Arizona Department of Transportation

STORMWATER MANAGEMENT PLAN

Prepared by the Arizona Department of Transportation

Environmental Planning, Water Resources Section

AZPDES Permit No. AZS000018-2015

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Table of Contents

EXECUTIVE SUMMARY

The Arizona Department of Transportation (ADOT) Stormwater Management Plan (SWMP) identifies the major program activities and procedures implemented by the agency to minimize, to the extent practicable, the release of pollutants to and the discharge of pollutants from the ADOT Municipal Separate Storm Sewer System (MS4) as required by ADOT's MS4 permit (AZS0000018-2015) issued on August 17, 2015.

The SWMP follows the order of the MS4 Permit Sections. Each chapter begins with an overview in bold, and lists the key groups responsible. Then the program requirements are stated, followed by a discussion of the activities to be implemented and if applicable, the methods or mechanisms by which the activities are tracked for assessment and reporting.

1.0 AUTHORIZATION

The MS4 Permit, number AZS000018-2015, allows ADOT to discharge stormwater runoff from its roadways, Rights of Ways, and support facilities to Waters of the United States (WOTUS) that are located on non-tribal land and under the control of the Arizona Department of Transportation. Stormwater and allowable non-stormwater (reference Section 1.1 in the MS4 Permit #AZS000018-2015) are permitted to leave the highway and/or facility subject to compliance with the Permit's conditions, and that the Stormwater Management Plan (SWMP) is developed and fully implemented. This chapter covers the basic information on Permittee activity.

Key Groups: Director's Office, State Engineer's Office, Administrative Services Division

This Stormwater Management Plan (SWMP) provides the basis for compliance with the Arizona Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit (MS4 Permit) permit number AZS0000018-2015, issued to ADOT and effective on August 17, 2015.

This SWMP applies to the municipal separate storm sewer system (MS4), which includes the State highway system composed of Interstates, highways, State Routes, and loops, administrative, maintenance facilities and other ancillary support locations not subject to an industrial (MSGP) stormwater permit. Roadways maintained by ADOT that transect tribal land are subject to the requirements imposed by the US Environmental Protection Agency and are not subject to the requirements of this SWMP.

ADOT implements control measures for allowable non-stormwater discharges. However, ADOT is not authorized to discharge any non-stormwater to impaired, not-attaining waters, or any Outstanding Arizona Waters, unless ADOT obtains a separate discharge permit, or the activity is associated with emergency activities such as fire-fighting efforts. See *Measures to Control Discharges from Roadways*.

Where receiving waters are subject to an approved Total Maximum Daily Load (TMDL) plan, ADOT is not authorized to discharge the pollutant(s) addressed by the TMDL, the Pollutant(s) of Concern, unless specific control measures are employed to ensure that the discharge will conform to the requirements of the TMDL and any identified Waste Load Allocation (WLA) assigned to ADOT. See *Protection of Water Quality* and *Compliance with Arizona Water Quality Standards*.

Other types of ADOT activities which may discharge stormwater runoff to WOTUS, such as construction, industrial activities, and/or herbicide application, may be subject to more stringent requirements imposed by other permits issued for those activities and are not part of this SWMP unless explicitly stated.

The table below (**Table 1.**) describes the control measures implemented to control pollutants from non-stormwater discharge originating from typical ADOT activities.

Table 1. Non-stormwater Discharge Control Measures for Typical ADOT Activities

Non-stormwater Discharge	Control Measure
Landscape watering	Do not discharge effluent; Follow pesticide/herbicide labels; Minimize runoff
Dust control	Do not discharge effluent, Do not apply water at rates creating runoff
Compaction	
External washing of buildings	Do not use chemicals or toxic cleaning agents
Tunnel washing	
Sign washing	
Water line and well flushing	Hold onsite or de-chlorinate to decrease the Total Residual Chlorine below applicable limit
Groundwater pumping	Minimize erosion
Footing drains	
Evaporative cooler/AC	Minimize erosion, Allow evaporation
Diverted flows, riparian area, wetland	Adhere to applicable 404/401 water quality requirements
Drilling and coring	Settle particulates
Dewatering	Settle particulates, Prevent erosion
Emergency highway operations: -Spills -Washing -Microblaze -Absorbent	Specified use, Apply only as needed, Track quantities, Follow-up

2.0 PROTECTION OF WATER QUALITY AND COMPLIANCE WITH ARIZONA WATER QUALITY STANDARDS

The Arizona Department of Environmental Quality and the United States Environmental Protection Agency are charged with protecting surface water quality in Arizona. One instrument used to ensure protection is through the issuance of stormwater discharge permits that include a set of Standard Conditions which must be adhered to by all Permittees and are designed to limit the and /or eliminate pollutants present in stormwater discharges to local surface waters. Some Permittees may be assigned more stringent controls, due to site-specific conditions. Often, the control measure is in the form of a load allocation that depends on the ability of the receiving water to assimilate or naturally treat or convert pollutants without affecting the natural stream function. The quantity of pollutant a system can manage is shown in terms of a numeric standard. Waterways and standards are evaluated periodically, and this results in the need to review water body status often throughout project development and on-going roadway maintenance activities.

Key Groups: Water Resources, Districts

Total Maximum Daily Loads

Total Maximum Daily Load (TMDL) is an estimate of the amount of a pollutant impairing a water body can assimilate, and still meet the applicable water quality standards[1]. The TMDL accounts for all potential sources of the pollutant in the watershed and assigns a load allocation to each Permittee that may discharge stormwater to the impaired receiving water.

In the absence of a load allocation for ADOT, then ADOT will be held to the applicable surface water quality standard (SWQS) for the pollutant of concern at the point of discharge. Table 2 summarizes the TMDL information applicable to ADOT. It lists the TMDL named water including the stream's segment(s) HUC code, the OFR report number, the applicable Waste Load Allocations, and control measures pertinent to ADOT MS4 activities.

ADOT control measure implementation is based on Stored and Standard Specifications, design plans, environmental commitments, roadside maintenance guidance documents and directives, and environmental clearance documents which serve to direct District personnel and contractors with regard to SWPPP, SWMP and Permit requirements. Additionally, ADOT activities are supported by various best management practice manuals that provide guidance for the selection, installation, and maintenance of structural pollution controls and practices. Finally, ADOT's SWMP requires the Department to conduct outreach and education, coordination with other MS4s, and to implement pollutant control measures as necessary to meet applicable waste load allocations if necessary.

Table 2. TMDL Information Applicable to ADOT

TMDL	Stream Segment HUC	Waste Load Allocation	Control Measures
Gila River OFR 15-03	#15070101-008	2.0 µg/L Total Selenium Chronic; 1000 µg/L Total Boron	Comply with AZPDES permits. Use control measures specific for the pollutant(s) in SWPPPs. Monitor on construction projects within ¼ mile of the impaired reach, as required. Conduct public outreach/education, Coordinate with adjacent MS4s.
Upper Granite Creek OFR 14-08	#15060202-059A, #15060202-059B, #15060202-767, #15060202-768, #15060202-772	*E. coli 235 cfu/100ml* 4.3 G-cfu/day: Upper USGS Gauge; 14.5 G-cfu/day: Lower USGS Gauge;	Comply with AZPDES permits, conduct public outreach/education, Coordinate with adjacent MS4s, Identify construction site-specific measures in project SWPPP (per ADOT Erosion and Pollution Control Manual), and Conduct monitoring as necessary.
Little Colorado River OFR 12-05	#15020002-004	235 cfu/100ml *E. coli* - FBC; 575 cfu/100ml *E. coli* - PBC Suspended Sediment Concentration	On Non-Indian land, comply with AZPDES permits. Use control measures specific for the pollutant(s) in SWPPPs. Monitor on construction projects within ¼ mile of the impaired reach, if necessary. Conduct public outreach/education, Coordinate with adjacent MS4s.

[1] http://www.azdeq.gov/environ/water/assessment/tmdl.html

TMDL	Stream Segment HUC	Waste Load Allocation	Control Measures
Oak Creek OFR 10-01 Spring Creek	#15060202-019, #15060202-18A, #15060202-18B, #15060202-18C, & #15060202-017 #15060202-022	**Exempt from WLA (MS4 only):** Due to surface area of the highways (~0.1%) being small area versus other dischargers (Ref. OFR 10-01, Pg. 23)	Comply with AZPDES permits, conduct public outreach/education, Coordinate with adjacent MS4s, Identify construction site specific measures in project SWPPPs (per ADOT Erosion and Pollution Control Manual), and Conduct monitoring as necessary.
Pinto Creek OFR 16-05	#15060103-018A, #15060103-018B, #15060103-018C, #15060103-885, #15060103-887	Copper (D): 34 µg/L (A&Ww chronic, and acute if hardness is <268 mg/L) Ref. A.A.C. R18-11 Appendix C	Comply with AZPDES permits, conduct public outreach/education, Coordinate with adjacent MS4s, Identify construction site specific measures in project SWPPPs (per ADOT Erosion and Pollution Control Manual), and Conduct monitoring as necessary.
San Pedro (Lower) OFR 12-01 See Appendix D	#15050203-004C	*E. coli*: 235 cfu/100ml (FBC); *E. coli:* 575 cfu/100ml (PBC)	OFR 12-01: See Appendix D Comply with AZPDES permits. Use control measures specific to the pollutant. Preserve, enhance, or establish buffers that provide water quality benefits.
Watson Lake OFR 14-03	waterbody	Total Nitrogen, pH, Total Phosphorus; Dissolved Oxygen (not applicable to ADOT)	ADOT is *not required to sample for Dissolved Oxygen as stated in the ADEQ SWGP16-0251 communication*. Comply with AZPDES permits. Identify pollutant specific control measures in SWPPPs. Monitor on construction projects within ¼ mile of the impaired reach, if necessary. Conduct public outreach/education, Coordinate with adjacent MS4s.

