

DRAFT
STORMWATER TREATMENT FACILITIES
OPERATION AND MAINTENANCE PLAN
for
Pine Hollow Estates
Clayton, California
Subivision No. 8933

PARTIAL DRAFT
21 DECEMBER 2005

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I. STORMWATER BMP INSPECTION AND MAINTENANCE LOGS

Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton	
Address	
Begin Date	End Date

Date	BMP ID#	BMP Description	Inspected by:	Cause for Inspection	Exceptions Noted	Comments and Actions Taken

Instructions: Make copies of this blank form. Record all inspections and maintenance for all treatment BMPs on this form. Use additional log sheets and/or attach extended comments or documentation as necessary. Submit a copy of the completed log with the annual independent inspectors' report to the City of Clayton, and start a new log at that time.

- BMP ID# — Always use ID# from the Operation and Maintenance Manual.
- Inspected by — Note all inspections and maintenance on this form, including the required independent annual inspection.
- Cause for inspection — Note if the inspection is routine, pre-rainy-season, post-storm, annual, or in response to a noted problem or complaint.
- Exceptions noted — Note any condition that requires correction or indicates a need for maintenance.

- Comments and actions taken — Describe any maintenance done and need for follow-up.

II. DESIGNATION OF INDIVIDUALS RESPONSIBLE FOR STORMWATER TREATMENT
BMP OPERATION AND MAINTENANCE

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #1 Planter Box PB1 and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #2 Planter Box PB2.1, Planter Box PB2.2 and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #3 Planter Box PB3.2 and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #4 Planter Box PB4.1, Planter Box PB4.2, and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #5 Planter Box PB5.1, Planter Box PB5.2, and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #6 Planter Box PB-6.1, Planter Box PB6.2, and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #7 Planter Box PB7 and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Lot #8 Planter Box PB8.1, Planter Box PB8.2 and connections	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

Date Completed	
Facility Name Pine Hollow Estates, Pine Hollow Road, Clayton—Joint Maintenance Planter Box PB3.1	
Facility Address	
Homeowner's Designated Contact for Operation and Maintenance	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	
Homeowner's Off-Hours or Emergency Contact	
Name:	Title or Position:
Telephone:	Alternate Telephone:
Email:	

III. UPDATES, REVISIONS, AND ERRATA

IV. INTRODUCTION

IV.A. Site Description

Pine Hollow Estates is eight single-family detached homes, a public street, and the necessary water, wastewater, and stormwater infrastructure. The project site is located between Pine Hollow Road and Verna Way in the City of Clayton (Figure 1). The minimum proposed net lot size is approximately 12,637 square feet, and the maximum lot size is approximately 14,427 square feet.

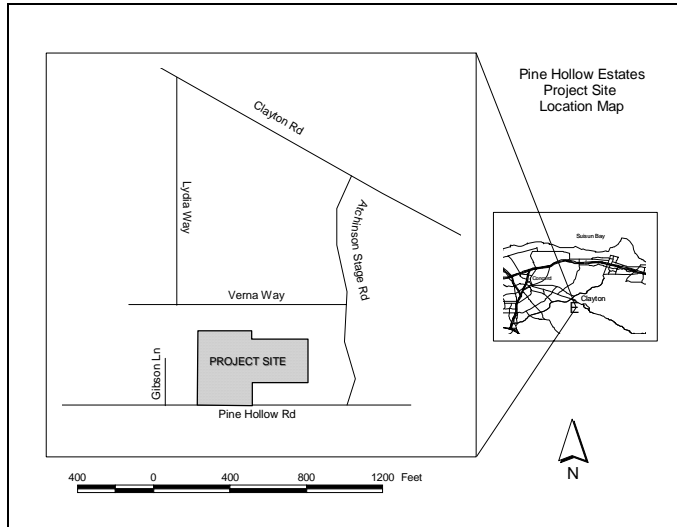


Figure 1. Project Location

pervious lawn areas (“self-treating” areas) to perimeter drainage swales and then to the City’s storm drainage system. This prevents the treatment facilities from being overloaded with runoff and also prevents sediments from the landscaped areas from washing on to the pavement and subsequently entering the treatment facilities. **These drainage characteristics of the yards and swales should not be altered.**

1. Swales capture runoff from the upgradient lots south of the development which drain to Lots 5, 6, and 7, and direct that runoff around the perimeter of the site to a storm drain leading to the City’s storm drain system.
2. Planter Box PB4.2, which treats runoff from Area A4.2 (see description below) discharges to a perimeter swale.
3. “Self-treating” lawn areas on each lot are sloped away from the building pads toward perimeter swales.

