



CONTRA COSTA  
**CLEAN WATER**  
P R O G R A M

# STORMWATER C.3 GUIDEBOOK

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*Stormwater Quality Requirements for Development Applications*

6<sup>th</sup> Edition

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Plant Recommendations for Bioretention Facilities and Planter Boxes

Grasses and Grass-like Plants															
Scientific name Common name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood	Wind		
<i>Bromus carinatus</i> California brome	✓			2	1	✓			ok	✓		✓	✓	✓	
<i>Bouteloua gracilis</i> blue grama	✓			1.5	1	✓				✓		✓	✓		Tolerates no summer water, good for non-irrigated remote sites
<i>Carex densa</i> dense sedge	✓			1	1		✓	✓	✓	✓		✓		✓	
<i>Carex obnupta</i> slough sedge	✓			2	1		✓	✓	✓	✓	✓	✓	✓	✓	
<i>Carex praegracilis</i> clustered field sedge	✓	✓		1.5	1.5		✓	✓	✓	✓	✓	✓	✓	✓	
<i>Carex subfusca</i> rusty sedge	✓	✓		1	1		✓		ok	✓	✓	✓	✓	✓	Great for swales
<i>Carex divulsa</i> Berkeley sedge		✓	✓	1	1		✓		ok		✓	✓	✓	✓	AKA <i>Carex tumulicola</i> ,. Full sun along coast.
<i>Deschampsia cespitosa</i> tufted hairgrass	✓			2	1		✓		ok			✓	✓	✓	Can look weedy
<i>Distichlis spicata</i> salt grass	✓			0.3	3		✓	✓	✓	✓	✓	✓	✓	✓	Looks like bermuda grass, withstands foot traffic, for soils with high salt
<i>Eleocharis palustris</i> creeping spikerush	✓			1	1		✓	✓	ok	✓	✓	✓	✓	✓	
<i>Elymus glaucus</i> blue wildrye	✓			1.5	2		✓	✓	ok	✓	✓	✓	✓	✓	good for grazing, difficult to mow, messy looking lawn
<i>Festuca californica</i> California fescue	✓	✓	✓	2	2	✓			ok	✓	✓		✓	✓	
<i>Festuca idahoensis</i> Idaho fescue	✓	✓		1	1	✓	✓		ok	✓	✓		✓	✓	Can mow. Needs light summer water at hot sites
<i>Festuca rubra</i> red fescue	✓	✓		1	1.5	✓	✓		ok	✓	✓	✓	✓	✓	Can mow. Lawn alternative
<i>Festuca rubra 'molate'</i> molate fescue	✓	✓		1	1.5	✓	✓		ok	✓	✓		✓	c	Can mow. Lawn alternative
<i>Hordeum brachyantherum</i>	✓	✓		1.5	1		✓	✓	ok	✓	✓		✓	✓	

Plant Recommendations for Bioretention Facilities and Planter Boxes

meadow barley														
<i>Juncus patens</i> blue rush	✓			2	1	✓	✓	✓	✓		✓		✓	
<i>Leymus triticoides</i> creeping wildrye	✓	✓		3	1	✓	✓	ok	✓	✓	✓	✓	✓	Can mow. Recommended for swales.
<i>Melica californica</i> California melica	✓	✓		1	1	✓			✓			✓	✓	
<i>Melica imperfecta</i> melic	✓	✓		1	1	✓		ok		✓	✓		✓	Part shade inland, light water in Summer to keep green or goes dormant
<i>Muhlenbergia rigens</i> deergrass	✓			3	3	✓	✓	ok	✓		✓		✓	
<i>Nasella pulchra</i> purple needlegrass	✓	✓		2	1	✓	✓	ok	✓		✓	✓	✓	
<i>Nassella lepida</i> foothill needlegrass	✓	✓	✓	1.5	1	✓	✓	ok	✓	✓		✓	✓	
<i>Phalaris californica</i> California canarygrass		✓	✓	1.5	1		✓	✓	ok		✓	✓	✓	Can be aggressive spreader

