

**Rutgers Cooperative Extension Water Resources Program  
Green Infrastructure Maintenance Program**

**GREEN INFRASTRUCTURE MAINTENANCE  
PROCEDURES/GUIDELINES**

*Portions of the document have been adapted from the Onondaga County, New York  
Save the Rain Program for Green Infrastructure Maintenance Training  
and  
The Sustainable Business Network's GSI Partners Greater Philadelphia Region GSI  
Operations and Maintenance Course*



# PERMEABLE PRACTICES MAINTENANCE GUIDELINES

Now that your permeable pavement or pavers have been installed, whats next?

## LANDSCAPE CARE

Permeable pavements allow water to infiltrate into the ground, decreasing the amount of storm water and pollution that drains to nearby waterways. The ability for the water to infiltrate depends on the porosity of the pavement. Soil and sediment draining from adjacent sites can cause the permeable pavement to clog and slow filtration. By maintaining the lawns and planting beds adjacent to the pavement, clogging can be prevented.

## WINTER CARE

Permeable pavements are more durable during the winter than conventional pavements. When deicing permeable pavements, it is recommended to use salt and not sand. Sand will clog the pores, and therefore decrease the amount of water that can flow through the pavement. Salt, on the other hand, will dissolve into the water and drain through the pavement. Check with the manufacturer of the pavers for guidelines on salt application.



## PAVER DRAINAGE

The gravel in the spaces between the pavers allows for the flow of water. This gravel also helps prevent weeds from taking root between the pavers. Over times this gavel may condense or wash away, and therefore should be regularly checked and replaced when needed.

## CLEANING

Permeable pavements will naturally collect sediment and infiltration could decrease over time; therefore, cleaning the pavement may be necessary. Accumulated sediment and debris can be removed using a high pressured hose or power washer. For pavers, the spaces between pavers should be re-filled with gravel.

For larger sites, streetsweepers and commercial vacuums can be used to remove the sediment build up within permeable pavements.

## PHOTOGRAPH AND DOCUMENT

Please photograph your green infrastructure practice and share pictures with the Rutgers Cooperative Extention (RCE) Water Resources Program! In addition, document the maintenance of the practice, and be sure to contact RCE Water Resources Program at [water@envsci.rutgers.edu](mailto:water@envsci.rutgers.edu) if you need assistance or have any questions.



For more information, please visit:  
[www.water.rutgers.edu](http://www.water.rutgers.edu)

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# Green Infrastructure Maintenance Procedures

## Porous Pavements:

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### Vacuumping

Vacuumping is done in order to remove sediment that may lead to a clogging of the porous surface, preventing water from infiltrating through the pavement into the stone reservoir.

Porous Pavement Vacuumping applies to several types of porous pavements described below:

Porous Pavers: an alternative to traditional hardscape paving which allows water to infiltrate between the pavers and through permeable layers below ground. When vacuumping porous pavers, the setting should be adjusted to a lower power in order to prevent complete removal of aggregate between voids (unless more intensive vacuumping is required to alleviate clogged areas).

Porous Concrete: a type of concrete that has a high porosity due to an increased void space to facilitate water infiltration through the porous concrete into a stone reservoir and then into the ground.

Porous Asphalt: a type of asphalt that has a high porosity due to an increased void space to facilitate water infiltration through the porous asphalt into a stone reservoir and then into the ground.

### Tools and Supplies:

- Porous pavement vacuum
- Water source
- Safety cones, trash bags, gloves, street broom

**Frequency:** Semi-Annually for Porous Concrete, Porous Asphalt, Flexible Porous Pavement  
Annually for Porous Pavers (Spring)

Labor Requirements: 2 people for approximately 1 hour per 10,000 square feet

### Procedures:

- A. Safety:** Set up safety perimeter. Ensure that no vehicles are parked in the vicinity of the location and that area is closed to the public. Notice to property owner should be given and required permissions secured.
- B. Inspection:** Visually inspect porous pavement for damage, including holes, cracks, excessive scuffing, settlement, and areas of standing water. Inspect status of aggregate between voids in porous pavers before and after vacuumping to see if additional replacement aggregate is needed. Record observations/damage on the Maintenance Report Form, include photos if possible, and report required repairs as necessary.
- C. Preparation:** Prepare site for vacuumping. Remove (by hand) bulky debris and waste materials from surface of porous pavement that may be too large to be picked up and/or block/clog the vacuum hose (i.e. litter, tree branches, wire, car parts) prior to using vacuum. Use a rigid street

## Green Infrastructure Maintenance Procedures

broom to loosen debris as needed. Pay particular attention to pavement edges and heavily loaded areas.

- D. Vacuum: Vacuum porous pavement per the vacuum manufacturer recommendations. Note: If vacuuming porous pavers, set vacuum at a lower power in order to prevent complete removal of aggregate between voids (unless more intensive vacuuming is required to alleviate clogged areas). Vacuum machine speed should be adjusted so that the vacuum draws out the first inch or so of stone and dirt in the openings between porous pavers, as this is where most unwanted sediment/debris typically collects. Follow all steps in the Manufacturer's Operation Checklist for the specified vacuum.
- E. Post-vacuuming inspection: After two passes, visually inspect porous pavement to ensure adequate debris removal. Any areas with visible debris/sediment still present should be vacuumed again until debris is removed. In the event that the surface of the porous pavement becomes clogged with fine dirt or sand, follow maintenance tasks outlined in Power Washing Procedure. Record observations on the Maintenance Report Form.
- F. Clean up: Clean up work area and vacuum equipment (per Manufacturer's Operation Manual).
- G. Safety completion: Remove safety perimeter and re-open area for parking/public access.

## Power Washing

Power Washing applies to several types of porous pavements described below. Power washing should be done if porous pavement surfaces become clogged with fine dirt or sand. Power washing of the pavement surface allows partial restoration of the original void space and therefore permeability and should immediately follow the porous pavement vacuum task (once every three years or more often as necessary). Power washing of porous pavers should never occur as it may damage pavers and/or remove aggregate between pavers

- Porous Concrete: a type of concrete that has a high porosity due to an increased void space to facilitate water infiltration through the porous concrete into a stone reservoir and then into the ground.
- Porous Asphalt: a type of asphalt that has a high porosity due to an increased void space to facilitate water infiltration through the porous asphalt into a stone reservoir and then into the ground.

## Tools and Supplies

- Power washer
- Water source
- Safety cones, trash bags, gloves, street broom

**Frequency:** Once every three years (perform immediately after thorough vacuuming) or more frequently if necessary, recommended time is Spring.