The perimeter swales are designed for conveyance, not treatment.

All runoff from roofs, driveways, and streets is directed to stormwater planter boxes for treatment. The design does not use self-retaining areas.

IV.B. Existing Site Condition

The 2.8-acre, “L”-shaped project site slopes about 3% downward to the north, from about 436 feet in elevation at Pine Hollow Road to about 423 feet at its border with residential lots to the north.

The Contra Costa County Soil Survey (1977) indicates that the soil type on the project site is Perkins gravelly loam (PaC), a well-drained soil found on stream terraces. Most gravelly loams are in Hydrologic Soil Group “C”.

IV.C. Self-Treating Areas

The site’s stormwater management design directs runoff from some

IV.D. Summary of Stormwater Treatment Facilities

The roof of each of the eight residences drains via gutters and downspouts to drains located around the perimeter of the structure. These drains are piped to one of fourteen stormwater infiltration planter boxes located on the private lots. The common street and most driveways are sloped to drain to Planter Box PB3.1, which straddles the lot line between Lots 2 and 3.

The Stormwater Treatment Facility Exhibit (Sheet 11 of Improvement Plans) [update when as-builts are available] shows the planter boxes and the corresponding areas of the site that drain to each planter box. The sizes of each drainage area and the corresponding planter box are shown in the table on the Stormwater Treatment Plan sheet.

V. RESPONSIBILITY FOR MAINTENANCE [TO BE REVIEWED/REVISED]

Each lot owner is responsible for maintaining the private drainage system, including rain gutters, downspouts, areas drains, risers, inlets, outlets, overflows, clean-outs, pipelines, and connectors, leading to the Planter Boxes.

The following table states maintenance responsibility for each of the Planter Boxes:

Table 1. Responsibility for Maintenance of Planter Boxes

Planter Box	Maintenance Responsibility
PB1	Owner of Lot 1
PB2.1	Owner of Lot 2
PB2.2	Owner of Lot 2
PB3.1	Joint Maintenance by Owners of Roadway Lots
PB3.2	Owner of Lot 3
PB4.1	Owner of Lot 4
PB4.2	Owner of Lot 4
PB5.1	Owner of Lot 5
PB5.2	Owner of Lot 5
PB6.1	Owner of Lot 6
PB6.2	Owner of Lot 6
PB7	Owner of Lot 7
PB8.1	Owner of Lot 8
PB8.2	Owner of Lot 8

As described in the Declaration of Covenants, Conditions, and Restrictions of Pine Hollow Estates, Planter Boxes will be maintained by the property owner, with the exception of Planter Box PB 3.1. Maintenance of Planter Box PB3.1 will be conducted by a contractor retained jointly by the homeowners.

V.A. Contact Information for Responsible Individuals

Contact information for each homeowner's representative is shown on the designation forms in Section II. A new form must be completed and added to Section II whenever any of this information changes or is updated. When this occurs, a copy of the new table must be faxed to the City of Clayton at [Fax number and name or title of City staff person].

V.B. Funding for Operation and Maintenance

The Covenants, Conditions, and Restrictions for Pine Hollow Estates require each homeowner to maintain, at their sole expense, the "biofiltration beds" (planter boxes) on their respective lots, with the exception of Planter Box PB3.1. [No apparent mechanism for funding maintenance of "Project Drainage System", i.e. Planter Box PB3.1.

V.C. Staff Training Program

Landscape contractors retained by the homeowners individually or jointly will familiarize themselves with the purposes, features, and mode of operation of the stormwater infiltration planters as described in this O&M manual.

As will be reflected in contracts for landscape maintenance and other maintenance services, landscape maintenance supervisors and employees will be informed of the following specific maintenance requirements for the stormwater infiltration planters:

- Maintain the design elevation of the soil or mulch surface.
- Avoid and remove any soil or debris blocking planter inlets and outlets.
- Use only compost or other organic material to amend or condition soils. Amendments to planter soils must not reduce the infiltration rate.
- Minimize applications of fertilizers.
- Applications of pesticides are to be conducted only by a licensed pest control operator trained in the use of Integrated Pest Management.

