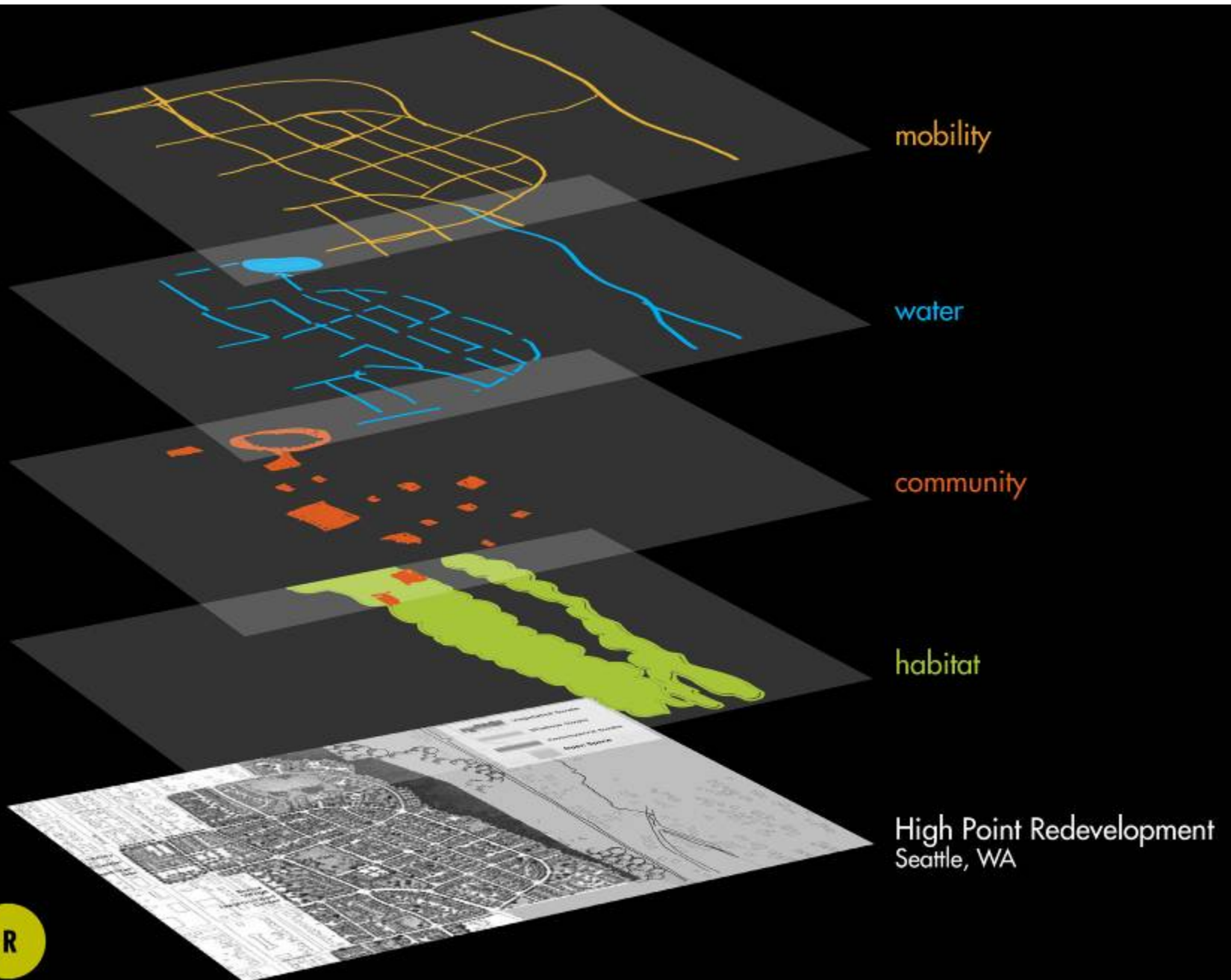
Excerpted from

"Sustaining Beauty: The performance of Appearance"
Elizabeth K. Meyer,

Landscape Architecture Magazine 10/2008

Importance of an Integrated Team

- Consider all the layers
- Keep the focus on the human connection
- Share thoughts, concerns, intent



Peeling apart a series of green infrastructure systems like layers,
Integrating systems and Focusing on the Human Experience we can Inspire