Plant Recommendations for Bioretention Facilities and Planter Boxes

Herbaceous Perennials and Groundcovers															
Scientific name Common name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood	Wind		
<i>Achillea filipendulina</i> fernleaf yarrow	✓			3	3	✓			✓	✓					
<i>Achillea millefolium</i> common yarrow	✓			1.5	1	✓			ok	✓				✓	Good for hot sites
<i>Achillea tomentosa</i> woolly yarrow	✓	✓		1	1.5	✓	✓		ok	✓			✓		
<i>Aloe striata</i> coral aloe	✓	✓		2	2	✓			ok						Sun along coast, afternoon shade inland
<i>Arctostaphylos hookeri</i> Monterey manzanita	✓	✓		1	4	✓	✓		ok		✓		✓	✓	Better in part shade in hot sites
<i>Arctostaphylos uva-ursi</i> kinnick-kinnick	✓	✓		1	15	✓	✓		ok		✓		✓	✓	Full sun at coast, part shade inland. Cultivars to try include 'emerald carpet,' 'Point Reyes,' 'San Bruno Mountain' depending on site
<i>Ceratostigma plumbaginoides</i> dwarf plumbago		✓		0.75	5	✓	✓		✓	✓					
<i>Epilobium canum</i> California fuchsia	✓	✓		1	4	✓			ok					✓	
<i>Eriogonum fasciculatum</i> flattop buckwheat	✓			3	4	✓				✓				✓	
<i>Eschscholzia californica</i> California poppy	✓			1	1	✓			ok	✓	✓	✓	✓	✓	
<i>Fragaria chiloensis</i> beach strawberries	✓	✓	✓	0.3	2	✓			ok		✓			✓	
<i>Gazania spp.</i> treasure flower	✓			0.5	2	✓	✓		✓	✓			✓		
<i>Iris douglasiana</i> Douglas iris	✓	✓		1.5	2	✓	✓		ok	✓			✓	✓	Also, Iris hybrids

Plant Recommendations for Bioretention Facilities and Planter Boxes

Scientific name Common name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood	Wind		
<i>Lotus scoparius</i> deerweed	✓			4	3	✓				✓		✓		✓	
<i>Lupinus bicolor</i> miniature lupine	✓			1	1	✓					✓	✓		✓	Adds nitrogen
<i>Mimulus aurantiacus</i> common monkeyflower	✓	✓		3	3	✓			ok			✓		✓	
<i>Mimulus cardinalis</i> scarlet monkeyflower	✓	✓	✓	3	3	☐	✓	✓	✓			✓		✓	Aggressive seeder
<i>Polygonum capitatum</i> pink knotweed	✓	✓		0.5	4	✓			✓	✓	✓		✓		
<i>Prunella vulgaris</i> self heal	✓	✓				✓	✓		ok		✓	✓	✓	✓	
<i>Rudebeckia californica</i> California coneflower	✓			3	2	✓	✓		ok	✓		✓		✓	
<i>Salvia clevelandii</i> Cleveland sage						✓									
<i>Scaevola 'mauve clusters'</i> fan flower	✓	✓		1	4	✓				✓			✓		
<i>Sedum spathulifolium</i> stone crop	✓					✓			ok	✓			✓	varies	For above the high water line
<i>Sisyrinchium bellum</i> blue eyed grass				1	1	✓			ok	✓	✓	✓	✓	✓	
<i>Sisyrinchium californicum</i> yellow eyed grass	✓	✓		1	1		✓		✓	✓	✓	✓	✓	✓	
<i>Solidago californica</i> California goldenrod		✓		3	2	✓	✓		ok	✓		✓		✓	
<i>Stachys byzantine</i> lamb's ears	✓	✓		1	3	✓			ok	✓	✓		✓		
<i>Verbena tenuisecta</i> moss verbena	✓			0.5	5	✓			ok	✓	✓		✓		

