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Shaping our community together

CITY OF LACEY

*DEPARTMENT OF COMMUNITY & ECONOMIC DEVELOPMENT*
*420 College Street SE, Lacey, WA 98503 (360) 491-5642*

| OFFICIAL USE ONLY |
|---|
| Date: |
| Case #: |
| Received By: |
| Planner: |
| Related Cases: |

# GENERAL LAND USE APPLICATION

**Please Identify Supplemental Forms Accompanying This Application:**

- ☐ Binding Site Plan (Preliminary)
- ☐ Binding Site Plan (Final)
- ☐ Boundary Line Adjustment
- ☐ Conditional Use Permit
- ☐ **Environmental Checklist (SEPA) (must include thumbdrive containing .pdf copies of all submittal materials, including applications)**
- ☐ Joint Aquatic Resources Permit Application (JARPA)
- ☐ Landclearing Permit/Class IV Forest Practices
- ☐ Limited Administrative Review (separate application form is not required)
- ☐ Planned Residential Development (Preliminary)
- ☐ Planned Residential Development (Final)
- ☐ Short Subdivision (Preliminary)
- ☐ Short Subdivision (Final)
- ☐ Site Plan Review
- ☐ Street Merchant Supplemental
- ☐ Subdivision (Preliminary)
- ☐ Subdivision (Final)
- ☐ Townhouse Development Permit
- ☐ Wetland Development Permit
- ☐ Woodland District Supplemental

***Applicant/Property Owner Information**

Owner: City Of Lacey

Mailing Address: 420 College Street SE, Lacey, WA 98503

Phone Number(s): 360-413-4340

E-mail Address: acsmith@ci.lacey.wa.us

Signature:

** For projects with multiple owners, attach a separate sheet with above owner information and signatures.*

Applicant: SCJ Alliance

Mailing Address: 8730 Tallon Lane NE, Lacey, WA 98516

Phone Number(s): 360-352-1465

E-mail Address: project-permitting@scjalliance.com

*Authorized Representative: Whitney Holm, SCJ Alliance

Mailing Address: 8730 Tallon Lane NE, Lacey, WA 98516

Phone Number(s): 360-352-1465

E-mail Address: whitney.holm@scjalliance.com

**The authorized representative will be the primary staff contact for all project related questions and correspondence.*

**Project Information**

Project Name: Regional Athletic Complex Parking Lot Design

Project Description: Demolition of existing gravel areas· Site preparation, grading, and erosion control activities· Construction of parking lot, sidewalks, and plaza area· Construction/installation of on-site water quality and flow control facilities

**Property Description**

Site Address: 8323 Steilacoom Rd SE, Lacey, WA 98513-2057

Full Legal Description of Subject Property (attached ■):

SECTION 13/14 TOWNSHIP 18 RANGE 1W QUARTER NW SW/NE SE BLA 13101203 TR A DOCUMENT 4335765

SECTION 13/14 TOWNSHIP 18 RANGE 1W QUARTER NW SW/NE SE BLA 13101203LA TR B DOCUMENT 4335765

Section: 14 Township: 18n Range: 1w

Assessor Tax Parcel Number(s): A: 11814410200, B: 11814410300

Zoning District: LD3-6,LOW-DENSITYRESIDENTIAL

Shoreline Designation (if applicable): _____

Area of Project Site (in square feet if less than 1 acre; in acres if greater ): A: 4.3 Acres, B: 67.06 Acres

Critical Areas on or near Site (show areas on site plan):

- ■ None
- ☐ Creek or stream (name): _____
- ☐ Lake or pond (name): _____
- ☐ Endangered or threatened species (identify): _____
- ☐ Encumbrances, such as wells with radius, and easements: _____
- ☐ Wetland
- ☐ Steep slopes/draw/gully/ravine
- ☐ Historic site or structure
- ☐ Flood hazard area, provide FEMA flood zone and map number: _____

**Utilities (Existing and Proposed)**

Water: Existing _____ Proposed _____

Sewer: Existing _____ Proposed _____

Access (name of street(s) from which access will be gained): _____

I affirm, under penalty of perjury, that all answers, statements, and information submitted with this application are correct and accurate to the best of my knowledge. I also affirm that I am the owner of the subject site or am duly authorized by the owner to act with respect to this application. Further, I grant permission from the owner to any and all employees and representatives of the City of Lacey and other governmental agencies to enter upon and inspect said property as reasonably necessary to process this application. I agree to pay all fees of the City that apply to this application.

**Print Name** **Signature** **Date**

Please attach all applicable supplemental forms

**MAINTENANCE AND SOURCE CONTROL MANUAL**

**REGIONAL ATHLETIC COMPLEX PARKING LOT DESIGN**

**8323 STEILACOOM RD SE**

**PARCEL NUMBERS: 11814410200**

## SECTION 1: OWNER INFORMATION

The maintenance staff at the City of Lacey will maintain the grounds and stormwater facilities. The stormwater facilities maintenance plan will be kept in safe and well known place and will be made available for inspection to the City upon request. See the general requirements below regarding frequency of inspections.

## SECTION 2: DESCRIPTION OF THE DRAINAGE SYSTEM AND FACILITIES SERVING THE SITE

The proposed improvements will allow stormwater runoff to be collected throughout the parcel, treated, and infiltrated on-site.

Typical maintenance of the stormwater system includes removing debris from trench drains and catch basins, removing sediment from pipes and catch basins, and removing sediment and debris from the bioretention pond and underground infiltration systems. The drawings of the stormwater facilities are found in Attachment 1 of the Stormwater Site Plan. See Attachment 1 of this report for the Basin Map Exhibits.

## SECTION 3: FINANCIAL LIABILITY

The property owner, the City of Lacey, will be financially responsible for keeping the stormwater facilities operational.

## SECTION 4: SITE AND FACILITY MANAGEMENT

**Intent:**
The importance of maintenance for the proper functioning of stormwater control facilities cannot be over-emphasized. A substantial portion of failures (clogging of filters, resuspension of sediments, loss of storage capacity, etc.) are due to inadequate maintenance. Stormwater BMP maintenance is essential to ensure that BMPs function as intended throughout their full life cycle.

The fundamental goals of maintenance activities are to ensure the entire flow regime and treatment train designed for this site continue to fully function. For this site these include:

- Maintain designed stormwater infiltration capacity
- Maintain designed stormwater detention/retention volume
- Maintain ability to safely convey design stormwater flows
- Maintain ability to treat stormwater runoff quality

- Preserve soil and plant health, as well as stormwater flow contact with plant and soil systems
- Clearly identify systems so they can be protected
- Keep maintenance costs low
- Prevent large-scale or expensive stormwater system failures
- Prevent water quality violations or damage to downstream properties

The intent of this section and manual is to pass on to the responsible party(s) all the information critical to understand the design of the system, risks and considerations for proper use, suggestions for maintenance frequencies, and cost so that realistic budgets can be established.

**General Requirements:**
1. Maintenance Required – all stormwater facilities shall be maintained in accordance with this maintenance program, the stormwater site plan for the Regional Athletic Complex Parking Lot, the most current version of the City of Lacey's *Stormwater Design Manual,* and the most current version of the Department of Ecology's *Stormwater Management Manual for Western Washington.*

2. Minimum Standards – the following are the minimum standards for the maintenance of this project's stormwater facilities.

a. Facilities shall be inspected annually and cleared of debris, sediment, and vegetation when they affect the functionality and/or design capacity of the facility.
b. Landscape and lawn/turf areas shall be inspected quarterly and mowed and replanted as necessary. Clippings are to be removed and properly disposed of.
c. Where lack of maintenance is causing or contributing to a water quality problem, immediate action shall be taken to correct the problem. Within one month, after initial recognition of the problem, a City of Lacey inspector may revisit the facility to assure that the problem has been rectified at his or her convenience.

3. Disposal of Waste from Maintenance Activities – disposal of waste from maintenance activities shall be conducted in accordance with City of Lacey's waste disposal standards.

4. Compliance – property owners are responsible for the maintenance, operation or repair of stormwater drainage systems, and project installed BMPs. Property owners shall maintain, operate, and repair these facilities in accordance with the requirements of this maintenance program, the drainage report, the most current edition of the City of Lacey's *Stormwater Design Manual,* and the most current edition of the Department of Ecology's *Stormwater Management Manual for Western Washington.*

## SECTION 4a: POLLUTION SOURCE CONTROL PLAN

See Attachment 2 for the completed Stormwater Pollution Source Control Checklist. All required BMPs are listed on the Stormwater Pollution Source Control and identified on Stormwater Site Plans.

