

Ghirardi Family WaterSmart Park Maintenance Guide



The Ghirardi WaterSmart Park exists as a beautiful community amenity on the surface while at the same time it models individual storm water Best Management Practices (BMPs) that separately and taken as a whole have the far reaching environmental benefits of protecting water quality and conserving water resources.

The BMP facilities, as they will be referred to, attempt to mimic the natural water cycle that existed before development.

They do this by slowing and reducing the amount of storm water that enters the storm drain system. Water is allowed to soak in and recharge groundwater and be cleaned of pollutants that might otherwise make their way into Galveston Bay. To properly do their job and to attain the most benefit from their performance, each BMP facility must be carefully maintained. The purpose of this manual is to offer an understanding of the facilities and provide a quick-reference tool for their care.

General Maintenance:

1. Visit and inspect BMPs after a rain event. Record any issues that need addressing.
2. Inspect and maintain BMP's seasonally.
3. Refer to the BMP design plan.
4. Take photos before and after maintenance activities to document any issues and also to keep a record of how the BMP's are performing over time.
5. Avoid all synthetic fertilizers, pesticides and herbicides.

Preparation for Site Visit and/or Maintenance:

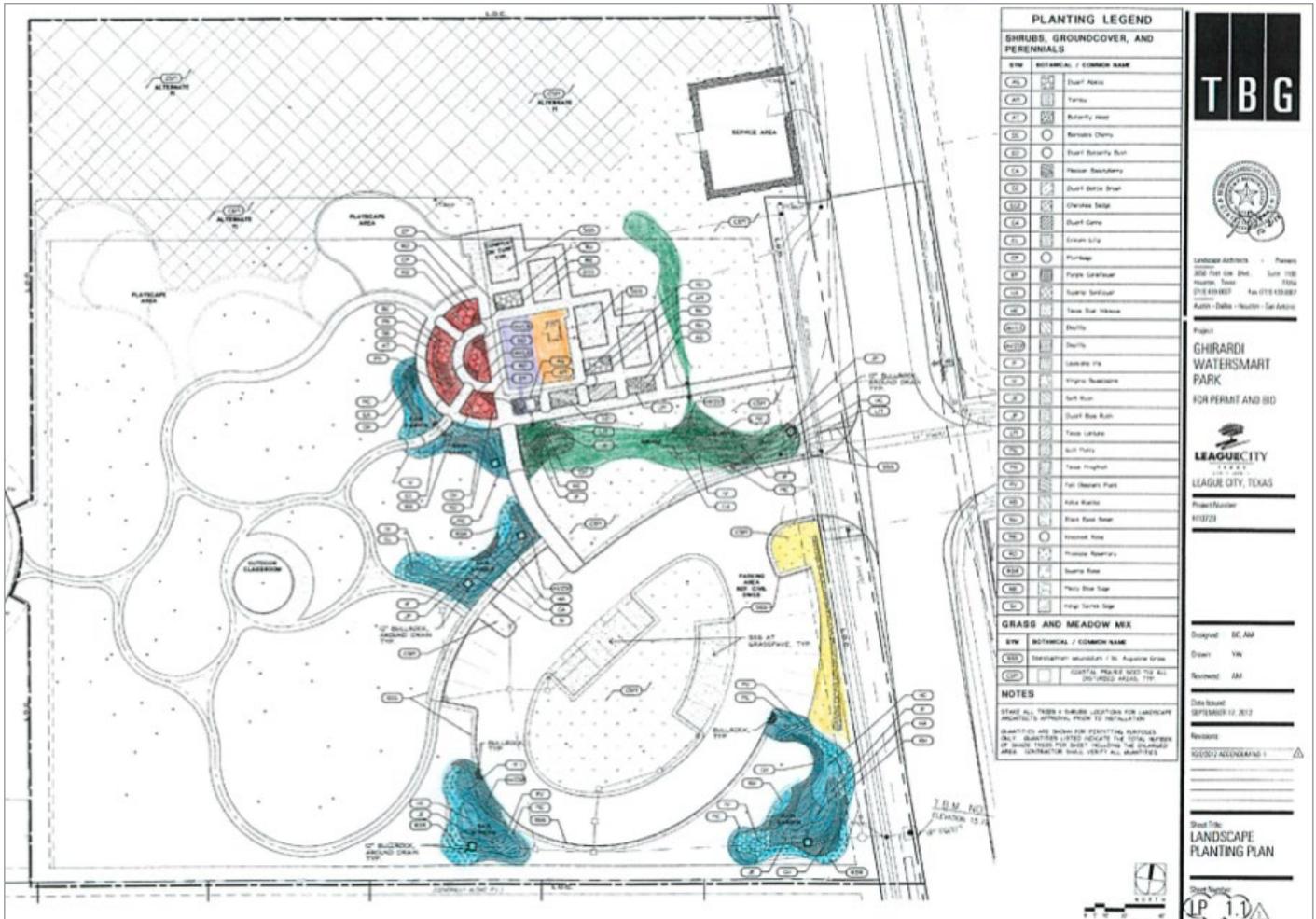
1. Review the maintenance guide.
2. Locate BMPs on the design site map.
3. Review reports from last maintenance date.
4. Prepare as for any other park landscape maintenance duties.
5. Equipment
 - a. Gloves
 - b. Tools
 - i. Rake (for removing leaves, litter, etc.)
 - ii. Pruning shears
 - iii. Leaf blower or vacuum (for pervious paver maintenance)

All Planted Areas:

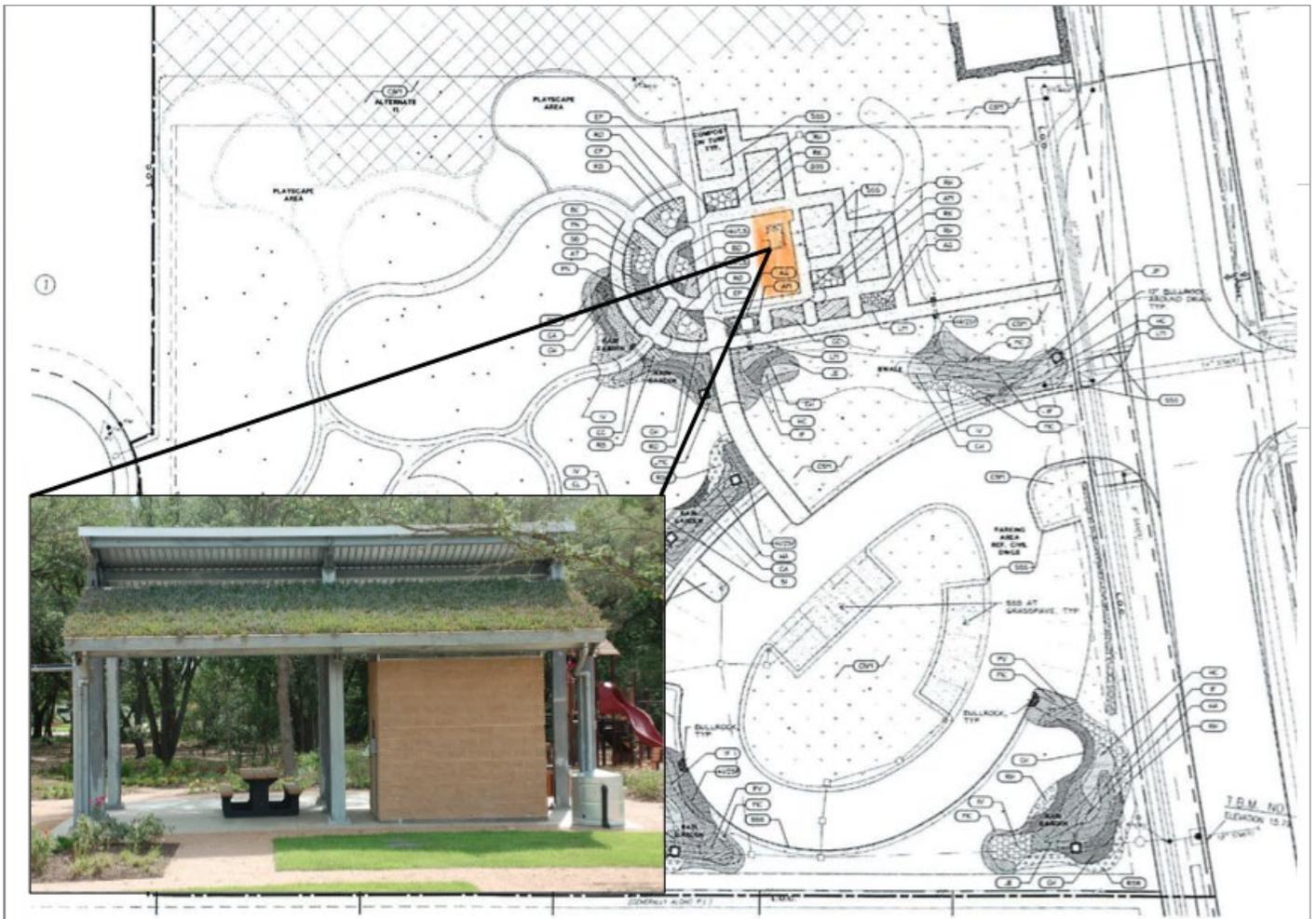
These areas need regular maintenance similar to other landscaped park areas.

1. Remove trash and debris.
 - a. Trash and debris can prevent runoff from entering the BMP facility.
 - b. It can also add to the pollutant load
2. Weeding
 - a. Become familiar with weeds and invasive plants (in order to not mistaken them for “good” plants). Remove and dispose of them off site.
 - b. Do not allow weeds to go to seed.
 - c. Planted areas are easier to maintain because once plants have filled in, the plants help to shade out weeds.
3. Watering—for the first 2 years it will be important to keep plants on a regular watering regime to allow them to establish a strong root system.
 - a. Inspect irrigation regularly to document areas that might be receiving too much or too little water.
 - b. Hand water areas that are not receiving adequate irrigation.
4. Pruning/Cutting Back
 - a. Refer to plant list and learn when plants need to be seasonally pruned/cut back. (More information to follow under individual BMP maintenance.)
5. Freeze damage
 - a. Remove damaged leaves on soft stemmed plants if they appear “mushy”.
 - b. Leave damaged branches on woody plants until danger of freezes has passed. Cutting back woody plants too early will encourage new growth which will be more susceptible to future freezes.
6. Replant as needed and according to design plan unless a plant (or plants) needs to be substituted if it (they) proves to not be suitable to the location or to other maintenance issues.
7. Mulching
 - a. 2-3” applied spring and fall.
 - b. CAUTION: Care should be taken to not allow mulch to cover the crown (top, center) of a plant and should not be pushed up against shrubs or trees. Perennials will rot.
 - c. Choose quality mulch that does not have large pieces of bark—these will float away and clog up systems.

Ghirardi WaterSmart Park Green Infrastructure Best Management Practices



Green Roof



Green roofs help to manage storm water and protect water quality by reducing and slowing storm water runoff and filtering pollutants from storm water. They also act as insulators by reducing heat from sunlight and helping to lower the energy costs of cooling a building. Additionally, they provide aesthetic value to a structure while providing habitat for wildlife.

Green Roof Maintenance Tasks:

Refer to manufacturer's documentation as each green roof structure is unique.

