SvR DESIGN COMPANY

Civil Engineering
Landscape Architecture
Environmental Restoration
Planning

Evolution of Landscape Architecture Sustainability in Practice

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PART 1: Design for Function + Aesthetics

PART 2: Integrate maintenance staff/perspective into design process

PART 3: Feedback Loop

PART 1: Design for Function + Aesthetics

- Performance Driven
- Codes
- Layout
- Plant trends
- Soil prep and mulch
- Trees
- Prototypes

Planting Design - Performance

- Is it part of a residential streetscape?

- or part of a downtown streetscape?

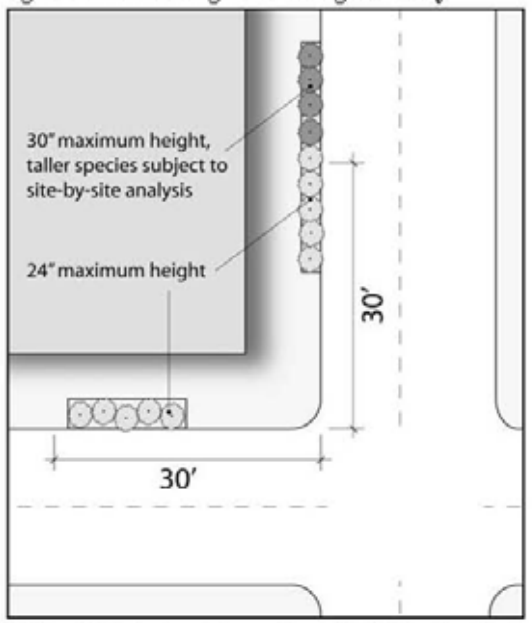
Planting Design-function and aesthetics

- Pollinators
  - Plant palettes reflect desire to encourage pollination
- Urban food production
  - Community gardens
  - Edible plants are moving into public space. (blueberries, herbs, apple trees, etc…) where appropriate