**1. Avoid the activity or reduce its occurrence:**
If possible, avoid the activity or do it less frequently. Is there a substitute process or a different material available to get the job done? Can a larger run of a process be performed at one time, thus reducing the

number of times per week or month it needs to be repeated? For instance, raw materials could be delivered close to the time of use instead of being stockpiled and exposed to the weather. Perhaps the site could avoid one solvent-washing step altogether. Apply lawn care chemicals following directions and only as needed. Many lawns are excessively fertilized. Do not apply herbicides right before it rains. Ecology or the Thurston County Department of Public Health and Social Services can provide pollution prevention assistance.

**2. Move activities under shelter:**
Sometimes it is fairly easy to move an activity indoors out of the weather. The benefits of this are twofold; preventing runoff contamination, and providing for easier, more controlled cleanup if a spill occurs. An example would be unloading and storing barrels of chemicals inside a garage area instead of doing it outside. Please be aware that moving storage areas indoors may require installation of fire suppression equipment or other building modifications as required by the International Building Code (IBC), the International Fire Code or local ordinances.

**3. Clean up spills quickly:**
Promptly contain and clean up solid and liquid pollutant leaks and spills on any exposed soil, vegetation, or paved area. Commercial spill kits are available, but readily available absorbents such as kitty litter also work well in many cases. Promptly repair or replace all leaking connections, pipes, hoses, valves, etc., which can contaminate stormwater.

**4. Use less material:**
Don't buy or use more material than you really need. This not only helps keep potential disposal, storage, and pollution problems to a minimum, but will probably save money, too.

**5. Use the least toxic materials available:**
Investigate the use of materials that are less toxic than what is used now. Perhaps a caustic-type detergent or a solvent could be replaced with a more environmentally friendly product. Such a change might allow the site to discharge process water to the sanitary sewer instead of paying for expensive disposal (contact the City of Lacey Public Works or the LOTT Clean Water Alliance to find out about allowable sanitary sewer discharges and pretreatment permits). Remember that even if using a biodegradable product, nothing but uncontaminated water is allowed to enter the stormwater drainage system.

**6. Create and maintain vegetated areas near activity locations:**
Vegetation of various kinds can help filter pollutants out of stormwater, so it is advisable to route stormwater through vegetated areas located near the activity. For instance, many parking lots contain grassy islands, typically formed in a "hump." By creating those islands as depressions instead of humps, they can be used to treat runoff from the parking lot or roof. Also, don't forget the erosion control benefits of vegetation at a site.

**7. Locate activities as far as possible from surface drainage paths:**
Activities located as far as possible from known drainage paths, ditches, streams, other water bodies, and storm drains will be less likely to pollute, since it will take longer for material to reach the drainage feature. This gives more time to react to a spill, or if it is a "housekeeping" issue, may protect the local

waters long enough for you to clean up the area around the activity. Don't forget that groundwater protection is important throughout the region, no matter where the activity is located, so the actions taken on your site on a day-to-day basis are always important, even in dry weather.

**8. Maintain stormwater drainage systems**
Pollutants can concentrate over time in storm drainage structures such as catch basins, ditches, and storm drains. When a large storm event occurs, it can mobilize these pollutants and carry them to receiving waters. Develop and implement maintenance practices, inspections, and schedules for treatment facilities (e.g., detention ponds, oil/water separators, vegetated swales). Clean oils, debris, sludge, etc., from all BMP systems regularly, including catch basins, settling/detention basins, oil/water separators, boomed areas, and conveyance systems, to prevent the contamination of stormwater. Promptly repair or replace all substantially cracked or otherwise damaged paved secondary containment, high-intensity parking, and any other drainage areas that are subjected to pollutant material leaks or spills. Also repair or replace all leaking connections, pipes, hoses, valves, etc., which can contaminate stormwater. Requirements for cleaning stormwater facilities are discussed in Volume IV of the 2019 Ecology Manual, specifically BMP S417. Maintenance standards can be found in Volume V Appendix V-A of the 2019 Department of Ecology Stormwater Management Manual for Western Washington.

**9. Reduce, reuse, and recycle as much as possible**
Always look for ways to recycle instead of just disposing. This can save money as well as keep both hazardous and non-hazardous materials out of the landfills. Learn more about other businesses that have made process changes allowing recycling of chemicals by calling Ecology at 1-800-RECYCLE and requesting publications No. 92-45 and No. 90-22. Another unique recycling opportunity for businesses is available through the Industrial Materials Exchange. This free service acts as a waste or surplus "matchmaker," helping one company's waste become another company's asset. For instance, waste vegetable oil can become biofuel for another business. Call Industrial Materials Exchange at (206) 625-6232 to list potentially usable solid or chemical waste in their publication.

**10. Be an advocate for stormwater pollution prevention**
Help friends, neighbors, and business associates find ways to reduce stormwater pollution in their activities. Most people want clean water and do not pollute intentionally. Share your ideas and the BMPs in this chapter to get them thinking about how their everyday activities effect water quality.

**11. Report problems**
We all must do our part to protect water, fish, wildlife, and our own health by implementing proper BMPs, and reporting water quality problems that we observe. In the City of Lacey, call the Department of Public Works at (360) 456-7799 to report dumping to sewers and to report spills and other incidents involving storm drains or ditches. Also contact Ecology's Southwest Regional Office at (360) 407-6300.

**12. Provide oversight and training**
Assign one or more individuals at your place of business to be responsible for stormwater pollution control. Hold regular meetings to review the overall operation of BMPs. Establish responsibilities for inspections, operation and maintenance (O&M), documentation, and availability for emergency

situations. Train all team members in the operation, maintenance, and inspection of BMPs and reporting procedures.

**13. Dust control**
Sweep paved material handling and storage areas regularly as needed, to collect and dispose of dust and debris that could contaminate stormwater. Do not hose down pollutants from any area to the ground, storm drain, conveyance ditch, or receiving water.

**14. Eliminate illicit connections**
An illicit connection is formally defined in the city's NPDES Municipal Stormwater Permit, but generally includes any connection to the city stormwater system that is not intended, permitted, or used for collecting and conveying stormwater. A common problem with the stormwater drainage system for most communities is the existence of illicit connections of wastewater to the storm drainage system. Wastewater other than stormwater runoff, such as wash water, must be discharged to a wastewater collection system, and may not be discharged to a storm drainage system (the storm drainage system does not drain to a wastewater treatment plant). Many businesses and residences have internal building drains, sump overflows, process wastewater discharges, and even sanitary sewer and septic system pipes that were connected to the nearby storm drainage system in the past as a matter of course. All businesses and residences must examine their plumbing systems to determine if illicit connections exist. Any time it is found that toilets, sinks, appliances, showers and bathtubs, floor drains, industrial process waters, and/or other indoor activities are connected to the stormwater drainage system, these connections must be immediately rerouted to the sanitary or septic system, holding tanks, or a process treatment system.

**15. Dispose of waste properly**
Every business and residence in the city must dispose of solid and liquid wastes and contaminated stormwater properly. There are generally four options for disposal depending on the type of materials. These options include:
- Sanitary sewer and septic systems
- Recycling facilities
- Municipal solid waste disposal facilities
- Hazardous waste treatment, storage, and disposal facilities

## SECTION 4b: VEGETATION MANAGEMENT PLAN

Refer to the landscape plans for the planting schedule of the project site.

## SECTION 5: STORMWATER FACILITY MAINTENANCE GUIDE

The parties responsible for maintenance must review and apply the maintenance requirements contained herein. These maintenance instructions outline conditions for determining if maintenance actions are required, as identified through inspection. However, they are not intended to be measures of the facility's required condition at all times between inspections. Exceedance of these conditions at any time between inspections or maintenance activity does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance

presented in the checklists shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action. For facilities not owned and maintained by the city, a log of maintenance activity that indicates what actions were taken must be kept on site and be available for inspection by the city.

**Inspection Program:**

1. Inspection – it will be the responsibility of the Owner to complete the necessary stormwater inspection tasks stated herein and prepare the inspection reports that will be submitted to the city of Lacey. Inspection reports shall be submitted annually or at the City of Lacey's request.

2. Records – the Owner shall keep records of the following;

a. As-built plans and locations of installed stormwater facilities.
b. Findings of fact from any exemption granted by the City of Lacey.
c. Operation and maintenance requirements and records of inspection maintenance actions and frequencies
d. Declaration of Covenant associated with the maintenance and operation of stormwater facilities.
e. Any pertinent engineering reports.

It is important to keep the catch basins, flow control structures, and stormwater pipes clean and free of debris, because if they get clogged the stormwater system will fail and will not meet water quality standards. Maintenance activities for the bioretention cell and the catch basin include but are not limited to the actions listed in Attachment 3 and the referenced checklists from the City of Lacey's *Stormwater Design Manual,* and the most current version of the Department of Ecology's *Stormwater Management Manual for Western Washington.*

## Log Sheet

Use copies of this log sheet to keep track of when maintenance checks occur and what items, if any, are repaired or replaced. The completed sheets will serve as a record of past maintenance activities and will provide valuable information on how your facilities are operating. Keep all log sheets in a designated area so others can easily access them.