VI. SUMMARY OF DRAINAGE AREAS AND BMPS

Drainage areas and locations of treatment BMPs are shown on the Stormwater Treatment Plan (Sheet 11 of the Improvement Plans. The drainage areas and treatment BMPs are summarized in Table 2 and discussed below.

Table 2. Impervious Areas and Infiltration Planter Boxes.

AREA ID No.	IMPERVIOUS SURFACE DESCRIPTION	IMPERVIOUS SURFACE AREA (SF)	BMP ID No.	SIZING FACTOR	MIN. REQ'D. BMP SURFACE AREA IMPERVIOUS SURFACE AREA x SIZING FACTOR	BMP SURFACE AREA AS DESIGNED
L O T S						
A1	ROOF	3,617 x 1.3 [*] =4,702	PB1	0.04	188 (SF)	32 X 6 = 192 (SF)
A2.1	ROOF	2,088 x 1.3 [*] =2,714	PB2.1	0.04	108	6 X 18 = 108
A2.2	ROOF	1,583 x 1.3 [*] =2,058	PB2.2	0.04	82	7 X 12 = 84
A3.1	ROOF + A9	(**)=21,080	PB3.1	0.04	843	17 X 50 = 850
A3.2	ROOF	875 x 1.3 [*] =1,138	PB3.2	0.04	46	5 X 10 = 50
A4.1	ROOF	1,401 x 1.3 [*] =1,821	PB4.1	0.04	73	7 X 11 = 77
A4.2	ROOF	2,267 x 1.3 [*] =2,947	PB4.2	0.04	118	10 X 12 = 120
A5.1	ROOF	1,522 x 1.3 [*] =1,978	PB5.1	0.04	79	8 X 10 = 80
A5.2	ROOF + DRIVE WAY	(***)=3,419	PB5.2	0.04	136	7 X 20 = 140
A6.1	ROOF	2,148 x 1.3 [*] =2,792	PB6.1	0.04	112	7 X 16 = 112
A6.2	ROOF	1,504 x 1.3 [*] =1,955	PB6.2	0.04	78	8 X 10 = 80
A7	ROOF + DRIVE WAY	(****)=5,144	PB7	0.04	206	11 X 19 = 209
A8.1	ROOF	2,700 x 1.3 [*] =3,510	PB8.1	0.04	140	8 X 18 = 144
A8.2	ROOF	971 x 1.3 [*] =1,192	PB8.2	0.04	48	6 X 8 = 48
TOTAL FOR LOTS		56,450			2,257	2,294

VI.A. Specific Descriptions of Each Drainage Area and Planter Box

Specific descriptions of each drainage area and planter box follow:

Area A1. Area A1 is the roof of the residence on Lot 1. Drainage from Area A1 is facilitated by area drains and 4-inch PVC pipes leading to Planter Box PB1, which is located on Lot 1. As with other lot areas, for the purpose of sizing Planter Box PB1, the square footage of Area A1 has been multiplied by 1.3 to account for the potential future addition of walkways, patios, and other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB1 is connected to the storm drain on the westerly side of the street fronting the lot.

Area A2.1. Area A2.1 is the southern portion of the roof of the residence on Lot 2. Drainage from Area A2.1 is facilitated by area drains on the east and south sides of the structure leading to Planter Box PB2.1, which is located on the southeast corner of Lot 2. For the purpose of sizing Planter Box PB2.1, the square footage of Area A2.1 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB2.1 is connected to the storm drain on the westerly side of the street fronting the lot.

Area 2.2. Area 2.2 is the northern portion of the roof of the residence on Lot 2. Drainage from Area A2.1 is facilitated by area drains on the west and north sides of the structure leading to Planter Box PB2.2, which is located on the north side of Lot 2. For the purpose of sizing Planter Box PB2.2, the square footage of Area A2.2 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB2.2 is connected to the storm drain on the westerly side of the street fronting the lot.

Area A3.1. Area A3.1 comprises most of the roof area (except the eastern portion) of the residence on Lot 3. Drainage from Area A3.1 is facilitated by area drains on the west and south sides of the structure leading to Planter Box PB3.1. For the purpose of sizing Planter Box PB3.1, the square footage of Area A3.1 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Area A9 (see below) also drains to Planter Box PB3.1.