The Process

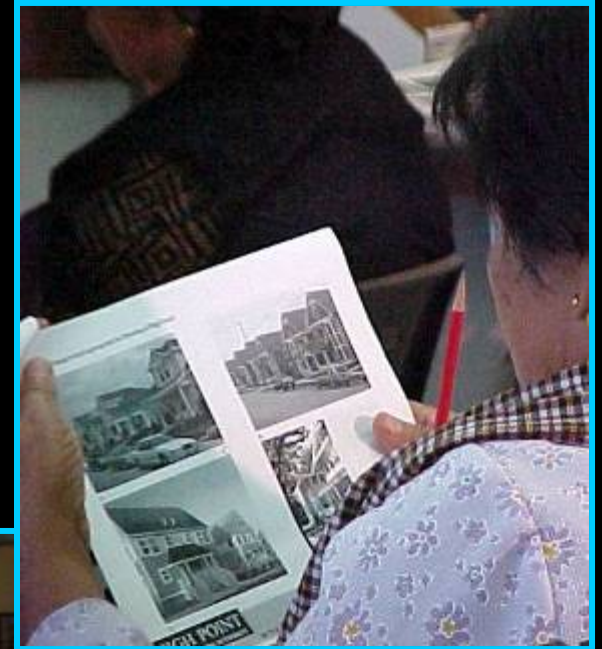
Planning to Permit 4 years

- Charrette - exchange ideas
- Contractor Breakfasts
- City Interdepartmental meetings
- Interdisciplinary Design Team
- Visionary clients



Our Strategy/Program

- Visual surveys to residents
- Visual surveys to neighbors



Our Strategy/Program

- Large Community Meetings
- Resident Design Committee



Working Through Major Hurdles – Project Vision

- New urbanist traditional neighborhood look and the *perceived* “wild aesthetic” of natural drainage



Working Through Major Hurdles – Public Infrastructure

- Quality Pedestrian Environment
- Street Right of Way width and Street Width
- Existing trees
- Accommodating utilities
- Water quality
- Entitlements and Permitting
- Bidding...Cost
- Construction (on going)
- Maintenance (on going)



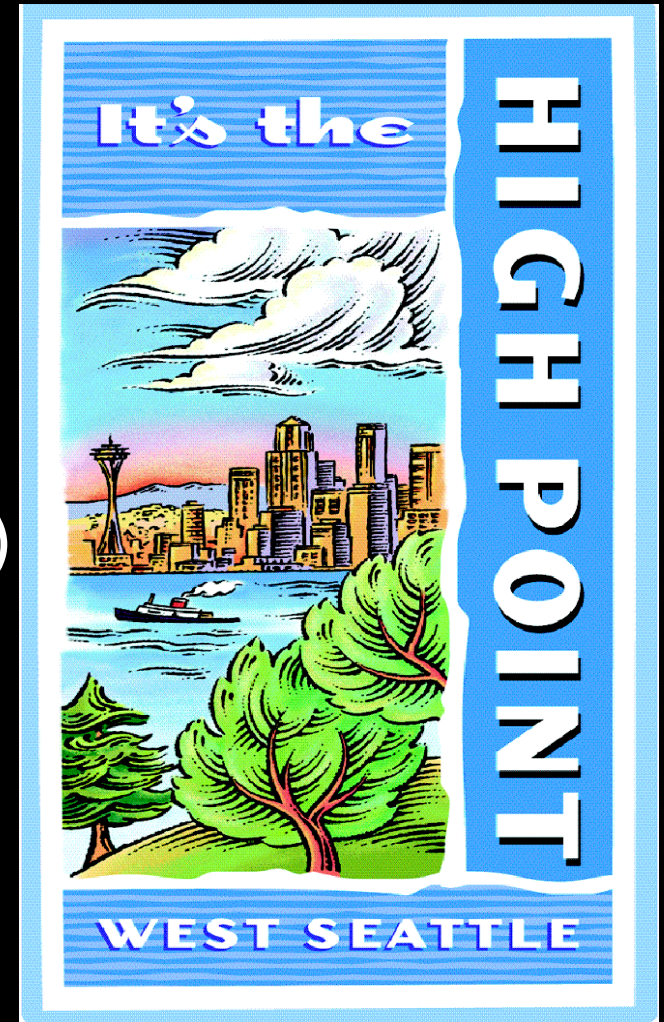
Working Through Major Hurdles – Site Design- Rental Housing

- Minimizing footprint
 - *I'll give you one more inch of overhang if you give me 1 square foot less of patio*
 - *So how long is that car really.....*
- Building spacing *(getting drainage to flow with 10 feet between buildings is likedifficult)*
- Working with grade *(right.... there is 120 feet of drop across the site and you want porous pavement at 3%)*
- Roof/downspout drainage dispersal *(right – you tell the new residents that ponding is good...what is your cell phone number ...)*
- Accessibility
 - ADA (Americans with Disabilities Act)
 - UFAS (Uniform Federal Accessibility Guidelines)
- Parking – affordable pervious surfaces

