ADOT MAINTENANCE AND FACILITIES BEST MANAGEMENT PRACTICES MANUAL

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PREFACE

The Arizona Department of Transportation (ADOT) directs control of impacts to stormwater via a Statewide Stormwater Management Plan (SSWMP), ADOT's Phase I stormwater municipal permit for Phoenix and Tucson (Permit No. AZS000018), and a pending statewide stormwater individual permit. The *Maintenance and Facilities Best Management Practices Manual* is one component of the SSWMP. It contains Best Management Practices (BMPs) in three sections: Roadway Maintenance BMPs (Chapter 2), Facilities BMPs (Chapter 3), and Good Housekeeping BMPs (Chapter 4). Roadway Maintenance BMPs are formatted for single or multiple activity codes as defined in the ADOT Maintenance Performance Control System (PeCoS) database. This database defines and describes all maintenance activities. It was used by ADOT and the Arizona Department of Environmental Quality (ADEQ) to determine which maintenance activities would require stormwater protection BMPs. The Facilities BMPs have been formatted by facilities maintenance programs rather than PeCoS activity codes. The Good Housekeeping BMPs are applicable to all Roadway Maintenance and Facilities programs. A glossary is provided in Appendix A for those unfamiliar with environmental terms and acronyms.

BMPs evolve and change as ADOT activities change or new and improved methodologies are developed. The user of this manual is encouraged to provide feedback and share suggestions on BMP modifications with supervisors and District Environmental Coordinators (DECs). If none of the BMPs are appropriate or applicable to a new or modified activity, employees should contact their immediate supervisor and/or the DEC for guidance.

Several references to other manuals, permits, or policies are found within this manual. The following links will assist the reader in using these references.

1. ADOT *Erosion and Pollution Control Manual for Highway Design and Construction*
   http://www/azdot.gov/ADOT_and/Storm_Water/Erosion_Pollution_Control_Manual

2. ADOT *Equipment Services BMP Manual* (internal)
   http://adotnet/divisions/ts/equipsvcs/Policies/BMP_Manual.pdf

3. ADOT *Demolition, Salvage, Asbestos/Abatement Procedures*
   http://www.azdot.gov/highways/row/PDF/9320_2006_ROW_Manual.pdf

4. ADOT Safety Exposure Control Policy 3.01 (internal)
   http://adotnet/divisions/ts/safety/About/Documents/exposureCont.pdf

5. ADOT Safety Hazard Communication Policy 7.01 (internal)
   http://adotnet/divisions/ts/safety/About/Documents/hazmatPolicy.pdf

6. ADOT Adopt a Highway Safety Briefing
   http://www.azdot.gov/Highways/AdoptAHwy/Volunteer.asp
   (see "Safety Requirements for Volunteers")

7. ADEQ Arizona Construction General Permit, Permit No. AZG2003-001
   http://www.azdeq.gov/function/forms/appswater.html#cgp

8. ADEQ DeMinimus General Permit, Permit No. AZG2004-001
   http://www.azdeq.gov/environ/water/permits/gen.html#demi

9. PeCoS Database (internal)
   http://adotnet/divisions/ITD/CMaintenance/Documents/Perform%20Guidelines/indexPG.asp

10. Statewide Stormwater Management Plan
    http://www.azdot.gov/adot_and/storm_water/stormwater.asp#one

11. Approved Products List
    http://www.azdot.gov/TPD/ATRC/PRIDE/apl.asp

12. OES Section 404 Permit Guidance
    http://www.azdot.gov/EEG_common/documents/section_404.asp

13. General Stormwater Guidance (e.g., SWPPP checklist, SMART NOI, NOT forms)
    http://www.azdeq.gov/

14. EPA Stormwater Guidance (e.g., Electronic NOI forms)
    http://cfpub.epa.gov/npdes/stormwater/enoi.cfm

The ADOT Maintenance and Facilities Best Management Practices Manual *is designed to provide employees and other users with general information relevant to the stormwater activities and responsibilities of ADOT. This manual is not intended to establish a legal standard of care or conduct. It is subject to modification and revision and will be updated as deemed necessary.*

In addition, the ADOT personnel identified and the supplemental documents referenced throughout this plan are subject to modification and revision and will be updated as deemed necessary.

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CHAPTER 1
INTRODUCTION

District roadway maintenance activities and facilities operations are potential sources of sediment and pollutants in stormwater runoff. To minimize the effect, it is necessary to integrate a variety of temporary and permanent erosion, sediment, and pollutant control measures into the work methods used to complete these activities.

Erosion, sedimentation, and pollution from these activities can have environmental and economic impacts. The more common impacts of sediment runoff and release of pollutants into stormwater include:

- Turbidity, which reduces in-stream photosynthesis and increases water temperatures, leading to reduced food supply and aquatic habitat.
- Introduction of soil nutrients into waters that cause algal blooms, which reduces water clarity and depletes oxygen.
- Sedimentation of stream bottoms that blankets vegetation and wildlife and impacts spawning areas.
- Loss of topsoil that leaves hard, rocky, and infertile soil, which is more difficult to revegetate.
- Introduction of undesirable organic and inorganic materials into watercourses, which can have long-term consequences for human and biotic communities.

The impacts listed above result in damage to the environment that is difficult to quantify in terms of cost and quality of life. The costs to remove sediments and pollutants from affected watercourses can be very high. Removal can also cause disruption to the drainage functions and aquatic or terrestrial habitats.

1.1 PURPOSE OF MANUAL

ADOT has prepared this manual in cooperation with key stakeholders to provide a variety of Best Management Practices (BMPs) that will reduce impacts to environmentally sensitive resources. This manual is intended as a reference for use during project planning, permit applications (if required), as well as field operations. The BMPs in this manual are intended to provide guidance associated with sound environmental stewardship toward natural, cultural, and social resources.

The overall purpose of this manual is to:

- Outline ADOT's procedures for complying with water quality regulations.
- Provide a variety of Activity BMPs for use by ADOT Maintenance and Facility operations.

1.2 RESPONSIBILITIES

1.2.1 Roadway Maintenance

To ensure compliance with applicable water quality regulations, the minimization and/or elimination of sedimentation and stormwater discharges must be incorporated into the routine maintenance of all ADOT roadway operations and facilities. For roadway maintenance operations, the District Maintenance Supervisor or his designee or contractor will be responsible for implementation of BMPs or preparation of the Stormwater Pollution Prevention Plan (SWPPP), if applicable, prior to roadway maintenance activities. *Note:* In the following sections, "operator" is used to mean either ADOT alone or ADOT and the contractor. The District Environmental Coordinator (DEC) will provide assistance with environmental compliance and permitting issues as they arise.

1.2.2 Facilities

At ADOT Maintenance Yards where more than one ADOT organization resides, the ADOT Maintenance Yard Supervisor will be the lead for implementation of the stormwater management BMPs or SWPPP, with the assistance of each ranking member of each organization in residence. Each organization will endorse and sign the SWPPP, if one is prepared. At other types of facilities, such as Ports of Entry or administrative complexes, the lead ADOT organization responsible for water quality compliance may be the Motor Vehicle Division, Department of Public Safety, Aeronautics, or ADOT Physical Plant Facilities. In all cases, the DEC will provide assistance with environmental compliance and permitting issues as they arise.

1.3 WATER QUALITY REGULATIONS AND PERMITS

Attention must be given to water quality regulations and permit requirements throughout the planning, design, construction, and maintenance of a project or facility to ensure that the quality of Waters of the US is not compromised. The following is a general overview of the pertinent regulations and permitting requirements.

1.3.1 Section 402 of the Clean Water Act, National Pollutant Discharge Elimination System Stormwater Permit Requirements

On December 5, 2002, Arizona became one of 45 states with authorization from the US Environmental Protection Agency (EPA) to operate the National Pollutant Discharge Elimination System (NPDES) Permit Program (Section 402 of the Clean Water Act [CWA]) at the state level. Under the Arizona Pollutant Discharge Elimination System (AZPDES) Permit Program, all facilities that discharge pollutants from any point source into Waters of the US are required to seek coverage under an AZPDES permit. Pollutants can enter Waters of the US from various sources, including agricultural, domestic, and industrial. For regulatory purposes, these sources are generally categorized as either point source or non-point source.

For similar types of construction activities, ADEQ has issued an Arizona Construction General Permit (AZCGP) No. AZG2003-001, which is available to provide stormwater permit coverage to all construction projects in the State of Arizona (except on Tribal Trust Lands where the Federal Construction General Permit [FCGP] is issued by the EPA) *Note:* the Construction General Permit (CGP) may be used in this document to denote either the FCGP or AZCGP. A copy of the AZCGP may be found online at:

http://www.azdeq.gov/function/forms/appswater.htm/#cgp.

During preparation of ADOT's Statewide Stormwater Management Plan, all roadway maintenance activities and facility activities with the potential to generate stormwater pollutants were evaluated for applicability of CGP requirements or the application of BMPs. Activities qualifying for CGP coverage require preparation of a SWPPP and filing of a Notice of Intent (NOI) for coverage (see Appendix B for additional information on CGP coverage). Other activities may be subject to the BMPs identified in this manual.

ADOT Roadway Maintenance

Construction projects require coverage under one of the CGP if 1 or more acres are disturbed. ADOT roadway maintenance activities that qualify as new construction projects rather than routine maintenance activities include, but are not limited to, the following:

- Installation of new drainage structures.
- Construction of new turnouts.
- Construction of new climbing or turn lanes.
- Construction Group "inherited" projects that have not yet achieved final stabilization.

EPA defines routine maintenance activities as *maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility* (40 CFR, Section 122.26 [15][i]). EPA further states that routine maintenance activities are exempt from stormwater discharge permitting requirements. ADEQ has adopted this same definition but currently limits it to small construction activity only (disturbance that is less than 5 acres). Therefore, ADOT has applied the 5-acre threshold to the stormwater discharge exemption for all ADOT routine maintenance activities. The 5-acre threshold includes all temporary and permanent disturbances to soil from such activities as ditch cleaning and shoulder repair. If these types of activities disturb 5 or more acres during one distinct project (continuous in time and location), the operator will prepare a SWPPP and submit an NOI prior to conducting the activity.

For those maintenance activities that require coverage under a CGP (as defined above), the operator, in coordination with the DEC and other Office of Environmental Services (OES) personnel shall:

- Comply with all terms and conditions of the CGP.
- Prepare and implement a site-specific SWPPP that meets the minimum requirements of the CGP.
- Submit an NOI to ADEQ or EPA after the contract has been awarded and before any maintenance activity begins (the NOI is submitted to the EPA if the project is located on

Tribal Trust Lands). *Note:* An NOI for ADEQ may not be required when the ADOT stormwater individual permit becomes effective.

- Submit a Notice of Termination (NOT) to ADEQ or EPA when maintenance activities are complete, all permanent erosion and sedimentation controls are in place, and final stabilization has been achieved.

ADOT Facilities

Approximately 230 ADOT-owned facilities (e.g., administrative complexes, maintenance yards, equipment service centers) have been inventoried and classified as part of ADOT's Statewide Stormwater Management Plan. ADEQ has determined the regulatory classification and applicable stormwater permit for each of those facilities. As a result, some ADOT facilities are required to conduct daily operations in accordance with a site-specific SWPPP prepared for that facility. Other facilities are not required to prepare a SWPPP but must conduct operations that incorporate BMPs suited for that site's activities. In addition, some facilities that are located within the geographic boundaries of a Municipal Separate Storm Sewer System (MS4) are subject to the stormwater requirements of that MS4. Operations at each facility are governed by the applicable SWPPP, BMPs, or MS4 requirements for that site. The BMPs identified in this manual are applicable to all ADOT facilities unless superseded by SWPPP or MS4 requirements. Maintenance personnel should request assistance from the DEC if stormwater compliance information is required for a specific facility.

1.3.2 Section 404 of the Clean Water Act

Section 404 of the CWA regulates the discharge of dredged or fill material within Waters of the US and establishes a program to issue permits. In Arizona, the US Army Corps of Engineers (Corps) administers this program. In addition, the US Fish and Wildlife Service, and state resources agencies (e.g., ADEQ, Game and Fish Department, Department of Water Resources) have important advisory roles. The phrase "discharge of dredged or fill material" includes all earthwork activities such as clearing, grading, filling, redistribution, and excavating.

The Section 404 program has considerable impact on the design, construction, and maintenance of Arizona's highways. Essentially, any proposed work in washes, rivers, streams, lakes, and wetlands requires ADOT OES to obtain a permit from the Corps for new construction. Typical projects that are affected include the construction and maintenance of culverts, bridges, and stream bank erosion protection.

There are two types of Section 404 permits: nationwide permits and individual permits. Nationwide permits are general permits designed for allowing minor non-controversial projects that are similar in nature and that create minimal impact on the environment. Individual permits are required for projects that do not meet the terms and conditions for a nationwide permit. They require greater scrutiny by the Corps, other regulatory agencies, and the public.

OES oversees the preparation and implementation of all Section 404 permits. For additional information, see the OES Section 404 Procedures Manual available online at the address below and/or coordinate with the DEC.

http://www.azdot.gov/EEG_common/documents/section_404.asp

The federal Section 404 permit program can be easily confused with the ADEQ Section 402 AZPDES program. It is important to remember, however, that they are two separate and distinct regulatory programs. The distinction is that a Section 404 permit provides permission to dredge and add fill material to Waters of the US, whereas a Section 402 AZPDES permit provides permission to discharge stormwater to Waters of the US in compliance with permit limitations, conditions, and BMPs.

1.3.3 Section 401 of the Clean Water Act

Section 401 of the CWA enables states to provide certification that the draft Section 404 permit is in compliance with state law. The purpose of Section 401 is to ensure that the proposed activity meets the state's water quality standards and any other pertinent state-required criteria. In Arizona, ADEQ performs the State Water Quality Certification Review for all areas of the state, with the exception of Indian reservations. For projects within the White Mountain Apache Reservation, the Tribal Environmental Planning Office performs certification reviews. For projects within all other Indian reservations in Arizona, EPA performs certification reviews.

Section 401 certification requirements apply to all activities regulated under Section 404 of the CWA. State and tribal water quality compliance is achieved by following the Section 401 certification requirements specified within the terms and conditions of each nationwide permit. For some nationwide permits and all individual Section 404 permits, a separate Section 401 certification application must be submitted to ADEQ and/or EPA. ADEQ and/or EPA may approve or deny certification for any Section 404 permit based on the anticipated effect on water quality. A Letter of Certification should be issued by ADEQ and/or EPA when the applicant is in compliance with these standards and conditions.

OES oversees the preparation and submittal of Section 401 certifications via the environmental clearance process. For additional information, see the OES Section 404 Procedures Manual available online and/or coordinate with the DEC.

1.3.4 Additional Federal Agency Requirements

In addition to EPA's administration of the stormwater program under the CWA, several other federal agencies require sediment and erosion controls through their own implementing regulations. Section 1057 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) requires the Federal Highway Administration (FHWA) to develop erosion and sediment control guidelines for states to follow when building highways using federal funds. Subsequent transportation acts such as the Transportation Equity Act for the 21st Century (TEA-21) and the current Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) also incorporate measures to enhance and protect the environment. SAFETEA-LU has expanded the scope of transportation projects and activities that are intended to improve pollution abatement.

FHWA has formally adopted the American Association of State Highway and Transportation Officials (AASHTO) Highway Drainage Guidelines, Volume III, to provide the proper level of environmental protection on transportation projects. Each state highway agency is required to comply with the AASHTO guidelines or to develop and apply their own more stringent

guidelines. ADOT has exceeded AASHTO standards by developing their own, more stringent standard specifications that were ultimately approved by FHWA. In addition, by incorporating the AASHTO guidelines into the design of new construction projects and by complying with the CGP for all other activities, ADOT is providing a superior level of environmental protection for state natural resources.

Stored Specifications (Sections 104.09, 805, and 810) and project-specific special provisions are constantly being modified by the Contracts and Specifications Section to keep ADOT's activities in compliance with current environmental regulations. Because the regulatory requirements periodically change and new BMPs (products and techniques) are routinely being field-tested, this is an evolving practice within ADOT. Maintenance personnel and the DECs will need to work closely to determine how to effectively comply with a broad array of environmental requirements when completing their maintenance tasks.

Several agencies within the US government manage public lands and may have their own erosion and pollution control requirements. These agencies include, but are not limited to, the Bureau of Land Management, Bureau of Indian Affairs, US Department of Agriculture (USDA) Forest Service, National Park Service, and US Fish and Wildlife Service. Each affected agency will be included in the planning and design process when roadway construction or maintenance activities are being planned within their jurisdictions. Doing so will ensure that their requirements are made part of the undertaking.

1.3.5 State and Local Government Requirements

The Arizona State Land Department does not have a specific policy on sediment and erosion control of maintenance or construction projects, but rather reviews projects on a case-by-case basis. Projects may be located within the jurisdictions of other state agencies or local governments. These may include MS4 and County Flood Control Districts. Each affected agency shall be included in the planning and design process when roadway construction or maintenance plans are prepared within their jurisdictions. This will ensure that their requirements are incorporated into the plans.

Other environmental issues, such as archaeological or historic sites and/or endangered species, may be identified during project planning and design that could affect design, construction, and maintenance activities. If these issues are encountered on a project, other state agencies such as the Arizona Game and Fish Department and the State Historic Preservation Office may contribute environmental mitigation elements.

CHAPTER 2

ROADWAY MAINTENANCE BEST MANAGEMENT PRACTICES

The Roadway Maintenance BMP numbering sequence is directly related to the program and activity numbers for the relevant maintenance practices within the Maintenance Performance Control System (PeCoS), a database that defines and describes all maintenance activities. Activities are divided by general subject matter into groupings. BMPs have been developed for various activities within the following groupings:

Program 100 – Surface
Program 120 – Unpaved Surfaces
Program 130 – Shoulders
Program 140 – Vegetation Control
Program 150 – Roadside
Program 160 – Drainage
Program 170 – Snow and Ice Removal
Program 200 – Rest Area
Program 300 – Landscape
Program 400 – Traffic Control
Program 500 – Sign Factory
Program 510 – Traffic Signals
Program 600 – Overhead
Program 700 – Non-routine Maintenance
Program 800 – Material Handling
ADOT Activities vs. Contract Maintenance Activities

Descriptions contained within this manual are necessarily abbreviated to maintain a consistent format. Full activity *Description* and additional information may be found within the most current version of PeCoS, found on the ADOTNet at http://adotnet/divisions/ITD/CMaintenance/Documents/Perform%20Guidelines/indexPG.asp. (internal)

Chapter 4, Good Housekeeping BMPs, Programs 8–9 are general categories of BMPs that may be required for one or more roadway maintenance or facilities activities.

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PROGRAM 100 – SURFACE

Activities 101, 102, 103, 104, 105, 106, 107, 108, 109, 111, 112, 113, 114, 115, 119 – Paved Surface Maintenance

Activities 403, 407 – Surface Preparation for Pavement Marking

Description

These activities include surface preparation, surface replacement or repair, patching with pre-mix, crack sealing, seal coating, flushing, concrete pavement repair, and surface cleanup following repair. Activities 403 and 407 include sawcutting, grinding, and power washing to remove pavement markings and reapply new markings.

Applications and Limitations

These procedures are implemented where paving, surfacing, resurfacing, pavement washing, or saw cutting may pollute stormwater runoff or discharge to stormwater drainage systems or watercourses.

Do

- Install storm drain inlet protection prior to paving operations, including when seal coat, tack coat, slurry seal, or fog seal is applied:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Minimize water use and control any runoff.
- Consult the MSDS or label for specific chemical handling instructions.
- Dampen dry exposed soil created to reduce airborne particles.
- Use a mechanical broom with a pre-wetting feature to sweep debris from the road surface onto the shoulder.
- Roll and compact placed millings.
- Follow BMPs for paving products, pre-mix, and concrete (refer to Program 6, Activities 6.5, 6.7, and 6.10 BMPs).
- Use asphalt release agents that are biodegradable (e.g., citrus, soy-based) for cleaning and coating of equipment and tools.
- Clean pavers over absorbent pads, drip pans, plastic sheeting, or other materials to collect residual cleaning wastes.
- Dispose of removed material in accordance with Chapter 3, Program 7 BMPs.
- Cover or berm material stockpiles in accordance with Chapter 3, Program 6, Activity 6.6.
- Use dry cutting techniques, if possible.
- Contain slurry and cuttings during cutting, washing, and surfacing operations.
- Dispose of collected slurry and cuttings as solid waste.