**Labor Requirements:** 2 people for approximately 1 hour per 10,000 square feet

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## Maintenance Procedure:

- A. Safety: Set up safety perimeter. Ensure that no vehicles are parked in the vicinity of the location and that area is closed to the public. Notice to property owner should be given and required permissions secured.
- B. Inspection: Visually inspect porous pavement for damage, including holes, cracks, settlement, excessive scuffing/raveling and areas of standing water. Record observations/damage in the Maintenance Report Form
- C. Preparation: Prepare site for power washing. Remove (by hand) bulky debris and waste materials from surface of porous pavement that may block or impede power washer access to the surface (i.e. litter, tree branches, wire, car parts). Use a rigid street broom to loosen debris as needed. Pay particular attention to pavement edges and heavily loaded areas, include photos if possible, and report as necessary.
- D. Power wash: Follow manufacturer's recommendations for use of the power washer unit with the clarifications noted below. Ensure that the water inlet valve and pump are both on.
- E. Set the pressure levels to be no greater than 500 PSI.
- F. Perform two passes over surface of pavement, with wand spraying at a 45 degree angle. Do not keep water flow on one location for longer than 5 seconds.
- G. Vacuuming: Power washing may need to be followed immediately by vacuuming. Refer to Vacuuming procedure for detailed instructions. If sediment is exposed (brought to the surface) during power washing, this sediment must be immediately removed through vacuuming instead of allowing the sediment to migrate and re-enter the porous pavement.
- H. Post-power washing inspection: Visually inspect porous pavement to ensure adequate sediment/debris removal. Any areas with visible debris/sediment still present should be washed again until debris is removed. Note if water remains ponded in any areas of the porous pavement. Record observations in the Maintenance Report Log
- I. Store equipment: Shut off pump and return hose and wand to proper storage place.
- J. Safety completion: Remove safety perimeter and re-open lot for parking/public access.

## Porous Paver Maintenance (Restoring Aggregate)

Porous pavers are an alternative to traditional hardscape paving which allows water to infiltrate between the pavers and through the permeable layers below them. Pavers are laid out on the surface and clean-washed aggregate material (also called screening or gravel) are placed in the spaces (voids) between paver units to provide stability and surface drainage while keeping unwanted debris out of the system. This procedure refers specifically to the task of refilling the voids between pavers with additional aggregate material to replace any material that has been lost by vacuuming and/or due to natural migration, settlement, and erosion.

**Type of Maintenance:** Preventative

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## Tools and Supplies

- Safety cones
- Rigid Street Broom
- Shovel
- Manhole Pick
- Wheelbarrow
- Clean-washed small aggregate (gravel) per project specifications

**Frequency:** As needed when gravel infill is not within ½ inch of the paver surface, immediately following vacuuming

**Labor Requirements:** 2 people for approximately 1 hour per 10,000 square feet

## Maintenance Procedure:

- A. **Safety:** Set up safety perimeter. Ensure that no vehicles are parked in the vicinity of the location and that area is closed to the public. Notice to property owner should be given and required permissions secured.
- B. **Inspection:** Visually inspect porous pavers for damage, including broken pavers, cracks, settlement, and any areas of standing water or evidence of standing water. Inspect status of aggregate infill material in the voids between porous pavers to see if additional replacement aggregate is needed. Evaluate if voids (joints) between porous pavers are clogged or not
  - i. Inspect to see if pavers themselves are missing from any areas and note need for replacement pavers. Record observations/ damage on the Maintenance Report Form, include photos if possible, and report as necessary.
- C. **Preparation:** Remove (by hand) bulky debris and waste materials from surface of pavers, include photos if possible, and report as necessary.
- D. **Cleaning Clogged Voids:** If voids (joints) between porous pavers are still clogged even after area has been vacuumed, use a manhole pick to tool out joint until clean aggregate is found. Follow aggregate replacement instructions below.
- E. **Add aggregate:** Using a shovel, spread aggregate over the surface of the pavers. Using a broom, sweep aggregate into the voids between porous paves, taking care to fill in any obvious holes. Once the aggregate has been added to the pavers, and the voids have been filled, perform a final sweeping pass with the hand broom to remove any excess gravel from the paver surface.
- F. **Clean up:** Clean-up work area.
- G. **Safety completion:** Remove safety perimeter and re-open area for parking/public access

## Winter Maintenance for Porous Pavements

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During the winter, porous pavement surfaces require different maintenance practices from standard pavement surfaces in order to maintain performance and promote infiltration. Specifically, sanding of porous pavement surfaces is prohibited, salting must be minimal, and plow blade heights may need to be set higher in some instances. In addition, plowed snow should not be stockpiled directly on top of porous pavement if possible.

**Type of Maintenance** - Preventative

### Tools and Supplies

- Truck with snow plow
- Salt/Deicers and appropriate machinery as needed
- Hand shovel

**Frequency:** As necessary following snowfall or icy conditions

**Labor Hours:** 2 people for approximately 1-2 hours per acre (varies with snow conditions)

### Maintenance Procedure:

- A. Safety: Set up a safety perimeter
- B. Inspection: Visually inspect entire area to be plowed prior to plowing snow and/or salting the porous pavement surface. Refer to project site plan if necessary to identify location of landscape elements and porous pavement surfaces. Note presence of trees, shrubs, landscape features, and wheel stops or bollards so that plow does not hit them during plowing and cause physical damage. Record observations in the Maintenance Report Form and report as necessary. If possible, take photographs to document site conditions.
- C. Remove trash/debris: Remove any large debris and trash from porous pavement surface prior to plowing and report as necessary. If possible, take photographs to document site conditions.
- D. Plow: If plowing on top of porous pavers, raise plow blade to a slightly higher level (1" higher) than for other types of porous pavement (asphalt, concrete, or flexipave) to prevent the plow from catching paver edges and dislodging paver units. If possible, it is recommended that a rubber plow blade be used for plowing porous pavement surfaces.
- E. Storage of snow piles: If possible, do not leave plowed snow piles on top of porous pavement surfaces to melt. This may result in sediment from the plow operations entering the porous pavement which can lead to clogging. Move snow piles to standard/conventional pavement area or to grassy/lawn area nearby. Refer to project site plan if necessary to identify location of landscape elements, porous and non-porous pavement surfaces, and snow stockpiling areas.
- F. Salting: Use road salt in moderation on porous pavement surfaces. If possible, use an environmentally safe road salt/deicer. Use approximately only 25% of the amount of deicing salt that is routinely applied to standard pavement parking lots or as needed to maintain acceptable driving conditions (*This is approximately a 75% reduction in salt use that is recommended*).
  - i. Recommended Environmentally Safe Road Salts: Calcium magnesium acetate (CMA) and potassium acetate (KA) are highly recommended. A second suggestion is calcium

