

2019-2024

# Stormwater Management Plan



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Marion County

2019-2024

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## Background

Marion County has been implementing the NPDES MS4 Phase II permit since 2007. Because the permit has changed from an individual permit to a general permit, many of the BMPs to the existing program will need to be adjusted to fit within the new permit requirements. These adjustments will occur when work is completed on the specific minimum control measure.

The Stormwater Management Area for Marion County corresponds with the U.S. Census Bureau-designated “Urbanized Area”. These areas are developed from census data relating to population densities and census blocks. Within this “Urbanized Area” Marion County is responsible for an urbanized fringe around Keizer, Turner, and Salem. Though it is designated as an urbanized area, the land uses include agricultural, commercial, multifamily residential, single family residential, and rural residential areas.

### SWMA Vital Statistics

SWMA Area	Acres	Properties
Inside ESSD	3,407	9,344
Outside ESSD	5,182	2,068
<i>Totals</i>	8,589	11,412

(ESSD – East Salem Service District)

The SWMA includes portions of the following watersheds:

- Claggett Creek
- Little Pudding River
- Mill Creek (including Battle Creek)
- Croisan Creek

## Revisions

Revisions of the SWMP document must be completed annually. Once revision is complete, please sign and date when the revisions are approved.

Due Date	e-Sign & Date
November 2021	
November 2022	
November 2023	
November 2024	

## Minimum Control Measure 1: Education & Outreach

### Goal

- 1.) Inform the public, businesses, construction operators and other stakeholders about the impacts of stormwater pollution on our waterways
- 2.) Provide these audiences with steps and/or actions that will reduce pollutants in stormwater runoff
- 3.) Understand which local behaviors and practices cause and contribute to stormwater pollution and work to reduce selected behaviors

The program will provide education and outreach using methods that are appropriate for the desired audiences. Some of these methods may include social media messaging, brochures or handouts, in-person event outreach or presentations and trainings.

### BMPs

**EO-1:** Identify 3-5 topics that impact water quality locally. These topics will be considered priority topics to be addressed during outreach campaigns over the course of the permit term. Topics could include:

- a. Impacts of illicit discharges and how to avoid and report them
- b. Impacts from impervious surfaces and to avoid them
- c. Practices for proper use and storage of pesticides, herbicides, and fertilizers
- d. Practices to reduce litter
- e. Practices for recycling programs
- f. Practices for power washing, carpet, cleaning, auto repair and maintenance
- g. Low impact development and green infrastructure
- h. Potential impacts of septic systems and practices for maintenance
- i. Watershed awareness
- j. Storm drain awareness and connectivity to local rivers and streams
- k. Other stormwater issues of significance

**EO-2:** Offer at least two educational messages or activities a year that address the County's priority topics created from EO-1.

**EO-2a:** Offer at least one educational message or activity from the priority list to the general public, homeowners, students, or businesses over the permit term.

**EO-2b:** Offer at least one educational message or activity from the priority list to local elected officials, land use planners or engineers over the permit term.

**EO-2c:** Offer at least two educational messages or activities to construction site operators over the permit term that addresses any of the following topics:

- a. Appropriate selection, design, installation and use of onsite stormwater controls as outlined by Marion County ordinances
- b. Appropriate maintenance of onsite stormwater controls as outlined by Marion County ordinances

**EO-3:** Implement one assessment or evaluation on an education and outreach activity to determine how effective the activity was at conveying the material to the intended audience.

**Measurable Goals**

BMP	Milestones	Start	Finish	Deliverables
<b>EO-1</b>	Identify 3-5 priority topics			<ul style="list-style-type: none"> <li>• Priority list of topics</li> </ul>
<b>EO-2a-c</b>	<ul style="list-style-type: none"> <li>• Develop annual plan</li> <li>• Offer 2 messages annually</li> <li>• Offer messages in Spanish</li> </ul>	Mar. 2019	Feb. 2024	<ul style="list-style-type: none"> <li>• EO Annual Plan</li> <li>• Priority topic covered, method, audience type, estimated reach</li> </ul>
<b>EO-6</b>	<ul style="list-style-type: none"> <li>• Determine type of assessment &amp; activity to assess</li> <li>• Implement assessment</li> <li>• Implement findings in following year</li> </ul>	Feb 2020	Nov. 2020	<ul style="list-style-type: none"> <li>• Assessment metric, summary of how the activity was considered successful</li> </ul>

**Responsible Person(s):**

The majority of outreach activities are designed and implemented by an Environmental Specialist who is supervised by the Environmental Services Program Supervisor. Some outreach activities may involve other groups within Public Works or other entities, but will be coordinated through an Environmental Specialist. All environmental services activities are approved and overseen by the Environmental Services Division Manager and the Public Works Director.