General maintenance:

1. Keep a record of maintenance checks.
2. Become familiar with plant varieties installed on the roof.
3. Test soil in late February or early March—before the spring flush of growth.
4. Bi-weekly
 - a. Check for weeds throughout the year—some may even appear during winter.
 - i. Weeding often will be less time consuming than allowing weeds to take hold.
 - ii. Weeds may also overtake desirable plants.
5. Apply organic fertilizer twice a year according to manufacturer's recommendations or results of soil test
 - a. Do not fertilize during fall and winter. This may stimulate growth that may be harmed by a sudden freeze.
6. Inspect drainage.
7. Check to be sure soil has not been displaced.
8. Remove debris.
9. Be sure green roof is receiving adequate irrigation, but be careful of overwatering.
 - a. Water to saturation point 2-3 times a week during prolonged dry spells.
 - b. In areas of shade, less irrigation may be necessary.

WaterSmart Demonstration Gardens

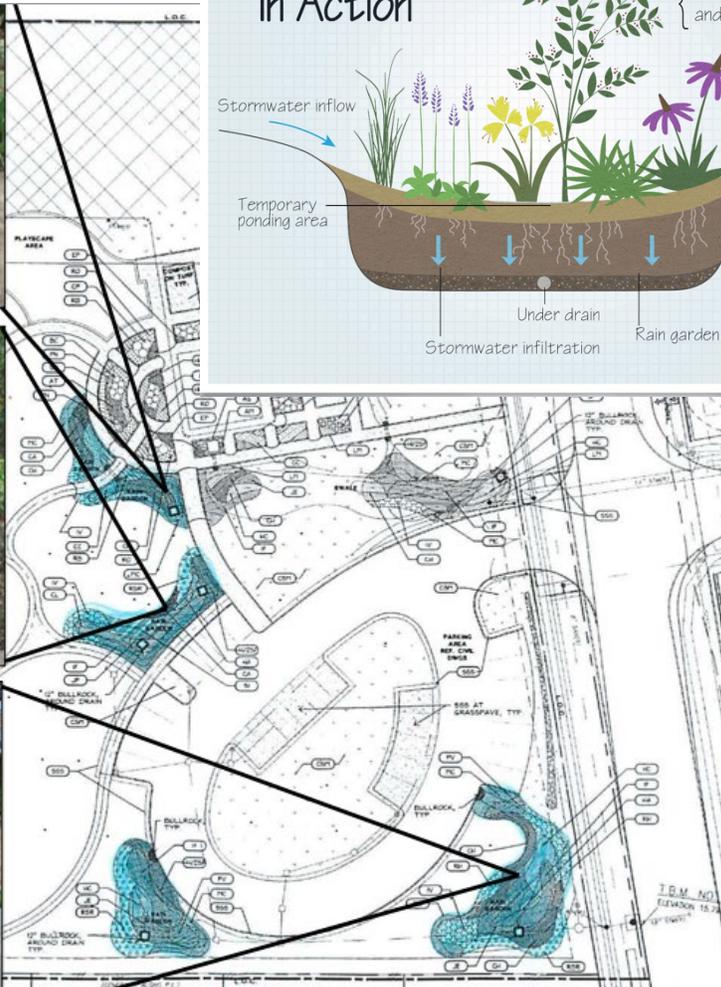


These demonstration gardens highlight environmentally friendly landscape practices that help to conserve water, protect water quality and provide habitat for wildlife.

WaterSmart Garden Maintenance Tasks:

1. Weed as necessary—learn to recognize weeds from newly sprouting/emerging “desirable” plants.
2. Inspect irrigation and adjust accordingly.
3. **IMPORTANT:** During the winter months, cut back on watering. This may be watering once a week if the winter is very dry to not watering at all.
 - a. Plants are typically dormant. Overwatering will result in plant rot.
4. Cut back dead stems on flowering plants.
 - a. This should be done seasonally or anytime the plant has finished flowering for the season.
 - b. Plants may flower at different times of the year. Be careful not to cut back stems that will be soon producing blooms.
5. Replant as necessary—refer to original garden design or substitute similar plants should original ones be found not suitable for the site or for other maintenance issues.
6. Fertilize with an organic fertilizer 1-2 times per year or when plants appear to need extra nutrients. (Look for yellowing leaves, etc.)
7. Apply 2-3” of mulch in fall and spring only if necessary. A build up of mulch may cause the facility to not perform properly.
 - a. Mulching in March will help suppress weeds, maintain moderate soil temperatures and conserve water by helping to slow evaporation.
 - b. Mulching in late October will help protect roots from possible freeze damage.
 - c. Take care to not cover newly emerging plants.
 - d. **CAUTION:** Keep mulch away from the crown (center) of the plant especially for perennials and non-woody stemmed plants to prevent plant rot. Do not pile up mulch against tree trunks (the root flare should always be visible) or too close to center of shrubs.

Rain Gardens



A rain garden is a sunken, generally flat-bottomed garden bed that collects and treats storm water runoff from impervious (solid) surfaces.