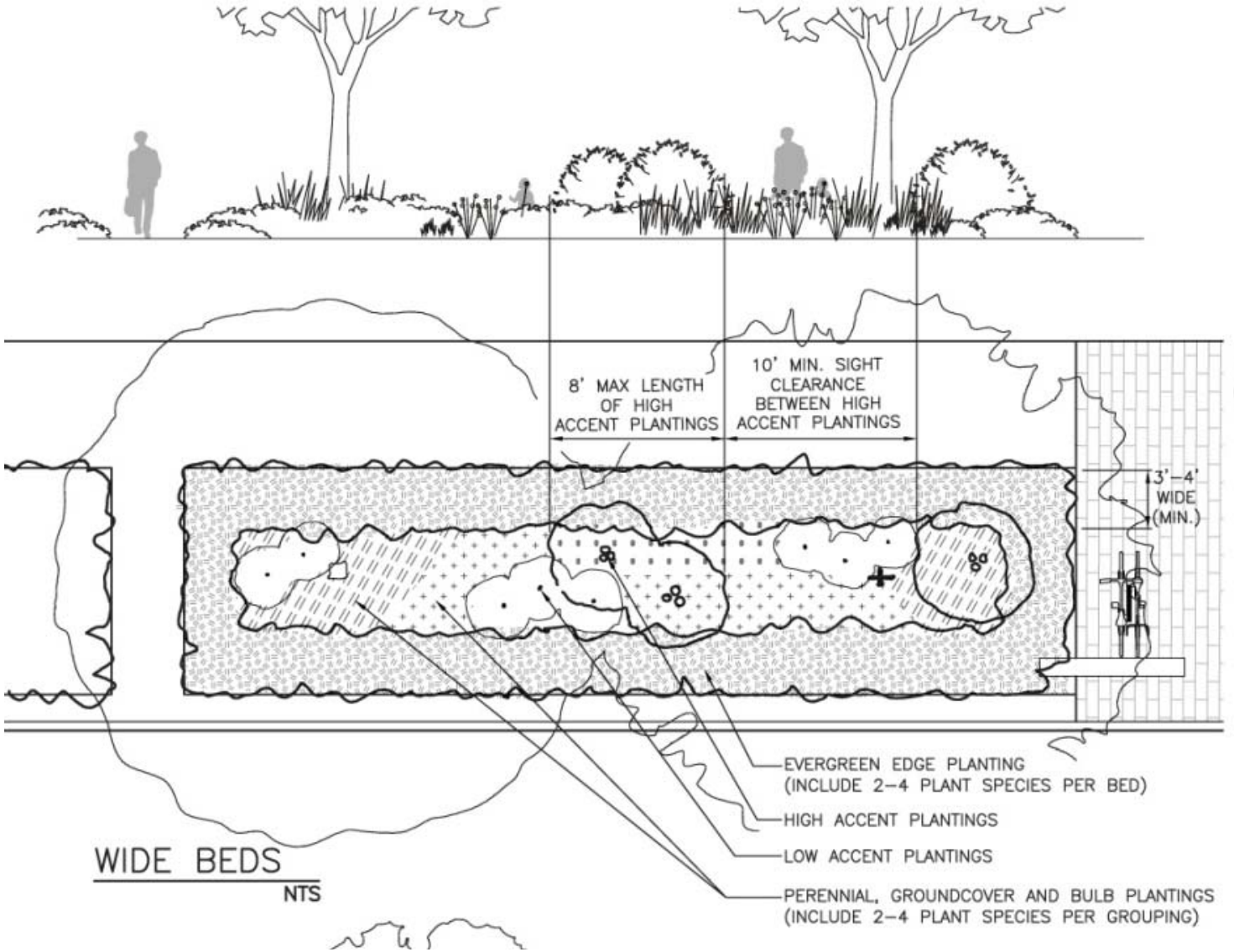
Codes: Things to Consider

- Example Streetscapes
  - What are the city standards?
  - Keep sight lines between pedestrian and vehicular traffic open at street corners.
  - Height - CPTED
  - Tree purpose & placement
  - Who maintains?

Figure 1: Shrub height in the right-of-way



Within 30 feet of an intersection, SDOT limits shrub height to 24". Elsewhere in the right-of-way, they may be 30". Shrubs taller than 30" subject to review.



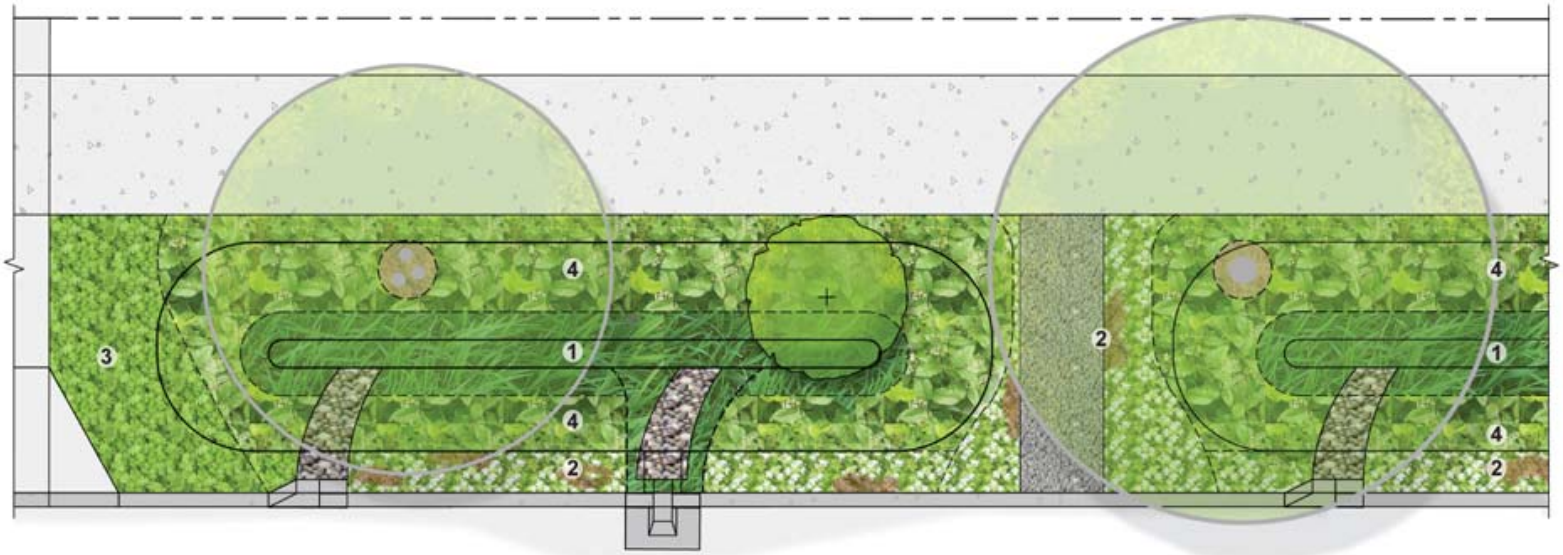
WIDE BEDS

NTS

Codes: Things to Consider

- Setbacks- what space and exposure exists ….and with land use changes what will be there?
- Tree Canopy Coverage – is there above and below space to allow the tree to meet the canopy goal?
- Plant mix- will the approach adapt to changing weather patterns?
- Siting - Is the siting of required natural drainage/green infrastructure techniques (BMP's) providing multiple function?