- Characterize millings or grindings for removal of highway striping paint prior to disposal.
- Capture and allow process water that is generated during hydro demolition, surface roughening, or similar operations to evaporate and dispose of residuals as solid waste.
- Handle and dispose of cleaning waste material and demolition debris as appropriate.
- Haul the material out of the area to an appropriate disposal site if the area is swept with a sweeper.
- Sweep and dispose of excess asphalt as solid waste.

Don't

- Use more material than necessary.
- Place stockpiles near storm drain inlets, watercourses, or sensitive waters.
- Place stockpiles without perimeter containment.
- Apply seal coat, tack coat, slurry seal, or fog seal if precipitation is predicted to occur during the application or curing period.
- Allow slurry and cuttings to remain on permanent concrete or asphalt pavement overnight.
- Allow slurry and cuttings to drain to any watercourse.
- Allow process water that is generated during hydro demolition, surface roughening, or similar operations to drain to any watercourse.
- Discharge asphalt release agents to storm drain inlets, watercourses, or sensitive waters.
- Use diesel fuel as an asphalt release agent.

Maintain

- Machinery in good repair to minimize leaks and drips.
- Equipment away from storm drains and watercourses.

Inspect

- Monitor operations continually to determine whether slurry, cuttings, or process water could enter watercourses. If so, immediately implement preventive measures such as berms, barriers, secondary containment, and use of vacuum trucks.

PROGRAM 120 – UNPAVED SURFACE

Activity 121 – Blade Unpaved Roads

Description

Grade unpaved roads, including frontage roads, to restore proper shape, smoothness, and drainage. This activity includes forming or reforming drainage gutters, removal of berms, and placement of cut material on the roadway.

Applications and Limitations

These applications should be used in compliance with state, county, municipal, and/or tribal dust control requirements. A dust control permit must be obtained for work in Pima, Pinal, and Maricopa counties prior to commencing activities (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC to determine whether a dust control permit will be required.

Do

- Identify and protect areas of environmental importance, storm drain inlets, watercourses, or sensitive waters.
- Schedule grading activities, to the extent practicable, when surface soils are moist but precipitation is not anticipated.
- Grade from one side of the road to the other; smooth and compact to the original grade; use all disturbed soil within the roadway footprint.
- Evaluate the need for check dams and install as needed.
- Moisten the soil with water to eliminate airborne particles if dust is being generated.
- Minimize water use and control runoff.
- Stabilize graded areas.

Don't

- Service equipment in close proximity to storm drain inlets, watercourses, or sensitive waters.
- Discharge materials to storm drain inlets, watercourses, or sensitive waters.

Maintain

- Machinery to minimize leaks and drips.
- Equipment away from storm drains and watercourses.

Inspect

- To identify erosion areas.
- Equipment prior to operation.

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PROGRAM 120 – UNPAVED SURFACE – DUST CONTROL AGENTS

Activity 129 – Other Unpaved Surface Maintenance

Description

This activity will be used only for unpaved surface and related work that cannot reasonably be performed as Activity 121. This activity includes application of dust control agents.

Applications and Limitations

These applications should be used in compliance with state, county, municipal, and/or tribal dust control requirements. A dust control permit must be obtained for work in Pima, Pinal, and Maricopa counties prior to commencing activities (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC to determine whether a dust control permit will be required. If 5 acres or more will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Identify and protect areas of environmental importance, storm drain inlets, watercourses, or sensitive waters.
- Evaluate the need for check dams prior to application and install as needed.
- Clean application and transport tanks that may have been used previously or will be used for other purposes in accordance with applicable regulations.
- Use environmentally friendly dust palliatives in accordance with MSDS and manufacturer's instruction.

Photo courtesy of www.ddemulsionsinc.com/Products.htm

- Ensure all preparation and mixing is performed in a temporary containment facility.
- Spray or apply at lowest effective rate to avoid wind drift.
- Properly dispose of any waste products and post-application rinsate (refer to Chapter 3, Program 7 BMPs).

Don't

- Apply if precipitation is predicted during application or curing period.
- Mix more material than necessary.

Maintain

- Storage of chemical agents in accordance with all applicable regulations and the manufacturer's instructions.

Inspect

- For potential impact to watercourses and areas of environmental importance prior to earthmoving and for increased probability of erosion afterward.

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PROGRAM 130 – SHOULDERS

Activities 131, 132, 133, 134 – Blade Unpaved Shoulders

Description

Return roadway prism to an as-built condition. This activity includes blading unpaved shoulders, repairing unpaved shoulders as well as shoulders behind guardrail, and maintaining unpaved turnouts and crossovers. Blade and reshape drainage ditches, including fill and cut sections, if necessary, to correct pavement drop-off, rutting of shoulders, and accumulation of shoulder material.

Applications and Limitations

If 5 or more acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1). A dust control permit must be obtained for work in Pima, Pinal, and Maricopa counties prior to commencing activities (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC to determine whether a dust control permit will be required.

Do

- Limit disturbance area to the extent necessary, minimizing vegetation impacts and area to be revegetated.
- Preserve a vegetated buffer zone in areas of environmental importance.
- Evaluate the need for installation of temporary erosion control devices, such as sediment logs, sediment wattles, and check dams, to protect roadside drainage facilities and exposed shoulder soils.
- Moisten the soil with water to eliminate airborne particles if dust is being generated.
- Minimize water use and control runoff.
- Blade, feather, moisten, and roll materials to edge of pavement. Keep grading above the ditch line, where possible, to reduce disturbance to vegetative cover in the ditch bottom.
- Gradually adjust the blade down as the front wheels pass the lowest point and then adjust the blade up as the rear wheels follow in valleys and swags. This will prevent loose, easily erodible material from piling up where runoff and concentrated flows frequently occur, thus preventing loss of valuable road fill and preventing massive sedimentation to watercourses.
- Smooth and firm shoulders to the original design grade.
- Stabilize exposed soils with native seeding, etc., as appropriate.

Don't

- Place any materials in watercourses.
- Create slopes steeper than 2:1 (horizontal to vertical).
- Repair or maintain equipment in close proximity to watercourse.

Maintain

- Equipment in proper operating condition to prevent leaks and drips.
- Equipment away from storm drains and watercourses.
- Roadway surface as it must remain higher than the ditch line.

Inspect

- Before blading for surface water drainages and areas of environmental importance, and afterward for increased potential of erosion.

PROGRAM 130 – SHOULDERS

Activity 135 – Flush Shoulder Edge

Description

Apply emulsified petroleum resin or emulsified asphalt to shoulder edge as a flush coat to rejuvenate aged asphalt and retard surface deterioration. Apply liquid asphalt and cover material to seal and restore shoulder edge life.

Applications and Limitations

This activity does not allow for disturbance of the underlying soils. Unconsolidated material and emulsion must not be allowed to migrate into watercourses during this activity.

Do

- Protect storm drain inlets, watercourses, sensitive waters, and areas of environmental importance.
- Implement Chapter 2, Program 800, Activity 892 for temporary stockpiles.
- Carry spill response materials such as absorbent boom, containment boom, material safety data sheets (MSDSs), and drip pads.
- Store, prepare, and mix any liquid or petroleum products within temporary containment.
- Sweep dirt, sand, or other debris off the roadway prior to flushing.
- Dispose of debris and litter at approved sites.
- Coordinate crews, when feasible, to follow the flushing with bridge drainage cleaning, if applicable.
- Remove any excess emulsified petroleum resin or emulsified asphalt that may have resulted after application.

Don't

- Flush when freezing temperatures are likely or when precipitation is predicted.
- Flush shoulders near sensitive waters, watercourses, or areas of environmental importance.
- Transfer materials to applicator truck near sensitive waters, watercourses, or areas of environmental importance.

Maintain

- Barriers, when feasible and practicable, in site-specific locations along watercourses or direct drainage to route flushed material away from surface water.

Inspect

- Prior to activity for the existence and location of sensitive waters, watercourses, or areas of environmental importance.
- Application site locations to ensure that debris and litter are removed and disposed of appropriately.
- Sediment barriers as appropriate.
- For presence of surface runoff.

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PROGRAM 130 – SHOULDERS

Activity 139 – Other Unpaved Shoulder Maintenance

Description

This activity will be used only for unpaved shoulder and shoulder-related work that cannot be reasonably performed as Activities 131, 132, 133, 134, and 135. This activity includes sweeping, extending deteriorated shoulders with cold mix or salvaged AC, and adding emulsion to crossovers and turnouts.

Applications and Limitations

See Chapter 2, Program 100, Activity 119 for paving and Chapter 2, Program 130, Activity 135 for emulsion addition. For sweeping activities, follow BMP below.

Do

- Handle sweeper waste in accordance with Chapter 3, Program 7, Activity 7.2 BMPs.
- Identify and protect areas of environmental importance.

Don't

- Place any materials in storm drain inlets, watercourses, or sensitive waters.

Maintain

- Equipment in good repair to avoid leaks and drips.
- Equipment away from storm drains and watercourses.

Inspect

- For any damage to storm drain inlets.

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PROGRAM 140 – VEGETATION CONTROL

Activity 1400 – Soil Stabilization

Description

This activity is used to hold soils in place and to encourage vegetative growth within the median/shoulder or right-of-way (R/W) areas.

Applications and Limitations

A dust control permit must be obtained for work in Pima, Pinal, and Maricopa counties prior to commencing activities (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC to determine whether a dust control permit will be required.

Work Method A: For use on slopes steeper than 3:1 (horizontal to vertical). Apply polymeric/acrylic soil stabilizers to reinforce soil characteristics for resisting erosion on slopes and drainages, and provide stability until emergence of plants.

Work Method B: Apply magnesium chloride soil stabilizers to promote compaction and dust control on dirt or gravel roads and material stockpiles (non-vegetated facilities). See Chapter 2, Program 120, Activity 129. Work Method B does not apply to topsoil salvage piles.

Do

- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Control off-site runoff with berms or barriers.
- Use only the amount of product necessary.
- Follow manufacturer's handling recommendations and instructions on the MSDS.

Don't

- Allow equipment in watercourses.
- Overspray off-site, into watercourses, or other sensitive areas.

Maintain

- All temporary and permanent erosion and sediment control measures as needed to assure continued performance of their intended function.

Inspect

- Site perimeter and all barriers before and after application.

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PROGRAM 140 – VEGETATION CONTROL – MOWING

Activities 1410, 1412 – Swath Mowing, Standard Swath

Description

This activity includes swath mowing to improve sight distances, control weeds, eliminate snow drifts, and reduce fuels.

Applications and Limitations

Mowing is typically undertaken in a single swath (5–14 feet wide) along the roadway, with negligible opportunity for discharge. Proper mowing promotes retention of water and sediment on-site. Contact OES prior to mowing for information on areas of environmental importance.

Do

- Contact OES prior to mowing for information on site status to avoid damage to plant community, invasive species locations, and/or weed treatments.
- Clean equipment prior to activity at designated washing facilities to reduce potential transport of invasive plant species.
- Inspect all construction equipment and remove all attached plant/vegetation debris prior to leaving the construction site
- Mow when vegetation is approximately 17 inches high or higher.
- Develop a mowing route that reduces ground surface grinding by turning movements.
- Limit mowing activity to when precipitation is not anticipated.
- Clearly mark, flag, or fence areas where vegetation should be preserved.
- Leave buffer strip along banks of watercourses.
- Know where invasive species patches are documented and develop a plan that will help prevent spread.

Don't

- Mow adjacent to watercourses without proper authorization.
- Mow lower than approximately 6–8 inches in height.

Maintain

- Equipment in good repair to avoid leaks and drips.
- Equipment away from storm drains and watercourses.

Inspect

- All mowing equipment for leaks.

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PROGRAM 140 – VEGETATION CONTROL – CHEMICAL

Activities 1420, 1421, 1430, 1431, 1432, 1433, 1440, 1441, 1492, 351, 354, 355 – Chemical Vegetation Control Safety

Description

This activity includes BMPs for chemical vegetation control safety, small truck, roadway shoulders, swath application treatment, spot application treatment, roadway shoulder application, spot pre-emergent shoulder application, off-road truck application, off-road wand application, hand application of herbicides/insecticides, swath application treatment, and chemical control of vegetation (other), gores, and headwalls to control brush, rank growing forbs, grasses, and tree seedlings, and maintain visibility of hazard markers and reflectors.

Applications and Limitations

Herbicides are typically applied from a vehicle operating from or driving along the pavement.

Do

- Locate storm drain inlets and watercourses prior to application so that chemical vegetation control is not applied within close proximity to these areas.
- Follow the ADOT "Vegetation Management Guidelines" (refer to Appendix D).
- Have work performed by Structural Pest Control Commission licensed applicators.
- Follow all safety procedures for working with chemicals, including the use of personal protective equipment.
- Meet all applicable regulations for material handling and storage within site-specific SWPPPs for the facility where the materials are stored (refer to Program 6, Activity 6.2 for storage and handling).
- Check for approved chemical lists for federal and tribal land. Herbicide use on BLM land is limited to those chemicals approved by BLM.
- Post notice on the 1-800 hotline 30 days in advance of the activity start date and coordinate with the appropriate adjacent land-managing agencies (e.g., USDA Forest Service, BLM, Indian tribes) for R/W applications only.
- Refer to and follow Chapter 3, Program 6, Activity 6.2 and Program 7, Activity 7.7 for storage, handling, and disposal of pesticides and herbicides.
- Follow all chemical herbicide label requirements.
- Minimize off-road vehicle travel.
- Maintain a chemical spill kit and MSDS sheets in vehicles that conduct herbicide applications.

Don't

- Improperly dispose of chemical containers.
- Apply chemical vegetation control within close proximity to storm drains and watercourses.
- Apply herbicides during high temperatures, frozen ground conditions, or under windy conditions to avoid chemical drift.
- Apply if the potential for heavy precipitation is predicted or prior to irrigation, except for pre-emergent applications.
- Apply non-aquatic labeled chemical herbicides to standing or flowing water.

Maintain

- Equipment in good repair to avoid leaks and drips.
- Equipment away from storm drains and watercourses.
- Records of all herbicides applied, including brand name, formulation, EPA registration number, amount and date applied, exact location of application, vehicle calibration, and name, address, and certification number of applicator.

Inspect

- All application equipment.

PROGRAM 140 – VEGETATION CONTROL

Activity 1450 – Tumbleweed Removal/Disposal

Description

Remove and dispose of tumbleweeds that have accumulated along fences, in cuts, in and around drainage structures, etc.

Applications and Limitations

Control tumbleweeds first by mowing (the preferred option). Mechanical removal by loaders is used when vegetation is too tall or dense. Physical removal by hand is the least desirable option. Coordinate with OES for burning oversight if deemed necessary, data collection, invasive species survey, and chemical application post-removal.

Do

- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- If tumbleweeds are controlled by mowing, develop a mowing route that reduces ground surface grinding by turning movements.
- Limit mowing activity to when ground surface is slightly damp and precipitation is not expected.
- Mow tumbleweeds when green and immature to reduce seed dispersal.
- Clearly mark, flag, or fence areas where vegetation should be preserved.
- Leave a buffer strip along watercourses.
- If tumbleweeds are to be burned, obtain Burn Permit from ADEQ or other applicable authority.
- Identify burn area; isolate with firebreaks and place highway signage, as needed. Have appropriate fire fighting equipment at the site (e.g., water tenders, hand tools).
- Follow all safety procedures for this activity, including the use of personal protective equipment.
- If burn area is located near a watercourse, control movement of any sediment (from water used to control the burn) to watercourses by placing temporary sediment controls (sediment logs, silt fences, etc.) between the burn area and watercourses.
- Dispose of all tumbleweeds as solid waste in a landfill, if hand-removing is applicable.
- Seed all disturbed or burned areas for soil stabilization, where applicable.
- Contact OES prior to removal to discuss the need for follow-up chemical treatment.

Don't

- Burn any material until activity approval is obtained from ADEQ, ADOT, and the land management contact for the area (i.e., county, Indian tribe, or USDA Forest Service).
- Burn outside conditions stipulated in the burn plan.
- Dispose of tumbleweeds near watercourses.

Maintain

- A regular tumbleweed removal schedule for identified infestation areas before tumbleweeds go to seed.

Inspect

- By conducting routine patrols to monitor where the removal of tumbleweeds from fences and drainage structures is needed.

PROGRAM 140 – VEGETATION CONTROL – MECHANICAL

Activities 1460, 1461, 1462, 1463, 315, 324, 363 – Trees/Brush

Description

Remove and dispose of brush before herbicides are applied to eliminate unwanted growth from guardrails, road shoulders, and drainage structures, etc. This activity includes BMPs for mechanical control of trees/brush using tractor-mounted boom axe or skid steer mounted timber axe; hand-cut trees/brush; large tree removal, mechanical chipping of stems, limbs, and slash; tree removal; shrubs/groundcover removal; and weed control. These activities help maintain recovery zones and define fuel break areas and facility operations.

Applications and Limitations

Trees and shrubs will be removed from the edge of the pavement and as close to the natural ground/finished grade as practicable with minimal disturbance to the surrounding soil surface. Unless otherwise specified, no excavation of the associated stumps and rootballs will be allowed. If 5 or more acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Coordinate with the DEC.
- Protect storm drain inlets, watercourses, and sensitive waters from vegetative debris.
- Evaluate the need for the installation of check dams to protect roadside drainage facilities and exposed soils; install as appropriate.
- Follow the ADOT "Vegetation Management Guidelines" (refer to Appendix D).
- Follow all safety procedures for mechanical vegetation control, including the use of personal protective equipment.
- Operate equipment in a manner that minimizes soil disturbance.
- Minimize impacts to existing vegetation by defining the work area prior to the activity start date.
- Establish buffer zones near watercourses.
- Establish buffer zones near equipment access route.
- Remove and cut tree limb and shrub stumps as close to the trunk or existing ground surface as possible.
- Grind or chip removed material in place.
- Spread chips evenly on flat terrain.
- Reseed skid trails and other disturbed areas as soon as practicable.
- Properly dispose of waste materials; if material is to be burned, then obtain a burn permit from ADEQ or other applicable authority.
- Coordinate with land-managing agencies to work out disposal of trees and shrubs.

Don't

- Disturb vegetation on the bank of a watercourse.
- Excavate the associated stumps and root balls unless otherwise required by the project specifications, the Engineer, or both.
- Allow cut vegetation or chips to go into any watercourse.
- Remove vegetation if precipitation is predicted or soil is wet and unstable.

Maintain

- Equipment in good repair to avoid leaks and drips.
- Equipment away from storm drains and watercourses.

Inspect

- Vegetation removal area prior to the activity start date.
- Vegetation removal area for proper cleanup of chemicals and vegetative debris once the activity is completed.

PROGRAM 140 – VEGETATION CONTROL

Activity 1464 – Salvage Native Trees, Shrubs, and Cacti

Description

This activity is for salvaging native trees, shrubs, and cacti prior to maintenance or construction to maintain natural resources and to protect species.

Applications and Limitations

This action allows for limited ground disturbance associated with excavating the plant pits, haul routes and, if necessary, temporary storage sites for the removed plants. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC to determine whether a dust permit will be required.

Do

- Limit the size of the disturbed area.
- Use equipment that minimizes soil disturbance.
- Conduct activities when precipitation is not predicted.
- Determine if runoff from the site can enter a watercourse or storm drain.
- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.

- Follow the ADOT "Vegetation Management Guidelines" (refer to Appendix D).
- Disperse chips, trimmings, or small branches on-site.
- Deposit logs and other large wood materials at an appropriate facility.
- Adequately prepare seedbed and reseed disturbed areas and temporary storage location as soon as possible after completion of activity.
- Reduce runoff from temporary storage location. Limit use of fertilizers and chemicals.
- Use a local recycling center for disposal of miscellaneous waste materials or coordinate with land-managing agencies for waste vegetation disposal sites.

Don't

- Track out sediment onto highways.
- Leave large branch clusters to remain on the ground when activity is completed.
- Allow trimmings to be deposited into any watercourse.
- Disturb vegetative buffers along stream banks.
- Remove vegetation and spread mulch if precipitation is predicted.
- Disturb vegetation on the bank of a watercourse if not required for salvage.
- Allow cut vegetation to go into any watercourse.

Maintain

- Stabilized soils at site until construction or maintenance activity commences.
- Salvaged plants until returned to site.

Inspect

- To ensure disturbed soil areas are revegetated and that eroded areas are repaired.

PROGRAM 140 – VEGETATION CONTROL

Activities 1470, 1471 – Hydroseeding and Hydromulching

Description

Apply grass seed and mulch with a Hydroseeder on eroded or disturbed sites to stabilize the sites and prevent erosion.

Applications and Limitations

Coordinate with OES and Roadside Development for seeding and mulching requirements prior to application.