**Rationale**

**EO-1:** The County currently utilizes social media to share around 10-15 educational messages annually. However, it is challenging to measure the impact of those messages. In order to promote behavior change, staff will develop a list of 3-5 behaviors negatively impact water quality locally. Staff will concentrate on creating in-depth messages and activities that target those behaviors throughout the permit term. Focusing in-depth on a small number of topics will promote lasting behavior change.

**EO-2:** By distributing at least two educational messages or activities a year, the County will be fulfilling the general permit requirements. Additionally, by focusing messages on the County identified priority topics, the messaging will be more impactful.

**EO-2a:** The County currently focuses heavily on distributing most of their educational messages to the public through the use of social media. Going along with EO-1, during this permit term,

staff should identify priority topics to promote through social media. Staff should also coordinate social media messaging with other activities in an effort to have a greater impact. Finally, staff should continue to provide messaging in Spanish since a large percent of the population living in the SWMA speak Spanish.

**EO-2b:** Historically, the County has reached land use planners through the Point of Contact program by handing out brochures and informational pamphlets. During this permit term, staff should work with the Land Development Planning and Engineering group and the Marion Water Quality Advisory Committee (MWQAC) to identify priority topics to focus on annually and the best methods for distributing those messages.

Typically, methods for reaching elected officials have been through updates to the Board of Commissioner as issues arise. This approach meets the permit requirements however staff should consider identifying other possible ways of sharing educational messages with County public officials in a less formal way, to keep them abreast of concerns and successes.

**EO-2c:** The County has been successful in reaching Construction Site Operators through the yearly Erosion Control Summit in partnership with the Mid-Willamette Outreach Group. Continued participation in the development of the summit should be considered but if other opportunities arise to reach this audience, they should be considered as well.

**EO-3:** While the County has conducted informal evaluations of outreach programs, these evaluations do not typically inform future outreach activities. As staff develop the annual education and outreach plan, it should also include plan to evaluate the effectiveness of at least one activity.

## **Minimum Control Measure 2: Public Involvement**

### *Goal*

- 1.) Provide adequate opportunity for the public to participate in the development of the SWMP control measures and programs

The program will utilize a variety of methods to make the public aware of opportunities to participate in the development of implementation plans. It will also encourage participation from diverse groups within the community.

### **BMPs**

**PI-1:** Maintain and promote a publicly accessible website that includes the following information:

- a. SWMP
- b. Contact information
- c. Educational materials

- d. Illicit discharge reporting procedures
- e. Links to ordinances and policies related to stormwater control programs

**PI-2:** Utilize the Marion Water Quality Advisory Committee (MWQAC) to develop the SWMP and SWMP programs.

**PI-3:** Create an annual stewardship opportunity for the public. These could include:

- a. Stream team activities
- b. Storm drain marking
- c. Volunteer monitoring
- d. Riparian plantings or stormwater facility enhancement
- e. Neighborhood low-impact development
- f. Adopt-a-road
- g. Citizen advisory committee
- h. Other locally relevant opportunities

### Measurable Goals

BMP	Milestones	Start	Finish	Deliverables
PI-1	<ul style="list-style-type: none"> <li>• Conduct an annual revision and update</li> </ul>	Mar. 2019	Feb. 2020	<ul style="list-style-type: none"> <li>• Number of site visits to each page</li> <li>• Date of revision &amp; update</li> </ul>
PI-2	<ul style="list-style-type: none"> <li>• Host quarterly MWQAC meetings</li> <li>• Provide opportunities for input</li> </ul>	Mar. 2019	Feb. 2024	<ul style="list-style-type: none"> <li>• Meeting dates, agendas, number of attendees</li> </ul>
PI-3	<ul style="list-style-type: none"> <li>• Develop stewardship opportunity</li> <li>• Implement activity</li> </ul>	Mar. 2019	Feb. 2024	<ul style="list-style-type: none"> <li>• Summary of event, event date, number of participants</li> </ul>

### Responsible Person(s)

The majority of outreach activities are designed and implemented by an environmental specialist who is supervised by the Environmental Services Program Supervisor. All environmental services activities are approved and overseen by the Environmental Services Division Manager and the Public Works Director.