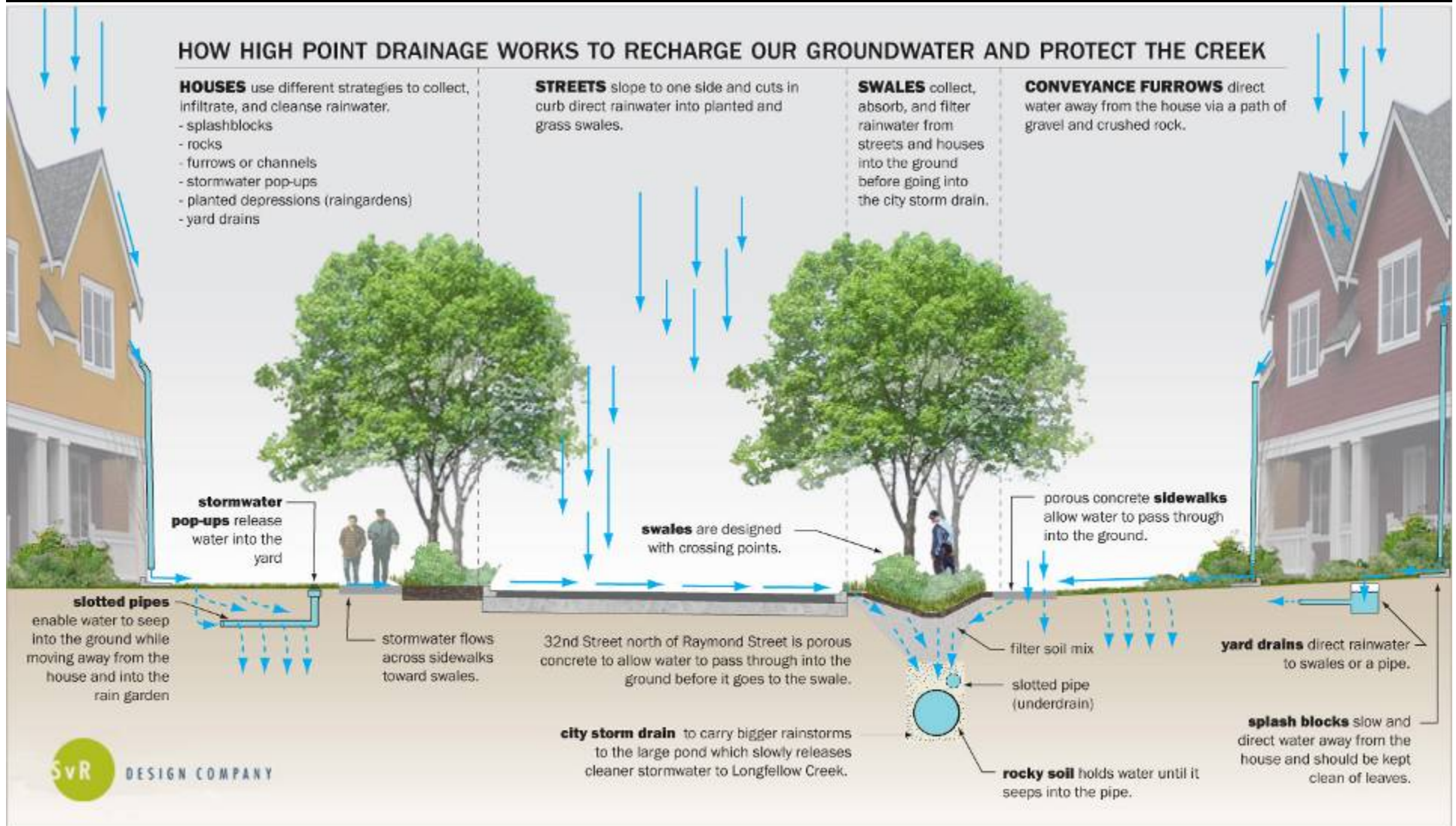


Working Through Major Hurdles – Selling the Project

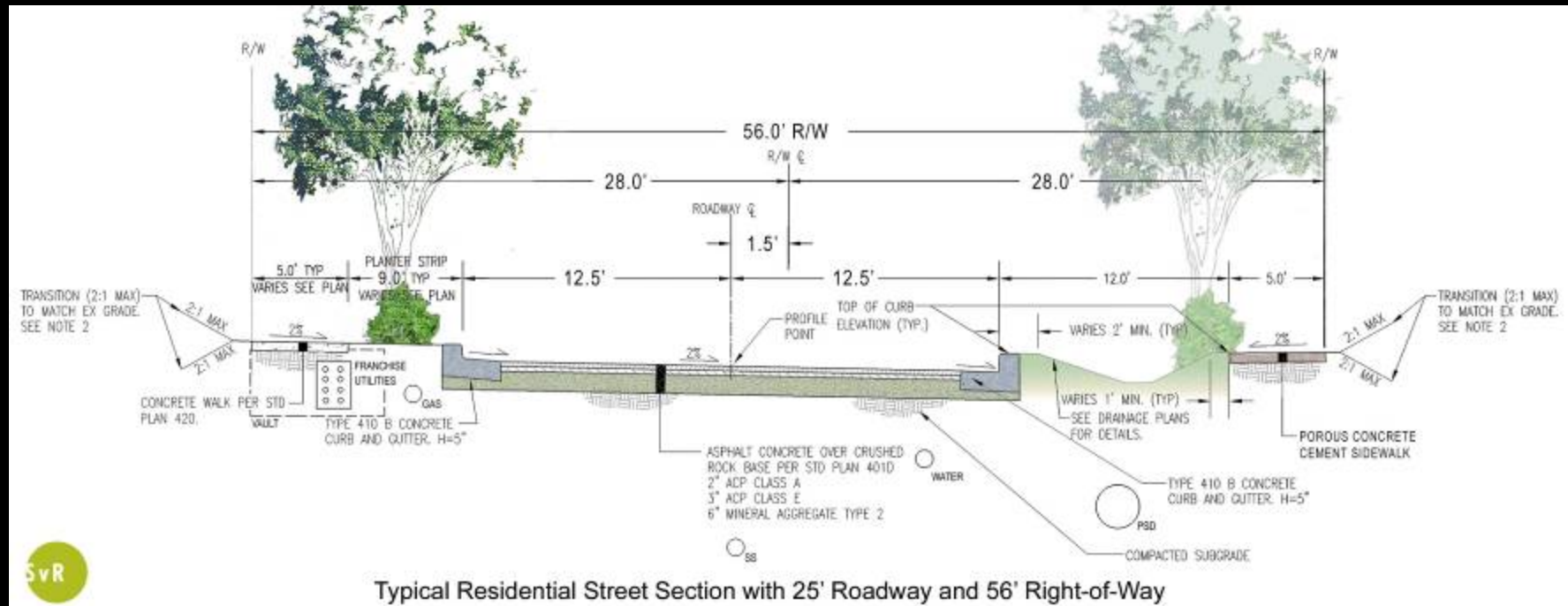
- Public Relations
- Design Guidelines
- LID Site Design Guidelines
(City didn't have them in 2002)
- Builder Guidelines
- Community Events
- And more.....



So How Does it Work ?

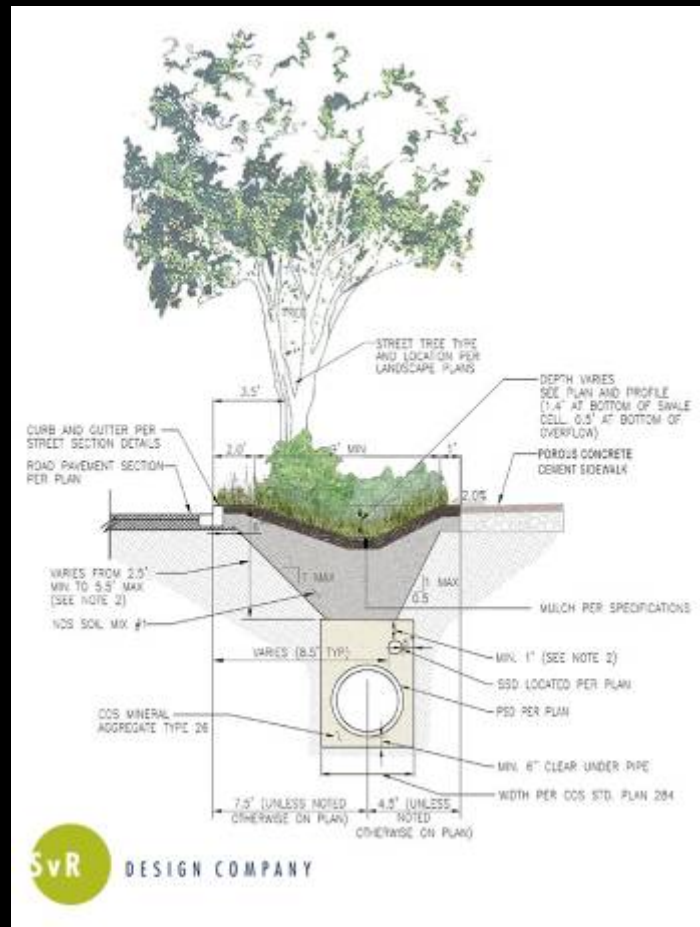


ROW Street Section with NDS Swale



- The cross sections for the NDS swales were developed through discussions with various City of Seattle departments (decisions by inches)
- Street widths: 25 feet/56 right of way; 28 feet/56 ft rw; 32 feet/60 ft rw
- Curb height, swale width, street tree locations, berm locations, side slopes, bottom width, etc. were established
- Porous sidewalks on the swale side