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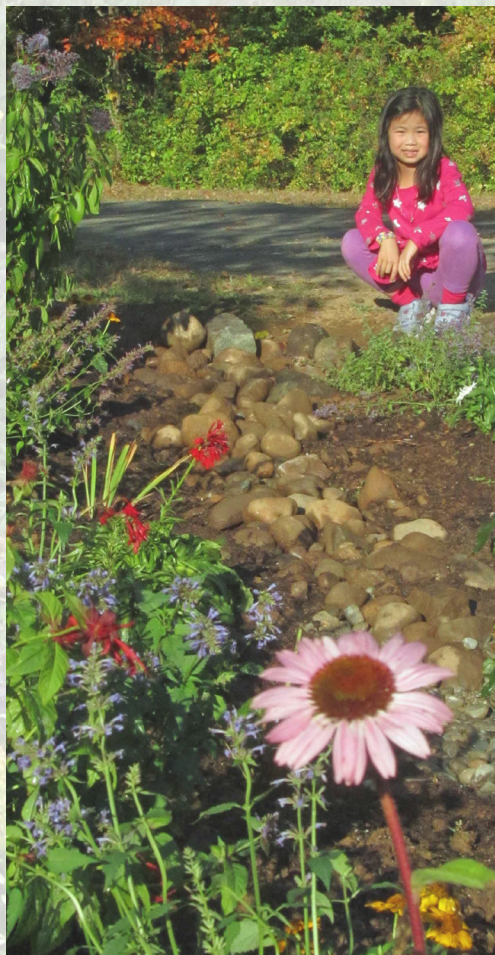
chloride (CaCl), which is similar to sodium chloride but can be used in smaller amounts. A mix of sodium chloride or calcium chloride and CMA or KA is better than one of the salts alone. Recommended products include GEOMELT, ECO Salt, and GEOSALT.

- G. Record: Make note of any unrecorded observations in Maintenance Report Log.
- H. Safety completion: Remove safety perimeter.



# BIORETENTION (RAINGARDEN) MAINTENANCE GUIDELINES

Now that your rain garden has been planted, whats next?



## **WATER**

Water is essential for the survival of your new rain garden. Please water the garden during the first three months post-planting and as needed throughout the future in times of drought. Plants should be watered every day for the first week they are in the ground and then once a week after that, unless there is substantial rainfall. In hot weather or times of drought, the rain garden will need water one to two times a week to prevent the loss of plants, even if the garden is already established.

## **WEEDS**

Please remove unwanted weeds from the garden by hand. Pull them from the base of the weed to remove the roots. As your garden becomes established, the rain garden plants will spread and out-compete unwanted weeds.

## **MULCH**

Mulch is used to prevent weeds and retain moisture in the rain garden. During the first year the garden is growing, please maintain a 3" layer of mulch between plants. As your rain garden plants spread and become denser, you may find mulching the garden more difficult. Mulching beyond the first year is optional. Please be careful not to excessively mulch the garden, and keep mulch away from drains.

## **INLETS/OUTLETS**

Please inspect the rain garden's inlets monthly, and be sure to remove any leaves, trash, or debris that may prevent water from passing through. Observe the inlet during rainstorms to make sure stormwater is flowing into the rain garden. After rainstorms, please check the garden to be sure drainage outlet paths are clear and that water is not ponding for more than 48 hours.



## **NO MOWING**

Please DO NOT mow or use a line-trimmer inside of the rain garden. This damages the plants and can destroy the rain garden.

## **SUPPLEMENTAL PLANTING**

Please remove and replace any dead plants in the garden as needed.

## **PRUNING**

We recommend pruning overgrown material in the garden annually when the plants are dormant.

## **PHOTOGRAPH AND DOCUMENT**

Please photograph your green infrastructure practice and share pictures with the Rutgers Cooperative Extension (RCE) Water Resources Program! In addition, document the maintenance of the practice, and be sure to contact RCE Water Resources Program at [water@envsci.rutgers.edu](mailto:water@envsci.rutgers.edu) if you need assistance or have any questions.

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# DOWNSPOUT PLANTER MAINTENANCE GUIDELINES

Now that your downspout planter has been installed and planted, whats next?

## WATER

Water is essential for the survival of your new stormwater planter. Plants should be watered every day for the first week they are in the planter box and then once a week after that, unless there is substantial rainfall. In hot weather or times of drought, the planter box will need water one to two times a week to prevent the loss of plants, even if the plants are already established.

## WEEDS

Please remove unwanted weeds from the planter by hand. Pull them from the base of the weed to remove the roots. As your planter becomes established, the plants will spread and out-compete unwanted weeds.

## MULCH

Mulch is used to prevent weeds and retain moisture in the stormwater planter. During the first year the plants are growing, please maintain a 3" layer of mulch between plants. As your plants spread and become more dense, you may find mulching the planter more difficult. Mulching beyond the first year is optional. Please be careful not to excessively mulch the planter, and keep mulch away from drains.

## DRAINAGE

Please inspect the stormwater planter's drains monthly, and be sure to remove any leaves, trash, or debris that may prevent water from passing through. After rainstorms, please check the planter to be sure drainage paths are clear and that water is not ponding for more than 48 hours.

## SUPPLEMENTAL PLANTING

Please remove and replace any dead plants in the planter as needed.

## PRUNING

We recommend pruning overgrown material in the planter annually when the plants are dormant.

## PHOTOGRAPH AND DOCUMENT

Please photograph your green infrastructure practice and share pictures with the Rutgers Cooperative Extension (RCE) Water Resources Program! In addition, document the maintenance of the practice, and be sure to contact RCE Water Resources Program at [water@envsci.rutgers.edu](mailto:water@envsci.rutgers.edu) if you need assistance or have any questions.



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# Green Infrastructure Maintenance Procedures

## Rain Garden, Bioswale, and Stormwater Planter/Plant Bed

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### Shrub and Herbaceous Plant Material General Maintenance, Weeding, Mulching

Actions include visual inspection, weeding, and mulching

Rain gardens and bioswales are shallow surface depressions planted with specially selected native vegetation (trees, shrubs, grasses, and perennials) to treat and capture stormwater runoff. They are often designed to be planted on top of a layer of sand or gravel storage.

Plant beds, or planters, are typically a combination of trees, shrubs, and herbaceous perennials (flowering plants) in a contained planting bed, with a covering of mulch. Planters can be contained within concrete curbs or seatwalls, or are often at ground level.

Healthy plants and lawns should be able to withstand minor disease and insect damage without controls. Routine application of pesticides shall not be practiced, as this destroys natural predator-prey relationships in the environment. Where unusually high infestations or infections occur, an accurate identification of the disease or insect shall be made and the control selected with care, prior to application. All chemical controls must be applied under the supervision of a licensed and qualified pest control applicator, following the procedures set forth in the labeling of the product, as required by law.