**Location:** _____ **Date Checked:**
**Checked By:**
**Name:** _____ _____/_____/20_____
**Address:** _____ **Phone:**
**City:** _____ **Zip:** _____ (_____) _____

| Facility and Component Checked | Observations (List things that should be done) | Follow-up Actions Taken | Date Action Taken |
|---|---|---|---|
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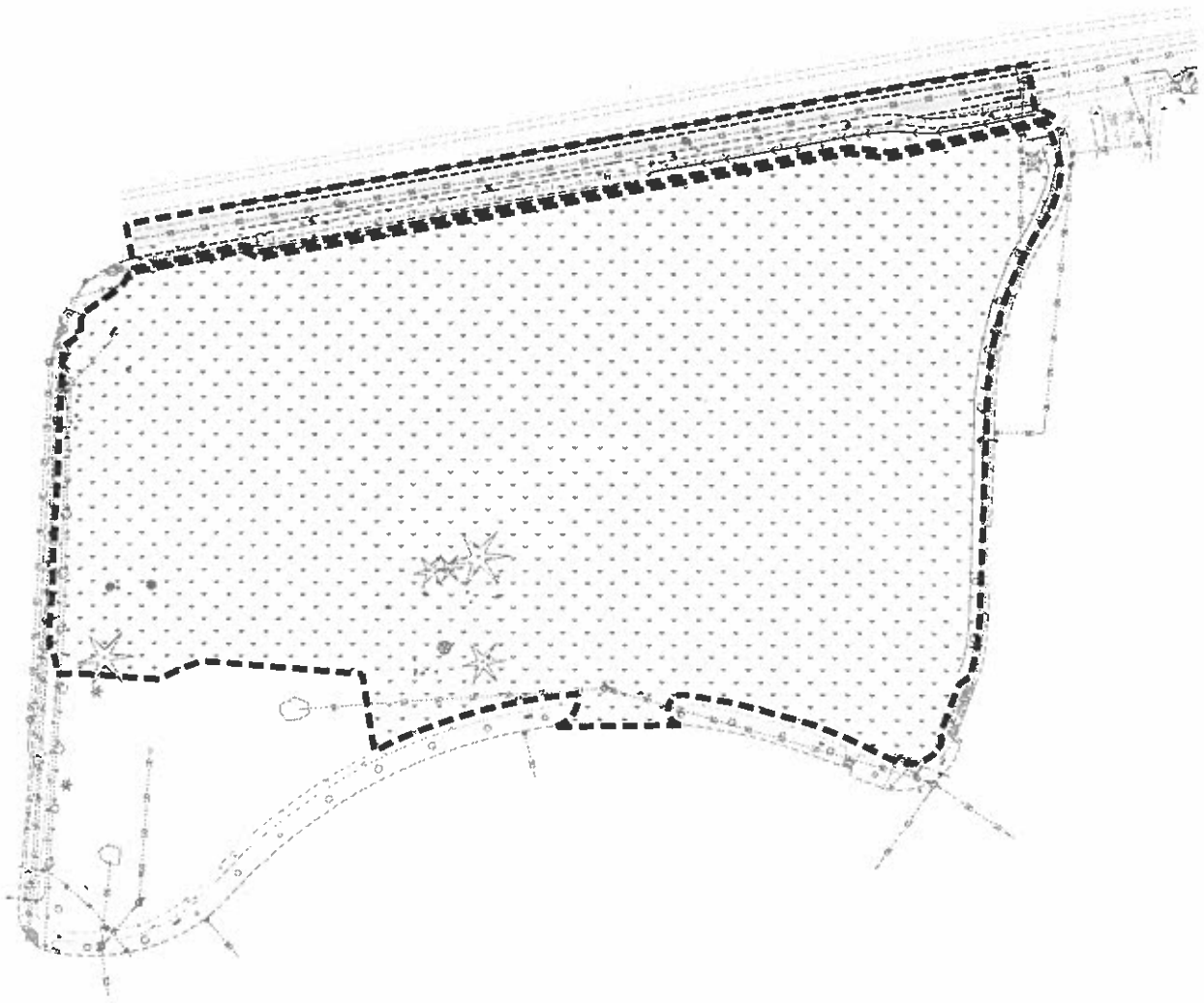
# *ATTACHMENT 1:*
# *BASIN MAP*



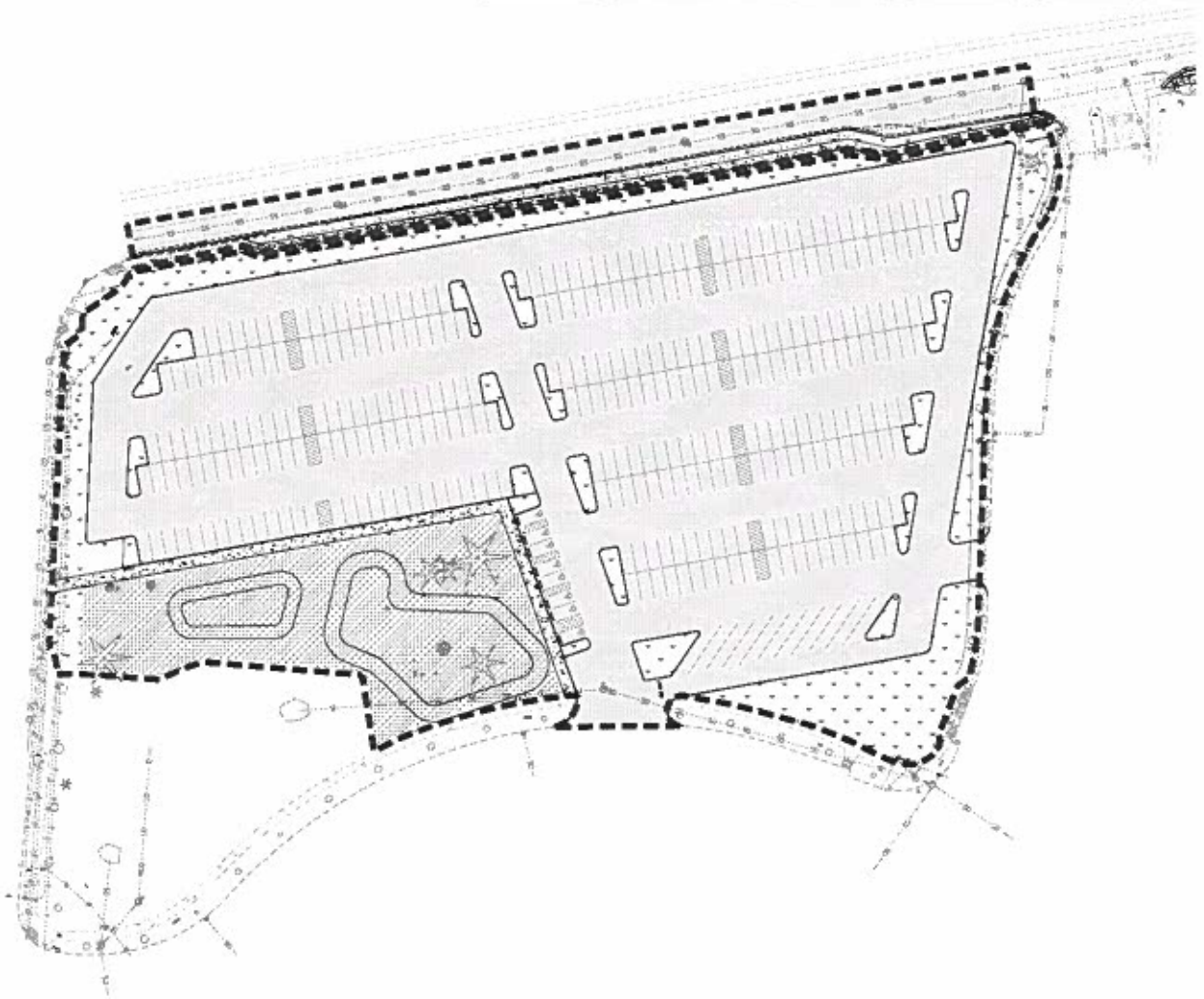

| PROPOSED BASIN AREAS: | | |
|---|---|---|
| BASIN 1: | | |
| | ASPHALT PAVEMENT AREA: | 0.26 ACRES |
| | SIDEWALK AREA: | 0.00 ACRES |
| | PERVIOUS AREA: | 0.28 ACRES |
| | TOTAL: | 0.54 ACRES |
| BASIN 2: | | |
| | ASPHALT PAVEMENT AREA: | 0.00 ACRES |
| | SIDEWALK AREA: | 0.00 ACRES |
| | PERVIOUS AREA: | 5.04 ACRES |
| | TOTAL: | 5.04 ACRES |

