

# Stormwater Management Program



Town of Cave Creek  
AZG2016-002  
July 2019

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## **ABBREVIATIONS / ACRONYMS**

AAC	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
AZPDES	Arizona Pollutant Discharge Elimination System
BMP	Best management practice
CFR	Code of Federal Regulations
MEP	maximum extent practicable
MS4	Municipal separate storm sewer system
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
SWMP	Storm Water Management Plan (also referred to as a Storm Water Management Program)
TMDL	Total Maximum Daily Load

## 1. BASIC SWMP INFORMATION

This Stormwater Management Plan, also referred to as a Stormwater Management Program (SWMP) was developed by the Town of Cave Creek to describe the activities and measures that will be implemented in urbanized areas to meet the terms and conditions of the General Permit AZG2016-002 for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) as required by the Arizona Department of Environmental Quality (ADEQ) Arizona Pollutant Discharge Elimination System (AZPDES).

As required by the Permit, the SWMP addresses the six minimum control measures (MCMs):

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination Program
- Construction Activity Stormwater Runoff Control
- Post-Construction Stormwater Management in New Development and Redevelopment
- Pollution Prevention and Good Housekeeping for Municipal Operations

The SWMP complies with the requirements specified in Code of Federal Regulations (CFR) Chapter 40 Part 122.32, incorporated by reference in Arizona Administrative Code (AAC) R18-9-A902 and A905. The SWMP has been prepared to meet the requirements identified in the Permit and is certified according to Permit Section 9.9.

### 1.1 GEOGRAPHIC SETTING

The Town of Cave Creek is located in northern Maricopa County and is bounded by the Tonto National Forest to the north, Phoenix to the west and south, Carefree to the east, Scottsdale to the southeast and various parts of Unincorporated Maricopa County. The Town encompasses approximately 38 square miles.

The Town of Cave Creek is named for Cave Creek Wash, a stream that originates in the remote areas about 25 miles to the north. It flows through the Town and continues south into Phoenix. The stream derives its name from a high, overhanging bluff along its west bank that forms a wide open-mouthed cavern about two miles north of the Town's Historic Town Core.

The discovery of gold in California in 1848 brought thousands of miners to the West. In 1863 central Arizona had its turn at gold rush days. As prospectors explored mostly eastward from California, the Apaches resisted their influence and raided their mining camps. To protect the miners, the U.S. Army established Fort McDowell in 1865 on the west bank of the Verde River.

In 1986 Cave Creek was incorporated as a self-governing community.

## 1.2 STAFF ORGANIZATION

Overall responsibility for administering the Permit and SWMP will be by the Town Utility and Engineering Assistant and Compliance Coordinator. However, implementing the SWMP requires participation from multiple departments throughout the Town. The responsibilities for each department as well as the title of the responsible person(s) are provided below.

### **i. Utility Department**

#### Department Purpose

The Utility Department is responsible for the operation and maintenance of the water and wastewater system in accordance with applicable laws and regulations.

### **ii. Building & Fire Safety, Facilities, Parks, and Rodeo Grounds**

#### Department Purpose

The Building Division of the department is charged with the duties of administering the Town's adopted Building Codes under the guidance of the Chief Building Official. It is responsible for the Management to the Town of Cave Creek and our visitors. The Town Marshal enforces all State of Arizona Statutes, with an emphasis on the Cave Creek Town Code and Zoning Ordinances. The Marshal is the Town of Cave Creek's Community Police Officer as well as the Town's Emergency Manager.

### **iii. Engineering Department**

#### Department Purpose

The Engineering Division has the primary responsibility for the planning, design, construction, operation, and maintenance of Public Works facilities and programs. This also includes providing engineering review, inspections, project management and administration for the Town's infrastructure facilities; and engineering review for all commercial development, subdivisions and residential building permits.

### **iv. Public Works**

#### Department Purpose

The Roads division constructs, reconstructs, and maintains roadways, both paved and unpaved, drainage facilities, traffic control devices, and street signs in proper working order. Providing timely and appropriate maintenance of streets and unpaved roads prolongs the useful life of the facility and reduces maintenance, and rehabilitation costs. Preventative maintenance activities for streets and unpaved roads may include resurfacing, crack sealing, seal coating and pothole patching. The Road Crew also assists with WWTP repairs, landscape maintenance and operation.