**Type of Maintenance** - Preventative

#### Tools and Supplies

- Hand Pruners
- Mulch (as specified)
- Mulch fork
- Rake
- Spade shovel
- Pitchfork or spade
- Weeding fork
- Plant and Weed Photo ID Sheet
- Trash bag, gloves

#### Frequency:

- Inspection: 1x/year minimum (Late May to early July, and/or late August/early September)
- Weeding: 3x/year minimum (Spring clean up, summer maintenance, fall put to bed)
- Mulching: Minimum 1x/year (Spring)

**Labor Hours:** 2 people for approximately 4-6 hours per site

#### Maintenance Procedure:

- A. Safety: Set up a safety perimeter. Protect existing plants from damage due to landscape operations and maintenance and operations of other contractors and trades.

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- B. Inspection: Visually inspect for any bare areas of vegetation or for specimen vegetation that has died and needs to be removed and/or replaced. Inspect for signs of frost heave and note any plants that may need to be replaced. Inspect plants for signs of excessive drought, disease, nutrient deficiency, and/or pest problems. Inspect planting areas for signs of soil compaction, soil subsidence, excessive salt deposits, or ponding of water. Inspect any areas of standing water for mosquito larvae. Also inspect areas (e.g. stabilized outfalls) that may experience erosion or increased sediment deposits which would inhibit infiltration.
  - i. Record observations in the Maintenance Report Log and report as necessary. If possible, take photographs to document site conditions.
  - ii. Based on the above observations, determine if it is necessary for a skilled horticulture professional to conduct a follow up visit to assess any potential plant health issues. Note this in the Maintenance Report Log.
- C. Remove trash/debris: Remove any leaves, debris, and trash that have accumulated in or around the plant beds/planters and legally dispose of them off Owner's property.
  - i. All refuse resulting from the maintenance operation of properties shall be disposed of at locations designated by the Manager/Owner.
- D. Weed: Weeding shall occur 3x/year at minimum (spring, summer, and fall).
  - i. Weeding is easiest if done when soil is moist. It is also recommended to pay attention to specific sites and keep track of weed presence on the Maintenance Report Log for each site. Weeding is easier and more effective if done consistently throughout the growing season and done BEFORE weeds go to seed.
  - ii. Refer to project's Plant ID Sheet for photographs of plants in order to be able to identify what plants should remain and what plants are weeds and should be removed.
  - iii. All planting areas shall be kept free of weeds, using either mechanical or chemical methods defined below;
    - a. Carefully hand pull or dig out weeds and invasive plants taking care not to damage surrounding plants.
    - b. For control of invasive species, spot spraying with herbicide may be employed by a Certified Pesticide Applicator only after notifying the proper authorities and getting approval to apply herbicides. Spraying is allowed only after receiving approval. Before applying herbicides, the type of weed shall be identified and the control selected accordingly, using the most effective control for the species, the location and the season.
    - c. (See recommended herbicidal list in Appendix A: Herbicides for Control of Invasive Plants).
  - iv. Weeds shall not be allowed to grow in paved areas such as driveways, walks, curbs, gutters, etc. Dead weeds shall be removed from the paved areas.



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- E. Mulch: After weeding, apply specified mulch across surface of planter and/or planting bed in uniform manner; do not apply more than 3-4 inches thick. Mulching is only once/year in the spring, unless additional applications are needed after heavy rain events.
- i. Type: organic shredded hardwood mulch (or mulch specified for specific site)
  - ii. Shall be free of ceramic, man-made trash or debris of any kind, wood or other objectionable materials.
  - iii. Application rate: 3 inches applied to a settled thickness of 2 inches.
  - iv. Do not place mulch within 2 inches (150 mm)
  - v. Do not shape mulch like a “volcano”. Spread mulch evenly to a uniform, level height. of shrub trunks or perennial/plant stems in order to prevent rot from occurring
- F. Clean up: Remove surplus mulch and waste material including trash and debris, and legally dispose of them off Owner's property
- G. Record: Make note of any additional observations in the Maintenance Report Form.
- H. Safety completion: Remove safety perimeter.

## Riverstone/Stone Gutter Maintenance

The riverstone/stone gutter is a 2 to 4-foot wide (width varies) stone channel serving to slow water down, prevent erosion, and direct runoff into the rain garden, bioswale, or planter.

**Type of Maintenance** - Preventative

### Tools and Supplies

- Rake
- Clean-washed riverstone per project specifications
- Trash bag, gloves

**Frequency:** Annually in spring Labor Hours: 2 people for approximately 1-2 hours per site

### Maintenance Procedure:

- A. Safety: Set up a safety perimeter
- B. Inspection: Visually inspect the riverstone/stone gutter for any areas of riverstone that are bare and/or need to be replenished or replaced. Inspect for signs of weed growth, dumping of debris, or snow plow damage. Record observations in the Maintenance Report Form and report as necessary. If possible, take photographs to document site conditions.

## Green Infrastructure Maintenance Procedures

- C. Remove trash/debris: Remove any large debris and trash that has accumulated in the riverstone/stone gutter area.
- D. Weed: Remove any obvious weed growth that has established itself within the limits of the riverstone/stone gutter. The riverstone should be free of vegetative growth.
- E. Rake: Gently rake riverstone/stone gutter to re-establish an even surface and even out any irregular depressions or high points (stones may have moved or shifted during the year).
- F. Replenish: Add new riverstone only if shallow and/or bare areas exist after raking has been completed. Add only enough riverstone to bring entire riverstone/stone gutter to a consistent and level grade, approximately even with the elevation of the adjacent edge of pavement.
- G. Record: Make note of any unrecorded observations on the Maintenance Report Form.
- H. Safety completion: Remove safety perimeter.

## Rain Garden/Bioswale/Planter Watering

Watering for the first year after installation should be covered by a one-year maintenance agreement as outlined in project specifications and contract/warranty provisions.

This watering procedure takes effect contractor warranty period expires.

Rain gardens and bioswales are shallow surface depressions planted with specially selected native vegetation (trees, shrubs, grasses, and perennials) to treat and capture stormwater runoff. They are often designed to be planted on top of a layer of sand or gravel storage.

Plant beds, or planters, are typically a combination of trees, shrubs, and perennials (flowering plants) in a contained planting bed, with a covering of mulch. Planters can be contained within concrete curbs or seatwalls, or are often at ground level.

**Type of Maintenance** - Preventative

### Tools and Supplies

- Hose
- Sprinkler
- Hydrant
- Water backpack (for small areas)
- Water truck (if no access to water hydrant)

### Frequency:

- Initial Establishment (First Year after Plant Installation): Water in absence of rainfall in order to maintain a rate of 1" of water per week.
- Year 2, Year 3: Water as needed (generally up to ½" of water per week) during the first 4-6 weeks of the growing season, and then only during extended periods of drought and only when ground is not frozen.