### Rationale

**PI-1:** The County currently maintains and operates a publically accessible website that meets current permit standards, however improvements could be made to increase the organization and relatability of the content. Staff should plan to make updates to the site that will add educational value as well as make the site easier to navigate. Additionally, the most recent versions of the SWMP, illicit discharge reporting protocol and County Ordinances will be added as they are updated.

**PI-2:** During previous permit cycles, County staff met with the MWQAC to develop and review proposed ordinance changes and found great value in their feedback. Staff should continue to utilize this public group by meeting with them quarterly. These meetings should provide updates and assess programmatic needs. Staff will rely heavily on the MWQAC for their input on the SWMP, ordinance updates and other protocol that are being updated as a result of the general permit.

**PI-3:** The County has typically relied on the Adopt-a-Road program to fulfill the permit stewardship requirements; however they have seen recent success hosting volunteer litter clean ups and storm drain marking events. In order to see continued success and attendance at stewardship events, it will be important to continue to cultivate engagement of volunteers. Staff will work with the Volunteer Services coordinator to develop a list of potential volunteers and will continue to implement at least one of those stewardship opportunities yearly to meet permit requirements.

### **Minimum Control Measure 3: Illicit Discharge Detection and Elimination**

#### *Goal*

- 1.) Implement and enforce a program that detects and eliminates illicit discharges into the MS4

The program will prohibit non-stormwater discharges into the MS4 through the enforcement of a County ordinance or other regulatory method.

#### **BMPs**

**IDDE-1:** Update and maintain a current map and digital inventory of the MS4 including the following:

- a. Outfalls
- b. Conveyance system
- c. Stormwater control locations
- d. Chronic illicit discharges
- e. Dry weather flows

In addition to the map, there must also be an outfall inventory with all the known outfall locations. The inventory must include a unique identifier (i.e. alphanumeric code), any geographic information necessary to find the outfall in the field and the name(s) of the receiving water(s).

**IDDE-2:** Revise and update the existing Stormwater Discharge Quality Control Ordinance (#1311) to reflect the conditions of the general permit.

**IDDE-3:** Develop and implement an IDDE Response Plan that includes the following:

- a. An internal and external IDDE reporting system
- b. Timelines for response and investigation
- c. Documentation and tracking procedures

**IDDE-4:** Develop and implement an IDDE Enforcement Plan that includes the following:

- a. Timelines for compliance
- b. Progressively stricter responses for repeat violations

**IDDE-5:** Develop and implement a dry weather screening schedule.

**IDDE-6:** Implement an IDDE training program for all potential response staff.

## Measurable Goals

BMP	Milestones	Start	Finish	Deliverables
IDDE-1	• Create unique IDs for stormwater assets in GIS	Aug. 2019	Aug. 2020	<ul style="list-style-type: none"> <li>• Unique IDs</li> <li>• Percent of MS4 mapped</li> <li>• Updated map &amp; outfall inventory</li> </ul>
	• Conduct GIS analysis to determine missing information	Aug. 2019	Aug. 2023	
	• Update missing information on GIS layers			
	• Create an outfall inventory			
	• Continually update MS4 map and stormwater assets			
IDDE-2	• Review & update ordinance	Jan. 2022	July, 2022	<ul style="list-style-type: none"> <li>• Updated ordinance</li> </ul>
	• Provide draft to BOC for review & approval		Jan. 2023	
	• Open for public comment			
	• Adopt the updated ordinance(s)			
IDDE-3	• Update IDDE reporting system	July 2019	July 2020	<ul style="list-style-type: none"> <li>• Updated response procedures</li> </ul>
	• Update IDDE response and documentation procedures			
IDDE-4	• Evaluate current enforcement procedures	July 2021	Jan. 2022	<ul style="list-style-type: none"> <li>• Updated ordinance</li> </ul>
	• Develop new IDDE enforcement procedures		Jan. 2022	
IDDE-5	• Develop a dry weather screening schedule	Jan. 2020	July 2020	<ul style="list-style-type: none"> <li>• Schedule</li> <li>• Pollutant parameter document</li> <li>• Screening reports</li> </ul>
	• Develop pollutant parameters for response	Jan. 2020	July 2020	
	• Complete 40% dry weather screening in the MS4	June 2021	Feb. 2022	
	• Complete 60% dry weather screening in the MS4	June 2022	Feb. 2023	
	• Complete 80% dry weather screening in the MS4	June 2023	Feb. 2024	
IDDE-6	• Develop IDDE training	Annually		<ul style="list-style-type: none"> <li>• Training materials</li> <li>• Agenda &amp; Sign-In Sheets</li> </ul>
	• Host trainings for relevant staff			

## Responsible Person(s)

The illicit discharge program has traditionally been run as a coordinated effort between the Public Works Dispatch staff, the stormwater crew and Environmental Specialists. Dispatch collects and documents complaints; Stormwater crews will investigate where appropriate; Environmental Specialists will investigate and respond.