### 1.3 RECEIVING WATERS AND DRINKING WATERSOURCES

The Town of Cave Creek discharges to the following dry Apache washes in the area:

- Galloway Wash
- Andora Hills Wash
- Cave Creek Wash

The Town does not discharge to any qualifying Unique Arizona Waterway (UAW) or impaired waters. Therefore, no stormwater analytical monitoring is required to be conducted. However, visual stormwater monitoring will be performed at five outfalls or screening points.

- Willow Springs Wash
- Ocotillo Wash
- Rowe Wash
- Paradise Wash
- Grapevine Wash

### 1.4 STORM DRAIN SYSTEM AND OUTFALLS

The Town's drainage system consists of numerous washes complete with culverts, overland wash crossings, and ditches. The sequence of flow is generally overland to roadside ditches then to culverts and then into either washes or drainage channels/ditches. Washes are defined as unimproved natural drainage ways. Drainage channels/ditches are defined as intentionally designed drainage ways that are not natural in either their shape or location.

The Town has one storm drain system which collects flows from behind the post office and carries the flows to Andora Hills Wash behind the Neary Tank site.

## 2 MAP OF SEPARATE STORM SEWERSYSTEM

As required by the General Permit, the Town will have a completed map of the storm sewer system by 2020. Which is within two years for existing permittees and four years for new permittees, per Part 2.4.4.6 of the General Permit.

## 3 CONTROLS FOR TARGETING POLLUTANTS OF CONCERN

Unless explicitly specified otherwise in the SWMP, all actions proposed to be undertaken exclusively apply to the designated urbanized areas only. Actions taken beyond these geographic bounds are done so at the discretion of the Town of Cave Creek. The Town intends to fully implement the conditions in this SWMP.

### 3.1 CONTROLS FOR EXISTING DISCHARGES TO IMPAIRED WATERS WITH TMDLS

The Town will adopt and implement a local ordinance by September, 2019 that will provide adequate enforcement procedures that satisfy the requirements of the Permit to control pollutant discharges into its MS4. These enforcement procedures will, at a minimum, address the following:

- Prohibit and eliminate illicit connections and discharges to the MS4
- Control the discharge of spills, and prohibit dumping or disposal of materials other than stormwater into the MS4
- Require compliance with conditions in the ordinance, permits, contracts, and orders
- Require owners/operators of construction activities, new or redeveloped land, and industrial and commercial facilities to minimize the discharge of pollutants to the MS4 through the installation, implementation, and maintenance of stormwater control measures
- Allowable methods to enter private property for the purpose of inspecting at reasonable times any facilities, equipment, practices, or operations related to stormwater discharges to determine whether there is compliance with the Town's stormwater control ordinance/standards.
- Require violators to cease and desist illicit discharges or discharges of stormwater in violation of any ordinance or standard and/or cleanup and abate such discharges
- Provide for civil or criminal sanctions (including referral to a county district attorney) and escalate corrective response, consistent with its enforcement response
- Identify departments within the Town's jurisdiction that conduct stormwater-related activities and their roles and responsibilities under this permit.
- Identify any other administrative and legal procedures and ordinances available to mandate compliance with stormwater issues if applicable
- Describe how stormwater related-ordinances are implemented and appealed.

## 3.2 ANALYTICAL MONITORING

The Permit requires monitoring for small MS4s that discharge to impaired waters with established Total Maximum Daily Load(s) (TMDLs). The Town's MS4 drains to a wash that is not listed on Arizona's 303(d) list and there is no established TMDL. Therefore, the Town's SWMP does not include provision for stormwater analytical monitoring. However, the Town will be conducting dry weather screening and visual wet weather monitoring as per MCM 3 under the IDDE program.

## 3.3 CONTROLS TO REDUCE POLLUTANTS TO THE MAXIMUM EXTENT PRACTICABLE

The following sections describe the Town of Cave Creek's program to reduce pollutants from the discharge of pollutants from the MS4 to the maximum extent practicable. As necessary, the sections describe partnerships that the Town of Cave Creek is using to implement various BMPs, as allowed in Part 2.4.1.b. of the General Permit.