Do

- Reference the ADOT *Erosion and Pollution Control Manual for Highway Design and Construction* BMPs 5.1.4 and 5.1.5, Hydraulic Mulching and Hydroseeding.
- Install check dams, berms, and other erosion control features prior to application to keep material on-site.
- Install storm drain inlet protection, as necessary, prior to commencing hydroseeding/hydromulching activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Follow the ADOT "Vegetation Management Guidelines" (refer to Appendix D).
- Check project specifications for native seed mix and soil preparation requirements (refer to Chapter 2, Program 140, Activity 1472).
- Apply seed that incorporates slow-release fertilizers to reduce the transport of nutrients and the need for follow-up fertilization.
- Manage waste properly and manage containers to prevent spills.
- Keep hydroseed mix in proper containers so no spills occur.
- Collect all spills and reuse the material.

Don't

- Disturb vegetation on the bank of a watercourse.
- Allow hydroseed into any watercourse.
- Apply when precipitation is predicted.
- Mix more material than needed.

Maintain

- All temporary sediment and erosion control until final stabilization.

Inspect

- That no spills have occurred during application.
- Check dams and downstream to ensure that material has not migrated off-site.

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PROGRAM 140 – VEGETATION CONTROL

Activities 1472, 1473, 1475, 1476, 314, 323 – Tilling, Seeding, and Planting

Description

Till soil to prepare it for seeding. This allows soil to hold moisture for best growing condition.

Applications and Limitations

This activity includes BMPs for tilling, seeding, planting, seed drilling, broadcast seeding, planting trees, shrubs and cacti, replacing trees, and replacing shrubs/groundcover. If 5 or more acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Add a check dam as needed to make sure roadside drainage is free from loose soil.
- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Stay within the disturbed area and minimize creation of access roads to reduce ground disturbance.
- Till with the contour of the land to prevent uncontrolled downslope erosion.
- Leave tilled area roughened.
- Keep mulch mix in proper containers to prevent spills.
- Collect spilled mulch material and reuse if possible.
- Seed as soon as possible after tilling using site-specific native seed specifications.
- Plant and apply seeds that incorporate slow-release fertilizers to reduce the transport of nutrients and the need for follow-up fertilization.

Don't

- Disturb vegetation on the bank of a watercourse.
- Allow soil or vegetation to go into any watercourse.
- Remove vegetation and spread mulch if precipitation is predicted.
- Till on ground with a slope steeper than a 3:1 ratio (horizontal to vertical).

Maintain

- Stabilized soils at site.

Inspect

- That no spills have occurred during any application.
- Check dams and downstream to ensure that material has not migrated off-site.

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PROGRAM 140 – VEGETATION CONTROL

Activities 1480, 1481, 1482, 1490 – Fire Breaks and Prescribed Burning

Description

Burn R/W and brush piles to remove fuel accumulation. Establish and maintain fire breaks. Cut fire breaks and pre-treat with fire retardants in high-risk wildfire areas prior to ignition of prescribed fires. Fire breaks are burned in advance of general fire sequencing to limit the prescribed fire from escaping burn plan boundaries.

Applications and Limitations

This activity requires a Burn Plan and permit from ADEQ. Consult with OES when planning a burn. If 5 or more acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Submit burn plan to ADEQ and OES for burn permit.
- Coordinate with OES, local government (e.g., local fire authority or fire marshal), and appropriate land-managing agency (e.g., BLM, ASLD, Indian tribe, or USDA Forest Service).
- Coordinate with the DEC to obtain a listing of any areas of environmental importance that must be avoided.
- Follow all ADOT safety procedures for prescribed burning, including placing highway signage as needed, designating a safety zone, and using personal protective equipment.
- Have appropriate fire fighting equipment at the site (e.g., water tenders, hand tools).
- Determine if water used for firefighting or precipitation surface runoff from the site may enter a watercourse or storm drain. Install temporary perimeter controls such as sediment logs, wattles, or silt fence, if necessary.
- Install necessary storm drain inlet protection prior to commencing burning activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Establish buffer zones near watercourses, if possible, by mowing rather than burning.
- Install water bars to prevent erosion following burning of fire breaks.
- Seed and stabilize burn area as necessary.

Don't

- Improperly dispose of chemical containers.
- Disturb vegetation on the bank of a watercourse.
- Allow soil or vegetation to go into any watercourse.
- Burn outside the conditions stipulated in the burn plan.
- Burn during a "burn ban."

Maintain

- Stabilized soils at burn site.

Inspect

- To ensure that all fire break maintenance work is completed before the start of fire season.
- Post-burn area to identify and repair areas prone to erosion.

PROGRAM 150 – ROADSIDE

Activities 1501, 1502, 1507, 1590 – Full Width Litter Pickup and Mechanical Sweeping

Description

Pick up and dispose of all litter within the R/W, including unwanted trash and objects that could cause damage to roadside mowing equipment.

Applications and Limitations

This activity includes BMPs for full-width litter pickup, mechanical sweeping, spot litter and debris pickup, and other roadside maintenance.

Do

- Use personal protective equipment as necessary.
- Check to see whether litter holds hazardous or bio-hazardous material.
- Talk to your supervisor if you cannot tell what the litter or garbage is.
- Separate garbage as supervisor instructs and place in plastic bags.
- Be careful with bags to prevent injuries or spills.
- Clean up leaks from bags or trash when spills occur.
- Keep trash bags covered or tied down when it is being transported. Tarp all loads.
- Report injured animals to OES.
- Adjust power brooms frequently for maximum efficiency.
- Take trash to a permitted landfill.
- Rinse sediment from equipment in designated washing areas only.
- Stow gutter brooms before deadheading the sweeper but keep the pickup broom down for approximately 150 feet. Lift the pickup broom and, to the maximum extent possible, clear the sweeper's brooms and elevators before merging onto the public roadway or highway.
- Transport sweeper waste back to the maintenance facility or temporary pre-designated location to be reused, recycled, or disposed of properly.
- Refer to and follow Chapter 3 Facilities BMPs, Program 7, Activity 7.2 for highway debris management.

Don't

- Dispose of gas, propane, or any other chemical containers in landfills.
- Allow trash or litter to go into any watercourse.
- Load garbage hoppers beyond their capacity.
- Discharge fluids from sweeping operation into stormwater drainage system or watercourses.
- Sweep any potentially hazardous unknown substances.
- Overload trucks or sweepers.

Maintain

- Records of any Adopt a Highway trash removal activities.

Inspect

- R/W for roadway debris.

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PROGRAM 150 – ROADSIDE

Activities 1505, 1506 – Fence and Cattle Guard Maintenance

Description

Maintaining, repairing, or replacing fencing and cattle guards.

Applications and Limitations

Access roads may be required for this activity in remote areas. If more than 5 acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1). A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Minimize ground disturbance as much as possible by using existing access roads and planning equipment access.
- Preserve existing vegetation as much as possible.
- Select and use equipment that will cause the least amount of ground disturbance.
- Implement Chapter 4, Program 8, Activities 8.0 and 8.1.
- Review and implement the ADOT "Vegetation Management Guidelines" (refer to Appendix D).
- Evaluate need for installation of perimeter erosion and sediment controls (e.g., silt fences, berms).
- Implement Chapter 3, Program 6, Activity 6.10 if concrete is used.
- Stabilize exposed soils as appropriate when work is completed (seeding or granite mulching).
- Properly dispose of waste materials (refer to Chapter 3, Program 7, Activity 7.1).

Don't

- Dispose of concrete waste improperly.
- Track out sediment or other materials onto roadways.

Maintain

- Equipment in good repair to avoid leaks and drips.
- Equipment away from storm drains and water courses.
- A clean and orderly work area.

Inspect

- For spills and waste materials following completion of work.

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PROGRAM 160 – DRAINAGE

Activities 1601, 1603, 1604, 1605, 1608, 1690 – Routine Drainage Inspection and Maintenance

Description

Remove debris from pipe, box, and bridge culverts. Clean inlet and outlet drainage ditches within the R/W and drainage easements, including those for roadway dips. Clean catch basins, drop inlets, and down drains.

Applications and Limitations

This activity identifies BMPs for routine drainage, maintenance, and inspection. New construction may require an environmental clearance. Section 404 and 401 certifications may be required for this activity. Coordinate with the DEC to determine applicability.

Do

- Coordinate with the DEC and OES to determine whether the activity will affect areas of environmental importance.
- Conduct this activity when precipitation is not anticipated.
- Clearly mark the limits of disturbance and minimize removal of native riparian vegetation.
- Report illicit discharges, such as solid waste, paint spills, and oil containers to DEC and OES.
- Report the location of unapproved connections to the drainage system to DEC and OES.
- Maintain a spill kit on or near equipment used to conduct drainage maintenance.
- Keep collected trash in appropriate containers or temporary storage sites so no leaks will enter storm drains or watercourses.
- Vacuum or drain water from the collected waste material into an approved tank so no discharge enters a storm drain or watercourse.
- Use equipment that can operate from the bank. No mechanical equipment is allowed within watercourses unless covered under applicable permits (e.g., NWP, CGP).
- Install silt fence, erosion control berms, check dams, or other temporary erosion control measures as needed.
- Limit clearing activities to 500 feet upstream and downstream of the structure.
- Add a check dam as needed to make sure roadside drainage is free from cut brush and loose soil.
- Place excavated soil material as described in Chapter 2, Program 130, Activity 131 and Chapter 2, Program 800, Activity 892.
- Seed and mulch any disturbed ground except the watercourse itself.

Don't

- Allow trash, waste, or litter to go into any watercourse.
- Improperly dispose of discarded chemical containers.

Maintain

- Appropriate records documenting frequency of maintenance/cleaning activities and identified problem areas that may need to be checked more often.

Inspect

- Drainage facilities annually during the dry season to identify any problem inlets where sediment/trash or other pollutants have accumulated or if head-cutting of the watercourse has occurred.

PROGRAM 160 – DRAINAGE

Activities 1610, 1611 – Roadway Pump Preventive Maintenance Inspection and Repair

Description

Regular inspection, preventive maintenance, troubleshooting and repair activities for roadway pump facilities used to dewater tunnels, control groundwater on depressed roadways, or transport water into the ADOT MS4.

Applications and Limitations

This activity may involve use of chemicals, oils, and greases that may pollute stormwater. Read Program 6, Activity 6.1 prior to starting this activity.

Do

- Check the area for evidence of any illicit discharges or connections into the storm drain system. Report discharges or illicit connections to DEC and OES.
- Maintain a spill kit in close proximity to the pumping facility.
- Maintain absorbents or containments around chemicals, oils, and greases stored in the area or used during repair activities.
- Keep collected trash in appropriate containers or temporary storage sites away from storm drains or watercourse.
- Sweep paved areas and remove excess material after completing repair work.
- Refer to Chapter 3, Program 3, Activity 3.0, for BMPs applicable to pump station fuel tanks.
- Refer to Chapter 3, Program 7 BMPs for the proper disposal of chemicals and solid wastes.

Don't

- Allow trash, litter, or any repair materials to go into any storm drain or watercourse.
- Improperly dispose of discarded chemical containers.

Maintain

- Records on frequency of maintenance service.

Inspect

- The structural quality of pipes, valves, controls, joints, pumps, welds, roofs, pavement, coatings, or any other source of possible leaks and spills that could contaminate stormwater runoff.
- Secondary containments (refer to Appendix A).

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PROGRAM 170 – SNOW AND ICE REMOVAL

Activities 171, 172, 173, 179 – Plow Snow and/or Apply Abrasives/Deicer

Description

Plow snow and apply deicer products to paved surfaces and bridges, as needed. Spot apply abrasives, treated abrasives, and deicing or anti-icing agents to areas where ice exists or where ice conditions could develop. This activity identifies BMPs for plowing roadways, using salt or other products for deicing/anti-icing, applying abrasives or mixing deicers with abrasives to improve traction. It also includes cleanup of abrasives and equipment following storms and installation of snow fencing or barriers to eliminate drifting.

Applications and Limitations

Prior to application, read Appendix E, *Draft Environmental Assessment: Winter Storm Management of Arizona State Highways* (Chapter 6: Recommended Mitigation Measures).

Do

- Identify and protect areas of environmental importance prior to winter season.
- Place salt or deicer at the top of the slope on a sloped road (gravity will spread it across the width of the road).
- For best distribution, place salt or deicer in the middle of the road on two-lane roads (traffic and gravity will spread it to the curbs).
- Ensure that abrasives and other materials that may be mixed with snow when plowed do not interfere with drainage structures or watercourses.
- Use abrasive products without salts or deicers in areas where soils are highly permeable.
- Remove any accumulated abrasives from culverts and roadside ditches.
- Monitor wind conditions and keep product on the road by adjusting application speed during application of deicing product.
- Store and mix salt and deicers on an impervious surface to prevent contamination into ground, stormwater contact, and surface runoff (refer to and follow Chapter 3, Program 6, Activity 6.3 for applicable storing and mixing BMPs).
- Wash equipment only at designated wash sites.
- Use snow fencing to protect areas of environmental importance where snow drifts can be 5–10 feet thick.
- Put snow fence a distance of 15–20 times the fence height away from the area to be protected.
- Put snow fencing next to disturbed areas, perpendicular to prevailing wind, and upwind of the disturbed area.

Don't

- Use excessive amounts of salt or other deicing products within ¼ mile of sensitive waters.
- Store salt or other deicer products within ¼ mile of areas of environmental importance.
- Use large amounts of sodium ion on fine-textured soil.
- Use large amounts of chloride ion in highly permeable soil.
- Use salt as a substitute for plowing.
- Improperly dispose of discarded chemical containers.

Maintain

- Equipment in good working order to avoid leaks.
- Equipment away from storm drains and watercourses.
- Snow fencing as necessary.

Inspect

- Sensitive waters within ¼ mile of plowing and application areas for deicing and anti-icing agents.
- Watercourses for accumulated abrasives.
- Snow barriers throughout winter for damage or broken parts.

PROGRAM 200 – REST AREA

Activities 209, 220, 259 – Rest Area Maintenance Utility Work

Description

Apply to all rest area–related work and maintenance completed by a contractor or state personnel.

Applications and Limitations

This activity involves regular cleaning and maintenance, including plumbing, electrical, janitorial, and utilities. If 5 or more acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1). *Note:* If new construction and 1 or more acres will be disturbed, prepare a SWPPP and submit an NOI.

Do

- Implement Chapter 3, Program 2, Activities 2.0–2.4, if applicable.
- Implement Chapter 3, Program 6, Activity 6.10 for concrete work.
- Implement Chapter 3, Program 5, Activities 5.0–5.2 and Chapter 2, Program 300, Activities 332 and 333 for well development and irrigation system maintenance.
- Implement Chapter 3, Program 7, Activities 7.0 and 7.6 for solid waste disposal and containment dewatering.
- Implement Chapter 4, Program 8 BMPs as needed.
- Implement Chapter 4, Program 9 BMPs as needed.
- Report immediately any spilled chemicals or large amounts of vehicle fluids that enter the storm drains to the supervisor and the DEC.
- Remove sediment and debris from storm drain inlets.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Use drip pans for equipment and vehicle leaks, where needed, and spill troughs for any chemicals stored on-site for drums with drain taps.

Don't

- Allow potential pollutants into stormwater drains.
- Hose down parking areas.
- Place stockpiles near storm drain inlets, watercourses, or sensitive waters.

Maintain

- Paint and retouch as needed.
- Wells, pumps, heating systems, and other special facilities and repair as soon as a breakdown happens.
- Hazardous materials in a locked, protected, and secure location away from storm drains.
- Reactive chemicals in areas and conditions that comply with local area fire codes.
- Identification of hazardous materials and label uses on each container.
- Records of hazardous materials on-site that identify quantity, received date, expiration dates, and means of disposal.

Inspect

- All storage tanks for leaks and weak areas, and replace as needed.
- All storm drain inlets for trash, waste, and sediment.
- For evidence of spills, especially near storm drains.
- Facility grounds for eroded areas that may require landscape repair.

PROGRAM 300 – LANDSCAPE

Activities 332, 333 – Irrigation System Maintenance and Inspections

Description

Assure proper operation of all irrigation systems, including inspection of emitters, sprinkler heads, distribution tubing, and radio-controlled irrigation components, and test backflow prevention systems annually.

Applications and Limitations

Ensure sprinkler system operation does not contribute to soil erosion.

Do

- Implement Chapter 3, Program 5, Activities 5.1–5.2 for well development and irrigation system maintenance.
- Check for leaks and fix them immediately by looking for areas of grass or groundcover that is darker (wetter) than other areas or areas that have been eroded.
- Check the complete irrigation system after startup in the spring to be sure of proper operation.
- Check complete irrigation system and adjust within 24 hours of mowing.
- Check to make sure backflow prevention device is working properly.
- Check that all valves do not slam open and slam shut to prevent damage.
- Check to make sure sprinkler heads are adjusted to arc, radius, level, and altitude according to the slope.
- Check to make sure dirt and rocks are not lodged in the sprinkler heads or drip emitters.
- Minimize runoff during irrigation and maintenance activities.

Don't

- Leave water in irrigation systems during winter months.
- Be wasteful with water.

Maintain

- Performance audit every 3 to 5 years to ensure the system is working properly.
- Irrigation systems by updating to the newest water-saving technology (e.g., self-shutoff systems and drip irrigation systems) to minimize water loss.

Inspect

- Water flow so it remains only on the area to be watered and does not run onto sidewalks, driveways, streets, etc.
- Irrigation system timers to match the needs of each season.
- Irrigation system as plants mature and relocate to maintain uniform growing patterns.
- For system leaks.

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PROGRAM 300 – LANDSCAPE

Activity 341 – Granite Erosion Control

Description

Repair damage to landscaped granite mulch slopes caused by storms, broken water pipes, and traffic.

Applications and Limitations

Only minimal soil disturbance is allowed with this practice. If 5 or more acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1). A dust control permit must be obtained for work in Pima, Pinal, and Maricopa counties prior to commencing activities (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC to determine whether a dust permit will be required.

Do

- Investigate to determine the source/cause for the erosion.
- Correct the source/cause to prevent future erosion occurrences prior to repair, if feasible.
- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Rake granite away from eroded area to provide adequate work area and to reduce potential granite contamination from exposed soil/embedded seed sources.
- Trim edges of gullies or rills to provide a neat line to match repairs.
- Fill and compact gullies or rills with salvaged soil or acceptable backfill. Compact to at least 90 percent density.
- Install temporary BMPs at the end of each day if work extends beyond a single day or if precipitation is anticipated before the activity is to be completed.
- Apply and water-settle crushed granite.
- Install pre-emergent per the manufacturer's recommendations.
- Match granite color and size to existing rock.
- Ensure depth of repair is consistent with the as-built plans (usually 2 inches deep).

Don't

- Use filter cloth on slopes steeper than 1:4 (horizontal to vertical).

Maintain

- Repaired areas. Make additional repairs, as needed, based on site inspections.

Inspect

- To ensure granite mulch repair is stable and in proper operating condition.

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PROGRAM 300 – LANDSCAPE

Activity 343 – Non-granite Erosion Control

Description

Repair damage to native soil slopes caused by storms, broken water pipes, and traffic.

Applications and Limitations

Only minimal soil disturbance is allowed with this practice. If 5 or more acres are disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Follow manufacturer's recommendations for application of erosion control material.
- Slope or crown ground to prevent ponding of water.
- Apply straw mulch in an even layer using a studded roller or a stabilizing emulsion.
- Use straw blowers within 150 feet of the road surface or area able to support the truck.
- Use only wheat, rice, or barley straw that is certified as weed-free.
- Use trackifier as the preferred method of anchoring straw.
- Apply loose straw at a minimum rate of 4,000 pounds/acre or as directed by the project's special directions.
- Roughen the soil with a crimping- or punching-type roller when using stabilizing emulsion.
- Use a shovel or spade to incorporate straw on small slopes.
- Apply straw with a knife blade roller or a "crimper" on slopes with stable soil.
- Hold down straw with netting or jute that is held down by 11 gauge staples, geotextile pins, or wooden stakes on small areas or steep slopes.
- Allow treated area to cure to manufacturer's recommendations or for at least 24 hours.
- Apply solution under pressure and overlap by at least 6 to 12 inches.
- Pre-wet ground for emulsions at 0.03 to 0.3 gallon of water per square yard or per the manufacturer's recommendations.
- Apply in an even layer not more than 2 inches thick when using green material mulch.

Don't

- Place straw, mulch, or emulsion on the roadway, sidewalks, drainage canals, sound walls, and existing vegetation.
- Apply straw mulch during or just before precipitation.
- Apply the straw unevenly.
- Apply soil binders to frozen soils.