Rain Garden Maintenance Tasks:

1. Avoid walking in the rain garden as much as possible. This will compact soil and not allow water to penetrate into the soil.
2. Weed and remove invasive plants regularly.
3. Remove trash and debris.
 - a. Trash and debris will prevent rain garden from functioning properly.
 - b. Trash and debris will add to the pollutant load.
4. Check for erosion.
 - a. Erosion may occur at the area where water enters the rain garden.
 - i. Add a splash pad, riprap, etc. to disperse the water energy.
 - b. Erosion may indicate there is not enough vegetation to hold the soil in place.
 - i. Add more plants.
 - ii. Mulch slopes (preferably with compost) until plants fill in the areas.
5. Remove sediment build-up.
 - a. It can prevent runoff from entering the rain garden.
 - b. It may increase the amount of time it takes the water to soak into the soil.
 - c. Plants may become choked with sediment.
 - i. Remove as soon as possible by hand or small shovel.
 - ii. Use a rake to loosen soil around plants once sediment has been removed.
6. Watering
 - a. Plants need at least 2 full growing seasons to become established. Water regularly especially during extended dry periods. Roots of new plantings are fragile and shallow and will be damaged or cause the plant to die if allowed to dry out.
 - b. Plantings around the edge need to dry out after rain event, so do not apply extra water. These typically like dryer conditions and will rot if kept wet.
 - c. Water early morning and deeply. This will allow leaves to dry, helping to prevent mildew and allow water to sink in before the sun causes evaporation.
7. Pruning (There are different recommendations for different plants. This may require some research or advice from a plant expert.)
 - a. Prune and remove dead stalks/branches/flowers to main appearance and keep the plant growing and healthy.
 - b. Early spring is a good time to cut back plants that do not have woody stems—only when you see signs of new growth at the base.
 - i. Grasses should be cut back to 12"; soft-stemmed plants should be cut back to 8".
 - ii. Shrubs and other woody plants may be cut back by 1/3 after flowering.
8. Replant as necessary according to the design plan unless a plant is found to be unsuitable for the site or is higher maintenance.
 - a. Dead or dying plants indicate the plants may be the wrong plant choice for the type of sun exposure or moisture conditions. Weeds may also be a problem.
9. Mulching
 - a. Apply no more than 2-3" good quality mulch spring and fall.
 - i. Mulch should not have large bark pieces as these will just float and clog up or dam the system. Ideally, the mulch should stay in place during and after a rain event.
 - b. CAUTION: Care should be taken to not allow mulch to cover the crown (top, center) of a plant and should not be pushed up against shrubs or trees. Perennials will rot in this situation.
 - c. Sometimes a crust will form on top of the mulch.
 - i. Carefully break up this top layer or remove top layer and add fresh mulch.
 - d. After 2 years, check the depth of mulch. Much should have decomposed, but should there be more than a 3" layer, remove old mulch and re-mulch to get to the 3" level.

Swale



Swales are gently sloping depressions planted with dense vegetation or grass and treat storm water runoff from impervious (solid) surfaces. As the runoff flows along the length of the swale, the vegetation slows and filters the water and allows it to soak into the soil.

Swale Maintenance Tasks:

1. Weed and remove invasive plants regularly.
2. Remove trash and debris which can prevent the swale from functioning properly and will add to the pollutant load.
3. Check for erosion.
 - a. Erosion may occur at the area where water enters the swale.
 - i. Add a splash pad, riprap, etc. to disperse the water energy.
 - b. Erosion may indicate there is not enough vegetation to hold the soil.
 - i. Add more plants.
 - ii. Mulch slopes (preferably with compost) until plants fill in the areas.
4. Remove sediment build-up.
 - a. Sediment build-up will prevent runoff from entering the swale.
 - b. It may increase the amount of time it takes the water to soak into the soil.
 - c. Plants may become choked with sediment.
 - i. Remove as soon as possible by hand or small shovel.
 - ii. Use a rake to loosen soil around plants once sediment has been removed.
5. Watering
 - a. Plants need at least 2 full growing seasons to become established. Water regularly, especially during prolonged dry spell.
 - b. Plantings around the edge need to dry out after a rain event—do not apply extra water. These typically like dryer conditions and will rot if kept wet.
 - c. Water early morning and deeply. This will allow leaves to dry which will help prevent mildew and will allow water to sink in before the sun causes evaporation.
6. Pruning (There are different recommendations for different plants. This may require some research or advice from a plant expert)
 - a. Prune and remove dead stalks/branches/flowers to maintain appearance and keep the plant growing and healthy.
 - b. Early spring is a good time to cut back plants that do not have woody stems—if or when you see signs of new growth.
 - i. Grasses should be cut back to 12"; soft-stemmed plants cut back to 8".
 - ii. Shrubs and other woody plants may be cut back by 1/3 after they flower.
7. Replant as necessary according to the original design plan unless a plant is found to be unsuitable for the site or is higher maintenance than acceptable.
 - a. Dead or dying plants indicate the plants may be the wrong plant type for the sun exposure and moisture conditions, or they may be smothered by weeds
8. Mulching
 - a. Apply no more than 2-3" good quality mulch spring and fall.
 - i. Mulch should not contain large bark pieces which float and clog up or dam the system. Ideally, the mulch should stay in place during and after a rain event.
 - b. CAUTION: Care should be taken to not allow mulch to cover the crown (top, center) of a plant and should not be pushed up against shrubs or trees. Perennials will rot.
 - c. After 2 years, check the depth of mulch. Much should have decomposed, but should there be more than a 3" layer, remove old mulch and re-mulch to get to the 3" depth.

Rain Water Cistern



Rainwater harvesting (RWH) is a system that captures, diverts and stores rainwater (storm water) for later use. For storm water control, it retains water to minimize the volume of water entering the storm drain system during a rain event, allows water to be slowly released into the system and recharges groundwater. A RWH system reduces the demand on municipal water supplies while it supplies a better, untreated water source for plants.