Layout: Example Rain Garden Zones



SYMBOL	ZONE	PLANT TYPE	LOCATION	FUNCTION	PLANT HT.	DECIDUOUS / EVERGREEN
	1	Emergents, Perennials & Low Shrubs (sedges, rushes, grasses, irises)	Swale Bottom / Lower Slope	Water Quality Treatment	36" max.	Mix
	2	Steppables / Groundcovers/ Arborist Wood Chip Mulch	Crossing / Overflow / Curb Strip / Upper Slope	Steppable	6" +/-	Evergreen
	2	Pervious Concrete Path	Crossing	Access		
	3	Groundcovers / Low Shrubs	Driveway / Intersection	Sight Clearance / Durable	24" max.	Evergreen
	4	Groundcovers / Shrubs	Sidewalk / Upper Slope	Accent / Border / Anchor	6"-36"	Mix
	4	Tall Accent Shrub	Sidewalk / Lower Swale	Accent	4'-6' +/-	Mix
	4	Small Tree / Large Shrub	Sidewalk / Upper Slope	Shade / Water Quality	25' max.	Mix
	2 + 4	Tree	Crossing / Sidewalk / Upper Slope	Shade / Water Quality	20'-50' - varies based on power line location	Mix

TYPICAL BIORETENTION SWALE PLANTING Z

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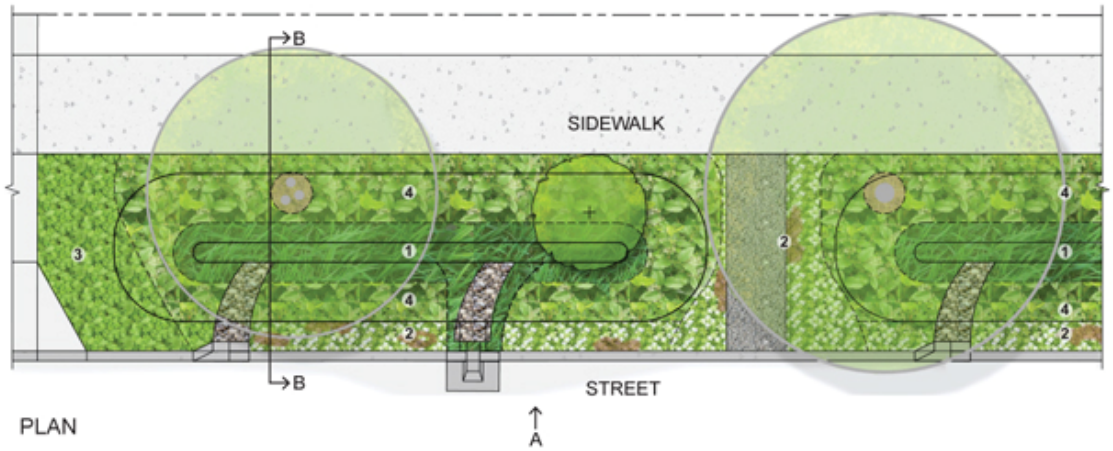
Rain Garden Zones of Planting



PLAN

ELEVATION A

SECTION B-B

Planting Design-Seasonal Interest – it still matters

- Spring and Summer?

- Winter interest?

Planting Palettes

BULB & INTERSECTION PALETTE (UNDER 24" HEIGHT)

PLANT ID & SPECS


Mahonia repens

Low Oregon holly-grape

J F M A M J J A S O N D

Zone 4 / NWN


Helictotrichon sempervirens

Blue oat grass

J F M A M J J A S O N D

Zone 4


Euonymus fortunei 'Interbolwi'

Blondy wintercreeper

J F M A M J J A S O N D

Zone 3,4


Potentilla fruticosa 'Sunset'

Frosty potentilla

J F M A M J J A S O N D

Zone 3,4 / NWN

Bulb & Intersection Palette Characteristics

- Bright foliage
- Medium sized leaves
- Vibrant colored flowers
- Low for visibility

PLANT ID & SPECS


Geranium x 'Gerwat' Rozanne

Rozanne hardy geranium

J F M A M J J A S O N D

Zone 3,4


Narcissus 'Dutch Master' or 'King Alfred'

Daffodil

J F M A M J J A S O N D

Zone 3,4


Carex dolichostachya 'Kage Nishiki' or 'Ice Dance'

Gold fountain sedge

J F M A M J J A S O N D

Zone 3,4


Iberis sempervirens 'Snowflake'