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WA 98516
P: 360.352.1465 F: 360.352.1509
SCJALLIANCE.COM

HORIZONTAL SCALE: 1"=40'
DATE: DECEMBER, 2022
JOB No.: 22-060910
DRAWING No.: 22-060910 SPR Ex Conditions Map.dwg

EXISTING CONDITIONS MAP
RAC PARKING LOT DESIGN, LACEY, WA

SHEET No.: EX-01
SHEET No.: 1




PROPOSED BASIN AREAS:

BASIN 1:

| | |
|---|---|
| ASPHALT PAVEMENT AREA: | 0.35 ACRES |
| SIDEWALK AREA: | 0.08 ACRES |
| PERVIOUS AREA: | 0.11 ACRES |
| TOTAL: | 0.54 ACRES |

BASIN 2:

| | |
|---|---|
| ASPHALT PAVEMENT AREA: | 3.42 ACRES |
| SIDEWALK AREA: | 0.07 ACRES |
| PERVIOUS AREA: | 0.88 ACRES |
| RETAINED PERVIOUS POND AREA: | 0.67 ACRES |
| TOTAL: | 5.04 ACRES |

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PROPOSED CONDITIONS MAP
RAC PARKING LOT DESIGN, LACEY, WA

EX-02

2

# *ATTACHMENT 2:*
# *STORMWATER POLLUTION SOURCE CONTROL CHECKLIST*

## CITY OF LACEY STORMWATER POLLUTION SOURCE CONTROL CHECKLIST

Project Name: Regional Athletic Complex Parking Lot Design

*Check all activities that will occur at a proposed site. Only activities common in the City of Lacey are included in this checklist. Other activities may apply to your site. Fill in the blank rows included under each activity grouping if needed based on the complete list of site-specific activities provided in Table 9A.1.*

| **Source Control BMPs Applicable to All Sites** | | |
|---|---|---|
| **BMP #** | **BMP Name** | |
| S410 | Correcting Illicit Discharges to Storm Drains | |
| S453 | Formation of a Pollution Prevention Team | |
| S454 | Preventive Maintenance/Good Housekeeping | |
| S455 | Spill Prevention and Cleanup | |
| S456 | Employee Training | |
| S457 | Inspections | |
| S458 | Record Keeping | |
| **Source Control BMPs for Specific Activities** | | |
| **BMP #** | **BMP Name** | **Activity Conducted on the Site?** |
| **Cleaning or Washing Source Control BMPs** | | |
| S431 | Washing and Steam Cleaning Vehicles/Equipment/Building Structures | ☐ Yes ☐ No |
| _____ | _____ | ☐ Yes ☐ No |
| **Roads, Ditches, and Parking Lot Source Control BMPs** | | |
| S415 | Maintenance of Public and Private Utility Corridors and Facilities | ☐ Yes ☐ No |
| S416 | Maintenance of Roadside Ditches | ☐ Yes ☐ No |
| S417 | Maintenance of Stormwater Drainage and Treatment Systems | ☐ Yes ☐ No |
| S421 | Parking and Storage of Vehicles and Equipment | ☐ Yes ☐ No |
| S430 | Urban Streets | ☐ Yes ☐ No |
| _____ | _____ | ☐ Yes ☐ No |
| **Soil Erosion, Sediment Control, and Landscaping Source Control BMPs** | | |
| S407 | Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots | ☐ Yes ☐ No |
| S408 | Dust Control at Manufacturing Areas | ☐ Yes ☐ No |
| S411 | Landscaping and Lawn/Vegetation Management | ☐ Yes ☐ No |
| S425 | Soil Erosion and Sediment Control at Industrial Sites | ☐ Yes ☐ No |
| S435 | Pesticides and an Integrated Pest Management Program | ☐ Yes ☐ No |

| BMP # | BMP Name | Activity Conducted on the Site? |
|---|---|---|
| **Soil Erosion, Sediment Control, and Landscaping Source Control BMPs (continued)** | | |
| S444 | Storage of Dry Pesticides and Fertilizers | ☐ Yes ☐ No |
| S449 | Nurseries and Greenhouses | ☐ Yes ☐ No |
| S450 | Irrigation | ☐ Yes ☐ No |
| _____ | _____ | ☐ Yes ☐ No |
| **Storage and Stockpiling Source Control BMPs** | | |
| S427 | Storage of Liquids, Food Waste, or Dangerous Waste Containers | ☐ Yes ☐ No |
| S428 | Storage of Liquids in Permanent Aboveground Tanks | ☐ Yes ☐ No |
| S429 | Storage or Transfer (Outside) of Solid Raw Materials, Byproducts or Finished Products | ☐ Yes ☐ No |
| _____ | _____ | ☐ Yes ☐ No |
| **Transfer of Liquid or Solid Materials Source Control BMPs** | | |
| S409 | Fueling at Dedicated Stations | ☐ Yes ☐ No |
| S412 | Loading and Unloading Areas for Liquid or Solid Material | ☐ Yes ☐ No |
| S419 | Mobile Fueling of Vehicles and Heavy Equipment | ☐ Yes ☐ No |
| S426 | Spills of Oil and Hazardous Substances | ☐ Yes ☐ No |
| _____ | _____ | ☐ Yes ☐ No |
| **Other Source Control BMPs** | | |
| S404 | Commercial Printing Operations | ☐ Yes ☐ No |
| S414 | Maintenance and Repair of Vehicles and Equipment | ☐ Yes ☐ No |
| S418 | Manufacturing Activities – Outside | ☐ Yes ☐ No |
| S420 | Painting/Finishing/Coating of Vehicles/Boats/Buildings/ Equipment | ☐ Yes ☐ No |
| S423 | Recyclers and Scrap Yards | ☐ Yes ☐ No |
| S424 | Roof/Building Drains at Manufacturing and Commercial Buildings | ☐ Yes ☐ No |
| S432 | Wood Treatment Areas | ☐ Yes ☐ No |
| S433 | Pools, Spas, Hot Tubs, and Fountains | ☐ Yes ☐ No |
| S438 | Construction Demolition | ☐ Yes ☐ No |
| S443 | Fertilizer Application | ☐ Yes ☐ No |
| S447 | Roof Vents | ☐ Yes ☐ No |
| S451 | Building, Repair, Remodeling, Painting, and Construction | ☐ Yes ☐ No |
| _____ | _____ | ☐ Yes ☐ No |

| Table 9A.1. All Site-Specific Source Control BMPs. | |
|---|---|
| **BMP #** | **BMP Name** |
| **Cleaning or Washing Source Control BMPs** | |
| S431 | Washing and Steam Cleaning Vehicles/Equipment/Building Structures |
| S434 | Dock Washing |
| S441 | Potable Water Line Flushing, Water Tank Maintenance, and Hydrant Testing |
| **Roads, Ditches, and Parking Lot Source Control BMPs** | |
| S405 | Deicing and Anti-Icing Operations for Airports |
| S406 | Streets and Highways |
| S415 | Maintenance of Public and Private Utility Corridors and Facilities |
| S416 | Maintenance of Roadside Ditches |
| S417 | Maintenance of Stormwater Drainage and Treatment Systems |
| S421 | Parking and Storage of Vehicles and Equipment |
| S430 | Urban Streets |
| **Soil Erosion, Sediment Control, and Landscaping Source Control BMPs** | |
| S407 | Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots |
| S408 | Dust Control at Manufacturing Areas |
| S411 | Landscaping and Lawn/Vegetation Management |
| S425 | Soil Erosion and Sediment Control at Industrial Sites |
| S435 | Pesticides and an Integrated Pest Management Program |
| S444 | Storage of Dry Pesticides and Fertilizers |
| S449 | Nurseries and Greenhouses |
| S450 | Irrigation |
| **Storage and Stockpiling Source Control BMPs** | |
| S427 | Storage of Liquids, Food Waste, or Dangerous Waste Containers |
| S428 | Storage of Liquids in Permanent Aboveground Tanks |
| S429 | Storage or Transfer (Outside) of Solid Raw Materials, Byproducts or Finished Products |
| S445 | Temporary Fruit Storage |
| **Transfer of Liquid or Solid Materials Source Control BMPs** | |
| S409 | Fueling at Dedicated Stations |
| S412 | Loading and Unloading Areas for Liquid or Solid Material |
| S419 | Mobile Fueling of Vehicles and Heavy Equipment |
| S426 | Spills of Oil and Hazardous Substances |
| S439 | In-Water and Over-Water Fueling |