Maintain

- Coverage until permanent vegetative cover has been established.

Inspect

- Following completion of work to ensure no additional erosion has occurred.

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PROGRAM 400 – TRAFFIC CONTROL

Activity 456 – Wash Interstate Signs

Description

Wash permanent and temporary regulatory, warning, route markers, and mainline guide signs on a periodic basis to remove oxidation, road film, and other foreign material from sign faces.

Applications and Limitations

For cleaning signs over impervious surfaces without a risk of discharge to a watercourse, ensure minimum concentrations of cleaning solution and low volume of water.

Do

- Use dry methods for surface pre-cleaning, such as using absorbents on signs prior to wet washing.
- Use biodegradable, phosphate-free, water-based cleaners.
- Use a minimal amount of soap and water.
- Spot clean rather than power wash or power wash without soap.
- Minimize water use by using high-pressure, low-volume nozzles.
- Keep wash water contained by creating a containment area with berms or tarps.
- Remove all wash water in the contained area.

Don't

- Dispose of wash water into the street, storm drains, landscape drains, or watercourses.
- Allow pressure washing wastewater containing visible debris or residue, soap, detergent, or other cleaning agents, hazardous waste, or excessive amounts of any pollutant to be left on paved surfaces to evaporate because the residue will eventually be discharged to the storm drain.
- Discharge wastewater containing garbage, food wastes, or visible trash to land.

Maintain

- All equipment and tools used for this activity.
- Equipment away from storm drains and watercourses.

Inspect

- Following the activity to ensure complete cleanup of the area.

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PROGRAM 500 – SIGN FACTORY

Activities 503, 509, 512

Description

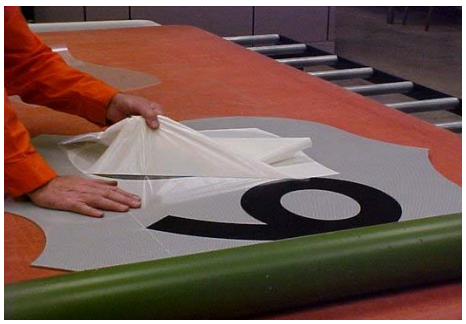
The work activities in this program are conducted at the ADOT Sign Factory located at 2104 S. 22nd Ave., Phoenix, Arizona.

Applications and Limitations

Follow the BMPs listed in the current SWPPP for the ADOT Sign Factory. A copy of this document is available at the address listed above.

Do

- Train employees on proper filling and transfer procedures.
- Handle solvents in designated areas away from drains, ditches, and surface waters.
- Use temporary containment, such as portable drip pans, where required.
- Use spill troughs for drums with taps.
- Secure and carefully monitor hazardous materials to prevent theft, vandalism, and misuse of materials.



Don't

- Store containerized materials (fuel, paints, inks, solvents, etc.) in unprotected, unsecured locations and near drains.

Maintain

- Good integrity of all storage tanks.
- Records of solvent and paint use per applicable rules and regulations.

Inspect

- Piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks.
- Storage tanks to detect potential leaks and perform preventive maintenance.

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PROGRAM 510 – TRAFFIC SIGNALS

Activity 5117 – Paint Traffic Signals/Highway Lighting Poles

Description

Paint to protect non-galvanized surfaces from the effects of corrosion and to restore proper appearance.

Applications and Limitations

This activity is to be performed at on-site locations.

Do

- Perform painting with a tarp laid out to catch any debris or overspray.
- Sweep fly material and dust.
- Clean up solvent spills that reach unprotected pavements and landscape areas as recommended by the manufacturer.
- Reuse thinners and solvents as much as possible.
- Dispose of unusable thinners and residue as hazardous waste.
- Refer to Chapter 3, Program 7 BMPs for waste management.

Don't

- Clean brushes or rinse paint containers into a street gutter, storm drain, or water body or any conveyance structure where the flow could reach these types of watercourses.
- Hose sidewalks or pavements.

Maintain

- Equipment, including sprayers, sprayer supply lines, and paint containers, and collect and dispose of wash water and excess paint.

Inspect

- All equipment to ensure that it is in good operational condition prior to using.
- The work area upon completion of the activity to ensure proper cleanup of all materials.

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PROGRAM 510 – TRAFFIC SIGNALS

Activities 5171, 5404 – Maintain Tunnel Lighting and Tunnel Contract Maintenance

Description

Wash and clean fixtures to provide maximum light distribution and, as necessary, correct outages to restore system to normal condition.

Applications and Limitations

Tunnel wash water is not dischargeable and must be contained.

Do

- Install storm drain inlet protection, as necessary, prior to commencing cleaning activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Use Vactor trucks during cleaning activities to remove wash-down water before it can enter the storm drains within the tunnel.
- Perform street sweeping within the tunnel to remove sediments that remain after discharge water has evaporated.
- Remove sediments from storm drain catch basins within the tunnel.
- Monitor the wash-down water from tunnel cleaning activities to determine whether BMPs are appropriate or whether changes are required.

Don't

- Allow unauthorized or uncertified personnel to conduct the applications for this activity.
- Allow any discharge of wash water into storm drains.

Maintain

- Vactor trucks, street sweepers, and related equipment to avoid leaks and drips.
- Equipment away from storm drains and watercourses.

Inspect

- All equipment to ensure that it is in good operational condition prior to use.

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PROGRAM 510 – TRAFFIC SIGNALS

Activity 5255 – Repair Roadway and Sign Lighting

Description

Restore malfunctioning systems, luminaries, or fixtures to designed optimum efficiency. Repair damage or replace knocked-down features and accessories to designed efficiency. Realign, wash as required, repair, or replace parts of damaged roadway and sign lighting features or systems.

Applications and Limitations

This activity is to be performed at on-site locations.

Do

- Perform maintenance in accordance with manufacturer's guidelines.
- Clean and inspect the interior and exterior of sign, remove all graffiti.
- Implement Chapter 3, Program 1, Activity 1.4 for graffiti removal.
- Implement Chapter 2, Program 400, Activity 456 for sign washing.
- Contain broken electrical and lighting fixtures.

Don't

- Allow unauthorized or uncertified personnel to conduct the applications for this activity.

Maintain

- Vactor trucks, street sweepers, and related equipment to avoid leaks and drips.
- Equipment away from storm drains and watercourses.

Inspect

- All equipment to ensure that it is in good operational condition prior to use.

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PROGRAM 600 – OVERHEAD

Activity 611 – Material Handling

Description

Haul and handle supplies and materials.

Applications and Limitations

This application should be followed by all individuals handling these materials.

Do

- Refer to the MSDS and the manufacturer's recommendations.
- Read the label for safety instructions prior to handling unfamiliar and hazardous materials or chemicals.
- Contain all liquids in secondary containment when transporting.
- Know where spill response equipment is located at the facilities.
- Implement Chapter 3, Program 6 BMPs.
- Implement Chapter 4, Program 9 BMPs, if needed.

Don't

- Allow unauthorized or untrained personnel to handle materials and supplies.

Maintain

- The MSDS and manufacturer's recommendations.

Inspect

- All equipment to ensure that it is in good operational condition prior to use.
- For spills and broken containers.

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PROGRAM 600 – OVERHEAD

Activity 612 – Work for Equipment Services

Description

Mechanical work performed on assigned equipment by maintenance personnel.

Applications and Limitations

This activity should be followed by any individual performing mechanical work at any level.

Do

- Reference the ADOT *Equipment Services BMP Manual*.
- Clearly label all materials and keep an inventory as required.
- Provide secondary containment for all materials subject to leaks and spills.
- Use drip pans or absorbent as necessary.

Maintain

- Dry and clean floors and surfaces by using brooms, shovels, vacuums, or cleaning machines as necessary.
- Orderly storage of materials.

Inspect

- All equipment to ensure that it is in good operational condition prior to use.
- Area after completion of work to ensure no spills and materials are removed.

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PROGRAMS 700, 710, 720, 730, 740, 750 – NON-ROUTINE MAINTENANCE

Activities 700, 710, 720, 730, 740, 750 – Non-routine Maintenance

Description

This maintenance work, which is not classified in the routine work program, is planned and reported in this activity. This work includes the following:

- Work of a size or scope that exceeds standard maintenance activities but is too small to contract; not to exceed $50,000 per project.
- Projects that would improve roadway safety and appearance, reduce maintenance, eliminate maintenance trouble spots, expand or extend existing features, and the installation of new features.

Applications and Limitations

If 1 acre or more for new construction or 5 acres or more for routine maintenance will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Select BMPs from the ADOT *Erosion and Pollution Control Manual for Highway Design and Construction* as applicable to each activity.
- If the activity will take place at an ADOT facility, select the appropriate BMPs from Chapter 3 in this manual and the related site-specific SWPPP, if applicable.
- If the activity will generate wastes, implement Chapter 3, Program 7 BMPs.

Don't

- Begin projects before estimating the disturbed acreage.
- Perform work that is not planned (refer to Chapter 4, Program 8, Activity 8.0).

Maintain

- BMPs for the duration of the activity.
- All equipment to ensure good operational condition prior to use.
- Equipment away from storm drains and watercourses.

Inspect

- Project site for erosion, sedimentation, or damage to BMPs after project completion.

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PROGRAM 800 – MATERIAL HANDLING

Activity 891 – Make Pre-mix (Asphalt) Material

Description

Windrow mineral aggregate, apply asphalt and mix.

Applications and Limitations

This activity does not allow for the disturbance of soil; it applies only to the moving and storage of stockpiled materials. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Follow the site-specific SWPPP and/or BMPs for the facility where the activity is occurring.
- Consider lining underneath cold mix stockpiles or placing on an impervious surface.
- Locate pads and stockpiles away from storm drain inlets, watercourses, or sensitive waters.
- Divert stormwater run-on away from the site.
- Construct compacted earthen berms or place concrete barriers or other sediment controls around the mixing pad and stockpiles to prevent stormwater runoff from migrating off-site.
- Minimize track-out during material loading.
- Sweep areas prone to track-out.

Don't

- Allow any stored or stockpiled materials to enter stormwater drains.
- Construct berms using the unconsolidated stockpiled material such as uncompacted cinders or gravels.

Maintain

- Safety and stormwater BMPs already in place.
- All equipment to ensure good operational condition prior to use.
- Equipment away from storm drains and watercourses.

Inspect

- All other perimeter controls and pads.

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PROGRAM 800 – MATERIAL HANDLING

Activity 892 – Stockpile Material

Description

Haul and stockpile AC mix, aggregate, chips, sand, salvaged AC pavement or cinders from a commercial source, crusher location, mixing table, and/or borrow from any undesignated source to a stockpile site.

Applications and Limitations

Apply these BMPs to manage stockpiles.

Do

- Consolidate stockpiles as much as possible in one location.
- Protect all temporary stockpiles with a temporary perimeter sediment barrier, such as compacted earthen berms, dikes, silt fences, or sandbag or concrete barriers.
- Conduct a BMP inspection if precipitation is predicted, and make repairs, replacements, and modifications as needed to reduce potential for stockpile runoff.
- Evaluate and assess potential wind erosion-protection practices based on site wind conditions and regulatory requirements.
- Plan for relocation of stockpiles when they are located within ¼ mile of sensitive waters.

Don't

- Locate new stockpiles near concentrated flows of stormwater, storm drain inlets, watercourses, or sensitive waters.
- Construct berms from unconsolidated stockpiled material.
- Locate stockpiles within ¼ mile of sensitive waters.

Maintain

- Perimeter barriers at all stockpile sites.
- All equipment to ensure good operational condition prior to use.
- Equipment away from storm drains and watercourses.

Inspect

- Perimeter controls for evidence of erosion.

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PROGRAM 800 – MATERIAL HANDLING

Activity 897 – Truck Screen

Description

Screen material for use on a roadway using a bed-mounted A-frame screen on the bed of a dump truck.

Applications and Limitations

Follow the applicable site-specific SWPPP and/or BMPs for the facility where the activity is occurring. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Locate the screening activity away from storm drain inlets, watercourses, or sensitive waters.
- Control spillage and track-out.
- Sweep up loose material, if appropriate.

Don't

- Undertake this activity during windy conditions.

Maintain

- Berms and containments around stockpiles (refer to Chapter 2, Program 800, Activity 892).
- All equipment to ensure good operational condition prior to use.
- Equipment away from storm drains and watercourses.

Inspect

- The site following the activity for spilled materials.

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PROGRAM 800 – MATERIAL HANDLING

Activity 899 – Other Material Overhead (Material Source Mining)

Description

This activity will be used only for work related to material production that cannot be reasonably performed as Activities 891, 892, and 897. This activity includes material source mining.

Applications and Limitations

Sign on to and follow the applicable site-specific SWPPP and/or BMPs for the facility where the activity is occurring. Follow BMPs in Appendix C if a SWPPP is available or applicable for the material source. Ensure activities are in compliance with Sector J of the MSGP for Industrial Activities, if mining occurs.

Do

- Implement Chapter 2, Program 800, Activity 892.
- Implement Chapter 3, Program 6 and Program 7 BMPs, and Chapter 4, Program 8 and Program 9 BMPs.

Don't

- Use the material source without reviewing a copy of the material source SWPPP, if available or applicable.

Maintain

- Ample supply of appropriate spill cleanup material near storage areas.
- Storage areas to prevent precipitation and runoff from coming in contact with chemicals or materials.
- Perimeter controls, containment structures, covers, and liners.
- Clean areas where materials have been removed to ensure that no dust or spillage remains to be washed into stormwater.

Inspect

- Before and after precipitation events and as recommended in the site-specific SWPPP, if applicable.

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ADOT Activities vs. Contract Maintenance Activities				
Description	**Contract Activity Number**	**ADOT Activity Number**	**Description**	**ADOT BMP Manual Page Number**
Pavement leveling with pre-mix	9102	102	Level with pre-mix	2-3
Paving	9105	101, 105	Patch with pre-mix, tight blading	2-3
Seal coat	9106	104, 106, 107	Sand seal coat, chip seal coat, seal coat (minor)	2-3
Flushing	9109	108, 109, 135	Flush coat, spot flush/seal coat, flush shoulder edge	2-3, 2-11
Pavement milling and replacement	9111	112	Replace surface/base	2-3
Crack filling with rubber asphalt	9113	113	Fill cracks with rubber asphalt	2-3
Hydro vacuum	9114	1507, 1601, 1602, 1603, 1604, 1605, 1607, 1608, 1690	Mechanical sweeping, drainage maintenance	2-33, 2-37
Mechanical litter pickup	9152	1501, 1502	Full-width litter pickup, spot litter and debris pickup	2-33
Fence inspections/repair	9154	1505, 1506	Annual fence inspection, routine fence maintenance	2-35
New fence installation	9156	1505, 1506	Annual fence inspection, routine fence maintenance	2-35
Mechanical sweeping	9157	1507	Mechanical sweeping	2-33
Rest area maintenance	9201, 9205	209, 259	Rest area maintenance	2-43
Landscape maintenance	9301	323, 324	Trimming, removing, and replacing trees, shrubs, and ground covers	2-23, 2-29
Hydroseeding	9303	1470, 1471	Hydroseeding, hydromulching	2-27
Chipping	9305	1463	Chipping stems, limbs, and slash	2-23
Irrigation inspection/repair	9307	332	Irrigation inspection, irrigation repair	2-45

Description	Contract Activity Number	ADOT Activity Number	Description	ADOT BMP Manual Page Number
Tree trimming/removal	9308	1460, 1461, 1462, 315, 324	Mechanical tree and brush removal, hand-cut trees and brush, large tree removal, mechanical, trim trees, remove trees, trim/remove shrubs/ground cover	2-23
Tree thinning	9309	1460, 1461, 1462	Mechanical tree and brush removal, hand-cut trees and brush, large tree removal, mechanical	2-23
Herbicide spraying	9310, 9311	1420, 1421, 1430, 1431, 1432, 1433, 1440, 1441, 1492	Chemical vegetation control, hand application herbicides/insecticides	2-19
Miscellaneous maintenance	9799	1590	Other roadside maintenance	2-33

Chapter 3
FACILITIES
BEST MANAGEMENT PRACTICES

The following activity BMPs are applicable to all ADOT maintenance yards and facilities unless superseded or complemented by a site-specific SWPPP, including MS4 requirements. If available, follow the applicable MS4 SWPPP and/or BMPs for the facility where the activity is occurring.

Programs 1 through 7 address specific groupings of activities undertaken at ADOT yards and facilities. These program groupings are numbered similarly to the maintenance program groupings within PeCoS, but because there is no complimentary database to track Facilities programs, each activity within the program has been numbered sequentially for ease of use. Chapter 4, Good Housekeeping, Programs 8–9 are general categories of BMPs that may be required for one or more roadway maintenance or facilities activities.

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PROGRAM 1 – BUILDINGS

Activity 1.0 – Facility Cleaning

Description

Custodial work in ADOT buildings.

Applications and Limitations

Prior to this activity, review and implement Chapter 4, Program 8, Activity 8.2 regarding use of safer alternative products.

Do

- Dry-sweep as much as possible and properly dispose of debris.
- Pour non-hazardous mop water for cleaning into sanitary sewer.
- Pick up and dispose of garbage and waste material (refer to Chapter 3, Program 7 BMPs).
- Train for spill cleanup procedures to ensure that all employees understand them.

Don't

- Pour mop water on the ground.
- Store cleaning materials outdoors uncovered.

Maintain

- An orderly storage of materials in lockers, cabinets, or stockpiles.
- Debris-free storm drain covers; dry and clean floors and surfaces by using brooms, shovels, vacuums, or cleaning machines as necessary.

Inspect

- For leaks or conditions that could lead to a discharge of chemicals or contact of stormwater with raw materials, intermediate materials, waste, waste materials, or products. Repair all leaks immediately.

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PROGRAM 1 – BUILDINGS

Activity 1.1 – HVAC Condensation Management

Description

The purpose of this activity is to reduce pollution impacts from cleaning and maintenance of air conditioning and refrigeration units. It is allowable to discharge condensation water, which is essentially pure water, to the atmosphere. It is illegal to discharge any water that contains chemicals, detergents, algae-killing agents, and other man-made substances onto the ground or onto any surface that drains to an MS4, sensitive waters, and watercourses.

Applications and Limitations

Evaporative cooling water is potable. Chiller system cooling tower water is chemically treated and must be contained for disposal.

Do

- Minimize use of toxic or hazardous chemicals as much as possible.
- Route evaporative cooler water to vegetation or rock-mulched areas to avoid erosion and retain on-site.
- Contain non-potable chiller water in accordance with Chapter 3, Program 7, Activity 7.7.

Don't

- Discharge chemically contaminated water to the land surface or into watercourses.

Maintain

- Evaporative coolers and chillers in good operating condition to conserve water.

Inspect

- For equipment leaks and surface erosion caused by leaks.

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PROGRAM 1 – BUILDINGS

Activity 1.2 – Fire Sprinkler System Maintenance

Description

Sprinkler systems are tested and flushed, with discharges possible.

Applications and Limitations

Additives to this water require containment.

Do

- Minimize use of hazardous or toxic chemicals as much as possible.
- Route potable water to vegetation or granite-mulched areas to avoid erosion.
- Contain non-potable water (refer to Chapter 3, Program 7, Activity 7.7).

Don't

- Discharge chemically contaminated water to the land surface or into watercoures.
- Create an erosion zone from discharge of high-pressure water.

Maintain

- Sprinkler systems in good operating condition.

Inspect

- For equipment leaks and surface erosion caused by leaks.

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PROGRAM 1 – BUILDINGS

Activity 1.3 – Painting

Description

Prevent or reduce the discharge of pollutants to watercourses from structure painting by using good housekeeping practices, proper waste disposal, using safer alternative products, and training employees and subcontractors.

Applications and Limitations

Safer alternative products may not be available, suitable, or effective in every case. Hazardous waste that cannot be recycled must be disposed of by a licensed hazardous waste hauler. Implement Chapter 3, Program 6, Activity 6.0, Program 7, Activities 7.8 and 7.9.

Do

- Ensure that hauler contract agreements for supply of materials to maintenance activity sites require that materials be in accordance with this BMP.
- Secure loads and cover loose materials in open bed trucks during hauling to activity sites.
- Use proper equipment loading and unloading techniques to prevent spills.
- Load paint into spray equipment at a maintenance facility.
- Install storm drain inlet protection, as necessary, prior to painting activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment and other contaminants out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained, evaporated, or been otherwise controlled.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Use good site preparation (drop cloths, containments, etc.) to prevent contaminants from entering stormwater runoff.
- Contain and control runoff from high-pressure washing or sandblasting.
- Use materials only where and when needed to complete the maintenance activity. Use all contents of open containers where possible.
- Appropriately label all secondary containers.
- Dispose of latex paint, paint cans, used brushes, rags, absorbent materials, and drop cloths in accordance with Chapter 3, Program 7 BMPs.
- Dry residual latex paint and dispose of as solid waste. Latex paint brushes may be rinsed to the sanitary sewer after removing residual paint.
- Use the entire product amount, if practicable, before disposing of the container.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Make copies of the label information or MSDS, if needed.