## Rationale

**IDDE-1:** While the County currently maintains a GIS database that includes features such as the storm drains, pipes and most outfalls, the general permit also requires additional features that are currently not mapped. Staff will work to update the mapping of ditches and outfalls, create unique IDs for all features, and begin mapping illicit discharge and dry weather monitoring sites. To stay in compliance, staff should continue to update new features as they are added to the MS4.

**IDDE-2:** In 2003 the County implemented East Salem Service District (ESSD) Ditch Maintenance Ordinance (#1174) which prohibits the dumping of solid waste, discarded items, or yard debris into ESSD ditches. While this ordinance only serves one portion of the SWMA and is not the main ordinance to prohibit illicit discharge, it can be used for IDDE purposes and thus should be reviewed for inconsistencies with the general permit. Under the conditions of the general permit, the ordinance must define the range of illicit discharges it covers. New activities may need to be added to the ordinance.

In 2011, the County implemented the Stormwater Discharge Quality Control Ordinance (#1311) in order to meet the illicit discharge terms of the previous individual permit. Because the range of illicit discharges in the general permit has changed, this ordinance should be reviewed to update the definitions and prohibited activities. In addition, the general permit requires the ordinance to include enforcement procedures. The enforcement procedures in the existing ordinance are not adequate to meet the new conditions. Staff will provide recommendations and refer to Legal Counsel for the best course of action.

**IDDE-3:** The County currently has a response and documentation procedure that fulfills the previous individual permit. However, the general permit has required response times that will need to be incorporated into the standard operating procedures.

Additionally, as was referenced in the rationale for IDDE-2, the enforcement measures in the existing ordinance do not adequately meet the requirements of the general permit. A separate enforcement plan will be necessary to meet the new requirements including a procedure that addresses repeat offenders with progressively stricter responses.

**IDDE-4:** The County currently routes illicit discharge complaints through the Public Works Dispatch, however not all internal and external reports are captured and documented the same way. For consistency and proper documentation, a standard reporting and investigation procedure should be developed. Additionally, the general permit requires the County to publicize a method for reporting illicit discharge 24/7, so an appropriate system will need to be established. Additionally, staff will need to develop an updated protocol for documentation and tracking.

**IDDE-5:** In the past, the County has conducted informal dry weather monitoring throughout the course of regular maintenance activities, but no written protocol or documentation have been

developed. The general permit requires this be established as well as documenting priority locations for monitoring. In order to meet the requirements of the permit, the County will need to develop a schedule, protocol, priority locations and a pollutant parameter if a response is required.

**IDDE-6:** Regular IDDE training has been an ongoing practice for County Road Operations Crews, but it will be necessary to provide updated training to reflect new expectations. Staff will also need to include all personnel responsible for illicit discharge response in those trainings.

## **Minimum Control Measure 4: Construction Site Runoff Control**

### *Goal*

- 1.) Implement and enforce a program that reduces the discharge of pollutants from construction sites to the MS4

Through the use of an ordinance or other regulatory mechanism, the program will require erosion and sediment controls and waste materials management controls to be used at all qualifying construction sites.

### **BMPs**

**CE-1:** Revise and update the existing Construction Erosion Ordinance (#1307) to reflect the conditions of the general permit.

**CE-2:** Review and update Erosion and Sediment Control Plan (ESCP) requirements for site operators as well as the County's procedures for documentation and tracking.

**CE-3:** Review and update the Construction Site Inspection procedure which should include triggers for inspection and minimum inspection documentation.

**CE-4:** Review and update the Construction Site enforcement procedures which should include an escalating enforcement procedure for repeat violations.