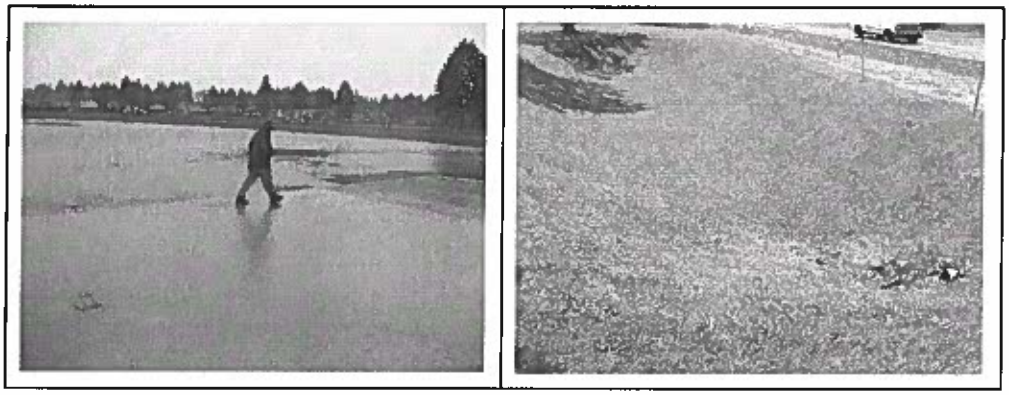
| Other Source Control BMPs | |
|---|---|
| S401 | Building, Repair, and Maintenance of Boats and Ships |
| S402 | Commercial Animal Handling Areas |
| S403 | Commercial Composting |
| S404 | Commercial Printing Operations |
| S413 | Log Sorting and Handling |
| S414 | Maintenance and Repair of Vehicles and Equipment |
| S418 | Manufacturing Activities – Outside |
| S420 | Painting/Finishing/Coating of Vehicles/Boats/Buildings/Equipment |
| S422 | Railroad Yards |
| S423 | Recyclers and Scrap Yards |
| S424 | Roof/Building Drains at Manufacturing and Commercial Buildings |
| S432 | Wood Treatment Areas |
| S433 | Pools, Spas, Hot Tubs, and Fountains |
| S436 | Color Events |
| S438 | Construction Demolition |
| S440 | Pet Waste |
| S442 | Labeling Storm Drain Inlets On Your Property |
| S443 | Fertilizer Application |
| S446 | Well, Utility, Directional and Geotechnical Drilling |
| S447 | Roof Vents |
| S451 | Building, Repair, Remodeling, Painting, and Construction |
| S452 | Goose Waste |

# *ATTACHMENT 3: CITY OF LACEY'S 2022 STORMWATER DRAINAGE MANUAL: BMP MAINTENANCE TABLES*

## 10.4.2 Infiltration Basin ("Dry Pond")

### *Description*

A shallow bowl-like depression in the land, with a broad, flat bottom area to collect, temporarily store, and infiltrate stormwater.



### *Purpose*

An infiltration basin is designed to receive treated water and allow it to infiltrate into the soil. The infiltration basin is usually lined with grass and drains "dry" between rain events. Some playfields (as in photo above, left) double as infiltration basins by design.

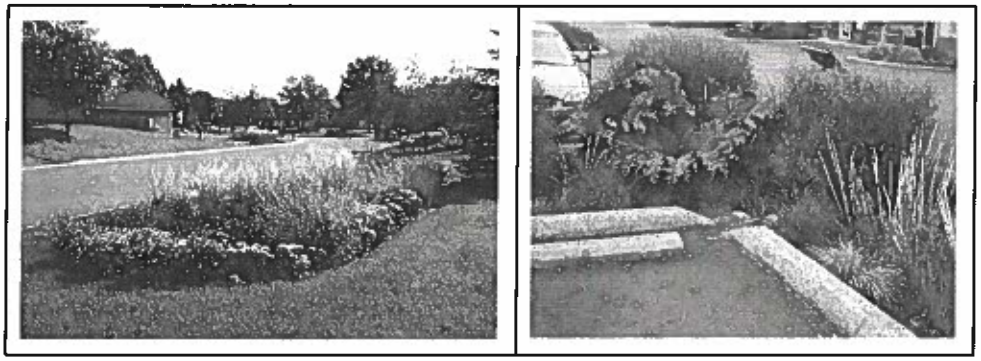
### *Maintenance Actions To Keep Infiltration Basins Functioning*

- Remove litter, yard debris, and problem vegetation such as Scotch broom.
- Maintain a healthy grass cover to prevent erosion and weed growth.
- Repair erosion and replace rock riprap at pipe ends.
- Avoid activities within the basin that could cause erosion or soil compaction.
- Avoid using herbicides or pesticides within the basin area.
- Aerate the soil in the bottom area as needed to preserve and enhance infiltration.

### 10.4.6 Bioretention Cell

#### *Description*

A shallow stormwater system with a designed soil mix and plants. Bioretention is a low impact development (LID) practice that is integrated into a site to retain stormwater near its source.



#### *Purpose*

Bioretention cells are designed to mimic a forested condition by controlling stormwater through detention, infiltration, and evapotranspiration. They also provide runoff treatment through sedimentation, filtration, adsorption, and phytoremediation. Bioretention cells function by storing stormwater as surface ponding before it filters through the underlying amended soil.

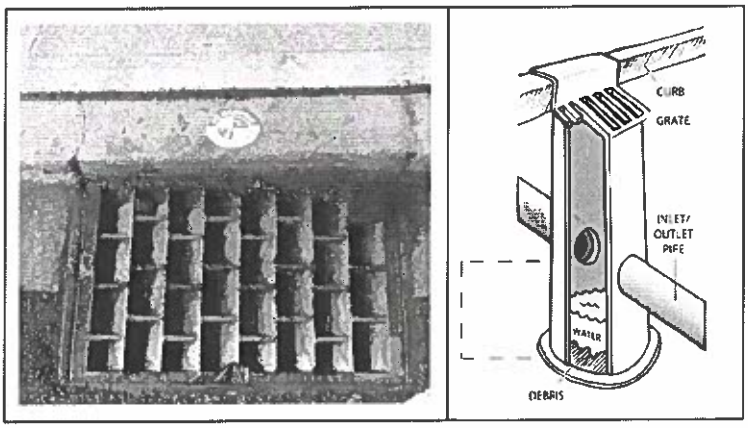
#### *Maintenance Actions To Keep Bioretention Cells Functioning*

- Remove litter, weeds and fallen leaves. Do not use herbicides or pesticides.
- Check inflow and outflow systems and remove any obstructions.
- Repair erosion, cover bare spots with organic mulch.
- Perform plant maintenance as needed, such as pruning branches.
- Remove dead vegetation and replace dead plants with same varieties.

## 10.4.14 Catch Basin

### *Description*

An underground concrete box structure with a slotted metal grate on top that collects runoff water from the ground surface. Typically located within pavement in parking lots and in the street gutter, usually next to a curb.




### *Purpose*

Grate on top lets water in and keeps larger debris out. Sediment settles in the sump in the bottom (below the pipe openings) and must be removed periodically. Catch basins have an outlet pipe between the grate and the sump, to let the cleaner water flow out to a storm pond or other location. Some catch basins have both inflow and outflow pipes, to convey collected runoff water through.

### *Maintenance Actions To Keep Catch Basins Functioning*

- Remove litter, leaves, debris, and obstructions from catch basin grates.
- Hire a professional to remove sediment buildup from sump if road is privately owned. Catch basins in the public right-of-way are maintained by the City.