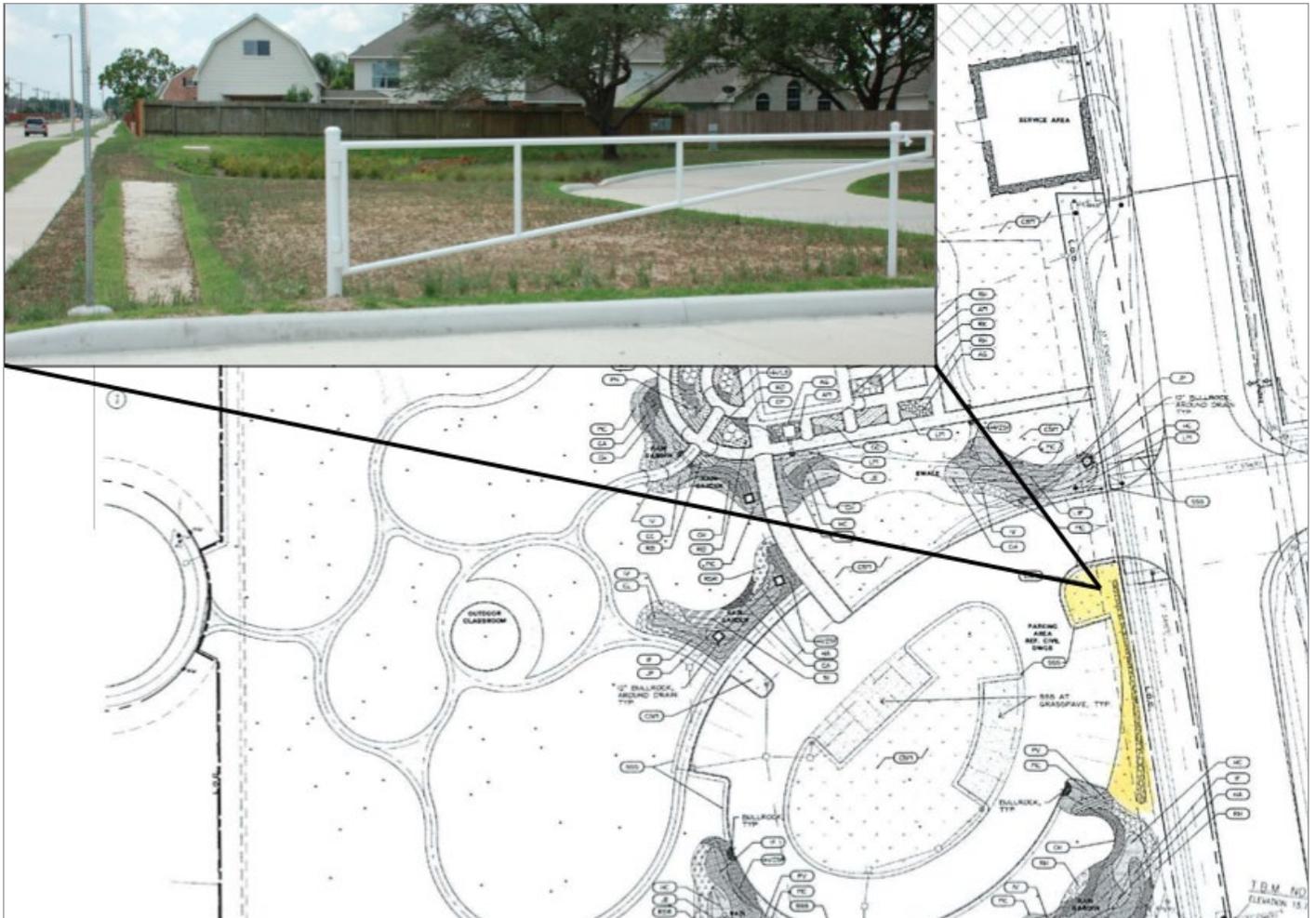
Refer to the documentation about the specific cistern installed at the park.

Be sure startup procedures were followed to be sure all was in working order at the beginning.

Rain Water Cistern Maintenance Tasks:

- I. Components
 - a. Catchment (roof)
 - b. Conveyance (gutters and downspouts)
 - c. Storage (cistern)
 - d. Treatment (screening and diversion)
 - e. Distribution (channels water from storage to point of use)
2. Maintenance--monthly
 - a. Create a maintenance checklist.
 - b. Clean and maintain the roof and gutters.
 - i. Remove debris.
 - ii. Inspect after high-intensity storms.
 - iii. Flush gutters once a year. (Divert this water away from the tank.)
 - iv. Look for standing or puddling water. (Gutters may need adjusting to be sure water is flowing properly.)
 - c. Check downspouts for cracks.
 - i. Inspect regularly for debris.
 - ii. Check to make sure water is flowing freely through pipes.
 - d. Clean and maintain the filters/screens.
 - i. Remove debris and clean thoroughly.
 - e. Check first flush (diverter).
 - i. Clean out monthly and/or after a large rain event.
 - f. Storage container
 - i. Check the foundation for cracks and/or erosion.
 - ii. Inspect inside of tank.
3. Freeze concerns
 - a. Protect exposed components by installing insulation.

Vegetated Buffer



Vegetated buffer strips consist of planted or naturally occurring vegetation such as shrubs, trees, and plants. The vegetation serves as a filter, straining out sediments, nutrients, pesticides and other pollutants before they reach the storm drain. In this case, the storm water sheet flow off the parking lot and roadway makes its way into the buffer strip where it is filtered before it enters the storm drain system. Vegetated buffer strips act as natural, living sediment and pollutants filters.

Pervious Pavers



The pervious pavers are designed with small spaces between each paver so water can seep down between the stones and into the gravel base below. Water can then either soak into the soil or drain into a perforated pipe located below ground. This pipe is connected to the storm drain system.

Pervious pavers at the park are Eco-Priora made by Pavestone (see manufacture information sheet)

Pervious Pavers Maintenance Tasks:

1. Remove debris and organic matter by hand or with a blower.
2. Twice a year – observe parking area after a rain to make sure water is draining.
3. Clean with a street sweeper as needed.
4. Once a year - check for areas of missing aggregate between pavers and broken pavers.
5. Replace aggregate as needed.



