



*Public Programs...Personal Service*

## **Stormwater Management Program (SWMP)**

**Cochise County  
Highway & Floodplain Department  
Flood Control District  
September 2018**

## **Table of Contents**

	<b>Page</b>
Section 1.0 – Definitions	2
Section 2.0 – List of Abbreviations	4
Section 3.0 – Introduction	5
Section 4.0 – Summary of Receiving Waters	5
Section 5.0 – Mapping	5
Section 6.0 – Stormwater Management Plan	6
Section 7.0 – Reviewing and Updating the SWMP	14
Section 8.0 – Monitoring	14
Section 9.0 – Annual Report	14

## **List of Appendices**

Appendix A - MS4 Stormwater Outfall Location Maps

## **List of Tables**

	<b>Page</b>
Table 2.1 – Receiving Waters	5
Table 4.1 – Public Education and Outreach	6
Table 4.2 – Public Involvement and Participation	7
Table 4.3 – Illicit Discharge Detection and Elimination (IDDE) Program	9
Table 4.4 – Construction Activity Stormwater Runoff Control	11
Table 4.5 – Post-Construction Stormwater Management in New Development and Redevelopment	12
Table 4.6 – Pollution Prevention and Good Housekeeping – Measurable Goals for each BMP	13

## Section 1.0 – Definitions

**MS4 Operator:** An operator of an MS4 can be a town, city, county; Department of Transportation, tribe, flood control, drainage improvement or other special district; university, prison, hospital, or other government - owned facility.

**Municipal Separate Storm Sewer System (MS4):** An MS4 is a conveyance or system of conveyances that transport storm water runoff. The stormwater conveyance system is separate and distinct from a combined sewer system, which carries both stormwater and wastewater. Storm sewer systems can be comprised of pipes, culverts, municipal streets, detention or retention basins, curbs, gutters, natural channels or ditches, man-made channels, drywells, and/or treatment systems designed to remove pollutants from the first flush like oil/grease separators, sediment filters, or other water quality treatments prior to discharge into the MS4.

**Navigable Waters:** Waters of the United States that either are connected to or immediately adjacent to (therefore affecting) waters that may be navigated in interstate commerce in the United States of America. Navigable waters of the U.S can include oceans, streams (perennial, intermittent, or ephemeral), lakes, rivers, washes, playas, wetlands, and natural or man-made channels (ADEQ, 2004).

**Point Source:** A point source is any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel, or other floating craft from which pollutants are or may be discharged to navigable waters. Point source does not include return flows from irrigated agriculture (ADEQ, 2004).

**Pollutant:** The term 'pollutant' (defined in A.A.C. R18-9-A901) can generally be thought to encompass any chemical wastes, biological materials, or constituents discharged to receiving waters. For example, pollutants could include bacteria from wastewater discharges, sediments from construction projects or chlorine from a well development project. Even groundwater redirected to a river could contain pollutants, such as nitrates or metals, and the project could require an AZPDES permit (ADEQ, 2004).

**Regulated Small MS4s:** A regulated small MS4 is any small MS4 located in an Urbanized Area (UA), as defined by the Bureau of the Census. Small MS4s that are located outside of a UA can be brought under Phase II by the NPDES permitting authority.

**Small MS4s:** A small MS4 is any MS4 not covered under Phase I of NPDES as a large or medium MS4. Large MS4s are those that serve populations of 250,000 or more. MS4s that serve a population of 249,999 to 100,000 are considered medium MS4s. In addition, some MS4s that served populations of less than 100,000 were brought under the Phase I regulations and treated as a medium MS4 regardless of their actual population. There is no population threshold associated with small MS4s, although they are typically understood to be entities with a population of less than 100,000.

**Urbanized Area:** Urbanized Areas (UAs) constitute the largest and most dense areas of settlement. UA calculations delineate boundaries around these dense areas of settlement and, in doing so, identify the areas of concentrated development. UA designations are used for several purposes in both the public and private sectors. For example, the federal government has used UAs to calculate allocations for transportation funding, and planning agencies and developers use UA boundaries to help ascertain current, and predict future, growth areas. The Bureau of the Census determines UAs by applying a detailed set of published UA criteria (see 55 FR 42592, October 22, 1990) to the latest decennial Census data. Although the full UA definition is complex, the Bureau of the Census' general definition of a UA,

based on population and population density, is provided below. An urbanized area is a land area comprising one or more places -- central place(s) -- and the adjacent densely settled surrounding area -- urban fringe -- that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile (EPA, 2003).