Developing Cross Section & Swale Length in ROW



- Vegetated swale
- 5' +/- compost gravelly soil
- 18" deep, 10" ponding



- Grass-lined swale
- 5' +/- compost gravelly soil
- 8" deep, 2" ponding

High Point Natural Drainage Strategies

Housing: Block - level Design Tools to Meet Effective
Impervious - Average 60%



Saved Trees



Rain Gardens



Artist Splash Blocks



Pop Up Emitters



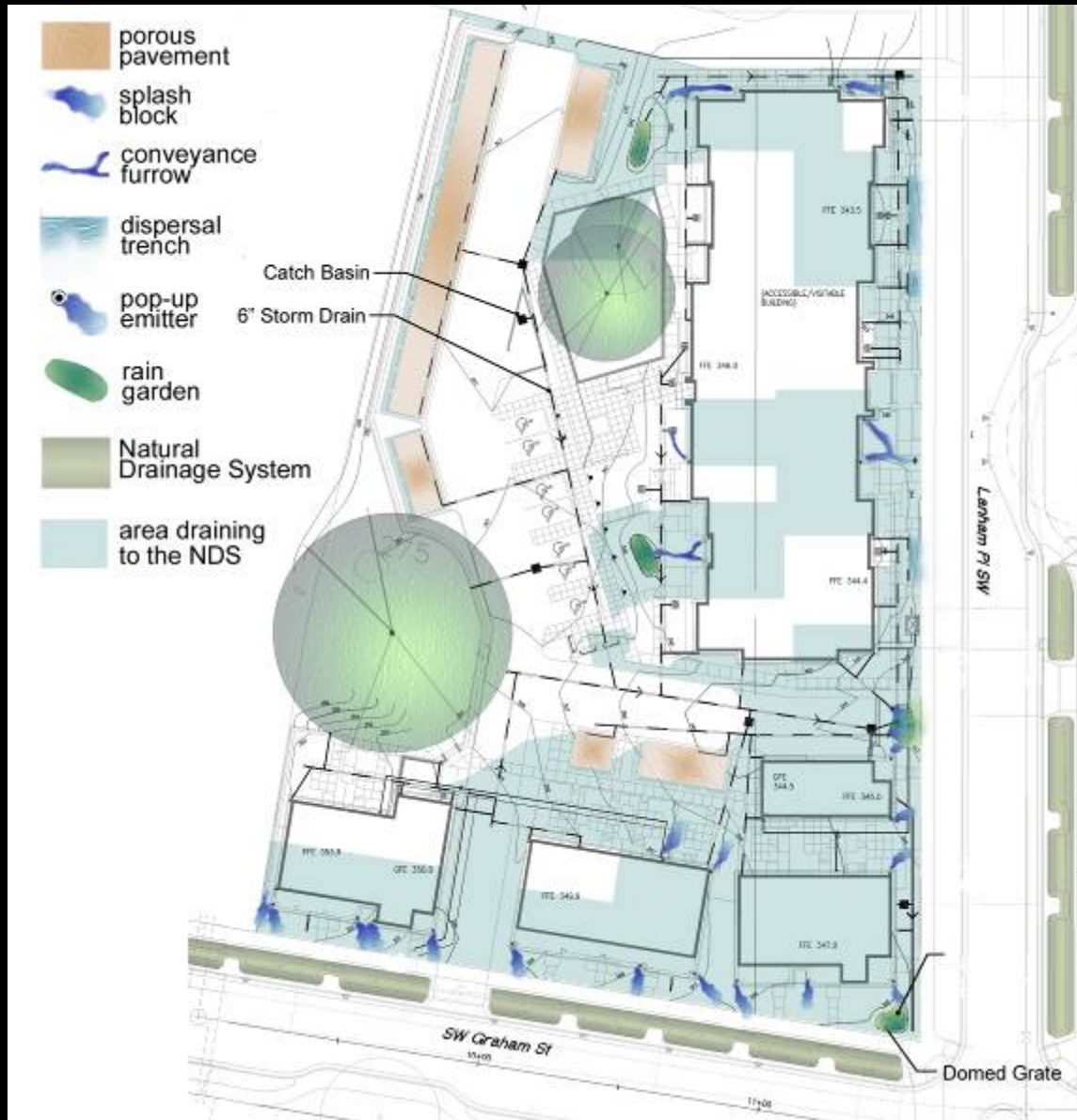
Permeable
Pavements



And Furrows, Gravel Pockets, Flow
Spreaders and Dispersal Trenches



Block-level Drainage Design



- Each block uses site-specific drainage strategies
- Porous pavement
- Splash block
- Conveyance furrow
- Integrated utilities
- Dispersal trench
- Pop-up emitter
- Rain garden
- Adjacent NDS
- Lot drainage to NDS

15,000 Linear Feet of Swales Drain to High Point Pond Park



- Receives 130 acres (53 hectares) of run-off (106 acres from High Point redeveloped areas)
- Flow control for up to 100-year Storm Event
- Water Quality Treatment in combination w/upstream NDS swales
- Maximum Depth 15.5 feet (4.72 m)
- Volume 22+ acre-feet (27,123 m³)
- Pond within 3.5 acre Tract (1.42 hectares)
- Wet Pool for Additional Water Quality:
 - Storage: 4.2 acre-feet (5,178 m³)
 - Depth: 4.5 feet (1.37 m)
- Live Storage for Flow Control/Detention:
 - Volume: 11.8 acre-feet (14,546 m³)
- Remaining 3.2 acre-feet (freeboard and Dam Safety flow)
- Conveyance system out of pond designed for 5,000 year storm event for Dam Safety (Two 8-foot (2.44 m) diameter concrete risers below pier)