Area A3.2. Area A3.2 is the eastern portion of the roof of the residence on Lot 3. The roof area has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Drainage from Area A3.1 is facilitated by an area drain on the east side of the structure leading to Planter Box PB3.2, which is located on the southeast corner of Lot 3. Overflow and underdrainage from Planter Box PB3.2 is connected to the storm drain manhole due south in the street fronting the lot.

Area A4.1. Area A4.1 is the southern portion of the roof of the residence on Lot 4. Drainage from Area A4.1 is facilitated by area drains on the south side of the structure leading to Planter Box PB4.1, which is located at the southwest corner of Lot 4. For the purpose of sizing Planter Box PB4.1, the square footage of Area A4.1 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB4.1 is connected to the storm drain in the street fronting the lot.

Area A4.2. Area A4.2 is the northern and eastern portion of the roof of the residence on Lot 4. Drainage from Area A4.2 is facilitated by area drains on the north and east sides of the structure leading to Planter Box PB4.2, which is located near the northeast corner of Lot 4. For the purpose of sizing Planter Box PB4.2, the square footage of Area A4.2 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB4.2 is connected to the perimeter swale on the northern edge of the lot.

Area A5.1. Area A5.1 comprises the southern portion of the roof of the residence on Lot 5. Drainage from Area A5.1 is facilitated by area drains on the east and south sides of the structure leading to Planter Box PB5.1, which is located near the southwest corner of Lot 5. For the purpose of sizing Planter Box PB5.1, the square footage of Area A5.1 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB5.1 is connected to the storm drain running northward through the cul-de-sac fronting the lot.

Area A5.2. Area A5.2 comprises the northern portion of the roof of the residence on Lot 5 and the driveway for the residence. Drainage from Area A5.2 is facilitated by area drains on the east and north sides of the structure and a trench drain in the driveway which lead to Planter Box PB5.2, located on the north side of the cul-de-sac on which the lot faces. Overflow and underdrainage from Planter Box PB5.2 is connected to the storm drain running northward from the cul-de-sac fronting the lot.

Area A6.1. Area A6.1 is the southern portion of the roof of the residence on Lot 6. Drainage from Area A6.1 is facilitated by area drains on the east, south, and west sides of the structure, which lead to Planter Box PB6.1, located on Lot 6 on the south side of the cul-de-sac on which the lot faces. For the purpose of sizing Planter Box PB6.1, the square footage of Area A6.1 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB6.1 is connected to the storm drain manhole in the cul-de-sac.

Area A6.2. Area A6.2 is the northern portion of the roof of the residence on Lot 6. Drainage from Area A6.2 is facilitated by area drains on the east and north sides of the structure, which lead to Planter Box PB6.2, located on Lot 6 on the east side of the cul-de-sac on which the lot faces. For the purpose of sizing Planter Box PB6.2, the square footage of Area A6.2 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB6.2 is connected to the storm drain manhole in the cul-de-sac.

Area A7. Area A7 is the roof and driveway of the residence on Lot 7. Drainage from Area A7 is facilitated by a trench drain in the driveway and by area drains on each side of the structure which lead to Planter Box PB7, located on Lot 7 on the street to the north of the lot. Overflow and underdrainage from Planter Box PB7 is connected to the storm drain in the adjacent street.

Area A8.1. Area A8.1 is the southern portion of the roof of the residence on Lot 8. Drainage from Area A8.1 is facilitated by area drains on the east and south sides of the structure which lead to Planter Box PB8.1, located near the southwest corner of on Lot 8. For the purpose of sizing Planter Box PB8.1, the square footage of Area A8.1 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB8.1 is connected to a storm drain manhole in the street on which the lot faces.

Area A8.2. Area A8.2 is the northern portion of the roof of the residence on Lot 8. Drainage from Area A8.2 is facilitated by area drains on the north side of the structure which lead to Planter Box PB8.2, located near the northwest corner of Lot 8. For the purpose of sizing Planter Box PB8.2, the square footage of Area A8.2 has been multiplied by 1.3 to account for the future addition of other impervious surfaces on the lot. Overflow and underdrainage from Planter Box PB8.2 is connected to the storm drain in the adjacent street.