Don't

- Pour any residual paint in paint cans to the sanitary sewer.
- Remove the original product label from a container, unless the label or MSDS information is available elsewhere, because it contains important spill cleanup and disposal information.

Maintain

- A supply of spill cleanup material near material use areas. Clean up all spills immediately in accordance with Chapter 4, Program 9 BMPs.

Inspect

- Truck beds after the completion of material delivery to avoid depositing materials on the roadway.
- Containers to ensure lids are tight.
- Containers to ensure they are secured in vehicle before transporting.

PROGRAM 1 – BUILDINGS

Activity 1.4 – Graffiti Removal

Description

Painting over or sandblasting of graffiti.

Applications and Limitations

This activity is applicable for elimination of graffiti on highway structures and facilities.

Do

- Refer to techniques contained under Chapter 3, Program 1, Activity 1.3 when painting.
- Implement Chapter 3, Program 6, Activity 6.0.
- Implement Chapter 3, Program 7 BMPs.
- Collect and contain all contaminated rags or absorbents (refer to Chapter 3, Program 7 BMPs for disposal).
- Implement Chapter 4, Program 8 BMPs.
- Minimize use of solvents and hazardous materials (refer to and follow Chapter 4, Program 8, Activity 8.1).
- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Properly channel and contain runoff from sandblasting.
- Wear approved respirators and have a medical monitoring examination before wearing and working with a respirator or self-contained breathing apparatus.

Don't

- Sandblast painted surfaces that may contain lead-bearing paints.

Maintain

- Containment of all materials when working.

Inspect

- Entire area on completion of activities for any remaining debris or paint materials.

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PROGRAM 1 – BUILDINGS

Activity 1.5 – Shipping/Receiving/Loading Docks

Description

Proper operation and maintenance of loading docks.

Applications and Limitations

These features may have storm drains or dry wells to collect stormwater, which must be correctly managed to prevent improper discharges. Dry wells located in an area where hazardous substances are stored or loaded may require an Aquifer Protection Permit (APP) issued by ADEQ. Contact DEC to determine applicability.

Do

- Identify locations of storm drains (usually at base of inclined loading areas) and cover or block them during deliveries in the event of a spill from delivery vehicles.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Decommission any dry wells located within loading dock areas, when possible. Contact OES for further guidance.
- Install manual valves in storm drains that can be opened or closed in the event of an unexpected release.
- Remove trash and debris before discharge to a storm drain.
- Route water from the loading dock storm drains to on-site retention areas for evaporation or infiltration.

Don't

- Allow chemical contaminants or other debris to enter the storm drain system.

Maintain

- The area clean and free from debris by sweeping regularly. Collected debris and litter should be deposited in a trash container to avoid accumulation in the drain or dry well area.
- Control of stormwater runoff by directing it toward storm drains, swales, granite-mulched areas, or stormwater impoundments.

Inspect

- After precipitation events for the presence of stormwater contaminants, debris, trash, and litter.
- Before expected precipitation events for trash, debris, and other materials that could contribute pollutants, such as spilled oil in loading dock.

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PROGRAM 2 – SITES, YARDS, AND GROUNDS

Activity 2.0 – Vehicle Parking Areas

Description

Control of oils, greases, and other vehicular contaminants from small vehicle parking areas.

Applications and Limitations

This activity applies only to employee or public small vehicle parking areas (e.g., MVD, rest area).

Do

- Install storm drain inlet protection, as necessary:
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Remove any debris from covered storm drain inlets.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity indicating that no dumping is allowed.
- Sweep paved parking areas and properly dispose of debris.
- Immediately clean up any spills or leaks. Block storm drains until cleanup is complete.
- Install porous pavement in smaller parking areas, when possible.
- Direct stormwater runoff from parking lots to vegetative buffers, dry swales, or granite-mulched areas, if feasible.

Don't

- Discharge heavily contaminated stormwater directly to storm drain inlets, watercourses, or sensitive waters.

Maintain

- A clean and orderly parking area.

Inspect

- Storm drains after each precipitation event for the presence of stormwater contaminants, debris, trash, and litter. Cleaning should occur on an as-needed basis.
- Parking lots for standing oil. Spot-clean affected area as needed.

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PROGRAM 2 – SITES, YARDS, AND GROUNDS

Activity 2.1 – Vehicle Parking Areas (Snow and Ice Removal)

Description

Public (e.g., MVD, rest area) and ADOT vehicle parking lots and yards—management of snow and ice.

Applications and Limitations

The application of salt and salt alternatives (e.g., abrasives, anti-icers, deicers) should not be substituted for plowing. If deicers are used, surface runoff should not leave the site. Use berms and direct runoff to permeable surfaces such as graveled areas.

Do

- Use sand that is free of fine particles; fine sand is difficult to sweep and will contribute to increased turbidity.
- Install storm drain inlet protection, as necessary, prior to commencing application of salt and salt alternatives:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained, evaporated, or been otherwise controlled.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Avoid applying material near surface runoff discharge points.
- Place snow piles to avoid or divert surface water run-on from areas outside the snow piles.
- Accommodate stormwater retention on-site.

Don't

- Use excess quantities of salts, deicers, or abrasives where the outlet of a storm drain system directly discharges to sensitive waters, watercourses, or areas of environmental importance.
- Directly discharge plowed snow into sensitive waters, watercourses, or areas of environmental importance.

Maintain

- Sweeping of parking areas prior to precipitation to remove trash, debris, and other potential pollutants.
- Regular sweeping of the parking areas following use of sand and deicers.
- Storage of salt and deicers, preferably in a permanent roofed structure, a minimum of ¼ mile from sensitive waters.

Inspect

- During spring snow melt for site run-on/runoff conditions.

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PROGRAM 2 – SITES, YARDS, AND GROUNDS

Activity 2.2 – Rooftops

Description

Rooftop maintenance.

Applications and Limitations

Applicable only to large industrial buildings where sediment and other contaminants accumulate from air-handling equipment and fugitive dust.

Do

- Clean the rooftops of your buildings at least once before the rainy season.
- Cover any maintenance materials stored on the roof to protect them from rainwater.
- Consider disconnection of any downspouts from the direct connection to the storm drain inlet to divert runoff to vegetated areas or use rain-barrel collection for reuse.

Don't

- Store materials or chemical contaminants on rooftops.

Maintain

- Equipment located on rooftops to prevent leaks.

Inspect

- Roof before expected periods of precipitation.
- Downspout discharge areas and rain-barrel collection sites for overtopping and erosion.

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PROGRAM 2 – SITES, YARDS, AND GROUNDS

Activity 2.3 – Landscape Work

Description

Tree and brush removal, chipping of stems, limbs and slash, tillage, mulching, and seeding, fertilizing and use of pesticides, etc.

Applications and Limitations

To maintain shade and aesthetics, do not conduct excessive landscaping activity near buildings and structures without proper guidance. Maintain landscaping corridor or natural vegetation buffer areas. Over-application of fertilizers, herbicides, and pesticides may create stormwater pollution. If 5 or more acres will be disturbed, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Properly manage sediment from these areas; contain and prevent sediment from leaving ADOT property. Install on-site retention areas and controls if necessary.
- Install storm drain inlet protection if applicable:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment and other contaminants out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained, evaporated, or been otherwise controlled.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Apply pesticides and fertilizers according to label instructions (refer to Chapter 3, Program 6 and Program 7 BMPs for handling and disposal).
- Consider using less toxic alternatives to pesticides and fertilizer whenever possible (refer to Chapter 4, Program 8, Activity 8.2). Review the ADOT "Vegetation Management Guidelines" (refer to Appendix D).
- Stabilize exposed soils by seeding, granite mulching, using riprap, etc.
- Select and use equipment that causes the least amount of ground disturbance.
- Store stockpiled materials away from the yard perimeter, storm drains, concentrated flows of stormwater, and watercourses. Berm or cover soil stockpiles.
- Recycle or properly dispose of green waste materials.
- Properly adjust and maintain sprinkler heads to prevent overwatering.

Don't

- Clear any areas larger than necessary.
- Apply pesticides and fertilizers prior to precipitation.

Maintain

- Large trees and shrubs in critical buffer areas near streams.

Inspect

- Site on completion of work for appropriate management of waste materials.
- Irrigation system for erosion, leaks, spray patterns, and timing.

PROGRAM 2 – SITES, YARDS, AND GROUNDS

Activity 2.4 – Culvert and Watercourse Clearing

Description

Proper maintenance and repair of existing drainage systems will greatly improve water quality, allow the drainage system to function at peak levels, and reduce flooding.

Applications and Limitations

This activity includes BMPs for routine drainage, maintenance, and inspection. New construction may require an environmental clearance. Section 404 and 401 certifications may be required for this activity. Coordinate with the DEC to determine applicability.

Do

- Report any illicit discharges or connections observed during normal activities to DEC and OES.
- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Stabilize exposed soil per ADOT specifications.
- Seed and mulch any disturbed areas along stream banks per ADOT specifications.
- Store waste collected from cleaning activities in appropriate containers to prevent discharge to storm drain inlets or watercourses.
- Dewater waste with outflow directed into or vacuumed into a tank for proper disposal.
- Post visible signs where needed to prevent contaminants from being released to stormwater.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.

Don't

- Remove vegetation along stream banks, such as trees and bushes.
- Place equipment in the wash; an alternative is to place equipment on the bank.
- Undercut the stream bank.
- Pile wastes along stream banks.
- Discharge water near a storm drain inlet or watercourse.

Maintain

- Drainage structures in good condition with unobstructed watercourse.

Inspect

- Culverts and watercourses for debris and to determine whether maintenance is needed.
- Problem areas where discharges or probable illicit connections may occur.

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PROGRAM 2 – SITES, YARDS, AND GROUNDS

Activity 2.5 – Fence Work

Description

Fence and gate installations and repairs.

Applications and Limitations

Determine the best equipment access route to cause the least soil impacts to site. Use rubber-tired equipment to minimize soil crust damage. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Implement Good Housekeeping BMPs (refer to Chapter 4, Program 8 BMPs).
- Review and implement the ADOT "Vegetation Management Guidelines" (refer to Appendix D).
- Stabilize exposed soils as appropriate.
- Select and use equipment that causes the least amount of ground disturbance.
- Evaluate need for installation of perimeter controls (e.g., silt fences, berms).
- Follow Chapter 3, Program 6, Activity 6.10 for concrete (Portland cement).
- Properly dispose of waste materials (refer to Chapter 3, Program 7 BMPs).

Don't

- Dispose of concrete waste improperly.
- Track sediment or other materials onto roadways.

Maintain

- A clean and orderly work area.

Inspect

- For spills and waste materials following completion of work.

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PROGRAM 2 – SITES, YARDS, AND GROUNDS

Activity 2.6 – Sediment Control – Track-in/Track-out

Description

Management of mud and dirt tracked out of, or brought into, facilities via tires and undercarriages of vehicles and equipment.

Applications and Limitations

Whenever traffic will be leaving a facility and moving directly onto a public road or paved area. Refer to the ADOT *Erosion and Pollution Control Manual for Highway Design and Construction 5.5.1.* A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Plan the traffic pattern and construct entrances on level ground with drainage directed back to the facility.
- Sweep or vacuum facility grounds to remove any accumulated pollutants that might be picked up by vehicles and equipment.
- Install track-out protection at facility exits or use rubberized or metal mats where appropriate (unpaved).
- Clean vehicles at designated washing facilities to reduce potential transport of invasive plant species.

Don't

- Allow tire and wheel wash waters to leave the containment area.

Maintain

- Gravel mat by replacing top dressing with additional stone when surface voids are no longer visible.
- Sediment traps to ensure sediment is removed.

Inspect

- Vehicles and equipment for dirt and mud.
- Paved areas and public roads at entrances/exits.

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PROGRAM 3 – GENERAL AUTOMOTIVE ACTIVITIES

Activity 3.0 – Fueling Stations

Description

Proper handling of automotive fuels.

Note: Additional guidance on fueling may be found in the ADOT *Equipment Services BMP Manual.*

Applications and Limitations

Applies to all temporary and permanent fuel facilities located on facilities or yards. This activity may require a Spill Prevention Control and Countermeasure Plan or Underground Tank Registration. Coordinate with DEC for applicability.

Do

- Use safe handling techniques, prevent spills on ground.
- Clean up any small/normal fueling spills as soon as possible. Any large spills must be reported to ADOT Fuel Systems Management for cleanup evaluation (refer to Chapter 4, Program 9 BMPs).
- Locate aboveground tanks within secondary containment or use double-walled tanks.
- Install overflow protection on all tanks, and underground tanks should have corrosion protection.
- Ensure the fueling station is covered.
- Lock drain valves at all times. Facility managers and ADOT Fuel Systems Management will have keys. Any time an area is drained, ADOT Fuel Systems Management must be contacted first to evaluate process.
- Test emergency shutoff systems according to established schedules.
- Monitor tanks when fueling or filling.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Consider installing perimeter controls around fueling area.
- Keep small spill control cleanup kits at each fueling location.
- Report all drips or seeps in lines, on filters, or around pumps to the Fuel Management Group.
- Keep Fuel Management Group phone numbers posted at fueling locations.

Don't

- Leave vehicle unattended when fueling.
- Wash spills off with water.
- Top off.

Maintain

- Fuel inventory.
- Spill Prevention Control and Countermeasure Plan.
- Spill control kits on hand at all fueling locations.

Inspect

- For spill residues in secondary containment and remove if present (refer to Chapter 3, Program 7 BMPs).
- Tanks, piping, containment basins, and drip pans for any possible leaks, spills, or signs of corrosion.
- Adjacent drainage areas for evidence of fuel activity impact.

PROGRAM 3 – GENERAL AUTOMOTIVE ACTIVITIES

Activity 3.1 – Outdoor Vehicle and Equipment Storage

Description

This section describes BMPs for control of runoff of oils and grease from ADOT equipment and vehicles that are stored outside. For general parking lot BMPs, refer to Chapter 3, Program 2, Activity 2.0.

Applications and Limitations

Applies to all ADOT heavy equipment storage.

Do

- Designate a vehicle storage area, preferably with an impervious surface.
- Install perimeter controls such as berms or curbs.
- Design for maximum on-site retention of stormwater in equipment storage areas.
- Install storm drain inlet protection if storm drains are located in the equipment storage area.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Remove any debris from covered storm drain inlets on a regular basis.
- Consider removal of storm drains in favor of on-site retention or diversion to a pre-treatment device such as an oil/water separator. This is especially important if the storm drain ultimately empties to a Water of the US or MS4.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Sweep paved parking areas on an established schedule.
- Conduct preventive maintenance on all vehicles to prevent fluid leaks.
- Place drip pans under vehicles or equipment.
- Direct sheet flow runoff to a vegetative buffer, dry swale, or riprap area if area is not bermed or curbed.

Don't

- Store vehicles just anywhere on your site.

Maintain

- All vehicles in clean and good working order.
- Vehicles and equipment away from storm drains and watercourses.
- Broken down and unused vehicles by returning them to working service, if practicable. Disabled vehicles left unattended and unmaintained may eventually leak automotive fluids.
- Spill kits in close proximity that include drip pans.

Inspect

- Storm drains after each precipitation event. Cleaning should occur on an as-needed basis.
- Storage area weekly to ensure that no significant leaks have occurred. If spills are discovered, clean up spilled material, dispose of properly, and place a drip pan under vehicle or equipment until it can be repaired (refer to Chapter 4, Program 9 BMPs).

PROGRAM 3 – GENERAL AUTOMOTIVE ACTIVITIES

Activity 3.2 – Vehicle Fluid Management

Description

Vehicle fluids such as oils, lubricants, and antifreeze can be discharged from hose ruptures, container leaks, hydraulic leaks, or accidents. This section describes BMPs to remedy vehicle leaks and manage discharged fluids.

Applications and Limitations

Routine vehicle fluid replacement is addressed in the ADOT *Equipment Services BMP Manual*.

Do

- Install storm drain inlet protection immediately, as necessary:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, stone filters, or petrochemical absorbent materials, etc., to keep sediment and vehicle fluids out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained, evaporated, or been otherwise controlled.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Drain fluids from disabled or stored vehicles as soon as possible to prevent leaks and spills.
- Clean up any vehicle fluids on the paved surfaces with dry absorbents or rags. Properly dispose of cleanup materials (refer to Chapter 3, Program 7 BMPs).
- Transfer any fluids from drip pans or collection devices to designated waste storage areas.
- Store vehicle fluids in separate, clearly identified, sealed, and leakproof containers in designated areas, away from storm drains.
- Manage and dispose of antifreeze, used oil, and used solvents (refer to Chapter 3, Program 7 BMPs).

Don't

- Mix leaking fluids from vehicles. Mixing can contaminate the fluids and turn it all into hazardous waste.
- Store waste fluids on-site beyond 30 days.

Maintain

- A properly contained and marked recycling or collection site for used oils, antifreeze, and lubricants.

Inspect

- Vehicle and equipment storage areas for evidence of leaks.

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PROGRAM 3 – GENERAL AUTOMOTIVE ACTIVITIES

Activity 3.3 – Vehicle/Equipment Wash Facilities

Description

Reduce pollutants from vehicle washing to protect storm drains and watercourses. Recycle or properly treat all wash water.

Applications and Limitations

Pollutants such as detergents and dirty wash water must be prevented from directly discharging to watercourses and storm drains. Discharges to sanitary sewers require a pre-treatment permit from the affected municipality.

Do

- Wash equipment only in designated, contained areas with impervious surfaces or off-site at commercial facilities.
- Discharge into a permitted sanitary sewer, recycle system, or other similarly approved discharge system.
- Use an oil/water separator or similar treatment system to remove oil, grease, and solids when discharging to the sanitary sewer. Use of oil/water separators may have special discharge requirements.
- Use phosphate-free biodegradable soaps and detergents.
- Store soaps/detergents in contained area.
- Use a spray nozzle, pressure washer, or rinse bucket to conserve water and minimize discharge water.
- Use as little water as possible to avoid having to install erosion and sediment controls for the wash area.
- Cover wash slabs to prevent precipitation from entering the wash water facility.

Don't

- Permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations.
- Discharge into the storm drainage system, septic systems, watercourses, or groundwater.

Maintain

- Drains to prevent them from becoming clogged with sand, grit, or other materials.
- On-site wash facilities to prevent the accumulation of trash and debris.
- Oil/water separator. Schedule regular servicing intervals and maintain associated records.

Inspect

- Washing area and all water treatment equipment.
- Soap/detergent containers and storage areas for leaks/spills.

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PROGRAM 4 – SEWERAGE FACILITIES

Activity 4.0 – Sewer Systems, Septic Systems, and Portable Toilets

Description

Prevent the discharge of pollutants from sanitary and septic waste to stormwater systems and natural watercourses. Provide convenient and well-maintained restroom facilities or portable toilets. Seek permanent connections to the sanitary sewer system or schedule for regular service and disposal when practicable. Such management practice will significantly reduce unwanted nutrients, bacteria, and viruses, and oxygen-demanding substances to land and water surfaces.

Applications and Limitations

Sanitary or septic waste should be treated or disposed of through municipal or state-approved sewage disposal systems, where feasible. If discharging to a sanitary sewer, contact the local wastewater treatment plant for their requirements and necessary pretreatment permits.

Do

- Arrange for regular or emergency waste collection by a licensed hauler to prevent facilities from overflowing.
- Locate sanitary facilities away from storm drains and watercourses.
- Treat waste from temporary septic systems to appropriate regulatory standards before discharging or collection.
- Ensure that excessive chlorine does not leave ADOT property. Contain any super-chlorinated water (above 1 ppm) until chlorine values have dissipated below 1 ppm before discharge to a sanitary sewer.
- Avoid illicit discharges by properly disconnecting temporary sanitary facilities that discharge to sanitary sewer systems.
- Equip waste transport vehicles with anti-spill devices and equipment.
- Secure portable toilets to prevent tipping over of contents.
- Have leasing company dispose of portable toilet waste into sanitary sewer.
- Immediately report contractor spills of sewage or cleaning solution of portable toilets to the maintenance supervisor or the yard supervisor as necessary for a proper response.
- Ensure that any spills or overflows of raw sewage are immediately contained and properly disposed of to the sanitary sewer or septic tank. Advise/consult ADOT Water/Wastewater Manager as needed (refer to Chapter 4, Program 9 BMPs). Advise DEC and OES as necessary.
- Develop and document a regular pumping schedule (3–5 years) for all septic systems to prevent failure of the leach fields.