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- Year 4 and Beyond: Water to supplement rainfall only during extended periods of drought and only when ground is not frozen.

**Labor Hours:** 2 people for approximately 1-5 hours per site depending on site size

### **Maintenance Procedure:**

- A. Safety: Set up a safety perimeter.
- B. Inspection: Visually inspect for any bare areas within rain gardens/bioswales/ planters/plant beds and also for specimen vegetation that has died and needs to be removed and/or replaced. Inspect plants for signs of excessive drought, disease, and/or pest problems. Inspect any areas of standing water for mosquito larvae. Record observations in the Maintenance Report Form and report as necessary. If possible, take photographs to document site conditions.
- C. Remove trash/debris: Remove any large debris and trash that has accumulated in the plant beds/planters.
- D. Record: Make note of any additional observations in the Maintenance Report Log.
- E. Water:
  - i. During the first year after plant installation, water to supplement rainfall throughout the growing season (April through November) if soil conditions are dry. Do not water if ground is frozen. The amount of water recommended (combination of rainfall and/or supplemental watering) is 1" of water per week. If resources permit, 2" of water per week is recommended during extreme drought conditions for ideal plant growth and peak performance.
  - ii. During the second and third year after plant installation, water to supplement rainfall in the first 4-6 weeks of each growing season (April through May) if soil conditions are dry and there is not adequate spring snow melt to provide soil moisture. Do not water if ground is frozen. Also water throughout the growing season if there is extreme drought. The amount of water recommended (combination of rainfall and/or supplemental watering is 1" of water per week). If resources permit, 2" of water per week is recommended during extreme drought conditions for ideal plant growth and peak performance.
  - iii. There is no need to water plants if rainfall has fulfilled the 1" of water per week requirement.
  - iv. Discontinue watering activities once temperatures create frozen soil conditions. Start again in spring when tree buds swell and sprout new leaves.
  - v. Water as necessary so planting soil remains moist 2-3 inches below the finished grade. Use a trickling hose if possible to ensure steady, slow water flow. Water plant roots and avoid watering plant leaves (foliage). Water deeply to promote deeper root growth, which will ultimately enable plants to be more tolerant of drought in the long term.

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- F. Record: Make note of any additional observations in the Maintenance Report Log.
- G. Safety completion: Remove safety perimeter.

### Shrub and Herbaceous Groundcover: Pruning, Division, and Cutback (Removal of Dead Vegetation)

Plants are chosen for their natural shape and growth habit and maintenance should encourage vegetation health and enhance the natural form of plant material. Activities such as trimming and pruning should not alter plant form considerably.

**Type of Maintenance** - Preventative

#### Tools and Supplies

- Hand Pruners
- Trowel
- Spade shovel
- Pitchfork
- Bow saw (if necessary)
- Trash bag, gloves

**Frequency:** 1x/year, see below:

- Shrubs: 1x/year in March/April or September/October depending on species
- Perennials: 1x/year cutback in March/April or September/October (March/April recommended)
- Grasses: 1x/year cut back as needed, March/April

**Labor Hours:** 2 people for approximately 1-8 hours per site, depending on site size

#### Maintenance Procedure:

- A. Safety: Set up a safety perimeter. During pruning, keep adjacent paving and construction clean and work area in an orderly condition. Protect plants from damage due to landscape maintenance operations and operations of other contractors and trades.
- B. Inspection: Visually inspect for any bare areas of vegetation, or for specimen vegetation that has died and needs to be removed and/or replaced. Inspect plants for signs of excessive drought, disease, and/or pest problems. Inspect any areas of standing water for mosquito larvae. Record observations in the Maintenance Report Form and report as necessary. If possible, take photographs to document site conditions.
- C. Remove trash/debris: Remove any large debris and trash that has accumulated in and around planters/plant beds and legally dispose of them off Owner's property.
- D. Prune:



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## Shrubs:

Prune, thin, and shape shrubs according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by City Arborist, remove only injured, dying, or dead branches from shrubs; and prune to retain natural character/form. Do not prune for shape.

Shrubs shall be pruned to maintain growth within space limitations, to maintain or enhance the natural growth habit, or to eliminate diseased or damaged growth. Some species shall be trimmed appropriately to influence flowering and fruiting, or to improve vigor.

Shrubs must be trimmed as needed to permit unobstructed passage to residents or vehicles. Trimming shrubs within site clearance restricted areas at intersections is appropriate and shall have a maximum height of 2-1/2 feet from vehicular surface. Any curbs or raised planting areas shall be factored into the maximum 2-1/2 feet height. Shrubs must be trimmed 4 inches from the edges of sidewalks and curbs.

Shrubs shall be pruned to conform to the design concept of the landscape. Individual shrubs shall not be clipped into balled or boxed forms, except where specifically instructed.

## Perennials and Herbaceous Plants:

Established plants bordering sidewalks or curbs shall be edged as often as necessary to prevent encroachment. Plants shall not be allowed to cover the crowns of shrubs or trees.

Refer to **Plant ID Sheet** to identify weeds from intended plants.

Perennial cutback/clean-up/removal of dead vegetation : Removing dead vegetation (on perennials) shall occur a minimum of 1x/year during the spring or fall, with a recommendation towards mid-spring before new vegetated growth has emerged or when plant is dormant. Use hand shears to remove dead vegetation and cut back perennials to 6-8" above root crown.

If dried seed pods or dried flowers are considered desirable by the property owner, then the dead vegetation may be allowed to remain through the winter and should be cut back in the spring. Some species have seed pods that act as food for birds/wildlife and/or decorative dried features, however other species may spread seed or look unkempt when dried and this may not be desired.

Perennial Division and Thinning: Depending on the species, perennials may need dividing every 3 – 5 years. This is because as certain plants get older, they die back starting from the center. Division is also done in order to prevent crowding as a plant grows and becomes larger in size. To divide perennials, dig up the old plant, remove the dead vegetation entirely, and replant the healthier sections. To thin perennials, selectively remove individual plant stems (either healthy or dead) if overcrowding is occurring. Thinning of perennials is done to prevent overcrowding and mildew by encouraging air circulation between individual plants.

## Grasses

Refer to **Plant ID Sheet** to identify weeds from intended plants.

Grass cutback: Cut back foliage to 6 – 10" above root crown in mid-spring before warm season grasses emerge, but when cool season weeds are actively growing. Leave a minimum 4-6" of

## Green Infrastructure Maintenance Procedures

previous growing season's growth depending on the ornamental grass species. Shorter species such as Blue Fescue will be 4" while taller species such as Switchgrass will be 6".

Grass division: Ornamental and/or clumping grasses shall also be divided every 3 to 5 years to increase vigor. Groundcover grasses and meadow grasses do not need dividing.