The Town has established six (6) required minimum control measures (MCM) to assist in reducing discharge of pollutants to the maximum extent practicable (MEP) to protect water quality. These control measures include:

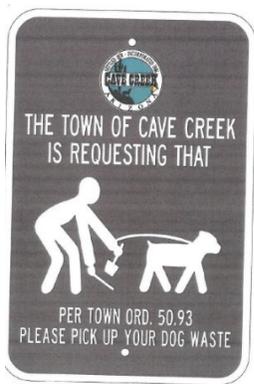
1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Activity Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention and Good Housekeeping

**i. PUBLIC EDUCATION AND OUTREACH**

The ultimate objective of this public education program is to increase knowledge and change behavior of the public so that pollutants in stormwater are reduced. The Town will modify any ineffective message or distribution technique as needed and document in each annual report the overall effectiveness of the education program.

<b>Control Measure</b>	<b>BMP – Brochure</b>
<b>Measurable Goal:</b>	The Town will develop and have brochures and other printed materials available for the general public within the front reception area.
<b>Department Responsible:</b>	Town Utility and Engineering Department
<b>Control Measure</b>	<b>BMP –Website Outreach</b>
<b>Measurable Goal:</b>	The Town will maintain and update its stormwater page which contains links to the STORM website and the current SWMP and NOI. Residents will be provided a method to provide complaints and access for more information.
<b>Department Responsible:</b>	Town Utility and Engineering Department

Examples below:



## ii. PUBLIC INVOLVEMENT

The ultimate objective of this public involvement program is to provide opportunities to engage the public to participate in the review and implementation of the Town’s SWMP.

<b>Control Measure</b>	<b>BMP – Town Website and Public Comment Period</b>
<b>Measurable Goal:</b>	The Town will make the SWMP available to the public on the Town’s website by summer of 2019. The anticipated audience is residents, businesses and/or anyone looking for information about the Town. The measurable goal for this BMP is when the SWMP is posted to the website and any updates. This will be reported in the annual report
<b>Department Responsible:</b>	Town Utility and Engineering Department
<b>Control Measure</b>	<b>BMP –Stormwater Ordinance</b>
<b>Measurable Goal:</b>	The Town will document the number of complaints related to stormwater and their resolution.
<b>Department Responsible:</b>	Town Utility and Engineering Department

## iii. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The ultimate objective of the illicit discharge detection and elimination program is to develop, implement, and enforce a program to systematically find and eliminate sources of non-stormwater into the Town’s small MS4.

<b>Control Measure</b>	<b>BMP – Town Website and IDDE Reporting</b>
<b>Measurable Goal:</b>	The Town will develop an online reporting tool for the reporting of illicit discharges.
<b>Department Responsible:</b>	Town Utility and Engineering Department
<b>Control Measure</b>	<b>BMP –Training</b>
<b>Measurable Goal:</b>	The Town will train related Town personnel on implementation of written IDDE procedures.
<b>Department Responsible:</b>	Town Utility and Engineering Department
<b>Control Measure</b>	<b>BMP –Stormwater Sewer Mapping</b>
<b>Measurable Goal:</b>	Develop a stormwater system map that includes major outfall locations and municipal stormwater structures. The Town will map 20% annually until 2020.
<b>Department Responsible:</b>	Town Utility and Engineering Department
<b>Control Measure</b>	<b>BMP –Dry Weather Screening Form</b>

<b>Measurable Goal:</b>	The Town will develop an outfall inspection form for conducting dry weather screening and complete annually.
<b>Department Responsible:</b>	Town Utility, Engineering and Public Works Department
<b>Control Measure</b>	<b>BMP –Wet Weather Screening Form</b>
<b>Measurable Goal:</b>	The Town will develop an outfall inspection form for conducting wet weather screening and complete annually.
<b>Department Responsible:</b>	Town Utility, Engineering and Public Works Department
<b>Control Measure</b>	<b>BMP –Written IDDE Procedures</b>
<b>Measurable Goal:</b>	The Town will adopt a stormwater ordinance that will be enforced by performing periodic inspections by September 2019.
<b>Department Responsible:</b>	Town Utility and Engineering Department

**iv. CONSTRUCTION ACTIVITY STORMWATER RUNOFF CONTROL**

The ultimate objective is to develop, implement, maintain and enforce a construction activity program stormwater runoff program to minimize or eliminate pollutant discharges to the MS4 from any construction activities that could disturb one (1) or more acres of land.