ADOT monitors stormwater discharges associated with highway runoff at five (5) representative MS4 outfalls to identify what pollutants are present in the stormwater discharge, and if detected, at what concentrations. The samples at each location are collected using a stormwater auto-sampling system installed at the site. The sample data results are then compared to applicable Surface Water Quality Standards (SWQS) to assess compliance with the respective standard.

Exceedance

The most common pollutants found to exceed SWQSs in the last permit term include *E. coli,* lead, and nitrates. One of the five monitoring locations generally meets applicable standards. That location discharges to Oak Creek, an Outstanding Arizona Water (OAW) and is impaired for *E. coli.* The stormwater from the roadway surface is sent to a stormwater treatment device designed to protect the OAW designated water quality prior to entering Oak Creek. The treatment device is a hydrodynamic oil/ grit separator designed to remove suspended sediment, free oils, floatables and other pollutants that attach to particles in roadway runoff. The other four locations, which do not have treatment devices installed, on occasion have had excursions above the applicable SWQSs.

Any exceedence of an applicable SWQS will be reported annually and include the following information: sampling date, monitoring location, listed receiving water, the standard that was exceeded, and the laboratory results of the sampling effort. If the same pollutants have been detected more than once at an outfall in the same reporting period, an investigation will be triggered to attempt to identify potential sources of the pollutant, circumstances that may have caused or contributed to the recurrence, identify

actions for reducing the pollutant in discharges, and, if applicable, a schedule for implementing the purposed action(s).

If the exceedance may endanger health or the environment, ADOT will report the information to the ADEQ 24-hour hotline (602.771.2330) and follow-up with written correspondence within five (5)-days. Correspondence will be made in writing and signed by a principal executive officer or ranking elected official, chief executive having responsibility for the overall operations of a principal geographic unit of the agency (District Engineer, Program Manager), or duly authorized representative (Supervisor, Program Coordinator).

The annual report will contain an update and evaluation of the activities planned to address TMDLs. The report will also include monitoring results collected in the last five years (10 sample events). In addition, an evaluation of water quality trends over the permit term will be evaluated and summarized in the annual report as required by the permit.

3.0 LEGAL AUTHORITY

ADOT has control over the highway system, either by ownership, lease agreement or title transfer and is responsible to manage the system according to a myriad of laws, statutes, and codes. The Legislature has granted the ADOT Director the complete and exclusive operational control over state highways and routes. This authority is delegated to the Deputy of Transportation, also known as the State Engineer. The responsibility for the highways and yards, or support activities, is further delegated to District Engineers and Administrative Services, with support from several headquarters divisions.

Key Groups: State Engineers Office, Infrastructure Development and Operations, Administrative Services Division

ADOT maintains authority to regulate discharges to its MS4 thru use of the Arizona Revised Statutes (A.R.S.) Title 28: Transportation, and the Arizona Administrative Code (A.A.C.) Title 17, Chapter 3, Article 5: Highway Encroachments and Permits. The roles and responsibilities to carry out this authority are enforced statewide. ADOT relies on state statute to specify authority, roles, and responsibilities. ADOT relies on the administrative code for the authority to control the Right of Ways and contract specifications, and issue permits. ADOT follows both state statute and administrative code regarding enforcement actions. In addition, ADOT can enlist ADEQ, if necessary, to assist with problematic repetitive Clean Water Act offenders, as both agencies are departments of the State.

Statutes

Arizona Revised Statutes (A.R.S.) Title 28: Transportation

Administrative Code

Arizona Administrative Code (A.A.C.) Title 17, Chapter 3, Article 5: Highway Encroachments and Permits

Specifications

ADOT specifications apply to construction projects and contain additional details that identify the Engineer's authority to direct the contractor and hold contractors performing highway work to the requirements of law. Specification 104.09 has the stormwater requirements for contracts was recently updated and awaiting FHWA approval. In addition, a new Specification, 104.16, with pollution prevention (SPCC), 401/401, and biology requirements is drafted. Currently, 104.16 is continuing through the approval process. The two specifications supply contractors' instructions and direct the reader to the MS4 Permit regarding stormwater permit requirements and compliance.

The URL is: https://azdot.gov/business/contracts-and-specifications

Roles and Responsibilities

Roles and responsibilities for stormwater compliance are spread throughout the agency. Cross-Divisional and District coordination is common. Program stewardship is managed by the Water Resources Team within Environmental Planning. Implementation primarily occurs through Infrastructure Delivery and Operations Division at the design level, as well as the District level. Other Units have minor support roles, such as Multimodal Planning, Communications, and Administrative Services.

ADOT's Organization Chart and Mission can be found at: https://www.azdot.gov/about/inside-adot

A.R.S. § 28-363. Duties of the director

A. The director shall:

1. Supervise and administer the overall activities of the department and its divisions and employees.
2. Appoint assistant directors for each of the divisions. (Signatory Authority)
3. Provide for the assembly and distribution of information to the public concerning department activities. (Public Outreach and Involvement)
4. Delegate functions, duties or powers as the director deems necessary to carry out the efficient operation of the department. (Signatory Authority)
5. Exercise complete and exclusive operational control and jurisdiction over the use of state highways and routes. (Encroachment and illicit discharge or connection)
6. Designate the necessary agencies for enforcing the provisions of the laws the director administers or enforces. (Oversight and enforcement)
7. Exercise other duties or powers as the director deems necessary to carry out the efficient operation of the department (for example miscellaneous tasks).

4.0 STORMWATER MANAGEMENT PLAN

The plan, or SWMP, explains the standard procedures that ADOT uses to meet the MS4 Permit requirements. Although many are loose guidelines there is a measure of confidence that if implemented, maintained, inspected, tracked, and assessed, as required for the annual report, then ADOT is complying with the Clean Water Act by minimizing pollutants in runoff to the maximum extent practicable in order to maintain the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water

Key Groups: Environmental Planning

The minimum requirements are covered in this document and apply to the release of pollutants to and the discharge of pollutants from the MS4 that is owned, operated or used by ADOT. Control measures, best management practices, and procedures contained in the SWMP will be implemented and maintained fully to achieve the specific goals of ADOT's Permit in managing the municipal storm sewer system.

The SWMP will be updated as necessary and includes the details necessary for implementation, tracking and assessment. Annually the control measures, best management practices, and procedures will be reviewed and assessed – coincidental to the preparation of the annual report, which covers the fiscal year, or from July 1 – June 30. An evaluation of the SWMP and program effectiveness will be conducted and revisions or modifications to the programs will be completed, as required by the permit.

Each control measure is described relative to the applicable permit section or chapter and includes a description of the measure and criteria for selection, will be implemented and maintained, and revised and/or updated as necessary. Where discharges may contribute to an exceedence of a surface water quality standard, ADOT will use appropriate best management practices (control measures) described in the manuals, *Erosion and Pollution Control Manual for Highway Design and Construction (2012)* and *Post-Construction BMP Manual*, to control and reduce pollutants to the maximum extent practicable. The manuals include how, and when to select specific erosion and sediment controls, perimeter controls, and discuss good housekeeping practices, velocity dissipation, and sediment basins/traps. ADOT works to avoid discharges where possible. Tracking and documenting the occurrence of control measures happens at various levels and in multiple units, organizations, and divisions. However, a single steward of the program, the MS4 Stormwater Program Coordinator, is assigned to coordinate all the requirements on behalf of ADOT. The steward will account for the measureable goals as identified in the SWMP, and report on the status and achievements attained. If necessary, additional measurable goals to comply with an overall larger goal may be added, and if the measurable goal in not an on-going activity, will include the permit year, and a tentative schedule if determined to provide greater clarity, by which time the goal will be met by the Key Group(s) accountable for meeting the goal. Due to ADOT's geographic coverage and large number of employees, the roles and responsibilities by team, group, and/or division are noted as Key Groups in each section of the SWMP.

The ADOT Water Resources Team maintains Permit and compliance information for the MS4 Permit. Water Resources Team member names and their contact information is located in Table 3 below.