*List of example grasses that require division:*

Sedges (Carex spp.)  
Pennisetum (Fountain Grass)  
Andropogon gerardii (Big Bluestem)  
Schizachyrium scoparium (Little Bluestem)  
Panicum virgatum (Switchgrass)  
Calamagrostis x acutiflora (Feather Reed Grass)

- E. 50 Record: Make note of any additional observations in the Maintenance Report Form.
- F. 60 Safety completion: Remove safety perimeter

## Shrub and Herbaceous Plant Material Plant Replacement

Plant (shrub and herbaceous plant material) replacement involves replacing missing, dead, or diseased shrubs and herbaceous plant material (perennials, forbs, grasses) in planter beds, planters, rain gardens, and/or bioswales if replacement has been deemed necessary.

**NOTE:** Tree replacement is not part of this procedure and will occur separately.

**Type of Maintenance** - Replacement

### Tools and Supplies

- Safety cones
- Safety gear (clothing, gloves, etc.)
- Planting and Mulching Equipment – shovels, pitchfork, rake, etc.
- Shrubs, plants, and seeds (to be planted)
- Mulch (as specified)
- Trash bags for debris, weeds, etc.

**Frequency:** Spring and Fall, Replacement as necessary

**Labor Hours:** 2 people for approximately 2-6 hours per site depending on scope of replacement

### Maintenance Procedure:

- A. Safety: Set up a safety perimeter. Protect existing plants from damage due to landscape operations and maintenance.

## Green Infrastructure Maintenance Procedures

- B. Inspection: Visually inspect for any bare areas of vegetation or specimen vegetation that has died and needs to be removed and/or replaced. Inspect areas where plants will be planted (replaced) and note signs of soil subsidence, soil compaction, standing water, evidence of disease/fungus, and animal burrowing.
- a. Record observations in the **Maintenance Report Log** and report as necessary. If possible, take photographs to document site conditions.
- C. Remove trash/debris: Remove any leaves, debris, and trash that have accumulated in or around the plant beds/planters.
- a. All refuse resulting from the maintenance operation of properties shall be disposed of at locations designated by the Manager/Owner.
- D. Replacement: Follow the below instructions if shrub and herbaceous groundcover replacement has been deemed necessary. **Tree replacement will occur separately.**
- i. Replacement requirements for shrubs and groundcover:
    - Shrubs: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock, densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.
    - Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required.
      - Set balled and potted and container-grown stock plumb and in center of planting pit or trench with root flare 1 inch (25 mm)
      - Pit should be twice as wide as it is deep above adjacent finish grades.
        - Use planting soil for backfill, of types specified and scheduled.
        - Carefully remove root ball from container without damaging root ball or plant.
        - Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
        - If amending soil, place amendment tablets or incorporate amendments in each planting pit when pit is approximately one-half filled; in amounts recommended in soil reports from soil-testing laboratory. If using amendment tablets, place tablets beside the root ball about 1 inch (25 mm)
        - Continue backfilling process. Water again after placing and tamping final layer of soil.
      - Groundcover and Perennial Plugs: For rooted cutting plants supplied in flats, plant each in a manner that will minimally disturb the root system but to a depth not less than two nodes.
        - Set out and space ground cover and plants in swaths to fill in vegetated gaps in plant bed.
        - Dig holes large enough to allow spreading of roots.

## Green Infrastructure Maintenance Procedures

- Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.
  - Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
  - Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.
  
  - Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
  
  - Shrubs:
    - Spring Planting: March 1 to May 1.
    - Fall Planting: September 1 to November 1.
  - Grass & Perennial Plugs:
    - Spring Planting: April 1 to June 15.
    - Fall Planting: August 1 to September 15.
  - Bulbs:
    - Fall Planting: September 15 to October 30.
- E. Cleanup: Stones, debris, tools, equipment, rope, pruned branches, tree debris, etc., shall be removed from the site upon completion of work. Excess soil outside of the saucer areas shall be removed and the area raked smooth. Paved areas shall be broom cleaned.
- F. Record: Make note of any additional observations in the Maintenance Report Form.
- G. Safety completion: Remove safety perimeter.



# Green Infrastructure Maintenance Procedures

## Control of Invasive Species

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### Inspection and Control Measures

Invasive species inspection consists of a visual inspection, trash/debris removal, and invasive species management.

Healthy plants and lawns should be able to withstand minor disease and insect damage without controls. Routine application of pesticides shall not be practiced, as this destroys natural predator-prey relationships in the environment. Where usually high infestations or infections occur, an accurate identification of the disease or insect shall be made and the control selected with care, prior to application. All chemical controls must be applied under the supervision of a licensed and qualified pest control applicator, following the procedures set forth in the labeling of the product, as required by law.

**Type of Maintenance** - Preventative

### Tools and Supplies

- Hand Pruners
- Trowel
- Spade
- Pitchfork and Weed fork
- Plant and Weed Photo ID Sheet
- Trash bag, gloves
- 

### Frequency:

- Inspection: Minimum 3x/year (Spring, Summer, Fall)
- Monitor meadow monthly during growing season for invasive species during the first 2 to 3 years

**Labor Hours:** 2 people for approximately 4-8 hours per site

### Maintenance Procedure:

- A. Safety: Set up a safety perimeter. Protect existing plants from damage due to landscape operations and maintenance.
- B. Inspection: Visually inspect for any bare areas of vegetation or specimen vegetation that has died and needs to be removed and/or replaced. Inspect plants for signs of excessive drought, disease, nutrient deficiency, and/or pest problems.
  - i. Inspect any areas of standing water for mosquito larvae. Inspect meadow area for evidence of invasive species and woody plant establishment. Monitor meadow monthly during growing season for invasive species during the first 2 to 3 years. Examples of invasive species include thistle, knapweed, phragmites, and general weeds such as dandelions.

## Green Infrastructure Maintenance Procedures

- ii. Record observations in the Maintenance Report Log and report as necessary. If possible, take photographs to document site conditions.
- iii. Based on the above observations, determine if it is necessary for a skilled horticulture professional to conduct a follow up visit to assess any potential plant health issues. Note this in the Maintenance Report Log.