**Waters of the United States:**

Waters of the United States per EPA "Clean Water Rule" 40 CFR 230.3:

1. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any waters:
  - That are or could be used by interstate or foreign travelers for recreational or other purposes;
  - From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - That are used or could be used for industrial purposes by industries in interstate commerce
4. All impoundments of waters defined as waters of the United States under this definition:
5. Tributaries of waters identified in subsections (1.) through (4.);
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subsections (a) through (f) (ADEQ, 2004)

## Section 2.0 – List of Abbreviations

AAC	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ARS	Arizona Revised Statutes
AZPDES	Arizona Pollutant Discharge Elimination System
BMP	Best Management Practice
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency, U.S.
FR	Federal Register
GIST	Geographic Information Systems Technology
MAG	Maricopa Association of Governments
MS4	Municipal Separate Storm Water System
NPDES	National Pollutant Discharge Elimination System
OAW	Outstanding Arizona Waters
PAG	Pima Association of Governments
PCDOT	Pima County Department of Transportation
PCFCD	Pima County Flood Control District
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UA	Urbanized Area
VA	Veteran's Administration

### Section 3.0 – Introduction:

The purpose of this updated Stormwater Management Program (SWMP) is to outline Cochise County's effort to reduce surface water pollution in accordance with the Arizona Pollution Discharge Elimination System. The primary focus of the SWMP will be the area identified as required for coverage under General Permit for discharge from small municipal separate storm sewer systems (MS4's) to water of the United States.

The required regions are located within the unincorporated areas of Sierra Vista, Douglas, and Bisbee, Arizona. These regions are the urbanized fringe outside the cities. **Appendix A** indicates the outfalls for the above-mentioned areas (Sierra Vista, Douglas, and Bisbee).

### Section 4.0 – Summary of Receiving Waters:

**Table 2.1 – Receiving Waters**

<b>Identify Appendix B surface water(s) that received discharge(s) from the MS4</b>	<b>Number of outfalls discharging to receiving water</b>	<b>Is the receiving water listed as an Impaired, Not- Attaining or OAW?</b>	<b>List of Pollutant(s) causing the Impairment:</b>	<b>Does the receiving water have a TMDL?</b>
Ramsey Canyon Wash	1	No	N/A	No
Richards Ranch Wash	1	No	N/A	No
Carr Canyon Wash	1	No	N/A	No
Green Brush Draw	1	No	N/A	No
Palm Grove Wash	1	No	N/A	No

### Section 5.0 – Mapping:

Storm sewer system mapping is done through the use of our GIST systems and/or aerial imaging. Cochise County's survey crew will also provide support if needed.

Maps have been updated with new locations of outfalls in July 2018, as recommended by ADEQ's audit team in May 2018. The revised outfalls are being used for monitoring starting June 1, 2018.

Our mapping schedule is as follows:

- Storm sewer system mapping for Bisbee to be reviewed in September 2019.
- Storm sewer system mapping for Douglas to be reviewed in September 2019.
- Storm sewer system mapping for Sierra Vista to be reviewed September 2019.

**Section 6.0 – Stormwater Management Plan:**

The plan will address the six minimum control measures.

- A. Public education and outreach on stormwater impacts.
- B. Public involvement/participation.
- C. Illicit discharge detection and elimination.
- D. Construction site stormwater runoff control.
- E. Post-construction stormwater management in new development and redevelopment.
- F. Pollution prevention/good housekeeping for municipal operations.

**A. Public Education and Outreach, General Permit AZG 2016-002, Section 6.4.1**

**Table 4.1 – Public Education and Outreach – Measurable goals for each BMP**

<b>Permit Condition</b>	<b>BMPs / Practices to achieve compliance</b>	<b>Measurable goals</b>	<b>Department responsible for the measure</b>	<b>Implementation (Start date and or, subsequent target dates)</b>
Educational materials (Brochures)	Floodplain Department to create and distribute brochures on stormwater pollution prevention.	The number of brochures distributed will be tracked and records maintained.	Highway & Floodplain	June 2018. Brochures have been developed, printed and distributed to public. To date, 728 such brochures have been distributed.
Public Education and awareness through Web Page	Use County website to inform general public about SWMP by featuring information in simple and easy to understand language.	Highway & Floodplain staff will maintain and update the webpage throughout the permit period by inserting latest information on the site whenever available.	IT and Highway & Floodplain	March 2018 and continuous. The created website is being updated whenever need arises.