Table 3. Contact Information for the ADOT Water Resources Team

Name	Role	Contact Information
Eileen Dunn	Water Resources Manager	602-712-8386 EDunn@azdot.gov
Laura Nordan	MS4 Stormwater Program Coordinator	602-712-6972 LNordan@azdot.gov
David Mack	Industrial Stormwater Coordinator	602-376-7935 DMack@azdot.gov

The Water Resources Team URL is:

http://www.azdot.gov/business/environmental-planning/water-resources.

Stormwater Program related documents and manuals URL is:
http://www.azdot.gov/business/environmental-planning/water-resources/manuals

5.0 MAPPING THE MS4

The infrastructure of ADOT's transportation system is typically linear in configuration, except for maintenance yard locations and other ancillary activity locations. Narrow stretches of land parallel with the roadway surface are developed with roadway assets, including base material several feet deep, pavement, shoulders, ditches, culverts, catch-basin inlets, down-drains, bridge-deck drains, sound-wall weep holes, traffic interchange basins, retention and detention basins, and the many posts that hold up guardrail, signs, signals, fences, and light fixtures collectively form the ADOT roadway infrastructure. All these assets are catalogued in a centrally available database known as the Features Inventory System (FIS) which is managed by Department users.

Key Groups: Central Maintenance, Environmental Planning

Mapping of ADOT's storm sewer system for the entire state is a massive undertaking in terms of geographic area covered and the resources needed to complete the entire system as well as keeping the system information updated as the system grows and changes. ADOT began mapping its MS4 system in 2005 by mapping the Phoenix and Tucson areas. There were less than 100 major outfalls identified at that time.

In the next decade, ADOT continued to map priority outfalls over an expanded area with each year of the permit term. In addition, the Permit requires ADOT to inspect a minimum of 20% of the total number of priority outfalls in any one year of a permit term. This will result in all outfalls being inspected at least one time during a 5-year permit term. See the annual report statistics for the total number of outfalls and the total number of outfalls inspected for each reporting period. The outfall inventory is updated a minimum of annually, and typically, more often in recent years due to new outfall data being collected specifically for the MS4 mapping effort.

ADOT has mapped all assets that relate to drainage throughout the state highway system and has implemented an asset management program. However, as construction continues more assets and outfalls will continuously be added due to system growth and certain ones may be lost or removed as the system requires rehab, updating or retrofitting to minimize roadside maintenance issues, in which case those features must be removed from the FIS database. Two modes of data collection are envisioned to continue mapping of the storm sewer system and identifying outfalls: 1) retroactive mapping of existing infrastructure, and 2) future documentation as new outfalls are created or replaced through redevelopment.

The general process for outfall mapping and updates begins with consultants and/or staff conducting a desktop review of the current FIS database, ADOT base mapping integrated with ADEQ's assessed water's layer to identify all outlets that may flow into a potential Water Of The United States. Then, Geographic Information System software will further assist in assessing those locations and will include documenting any the findings and verification of mapped assets documented as an ADOT outfall. Potential outfall locations will be field verified, as needed, and then documented in ADOT FIS.

Mapping new outfalls or retirement of assets that are decommissioned by redevelopment projects will be initiated during the project development phase. The development project manager will ensure that new outfalls are identified in project plans and the construction resident engineer will notify the FIS Team when the asset is constructed. The FIS Team will collect the necessary information following project completion and submit the new asset ID to Water Resources for tracking and annual reporting.

Through the approach described above, ADOT also created an inventory of outfalls that discharge to impaired (303 d listed) waters statewide, and identifies the (if approved, meaning, not in draft form) waste load allocation contribution, or the identified TMDL stated concentration limit for the pollutant(s) of concern causing the impairment.

Permit Section 5.2 requires that a submittal of the Fourth Year Annual Report to ADEQ include a proposal to identify and map all remaining outfalls statewide. The plan must identify and prioritize all remaining unmapped areas and propose schedules for the next three, five-year permit terms to complete mapping the system. The plan has been developed and is being submitted as Attachment 1 in the Permit Reapplication Addendum with the Annual Report and updated SWMP for ADEQ's review. The mapping of the I-8, I-10 and I-17 corridors are complete including the outfall inventory for those corridors. The Interstate 40 portion of mapping outfalls is planned for year-five of this permit.

6.0 ILLICIT DISCHARGE DETECTION AND ELIMINATION

Uncommonly there are illegal connections to the ADOT MS4. It is difficult to hide a connection in the linear right-of-way and even more difficult to force a connection to an ADOT storm sewer channel that is open and concrete lined. The majority of illicit discharges occur as spills due to accidents on the freeway or highway routes. Other common scenarios include deposition of litter at rural traffic interchanges and vacant, excess land parcels. Often these are reported by third parties or discovered by personnel during routine activities. Administrative Services Division – Safety and Risk handles hazardous materials and other spills to the highway or linear setting. Transportation – Environmental Planning takes care of facilities and yards that experience issues with material handling or spills. When a District discovers a routine or non-emergency situation, such as a non-stormwater flow or a suspicious connection, the District will take steps to manage the issue. In all cases, documentation and follow-up visits are required.

Key Groups: Environmental Planning, Administrative Services, Districts

Detection and elimination of illicit discharges requires that ADOT maintain a comprehensive inspection, documentation, and follow-up program. Mapping the storm sewer system and knowing where

discharges to waters of the US may occur are the first steps in minimizing pollutants in stormwater discharge. An updated storm sewer system map will be added to the SWMP following the February 2017 (first 18 months of permit term) deadline to map the outfalls along the Interstate 10 corridor. Inspecting drainage features and eliminating discharges to the storm sewer system and following up on reports of potential illicit discharges, including illegal dumping, is generally performed by district. In order to identify priority areas likely to have illicit discharges, ADOT will inspect a sample of identified/mapped outfalls each year and map/track the locations with illicit discharges. ADOT will begin this effort during the 2017 dry weather season.

Source Identification

There are two ways for potential illicit discharges/dumps to be identified: discover them in the normal course of duty during on-the-roadway maintenance and/or construction activities or to receive a notification or report from an outside source. Inspections of the roadway include fencing, pavement, and drainage attributes. Maintenance units conduct level of service inspections to ensure that infrastructure is performing as designed. Inspection frequency depends on the type of asset, or feature, and is prescribed by the department managing or overseeing the asset, for example, Bridge Group prioritizes bridge inspections and maintains the results in the BRM Tool (Bridge Management); maintenance inspects storm sewer and records the time in PeCoS (Performance Controlled System); and construction maintains project notes and reports in the PEN database and erosion and sediment control material quantities and costs in FAST (Field Office Automated System). Inspections of priority outfalls (including dry weather field screening) are performed by district and by consultants. Results are tracked in FIS (Features Inventory System) and reported annually. Dry weather field screening procedures include field observations, field visual monitoring, and analytical monitoring as needed. Documentation includes the Outfall ID, documentation of last know rain event, inspector information, surrounding land use, receiving water, outfall description and condition, outfall flow conditions, smell, floatables, algae, vegetation, deposits, and photographs.

Investigation and Elimination

Once an illicit discharge/dump is discovered, the District investigates the concern and documents the findings. They will contact the responsible party and work with them to stop the discharge from continuing. If the responsible party does not cease discharging, a formal cease and desist letter is sent to the discharging party. Lastly, the discharger will be reported to ADEQ if they refuse to cease the activity.

Spills

Reports of material spills, such as fuel, sediment or debris, may be reported to the Traffic Operations Center (TOC) or Department of Public Safety. The TOC is manned 24 hours per day and provides the most consistent tracking service. Spill information is routed to qualified personnel that will begin the necessary protocol to protect human health and the environment. Either hazardous materials staff or environmental planning and the local environmental coordinator will be contacted to remediate and report the incident. The TOC can be reached by calling 602.257.1563. ADOT responds to spills in compliance with the Arizona State Emergency Response and Recovery Plan, found here: https://dema.az.gov/sites/default/files/EM-

PLN_State%20Emergency%20Response%20and%20Recovery%20Plan-Basic%20Plan%20SERRP2012Final_1.pdf.

Specific details can be found in Stormwater Enforcement Response Plan (found here: http://www.azdot.gov/business/environmental-planning/water-resources/manuals), under Illicit Discharge.

7.0 STORMWATER MANAGEMENT OF DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY

ADOT is required to participate as an operator on projects that are built in the MS4 because the District in which the project occurs is responsible for public safety and managing the roadway features according to design standards (that is, controls, plans, and development). ADOT will submit a notice of intent to comply with the provisions of the Construction General Permit (CGP). Implementation and compliance with the permit will include implementing some conditions by proxy by overseeing the contractor and requiring compliance with permits and specifications. ADOT will maintain an inventory of all activities that have the potential to discharge pollutants, or potentially polluted runoff, to the MS4. Once it enters the system, ADOT is responsible to remediate it or initiate the stormwater enforcement response plan. ADOT is also required to document incidents of non-compliance. All aspects of erosion and sediment control for activities subject to the CGP are included in this section, and ADOT must consider pretreatment devices, or post-construction runoff controls.