Plant Recommendations for Bioretention Facilities and Planter Boxes

Small Shrubs															
Scientific name Common name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood	Wind		
<i>Artemisia californica</i> California sagebrush	✓			2-5	4-5	✓				✓	✓		✓	✓	Will not tolerate sprinklers
<i>Baccharis pilularis</i> 'Twin Peaks' or Pigeon Point' dwarf coyote brush	✓			2	6	✓	✓		ok	✓	✓	✓	✓	c	
<i>Cistus skanbergii</i> hybrid rockrose	✓			3	5	✓	✓		✓	✓	✓	✓	✓		Best with annual shearing
<i>Correa 'Carmine Bells'</i> or 'Ivory bells' Australian fuchsia	✓	✓		3	6	✓	✓		✓	✓			✓		Ivory bells does not tolerate wind. Attracts hummingbirds. Sunset Zones 16-17 (not recommended for E. Contra Costa)
<i>Erigeron glaucus</i> seaside daisy	✓			1	1.5				ok		✓			✓	
<i>Eriogonum crocatum</i> saffron buckwheat	✓			1.5	1.5	✓				✓	✓		✓	✓	
<i>Eriogonum umbellatum</i> sulfur buckwheat	✓			0.7	3	✓			ok	✓			✓	✓	
<i>Grevillea lanigera</i> woolly grevillea	✓			4	6	✓				✓			✓		Sunset Zones 15-24 (not recommended for E. Contra Costa)
<i>Lavandula spp.</i> lavender	✓			1.5	1.5	✓			ok	✓	✓				
<i>Mahonia pinnata</i> California holly grape	✓	✓	✓	4	4	✓	✓			✓		✓	✓	✓	
<i>Mahonia repens</i> creeping Oregon grape	✓	✓		2	3	✓	✓		ok		✓	✓		✓	
<i>Rosmarinus officinalis</i> rosemary	✓			2.5	5	✓			✓	✓	✓		✓		
<i>Rubus ursinus</i> California blackberry		✓	✓	3	5		✓	✓	ok	✓	✓	✓	✓	✓	Thorns. Harbors beneficial insects

Plant Recommendations for Bioretention Facilities and Planter Boxes

<i>Symphoricarpos albus</i> common snowberry	✓	✓	✓	4	4	✓	✓	✓	ok	✓			✓	Adaptable to many conditions
<i>Westringia fruticosa</i> coast rosemary	✓			4	8	✓				✓	✓		✓	
<i>Whipplea modesta</i> whipplevine		✓	✓	0.5	3		✓	✓	✓		✓	✓	✓	Sunset zones 16-17, 19-24 only (not recommended E. Contra Costa), best for moist shady spots

Large Shrubs

Scientific name Common name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood	Wind		
<i>Alyogyne huegelii</i> blue hibiscus	✓			6	5	✓				✓					Very low water after second year, Sunset zones 15-17 & 20-24 (not recommended E. Contra Costa)
<i>Arctostaphylos densiflora</i> 'Howard McMinn' McMinn manzanita	✓	✓		3	7	✓				✓			✓	c	
<i>Baccharis pilularis</i> coyote brush	✓			6	7	✓	✓		ok	✓	✓	✓	✓		Fast-growing, short-lived
<i>Berberis darwinii</i> Darwin's barberry	✓	✓		6	6	✓				✓		✓	✓		Sprinklers will kill foliage
<i>Carpenteria californica</i> Bush anemone	✓	✓		6	4	✓	✓		✓	✓				✓	Interior climate with occasional water otherwise low water needs
<i>Ceanothus</i> spp. Various ceanothus	✓	✓		varies	varies	✓			<input type="checkbox"/>	✓			✓	✓	fast-growing but short-lived
<i>Cercis occidentalis</i> western redbud	✓			12	8	✓			<input type="checkbox"/>	✓		✓	✓	✓	Prune low branches for small tree form, susceptible to disease if overwatered
<i>Cotinus coggygia</i> smoke bush	✓			15	15	✓			<input type="checkbox"/>			✓	✓		No water after second year
<i>Eriogonum arborescens</i> Santa Cruz Island buckwheat	✓			3	5	✓			✓	✓	✓	✓	✓	✓	Low water after second year