... And people come from all over to walk around the neighborhood

Working Through Major Hurdles – Construction

- Clearing and Tree Protection
- Soils and Earthwork Management
- Learning Curve for new way of working
 - Engineered soils
 - Permeable pavements
 - Grading
 - Protect installed work
 - Protection through establishment
- Learning Curve for Inspections



Erosion and Sediment Control

- Protect adjacent properties
- Protect public waterways and storm systems
- Protect installed work
- Protect infiltration systems including swales, soils and porous pavement
- Inspector FEI's (frequently encountered issues)
 - Edge conditions
 - Transitions
 - Partially completed corridors (half block)
 - Curb cuts
 - Water meters
 - Housing issues (later)
- Curb Cuts
 - Swales must be protected until fully established not just planted
 - Block off curb cuts to protect swales soils from being contaminated and to allow for establishment and stabilization of landscaping



Swale Construction



Plants, Swale Establishment and then Maintenance



Seattle's First Public Porous Pavement Street 32nd Avenue SW



- Designed 2003-04
Constructed 2005
- Drainage Basin 4.6
ac (Road and
Housing)
- 25' Wide Road with
Sidewalks on both
Sides and No Curbs
- Westside Landscape
Treatment to
Encourage On-Street
Parking
- New Utilities
- 30% Impervious
- 60% Pervious
- 10% Porous Paving

Porous Specs and Installations- working with the industry to set standards

- TEST PANEL required. (suggest off site or outside of new improvements)
 - May require multiple test panels for new installers.
 - If unable to install test panel, recommend they provide at least 3 examples of previous installations by crew and & locations nearby.
- Installers and Supplier Certification required.
 - Porous Cement Concrete : Require installers and suppliers to have National Ready Mixed Concrete Association's Pervious Concrete "Technician" Certification (NRMCA). Local contact: Bruce Chattin with WACA.
 - If crew has no certification, then require contractor to have a construction consultant with extensive porous pavement installation experience to oversee installation.
 - Training by Manufacturer Rep and/or Manufacturer Rep to be present for installation.
- Recommend at least 2-3 persons per crew to have certification.
- Specifics to each material type to be provided at later sessions.
- Follow manufacturer guidelines for installation with proprietary products.

Art Integrated throughout the watershed



Contractor Training

- Developed Power Points for overall project and specific elements from to go over lessons learned
 - Site demolition, clearing and sediment control
 - Tree protection
 - Utilities
 - Swales construction
 - Porous pavements
 - planting

Maintenance Responsibility

- Green – open space
- Lavender – rental housing
- Blue – for sale/market rate
- Light Green – NGO
- LID Landscape Maintenance Guide
- On going communication

High Point Associations: Areas of Maintenance Responsibility



Open Space Association

Maintenance Oversight Of Workers

- 24 hour response to e-mail requests
- Once a week meeting with site supervisor
- Every two weeks meeting with landscape contractor manager

High Point Community

Right of Way and Open Space Landscape Maintenance Guidelines



Fall 2008 Daily Landscaping Progress Sheet

Date: _____

Number NW Staff on Site: _____

Day of Week: _____

Number of NW Staff Scheduled: 5

Crew Leader: _____

Weather Conditions: _____

Crew Members: _____

Daily Schedule

Prep Time:	7:00 to 7:30 am	unload	
Start Time:	7:30 am		
Weed & Pick up Litter:	7:30 to 9:30 am		all 5 men = 10 man hours
Break Down:	9:30 to 9:45 am		
Break:	9:45 to 10 am		
Grass Prune/Mow/Edge/Weed:	10 to 11:45 am		
Break Down:	11:45 to 12 noon		
Lunch Break:	12 to 12:30 pm		
Grass Prune/Mow/Edge/Weed:	12:30 to 2:00 pm		all 5 men = 10 man hours
Load:	2:00 to 2:15 pm		
Check Out:	2:15 to 2:30		
Leave Site:	2:30 pm		

Monday

Work Areas:

Blocks 1 - 2 - 4 - 16 - 17 - 18 - 19

Weed

☐ Tree ROW
☐ Bio Swales
☐ Blk 9 Front/Side Yards
☐ Blk 9 Courtyard
☐ Blk 11 Front/Side Yards

Pick Up Litter

☐ Tree ROW
☐ Bio Swales
☐ Blk 9 Front/Side Yards
☐ Blk 9 Courtyard
☐ Blk 11 Front/Side Yards

Prune/Mow

☐ Tree ROW
☐ Bio Swales
☐ Blk 9 Front/Side Yards
☐ Blk 9 Courtyard
☐ Blk 11 Front/Side Yards

Edge/Prune

☐ Tree ROW
☐ Bio Swales
☐ Blk 9 Front/Side Yards
☐ Blk 9 Courtyard
☐ Blk 11 Front/Side Yards

Apply Burn Out

☐ Tree ROW
☐ Bio Swales
☐ Blk 9 Front/Side Yards
☐ Blk 9 Courtyard
☐ Blk 11 Front/Side Yards

Problems/Follow Up:

Thanks guys for a great day of work!