Key Groups: Construction Management, Roadway, Districts

Construction-related activities will occur in and adjacent to the ADOT MS4. Operators of construction activity will be monitored by ADOT for compliance with all AZPDES Permits, ROW Encroachment Permits, and local applicable stormwater requirements. ADOT will track all projects and activity that have the potential to discharge pollutants to and from the MS4.

ADOT will submit an Notice Of Intent (NOI) for permit coverage under the current State issued AZPDES CGP to discharge from construction-related activities whenever the Department meets the definition of operator and the area of disturbance meets the size threshold required for coverage under the AZPDES CGP. ADOT is considered an operator when: 1) it controls the plans or specifications of an activity, or 2) it performs the work, such as, maintenance. Two forms of activity occur in the ADOT MS4: Department maintenance or construction, and third-party encroachments.

The majority of construction-related activity is overseen, and/or performed by ADOT. That means, ADOT is administering either a contract for work, or maintenance to an existing infrastructure and/or making modifications to it to such an extent that permit coverage is required. Therefore, ADOT will submit an NOI to discharge pollutants in accordance with CGP Permit requirements. If there is a contractor doing the work, then ADOT will ensure that contractor(s) also file an NOI for CGP coverage. Signatory authority for ADOT will remain at the level of the District Engineer (DE) but may be delegated by the DE on phased projects to a person of sufficient knowledge and skill level capable of ensuring compliance with CGP

Permit requirements. ADOT will track and submit the total number of NOI's and NOT's filed annually by ADOT and/or on behalf of ADOT projects as a metric in the annual report as evidence of supporting compliance with the Permit's requirements to control pollutants generated from construction activities.

Maintenance

When ADOT is the sole operator, it will prepare and implement the required Stormwater Pollution Prevention Plan (SWPPP) in accordance with ADOT guidelines, inspect the work, and conduct any related permit sampling. These project-related details will be managed by the District tasked with completing the maintenance project.

Activities that disturb soil to improve or create new patterns of drainage will prepare and implement a SWPPP if more than 1.0 acre of soil is disturbed, unless the activity is intended to restore grade, and function of an existing system feature. Otherwise, and for maintenance projects, up to 5.0 acres of soil may be disturbed before a SWPPP will be developed, implemented, and an NOI is filed for CGP Permit coverage. Control measures such as reseeding, applying mulch, and removing sediment to offsite areas may be necessary to minimize pollutants discharged in stormwater from a site. Typical activities in this category include: grading roadway ditches, dirt roads, and the edges of pavement, scaling for rockfall in cut sections, and clearing crown ditches.

Construction

When ADOT oversees a contractor performing the work, only the contractor will prepare and implement a stormwater pollution prevention plan. The contractor assumes all responsibility to install, inspect, and maintain the work, including wet-weather stormwater sampling, until final acceptance. The contractor will follow the terms of the contract in specification 104.09. ADOT, however, will perform verification inspections of the contractor's work at a frequency dependent on the duration of the project. For example, project durations 0-3 months will be inspected a minimum of once; project durations 3-6 months a minimum of twice; and, project durations 6+ months a minimum of four times per year, and maintain details/results in the project diary in PEN.

If ADOT determines that the contractor is not meeting requirements, ADOT will provide verbal notification to the contractor with specific details. If work is not performed in 24 hours, a written notification to the contractor will be issued. If not corrected in 24 hours, a stop work order will result. All violations and enforcement actions by ADOT to contractors will be detailed in the tracking inventory and reported each year. The inventory will be submitted with the Annual Report each year.

At final acceptance, the contractor may file a notice of termination. If the project area has not reached final stabilization per the requirements of the construction general permit, the contractor's notice of termination must indicate that ADOT is assuming responsibility for final stabilization. The ADOT authorization number will be included on the contractor's notice of termination form. ADOT will assume inspections and monitoring, if applicable, until 70% cover, or equivalent, has been met. At such time, ADOT would file a notice of termination and archive the project document in the AIDW (ADOT Information Data Warehouse).

ADOT will administer local projects that occur on other municipal property. In this case, ADOT, the local, and the contractor will submit notices of intent, and the contractor and ADOT will submit notices of termination when the project is accepted by the local agency. The local agency will assume all responsibility for maintaining the inspections and performing repairs until final stabilization is met.

Third Party

Third-party construction is subject to tracking. ADOT receives a request through an encroachment permit process and assesses risk to the MS4. Applicants provide details of the encroachment, including any known impacts to resources, including the storm sewer system. Large developments adjacent to the MS4 that propose to utilize the highway system for managing sheet flow or point source connections and do not have a direct onsite improvement are required to retain stormwater up to the first inch of rainfall or snowmelt that originates onsite. ADOT Drainage provides a cursory review of these activities.

Encroachment permits are managed at the District level. Documents are maintained locally and are available through a public records request submitted to Risk Management. Inspections for stabilization of the MS4 are performed by a contractor. Any occupation or use of the highway system is subject to an encroachment permit, whether ground disturbance will result or not. ADOT must know when and where vehicles may be parked or contractors performing field survey are present. Similarly, any constructed feature must be evaluated for safety to the travelling public.

Although ADOT authorizes the work through a permit, ADOT will not be filing a notice of intent for construction activity of third party projects. All activity that has the potential to affect the quality of stormwater discharges will be tracked in the district inventory. Unpermitted work that occurs by a third party adjacent to or within the MS4 and that affects stormwater quality will be reported to ADEQ.

New Development and Redevelopment

A comprehensive planning and design process is established and was updated in 2016 to reduce discharges associated with significant development (or redevelopment) of the transportation system statewide. The Post-Construction Water Quality Control Measure Program involves all levels of project development from planning to design and construction through maintenance. Several control measures are specified for pre-treatment and will be assessed for use on projects as defined in the manual. (http://www.azdot.gov/business/environmental-planning/water-resources/manuals).

ADOT maintains an asset for each pre-treatment facility in the Features Inventory Services database. The number of projects assessed for pre-treatment and the number of devices constructed is reported in the annual report.

In addition, a grant was secured to develop a tool that will prioritize severe and repetitive erosion and sediment control projects that will require new design and construction at a maximum and extensive BMP retrofit, repair and maintenance at a minimum throughout the state. This will allow the funding available to retrofit these areas in a fiscally responsible and timely manner with the resources available. The project was just awarded to a consultant in May 2019 and is expected to run about one year. An

updated description and summary report will be submitted with the 2020 annual report outlining the project's results.

Tracking

ADOT tracks all notices of intent at the District where work is being performed. The environmental coordinator keeps the information in an excel spreadsheet and provides the details annually for reporting purposes. Activities that occur within or adjacent to the MS4 will be documented, including the third party authorization to discharge, if required. Any violations or enforcement actions, such as stop work order, will be reported annually. Refer to the Stormwater Enforcement Response Plan (http://www.azdot.gov/business/environmental-planning/water-resources/manuals) for additional information.

8.0 MEASURES TO CONTROL DISCHARGES FROM ROADWAYS

After the infrastructure is built and is being operated, routine inspections and scheduled maintenance activities will occur. To preserve the built environment and protect the state's investment, all aspects of the system will periodically require repair or restoration. Commonly sediment and rocks are removed from a roadside ditch, or an eroded slope is backfilled, compacted, and revegetated or covered with rock. Weeds and overgrown brush or trees may need to be removed to protect the pavement, shoulders or sight distance. In regions with higher elevations and reduced temperatures snow and ice removal impose activities that impact the quality of runoff. Independent of the daily, monthly, annually-considered or on-demand spot treatment maintenance activity, ADOT will deploy a plan to improve runoff quality where ADOT discharges to impaired water. ADOT will assess the potential for retrofitting and including the possibility of integrating LID principles and practices whenever updating the current infrastructure and track any improvements as part of a redevelopment and retrofitting program.

Key Groups: Central Maintenance, Geotech, District, Water Resources

ADOT follows multiple control measures when performing highway maintenance, road repair, and storm sewer system management, including vegetation and ice/snow patrol. An existing manual for maintenance and facilities best management practices is fairly representative of control measures that minimize pollutants in stormwater (http://www.azdot.gov/docs/planning/maintenance-and-facilities-best-management-practices-(bmp)-manual.pdf?sfvrsn=0).

Recently, a flip book was prepared by a committee of transportation stormwater associates (http://environment.transportation.org/center/products_programs/reports/field_guide_maintenance_stormwater.aspx). ADOT will rely on both as support to staff conducting routine activities in the MS4.

Maintenance Management Service provides performance guidelines, which are updated annually. Activity codes are used by employees to document daily work. These codes have been reviewed to identify roadway and facility activities that may generate or manage pollutants, and are relevant to stormwater tracking and reporting requirements.