Snowflake candytuft

J F M A M J J A S O N D

Zone 3,4


Euonymus fortunei 'Kewensis'

Wintercreeper euonymous

J F M A M J J A S O N D

Zone 2,3,4

PLANT ID & SPECS


Veronica liwanensis

Speedwell

J F M A M J J A S O N D

Zone 2,3,4


Cornus sericea 'Kelseyii'

Dwarf redtwig dogwood

J F M A M J J A S O N D

Zone 1/ NWN cultivar


Juncus effusus 'Spiralis'

Corkscrew rush

J F M A M J J A S O N D

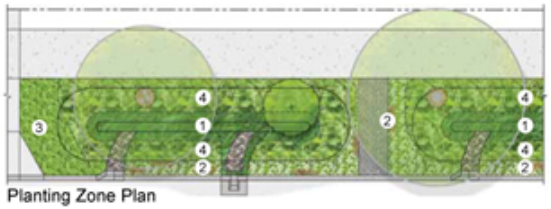
Zone 1/ NWN cultivar


Juncus patens 'Elk blue'

Califonia gray rush

J F M A M J J A S O N D

Zone 1/ NWN cultivar



Planting Zone Plan

FOLIAGE PERIOD
BLOOM PERIOD
FALL / WINTER INTEREST
NWN = NORTHWEST NATIVE OR CULTIVAR

King County Department of Natural Resources and Parks Wastewater Treatment Division

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COMMUNITY MEETING - NOVEMBER 14, 2012

BARTON CSO CONTROL PROJECT WITH GSI

(SHEET D26)

SvR

Plants Trends

- Choose plants that have been tested
  - Many new varieties are beautiful…
  - Vet in real situations to determine if they are hardy, have year round viability and don’t cause unnecessary maintenance
  - Please specify new varieties but mix them in with reliables

Soil Preparation and Mulch

- Mulch
  - One word does not fit all
    - Compost
    - Mulch
    - Wood chips
    - Arborist wood chips
    - Hog fuel
  - Know what you need
  - Specify carefully
  - Request certification
- Soil preparation
  - It is now code driven
  - It service both a drainage and a plant function
  - Testing best but not always funded
  - Results definitely

Trees: slowly being recognized for multiple functions

- Trees provide flow control via interception, transpiration, and increased infiltration. (Ecology 2012 Stormwater Manual)
- Trees reduce heat island affect
- Trees as carbon offsets

Prototypes: From Innovation to Standard Practice

City of Seattle-DPD Tip #532
GSI Bioretention Cells

PART 2: Integrate maintenance staff/perspective into design process

- Reciprocal sharing design ⟷ maintenance
- Who maintains?
- How to get the perspective?
- How to give the perspective?

Plant Maintenance

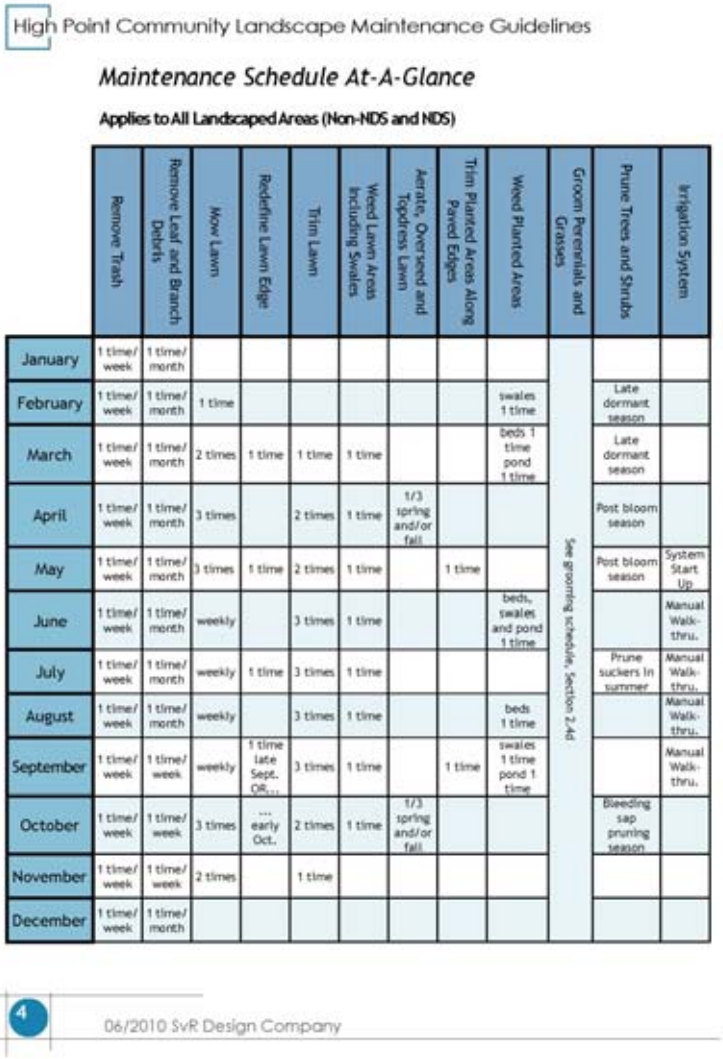
- Start thinking about maintenance at the beginning of the plant design process.
- What is the level of effort that fits the project budget and staffing?
- Will the project be maintained long term by paid staff with an annual budget or will this be maintained by volunteers?
- What tidiness level is appropriate for the location and type of plantings?
- Will plantings be hand watered or automatically irrigated?