## Measurable Goals

BMP	Milestones	Start	Finish	Deliverables
CE-1	• Review & update current ordinance	Sept. 2019	Jan. 2021	• Updated ordinance
	• Provide draft to BOC for review		Aug. 2022	
	• Public comment period			
	• Update Ordinance #1307			
CE-2	• Develop updated ESCP template	Sept. 2019	Jan. 2021	• Updated template
	• Develop inspection checklist	Sept. 2019	Jan. 2021	• Updated checklist
	• Develop updated internal procedures for ESCP documentation	Sept. 2019	Jan. 2021	• Updated procedures
CE-3	• Develop updated inspection procedures	Sept. 2019	Jan. 2021	• Updated procedures & ordinance
CE-4	• Develop updated enforcement procedures	Sept. 2019	Jan. 2021	• Updated ordinance

## Responsible Person(s)

The work involved in MCM 4 will be a collaborative effort between the County's Land Development Engineering and Planning (LDEP), Engineering staff and Environmental Specialists. LDEP is responsible for reviewing, permitting and inspecting construction sites however in order to update ordinances and standards, they will need input from both Engineering and Environmental Specialist staff. LDEP staff will review and provide updates for ESCP templates, inspection checklists, internal and enforcement procedures. Engineering staff will review and provide updates to engineering standards and the Environmental Specialists will coordinate meetings, draft new language for ordinances and review final documents to ensure compliance with the general permit.

## Rationale

**CE-1:** In 2010 the County implemented the Construction Erosion Ordinance (#1307) in order to meet the construction erosion requirements of the previous individual permit. However, changes in the general permit such as size requirements for ESCP and requirements for enforcement procedures require the ordinance to be updated. During this update, the County will review the erosion and sediment control program to ensure new expectations and internal processes are effective and meet permit requirements.

**CE-2:** The LDEP division currently uses a permitting system to ensure construction site operators and developers comply with ESCP requirements. In order to meet the conditions of the general permit, the threshold for submitting an ESCP must be updated, along with the supplementary materials provided to site operators. Staff will develop or update the ESCP template, inspection checklist and internal procedures for ESCP review and approval.

**CE-3:** The LDEP's inspection procedures were created in 2010 to fulfill the needs of the individual permit. In order to comply with the new general permit requirements, an updated procedure will need to be implemented. LDEP and Environmental Specialists will work to update the inspection procedures to meet the current permit expectations.

**CE-4:** As stated in CE-1, the County's Construction Erosion ordinance was developed to fulfill the previous individual permit and as such, the enforcement procedures are not sufficient to meet the current requirements of the general permit. LDEP and Environmental Specialists will update the ordinance with the new enforcement procedures.

## **Minimum Control Measure 5: Post-Construction Site Runoff Control**

### *Goal*

- 1.) Implement and enforce a program that reduces the discharge of pollutants and controls stormwater runoff from new development and redevelopment to the MS4

Through the use of an ordinance or other regulatory mechanism, the program will require that qualifying sites use stormwater controls and implement long term operation and maintenance for proper upkeep.

### **BMPs**

**PCE-1:** Revise and update the existing Post Construction Runoff Ordinance (#1324) to reflect the conditions of the general permit.

**PCE-2:** Review ordinances, code and standards for any barriers to implementing green infrastructure or low impact development. If barriers are identified, work to minimize or remove those barriers within three years.

**PCE-3:** Review and develop standards that meet the conditions of the general permit. These should include the following:

- a. Structural stormwater control design and specifications
- b. Site performance standards with a numeric stormwater retention requirement
- c. Treatment standards for sites unable to meet the retention standards
- d. Allowance for alternative compliance for sites unable to meet the retention requirements
- e. Stormwater mitigation options for sites that qualify for alternative compliance

**PCE-4:** Review and update the Post Construction Site Runoff Plan review procedures.

**PCE-5:** Review and update the Post Construction enforcement procedures which should include an escalating enforcement procedure for repeat violations.