Don't

- Track sanitary or other wastes off-site.
- Discharge toxic or hazardous wastes to drain fields, dry wells, cesspools, pits, storm drains, sewers, surface waters, or septic tanks.
- Locate portable toilets in or near a watercourse, storm drain inlet, or dry well.
- Discharge maintenance yard wastewater to a septic system.
- Discharge or bury untreated raw wastewater; this is a violation of federal and state law.

Maintain

- Sanitary/septic facilities in good working order.

Inspect

- Leach fields, evapotranspiration beds, and other waste management areas for spills, leaks, or evidence of failure.
- For leaks or conditions that could lead to a discharge of chemicals or contact of stormwater; stop any liquids from moving off ADOT property; advise/consult ADOT Water/Wastewater Manager/OES and DEC as needed.

PROGRAM 5 – WATER SYSTEMS

Activity 5.0 – Potable Water Supply Systems and Waterline Testing

Description

New potable waterlines are often flushed with "super-chlorinated" water – water that is treated at a higher-than-normal dosage of chlorine. Such chlorinated water is very harmful to aquatic life. This BMP prohibits off-site discharge of these waters unless dechlorinated below applicable discharge standards.

Applications and Limitations

If water will be discharged to a Water of the US or an MS4, a De Minimus General Permit or an APP General Permit from ADEQ will be necessary. Coordinate with the DEC for applicability.

Do

- Install storm drain inlet protection, as necessary, prior to commencing activities:
  - Block nearby storm drain inlets by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Ensure that excessive chlorine does not leave ADOT property; contain any super-chlorinated water (above 1 ppm) until chlorine values have dissipated below 1 ppm before discharge to a sanitary sewer.
- Use impermeable impoundments to control water collection and to protect areas of environmental importance.
- Promptly repair any leaks in water supply lines to prevent excessive surface erosion.
- Sweep loose soil/sediment after repair is complete.

Don't

- Contaminate discharge water with any chemicals other than chlorine.
- Discharge super-chlorinated water to septic systems, surface water, storm drains, and watercourses.

Maintain

- Waterline to avoid leaks that cause surface erosion or discharges to surface water and watercourses.

Inspect

- Lines and pump stations for leaks.

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PROGRAM 5 – WATER SYSTEMS

Activity 5.1 – Well Development and Maintenance

Description

Discharges of water used in the process of drilling, developing, and repairing wells.

Applications and Limitations

All well development operations will be performed under the direct and personal supervision of an Arizona-licensed well driller with a Registrar of Contractor License type A, A-4, A-16, or L-53. Well construction will also comply with the guidelines of the ADEQ Engineering Bulletin No. 10 (1978), Arizona APP Program Type I General Permits for Well Development (A.A.C. R-9-B301), AZCGP (Permit No. AZG2003-001, 2003), the AZPDES General Permit for Wastewater Discharges That Pose a Limited or Insignificant (De Minimus) Threat to Water Quality (Permit No. AZG2004-001, 2004) (AZ De Minimus Permit), and all other applicable federal, state, county, or local regulations. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with DEC for applicability. If more than 1 acre (cumulative, including site access roads) is disturbed for new construction or for routine maintenance activities with cumulative disturbance 5 or more acres, prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

Photo courtesy of http://groundwater.ucdavis.edu/Publications/Harter_FWQFS_8086.pdf.

- Obtain blue stake clearance prior to any excavations or borehole construction.
- Control site to ensure no contaminated water leaves ADOT property; water may or may not be potable and may contain drilling lubricants.
- Discharge water pumped from the well during drilling, sampling, and development operations at the well site. The discharge site must be to the same aquifer in approximately the same location from which the water supply was originally withdrawn.
- Prepare a discharge monitoring and a BMP Plan, if required under the terms and conditions of the AZ De Minimus Permit.
- Place a plastic tarp beneath the drilling rig during mobilization to protect the site from oil or hydraulic fluid spills or leaks; the tarp must remain beneath the rig until demobilization (refer to Chapter 4, Program 9 BMPs).
- Treat compressed air introduced into the well during drilling, sampling, or well development by passage through a carbon or coalescing filter to remove organic contaminants.
- Use aboveground tanks during drilling and construction phases of the project. During drilling, the aboveground tanks will be emptied of cuttings at necessary intervals. Cuttings will be placed on a liner with absorbent socks surrounding the pile of cuttings. Temporary berms may be required to contain fluids and cuttings. Maintain temporary berms and other controls to prevent discharge from occurring.
- Spread bore cuttings evenly in a thin layer at the well site such that they do not pose a threat to the existing vegetation or drainage.

- Remove all debris, waste, trash, and unused materials or supplies and all temporary construction facilities such as temporary work areas, temporary structures, and berms.
- Obliterate stockpiles of excess or waste material and restore the site, as nearly as possible, to its preconstruction condition and natural grade after completion of the work.
- Stabilize exposed soils after completion per ADOT specifications.
- Ensure that all well registration and repair forms are properly filed with the Arizona Department of Water Resources.
- Use impermeable impoundments to control fluids and protect areas of environmental importance.

Don't

- Use earthen mud pits during the drilling and construction phase of the project.
- Cause damage to property, contaminate wells, discharge to any surface watercourse, or create an environmental or other nuisance during development and maintenance operations.

Maintain

- Limited site access with fences and locking gates.
- Erosion control (e.g., gated irrigation pipe, splash plate, or riprap) at the point of discharge to prevent scouring, as needed.
- A record of well development and repair, including well registration.

Inspect

- For waste and unused materials and cleanup once development or repair work is completed.

PROGRAM 5 – WATER SYSTEMS

Activity 5.2 – Landscape Irrigation

Description

Maintenance of water systems used for landscaping.

Applications and Limitations

Water may be potable or non-potable. Used/reclaimed water may require additional permitting. Coordinate with DEC for applicability.

Do

- Schedule immediate repair of any erosion resulting from leaks or improperly leaking equipment.
- Properly dispose of replaced and excess materials.
- Restore ground surface to its original design condition as soon as possible.
- Minimize exposure to non-potable water.

Don't

- Overirrigate or overspray.

Maintain

- Lines and sprinkler heads.

Inspect

- For leaks and promptly schedule repairs.
- For spray patterns and timing.
- For site erosion.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.0 – Paint Storage and Handling

Description

Proper storage and handling practices for latex and oil-based paint, pavement marking products, and aerosol paint cans.

Applications and Limitations

See Chapter 3, Program 6, Activity 6.1 for storage and handling requirements for epoxies and solvents.

Do

- Minimize the inventory of paints (refer to Chapter 4, Program 8 BMPs).
- Designate paint storage areas. Store paints indoors or in covered areas. Storage areas should be secure to discourage theft and vandalism. Store flammable and combustible products in approved storage cabinets.
- Provide secondary containment in the storage area.
- Locate storage areas away from floor drains, storm drain inlets and watercourses.
- Store paints in their original containers or in other compatible containers that are clearly labeled.
- Use refillable spray bottles such as metal bottles that use compressed air or plastic bottles with hand pumps for paint spraying whenever possible.
- Use the entire aerosol spray can before starting a new one.
- Use all paint in cans and other containers and allow them to dry before disposal.
- Use funnels and pumps to minimize spills during refilling.
- Block all drains in the vicinity during any loading or mixing activities.
- Immediately clean up any spill (refer to Chapter 4, Program 9 BMPs).
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Refer to Chapter 3, Program 7 BMPs for proper paint and aerosol can disposal.

Don't

- Hose down spills or work areas.

Maintain

- MSDSs on all products and make sure employees know the location of the MSDSs for the products they use.
- Spill kits in close proximity (refer to Chapter 4, Program 9 BMPs).

Inspect

- Monthly for leaks, spills, or signs of container deterioration.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.1 – Storage and Handling of Chemicals

Description

Proper storage and handling of various hazardous and non-hazardous chemicals in small containers or drums (solvents such as coil cleaners, lubricants, spray adhesives such as epoxies, etc., or water treatment chemicals such as corrosion prevention chemicals for coolers, chillers, and boilers).

Applications and Limitations

Space limitations or site constraints may preclude permanent indoor storage of 55-gallon barrels or larger containers. If stored outside, materials must be stored under cover and contained.

Do

- Designate storage areas and bulk dispensing areas where transfers to smaller containers are made.
- Minimize the inventory of all chemicals (refer to Chapter 4, Program 8 BMPs).
- Substitute less or non-toxic materials for toxic materials (refer to Chapter 4, Program 8 BMPs).
- Consult the MSDS or label for specific handling instructions.
- Store material away from high-traffic areas in a designated and secured indoor or covered storage area.
- Locate storage areas away from floor drains, storm drain inlets, and watercourses.
- Provide secondary containment in the storage area.
- Store incompatible materials separately.
- Store material in its original container or clearly label any subsequent container.
- Keep the container closed when material is not being used.
- Immediately clean up any spill (refer to Chapter 4, Program 9 BMPs).
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Refer to Chapter 3, Program 7, Activity 7.7 for proper chemical disposal.

Don't

- Mix chemicals.

Maintain

- MSDSs and a current inventory of chemicals located within the facility.
- Spill kits in close proximity (refer to Chapter 4, Program 9 BMPs).

Inspect

- Monthly for leaks, spills, or signs of container deterioration.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.2 – Storage of Pesticides and Herbicides

Description

Promote efficient and safe housekeeping practices (storage, use, and cleanup) when handling potentially harmful materials such as herbicides and pesticides.

Applications and Limitations

Pesticides include insecticides, nematocides, and any product intended for preventing, destroying, repelling, or mitigating pests. Herbicides include defoliants, pre-emergents, dessicants, fungicides, and any products used for plant regulation and control. These materials may only be handled by Structural Pest Control Commission–licensed applicators. Store all pesticides in a secure area under a roof or protective cover. Use a sealed containment floor or spill containment pallets.

Do

- Designate mixing and storage areas.
- Minimize the inventory of pesticides, herbicides, and chemicals as much as possible by reclaiming and/or reusing process materials (refer to Chapter 4, Program 8 BMPs).
- Purchase returnable or refillable containers and mix only the amount of material to be used in one shift.
- Dispose and exchange any surplus material through an ADOT-approved vendor.
- Store all pesticides in a secure area under a roof or protective cover. Use a sealed containment floor or spill containment pallets.
- Consult the MSDS or label for specific handling instructions.
- Post an employee MSDS Right-to-Know Information Center by or on the storage buildings or storage modules used for pesticide storage.
- Require the office responsible for storage and handling of pesticides at the facility to have up-to-date MSDSs in that office for emergency response personnel.
- Place a warning placard on each building or storage module containing pesticides or chemicals in accordance with Structural Pest Control Commission rules. Use the National Fire Protection Association coding system for those materials being stored.
- Stay away from storm drain inlets, watercourses, and sensitive waters when handling pesticides.
- Rotate pesticide material stocks.
- Designate a spill response team; train team in spill response plan.
- Use safety measures when spill and leaks occur per MSDSs.
- Notify the Yard Supervisor, DEC, and OES in case of a reportable spill.
- Evaluate whether the spill response plan was successful or unsuccessful and how it can be improved following any spills.
- Ensure mixing sites are site-specific, are contained, and have water present.

Don't

- Clean equipment containing pesticides and herbicides in an uncontained area or near storm drains or dry wells.

Maintain

- Spill response drums or have kits available at storage sites (refer to Chapter 4, Program 9 BMPs).

Inspect

- Pesticide and herbicide storage facilities for leaking containers or broken bags or boxes.
- Pesticide and herbicide mixing areas for leaking or broken containers.

PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.3 – Liquid and Solid Deicer Management

Description

This activity applies at all facilities where liquid and solid deicer materials are stored or inventoried and where snow is disposed of (dumped after transport from its original location). Proper handling of liquid deicers (e.g., liquid magnesium chloride) and solid deicers (e.g., salt, sand, and cinders) is required.

Applications and Limitations

Bulk deicer material must be stored on impervious, contained pads and not allowed to migrate off-site. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Designate storage areas away from storm drains and watercourses.
- Use safe handling techniques. Prevent spills on ground.
- Clean up any spills as soon as possible.
- Sweep any salt and sand material spilled during loading/unloading back into the storage building immediately.
- Cover salt, preferably in a permanent, roofed structure, to prevent precipitation from reaching it. If this is not feasible, the next best solution is a waterproof covering that is weighted and tied down.
- Close structure doors when loading/unloading is not taking place, including intervals between multiple loading operations.
- Store salt on an impermeable pad, not on the ground. Asphalt is the most widely used material for pads because salt has little effect on it. However, concrete is sometimes used. Concrete must be high-quality, air-entrained, and treated with linseed oil or asphalt-type coatings to reduce chloride penetration and prevent scaling or spalling (i.e., flaking).
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Enclose area or build berms or curbs around stockpile loading and unloading areas. Stormwater should not be allowed to contact and leach any contaminants out of the materials and off ADOT property (refer to Chapter 3, Program 6, Activity 6.6 for material stockpiles).
- Storage pads should slope to let water drain away. The water should be channeled to a collection point or sump on ADOT property via ditches, pipes, or tile. The collection point or sump must only contain salt water (no additional contaminants from the maintenance yard).
- Transfer, use, and store deicing materials only in paved areas.
- Minimize generation of dust.

- Minimize track-out of stockpile materials to other areas of the site during load-out by installing track-out controls.
- Reapply brine held in the collection point or sump to the stockpile, applied to spreader loads prior to applications, or sent to a wastewater treatment plant for disposal.

Don't

- Dispose of salt brine or liquid deicer into a septic system or sanitary sewer.

Maintain

- Secondary containment for liquid deicer storage.
- A limited inventory of materials on-site to reduce the magnitude of potential spills and waste generation.

Inspect

- Pump and sump prior to precipitation. If sump is ½ full, pump solution out of sump into the holding tank, if applicable. Reapply to the stockpile or send to a wastewater treatment center for disposal.
- The holding tank and pump out if more than ⅔ full. Solution can be reapplied to the stockpile or sent to a wastewater treatment center for disposal.
- For spill residue in the secondary containment and remove if present (refer to Chapter 3, Program 7 BMPs).
- Containment basins and perimeter berms for any possible leaks or breaches.

PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.4 – Battery Storage

Description

Most new batteries are classified as hazardous materials because of the corrosive and/or toxic nature of their components. Five battery types are currently in use by ADOT:

- Car/motorcycle (lead-acid) batteries
- Alkaline batteries
- Non-alkaline rechargeable batteries such as nickel-cadmium (Ni-Cd); nickel metal hydride (Ni-MH), lithium ion (Li-ion)
- Button batteries
- Lithium batteries

Applications and Limitations

Batteries should be stored indoors.

Do

- Store all batteries away from drains in covered areas and off the natural ground.
- Use secondary containment for batteries.
- Place batteries into a suitable non-conductive container that is labeled with an accumulation start date.
- Store batteries in such a way as to prevent damage or discharge of any stored electrical energy. Immediately contain leaking or cracked batteries.
- Protect batteries from contact or damage from vehicles, carts, and equipment.
- Store small non-alkaline rechargeable batteries in designated marked containers.
- Cover battery terminals to prevent short-circuits that may generate heat or sparking.
- Secure the fill caps and vents in place or seal (i.e., taped or capped) to prevent leakage of the electrolyte for wet cell batteries,
- Refer to Chapter 3, Program 7, Activity 7.11 for spent battery disposal procedures.

Don't

- Store batteries for more than 1 year.
- Introduce the possibility of ignition materials in the areas around batteries.
- Assume any battery is completely dry. Take storage precautions even after the acid has been drained out.

Maintain

- Battery storage areas free of debris.
- Spill kits in close proximity to all battery storage areas.

Inspect

- Battery storage area for any leaks or cracked batteries.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.5 – Storage and Handling of Asphalt Paving Products

Description

Proper storage and handling of asphalt paving products, including emulsions, asphalt release agents, and rubber materials.

Applications and Limitations

This activity covers storage and handling of petroleum-based asphalt paving products. See Chapter 3, Program 6, Activities 6.6 and 6.7 for salvaged AC (millings) and pre-mix material.

Do

- Fill portable tanks at the vendor when feasible.
- Label containers with product and hazard information.
- Store products in designated, secured areas, protected from the weather and extreme heat, cold, or moisture.
- Store products away from floor drains, storm drain inlets, or watercourses.
- Store products on impervious surfaces with secondary containment, if feasible.
- Locate containers and tanks outside of high-traffic areas and protected from vehicle impacts.
- Close valves when not in use. Place drip pans under valves, if needed.
- Consider the use of an "environmentally friendly" biodegradable asphalt release agent such as soy and corn oil-based products (refer to Chapter 4, Program 8 BMPs).
- Handle open containers and product transfers in a manner to prevent spills by using tarps, drip pans, or other containments. Fluid transfers should be performed over an impervious surface, if possible.
- Immediately clean up any spills or leaks. Locate spill equipment in close proximity (refer to Chapter 4, Program 9 BMPs).

Don't

- Use diesel fuel as an asphalt release agent.

Maintain

- MSDSs on-site and ensure employees know the locations of the sheets.

Inspect

- The containment area and individual containers for evidence of leaks, spills, or other signs of deterioration.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.6 – Material Stockpile Management

Description

Haul and stockpile aggregate, chips, sand, salvaged AC pavement or cinders from a commercial source, crusher location, borrow pit or mixing table, and/or borrow from any undesignated source to a stockpile site.

Applications and Limitations

This activity applies to stockpiles located within the maintenance yard and at remote locations within the R/W. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Locate stockpiles away from yard perimeters, concentrated flows of stormwater, storm drains, and watercourses.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.
- Protect all stockpiles with a perimeter sediment barrier such as compacted earthen berms, concrete barriers, dikes, silt fences, or sandbag barriers. For semi-permanent stockpile sites, install permanent berms or curbs.
- Protect mixing tables from stormwater run-on using perimeter sediment barriers such as berms, barriers, or curbs.
- Check stockpiles after precipitation to ensure sediment is contained.
- Evaluate and assess potential wind erosion protection practices, such as spray crusting material or covers, based on wind conditions and/or regulatory requirements.
- Minimize track-out of stockpile materials to other areas of the site during load-out by installing track-out controls, if practicable.

Don't

- Stockpile at just any location. Consolidate stockpiles and manage inventories.
- Construct berms from unconsolidated stockpile material.

Maintain

- All temporary perimeter controls such as silt fences.

Inspect

- BMPs and make repairs, replacements, and/or modifications as needed if precipitation is predicted.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.7 – Storage and Handling of Pre-mix Material

Description

Mixing pads—windrow mineral aggregate, apply asphalt, and mix.

Applications and Limitations

Mixing pads should be located in designated, controlled sites such as yards or material sources. A track-out permit may be required for work in Maricopa, Pinal, and Pima counties (refer to Chapter 3, Program 2, Activity 2.6). Coordinate with the DEC for applicability.

Do

- Protect mixing tables from stormwater run-on using perimeter sediment barriers such as berms, barriers, or curbs.
- Locate stockpiles and mixing tables away from yard perimeters, concentrated flows of stormwater, storm drains, drainage courses, and watercourses.
- Locate stockpiles and mixing tables on an impervious surface.
- Limit exit and entry to the designated site to pre-mix handling equipment only.
- Minimize track-out of pre-mix materials to other areas of the site during mixing, loading, or unloading by cleaning exposed equipment prior to leaving the location and by not driving in the pre-mix material.

Don't

- Allow off-site migration of pre-mix material.

Maintain

- All site perimeters free from pre-mix migration.

Inspect

- The site perimeter barrier damage on completion of each mixing, loading, or unloading activity.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.8 – Storage and Handling of Bagged Bulk Materials

Description

Proper handling and storage of bagged bulk materials such as fertilizers, lime, and granular agents.

Applications and Limitations

Storage indoors is recommended.

Do

- Store materials in a designated secured area indoors or store outdoors in a covered area or on covered (tarp or sheeting) pallets.
- Store in original containers or other compatible containers or bags.
- Store dry products away from liquids.
- Store products away from the yard perimeter, concentrated flows of stormwater, watercourses, and floor drains.
- Minimize the generation of spillage by completely using the entire container or bag before opening another one.
- Clean up spills immediately using dry methods such as sweeping; use new product and reuse spilled material (refer to Chapter 4, Program 9 BMPs).
- Locate mixing and loading areas so spills can be contained.