Plant Recommendations for Bioretention Facilities and Planter Boxes

Scientific name Common name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood	Wind		
<i>Eriogonum giganteum</i> St. Catherines lace	✓			5	6	✓			<input type="checkbox"/>		✓	✓	✓	✓	best at coast, tolerant of unwatered inland garden
<i>Fremontodendron californicum</i> flannel bush	✓			20	14	✓			<input type="checkbox"/>	✓		✓		✓	Fast-growing, short-lived
<i>Garrya elliptica</i> Coast silktassel	✓	✓		8	8	✓	✓		✓	✓		✓	✓	✓	'Evie' is compact variety
<i>Heteromeles arbutifolia</i> toyon	✓	✓	✓	7	5	✓	✓		✓	✓		✓		✓	Doesn't respond well to pruning low branches
<i>Juniperus chinensis</i> 'Mint Julep' mint julep juniper	✓	✓		3	6	✓	✓		✓	✓		✓			
<i>Lonicera hispidula</i> California honeysuckle	✓	✓	✓	4	2		✓	✓	✓		✓	✓		✓	Climbing vine-like. Best in part shade. Attracts birds
<i>Lonicera involucrate</i> twinberry honeysuckle	✓	✓	✓	6	3		✓	✓	✓		✓	✓		✓	Best in part shade. Attracts birds
<i>Nandina domestica</i> heavenly bamboo	✓	✓		4	3	✓	✓		✓	✓		✓			
<i>Philadelphus coronaries</i> sweet mock orange	✓	✓		10	10		✓		✓						Best with annual pruning
<i>Physocarpus capitatus</i> Pacific ninebark	✓	✓		5	5	✓	✓	✓	ok		✓	✓		✓	Part shade and summer water required in hot locations
<i>Pittosporum eugeniodes</i> Pittosporum	✓	✓		40	15	✓	✓		✓	✓		✓	✓		shear to control height
<i>Pittosporum tenuifolium</i> Pittosporum	✓	✓		40	15	✓	✓		✓	✓		✓	✓		shear to control height
<i>Prunus illicifolia</i> holly leaf cherry	✓	✓		15	15	✓	✓			✓	✓	✓	✓	✓	
<i>Prunus lyonii</i> Catalina cherry	✓	✓		15	15	✓	✓			✓	✓	✓	✓	✓	
<i>Rhamnus californica</i> California coffeeberry	✓	✓		3-15	6	✓			✓	✓		✓	✓	✓	'Eve Case' is compact with broad foliage
<i>Rhus integrifolia</i>	✓	✓		8	6	✓			✓	✓			✓	✓	Shear to hedge if desired



Plant Recommendations for Bioretention Facilities and Planter Boxes

lemonade berry															
<i>Ribes malvaceum</i> chaparral currant	✓	✓		5	5	✓	✓		ok	✓				✓	
<i>Ribes sanguineum</i> flowering currant		✓	✓	5-12	5-12	✓	✓		✓	✓	✓		✓	Needs good air movement to avoid white fly	
<i>Ribes speciosum</i> fuchsia-flowered gooseberry	✓	✓	✓	3-6	3-6	✓	✓		✓	✓	✓		✓		
<i>Rosa californica</i> California wild rose	✓	✓		3	3-6		✓	✓	ok	✓	✓	✓	✓	hooked thorns not compatible with foot traffic	
<i>Rosa gymnocarpa</i> wood rose	✓	✓		2	3		✓		ok	✓	✓	✓	✓		
<i>Vitis californica</i> California grape	✓	✓		10	2-10	✓	✓		✓	✓	✓	✓	✓	Climbing vine. Best in full sun. Can be aggressive in moist area.	
<i>Vitis girdiana</i> desert grape	✓			8	2-11	✓	✓		✓		✓	✓	✓	Climbing vine. May be more suited to biofilter soils than californica.	