Table 4. Potential Pollutants Associated with Roadway Maintenance Work

Activity	Type of Work	Pollutants	Measurement
101-119, 9102-9113	Pavement protection and repair	Emulsion, concrete, chips	Lane miles
121	Blade unpaved roads	Sediment	Lane mile
131	Blade unpaved shoulders	Sediment	Acre
134	Maintain unpaved turnout/crossover	Sediment	Square feet
1501, 9313	Litter removal	Trash	Acre
1502	Spot litter	Debris	Labor hour
1507, 9157	Mechanical sweeping	Fines, oils, metals, trash	Lane mile
1601	Routine drainage maintenance	Sediment	Each
1602	Emergency drainage maintenance	Sediment, debris	Each
1603	Clean cuts/channel/dikes/curbs	Sediment, debris	Linear feet
1604	Minor slide removals	Sediment, debris	Square feet
1605	Routine structural repair	Varies	Square feet
1607	Storm and rock patrol	Sediment, debris	Mile
1608	Drainage inspection	None	Each
1610	Roadway pump inspections	None	Each
1690	Other drainage maintenance	Varies	Labor hour
180	Major damage (if stormwater related)	None	Labor hour
181	Emergency (if stormwater related)	None	Labor hour
191	Encroachment permit	None	Labor hour
332, 9307	Irrigation inspection	None	Unit
333, 9307	Irrigation repair	Non-stormwater	Labor hour
341	Granite erosion control	Fines	Cubic yard
343	Non-granite erosion control	Mulch, fertilizer	Cubic yard
1400, 1402	Soil stabilization	Sediment	Acre
351, 354, 1420-1441, 9310-9311	Chemical vegetation control	Herbicide	Acre
456	Wash interstate signs	Non-stormwater	Unit
603	Building and yard maintenance	Varies	Labor hour
611	Material handling	Varies	Labor hour
891	Premix material	Chips, emulsions	Cubic yard
892	Stockpile material	Varies	Cubic yard
897	Screen material	Sediment	Cubic yard
899	Other material operations	Varies	Labor hour
901	Administrative	None	Labor hour

Districts manage all aspects of roadway maintenance, whether work is performed by employees or by contract. Annually work plans are prepared and submitted by District units. Documentation is completed by individuals performing the work.

Storm Sewer System and Highway Maintenance

Routine inspections occur and documentation of dry weather flows or illegal dumping will be included in the inspection record for follow-up. As a result of inspections, maintenance needs are documented for prioritization. Control measures relevant to storm sewer system cleaning and repair include: removal of accumulated sediment, vegetation, trash hauled offsite, stabilization of bladed areas, and sweeping of

track-out. Inspection records and the condition of infrastructure are kept at the District for a minimum of three years past the end of the current term.

Vegetation Management

Control measures applicable to vegetation management include: herbicide and fertilizer application by licensed professionals, use of approved materials and chemicals, consideration of the application timing with respect to precipitation and proximity to water bodies, chemicals are applied in accordance with manufactures recommendations and not excess, and reviewing procedures annually. Additional information regarding management of roadside resources and environmental assessments associated with herbicide and pesticide application can be found here: http://azdot.gov/business/environmental-planning/biology/roadside-resources

Erosion Abatement

Control measures for erodible slopes where sediment is leaving the highway will include stabilization through different methods of prioritization. For minor failures or erosion of slopes, maintenance units will manage deposited sediment and track incidents locally. When failure of the slope involves major work that could be eligible under the State's Rockfall Program, Geotechnical Group will be notified for assistance. Should the failure potentially affect water quality then Water Resources will be notified. The Minor program is a competitive process that assists districts in meeting transportation needs related to safety, pavement preservation, and wildlife connectivity, and can be used to meet stormwater permit requirements, as needed.

Retrofit

When a pollutant repeatedly exceeds the applicable numeric water quality standard or TMDL load allocation, Water Resources staff and/or their consultant will investigate potential causes for the exceedance of the pollutant. Should the detection be isolated then providing details the information in the annual report may be adequate. If there are multiple incidents, and it becomes evident that the transportation activities or infrastructure are contributing to the exceedance, ADOT will address the issue through a proposed retrofit program process. ADOT has just received a research grant to fund a project designed to prioritize severe and repetitive erosion/sediment retrofit projects identified in each District. One of the main goals for the project is the protection of water quality through the elimination of the repeated erosion failures. The project was awarded in May 2019 and is expected to continue for one year. At the completion of the project the final report can be submitted with the next annual report describing the purpose, criteria, and final product with benefits in more detail.

Winter Storm

Winter storm management includes application of deicing and anti-icing chemicals and/or combination with abrasives (salt/cinder blend) to protect the traveling public during inclement weather. ADOT has fully evaluated the environmental impact from this activity and performs annual training to equipment operators that apply chemicals or abrasives and who drive snowplows or otherwise manage the storage of anti- and deicing materials. For additional details, the Winter Storm Management Operations Manual

can be accessed at the following URL: http://azdot.gov/business/environmental-planning/programs/winter-storm-management

9.0 TRAINING

Training is geared toward reducing or eliminating behaviors and practices that cause or contribute to adverse impacts to stormwater quality. Various levels of training are identified to present general awareness topics to all employees and target specific job codes to deliver knowledge to employees with duties that potentially affect water quality.

Key Groups: Environmental Planning, Infrastructure Delivery and Operations Technical Training

Staff

The Environmental Planning Group is responsible for the development and implementation of MS4 Permit-required training content. The actual training curricula is managed by the Environmental Trainer. Training record data is managed by Infrastructure Delivery and Operations Technical Training and is the source database for the annual report. The curricula is evaluated and refined on an as-needed basis by the Environmental Trainer to ensure the educational messages are consistent, up-to-date, and effective.

The training consists of both computer-based training, classroom based, and/or a combination of both. All training classes include interactive quizzes throughout the presentation and/or a final exam to assess adequate retention of the training material. All classes, syllabi, and attendees are tracked and recorded for submission as a metric in the annual report data and to capture a variety of metrics with which to analyze the trainings for indications of success and/or where improvements should be made, and to assess that all of the permit's topic requirements are met.

Upon hire, each employee is informed of their training requirements which are position based to ensure uniform training requirements across disciplines. If an employee fails to complete required training in a timely manner, a delinquent notification is sent to both employee and their supervisor for follow-up. When an employee completes a training class, the date, location or online session number, and quiz or exam grade for the class are all recorded in the training database, and in the employees training record. If the exam score result is less than passing, then the employee must repeat the class until they receive a passing score. The database can be mined for data to allow assessment of the training and to affect the desired outcome for expanding the knowledge base of the employee with regard to stormwater awareness issues in the normal course of the employee's job. Currently, Water Resources reports the number and type of training classes delivered, and the number of employees trained in the annual report.

Computer-Based

At present, three stormwater classes are delivered in the computer-based format: Stormwater Awareness, Post-Construction Water Quality Control Measures (formerly New Development/Redevelopment Post Construction), and Highway Storm Sewer System Maintenance. However, there are other courses that also incorporate stormwater pollution prevention messaging,

including Environmental Awareness (activities conducted by maintenance), Equipment Operator (pesticide/herbicide application), and Winter Storm Management (anti and deicing).

- **Stormwater Awareness:** includes the basics of recognizing and addressing illicit discharges and illegal dumping, good housekeeping, and non-stormwater discharges. The computer-based class is available as class number ENV1005W.
- **Post-Construction Water Quality Control Measures:** describes the comprehensive planning process for identifying and selecting appropriate control measures for a pre-defined set of site-specific conditions based on the requirements for stormwater treatment. The computer-based class is available as ENV1004W.
- **Highway Storm Sewer System Maintenance:** is being updated for 2020 to target maintenance field staff and will be delivered in a two class series. The first will remain as an introductory level class, to be followed-up by an intermediate level class having more advanced concepts. The introductory program elements for the storm sewer system maintenance will be taken from the Environmental and Stormwater Awareness content training. The added intermediate content will focus more on executing activities like facility inspections, pollutant source investigations, documenting investigations, activity tracking, and reporting procedures. Currently, these roles are being performed by a mix of environmental consultants, and headquarters water quality professionals. The introduction computer-based class is currently available as ENV1006W, and the intermediate class is under development for deployment in 2020.

Classroom-Based

Two first of two classroom delivered trainings is focused on Maintenance Yard SWPPP Management and Inspections conducted at those maintenance yards. This training is tied to the permit's requirement to develop a commercial/industrial inventory for ADOT facilities not subject to MSGP permit coverage and to develop a risk assessment methodology for the identified locations to determine the frequency of facility inspection needed for each location and then create a standardized form to use during the facility inspections for continuity across a diverse bunch of facilities. The inspection form was finalized in March 2017. The assessment is based on a predetermined set of risk criteria.

The second classroom-based training is the Oil Water Separator (OWS) Training conducted to train maintenance employees about how to manage the care and maintenance of the system to prevent pass through of oil and other hydrocarbon based pollutants and sediment carrying oil/grease from discharging to either surface water or groundwaters. The OWS is incorporated into each of ADOT's wash rack facilities which typically reside at maintenance yards. The training is tracked for content and attendance and will be reported as a new metric as of this annual report (2018/19) cycle as a way of increasing protections to maintenance yard stormwater runoff.