Don't

- Hose down the storage site.
- Use equipment with the potential to puncture bags or boxes.

Maintain

- Spill control equipment in close proximity to the site.
- An orderly storage area.

Inspect

- For spills or damaged bags or boxes.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.9 – Storage and Handling of Construction Materials

Description

Proper handling and storage of construction materials such as beams, culverts, guardrail, non-treated lumber, signs, and concrete barriers.

Applications and Limitations

Proper, orderly storage of construction materials promotes good housekeeping practices and discourages creation of "boneyards."

Do

- Locate storage areas so that yard drainage is maintained and standing water does not accumulate and damage construction materials.
- Store materials in a designated area and in an orderly manner.
- Segregate materials by type for easy use.
- Reuse and recycle construction materials.
- Dispose of unwanted materials promptly.

Don't

- Bury unused construction materials on-site without a construction debris landfill permit.

Maintain

- Inventories and manage them to minimize time material is stored on-site.

Inspect

- For accumulation of unusable items.
- For deterioration and rust.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.10 – Concrete (Portland Cement) Management

Description

Prevent or reduce the discharge of pollutants to stormwater drains and watercourses from concrete waste by conducting truck and equipment washout in a designated area.

Applications and Limitations

This activity includes compliance with a general APP permit. Requirements are incorporated in the following BMPs.

Do

- Store dry and wet materials under cover, away from drainage areas.
- Collect and return sweepings from exposed aggregate concrete to correct stockpiles or dispose of as solid waste.
- Block all storm drain inlets and dry wells in the vicinity of the concrete activity.
- Designate concrete washout area.
- Dispose of washout within the fence post hole when cleaning small equipment such as buckets, wheelbarrows, or mixers.
- Ensure that washout materials are properly contained in concrete washout areas, including those generated by hand tools, mechanical mixers, and concrete delivery vehicles.
- Contain concrete washout in prefabricated containers or washout impoundments, which must meet the following criteria:
  - Clear vegetation, grub, and compact the soil base of the impoundment to uniform density not less than 95 percent. If the impoundment is located above grade, the berms or dikes are compacted to a uniform density of not less than 95 percent.
  - Line the impoundment with a synthetic liner at least 30 mm thick if groundwater is less than 20 feet below land surface.
  - Locate impoundment at least 50 feet from any storm drain inlet, dry well, open drainage facility, or watercourse and 100 feet from any water supply well.
  - Design and operate to maintain adequate impoundment freeboard to prevent overflow or discharge of wastewater.
  - Ensure that the impoundment receives only concrete washout wastewater.

Don't

- Mix excess amounts of concrete.
- Allow sweepings to be dumped into the street or storm drains.

Inspect

- Concrete washouts for leaks and adequate freeboard.
- Storage area for spills and damaged bags.

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PROGRAM 6 – MATERIAL-SPECIFIC HANDLING AND STORAGE

Activity 6.11 – Management of Treated Timbers

Description

Handling of timbers treated with creosote, pentachlorophenol, and chrominated copper arsenate to prevent leaching of contaminants to surface and groundwater.

Applications and Limitations

This activity prevents leaching of timber treatment chemicals onto the land surface in yards or facilities where the timbers are stored in large quantities.

Do

- Designate storage area.
- Keep quantities to a minimum.
- Reuse treated timbers that are in good condition, when possible.
- Use alternatives to treated timbers, such as steel and concrete, when working near watercourses.
- Store on pallets or on impervious surfaces.
- Cover timber.

Don't

- Store treated timbers in contact with the ground.
- Burn treated timbers or use them for mulch.

Maintain

- Timber stockpiles in an orderly manner.

Inspect

- For pooled water or poor drainage in storage area.

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PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

SOLID WASTE

Activity 7.0 – Solid Waste Storage and Disposal

Description

Prevent or reduce the discharge of pollutants to stormwater or watercourses by effective management of solid waste. Primary approaches include educating and training employees and subcontractors, emphasizing proper material use, source reduction, tracking waste generation and disposal practices, identifying and implementing proper material storage, recycling procedures, preventing stormwater contact and runoff from waste management areas, and ensuring good waste disposal procedures.

Applications and Limitations

This activity is not intended to address site assessments and pre-existing contamination on-site. This activity does not address facility or structure demolition activities such as asbestos removal. A licensed hazardous waste hauler must dispose of hazardous waste that cannot be reused or recycled.

Do

- Segregate wastes and maintain waste accumulation sites in an orderly manner.
- Recycle or reuse solid waste as much as possible.
- Use proper Dumpsters (plug drain holes) with lids.
- Bag waste and tie off.
- Keep lids closed on Dumpsters when not adding waste.
- Provide and maintain overhead coverage or tarps for materials not stored within a trash Dumpster.
- Locate waste storage areas away from the yard perimeter, concentrated flows of stormwater, drainage courses, watercourses, storm drains, or dry wells.
- Avoid overfilling Dumpsters, and keep area around containers clean.
- Ensure that only appropriate solid wastes are added to the solid waste container.
- Sweep up the area.
- Provide trash cans. Post visible "No dumping or littering" signs around the property.
- Dispose of damaged construction materials with no further value as solid waste.
- Have a licensed asbestos-handling firm evaluate damaged asbestos-containing concrete pipe for disposal. Contact ADOT Safety & Health and OES for assistance.
- Have Dumpsters cleaned at the leasing facility, if possible. If ADOT personnel must clean Dumpsters, wash at designated wash facilities equipped with oil/water separators that discharge to sanitary sewers.

Don't

- Bury wastes on-site.
- Overfill the containers.
- Hose down the site.

Maintain

- All trash containers in good condition. Replace as needed. Make sure that lids close.

Inspect

- Solid waste disposal site and containers for deterioration or spills.

PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

SOLID WASTE

Activity 7.1 – Construction Demolition and Debris Removal

Description

Disposition of debris from remodeling or construction, including concrete.

Applications and Limitations

Regulated materials produced from demolition or remodeling must be correctly disposed of by qualified ADOT personnel or contractors. Contact ADOT Safety and Health and OES for further guidance on asbestos-containing and other regulated material disposal. See also Chapters 6–8, *Demolition, Salvage, Asbestos/Abatement Procedures* of the ADOT *Right-of-Way Procedures Manual*, July 2006 for major demolition activities. If 1 acre or more is disturbed (and not fully contained), prepare a SWPPP and submit an NOI (refer to Chapter 1).

Do

- Contact OES to ensure National Emission Standards for Hazardous Air Pollutants (NESHAP) notification occurs, if applicable, prior to demolition.
- Evaluate the site prior to demolition activity to plan containment of potential sediment and other pollutant runoff.
- Construct trenches, berms, and other controls as applicable around the perimeter of the site to contain potential pollutants.
- Install storm drain inlet protection, as necessary, prior to commencing demolition activities:
  - Block nearby storm drain inlets and dry wells by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment or other contaminants out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained, evaporated, or been otherwise controlled.
  - Remove any debris from covered dry wells and storm drain inlets when the activity is complete.
- Evaluate concrete debris for asbestos content and other regulated materials. A regulated materials handling plan should be prepared.
- Properly dispose of construction waste in permitted construction debris landfills.

Don't

- Bury unused construction materials on-site without a construction debris landfill permit.
- Store or stockpile construction debris near stormwater flows, dry wells, storm drain inlets, or outfalls.

Maintain

- Perimeter controls.
- Regulated waste disposal paperwork on-site for a minimum of 3 years.

Inspect

- Work site continuously during demolition or remodeling to ensure proper disposal of wastes and maintenance of perimeter controls and containments.

PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

SOLID WASTE

Activity 7.2 – Highway Debris Management

Description

This activity is intended to address storing, using, and disposing of highway debris. Highway debris includes, but is not limited to, litter and trash; sweepings; cleanings from catch basins, sumps, or stormwater facilities; ditching materials; landslide debris; used sand and gravel; and asphalt grindings.

Applications and Limitations

It is recommended that each District develop a Highway Debris Management Plan for specific highway debris. These plans should identify how specific highway debris will be managed on the local level (designated landfills, waste stream profiles, and contacts, etc.). Site-specific waste management protocols should be included. The protocols should be developed and implemented with assistance from ADOT OES. Collected highway debris should be characterized prior to developing the plans. Products should be stored in designated areas in an orderly manner. Handle suspected blood-borne (visible blood) pathogen-containing debris and urine bottles according to ADOT Safety Exposure Control Policy SAF 3.01 (http://adotnet/divisions/ts/safety/About/Documents/exposureCont.pdf). Handle suspected methamphetamine waste in accordance with the Adopt-a-Highway Safety Briefing (http://www.azdot.gov/Highways/AdoptAHwy/Volunteer.asp).

Do

- Sort and characterize highway debris for potential pollutants if the material is being managed for reuse (e.g., fill, shoulder buildup, or grindings from removal of highway striping paint).
- Locate storage areas within the boundaries of the maintenance yard, stockpile site, or at other locations with written permission of the owner (i.e., lease or other agreement).
- Use trees or landscaping to screen highway debris from the public and minimize impacts on adjacent landowners, where available.
- Locate temporary storage piles away from storm drain inlets, dry wells, watercourses, and sensitive waters (refer to Chapter 4, Program 8 BMPs).
- Implement erosion control, pollution reduction, and/or sediment reduction measures where appropriate (refer to the ADOT *Erosion and Pollution Control Manual for Highway Design and Construction* for additional guidance).
- Store highway debris with known or suspected high levels of pollutants in a manner that protects the surrounding soil and watercourses (e.g., store material on plastic sheeting, paved surfaces, or under cover) prior to waste characterization. If the material is characterized as a hazardous waste, arrange proper containment and disposal.
- Manage hazardous materials or wastes by contracted professionals. Contact ADOT Health and Safety through the Traffic Operations Center for emergency or abandoned hazardous materials or waste issues.

- Screen litter and trash initially and remove items intended for disposal or recycling.
- Screen street sweepings and trash for regulated pollutants to be properly disposed of in a permitted landfill.
- Separate catch basin and culvert cleanings into solid and liquid components prior to disposal.
- Recycle brush and woody debris, including grass clippings, as per ADOT practices.
- Reuse sand and gravel from winter maintenance activities. Screening and/or washing may be needed prior to reuse. Quick pickup of used sand and gravel reduces the need for screening and washing.
- Dispose of used sand and gravel that is not actively managed for reuse at permitted waste management facilities.

Don't

- Store or stockpile highway debris near dry wells, storm drain inlets, watercourses, or areas of environmental importance.

Maintain

- Regulated waste disposal paperwork on-site for a minimum of 3 years.
- Perimeter and other stormwater controls.
- Debris stockpiles in an orderly manner.

Inspect

- Stockpile sites for highway debris, standing water, drainage problems, and pollutant generation.

PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.3 – Oily Waste Management

Description

Proper disposal of used oil products. Used oil products include the following:

- Spent industrial oil, including compressor, turbine, and bearing oil
- Spent hydraulic oils
- Spent lubricating fluids, which have been removed from the engine, crankcase, transmission, gearbox, power steering, power takeoff, or differential of automobiles, trucks, buses, heavy equipment, or machinery powered by internal combustion engines
- Used oil filters
- Used floor sweep

Note: Additional guidance on Used Oil Management may be found in the ADOT *Equipment Services BMP Manual.*

Applications and Limitations

This activity applies to uncontaminated oily wastes, which are considered non-hazardous wastes as long as they are not mixed with hazardous wastes and oil filters (except terne-plated filters, which are considered hazardous). When shipped off-site for recycling or refining using an ADOT-approved contractor, the shipment must be documented using a bill of lading.

Do

- Practice safe management of oily wastes. Wear protective equipment such as safety glasses and gloves.
- Place used oil into designated, labeled (Used Oil), non-leaking, rust-resistant, metal containers (e.g., steel drums) for accumulation. Secondary containment will be used. Always store used oil in secure areas safely away from workers and the environment.
- Locate storage areas indoors or under cover away from storm drains and watercourses.
- Require that the oil transfer area be on an impervious surface or that a tarp be placed on the ground to catch any spills.
- Minimize the amount of used oil produced. Consider filtering, separating, and reconditioning used oil to prolong its usable life.
- Purchase refined used oil products instead of virgin oil products.
- Recycle or reclaim the free-flowing used oil when changing equipment oil or recovering oil from spills such as hydraulic line leaks.
- Keep containers closed, except when adding or emptying. Use self-closing funnels to add material to waste containers.
- Hot-drain used oil filters and store for recycling in a separate, closed, labeled fireproof container away from storm drain inlets and watercourses (refer to the ADOT *Equipment Services BMP Manual* for hot-draining procedures).

- Remove all free-flowing oil to the used oil container. Rags and absorbents, including wash rack filters that are used to wipe up oil from equipment leaks or spills, are not subject to used oil and hazardous waste regulation if there is no visible free-flowing oil or hazardous substances present (refer to Chapter 3, Program 7, Activity 7.13).
- Retain all shipping and used oil testing records on-site and provide an electronic copy to OES.
- Clean up spills when and where they occur with dry methods.

Don't

- Mix used oil with anything. Used oil contaminated with hazardous substances becomes a hazardous waste.
- Dispose of oily or auto fluids in an oil/water separator, clarifier, septic tank, trash bin, storm drain, on the ground, in the water, at a landfill, or by open burning.
- Utilize used oil to control weeds or insect pests or to oil roads for dust control. Used oil should never be applied to the land surface or watercourses.

Maintain

- Spill kits in close proximity to all maintenance activities and chemical storage (refer to Chapter 4, Program 9 BMPs).

Inspect

- Oily waste storage areas for leaks and spills.

PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.4 – Oily Residues from Clarifiers and Oil/Water Separators

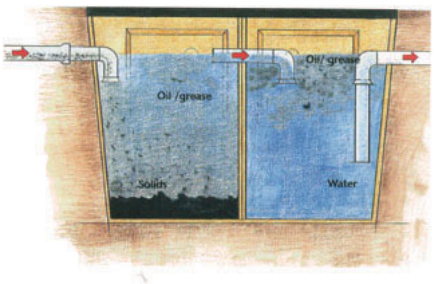
Description

Clarifiers are uncomplicated water treatment systems that separate sediments and floating oily liquids from wastewater. Clarifiers are used to pre-treat the wastewater from ADOT steam cleaning operations and vehicle wash-down areas before this waste is discharged to the sanitary sewer. Oil/water separators treat vehicle and floor wash water by allowing substances lighter than water to float and substances heavier than water to sink. Many oil/water separators also have baffles, coalescers, and oil skimmers to speed up or enhance separation of these substances.

Applications and Limitations

Refueling areas, washing facilities, parking lots, streets, driveways, and truck loading areas are potential sources for clarifiers and oil/water separators. Individual local sewer districts may require industrial wastewater discharge permits for discharges from this equipment. The residues from clarifiers and oils/water separators must be tested by an analytical laboratory to create a waste profile. Depending on the results, these residues may need to be managed as hazardous wastes because they may contain oil, grease, and heavy metals such as lead, zinc, and/or nickel. Removal by an ADOT-approved hazardous waste disposal firm may be required. A Uniform Hazardous Waste Manifest must be used to document the transportation.

Do



- Pump out clarifiers and oil/water separators at least annually or more frequently if required by local requirements. Document pumping activities.
- Clean up any spillage after clarifier and oil/water separator is pumped out.
- Use only floor wash-down or vehicle washing wastewater for oil/water separators. Oil/water separators must not be used to collect spills or concentrated wastes and should not be used to treat stormwater runoff.
- Minimize the amount of solids, oils, and wash water that enters the oil/water separator.
- Keep solids out of vehicle and floor wash water to reduce oil/water separator sludge. Install progressively finer grates and screens over the drains to the oil/water separator to maximize solids separation.
- Use oil-only absorbents to separate and recycle oil from the oil/water separator.
- Use microbes to digest oil in your oil/water separator, if recommended by manufacturer.
- Retain all waste profiles, laboratory results, and manifest records on-site. A copy must be sent to ADOT Environmental Fuel Systems and Scales Management.

Don't

- Wash with detergents.
- Discharge water treated with oil/water separators or clarifiers to a municipal sewer system unless the wastewater treatment plant or municipality has approved the disposal.

Maintain

- Proper water level in separators to prevent pass-through of oils and other floatables.

Inspect

- To ensure oil/water separators and clarifiers are functioning and measure the level of fullness to avoid reduced performance and discharges of untreated water into the sanitary sewer.
- If the clarifier is 75% or more full of accumulated sludge and oil residues, or if it appears it will achieve this level before the next monthly inspection, the clarifier will be pumped out.
- The clarifier will be pumped out promptly if it contains measurable floating hydrocarbons.

PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.5 – Waste Tires

Description

Proper management of used tires. Tires can be retreaded or reprocessed into rubber products, rubberized asphalt, or adhesives.

Applications and Limitations

This activity allows limited storage of waste tires (fewer than 100 tires) under controlled conditions only until the tires can be recycled or otherwise disposed of.

Do

- Designate storage away from storm drain inlets and watercourses.
- Recycle or dispose of scrap tires and tire materials to reduce the number of tires on-site. Establish a recycling pickup or disposal schedule.
- Store tires in one location on your property, preferably indoors. If you must store them outside, store them under cover and protected from the weather.
- Train employees in emergency response operations in case of a fire involving the scrap tires, paying particular attention to where firefighting runoff water will go.
- Install perimeter runoff controls if the storage area is located near the site perimeter.

Don't

- Store more than 100 waste tires or their equivalent in waste tire materials on the property at any one time. This will trigger additional regulatory requirements.
- Store tires in an area that is wet, oily, or greasy.
- Store tires near electric motors, other ozone-generating sources, or other potential sources of ignition.
- Store tires on black asphalt or similar heat-absorbent surfaces.
- Store tires on or adjacent to highly reflective surfaces such as sand or snow.
- Dispose of whole scrap tires in a landfill.

Maintain

- All records obtained from the registered scrap tire hauler and all records obtained from the disposal location.
- A fire lane around the pile.

Inspect

- The tire storage area for drainage problems.

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PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.6 – Dewatering of Material Containment Facilities and Structures

Description

Discharge of accumulated stormwater and sediments in scale pits, manholes, basins, vaults, containments, etc.

Applications and Limitations

Accumulated stormwater within containments may be discharged as long as it is tested by an authorized facility or environmental personnel first using a Spilfyter kit or similar test method to determine whether the containment water has been contaminated with substances other than stormwater. If the water fails the test, contact the DEC and OES.

Do

- Conduct field screening using Spilfyter or similar test method.
- Record test results in a log book.
- Retain discharge water, which has been tested by an authorized facility or environmental personnel and is within the allowable range, on ADOT property. The discharged water may be used to water landscape plants, large planters, and turf areas or it may be disposed of at on-site retention basins.
- Remove and replace contaminated oil-absorbent materials (pillows, donuts, etc.) to all scale containments during the routine 3-month scale certification inspection. Removed oil-absorbent materials will be stored in closed, marked containers until the annual waste disposal is scheduled, when they will be removed for disposal by an ADOT-approved waste disposal firm.

Don't

- Allow water to enter dry wells or storm drains.

Maintain

- All disposal and testing records on-site and provide an electronic copy to OES.
- Scale pits, storm drain inlets, basins, vaults, and containments free of debris and sediments.
- Oil-absorbent materials (pillows) in scale containments.

Inspect

- Containments to determine whether oil-absorbent materials should be replaced.
- Scale pits, storm drain inlets, basins, vaults, dry wells, and containments.

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PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.7 – Chemical Waste Disposal

Description

Disposal of spent chemicals. Spent chemicals can be categorized as either hazardous or non-hazardous waste.

Applications and Limitations

Waste profiles and disposal histories for generated waste streams should be updated and records retained on-site with an electronic copy sent to OES. New profiles should be developed for any new waste streams. The categorization is made by testing the waste product for hazardous characteristics or by referencing an MSDS to produce a waste profile for the specific waste. For example, you may use an MSDS that shows that the flashpoint of the substance is below 140 degrees Fahrenheit and is, therefore, hazardous for flammability.