Traditional Pavers



Pervious Pavers



**Pervious Pavers –
Aggregate needs added**

Manufacturers information on following pages.

Eco-Priora™

Concrete Paver Environmental Systems

C R E A T I N G B E A U T I F U L L A N D S C A P E S ®

ENVIRONMENTAL

®

Eco-Priora™

Pavestone Eco-Priora™ is the sustainable solution for permeable pavements. Eco-Priora™ is produced in a 120mm x 240mm rectangular module that is 80mm in thickness with a patented interlocking joint and a micro-chamfered top edge profile. This ingenuity is singular to the Pavestone Eco-Priora™ product and insures optimum pavement performance unequalled in the permeable paver industry. The unique Eco-Priora™ joint profile allows surface water to infiltrate into the pavement and its sub-layers. With initial permeability average flow rates of over 100 inches per hour, the Eco-Priora™ product, even with a clogging factor, will still meet the majority of current storm water management plans (SWMP). The structural interlocking capability is achieved by the paving unit having interlocking joints with a minimum of two vertically aligned horizontal interlocking spacer bars on each of its sides. These spacer bars interlock throughout the depth of the block and nest adjacently with neighboring paving units. This interlocking function resists lateral and vertical displacement when the unit is exposed to load. The dynamics of pavement stress are better distributed providing a structurally superior permeable paving system.

The micro-chamfered top edge profile produces a horizontal edge to edge dimension that is nominally 7mm including installation gapping. This small joint complies dimensionally with current ADA requirements for walking surfaces with spaces no greater than 1/2 inch. This narrow jointed surface diminishes vibration for wheelchairs and shopping carts when compared to all other permeable paving products. Eco-Priora™ can assist in meeting current EPA storm water regulations and LEED certification. The Eco-Priora™ product best achieves the balance of aesthetic segmental paving and the function of permeable pavement.

APPLICATIONS

Parking Lots • Driveways • Patios • Entrance Areas • Sidewalks • Terraces
Garden Pathways • Pool Decks • Pedestrian Malls • Roof Gardens • Streets

COMPOSITION AND MANUFACTURE

Eco-Priora™ is available in one size. Height = 80mm. Eco-Priora™ is made from a "no slump" concrete mix made under extreme pressure and high frequency vibrations. Eco-Priora™ has a compressive strength greater than 8000 psi, a water absorption maximum of 5% and will meet or exceed ASTM C-936. Note: Requires modifying the ASTM C 140 - Paver Annex A4 - "The test specimen shall be 60 ± 3 mm thick and, if necessary, cut to a specimen size having a Height/Thickness (width) [H/T] aspect ratio of 0.6 ± 0.1. If 3 1/8 in. (80 mm) thick pavers are specified, their compressive strength test results per ASTM C 140 should be adjusted by multiplying by 1.18 to equate the results to that from 2 3/8 in. (60 mm) thick pavers. Contact ICPI for adjustment factors for paver exceeding 3 1/8 in. (80 mm) thickness.

INSTALLATION

1. Excavate unsuitable, unstable, or unconsolidated subgrade material. Compact the area, which has been cleared as per the engineer's of record (EOR) requirements. Backfill and level with open graded aggregates as per the EOR's structural and hydraulic design.
2. Place bedding course of hard and angular material conforming to the grading requirements of ASTM No. 8 or No. 9 to a uniform minimum depth of 1 1/2"-2" (38mm) screeded to the grade and profile required.
3. Install Eco-Priora™ with joints approximately 1/4" (7mm).
4. Where required, cut pave stones with an approved cutting device to fit accurately, neatly, and without damaged edges.
5. Tamp pave stones with a plate compactor, uniformly level, true to grade, and free of movement.
6. Spread a thin layer of hard angular material conforming to the grading requirements of ASTM No. 8 or No. 9 aggregate over entire paving area.
7. Make one more pass with plate compactor to nest the aggregate and fill joints to the top.
8. Sweep and remove surplus joint material.

Complete installation & specification details are available by contacting your Pavestone Sales Representative.

Note: ✓ Permeable pavements require both civil and hydraulic engineering. All final pavements design shall be approved by a licensed engineer familiar with local site conditions, building codes and storm water management plans.

PRODUCT INFORMATION

Eco-Priora™ is available in one size. Height = 80mm



ECO-PRIORA™
(120mm x 240mm)

Eco-Priora™

Dimensions: 4 3/4" W x 9 7/16" L x 3 1/8" H

Wt./Stone: 11.5 lbs.

Stones/Pallet: 280

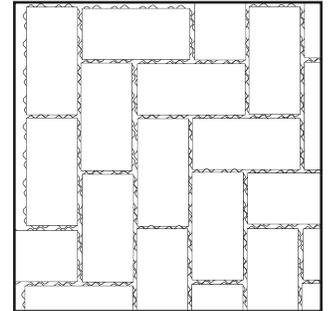
Approx. Wt./Pallet: 3,255 lbs.