### C. Control of Invasive Species:

- i. Refer to **SMP-12 Meadow Mowing** for information on managing invasive species in meadows, which is primarily done through mowing.
- ii. Refer to project's **Plant ID Sheet** for photographs of plants in order to be able to identify what plants should remain and what plants are weeds and should be removed.
- iii. For the control of certain types of invasive species not able to be managed by mowing, such as Crown Vetch, spot spraying and hand pulling should be conducted as directed below:

D. Carefully hand pull or dig out invasive plant species taking care not to damage surrounding plants in meadow.

E. For control of invasive species, spot spraying with herbicide may be employed only by a Certified Pesticide Applicator after notifying the proper authorities and getting approval to apply herbicides. Spraying is allowed only after receiving approval. Before applying herbicides, the type of weed shall be identified and the control selected accordingly, using the most effective control for the species, the location and the season. Suggested herbicides for control of invasive plants include:

#### i. **Glyphosate**

Glyphosate herbicide may be used for total vegetation control and is safe to use immediately prior to planting and up to four days after seeding. Glyphosate may also be used to target individual weeds as a careful spot spraying after planting, but some non-target plants are likely to be damaged and killed as well. A formulation such as Roundup can be used for total vegetation control prior to planting in the grassland and mow strip areas. A formulation approved for wetland use, such as Rodeo, can be used in storm water infiltration basins and swales.

#### ii. **Plateau** (Best application for areas near Rain gardens)

Plateau herbicide is a very good herbicide for pre and post-emergent weed control for establishing warm-season grasses. Pre-emergent application prior to planting is best. Plateau's utility is limited when wildflowers or coolseason grasses are incorporated into the seeding mix. Native forbs, depending on the species, may or may not be tolerant of Plateau. Cool season grasses are not very tolerant of Plateau. Switch grass is not as tolerant to Plateau as other warm season grasses. Transline Transline is a selective herbicide for the control of composites, polygonums, and legumes such as Crown Vetch. If carefully used as directed, it is an effective post-

## Green Infrastructure Maintenance Procedures

planting spot spray, because it will not kill all of the desired vegetation that is touched by over-spray.

### iii. Transline

Transline can be sprayed over the top of grass plantings where Crown Vetch is abundant and where there are no desired composite wildflowers or legumes. Control of Crown Vetch will likely require at least 2 to 3 years of scouting and retreating with a spot spray applications. Legumes and composites should be planted sparingly in the successional grassland in treated Crown Vetch areas.

*Note: All products mentioned here are for information only and are not an endorsement of a particular brand.*

- F. Remove trash/debris: Remove any leaves, debris, and trash that have accumulated in or around the meadow. All refuse resulting from the maintenance operation of properties shall be disposed of at locations designated by the Manager/Owner.
- G. Record: Make note of any additional observations in the Maintenance Report Form.
- H. Safety completion: Remove safety perimeter

# Detention Basin Maintenance Guidelines

*Now that your detention basin has been installed, what's next?*

## **INLETS/OUTLETS**

Inspect the pipe to make sure it is not crumbling or broken. Remove any debris or sediment that is obstructing the flow of water. If not removed, it could reduce the efficiency of the system.

## **EXAMINE FOR EROSION**

Check for gullies or sloughing of the banks in the spring and fall or after a major storm. Effective groundcovers must be kept healthy to prevent erosion and damage the system.

## **INSPECT VEGETATION**

Inspect vegetation on the banks and in the basin in the spring and fall. Remove dead cattails and other decomposing vegetation if they are clogging the pipe openings. Repair bare areas along the banks with turfgrass seed, meadow grass, or wildflowers. Regular inspections by a designated person, owner, or operator should be made, and a clear record should be kept.

## **MOWING**

Turfgrass basins only need to be mowed two or three times a year. Basins planted with native grasses and wildflowers should only be mowed once a year in the late fall or early spring.

## **SUPPLEMENTAL PLANTING TO THE BANKS**

Planting a variety of shrubs and wildflowers along the banks of stormwater basins will add more color and interest to the landscape as well as improve bird habitat.

## **MECHANICAL COMPONENT MAINTENANCE**

All mechanical equipment, such as gutters, valves, locks, or other components must be kept in working order should an emergency arise.

## **REGULAR INSPECTIONS OF THE BASIN**

Having regular inspections and immediate repairs will reduce the need for major repairs. Note any standing water or evidence of extended ponding not intended in the design or function of the system. Document any erosion or sediment accumulation and remove the excess sediment from the basin.

## **PHOTOGRAPH AND DOCUMENT**

Please photograph the progress of the basin and share pictures with the Rutgers Cooperative Extension (RCE) Water Resources Program! In addition, document the maintenance of the basin and be sure to contact the RCE Water Resources Program at [water@envsci.rutgers.edu](mailto:water@envsci.rutgers.edu) if you need assistance or have any questions.





# RAINWATER HARVESTING MAINTENANCE GUIDELINES

Now that your rain barrel / cistern has been installed, whats next?

## FILTERS

Rainwater harvesting systems allow for the slow and controlled use of stormwater. To ensure that the rainwater harvesting system functions properly, filters must be checked for debris on a regular basis. The rainwater harvesting system contains a diverter filter. The diverter filter serves as a barrier against clogging, directly catching the debris that flows off of the roof and into the downspout. This filter should be regularly checked and cleaned. Failure to clean the diverter filter may cause the rainwater harvesting system to

## OVERFLOW

The overflow pipe allows water to flow out of the rainwater harvesting system when the tank gets too full. This prevents the system from overflowing and backing up through the downspout. To help reduce the amount of water the flows directly into nearby storm drains, direct the overflow so that excess water can be dispersed along a lawn, field, garden, or other planted area. By simply using the water that is stored in your rainwater harvesting system, you can also help prevent water from flowing out of the overflow.



## WINTER

The constant freezing and thawing of water in the winter time can cause many pieces of the rainwater harvesting system to crack and break. Therefore, before the temperature falls below freezing, the rainwater harvesting system should be fully drained and disconnected at the diverter. For a rain barrel, disconnect the downspout from the barrel, place the original downspout onto the gutter, and then turn the barrel upside down.

## USE

The storm water held in the rainwater harvesting system is great for watering trees and gardens. However, it SHOULD NOT be used for bathing or drinking. If the water is to be used for a vegetable garden, it is advised that you water the soil not the vegetables. If concerned, feel free to get the water tested.

## PHOTOGRAPH AND DOCUMENT

Please photograph your green infrastructure practice and share pictures with the Rutgers Cooperative Extension (RCE) Water Resources Program! In addition, document the maintenance of the practice, and be sure to contact RCE Water Resources Program at [water@envsci.rutgers.edu](mailto:water@envsci.rutgers.edu) if you need assistance or have any questions.

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For more information, please visit:  
[www.water.rutgers.edu](http://www.water.rutgers.edu)



# TREE PLANTINGS MAINTENANCE GUIDELINES

Now that your trees have been planted, what's next?

*Newly planted trees require weekly maintenance during the first two years that they're in the ground. Please be sure to weed, water, and mulch per the instructions below.*

## **WATER**

Watering your newly planted tree is the best thing you can do for it. After it has been planted, water 20-30 gallons a day for the first three (3) days immediately after planting. Then, water once a week 20-30 gallons from the spring through the fall until the ground freezes. A slow trickle from a hose for half an hour is perfect. Water more frequently during dry periods.