### Measurable Goals

BMP	Milestones	Start	Finish	Deliverables
PCE-1	<ul style="list-style-type: none"> <li>Review &amp; update current ordinance</li> <li>Provide draft for BOC to review</li> <li>Public comment period</li> <li>Update ordinance #1324</li> </ul>	Feb 2022	Feb. 2023	<ul style="list-style-type: none"> <li>Updated ordinance</li> </ul>
PCE-2	<ul style="list-style-type: none"> <li>Develop a team to review codes, policy and ordinances</li> <li>Review codes, policies and ordinances for barriers to GI or LID implementation</li> <li>Provide recommendations to BOC</li> </ul>	Feb 2022	Feb. 2023	<ul style="list-style-type: none"> <li>Barriers</li> <li>Recommendations &amp; Changes</li> <li>Updated codes, ordinances or policies</li> </ul>
PCE-3	<ul style="list-style-type: none"> <li>Develop a post construction standard review team</li> <li>Review and update post construction standards</li> </ul>	Feb 2022	Feb. 2023	<ul style="list-style-type: none"> <li>Updated standards</li> </ul>
PCE-4	<ul style="list-style-type: none"> <li>Review and update the site plan review procedures</li> </ul>	Feb 2022	Feb 2023	<ul style="list-style-type: none"> <li>Updated procedures</li> </ul>
PCE-5	<ul style="list-style-type: none"> <li>Review and update enforcement procedures</li> </ul>	Feb 2022	Feb 2023	<ul style="list-style-type: none"> <li>Updated ordinance</li> </ul>

### Responsible Person(s)

Implementing these BMPs will be a collaborative effort between the County’s LDEP, Engineering staff and Environmental Specialist. LDEP is responsible for reviewing, permitting and inspecting post construction sites however in order to update ordinances and standards they will need input from both Engineering and Environmental Services staff. LDEP will review and provide updates for internal documentation and procedures as well as enforcement. Engineering will review and provide updates to engineering standards and Environmental Specialists will coordinate meetings, draft new language for ordinances and review final documents to ensure compliance with the general permit.

### Rationale

**PCE-1:** In 2010 the County implemented the Post Construction Erosion Ordinance (#1324) in order to meet the construction erosion requirements of the previous individual permit. However,

changes in the general permit such as size requirements for stormwater controls and requirements for enforcement procedures, calls for the ordinance to be updated.

**PCE-2:** The County has a large list of codes, policies and ordinances that must be reviewed for barriers to LID and GI implementation. In order to review these policies, a team from Public Works will be gathered to identify barriers. Once barriers have been identified the group will propose recommendations to the County's management team and the Board of Commissioners for approval and implementation.

**PCE-3:** The post construction standards are used by LDEP, capital projects and the general public during post-construction development. As such, in order to develop a set of standards that meet permit requirements and also fulfill the needs and expectations of those who use them, a team from Public Works will be gathered to provide input in the changes. Representatives will assist in reviewing the County's [2012 Draft Interim Standards](#), review other jurisdiction's standards and propose updates.

**PCE-4:** LDEP is responsible for the review of all post construction plans submitted to the County. With multiple staff members potentially performing a review of the plans, it is important to have a documented procedure. This can be used by all staff performing the site runoff plan review to ensure consistency in evaluations and to provide site operators with a better understanding of County expectations. In order to be in compliance with the general permit, this procedure will be reviewed and updated by staff.

**PCE-5:** As stated in PCE-1, the County's Post Construction Erosion ordinance was developed to fulfill the previous individual permit and as such, the enforcement procedures are not sufficient to meet the current requirements of the general permit. Staff will update the ordinance with the new enforcement procedures.

## **Minimum Control Measure 6: Pollution Prevention and Good Housekeeping for Municipal Operations**

### *Goal*

- 1.) Implement a program that ensures prudent pollution prevention and good housekeeping practices are used to reduce the discharge of pollutants from municipal operations

The program will utilize a variety of methods to train staff on pollution prevention practices and ensure that good housekeeping practices are being utilized during day-to-day municipal activities.

### **BMPs**

**PP-1:** Develop and implement an operations and maintenance strategy for all existing stormwater controls that discharge into the MS4.

**PP-2:** Develop and implement a strategy to inspect and maintain at least 50% of the catch basins and inlets within the MS4.

**PP-3:** Revise and update the existing best management practices document and ensure proper procedures are in place for the following activities:

- a. Pipe cleaning for stormwater and wastewater conveyance systems
- b. Cleaning of culverts conveying stormwater in roadside ditches
- c. Ditch Maintenance
- d. Road and bridge maintenance
- e. Road repair and resurfacing including pavement grinding
- f. Dust control for roads and municipal construction sites
- g. Winter road maintenance including salt or de-icing
- h. Fleet maintenance and vehicle washing
- i. Building and sidewalk maintenance including washing
- j. Solid waste transfer and disposal areas
- k. Municipal landscape maintenance
- l. Material storage and transfer areas including fertilizer and pesticide, hazardous material, used oil storage and fuel
- m. Firefighting training activities
- n. Maintenance of municipal facilities including public parks and open space, golf courses, airports, parking lots, swimming pools, marinas, etc.
- o. Application and disposal of pesticides and fertilizers
- p. Material disposal that is removed during the course of maintenance, treatment, control of stormwater or wastewater

**PP-4:** Implement a method to reduce litter within MS4 by working cooperatively with other departments and entities on a regular basis including after major public events.