## 1b. Infiltration Ponds, Trenches, and Galleries

Infiltration ponds, trenches, and galleries are earthen excavations or underground structures that are "dry" except during and after rains, when they contain stormwater temporarily. Infiltration ponds, trenches, and galleries store water while gradually percolating water into the ground.

| Infiltration Ponds, Trenches, and Galleries | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| General | Trash and Debris | Accumulated trash and debris. Dumping of yard wastes such as grass clippings and branches into pond. Presence of glass, plastic, metal, foam, or paper. In general, there should be no visual evidence of dumping. | | No trash or debris present. Remove and properly dispose all trash and debris. | |
| | Poisonous Vegetation and Noxious Weeds | Any poisonous or nuisance vegetation which may constitute a hazard to the public (such as Scotch broom or blackberry vines, poison oak, tansy ragwort, stinging nettles, or devil's club).<br>Any evidence of noxious weeds as defined in the Thurston County Noxious Weeds List. | | Eliminate danger of poisonous vegetation where maintenance personnel or the public might normally be. Completely remove invasive, noxious, or nonnative vegetation in accordance with applicable regulations. *(Coordinate with Thurston County Health Department.)* Do not spray chemicals on vegetation without guidance or City approval. It is strongly encouraged that herbicides and pesticides not be used in order to protect water quality. (Apply requirements of adopted integrated pest management policies for the use of herbicides.) *Complete eradication of noxious weeds may not be possible.* | |
| | Contamination and Pollution | Presence of contaminants such as oil, gasoline, concrete slurries, paint, obnoxious color, odor, or sludge. | | Locate the source of the pollution and remove contaminants or pollutants present. *Report and coordinate source control, removal, and/or cleanup with City of Lacey Spill Response Team (360) 491-5644, Moderate Risk Waste Program at Thurston County Environmental Health (360) 754–4111, and/or Dept. of Ecology Spill Response (800) 424-8802.* | |

| Infiltration Ponds, Trenches, and Galleries | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| General (continued) | Rodent Holes | If the BMP is constructed with a dam or berm, look for rodent holes or any evidence of water piping through the dam or berm. Water should not be able to flow through the rodent holes. | | Remove rodents and repair the dam or berm. *(Coordinate with Thurston County Health Department; coordinate with Ecology Dam Safety Office if pond exceeds 10 acre-feet.)* | |
| | Beaver Dam | Beaver dam results in an adverse change in the functioning of the BMP. | | Return BMP to design function. *(Contact WDFW Region 6 to identify the appropriate Nuisance Wildlife Control Operator.)* | |
| | Insects | Insects such as wasps and hornets interfering with maintenance activities, or mosquitoes becoming a nuisance. | | Remove insects. For mosquito control, eliminate stagnant water. *Apply insecticides in compliance with adopted integrated pest management policies.* | |
| | Hazard Trees | If dead, diseased, or dying trees are identified (Use a certified Arborist to determine health of tree or removal requirements). | | Remove hazard trees. | |
| | Tree Growth and Dense Vegetation | Tree growth and dense vegetation, which impedes inspection, maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, Vactoring, or equipment movements). | | Trees and vegetation do not hinder inspection or maintenance activities. Harvested trees should be recycled into mulch or other beneficial uses (e.g., alders for firewood). | |
| Storage Area | Water Not Infiltrating | Check for water ponding in infiltration basin after rainfall ceases and appropriate time allowed for infiltration. Treatment basins should infiltrate Water Quality Design Storm Volume within 48 hours, and empty within 24 hours after cessation of most rain events. (Maintenance is required if a percolation test pit or test of BMP indicates BMP is only working at 90 percent of its designed capabilities, or if 2 inches or more sediment is present, remove). | | BMP infiltrates as designed. Sediment is removed and/or BMP is cleaned so that infiltration system works according to design. | |
| Filter Bags (if applicable) | Filled with Sediment and Debris | Maintenance is required if sediment and debris fill bag more than one-half full. | | Replace filter bag or redesign system. Filter bag must be less than one-half full. | |

| Infiltration Ponds, Trenches, and Galleries | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Rock Filters | Sediment and Debris | By visual inspection, little or no water flows through filter during heavy rain storms. | | Replace gravel in rock filter if needed. Water must flow through filter. | |
| Trenches | Observation Well (use surface of trench if well is not present) | Water ponds at surface during storm events. Less than 90 percent of design infiltration rate. | | Remove and replace/clean rock and geomembrane. | |
| Galleries | Chambers | Check inlet and outlets and interior of chambers for deficiencies, cracks, debris, and sediment. | | Remove any debris and sediment and replace or restore chambers as needed. | |
| Ponds | Vegetation | Exceeds 18 inches. | | Mow grass or groundcover to a height no greater than 6 inches. | |
| | | Bare spots. | | Revegetate and stabilize immediately. No bare spots should be present. | |
| Side Slopes | Erosion | Maintenance is needed where eroded damage is over 2 inches deep and where there is potential for continued erosion or where any erosion is observed on a compacted berm embankment. Check all pond areas, particularly around inlets and outlets, as well as at berms for signs of sliding or settling. | | Try to determine what has caused the erosion and fix it. Stabilize slopes by using appropriate erosion control measure(s); e.g., reinforcing the slope with rock, planting grass, or compacting the soil. Contact the City for assistance.<br>*If erosion is occurring on compacted berms, a professional engineer licensed in Washington State should be consulted to resolve source of erosion.* | |
| Dikes or Berms | Settlement | Any part of the dike or berm that has settled more than 4 inches lower than designed. | | Build the dike or berm back to the design elevation.<br>*If settlement is significant, a professional engineer licensed in Washington State should be consulted to determine the cause of the settlement.* | |
| | Seepage | Check for water flowing through the pond berm and ongoing erosion with potential for erosion to continue. | | Repair berm to eliminate seepage and erosion.<br>*Recommend a geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.* | |

| Infiltration Ponds, Trenches, and Galleries | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Dikes or Berms (continued) | Tree Growth | Tree growth on berms over 4 feet in height may lead to piping through the berm, which could lead to failure of the berm. | | Remove trees on berms. *If root system is small (base less than 4 inches) the root system may be left in place. Otherwise, the roots should be removed and the berm restored. A professional engineer licensed in Washington State should be consulted for proper berm/spillway restoration.* | |
| Emergency Overflow Spillway | Rocks Missing | Check to see that the riprap protective area is intact. Maintenance is need if only one layer of rock exists above native soil in area 5 square feet or larger, or any exposure of native soil at the top of outflow path of spillway. | | Restore rocks and pad depth to design standards. (Riprap on inside slopes need not be replaced.) If any native soil is exposed, cover soil with rock riprap. | |
| | Tree Growth | Check emergency spillways for tree growth that creates blockage problems and may cause failure of the berm due to uncontrolled overtopping. | | Remove trees on emergency spillway. *If root system is small (base less than 4 inches) the root system may be left in place. Otherwise, the roots should be removed and the berm restored. A professional engineer licensed in Washington State should be consulted for proper berm/spillway restoration.* | |
| | Erosion | Maintenance is needed where eroded damage is over 2 inches deep and where there is potential for continued erosion. Maintenance is needed where any erosion is observed on a compacted berm embankment. Check all pond areas, particularly around inlets and outlets, as well as at berms for signs of sliding or settling. | | Try to determine what has caused the erosion and fix it. Stabilize slopes by using appropriate erosion control measure(s); e.g., reinforcing the slope with rock, planting grass, or compacting the soil. Contact the City for assistance. *If erosion is occurring on compacted berms, a professional engineer licensed in Washington State should be consulted to resolve source of erosion.* | |
| | Screen Clogged or Missing | The bar screen over the outlet should be intact and clear of debris. Water should flow freely through the outlet pipe. | | Replace screen if it is not attached. Remove any trash or debris and dispose of properly. Clean out the end pipe if necessary. | |

| Infiltration Ponds, Trenches, and Galleries | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Presettling Ponds and Vaults | BMP or Sump Filled with Sediment and/or Debris | 6 inches or designed sediment trap depth of sediment. | | Remove sediment. No sediment should be present in presettling pond or vault. | |
| | Inadequate Sediment Settling Area | Stormwater should not enter the infiltration area without some method of settling-out solids. | | Add a sediment trapping area by constructing a sump or berm for settling of solids. This area should be separate from the rest of the BMP. Contact the City for guidance. | |
| Drain Rock | Water Ponding | If water enters the BMP from the surface, inspect to see if water is ponding at the surface during storm events.<br>If buried drain rock, observe drawdown through observation port or cleanout. | | Clear piping through BMP when ponding occurs. Replace rock material/sand reservoirs as necessary. Tilling of subgrade below reservoir may be necessary (for trenches) prior to backfill. No water ponding should be present on surface during storm events. | |

For manufactured infiltration galleries, designers must review and apply the most current manufacturer guidelines and recommendations for BMP operation and maintenance.