Focus on messages for specific audiences at Special Events	Floodplain Department to setup materials (brochures, flyers, etc.) for booths at different events (County Fair, Roads and Streets Conference, etc.)	The number of brochures and flyers distributed will be tracked and records maintained.	Highway & Floodplain	February 2018 and on every occurring special events.
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**B. Public Involvement and Participation, General Permit AZG 2016-002, Section 6.4.2**

**Table 4.2 – Public Involvement and Participation -- Measurable goals for each BMP**

<b>Permit Condition</b>	<b>BMPs / Practices to achieve compliance</b>	<b>Measurable goals</b>	<b>Department responsible for the measure</b>	<b>Implementation (Start date and or, subsequent target dates)</b>
Public Involvement	Floodplain staff will respond to verbal and/or written public inquiries, comments or concerns.	A record of inquiries will be created to monitor the number received and addressed.	Highway & Floodplain	July 2018. So far, no inquirers have been received.
Public Involvement	Floodplain to make MS4 program plan and notice of intent available to the general public. Cochise County's MS4 program plan (SWMP) will be made available through web pages, brochures, and other appropriate measures.	The number of brochures and other printed materials distributed will be tracked and records maintained.	Highway & Floodplain and IT (for web page)	June 2018. Brochures have been developed, printed and distributed to public. To date, 728 such brochures have been distributed.  Web page was developed in March 2018.



Public Involvement	Floodplain to make MS4 annual report available to the general public. Cochise County MS4 annual report to be made available through web pages, and other appropriate measures.	County will try to keep track of any comments towards the annual report.	Highway & Floodplain and IT (for web page)	July 2018 and continuous. Copy of updated SWMP has been posted in the website and a copy placed at the BOS front desk.
Public Involvement	Floodplain to make MS4 ordinance available to the general public. Cochise County MS4 program ordinance to be made available through web pages, brochures, and other appropriate measures.	A copy of the ordinance will be posted in the webpage.	Highway & Floodplain and IT (for web page)	October 2018, or as soon as the ordinance is adopted.
Public Participation	Highway & Floodplain will encourage and provide opportunities for public participation in the SWMP and community cleanup events.	Highway & Floodplain will sponsor or co-sponsor a cleanup event at least once a year to allow citizens to clean up their property and neighborhoods at no cost to them under the condition that all waste consists of non- hazardous and/or non-special waste.	Highway & Floodplain	June 2019 and annually.

**C. Illicit Discharge Detection and Elimination (IDDE) Program, General Permit AZG 2016-002, Section 6.4.3**

**Table 4.3 – Illicit Discharge Detection and Elimination (IDDE) Program -- Measurable goals for each BMP**

<b>Permit Condition</b>	<b>BMPs / Practices to achieve compliance</b>	<b>Measurable goals</b>	<b>Department responsible for the measure</b>	<b>Implementation (Start date and or, subsequent target dates)</b>
Written IDDE Program	Identify facilities and activities that discharge to MS4 without an AZPDES/NPDS permit.	Develop, implement and enforce the written IDDE program that will identify facilities and activities that discharge to MS4 without an AZPDES/NPDS permit.	Highway & Floodplain	July 2018 and continue.
Stormwater Ordinance	Enforce IDDE and Stormwater ordinance.	A written stormwater ordinance will be developed under approval from the Board of Supervisors that will cover and empower the IDDE to enforce on illicit dischargers.	County/Highway & Floodplain	October 2018 and continuous.
Visual monitoring	Preparation of an MS4 map that includes all existing stormwater systems and catch basins and makes it available to the general public. MS4 map to be	Record keeping and reporting of illicit discharge through monitoring according to the prepared MS4 map.	Highway & Floodplain	April 2017 and continuous through the permit period.

	completed within four years and will include all unincorporated small MS4 areas in Bisbee, Douglas, and Sierra Vista.			
Training	Train employees in the detection and identification of illicit discharges.	Key employees will be trained on the proper way to detect and identify illicit discharges.	Highway & Floodplain	September 2018 and annual training onwards.
Training	Prepare a storm water control measure field manual to be used as reference by Cochise County staff performing site inspections.	Train concerned employees on the use of the field manual and keep track of all the detected and illicit discharges.	Highway & Floodplain	September 2018 and annual training onwards.