Sq. Ft./Pallet: 88

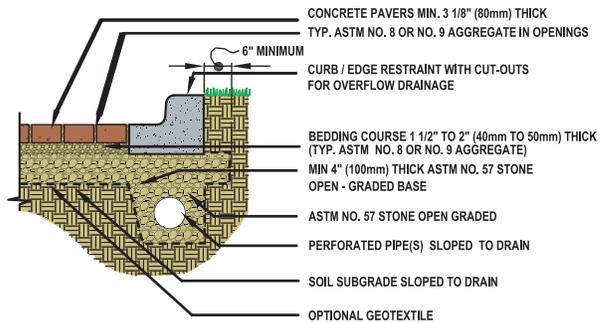
Product Number: 699



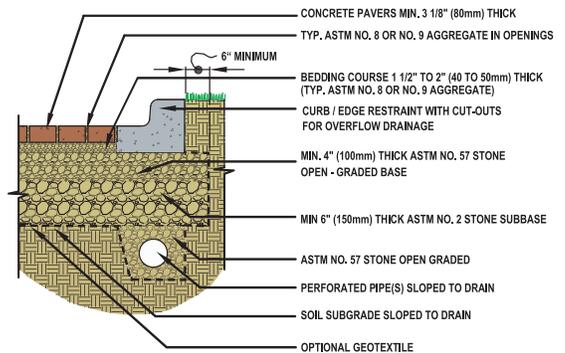
INSTALLATION PATTERN



PERMEABLE PAVERS TREATMENT



PERMEABLE PAVERS TREATMENT AND DETENTION



PAVESTONE®
Creating Beautiful Landscapes®

www.pavestone.com

© 2013 by Pavestone, LLC. All Rights Reserved. **PAVESTONE** and Creating Beautiful Landscapes® are trademarks of Pavestone, LLC. Eco-Priora™ is a trademark of F. von Langsdorff protected by one or more of the following patents: U.S. Patent 5,902,069, U.S. Patent 6,857,244.



World Wide Pavers

ICPI Charter Member



- Atlanta, GA: (770) 306-9691
- Austin/San Antonio, TX: (512) 558-7283
- Boston, MA: (508) 947-6001
- Cartersville, GA: (770) 607-3345
- Charlotte, NC: (704) 588-4747
- Cincinnati, OH: (513) 474-3783
- Colorado Springs, CO: (719) 322-0101
- Dallas/Ft. Worth, TX: (817) 481-5802
- Denver, CO: (303) 287-3700
- Hagerstown, MD: (240) 420-3780

- Houston, TX: (281) 391-7283
- Kansas City, MO: (816) 524-9900
- Las Vegas, NV: (702) 221-2700
- New Orleans, LA: (985) 882-9111
- Phoenix, AZ: (602) 257-4588
- St. Louis/ Cape Girardeau, MO: (573) 332-8312
- Sacramento/ Winters, CA: (530) 795-4400

Compost on Turf Grass Demonstration Area



The purpose of this area is to collect data that shows applying compost to turf grass to be a better choice than using tradition methods of turf grass management. Both will receive the same amount of irrigation.

Compost on Turf Grass Maintenance Tasks:

Compost on Turf Area

1. Apply $\frac{1}{4}$ to $\frac{1}{2}$ inch of compost to turf area in the spring and fall. Gently rake in the compost to make sure areas of grass are not smothered.
2. Mow high. During periods of drought, mow less often, a minimum of every 2 weeks, to allow longer blades of grass to shade the soil allowing for less water evaporation and keeping soil temperatures more even.
 - a. Set mower at highest setting, preferably 3+ inches
3. Water less often, but deeply. Once turf is established, apply one inch of water 2 times a week.
 - a. Watch for runoff. At that point no more water is being absorbed. Irrigation may need to be timed to allow water to sink in before next cycle of irrigation is scheduled.

Traditional Turf Area

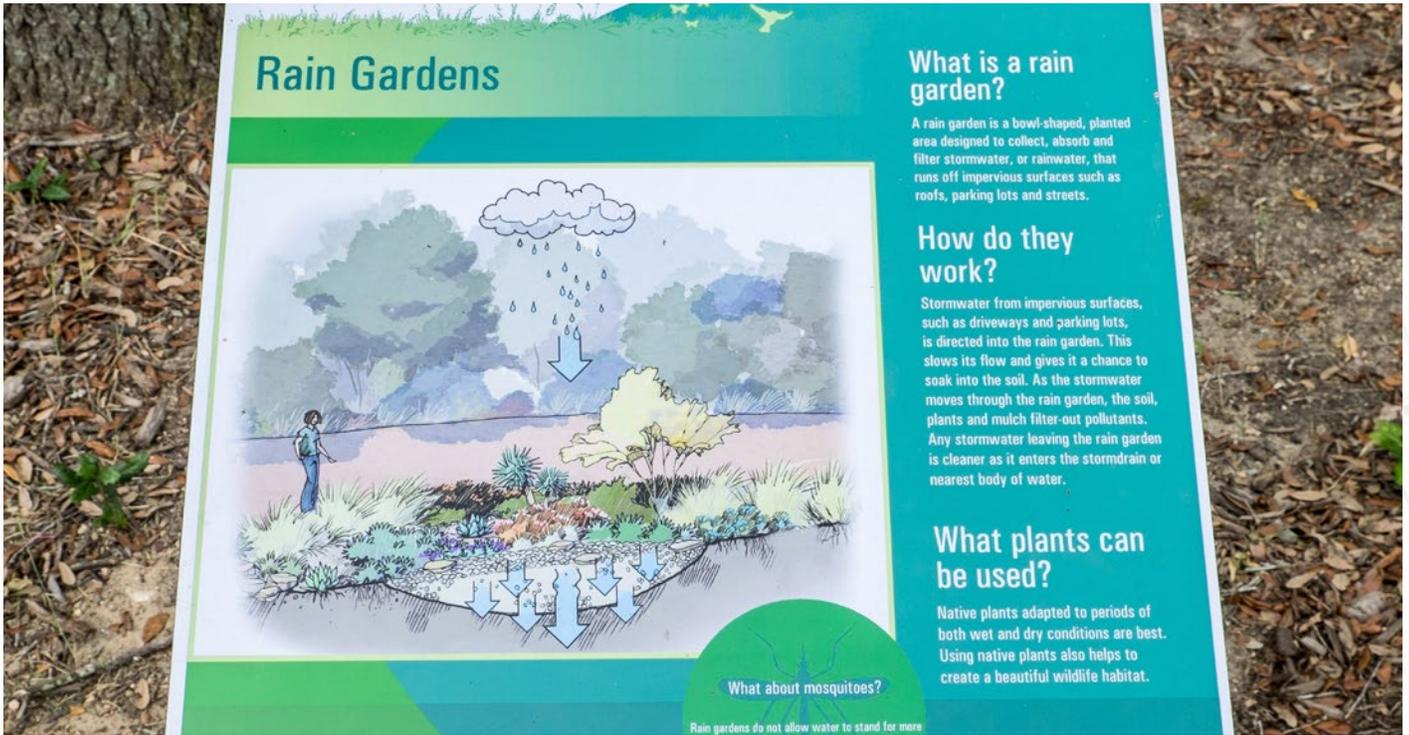
1. Irrigate following instructions above.
2. Mow weekly, setting blade at typical 2" height.