Area A9. Area A9 is the street and cul-de-sacs providing access to all eight parcels, plus the driveways of parcels 1, 2, 3, 4, 6, and 8. Area A9 drains to via curb and gutter to Planter Box PB3.1, which also receives runoff from Area A3.1. Planter Box PB3.1 straddles the property line between Lots 2 and 3. Overflow and underdrainage from Planter Box PB3.1 is connected to a storm drain manhole in the street just east of the planter box.

VI.B. Features of All Fourteen Planters

Relevant design criteria applicable to all planter boxes are:

- Minimum 6" deep reservoir at top of planter
- 18" deep sandy loam with minimum infiltration rate of 5"/hour.
- 12" deep layer of ½" drain rock.
- Filter fabric between soil and gravel layers
- Perforated pipe underdrain with cleanouts and connection to storm drain or discharge point.
- Splash blocks or cobbles at inlets and inlet pipes
- Native soils protected against compaction during construction.
- Irrigation system with connection to water supply.

The stormwater planters operate by filtering the design storm flow through 18 inches of sandy loam. Stormwater planters and other biofilters do not depend on surface detention time to allow pollutants to settle out or be trapped by vegetation. Instead, pollutants adhere to soil particles as runoff filters vertically through the soil and collects in the gravel layer below. After collecting in this gravel layer, the treated runoff seeps into a perforated pipe underdrain and is conveyed to the City of Clayton storm drain. Some runoff will infiltrate into the underlying native soil.

The benefits of stormwater planters include:

- The stormwater planter is capable of removing very fine particles (<60µm) that are deposited from the air and collect on impervious surfaces.
- The planters provide detention within the pores of the gravel and soil layers and, during larger storms, in the surface reservoir as well. Stormwater planters can eliminate runoff from small storms and reduces peaks and volumes from larger storms, thereby mimicking

the pre-development hydrology of the site and partially controlling hydrograph modification impacts of the development.

VII. DOCUMENTATION OF BMP CONSTRUCTION [TO BE COMPLETED AND UPDATED]

VII.A. Details of Construction

[Reference and include construction drawings marked up “as built” showing locations of drains and subsurface piping. Note here the specifications of:

- Sandy loam soil
- Gravel used in drainage layer
- Filter fabric
- Perforated pipe underdrain
- Overflow]

VII.B. Planting Plan

The landscaping plan for Pine Hollow Estates (Sheets L-1 through L-4) shows the planting plan for the planter boxes. Selected plants for the planter boxes are *Carex Elata* “Bowes Golden” sedge and *Phormium* “Bronze Baby” dwarf flax.

VII.C. Irrigation System

The irrigation system for the development is shown on Sheet L-5 of the construction plans. Irrigation of planter boxes is by pop-up spray heads located inside and outside the planter boxes, depending on location.

VIII. BMP MAINTENANCE SCHEDULE

Inspection and maintenance requirements are the same for all three stormwater treatment BMPs.

Routine inspection and maintenance will be conducted approximately monthly throughout the year. In addition, the stormwater treatment BMPs will also be inspected following each significant storm. Site drainage and treatment BMPs will be thoroughly inspected at least once a year prior to the start of the rainy season.

The following checklists are also reproduced as stand-alone sheets to facilitate their use in the field.

VIII.A. Whenever Landscaping within Planters is Maintained

- Maintain the design elevation of the soil or mulch surface, which should be a minimum 6 inches below the overflow elevation.
- Remove any soil or debris blocking planter inlets or overflows.
- Use only compost or other organic material to amend or condition soils. Amendments to planter soils must not reduce the infiltration rate.
- Minimize application of fertilizer.

- Pesticides may be applied only by a licensed pest control operator trained in the use of Integrated Pest Management.
- Confirm that irrigation is adequate but not excessive. If underdrains flow during dry weather, reduce irrigation.

VIII.B. Routine Inspection and Maintenance of Drainage System and Planters

- Examine each area drain and clean if necessary.
- Confirm there is no blockage in the connecting pick-up drain line leading to the Planter Box.
- Check rocks at inlets and repair, replace, or replenish as necessary.
- Remove any accumulations of sediment, litter, and debris in the planter.
- Examine the overflow. Remove any debris. Fix any damaged or disconnected piping.
- Observe the structure of the planters and fix any holes, cracks, or failure.
- Check that the soil surface is level and is at least six inches below the overflow height.
- Note condition of vegetation.
- Replace any dead plants.
- Prune or remove any overgrown plants or shrubs that may interfere with operation of the planter.
- Remove any nuisance or invasive vegetation.
- Clean up fallen leaves or debris and replenish mulch.
- Confirm that irrigation is adequate and not excessive.