**D. Construction Activity Stormwater Runoff Control, General Permit AZG 2016-002, Section 6.4.4**

**Table 4.4 – Construction Activity Stormwater Runoff Control -- Measurable goals for each BMP**

<b>Permit Condition</b>	<b>BMPs / Practices to achieve compliance</b>	<b>Measurable goals</b>	<b>Department responsible for the measure</b>	<b>Implementation (Start date and or, subsequent target dates)</b>
Ordinance	Construction sites will be evaluated, by Cochise County Floodplain Staff/ Planning & Zoning inspectors, by using an inspection form prepared in compliance with the Stormwater Ordinances.	Keep track of all sites inspected and any illicit discharges.	Highway & Floodplain	November 2018.
Inventory	Inspection and monitoring of construction activities that disturb or will disturb one or more areas per MS4 permit condition.	Inventory will be maintained through tracking and record keeping of all areas that are disturbed.	Highway & Floodplain	November 2018 and continuous.
Inspection	Assess drainage system for oil, grease, odor, algal growth and trash to identify construction site problem areas.	Keep track of all areas and their identified issues.	Highway & Floodplain	November 2018 and continuous.
Written procedure for site inspection	Inspection and enforcement of sediment and erosion control measures developed based on a	Keep track and record of all such control measures.	Highway & Floodplain	July 2018. Written procedure for site inspection has been developed.

	written procedure of inspection.			
Written procedure	Require developers to submit and implement best management practices on construction sites.	Keep track of all development submittals.	Highway & Floodplain	September 2018.

**E. Post-Construction Stormwater Management in New Development and Redevelopment,  
General Permit AZG 2016-002, Section 6.4.5**

**Table 4.5 – Post-construction Stormwater Management in New Development and Redevelopment – Measurable goals for each BMP**

<b>Permit Condition</b>	<b>BMPs / Practices to achieve compliance</b>	<b>Measurable goals</b>	<b>Department responsible for the measure</b>	<b>Implementation (Start date and or, subsequent target dates)</b>
Develop, implement and enforce	Use MS4 GIS map to monitor post construction site visits. MS4 GIS map to be created and construction site information will be updated as they are monitored.	Keep track of monitoring and enforcement.	Highway & Floodplain	September 2018.
Green Infrastructure- (Structural and non-structural) BMPs	Cochise County Floodplain department to look at projects which use holistic approaches for management of	Keep track of meetings and follow up on discussed items.	Highway & Floodplain	April 2018.

	water quality and water quantity.			
Regulatory mechanism (Ordinance)	Use of Stormwater ordinance for enforcement of regulations to Post-construction sites.	Record keeping of implementations.	Highway & Floodplain	November 2018.

**F. Pollution Prevention and Good Housekeeping, General Permit AZG 2016-002, Section 6.4.6**

**Table 4.6 – Pollution Prevention and Good Housekeeping – Measurable goals for each BMP**

<b>Permit Condition</b>	<b>BMPs / Practices to achieve compliance</b>	<b>Measurable goals</b>	<b>Department responsible for the measure</b>	<b>Implementation (Start date and or, subsequent target dates)</b>
Inspection	Highway & Floodplain department responsible for inspections within areas of interest. Highway & Floodplain will research and identify any Cochise County departments which fall within the areas of interest and will inspect for quality assurance.	Annual review to be done and included in the annual report to ADEQ.	Highway & Floodplain	December 2017- September 2018.
Training	A training program will be conducted so employees can incorporate and implement pollution prevention and good	Keep training records, follow-up and annual evaluation.	Highway & Floodplain	April 2018 and annually.

	housekeeping techniques.			
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**Section 7.0 – Reviewing and Updating the SWMP:**

Cochise County will review the SWMP in July/August of each year starting in 2018 and evaluate the implementation status of the SWMP components as well as the effectiveness of each component or combination of components.

**Section 8.0 – Monitoring:**

The dry weather and wet weather visual outfall monitoring will continue. The estimated total number of municipal stormwater outfalls or field screening points is five (5). Three (3) in Sierra Vista (Mohd Hasan, Environmental Compliance Engineer to inspect), One (1) in Douglas (Joaquin Solis, Floodplain Engineer to inspect), and One (1) in Bisbee, AZ (Teresa Garcia, Engineering Technician to inspect).

**Section 9.0 – Annual Reports:**

Cochise County is submitting an annual report to ADEQ by September 30, 2018 for the reporting period July 1, 2017 through June 30, 2018 and continue annually thereafter during the remaining permit period.

# Appendix A

## MS4 Stormwater Outfall Location Maps