Wildflower Areas



Mowing at the proper time of year will be very important if the wildflowers are to continue to bloom year after year. Mowing at improper times will result in no blooms or very few blooms. The wildflowers chosen for the GWS Park will have their major bloom in early to late spring. Other wildflowers will emerge when it is their time to bloom.

Sign Maintenance



Please follow manufacturer's recommendations for care and maintenance of the informational signs throughout the park. Please see information on the pages that follow.



iZone
Imaging

Care and Maintenance

© 2013 iZone Imaging. All rights reserved.

TECHNICAL BULLETIN

Care and Maintenance of iZone Imaging Custom High Pressure Laminate (CHPL) Graphic Panels

CLEANING:

- For regular cleaning, mild soap and water on a soft cloth is recommended. Rinse with clean water after washing.
- **DO NOT** use any cleaners with abrasives, any acids or acidic solutions.
- Graffiti (paint, crayon, felt tip markers, etc) can typically be removed using organic solvents, such as:
 - Simple Green** – 800.228.0709, www.simplegreen.com
 - Goof Off** – 800.398.3892, www.gooffstainremover.com
 - Graffiti Solutions** – 800.891.0091, www.graffitisolutions.com
- Recommendations for the use of the above referenced products are for significant graffiti removal only and should not be used for general purpose cleaning. iZone Imaging does not warrant or guarantee cleaning results or surface blemishes resulting from usage of these products.
- Follow all cleaning product manufacturer's instructions for graffiti removal and always test products in an inconspicuous location first. Always rinse with clean water after use of any cleaners.
- Very stubborn graffiti may require use of stronger cleaners, please contact iZone Imaging for assistance with such issues. **DO NOT** use lacquer thinner or acetone, as they may affect the surface of the graphics panel.
- Minor blemishes, nicks, rub marks, burns, and light scratches can be concealed using a polymer based surface treatment.

MAINTENANCE:

- Edges should be treated with a liquid sealant, such as Thompson's® WaterSeal® Waterproofer Plus Clear Wood Protector, on an annual basis. This helps maintain the core color and protects the edge finish. 800-367-8297, www.thompsonswaterseal.com
- An occasional treatment of the newly cleaned graphic panel face with a polymer based surface protectant, using a clean and soft cloth, will assist in easing removal of potential graffiti and dirt accumulation.
- Proper care and maintenance of your iZone Imaging CHPL graphic panels will ensure the highest quality appearance and function of the product over the expected life of the product.

Maintenance Calendar

Although BMP facilities require maintenance throughout the year in order to perform well, the calendar below will offer general reference for scheduling activities.

Action	Timing	Spring	Summer	Fall	Winter	Comments
Inspect site — each individual facility	After each rain event of 1 in. or greater during a 24 hr period	✓	✓	✓	✓	Such rain events may occur any time of year
Remove debris and trash from inlets, outfalls and within the facility	Monthly (in anticipation of a large rain event and after rainfall of 1 in. in a 24 hr.	✓	✓	✓	✓	
Correct erosion problems	After each rain event of 1 in. or greater during a 24 hr period	✓	✓	✓	✓	
Remove sediment from the base of facility	As need or when accumulation reaches 2-3 in. in depth		✓			Most easily done during dry periods or summer
Check soil levels — add as needed to maintain proper depth	Periodically, especially at the end of a growing season	✓	✓	✓		As compost decomposes, soil levels may drop
Check mulch levels to maintain	Periodically, and/or early spring and late fall and especially after a rain event of 1 in.	✓	✓	✓		After heavy rainfall, mulch may float to fill in low areas or collect too closely to crowns of plants, causing the plant to rot.
Fertilize with organic fertilizer	1-2 times per year	✓		✓		

Maintenance Calendar (cont.)

Action	Timing	Spring	Summer	Fall	Winter	Comments
Planted areas						
Remove weeds	As needed	✓	✓	✓		Become familiar with plant varieties to not mistaken them as weeds when they are emerging in the spring.
Water plants	Established areas should need only weekly watering during warmer	✓	✓	✓		New plants should be kept watered until they are established.
Replace plants as necessary	Inspect a minimum of twice per year during growing season	✓		✓		Plant during the cooler months or early spring or fall. Trees and shrubs are best planted in the fall.
Cutting back and pruning						
Perennials	Cut back in late winter once new growth appears at the base and depending on the variety.	✓				Remove spent blooms as necessary during growing season. Become familiar with plant varieties and their growing habit.
Grasses	Cut back to 12 inches in late winter/early spring when there is sign of new growth at the base	✓			✓	
Trees and Shrubs	Prune to maintain shape, size and to remove damaged or dead branches as needed				✓	In general, winter is best time to prune trees and shrubs when they are still dormant. Winter is best