Small Trees

Scientific name Common name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood	Wind		
<i>Acer Negundo</i> box elder	✓	✓	✓	30	30	✓	✓		ok	✓	✓	✓	✓	✓	Tough shade tree, deciduous
<i>Arbutus unedo</i> strawberry tree	✓	✓				✓	✓		✓	✓	✓				'Elfin King' is dwarf from 6' tall
<i>Arctostaphylos manzanita</i> common manzanita	✓			6-15	8-12	✓				✓			✓	✓	Prune to be small tree. "Dr. Hurd" is more tolerant of summer water.
<i>Cercis occidentalis</i> western redbud	✓	✓		12	8	✓				✓			✓	✓	Prune low branches for small tree form; susceptible to disease if overwatered.
<i>Eriobotrya deflexa</i> bronze loquat	✓	✓		18	25	✓	✓		✓	✓		✓			Monthly deep watering
<i>Eriobotrya japonica</i> Japanese loquat	✓	✓		25	20	✓	✓		✓	✓		✓			Susceptible to blight under stress
<i>Fraxinus angustifolia</i> Raywood ash	✓			30	30		✓		✓	✓					Fall color
<i>Fraxinus dipetala</i> California ash	✓	✓		20	20				ok	✓		✓		✓	

Plant Recommendations for Bioretention Facilities and Planter Boxes

Scientific name	Light Preference			Size (feet)		Watering				Tolerates				CA Native	Other Notes
	Common name	Sun	Part	Shade	Ht.	Width	L	M	H	Summer	Heat	Coast	Flood		
<i>Fraxinus latifolia</i> Oregon ash	✓	✓	✓	30	25	✓				✓	✓	✓		✓	
<i>Fraxinus velutina</i> velvet ash	✓			25	15	✓	✓			ok	✓		✓	✓	
<i>Garrya elliptica</i> coast silk tassel	✓	✓		20	20	✓	✓			ok		✓			Afternoon shade inland, responds well to pruning
<i>Laurus 'Saratoga'</i> hybrid laurel	✓	✓		12-40	12-40	✓					✓		✓	✓	prune for tree form
<i>Myrica californica</i> Pacific wax myrtle	✓	✓	✓	10-30	10-30	✓	✓					✓			best at coast
<i>Pinus thumbergiana</i> Japanese black pine	✓	✓		25	20	✓				✓	✓			✓	Asymmetrical, often leaning habit
<i>Pittosporum undulatum</i> victorian box	✓	✓		15	15	✓	✓			✓					Sunset zones 16-17, 21-24 only (not recommended E. Contra Costa. Prune low branches for tree form.
<i>Prunus ilicifolia</i> holly leaf cherry	✓	✓		15	15	✓	✓				✓	✓		✓	
<i>Prunus lyonii</i> Catalina cherry	✓	✓		15	15	✓	✓				✓	✓		✓	
<i>Prunus serrulata</i> "shirofugen" cherry	✓			25	25		✓					✓	✓		Additional cultivars

## Plant Recommendations for Bioretention Facilities and Planter Boxes

### Key

Water Preference- Low/Moderate/High	We have provided recommendations for irrigation. All plants should be watered with more frequency during the first two years after planting. After this establishment period, Low water use plants will only need supplemental irrigation at the hottest and driest sites. Plants with Moderate irrigation needs will be best with occasional supplemental water (once per week to once per month) and plants with High irrigation needs will be best with more frequent watering especially during periods of drought in the cooler seasons.
Water Preference- Summer Irrigation	Plants with a check in this column will not withstand a long period of summer drought without irrigation. Plants with an 'ok' in this column are tolerant of, but do not require, frequent summer irrigation. Plants with nothing in this column may not tolerate summer irrigation.
Tolerates Heat	A check in the heat column indicates that the plant will tolerate hot sites. It should not be confused with a plants preference for sun. Absence of the check indicates it should only be used in areas close to the Bay or other cool sites.
Tolerates Coast	The coast column indicates plants that perform well within 1,000 feet of the ocean or bay. Most of these plants tolerate some amount of salt air, fog, and wind.
Tolerates Flooding	
Tolerates Wind	A check in the wind column means that the plant will tolerate winds of ten miles per hour or more.
CA Native - c	Cultivar of California native. Cultivars offer habitat benefits to native wildlife and are adapted to the local climate but have reduced genetic diversity.
Other Notes - Sunset Climate Zones	Under the Other Notes category, we have indicated appropriate Sunset Climate Zones only for plants that will not do well across all of Contra Costa County. Please refer to the <i>Sunset Western Garden Book</i> which defines climate zones in the Bay Area based on elevation, influence of the Pacific Ocean, presence of hills and other factors.