## **WEEDS**

Grass and weeds compete for the same water and nutrition as the tree. Remove any grass or weeds growing in the tree bed. Be sure to remove the roots of the weed as well.

## **MULCH**

Mulch is a tree's best friend. Mulch helps soil hold water for the tree's roots and reduces grass and weeds. Apply mulch 2-3 inches deep and make sure to keep mulch 4-5 inches away from the trunk of the tree. Improper mulching kills trees, never pile up a mound of mulch around the base of tree. This will rot the bark and kill the tree.



## **PRUNING**

Bad pruning kills trees. Please contact the New Jersey Tree Foundation at [www.njtreefoundation.org](http://www.njtreefoundation.org) and attend a workshop to learn how to properly prune your tree. Do not top your tree or cut the main branches back to stubs. Ugly, weakly attached limbs often grown back higher than the original branches. Topping is one of the worst things you can do for the health of the tree.

## **PLACE GUARDS OR FENCES**

Never place a guard or fence in close proximity to or surrounding a tree trunk. This will cut the bark and cause wounds allowing insects and disease to enter the tree. Instead place a small fence around the perimeter of your tree bed.

## **PHOTOGRAPH AND DOCUMENT**

Please photograph your green infrastructure practice and share pictures with the Rutgers Cooperative Extension (RCE) Water Resources Program! In addition, document the maintenance of the practice, and be sure to contact RCE Water Resources Program at [water@envsci.rutgers.edu](mailto:water@envsci.rutgers.edu) if you need assistance or have any questions.

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# Green Infrastructure Maintenance Procedures

## Stormwater Structure Cleaning:

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### General Maintenance

Stormwater Structures are structures used to capture runoff, connect pipes, provide access, control the water level in stormwater management systems, and/or allow excess runoff to discharge or overflow in a controlled manner. Stormwater structures may include the following:

- Catch basin
- Inlet
- Sediment trap
- Manhole
- Overflow structure with or without removable weir
- Observation well
- Clean-out
- Domed riser

**Type of Maintenance:** Preventative

### Tools and Supplies

- Manhole Pick
- Vacuum/Vactor truck
- Safety cones, trash bags, gloves
- Screwdriver or similar tool for cleaning clogged orifices in sediment trap/sump
- Wrench, if necessary, for removing weir

**Frequency:** Semi-Annually

**Labor Requirements:** 2 people for approximately 30 minutes per structure, varies by structure type and configuration.

### Maintenance Procedure:

- A. Safety: Set up safety perimeter.
- B. Inspection: Visually inspect stormwater structure and adjacent area for any immediate damage or potential problems, including any upstream pollution sources or locations of existing or potential vegetation debris. Inspect stormwater structure for signs of accumulated sediment, leaf litter, and/or debris. Look for signs of settlement and/or washout around structures and attached pipes. Record all observations in the Maintenance Report Log and report as necessary. If possible, take photographs to document site conditions.
- C. Preparation: Remove any debris that has accumulated on top of the structure. Remove structure lid (e.g., inlet grate, manhole cover, or observation well cover) and set aside. Visually inspect interior of the structure for defects and evidence of illegal dumping. If illegal dumping has occurred, notify the proper authorities as necessary. Record observations/ damage in the Maintenance Report Form, include photos if possible, and report as necessary.

## Green Infrastructure Maintenance Procedures

- i. Examine structure for any unintended or excessive standing water. Inspect for signs of mosquito larvae. If sediment trap is in place and contains standing water, inspect the drainage orifices for signs of clogging. These orifices are usually 1-inch diameter and located at the base of the structure. Remove any and all material clogging these orifices.
  - ii. Observe if the structure has a filter insert and follow separate guidelines in SMP-05 Inlet Filters for maintenance and replacement of filter insert.
- D. **Cleaning:** If using a vacuum truck, clean the interior of the structure and remove all debris or sediment contained in sump. Leave weir in place. Employees should be properly trained in use of the vacuum truck and should follow all recommended guidelines for use by the vacuum truck manufacturer. If removable weir is present and not sufficiently cleaned, use wrench/screwdriver or other tool to remove the bolts, lift it up and out of the structure, and set it to the side and repeat cleaning.
- E. **Disposal:** Ensure that the removed waste/sediment is properly disposed of and securely contained as to not run back into the stormwater system. Follow guidelines for disposal of waste/sediment on the local, state, and federal levels.
- F. **Record:** Make a note of any recorded observations in the Maintenance Report Log
- G. **Replace:** Replace the stormwater structure cover and confirm it is tightly secured.
- H. **Safety completion:** Remove safety perimeter.



**Rutgers Cooperative Extension Water Resources Program  
Green Infrastructure Maintenance Program**

**GREEN INFRASTRUCTURE MAINTENANCE  
LOG AND REPORT FORM**

## Green Infrastructure Maintenance Report Form

<b>GENERAL INFORMATION</b>	
Name(s) person inspecting the green infrastructure:	Date:
Location Address and Cross Streets/Site Locations name:	Property Owner / Tax Parcel Block & Lot:
Contact information:	Name of the practice:
<b>STRUCTURAL COMPONENTS</b>	
Description of the current conditions:	

<b>GENERAL OBSERVATIONS</b>	<b>YES</b>	<b>NO</b>	<b>COMMENTS</b>
1) Any reports on the infrastructure not functioning?			
2) Are there any unauthorized or malfunctioning structures located in the infrastructure?			
3) Is the infrastructure overgrown with vegetation?			
4) Is there standing water or evidence of standing water?			
5) Signs of breakage, damage, corrosion or rusting of structure?			
6) Debris or sediment accumulation in or around the inlet clogging the inlet opening/pipe?			
7) Signs of erosion, scour or gullies; rock or vegetation above or around the inlet structure?			
8) Tree roots, woody vegetation growing close to or through the inlet structure or a situation impacting the structure's integrity?			
9) If the inlet has a pretreatment structure (trash rack, forebay) is it filled w/ debris or sediment?			

<b>ADDITIONAL OBSERVATIONS</b>



## Green Infrastructure Maintenance Report Form

<b>RECOMMENDATIONS FOR WATER QUALITY IMPROVEMENTS</b>	
1) Reduce mowing 2) Plant buffers 3) Establish meadows 4) Retrofit with infiltration structures or other strategies 5) Other	
<b>PERFORMED MAINTENANCE</b>	
1) Was weeding needed? Were they invasive plants (if known)?	
2) Was replacement of materials needed? (Plants, mulch, or riverstone)	
3) Were you able to water the plants?	
4) Did you winterize the structure? If so what did you do: (where did you put the parts for the cisterns)	
<b>SUMMARY AND NOTES: Identify unique characteristics and/or opportunities</b>	