Contractor

External to ADOT, the Associated General Contractors (AGC) assist ADOT in maintaining a 16-Hour Erosion Control Coordinator (ECC) Certification program for new development and redevelopment construction disturbances that are subject to the AZPDES Construction General Permit. The certification is required by ADOT Specification 104.09 for contractors working on ADOT projects subject to the

permit. The class includes inspection and maintenance requirements that pertain to erosion and sediment control when working on ADOT projects. ADOT maintains an annual list certified ECC's consisting of both ADOT staff and outside contractors. AGC sends notification that renewal is required prior to expiration annually.

The ECC Certification is required for any contractor that will perform work on ADOT projects. The construction company proposes the ECC in accordance with ADOT specifications and finally, the ADOT resident engineer administering the project must provide approval.

ADOT employees and contractors require an 8-hour refresher course every three (3) years without lapse in order to remain certified.

10.0 PUBLIC OUTREACH AND EDUCATION / PUBLIC INVOLVEMENT AND PARTICIPATION

This chapter brings in several topics that relate to external involvement in the ADOT plan to manage polluted runoff. Educating and involving public, citizens, and travelers are key components to the success of the program. Certainly if ADOT can gain the support of the traveling public in a reduction of litter, or if local residents that utilize the highway infrastructure to commute are asked to participate in making a difference in how much oil and grease are deposited on the roadway by maintaining leaky vehicles, then a cost savings is realized and may direct the flow of cash into restoration of infrastructure. Talking about and getting people involved in the management of state-owned assets are tricky because the audience is aged 16 to 80 and priorities are vastly different. Therefore, a targeted approach by communications professionals is necessary. Intergovernmental coordination is lumped in with this section and can be used to share a common message across agencies that have similar goals in the same watershed.

Key Groups: Communications, Water Resources

ADOT Communications partners in the outreach and public involvement events participated in by ADOT, and also designs and produces outreach materials related to stormwater management and controls employed for Water Resources. The Adopt-a-Highway Volunteer Program Manager assists with public involvement and participation through program activities, educational outreach, and stakeholder engagement about keeping trash and debris out of the storm sewer system and off the roadways. This includes participating in a collaborative effort with the ADEQ Recycling and Brownfield Program's Coordinators. ADOT collaborates with the Keep Arizona Beautiful (KAZB) Executive Director in an effort to share outreach resources and information about beautification projects throughout Arizona (kazb.org). Additionally, Communications assists with messages regarding ways to minimize impacts to transportation facilities that may include bilingual and bicultural versions when appropriate based on the targeted group's demographics. Videos on ADOT's YouTube channel includes subjects and past events such as ADOT's Environmental Resources Roadshows, the Adopt-a-Highway Volunteer Program, and other transportation related impacts on natural resources that outline ADOT's efforts taken to

protect the environment, public safety, and transportation systems (https://azdot.gov/adot-blog/environmental-resources-roadshow-empowers-citizens-improve-their-community).

Additional opportunities to engage the public include billboard messages, new overhead electronic displays located along major highways, messaging in mailings sent by the Motor Vehicle Department, and, and project and stakeholder meetings with the public.

Source control, such as removing lead from gasoline, and or replacing copper brake pads with ceramic ones happens at a national level. Local outreach activities to curb litter, vehicle maintenance, report dumping, and protecting roadsides have great potential to make a positive impact. Staying involved and connected with the communities that our roadway system impacts is made possible through partnerships with non-profits, non-governmental organizations, and other municipal entities. Examples of non-governmental organizations ADOT partners with includes various university departments and colleges such as the ASU School of Geographical Sciences & Urban Planning, and the Arizona State University Metis Center for Infrastructure and Sustainable Engineering. A few that ADOT participates with and the estimated municipal memberships are listed here:

- STormwater Outreach for Regional Municipalities (STORM) – 28 member organizations
- Pima Association of Governments Stormwater Management Working Group – 8 members
- Phase I Coalition – 7 members
- Phase II Coalition – 26 members

ADOT is required to maintain a public information page or process to involve the public in reducing transportation-related pollutants, and improve water quality. There are new electronic ways to anonymously report trash being discarded from moving vehicles through text messaging. Once a report is received, ADOT follows up with a letter notifying the offender and includes various outreach materials with the letter. Communications has one FTE dedicated to help communities dispose of unwanted materials in an environmentally sound manner. Passive distribution of outreach materials is managed by the ITG web team and posted on the ADOT Water Resources webpages as Water Resources provides new information, or updates any portion of the program. The list of ADOT personnel present under the *Contact Us* section of the stormwater page indicates the types of inquires handled by each member of the Water Resources Team and includes an email link to each. Public reporting is handled in a similar manner with a *Contact Us* button is available online. Communications receives the information and distributes according to the content. All emergency notifications go to the Traffic Operations Center via the Department of Public Safety.

ADOT participates in STORM, which provides tangible messages in the form of Frisbees, pencils, bags, dog-poop pick-up bag holders, and brochures. These items are distributed at events, meetings, gatherings, and help convey a consistent message about stormwater pollution. The message is voted in annually and a vendor is chosen to provide the item(s).

Other public displays that ADOT has participated in developing or delivering include billboards, movie advertisements, radio messages, and children's activity or workbooks. The target audience for each message is determined from the pollutant.

Table 5. Potential Pollutants, Sources, Audience, Distribution for Public Outreach Efforts

Pollutant	Potential Source	Target Audience	Distribution Point
Oil/Grease Deposits	Leaking vehicles	Licensed Drivers	Motor Vehicle Division, Brochure, Outreach events, ADOT Website
Trash	Licensed Drivers, Passengers	Licensed Drivers	Motor Vehicle Division, ADOT overhead message boards, Radio/TV ad, ADOT website
Sediment	Construction activity	Public, Contractors	Training, Arizona General Contractors meetings, Outreach events
Herbicide	Residential, Commercial	Local Homeowners, Businesses	Brochures, TV ads,
Bacteria	Pets, Wildlife, People	Public	Neighborhood message boards, Children's workbook, Outreach events

Intergovernmental Coordination

Drainage easements, connections to other systems, and discharges to non-ADOT property are assessed during the project development phase. Intergovernmental agreements, mitigation measures, or other commitments become documented in the project file and transferred to the appropriate district for implementation and tracking. Occasionally the project documents will call for an encroachment permit for others to connect to ADOT storm sewer and will dictate responsibilities for maintenance of associated infrastructure.

One example of an intergovernmental agreement is in place with the City of Chandler and the Gila River Indian Community for an open channel, concrete lined drainage that collects stormwater flows from the SR-202 Santan Freeway and conveys it westward to a bio-treatment facility located southeast of the SR-202 junction and Interstate 10. A second example includes the coordination, but not an official agreement, with the City of Flagstaff regarding pass-through drainage that flows from residential and commercial development east of Interstate 17 and is conveyed westward beneath the interstate before discharging into the Rio de Flag. This coordination is necessary for supporting a continuous flow path and to prevent unwanted flooding to the surrounding residential and commercial areas. Municipal systems may not always be separate and should be documented when there are interconnections – for the purpose of tracking illicit discharges and knowing where spills might go in the event of an accident.

11.0 DISCHARGES FROM ADOT FACILITIES AND ACTIVITIES

This section applies to all facilities and activities that discharge runoff and that are not covered by another permit type, such as the industrial stormwater permit. All facilities will be evaluated in accordance with a risk-based schema that identifies sites with high risk potential. Risk is based on the criteria provided in the permit under Section 11.1. Site-specific plans, called facility pollution prevention plans, are currently in place for almost 100 locations and will undergo a review for content, and in some cases recertification. All facilities will have a dedicated inspection frequency based on the risk level and some may require wet-weather sampling of runoff.

Key Groups: Environmental Planning, Administrative Services, Districts

Site Inventory and Prioritization

Each yard, or facility that is not subject to coverage by either the current mining or non-mining MSGP Permits for discharge from mines and industrial facilities, is included in the master site inventory and covers all non-MSGP permitted ADOT facilities. The master inventory is maintained centrally and can be subdivided into smaller regional lists. The master inventory gets updated as site conditions change, and/or inspections are conducted. The prioritization scheme for facilities entails doing a risk assessment for each facility and is based on a set of 17-predetermined facility criteria or risk factors. The risk factor assessed equates to a high, medium, low range which correlates to a facilities inspection frequency. Basically, the higher the risk, the more frequent facility inspections are conducted. For more detail on the risk assessment process, see the section entitled "*Facility Inspections*" below.

Best Management Practices

The *Maintenance and Facilities Best Management Practices Manual* is the guidance manual whose main function is to assist with stormwater protection at ADOT facilities through the detailed information about how to decide which BMPs are best employed under the site specific condition for a project, and includes details about the installation and maintenance activities related to each structural BMP included in the manual. The manual is periodically reviewed for relevance and effectiveness of the information contained in it and is updated to reflect changes in ADOT's operating conditions and/or policies.