**PP-5:** Develop and implement a program to train all new staff working to implement pollution prevention for municipal operations within 30 days of hire and at least once during the permit term.

## Measurable Goals

BMP	Milestones	Start	Finish	Deliverables
PP-1	<ul style="list-style-type: none"> <li>Document all existing stormwater controls in the MS4</li> <li>Develop an annual maintenance plan for O&amp;M</li> </ul>	Feb 2019	Feb. 2022	<ul style="list-style-type: none"> <li>Updated map</li> <li>Maintenance plan and documented work</li> </ul>
PP-2	<ul style="list-style-type: none"> <li>Develop an annual maintenance plan</li> <li>Inspect catch basins annually</li> </ul>	Feb 2019	Feb. 2022	<ul style="list-style-type: none"> <li>Updated map</li> <li>Documentation of inspections</li> </ul>
PP-3	<ul style="list-style-type: none"> <li>Review the existing BMP document</li> <li>Compare practices to another jurisdictions</li> <li>Update BMPs as necessary</li> </ul>	Feb 2019	Feb. 2022	<ul style="list-style-type: none"> <li>Updated BMP guide</li> </ul>
PP-4	<ul style="list-style-type: none"> <li>Document all solid waste removed from the MS4 through the course of daily operations</li> <li>Develop a plan to reduce most frequent materials</li> </ul>	Feb 2019	Feb. 2022	<ul style="list-style-type: none"> <li>Documentation of waste</li> <li>Litter reduction plan</li> </ul>
PP-5	<ul style="list-style-type: none"> <li>Develop BMP training program</li> <li>Implement training program for new hires</li> <li>Train employees on BMPs once per year</li> </ul>	Feb 2019	Feb. 2022	<ul style="list-style-type: none"> <li>Updated training program</li> <li>Documentation of participants</li> </ul>

## Responsible Person(s)

Implementing these BMPs will be a coordinated effort between Road Operations, Stormwater Operations and Environmental Specialists. Stormwater Operations will be responsible for mapping and inspecting stormwater controls as well as inspecting catch basins. Road and Stormwater Operations will be responsible for implementing all BMPs during the course of day-to-day activities. Finally, Environmental Specialist will be responsible for updating the BMP procedures and implementing training programs. The Road Operations Division Manager and Supervisors along with the Environmental Services Program Supervisor are responsible for ensuring the implementation.

## Rationale

**PP-1:** The County's post-construction requirements require certain sites to install stormwater controls within the MS4. However, documenting and inspecting these controls has been inconsistent in the past. To ensure compliance with the permit, LDEP and Capital Projects will

develop a comprehensive list of stormwater controls in the MS4. Once all the controls have been documented, the Environmental Services Program Supervisor will develop an annual plan for the Stormwater Operations team to inspect and maintain.

**PP-2:** Stormwater operations crews already inspect and clean catch basins within the MS4 on a regular basis. However, to ensure that there is evidence of meeting the permit expectations, the Environmental Services Program Supervisor will develop an annual plan and Stormwater Operations will provide documentation upon inspection and cleaning each catch basin.

**PP-3:** The County last updated their BMP document in 2012. Since it covers many different municipal activities, it is important that those BMPs are reviewed and updated to meet current expectations. An Environmental Specialist will review the BMP document and BMP activities, compare BMP activities to another jurisdiction, and update the BMP document.

**PP-4:** Stormwater operations crews already consistently remove solid waste and debris from ditches and catch basins throughout the MS4 but that is rarely documented. In order to show compliance with the general permit, staff will begin tracking the materials that they remove. An Environmental Specialist will review the data annually to develop a litter reduction plan that will address the root causes of the most frequent materials being found.

**PP-5:** Since 2009, the County has been implementing BMP training for all municipal operations crews. However, with newer technology and updated BMP strategy, there is an opportunity to update how training is implemented. In order to meet permit requirements staff should be trained once upon hire and once a year as a refresher. An Environmental Specialist will update these trainings and provide them to all appropriate employees.