Plant Maintenance Basics

- Plan for a high level of maintenance during the first two years.
- A minimum of two years of watering is necessary to establish plantings, even drought tolerant species.
- Weeding regularly from the time of planting until plants have filled is important to stay ahead of the weeds. Weeds also love the rich bioretention soil.
- Select plant species with an annual maintenance schedule in mind.
- Considered the experience and plant knowledge of those maintaining the rain garden when selecting and laying out plants.

Maintenance Schedule

- Develop a maintenance schedule at-a-glance – starting during design.
- This will help identify level of effort and assist in matching your planting design to maintenance capacity.
- This also provides a tool to discuss maintenance with your client.



High Point Community Landscape Maintenance Guidelines

Maintenance Schedule At-A-Glance

Applies to All Landscaped Areas (Non-NDS and NDS)

	Remove Trash	Remove Leaf and Branch Debris	Mow Lawn	Redefine Lawn Edge	Trim Lawn	Weed Lawn Areas Including Swales	Aerate, Overseed and Topdress Lawn	Trim Planted Areas Along Paved Edges	Weed Planted Areas	Groom Perennials and Grasses	Prune Trees and Shrubs	Irrigation System
January	1 time/ week	1 time/ month								See grooming schedule, Section 2.4d		
February	1 time/ week	1 time/ month	1 time						swales 1 time		Late dormant season	
March	1 time/ week	1 time/ month	2 times	1 time	1 time	1 time			beds 1 time pond 1 time		Late dormant season	
April	1 time/ week	1 time/ month	3 times		2 times	1 time	1/3 spring and/or fall				Post bloom season	
May	1 time/ week	1 time/ month	3 times	1 time	2 times	1 time		1 time			Post bloom season	System Start Up
June	1 time/ week	1 time/ month	weekly		3 times	1 time			beds, swales and pond 1 time			Manual Walk-thru.
July	1 time/ week	1 time/ month	weekly	1 time	3 times	1 time					Prune suckers in summer	Manual Walk-thru.
August	1 time/ week	1 time/ month	weekly		3 times	1 time			beds 1 time			Manual Walk-thru.
September	1 time/ week	1 time/ week	weekly	1 time late Sept. OR...	3 times	1 time		1 time	swales 1 time pond 1 time			Manual Walk-thru.
October	1 time/ week	1 time/ week	3 times	... early Oct.	2 times	1 time	1/3 spring and/or fall				Bleeding sap pruning season	
November	1 time/ week	1 time/ week	2 times		1 time							
December	1 time/ week	1 time/ month										

PART 3: FEEDBACK LOOP

- Follow up-
  - designer with contractor
  - designer with owner/maintenance staff
- Transition to maintenance and coordination with operations (as applicable)
- One year check in
- Three to Five year observations
- Mature Landscapes and adaptation
- Share

Follow up: Designer & Contractor

Transition to Maintenance and Coordination with Operations

Example: Discuss Level of Service Acceptable / Unacceptable

ACCEPTABLE MAINTANCE


Mostly healthy vegetation with good appearance


Appearance is good


Occasional weedy species (5-10%)


Some erosion and bare spots (0-5%)

UNACCEPTABLE MAINTENANCE


Debris buildup


Appearance is poor


Weedy


Overgrown

One Year Check In

	High Point Sylvan Way SW	High Point Lanham Place SW	Ballard 28th Ave NW	Portland
AT INSTALLATION				
1+ YEARS AFTER INSTALLATION				
				

Photos were taken during the summer. Conditions vary with seasons.

Three to Five Years
Observe for feedback

Mature Landscapes Intent & Adaptation


at planting


9 years later

Ask questions
Search the internet
and
Share your knowledge

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