Standard Planting Maintenance

attention to detail



Grasses – Jeanette says: “think about them as plants”

- Start at the bottom
- Pull out dead material
- Grab hold...don't use clippers...use saw blade and cut as you are backing away
- Use light rake to rake out cut material

Homeowner/Resident Education

- Newsletters
- Seattle Public Utilities' Natural Yard Care Handbook



Welcome to the New
HIGH POINT

GRAND OPENING!

October 10
2:00 to 4:00 p.m.

Join the Seattle Housing Authority and Mayor Holden in celebrating the grand opening of the new High Point community. Visit a new model home and see all the county's first "Seattle Easy" homes.

NEW HOMES FOR RENT

3-5 Bedrooms in West Seattle!

- Tenacious schools
- Secure master & dog
- 2-3-4-5 bedrooms
- Amenities & storage
- In-unit laundry
- Full Kitchen
- Close to bus, shops, and parks
- Walking distance to shopping and medical center
- Affordably priced

Call 1-800-455-8499 toll free or visit www.seattlehousing.org



For more information, visit www.highpoint.org

Homes for rent: www.highpoint.org
 1-800-455-8499 (Toll Free)
www.seattlehousing.org

Development Manager: Tom.Phillips@seattlehousing.org
 Community Builder: Karl.Lee@seattlehousing.org

Seattle Housing Authority
 1000 1st Avenue NE
 P.O. Box 35000
 Seattle, WA 98101-0000

PROJECT SITE
 15500 1st Avenue NE
 SEATTLE, WA
 98148-1500

SCWSE
 R000100000



Welcome to the New HIGH POINT

The most important goal for the High Point redevelopment was to weave this redeveloped neighborhood back into the fabric of West Seattle. The grand opening event gives the people of Seattle their first chance to see how successfully this exciting new neighborhood is achieving this goal.

The plan relies on three strategies to create something very special at High Point:

A Healthy Environment An Engaged Community Quality Design

Creating a healthy environment begins with houses that are energy efficient and healthy to live in. A healthy environment also includes a natural drainage system that uses the soil to effectively clean rainwater before it is released into Longfellow Creek.

The second strategy emphasized the importance of engaging High Point residents and surrounding neighbors

in the planning process. What Seattle residents know, their ideas that make up a great neighborhood, and their ideas were incorporated into the design of this new place. For High Point to reach its full potential, it will be essential for its residents to continue to stay engaged as active citizens.

The third strategy makes use of proven design principles when drawing up plans for streets and housing. The backdrop of the design is a new street grid that connects all arterial streets with the rest of the neighborhood. Small blocks, wide planting strips, along with traditional Seattle style homes with front porches – all these elements come together to make a friendly, walkable neighborhood.



Award-winning Neighborhood Plan Attracting National Attention

High Point is generating national praise for its progressive approach to redeveloping an urban community. In early 2006, PBS and NPR's "Urban Land & Power" – a documentary profiling redevelopment activities in Seattle, Los Angeles, Chicago, and Philadelphia. Held up as an exemplary model for new urban communities, High Point is highlighted because of the use of green technologies to preserve resources and minimize environmental impact. For more information, visit www.seattlehousing.org



COMING SPRING 2008



Natural Yard Care

Five steps to make your piece of the planet a healthier place to live.

King County
 Department of Natural Resources and Parks
 Solid Waste Division

City of Seattle
 Seattle Public Utilities

Saving Water Partnership
 A service of your local water utility

Fourth Edition 2008

Importance of Reaching Out and Sharing ideas

- Presentations
- Papers
- On line information- specs, details, photos and lessons learned
- University lectures
- Phone calls
- Tours: Over 101
 - Student Tours – gradeschool through university level
 - Boy Scouts, Girl Scouts, Seniors
 - Tours Groups across the USA, Australia, China, England, Sweden, Japan, Denmark, Korea etc