VIII.C. Inspection Following Storms

- Confirm any standing water drains from the surface of the planters within 3-4 hours.
- Remove any debris from curb cuts at planters.
- Check rocks at inlets and repair, replace, or replenish as necessary.
- Remove any accumulations of litter and debris in the planter.
- Check that the soil surface is level and is at least six inches below the overflow height.

VIII.D. Comprehensive Annual Inspection Prior to Rainy Season (System-Wide; by end of September)

- Examine perimeter swales and compare to as-built photographs and drawings. Confirm that drainage has not been altered.
- Examine street paving and confirm flow to Planter Box 3.1 is unimpeded.
- Remove any debris from curb cuts leading to Planter Box 3.1.
- Check rocks at inlets and repair, replace, or replenish as necessary.
- Examine each of the 14 Planter Boxes. Remove any accumulations of sediment, litter, and debris in the planter.

- Examine the overflow. Remove any debris. Note any damaged or disconnected piping.
- Check cleanouts and confirm underdrain piping is intact and unobstructed.
- Observe the structure of the planters and fix any holes, cracks, or failure.
- Check that the soil surface is level and is at least six inches below the overflow height.
- Note condition of vegetation.
- Replace any dead plants.
- Prune or remove any overgrown plants or shrubs that may interfere with operation of the planter.
- Remove any nuisance or invasive vegetation.
- Clean up fallen leaves or debris and replenish mulch.
- Confirm that irrigation is adequate and not excessive.

CHECKLIST FOR ANNUAL INSPECTION AND MAINTENANCE
(PRIOR TO RAINY SEASON—SYSTEM-WIDE)

- Examine perimeter swales. Compare to as-built photographs and drawings. Confirm drainage has not been altered.
- Examine street paving and confirm flow to Planter Box 3.1 is unimpeded.
- Remove any debris from curb cuts leading to Planter Box 3.1.
- Check rocks at inlets and repair, replace, or replenish as necessary.
- Examine each of the 14 Planter Boxes. Remove any accumulations of sediment, litter, and debris in the planter.
- Examine the overflow. Remove any debris. Note any damaged or disconnected piping.
- Check cleanouts and confirm underdrain piping is intact and unobstructed.
- Observe the structure of the planters and fix any holes, cracks, or failure.
- Check that the soil surface is level and is at least six inches below the overflow height.
- Note condition of vegetation.
- Replace any dead plants.
- Prune or remove any overgrown plants or shrubs that may interfere with operation of the planter.
- Remove any nuisance or invasive vegetation.
- Clean up fallen leaves or debris and replenish mulch.
- Confirm that irrigation is adequate and not excessive.

CHECKLIST FOR INSPECTIONS FOLLOWING STORMS—INDIVIDUAL SYSTEMS

- Confirm any standing water drains from the surface of the planters within 3-4 hours.
- Remove any debris from curb cuts at planters.
- Check rocks at inlets and repair, replace, or replenish as necessary.
- Remove any accumulations of litter and debris in the planter.
- Check that the soil surface is level and is at least six inches below the overflow height.

CHECKLIST FOR ROUTINE INSPECTION AND MAINTENANCE—INDIVIDUAL SYSTEMS

- Examine each area drain and clean if necessary.
- Confirm there is no blockage in the connecting pick-up drain line leading to the Planter Box.
- Check rocks at inlets and repair, replace, or replenish as necessary.
- Remove any accumulations of sediment, litter, and debris in the planter.
- Examine the overflow. Remove any debris. Fix any damaged or disconnected piping.
- Observe the structure of the planters and fix any holes, cracks, or failure.
- Check that the soil surface is level and is at least six inches below the overflow height.
- Note condition of vegetation.
- Replace any dead plants.
- Prune or remove any overgrown plants or shrubs that may interfere with operation of the planter.
- Remove any nuisance or invasive vegetation.
- Clean up fallen leaves or debris and replenish mulch.
- Confirm that irrigation is adequate and not excessive. If irrigation is producing underflow from the planter, reduce irrigation.