## 1m. Bioretention Cells, Swales, and Planter Boxes

Bioretention areas are shallow stormwater systems with a designed soil mix and plants adapted to the local climate and soil moisture conditions. They are designed to mimic a forested condition by controlling stormwater through detention, infiltration, and evapotranspiration. Most routine maintenance procedures are typical landscape care activities.

| Bioretention Cells, Swales, and Planter Boxes | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| General | Trash | Trash and debris present. | | No trash and debris present. Remove and properly dispose of all trash and debris. | |
| Concrete Sidewalls | Cracks or Failure in Concrete Planter Reservoir | Cracks wider than 0.5 inch or maintenance/inspection personnel determine that the planter is not structurally sound. | | Concrete repaired or replaced. | |
| Rockery Sidewalls | Unstable Rockery | Rock walls are insecure. | | Rockery sidewalls are stable (may require consultation with professional engineer licensed in Washington State, particularly for walls 4 feet or greater in height). | |
| Earthen Side Slopes and Berms | Failure in Earthen Reservoir (embankments, dikes, berms, and side slopes) | Erosion (gullies/rills) greater than 2 inches around inlets, outlet, and alongside slopes. | | Source of erosion eliminated, and damaged area stabilized (regrade, rock, vegetation, erosion control blanket). For deep channels or cuts (over 3 inches in ponding depth), temporary erosion control measures are in place until permanent repairs can be made. | |
| | | Erosion of sides causes slope to become a hazard. | | The hazard is eliminated, and slopes are stabilized. | |
| | | Settlement greater than 3 inches (relative to undisturbed sections of berm). | | The design height is restored with additional mulch. | |
| | | Downstream face of berm or embankment wet, seeps or leaks evident. | | Holes are plugged and berm is compacted. May require consultation with professional engineer licensed in Washington State, particularly for larger berms. | |
| | | Any evidence of rodent holes or water piping around holes if BMP acts as dam or berm. | | Rodents (see "Pests: Insects/Rodents") removed and berm repaired/compacted. | |

| Bioretention Cells, Swales, and Planter Boxes | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Ponding Area | Sediment or Debris Accumulation | Accumulation of sediment or debris to extent that infiltration rate is reduced (see "Ponded water") or surface storage capacity significantly impacted. | | Sediment cleaned out to restore BMP shape and depth. Damaged vegetation is replaced and mulched. Source of sediment identified and controlled (if feasible). | |
| | Leaf Accumulation | Accumulated leaves in BMP. | | No leaves clogging outlet structure or impeding water flow. | |
| | Basin Inlet via Surface Flow | Soil is exposed or signs of erosion are visible. | | Erosion sources repaired and controlled. | |
| Curb Cut Inlet | Sediment or Debris Accumulation | Sediment, vegetation, or debris partially or fully blocking inlet structure. | | Curb cut is clear of debris. Source of the blockage is identified and action is taken to prevent future blockages. | |
| Splashblock Inlet | Water Not Properly Directed to BMP | Water is not being directed properly to the BMP and away from the inlet structure. | | Blocks are reconfigured to direct water to BMP and away from structure. | |
| | Erosion | Water disrupts soil media. | | Splashblock is reconfigure/repaired. | |
| Inlet/ Outlet Pipe | Damaged Pipe | Pipe is damaged. | | Pipe is repaired/replaced. No cracks more than 0.25 inch wide at the joint of inlet/outlet pipes exist. | |
| | Clogged Pipe | Pipe is clogged. | | Pipe is clear of roots or debris. Source of the blockage is identified, and action is taken to prevent future blockages. | |
| Inlets/ Outlet and Access Pathways | Blocked Access | Maintain access for inspections. | | Vegetation is cleared within 1 foot of inlets and outlets. Access pathways are maintained. | |
| Ponding Area | Erosion | Water disrupts soil media. | | No eroded or scoured areas in bioretention area. Cause of erosion or scour addressed. A cover of rock or cobbles or other erosion protection measure maintained (e.g., matting) to protect the ground where concentrated water enters or exits the BMP (e.g., a pipe, curb cut, or swale). | |
| Trash Rack | Trash or Debris Accumulation | Trash or debris present on trash rack. | | No trash or debris on trash rack. Clean and dispose trash. | |
| | Damaged Trash Rack | Bar screen damaged or missing. | | Barrier repaired or replaced to design standards. | |

| Bioretention Cells, Swales, and Planter Boxes | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Check Dams and Weirs | Sediment or Debris Accumulation | Sediment, vegetation, or debris accumulated at or blocking (or having the potential to block) check dam, weir, or orifice. | | Blockage is cleared. Identify the source of the blockage and take actions to prevent future blockages. | |
| | Erosion | Erosion and/or undercutting is present. | | No eroded or undercut areas in bioretention area. Cause of erosion or undercutting addressed. Check dam or weir is repaired. | |
| | Unlevel Top of Weir | Grade board or top of weir damaged or not level. | | Weir restored to level position. | |
| Flow Spreader | Sediment Accumulation | Sediment blocks 35 percent or more of ports/notches or, sediment fills 35 percent or more of sediment trap. | | Sediment removed and disposed of. | |
| | Damaged or Unlevel Grade Board/Baffle | Grade board/baffle damaged or not level. | | Board/baffle removed and reinstalled to level position. | |
| Overflow/ Emergency Spillway | Sediment or Debris Accumulation | Overflow spillway is partially or fully plugged with sediment or debris. | | No sediment or debris in overflow. | |
| | Erosion | Native soil is exposed, or other signs of erosion damage are present. | | Erosion repaired and surface of spillway stabilized. | |
| | Missing Spillway Armament | Spillway armament is missing. | | Armament replaced. | |
| Underdrain | Blocked Underdrain | Plant roots, sediment or debris reducing capacity of underdrain. Prolonged surface ponding (see "Bioretention Soil"). | | Underdrains and orifice are free of sediment and debris. | |
| Bioretention Soil | Ponded Water | Excessive ponding water: Water overflows during storms smaller than the design event or ponded water remains in the basin 48 hours or longer after the end of a storm. | | Cause of ponded water is identified and addressed:<br>1. Leaf or debris buildup is removed<br>2. Underdrain is clear<br>3. Other water inputs (e.g., groundwater, illicit connections) investigated<br>4. Contributing area verified<br>If steps #1–4 do not solve the problem, imported bioretention soil is replaced and replanted. | |

| Bioretention Cells, Swales, and Planter Boxes | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Bioretention Soil (continued) | Protection of Soil | Maintenance requiring entrance into the BMP footprint. | | Maintenance is performed without compacting bioretention soil media. | |
| Vegetation | Bottom Swale and Upland Slope Vegetation | Less than 75 percent of swale bottom is covered with healthy/surviving vegetation. | | Plants are healthy and pest free. Cause of poor vegetation growth addressed. Bioretention area is replanted as necessary to obtain 75 percent survival rate or greater. Plant selection is appropriate for site growing conditions. | |
| Trees and Shrubs | Causing Problems for Operation of BMP | Large trees and shrubs interfere with operation of the basin or access for maintenance. | | Trees and shrubs do not hinder BMP performance or maintenance activities. Prune or remove large trees and shrubs. | |
| | Dead Trees and Shrubs | Standing dead vegetation is present. | | Trees and shrubs do not hinder BMP performance or maintenance activities. Dead vegetation is removed, and cause of dead vegetation is addressed. Specific plants with high mortality rate are replaced with more appropriate species. | |
| Trees and Shrubs Adjacent to Vehicle Travel Areas (or areas where visibility needs to be maintained) | Safety Issues | Vegetation causes some visibility (line of sight) or driver safety issues. | | Appropriate height for sight clearance is maintained. Regular pruning maintains visual sight lines for safety or clearance along a walk or drive. Tree or shrub is removed or transplanted if presenting a continual safety hazard. | |
| Emergent Vegetation | Conveyance Blocked | Vegetation compromises conveyance. | | Sedges and rushes are clear of dead foliage. | |
| Mulch | Lack of Mulch | Bare spots (without much cover) are present, or mulch covers less than 2 inches. | | BMP has a maximum 3-inch layer of an appropriate type of mulch and mulch is kept away from woody stems. | |
| Vegetation | Accumulation of Clippings | Grass or other vegetation clippings accumulate to 2 inches or greater in depth. | | Clippings removed. | |
| | Weeds | Weeds are present (unless on edge and providing erosion control). | | Weed material removed and disposed of. It is strongly encouraged that herbicides and pesticides not be used in order to protect water quality. | |

| Bioretention Cells, Swales, and Planter Boxes | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Noxious Weeds | Poisonous Vegetation and Noxious Weeds | Any poisonous or nuisance vegetation which may constitute a hazard to the public. Any evidence of noxious weeds as defined in the Thurston County Noxious Weeds List. | | Eliminate danger of poisonous vegetation where maintenance personnel or the public might normally be. Completely remove invasive, noxious, or nonnative vegetation in accordance with applicable regulations. *(Coordinate with Thurston County Health Department.)* Do not spray chemicals on vegetation without guidance or City approval. It is strongly encouraged that herbicides and pesticides not be used in order to protect water quality. (Apply requirements of adopted integrated pest management policies for the use of herbicides.) *Complete eradication of noxious weeds may not be possible.* | |
| Excessive Vegetation | Adjacent BMPs Compromised | Low-lying vegetation growing beyond BMP edge onto sidewalks, paths, or street edge poses pedestrian safety hazard or may clog adjacent permeable pavement surfaces due to associated leaf litter, mulch, and soil. | | Vegetation does not impede function of adjacent BMPs or pose as safety hazard. Groundcovers and shrubs trimmed at BMP edge. Excessive leaf litter is removed. | |
| | Causes BMP to Not Function Properly | Excessive vegetation density inhibits stormwater flow beyond design ponding or becomes a hazard for pedestrian and vehicular circulation and safety. | | Pruning and/or thinning vegetation maintains proper plant density and aesthetics. Plants that are weak, broken, or not true to form are removed or replaced in-kind. Appropriate plants are present. | |
| Irrigation (if any) | NA | Irrigation system present. | | Manufacturer's instructions for O&M are met. | |
| Plant Watering | Plant Establishment | Plant establishment period (1–3 years). | | Plants are watered as necessary during periods of no rain to ensure plant establishment. | |
| Summer Watering (after establishment) | Drought Period | Longer term period (3+ years). | | Plants are watered as necessary during drought conditions and trees are watered up to 5 years after planting. | |