<b>Control Measure</b>	<b>BMP – Inventory</b>
<b>Measurable Goal:</b>	The Town has developed an online reporting tool for all active permits issued and will continue to maintain inventory within that system.
<b>Department Responsible:</b>	Town Utility, Engineering, Planning and Building & Safety Department
<b>Control Measure</b>	<b>BMP – Written Procedures</b>
<b>Measurable Goal:</b>	The Town will train related Town personnel on implementation of written IDDE procedures.
<b>Department Responsible:</b>	Town Utility, Engineering, Planning and Building & Safety Department
<b>Control Measure</b>	<b>BMP –Inspections</b>
<b>Measurable Goal:</b>	The Town will review its current construction site inspection procedures and seek opportunities to update inspection of stormwater runoff controls.
<b>Department Responsible:</b>	Town Utility, Engineering, Planning and Building & Safety Department
<b>Control Measure</b>	<b>BMP –Education &amp; Public Involvement</b>
<b>Measurable Goal:</b>	The Town will provide contractors educational brochures on stormwater compliance.
<b>Department Responsible:</b>	Engineering, Planning and Building & Safety Department
<b>Control Measure</b>	<b>BMP –Enforcement</b>
<b>Measurable Goal:</b>	The Town will develop, implement, and enforce a stormwater ordinance to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, and discharge into the Town’s MS4.
<b>Department Responsible:</b>	Town Marshall, Engineering, Planning and Building & Safety Department
<b>Control Measure</b>	<b>BMP –Training</b>
<b>Measurable Goal:</b>	The Town will train construction inspectors to identify compliance/non-compliance with the stormwater ordinance requirements.
<b>Department Responsible:</b>	Engineering, Planning and Building & Safety Department

**v. POST CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT**

The ultimate objective is to develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment projects that disturb one (1) or more acres of land or less than one (1) acre if part of a common plan of development that discharges in the Town’s MS4.

<b>Control Measure</b>	<b>BMP – Inventory</b>
<b>Measurable Goal:</b>	The Town has developed an online reporting tool for all active permits issued and will continue to maintain inventory within that system.
<b>Department Responsible:</b>	Town Utility, Engineering, Planning and Building & Safety Department
<b>Control Measure</b>	<b>BMP – Enforcement</b>
<b>Measurable Goal:</b>	The Town will develop and implement said ordinance for Post construction stormwater runoff by the end of 2019. (violations will be recorded each year.)
<b>Department Responsible:</b>	Town Utility, Engineering, Planning and Building & Safety Department
<b>Control Measure</b>	<b>BMP –Inspections/ Site Plan Reviews</b>
<b>Measurable Goal:</b>	The Town will review its current construction site inspection procedures and seek opportunities to update inspection of stormwater runoff controls.
<b>Department Responsible:</b>	Town Utility, Engineering, Planning and Building & Safety Department

**vi. POLLUTION PREVENTION AND GOODHOUSEKEEPING**

The ultimate objective is to develop, implement and maintain an operations and maintenance program that includes a training component with the ultimate goal of preventing or reducing pollutant runoff and protecting water quality from municipal facilities and activities.

<b>Control Measure</b>	<b>BMP – Training</b>
<b>Measurable Goal:</b>	The Town will record number of employees who received training.
<b>Department Responsible:</b>	Town Utility and Engineering Department
<b>Control Measure</b>	<b>BMP – Inspections</b>
<b>Measurable Goal:</b>	The Town will Prioritize Town maintenance yard, parking lots, catch basins and public streets for pollution prevention activities.
<b>Department Responsible:</b>	Town Engineer and Public Works Department
<b>Control Measure</b>	<b>BMP –Operations and Maintenance Procedures</b>
<b>Measurable Goal:</b>	The Town will inventory its municipal operations and prioritize activities that have the potential to discharge stormwater to the MS4 and inspect them annually.
<b>Department Responsible:</b>	Town Engineer and Public Works Department