Market and Community Gardens



High Point Redevelopment- The Results



5.21 inch event 2007

3.9 inch event 2006



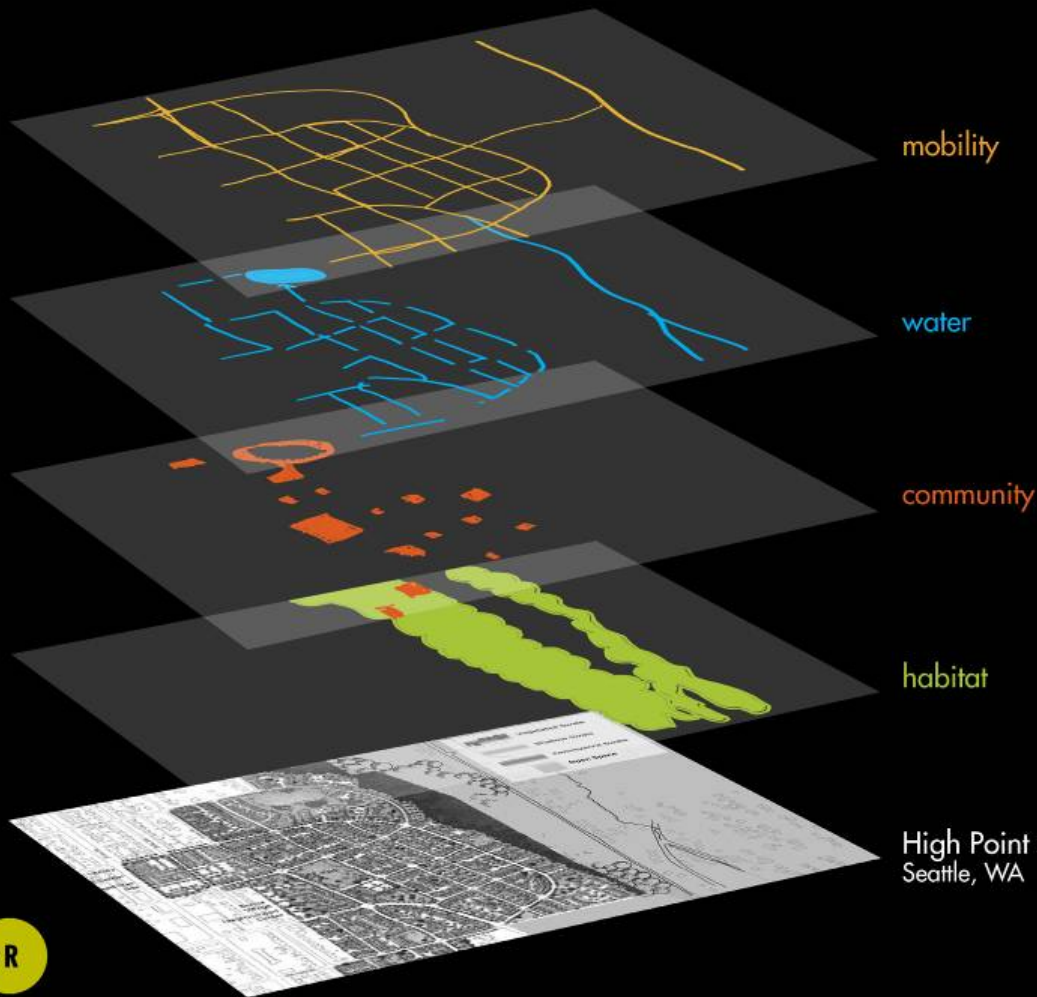
High Point Redevelopment - The Results



5.21 inch event 2007

The Results

A Great Neighborhood



- Sidewalks both sides of street
- 25 foot wide streets
- Arterial as Complete Street +
- 2,500,000 gallons of water saved by efficient appliances
- 7000 lineal ft of grass swales
- 8000 lineal ft of vegetated swales
- 13,00 lineal ft of pervious sidewalks; 600 lf of pervious street
- 22 acre feet pond
- 1600 housing units/4000 residents
- 1250 children under 19 years
- 12.5 acres of parks
- 180 public art elements
- 35 breathe easy homes
- 15,000 lineal ft of swales
- 107 mature trees saved
- Over 3500 new trees planted
- 80,000 groundcovers

Recognition

- Merit Award, ASLA, 2003
- Vision 2020 award, Puget Sound Regional Council, 2003
- 2005 Built Green Seattle Design Competition
- Grand Award, category "Best On The Boards Site Plan" Gold Nugget Awards, Pacific Coast Builders Council and *BUILDER* magazine, 2004
- Vision 2020 award, Puget Sound Regional Council, 2007 (March 2007)
- Washington Aggregates and Concrete Association (WACA) 2007 Awards for Excellence in Concrete Construction - award for Sustainable Merit (High Point Redevelopment, Phase 1)
- 2007 Merit Award - AIA Washington Council Civic Design Award
- 2007 Urban Land Institute (ULI) Award of Excellence – High Point Community (
- 2007 Rudy Bruner Award for Urban Excellence – Silver Award
- 2006 Outstanding Project Award – Site Development ASCE Seattle Section, received 2007
- 2006 Outstanding Major Project Award – Site Development ASCE Region 8, received 2007
- 2007 Urban Land Institute Global Awards for Excellence

Why Did It Work?

- We dealt with fears
 - residents (short term)
 - Neighbors (long term)
- We set the agenda
- We really did listen and made changes