| Bioretention Cells, Swales, and Planter Boxes | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Spill Prevention and Response | Spill Prevention | Storage or use of potential contaminants in the vicinity of BMP. | | Spill prevention measures are implemented whenever handling or storing potential contaminants. | |
| | Spill Response | Any evidence of contaminants such as oil, gasoline, concrete slurries, paint, etc. | | Spills are cleaned up as soon as possible to prevent contamination of stormwater. No contaminants or pollutants present. *(Coordinate source control, removal, and/or cleanup with City of Lacey Spill Response Team (360) 491-5644, Moderate Risk Waste Program at Thurston County Environmental Health (360) 754–4111, and/or Dept. of Ecology Spill Response (800) 424-8802.)* | |
| Safety | Safety (slopes) | Erosion of sides causes slope to exceed 1:3 or otherwise becomes a hazard. | | Actions taken to eliminate the hazard. | |
| | Safety (hydraulic structures) | Hydraulic structures (pipes, culverts, vaults, etc.) become a hazard to children playing in and around the BMP. | | Actions taken to eliminate the hazard (such as covering and securing any openings). | |
| Aesthetics | Aesthetics | Damage/vandalism/debris accumulation. | | BMP restored to original aesthetic conditions. | |
| | Edging | Grass is starting to encroach on swale. | | Edging repaired. | |
| Pest Control | Pests: Insects/ Rodents | Pest of concern is present and impacting BMP function. | | Pests removed and BMP returned to original functionality. Do not use pesticides or *Bacillus thuringiensis israelensis (Bti).* | |
| | Mosquitoes | Standing water remains in the basin for more than three days following storms. | | All inlets, overflows and other openings are protected with mosquito screens. No mosquito infestation present. | |

## 2b. Catch Basins

These structures are typically located in the streets. The City is responsible for routine maintenance of the pipes and structures in the public rights-of-way, while the property owner or homeowners association is responsible for maintenance of pipes and catch basins in private areas and for keeping the grates clear of debris in all areas.

| Catch Basins | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| General | Trash and Debris | Trash, leaves or debris which is located immediately in front of the catch basin opening or is blocking inflow capacity of the basin by more than 10 percent. | | Remove trash, leaves and debris located directly in front of catch basin or on grate. | |
| | | Trash or debris (in basin) that exceeds 60 percent of the sump depth as measured from bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches of clearance from the debris surface to the invert of the lowest pipe. | | No trash or debris present. Remove and properly dispose of all trash and debris. | |
| | | Trash or debris in any inlet or outlet pipe blocking more than 33 percent (one-third) of its height. | | Inlet and outlet pipes free of trash or debris. Remove and properly dispose of all trash and debris. | |
| | | Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane). | | Remove dead animals, etc., present within the catch basin. | |
| | Sediment | Sediment (in basin) exceeds 60 percent of sump depth as measured from the bottom of basin to invert of lowest pipe into or out of basin, but in no case less than a minimum of 6 inches of clearance from the sediment surface to the invert of lowest pipe. | | No sediment in the catch basin. | |
| | Structure Damage to Frame and/or Top Slab | Top slab has holes larger than 2 square inches or cracks wider than 0.25 inch (intent is to make sure no material is running into basin). | | Top slab is free of holes and cracks. | |

| Catch Basins | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| General (continued) | Structure Damage to Frame and/or Top Slab (continued) | Frame not sitting flush on top slab, i.e., separation of more than 0.75 inch of the frame from the top slab. Frame not securely attached | | Frame is sitting flush on the riser rings or top slab and firmly attached. | |
| | Fractures or Cracks in Basin Walls/ Bottom | Maintenance person determines structure is unsound. | | Basin replaced or repaired to design standard | |
| | | Grout fillet has separated or cracked wider than 0.5 inch and longer than 1 foot at the joint of any inlet/outlet pipe, or any evidence of soil entering basin. | | Pipe regrouted and secure at basin wall. | |
| | Settlement/ Misalignment | If failure of basin has created a safety, function, or design problem. | | Replaced or repair to design standards. | |
| | Vegetation | Vegetation growing across and blocking more than 10 percent of the basin opening. | | Remove vegetation blocking opening to basin. | |
| | | Vegetation growing in inlet/outlet pipe joints that is more than 6 inches tall and less than 6 inches apart. | | No vegetation or root growth present. | |
| | Contamination and Pollution | Presence of contaminants such as oil, gasoline, concrete slurries, paint, obnoxious color, odor, or sludge. | | Locate the source of the pollution and remove contaminants or pollutants present. *Report and coordinate source control, removal, and/or cleanup with City of Lacey Spill Response Team (360) 491-5644, Moderate Risk Waste Program at Thurston County Environmental Health (360) 754–4111, and/or Dept. of Ecology Spill Response (800) 424-8802.* | |
| Catch Basin Cover | Cover Not in Place | Cover is missing or only partially in place. Any open catch basin requires maintenance. | | Catch basin cover is in place and secured. | |
| | Locking Mechanism Not Working | Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 0.5 inch of thread. | | Mechanism opens with proper tools. | |

| Catch Basins | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Catch Basin Cover (continued) | Cover Difficult to Remove | One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance.) | | Cover can be removed by one maintenance person. | |
| Ladder | Ladder Rungs Unsafe | Maintenance person judges that ladder is unsafe due to missing rungs, misalignment, rust, or cracks. Ladder must be fixed or secured immediately. | | Ladder meets design standards and allows maintenance persons safe access. | |
| Metal Grates (if applicable) | Grate Opening Unsafe | Grate with opening wider than 0.875 (7/8) inch. | | Grate opening meets design standards. | |
| | Trash and Debris | Trash and debris that is blocking more than 20 percent of grate surface inletting capacity. | | Grate free of trash and debris. Remove and properly dispose of all trash and debris. | |
| | Damaged or Missing | Grate missing or broken member(s) of the grate. | | Grate is in place and meets design standards. | |

# Appendix 10C – Maintenance Standards Checklists for Group 3: Miscellaneous BMPs and Features

## 3a. Conveyance Pipes, Culverts, Ditches, and Swales

These features contain and direct the flow of water from one location to another.

| Conveyance Pipes, Culverts, Ditches, and Swales | | | | | |
|---|---|---|---|---|---|
| **Drainage System Feature** | **Problem or Defect** | **Conditions To Check For** | **√ Check** | **What To Do for Desired Condition** | **√ Done** |
| Pipes | Sediment, Debris, and Vegetation | Accumulated sediment should not exceed 20 percent of the diameter of the pipe. Vegetation should not reduce free movement of water through pipes. Ensure that the protective coating is not damaged or rusted. Dents should not significantly impede flow. Pipe should not have major cracks or flaws allowing water to leak out. | | Clean out pipes of all sediment and debris. Remove all vegetation so that water flows freely through pipes. Repair or replace pipe. | |
| Open Ditches | Trash and Debris | There should not be any yard waste or litter in the ditch. | | No trash or debris present. Remove and properly dispose of all trash and debris. | |
| | Sediment Buildup | Accumulated sediment should not exceed 20 percent of the depth of the ditch. | | Clean out ditch of all sediment and debris. | |
| Open Ditches and Swales | Overgrowth of Vegetation | Check for vegetation (e.g., weedy shrubs or saplings) that reduces the free movement of water through ditches or swales. | | Clear blocking vegetation so that water moves freely through the ditches. Grassy vegetation should be left alone. | |
| | Erosion | Check around inlets and outlets for signs of erosion. Check slopes for signs of sloughing or settling. Action is needed where eroded damage is over 2 inches deep and where there is potential for continued erosion. | | Eliminate causes of erosion. Stabilize slopes by using the appropriate erosion control procedure (e.g., compact the soil, plant grass, reinforce with rock). | |
| | Missing Rocks | Native soil beneath the rock splash pad, check dam, or lining should not be visible. | | Replace rocks to design standard. | |
| Swales | Vegetation | Grass cover is sparse and weedy, or areas are overgrown with woody vegetation. | | Aerate soils and re-seed and mulch bare areas. Keep grass less than 8 inches high. Remove woody growth, re-contour and re-seed as necessary. | |