Pollution Prevention Plans

Each site's Facility Pollution Prevention Plan (FPPP) includes a series of information and procedures to manage to manage pollutants known to be present at the site. These plans assist site personnel by providing a predetermined set of information about site-specific BMPs in place, potential hazards present, proper emergency response procedures should the need arise. The plan also acts as a guide for routine facility inspections of the site-specific conditions and control measures installed and practiced. Information that can be referenced in the plan includes things like a facility sitemap, list of pollution-generating activities, identifies what chemicals are present, includes the SDSs for those chemicals, identifies associated control measures that are undertaken and/or and spill-response equipment that must be present, inspected on a predetermined frequency, and site personnel trained on how to use, who is a member of the facility's pollution prevention team, inspection reporting procedures, spill response contacts and reporting information, and monitoring requirements where applicable.

Facility Inspections

ADOT will conduct inspections at the frequency determined by the risk assessment criteria discussed above. For example, a facility determined to have a high level of stormwater risk is assigned an inspection frequency of four times per year or quarterly. The maintenance yard site supervisor or other identified qualified person will conduct the inspections to review and evaluate control measures in place for potential maintenance and/or modification needs. The scope of the inspection will include examining all areas of the site exposed to precipitation and/or stormwater including but not limited to:

storage areas, fueling areas, outdoor maintenance areas, material stockpiles, vehicle/equipment cleaning areas, and on-site waste disposal areas. The inspection will also include the efficacy, and condition of control measures, discharge locations and/or points, and entrance and exit points. Deficiencies are documented on the field inspection form provided with the FPPP. The facility site inspections are completed using a standardized form at each facility for ADOT wide uniform assessments.

Based on the inspection and the deficiencies noted, repair or replacement of control measures may be warranted. When actions beyond the inspection are necessary such repair or replacement, then documentation of those actions are tracked, recorded, and the FPPP is updated at the District level and reported to Water Resources on an annual basis. All records are retained for five years beyond the end of the current permit term.

12.0 MONITORING REQUIREMENTS

All the control measures and activities discussed in this SWMP are intended to ensure pollutants are minimized in stormwater runoff, which is sampled and analyzed twice per year. These procedures are specific to protect the integrity of the sample and provide consistent methods for evaluating, comparing, and reporting the data. Analytical monitoring procedures are described in the federal register, which requires quality assurance documentation, such as chain of custody form, laboratory certification, and approved test methods.

Two types of samples are collected from two types of facilities – composite and grab at storm sewer system outfalls and grab samples at outlets from maintenance yards. The parameters that are analyzed are listed in the MS4 Permit Table 12.1. A new requirement was added this permit cycle, term, and requires the collection and analysis of an ADOT runoff sample runoff that is discharging to a 303d listed impaired receiving water.

Key Groups: Environmental Planning

Monitoring of stormwater is required twice per year, or until enough sample is collected to analyze the required parameters. Five locations have been established as representative of highway drainage (See Appendix A for sampling location maps). Each roadway runoff monitoring location is equipped with an ISCO auto-sampler system that takes flow-weighted composite samples within the first three hours of a storm (or snow melt) with a minimum of 0.1" of rainfall and more that 72-hours since the previous event. In addition, grab samples are required for a few specific parameters. Currently, the sampling required is contracted out on an annual basis (November 1 – October 31). Parameters are dictated based on the type of the system and the status of the receiving water. Numeric water quality standards and thus, exceedance thresholds vary as a result. Location and land use information for the monitoring locations is listed in **Table 6** that follows.

Table 6. Monitoring Location/Characterization Information

Location Name	Physical Address	Latitude	Longitude	Area Drained (acres)	Land Use (%)	Receiving Water/Designated Use	Monitoring Equipment
Flagstaff	South side of intersection at Business 40 and State Route 180	35 11 53.29N	111 39 05.48W	29.3	Urban Highway 80%, Commercial Streets 20%	AZ15020015-004A Rio de Flag: PBC, A&We	ISCO Auto-Sampler
Sedona	Below western abutment of State Route 179 bridge over Oak Creek	34 51 43.93N	111 45 42.68W	7.35	State/Business Route 90%, Commercial Streets 10%	AZ15060202-18C Oak Creek: OAW, FBC, DWS, FC, AgI, AgL, A&Ww	ISCO Auto-Sampler
Phoenix	East of State Route 101 on north bank of Skunk Creek	33 37 19.84N	112 14 21.61W	17.5	Urban Highway 90%, Commercial Streets 10%	AZ15070102 Skunk Creek: PBC, A&We	ISCO Auto-Sampler
Tucson	West of Interstate 10, north of Grant Road within ADOT Yard	32 15 17.17N	110 59 49.39W	4.8	Urban Highway 90%, ADOT Facility 10%	AZ15050301 Santa Cruz: PBC, A&We, AgL	ISCO Auto-Sampler
Nogales	Morley Road & State Route 82	31 21 02.10N	110 55 24.48W	59.5	Urban Highway 80%, Residential Streets 20%	AZ15050301-011 Tributary to Nogales Wash: PBC, FC, A&Ww; **Impaired :** Ammonia, Chlorine, Copper(d), *E. coli*	ISCO Auto-Sampler
Location Name	Physical Address	Latitude	Longitude	Area Drained (sq. ft.)	Land Use (%)	Receiving Water/Designated Use	Monitoring Equipment
Spring Creek	State Route 89A milepost 362-363, National Forest Road 9571, Cornville	34 48 00.20N	111 55 23.80W	218,000	Not Applicable	AZ15060202-022 Spring Creek, **Not Attaining** (E. coli)	Manual
Roosevelt	State Route 188 milepost 242-243, Roosevelt	33 39 46.11N	111 08 01.32W	50,928	Not Applicable	15060103-1240 Cottonwood Creek, Tributary to Roosevelt Lake: FBC; **Impaired** :Mercury: fish tissue	Manual
Superior	951 Main Street, Superior	33 17 14.12N	111 06 40.27W	55,290	Not Applicable	AZ15050100-014A, Queen Creek: PBC; **Impaired** : Copper(d)	Manual
Superior Fuel	952 Main Street, Superior	33 17 17.10N	111 06 43.45W	37,069	Not Applicable	AZ15050100-014A, Queen Creek: PBC, **Impaired**: Copper(d)	Manual
Nogales Maintenance	1340 Hohokam Drive, Nogales	31 21 22.97N	110 55 38.96W	115,037	Not Applicable	AZ15050301-011 Nogales Wash: PBC, **Impaired**: Ammonia, Chlorine, Copper(d), *E. coli*	Manual

- Flagstaff site collects drainage from downtown and discharges to a tributary of the Rio de Flag. This outfall is on the south side of the SR 66 and US 180 junctions.
- The Sedona site is located below the western abutment of State Route 179 Bridge over Oak Creek. The stormwater runoff is pretreated prior to discharge into Oak Creek, which is a listed Outstanding Arizona Water.
- The Phoenix site is along a segment of SR 101 that consists of a concrete lined channel that discharges to Skunk Creek.
- The Tucson site is located within an ADOT maintenance yard, northwest corner of I-10 and Grant Road and collects flows from I-10 and disposes of stormwater to the Santa Cruz River.
- The Nogales site is adjacent to a neighborhood along SR 82 on a tributary to Nogales Wash.

All sites but Sedona are held to the same numeric water quality standards – those designated for partial body contact. Because Oak Creek is designated for full body contact, and also is listed for livestock watering and fish consumption, the water must be cleaner before discharge.

Five (5) maintenance yards are located within 0.25 mile of a 303D listed impaired water and are subject to grab sample monitoring. See **Table 6** above for the list of sampling locations. One of the five (Roosevelt Yard) is listed as available for full-body contact and the numeric standard for this receiving water (Roosevelt Lake) is lower (more protective) than the other four sites (Superior Maintenance – discharge to Queen Creek, Superior Fuel – discharge to Queen Creek, Nogales Yard – discharge to Nogales Wash, and Spring Creek Yard – discharge to Coffee Creek at headwaters to Spring Creek).

After samples are collected and analyzed at the lab by the consultant/contractor, a laboratory sample data report is provided to Water Resources. The data is reviewed for comparison of prior events and exceedence's, and qualifiers that suggest additional sample should be taken are noted. In most cases, ADOT will not resample for bacteria (*E. coli* and Fecal). ADOT does not have a source of this pollutant, and most detection is coincidental with adjacent municipal development. The results of analysis are consistent with land uses such as parks, recreation, pet play areas, older neighborhoods with prior, long history of septic systems, and historic occupation. Additionally, adjacent municipalities also report detections of high *E. coli*. Therefore, ADOT typically samples for missed parameters due to insufficient flow, and prioritizes analysis for the pollutants more indicative of transportation pollutants – metals, sediment, and polycyclic aromatic hydrocarbons.

ADOT sampling requirements discussed in the (2009) Stormwater Monitoring Guidance Manual for MS4 Activities and are in accordance with 40 CFR 136. If there is a conflict in sampling method or requirements, then 40 CFR 136 will take priority.

When a pollutant repeatedly exceeds the numeric water quality standard or compared to the load allocation Water Resources staff and/or their consultant will investigate potential causes for the exceedance of the pollutant. Should the detection be isolated then providing details in the annual report may be adequate. If there are multiple incidents, and it becomes evident that the transportation activities or infrastructure are contributing to the exceedance, ADOT will address the issue through a proposed retrofit program process. For more detail see **Part 8.0, Retrofit**.

The MS4 Permit requires ADOT to develop a plan to conduct impaired water monitoring (Permit Section 12.5) which was completed. Sampling commenced five years ago, and since that time ADOT has collected a total of ten samples as of this reporting period. Impaired waters with an approved TMDL (including the pollutants causing the impairment) are addressed in Table 2 of this document. The TMDL analytical monitoring program is combined with the wet weather sampling efforts for resource efficiency whenever possible. A minimum of one outfall for each impaired segment is sampled during both the winter and the summer sample seasons. Currently, ADOT is unable to report the number of outfalls that discharge to each water segment because the system priority outfall mapping is still underway. This information will be updated and provided as the mapping efforts move forward. Each location where an outfall located along a water segments with an approved TMDL applicable will be

evaluated as priority location for consideration of post-construction best management practices and implementation as part of the retrofit program. Pollutant(s) causing the impairment will be considered when determining the appropriate control measure for each location.

13.0 REPORTS, RECORDS, AND STANDARDS

All activities have tracking requirements and only some must be included the annual report. In the event of an audit ADOT has the duty to provide the requested information. Because audits can happen with little preparation time it is important to retain current information in widely accessible databases. The annual report cycle covers the period July 1 – June 30 with a report due September 30.

Key Groups: All Divisions

ADEQ and ADOT developed a standard annual report form. Numeric and narrative descriptions, including goals and interim goals, may be carried over to compare stormwater quality trends in samples taken from yards and roadway runoff. The Permit Section 14.16.1.3 states that the retention time for all documentation and records is for five years beyond the term of the current Permit's expiration date. Records will be kept in a variety of databases and will be accessible, at reasonable times. If anticipated, non-compliance should be reported to ADEQ. Additionally, any activity that may endanger health or environment will be reported to 602.771.2330 within 24-hours from the time ADOT becomes aware of the circumstances. A written follow-up will be provided to the compliance section within five (5) business days.

14.0 STANDARD CONDITIONS

Web links are provided throughout the document for information incorporated by reference.

ADOT will maintain an updated SWMP, including amending the SWMP within 30-days per the conditions in Section 14.9 of the permit.

This SWMP is available electronically on the ADOT Water Resources website, and a hardcopy is available at 1611 West Jackson St, EM02, Phoenix, AZ 85007. Access to the hardcopy can be obtained by emailing adotwater@azdot.gov.

The SWMP is signed below.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

DocuSigned by:
Eileen Dunn
88728DE9770046F...

9/27/2019

Eileen E. Dunn, MS, CPMSM *Date*

ADOT Water Resources Manager

APPENDIX A: Outfall & Yard Sampling Locations

Appendix A

Outfall & Yard Sampling Locations

Table A.1. Stormwater Monitoring Location Information

Asset Id	Asset Code	Status	Category	Feature	Sub-Feature
2047514	Flagstaff	Active	MS4 Wet Weather Monitoring	Monitoring Point	Roadway Outfall
2047515	Sedona	Active	MS4 Wet Weather Monitoring	Monitoring Point	Roadway Outfall
2047696	Phoenix	Active	MS4 Wet Weather Monitoring	Monitoring Point	Roadway Outfall
2047697	Tucson	Active	MS4 Wet Weather Monitoring	Monitoring Point	Roadway Outfall
2047698	Nogales	Active	MS4 Wet Weather Monitoring	Monitoring Point	Roadway Outfall
2047700	Spring Creek	Active	MS4 Wet Weather Monitoring	Monitoring Point	Maintenance Yard Site
2047701	Roosevelt	Active	MS4 Wet Weather Monitoring	Monitoring Point	Maintenance Yard Site
2047702	Superior	Active	MS4 Wet Weather Monitoring	Monitoring Point	Maintenance Yard Site
2047703	Superior Fuel	Active	MS4 Wet Weather Monitoring	Monitoring Point	Maintenance Yard Site
2047704	Nogales MY	Active	MS4 Wet Weather Monitoring	Monitoring Point	Maintenance Yard Site

APPENDIX B: Agency Agreements

Appendix B

Agency Agreements

- *One agreement with the USGS for the efforts in hydraulic engineering design upgrades.*
- *One agreement with the City of Sedona for the purpose of maintaining one Stormceptor.*

APPENDIX C: SWMP Updates Current and Proposed

2018/19: Current Updates to the SWMP

General:

- *Updated various typos, clarified details of activities where needed and updated details based on shifted position responsibilities or changed Team structure, added numbers corresponding to applicable permit sections to SWMP Headings for simplifying searches, updated some document titles to be current, updated Key Groups for some sections and/or control measures to reflect current ADOT management structure.*
- *Table 2. TMDL Information as Applicable to ADOT: Updated with new TMDLs*
- *Relocate Flagstaff monitoring location to site that will better characterize ADOT's contribution of pollutants in roadway runoff that the current location.*

2019/20: Proposed Updates to the SWMP

Removed BMPs:

- *Annually, ADOT will post a SWMP review meeting and invite the public to provide input on the stormwater program.*

  Removed because it is not feasible based on the lack of understanding by the public to provide usable feedback based on online polls conducted by the STORM group.

  Instead, more effort is put into fostering communications on a more consistent quarterly basis when many facility inspections are conducted between HQ and the District personnel responsible for conducting, recording, reporting, and maintaining SWMP activities and information.

Added BMPs:

- *A new BMP for tracking the number of employees whom attend the Oil Water Separator (OWS) Maintenance and Management Training is added for the 4th year Annual Report under* ***Section 9.0 Training, Classroom-Based*** *heading, and would also serve to assist in the Good Housekeeping category as well, though not specifically listed under that section. The Annual Report will include the number of employees trained in the reporting period as evidence of another way to protect surface waters from wash rack generated pollutant runoff and pass through of pollutants due to a possible array of improper maintenance, frequency of maintenance, improper soaps being used in the systems, improper start-up procedures, or sediment overloading the floor trough in the wash area.*

- *Develop a computer-based version of the classroom-based OWS training. That will help to ensure that the wastewater treatment system of the wash rack water is managed in a way to minimize pollutants from passing through to the ground surface and groundwater in septic leach fields. This is carried out by managing the care and maintenance of the system to prevent pass through of oil and other hydrocarbon-based pollutants and sediment carrying oil/grease from discharging to either surface water or groundwaters. The OWS is incorporated into each of ADOT's wash rack facilities which typically reside at maintenance yards. The training is tracked for content and attendance and will be reported as a new metric as of this annual report (2018/19) cycle as a way of increasing protections to maintenance yard stormwater runoff. The training is conducted by a water quality professional and is under development to be delivered in 2020 as a computer-based class. A maintenance guidance manual that goes along with the training is developed and is completed.*

- *Develop ENV1006W Intermediate Class for Computer-Based Training addition. Will better support IDDE recognition in the field and inform on how to report and follow-up on. In addition, will enhance the avoidance of industrial/commercial pollutant runoff from maintenance yards.*

  Highway Storm Sewer System Maintenance: *is planned to be updated in 2020 to target a more specific class of maintenance employees and will be delivered as an introduction level class, followed up by an intermediate level class with more advanced concepts. The introduction program elements for the storm sewer system maintenance will copied from the Environmental and Stormwater Awareness content. The intermediate content will focus more closely on*

conducting activities such as inspections, investigations, documenting, tracking, and reporting procedures. Currently, these roles are being performed by a mix of environmental consultants and headquarters water quality professionals. The introduction computer-based class is currently available as ENV1006W, and the intermediate class is under development for deployment in 2020.

- *Review and update the Enforcement Response Plan (ERP) in 2020 to reflect current policy, process updates, and regulatory changes that have happened since the original draft. An updated version will be published on the Water Resources website.*

- *Under the Development and Re-Development heading. Submit the final report with the Year-Five (2019/2020) Annual Report on the Grant funded Erosion Retrofit Project Prioritization Tool is being developed and is being designed to prioritize long-standing, repetitive, and severe erosion/sediment maintenance issues which require too many man-hours to repair and materials which do not fix it for the long-term. Limited funding is available to the Districts to solve these issues, especially with the competition between Districts for funding. This will increase efficiency, reduce waste, increase driver safety, and better protect water quality and the goals. The criteria will be based on driver risk, and water quality protections at a minimum to redesign and repair severe and repetitive long-standing erosion and sediment issues effecting ADOT's roadway system. Opportunities for LID aspects can also be reviewed for the design phase when implemented and documented with design review documents.*