Do

- Perform safe management practices for all chemical wastes. Wear protective equipment such as safety glasses and gloves. Follow MSDS or label directions.
- Consult the waste product waste profile (see description) to determine whether the waste product is hazardous or non-hazardous. If uncertain, contact OES for assistance. If the waste product is hazardous, contain the waste in a compatible container; label the container, and remove it to the hazardous waste containment area for disposal by a qualified ADOT hazardous materials contractor (notify the ADOT Yard Supervisor). The accumulation start date must also be clearly marked.
- Consider reuse, recycling, evaporation of the free liquid, disposal as solid waste, or disposal to the sanitary sewer system if the waste product is non-hazardous and approved or otherwise permitted by the municipal sewer system. Contact OES for further guidance as necessary.
- Implement Chapter 4, Program 8 BMPs to minimize the use of hazardous chemicals and to substitute non-hazardous chemicals for hazardous chemicals.
- Reuse and recycle solvents, paints, antifreeze, motor oil, water, and lubricants whenever possible and practicable.
- Segregate wastes. Combining different types of waste can be dangerous and will limit your recycling options.
- Keep containers that have wastes that could react with each other separated by a physical barrier, such as a dike, berm, or wall, or by a safe distance.
- Locate your waste storage site indoors or outdoors on a covered, impervious surface. Make sure your waste storage area is clearly marked.
- Evaluate the location of the waste storage area with respect to floor drains, storm drains, drywells, electrical service panels, heat sources, customer/employee walkways, building access/egress by the public, and physical damage such as that caused by forklifts or other equipment. Emphasize site security and protection from fire and vandalism.

- Provide secondary containment for all containers holding liquid wastes (110 percent of the volume of the largest single container).
- Keep adequate aisle space for unobstructed movement of emergency equipment and personnel.
- Store drums on pallets to facilitate inspections for leaks.
- Check all containers at least once a week to ensure that they are not leaking or rusting and that they have no bulges. Repair leaks immediately.
- Close all containers except when adding or removing waste.
- Empty all containers and send empty drums to the vendor for reconditioning.
- Only accumulate up to 2,200 pounds (5 drums) of hazardous waste on-site before arranging for disposal.
- Stop and contain the leak or spill immediately; repair or replace the container (refer to Chapter 4, Program 9 BMPs).
- Immediately protect floor drains, storm drains and dry wells from spills.

Don't

- Place incompatible chemical wastes that could react with each other in the same container.
- Mix other wastes with used oil.
- Dispose of any waste chemical products to storm drains, dry wells, sanitary sewers, or septic systems.

Maintain

- Clean and orderly waste storage areas.
- Spill response equipment in close proximity to the waste storage area.

Inspect

- Waste storage areas and containers for leaks.

PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.8 – Paint Disposal

Description

Proper management of used paint supplies.

Applications and Limitations

Oil-based paints, lead-based paints, and those containing solvents may be regulated as hazardous waste. Latex paints are considered non-hazardous (refer to Chapter 3, Program 6, Activity 6.0).

Do

- Consult the waste product Waste Profile to determine whether the paint is hazardous or non-hazardous. If the paint is hazardous, contain the waste paint in a compatible container, label the container, and remove it to the hazardous waste containment area for disposal by a qualified ADOT hazardous waste contractor (notify the ADOT Yard Supervisor). The accumulation start date must also be clearly marked. Air-drying of hazardous paint is not allowed.
- Store non-hazardous, unused paint in an open container until solid. Solid paint residue from non-lead-based paints may be disposed of as solid waste.
- Store all waste paint away from storm drains and watercourses.
- Store waste paint in secondary containment.
- Dispose of absorbents that have been used to clean up non-hazardous paints as solid waste.
- Filter and reuse thinners and solvents used for cleanup, if possible. Dispose of any residue as hazardous waste.
- Wipe non-hazardous (water-based latex) paints out of brushes and sprayers with absorbents. Rinse to sanitary sewer.
- Sweep up non-hazardous paint scrapings and sand blasting residue and dispose of as solid waste. Hazardous paint scrapings and sand blasting (including lead-based paint) must be disposed of as hazardous waste.

Don't

- Dispose of potentially hazardous paints or absorbents as solid waste.

Maintain

- Only enough paint in the facility inventory to meet immediate needs. Limit and control "special orders" of paints. Limit use of hazardous paints.
- Records of hazardous paint disposal.

Inspect

- Paint storage areas and completed work areas for discarded paint materials and leaks.

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PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.9 – Aerosol Can Disposal

Description

Proper disposal of aerosol cans.

Applications and Limitations

Identify materials that should be treated as hazardous or non-hazardous.

Do

- Consult the waste product waste profile to determine whether the waste product is hazardous or non-hazardous. If the waste product is hazardous, contain the waste product in a compatible container, label the container, and remove it to the hazardous waste containment area for disposal by a qualified ADOT hazardous materials contractor (notify the ADOT Yard Supervisor). The accumulation start date must also be clearly marked.
- Aspirate all propellant, or use an approved puncture system to empty spray cans. Spent aerosol cans that are not punctured or aspirated are considered partly full and must be disposed of as hazardous waste. Punctured or aspirated cans may be disposed of in the trash or recycled.
- Recycle empty, used aerosol cans that contained non-hazardous material.

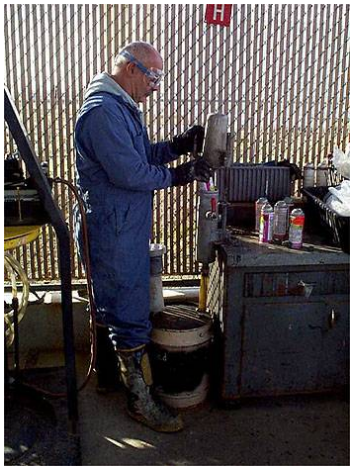

Photo courtesy of www.lakehurst.navy.mil.

Don't

- Throw spray cans into the trash if they contain ignitable or chlorinated solvents (like many older degreasers). These cans should be treated as hazardous waste.
- Throw broken or partially full spray cans in the trash. If a spray tip or any other item breaks or malfunctions, treat the can as hazardous waste.

Maintain

- Only enough paint in the facility inventory to meet immediate needs. Limit and control "special orders" of paints.
- Records of hazardous paint disposal.

Inspect

- Trash to confirm that all aerosol cans have been punctured and drained or aspirated.

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PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.10 – Electrical Waste Handling

Description

Proper management of used lamps, ballasts, mercury thermostats, and emergency lights.

Applications and Limitations

Fluorescent and other high-intensity discharge lamps and thermostats can contain mercury, cadmium, and lead that make these wastes regulated as "universal wastes." They must be recycled or sent for disposal to a regulated landfill under controlled conditions. Lamp ballasts may contain PCBs, which must be managed as hazardous waste.

Do

Photo courtesy of www.p2pays.org/mercury/lights.asp.

- Recycle these items to the extent possible.
- Contain the electrical waste in a compatible, covered container, label the container, and remove it to the hazardous or universal waste containment area for disposal by a qualified ADOT hazardous waste contractor. The accumulation start date must also be clearly marked.
- Provide spill kits near the containment area with materials capable of handling liquid mercury. Contact OES in case of a spill.
- Locate electrical waste containment areas indoors or in a covered area away from stormwater drains.
- Ensure safe storage and handling in a manner that avoids breakage.
- If bulbs are broken, isolate the area. Use proper protective equipment when cleaning up broken bulbs (gloves). Sweep broken materials into a container unless liquid mercury is present. Mercury beads must be pushed into a plastic dust pan and carefully transferred to an airtight plastic container. Remove all wastes to the waste containment area. Dispose of any contaminated cleanup materials with the broken bulbs. Ventilate the breakage area.

Don't

- Locate containers of regulated electrical wastes where they would be subject to damage and breakage.
- Handle mercury or PCB-containing wastes if not properly trained.

Maintain

- A clean and orderly waste storage area.
- Disposal records.

Inspect

- Waste storage area.

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PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.11 – Spent Battery Management

Description

Recycling and disposal of spent batteries and electrolyte.

Applications and Limitations

For large shipments of used batteries or electrolytes, refer to the ADOT *Equipment Services BMP Manual* and arrange shipment through an ADOT-approved battery transporter (refer to Chapter 3, Program 6, Activity 6.4 for battery storage).

Do

- Store in containments on an impervious surface, covered, and away from storm drains and watercourses.
- Recycle batteries of all types whenever feasible.
- Follow safety policies and procedures for working with batteries, including wearing the appropriate protective equipment, such as rubber gloves, aprons, overshoes, and splash-proof goggles to prevent exposure. Do not wear clothing that causes static electricity.
- Familiarize yourself with the locations and proper use of emergency equipment, especially eyewash and absorbents, prior to working with batteries.
- Package spent batteries in the cartons used from the shipment of the replacement cells.
- Cover battery terminals to prevent short-circuits that may generate heat or sparking.
- Secure in place or seal (i.e., taped or capped) the fill caps and vents to prevent leakage of the electrolyte for wet cell batteries.
- Place batteries into a suitable non-conductive container that is labeled with an accumulation start date.
- Use the services of an ADOT-approved contractor when electrolyte must be extracted from batteries. Electrolyte from oversized or damaged batteries must be drained as needed to facilitate their safe transportation. The electrolyte must be neutralized at a permitted hazardous waste treatment facility.
- Transport no more than 10 batteries at a time in a vehicle to an ADOT battery collection center.
- Physically separate batteries from other hazardous material being transported in the same vehicle.
- Block, brace, or otherwise secure any other material loaded in the same vehicle as batteries to prevent contact with, or damage to, batteries.

Don't

- Place batteries on the ground surface.

Maintain

- A used battery inventory with date of disposal.
- Spill kits in close proximity to all battery storage areas (refer to Chapter 4, Program 9 BMPs).

Inspect

- Batteries for cracks or damage before handling.

PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.12 – Used Antifreeze Handling

Description

Most antifreeze/coolant is made of water and ethylene or propylene glycol. Arizona classifies used antifreeze as non-hazardous waste if it is being recycled under controlled conditions.

Applications and Limitations

Antifreeze may be recycled in an on-site unit, a mobile collection unit, or removed for recycling by an approved ADOT contractor. A bill of lading or other shipping papers must be used to document the shipment of used antifreeze from the generating locations to a permitted recycling or treatment facility.

Do

- Designate storage area away from storm drains and watercourses.
- Place used antifreeze into a closed-top plastic or metal drum within secondary containment. Clearly label the outside of the drum (or secondary containment) with the words "Used Antifreeze."
- Keep the container closed at all times except when adding or emptying.
- Use self-closing funnels to add materials to waste containers.
- Clean up spills immediately.

Don't

- Mix used antifreeze with any other waste or chemicals, such as solvents, cooling system flushes, or oils.
- Dispose of used antifreeze to storm or floor drains.

Maintain

- On-site recycling units in good condition.
- Shipping records to demonstrate that your used antifreeze/coolant has been properly handled if shipped off-site.
- Spill response materials in close proximity to the storage area (refer to Chapter 4, Program 9 BMPs).

Inspect

- The used antifreeze storage area for leaks or spills.

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PROGRAM 7 – WASTE DISPOSAL AND DEBRIS MANAGEMENT

REGULATED WASTE

Activity 7.13 – Used Rags, Cloths, and Coveralls Disposal

Description

Disposal of fabric wipes, wash rack filters, and coveralls containing non-hazardous used oil and paints, etc.

Applications and Limitations

Fabric wipes, wash rack filters, and coveralls contaminated with non-hazardous chemicals or oily wastes may be managed as solid waste under controlled conditions.

Do

- Wring all free liquids from the fabric into the waste container for the waste product.
- Store soiled rags, cloths, filters, and coveralls in fire-resistant labeled containers away from storm drains, dry wells, floor drains, and watercourses.
- Evaluate using a recycling firm for laundering and returning rags.

Don't

- Mix solvents, antifreeze, caustics, or any other regulated chemicals in absorbents, filters, or rags.
- Dispose of rags with free liquid in container.

Maintain

- Storage area in a neat and orderly manner.

Inspect

- Used wipe and coverall storage areas to ensure proper containment of materials.

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Chapter 4

GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES

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PROGRAM 8 – GOOD HOUSEKEEPING PRACTICES

Activity 8.0 – Scheduling and Planning

Description

Reduce the discharge of pollutants to the storm drain system or to watercourses as a result of proper planning of maintenance activities.

Applications and Limitations

At a minimum, these BMPs should be used for all maintenance projects with the potential to release stormwater pollutants, especially those located in close proximity to areas of environmental importance.

Do

- Plan and schedule all maintenance activities in a manner that considers the use and installation of BMPs prior to the start of the activity. Recognize how the activity will affect stormwater so that the proper BMPs can be placed or used at the proper time.
- Plan ahead when working near storm drain inlets, dry wells, watercourses, and sensitive waters. They may need a higher level of awareness and protection.
- Locate and pre-treat invasive species before ground-disturbing activities. Locate staging areas and water access sites in weed-free areas. Inspect all equipment used in weed-infested areas and remove all attached plant/vegetation debris prior to leaving the maintenance site.
- Know where the flow of a leak, spill, or other runoff could go.
- Identify drain inlets, dry wells, and watercourses upstream and downstream of the work site.
- Clean all vehicles and equipment prior to the start of the activity and maintain in good operating condition.
- Designate areas for fueling and equipment repair away from storm drains and watercourses in accordance with Chapter 3, Program 3.0, Activities 3.0 and 3.1.
- Set up the work area to minimize the tracking of material by vehicles and equipment in or out of the work area.

Don't

- Forget to order BMP supplies well in advance of the project.
- Impact stormwater adversely by scheduling maintenance activities during the rainy season and prior to forecasted storm events.

Maintain

- Prescribed BMPs for all routine activities.

Inspect

- Site prior to starting the activity to ensure all BMPs are in place.
- Vehicles and equipment by performing a thorough pre-operational inspection.

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PROGRAM 8 – GOOD HOUSEKEEPING PRACTICES

Activity 8.1 – Preventive Maintenance

Description

Conduct routine maintenance on equipment and facilities to prevent deterioration from prolonged use or physically adverse conditions.

Applications and Limitations

Adhere to preventive maintenance schedules for specific equipment and facilities.

Do

- Ensure that any vehicles and equipment stored at the yard are working properly and are not leaking.
- Ensure that barriers, tarps, and any other physical structures are in place and functioning properly.
- Ensure that equipment, especially fuel-filled equipment and equipment that is used infrequently (e.g., generators and compressors), is working properly.
- Ensure that all erosion and sediment controls are clear of debris and functioning properly.
- Correct erosion and remove sedimentation in the early stages to prevent severe erosion and sediment accumulation.
- Install additional riprap or other erosion controls in areas exhibiting erosion.
- Obtain storm drain markers and properly sign all storm drain inlets and dry well grates in the vicinity, indicating that no dumping is allowed.

Don't

- Forget to prepare for seasonal weather conditions (precipitation) ahead of time.

Maintain

- Site perimeter controls.
- Limited site access with fences and locking gates.
- Aboveground storage tanks in proper working order.
- Fuel pumps and automatic shut valves in proper working order.
- Equipment in good repair way from storm drains and watercourses.

Inspect

- For leaks or conditions that could lead to a discharge of chemicals or stormwater contact with raw materials, intermediate materials, waste, waste materials, or products. Repair all leaks immediately.
- Check for spill residues in secondary containments and remove if present.
- Inspect, repair, and clean secondary containment systems, tanks, and piping.

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PROGRAM 8 – GOOD HOUSEKEEPING PRACTICES

Activity 8.2 – Product Substitution and Inventory Control

Description

A variety of products may be harmful to the environment. In some cases, a less harmful product, commonly referred to as a safer alternative product, can be used for the same purpose. Safer alternative products should be considered for all maintenance activities.

Applications and Limitations

All chemicals should be reviewed by ADOT Safety & Health before purchase for MSDS approval. Refer to Hazard Communication Policy, SAF-7.01 (http://adotnet/divisions/ts/safety/About/Documents/exposureCont.pdf) and the Approved Products List (http://www.azdot.gov/TPD/ATRC/PRIDE/apl.asp).

Do

- Inventory all products used at the maintenance yard and establish a list of approved products.
- Create a product use policy for contractors.
- Order only what is necessary.
- Buy reusable products and avoid disposable goods.
- Buy products that can be recycled.
- Research and test safer alternative products and recommend their use to the Yard Manager. Safer alternative products may be used for cleaning and painting products, herbicides, graffiti removers, automotive products, and fertilizers.
- Use biodegradable, phosphate-free, water-based cleaners.
- Use the materials according to the manufacturer's instructions and keep the materials out of the stormwater drainage system and watercourses.

Don't

- Allow contractors to use unapproved products or leave unapproved wastes.
- Allow the use of products that are not on the approved list, unless the product is being tested for use.

Maintain

- MSDSs and spill kits for all products used on-site.

Inspect

- For unapproved products.

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PROGRAM 8 – GOOD HOUSEKEEPING PRACTICES

Activity 8.3 – Training

Description

To provide employee training in appropriate stormwater pollution control practices that will influence employee behavior.

Applications and Limitations

Use any opportunity for training, not just formal instruction.

Do

- Train employees in the proper use and storage of supplies, chemical handling, waste reduction and management (pollution prevention), spill prevention, and spill cleanup.
- Document all your training, including dates, subjects, instructors, attendees, and copies of materials presented.
- Make sure employees know the location of the MSDSs and spill kits for all products they use. The employee should have the tools and knowledge to immediately begin cleaning up a small spill if one should occur.
- Walk your site and identify proper storage areas for supplies, hazardous waste, waste awaiting recycling, and regular waste. A weekly walk-through with employees can help identify potential difficulties before they become major problems.
- Use licensed personnel to apply pesticides and herbicides.
- Post visible signs and use policies (such as "Do Not Top Off" signs at gas pumps) to reinforce the spill prevention message.
- Conduct annual yard inspections assisted by Safety and Health and the DEC to proactively identify and plan for addressing areas of future training needs.
- Incorporate the results of routine inspections by ADOT Organizations in training programs and "tailgate briefings."

Don't

- Allow untrained personnel to conduct maintenance and waste disposal activities.

Maintain

- Accountability.
- Training records.

Inspect

- Training records and audit training classes.

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PROGRAM 9 – SPILL PREVENTION AND CONTROL

Activity 9.0 – Yard and Facility Spills

Description

Prevent or reduce the discharge of pollutants to stormwater from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

Applications and Limitations

The procedures presented in this activity are general. The maintenance yard manager will identify appropriate practices for specific materials used or stored at the project site.

Do

- Contain and clean up large spills by trained personnel. Contact your Hazmat Specialist, ADOT Safety & Health, or Fuels Management, if needed.
- If spilled material enters a storm drain, immediately notify the Yard or Facility Supervisor who will contact OES, ADOT Safety & Health, or Fuels Management, if needed.
- Post a spill response contact list near the spill cleanup material.
- Control any spills as soon as it is safe to do so.
- Transport collected materials back to a maintenance facility or approved storage or disposal site.
- Use drip pans and/or absorbent materials to contain leaks or spills of vehicle fluids.
- Install storm drain inlet protection, as necessary, immediately:
  - Block nearby storm drain inlets and dry wells by capping and covering with waterproof material or mats.
  - Use sand bags, sediment logs, filter fabric, gravel, or stone filters, etc., to keep sediment and other contaminants out of the storm drain system.
  - Leave covers in place until the activity is complete and until all water has drained or evaporated.
  - Remove any debris from covered storm drain inlets when the activity is complete.
- Use dry cleanup methods for pollutants whenever possible. If water must be used for spill cleanup and/or decontamination, contain the water used for spill cleanup and decontamination.
- Cover and protect pollutant spills from stormwater run-on to the extent cleanup activities and safety are not compromised.
- Follow this three-step process for small spills:
  - Clean up leaks with rags or absorbents.
  - Apply granular absorbent material (kitty litter) to pooled spills. Sweep up and dispose of as solid waste (trash) unless the material is hazardous.
  - Finally, mop the spill site with a damp mop, using no soap. Dispose of mop rinse-water into a sanitary sewer.

Don't

- Attempt to handle a large (requiring special equipment) or hazardous material spill of a material that you are not familiar with. Get help.
- Discharge water used for spill cleanup to septic systems, sanitary sewers, and watercourses.

Maintain

- Spill cleanup materials available at all sites.

Inspect

- All containments, containers, equipment, vehicles, etc., for potential leaks.

PROGRAM 9 – SPILL PREVENTION AND CONTROL

Activity 9.1 – Small Spill Response Procedures

Description

Prevent vehicle fluids such as oils, fuels, and antifreeze from entering drainages and shoulders during traffic incident responses. Proper containment and cleanup of spilled vehicle fluids will reduce the discharge of pollutants to the stormwater drainages.

Applications and Limitations

In general, this activity involves cleanup and treatment of small vehicle fluid spills resulting from accidents or from vehicle failures that do not require an emergency response. This activity does not include cleanup of hazardous materials or hazardous waste releases that would necessitate an emergency response and training beyond the scope of maintenance personnel. Contact ADOT Safety & Health through the Traffic Operations Center for assistance with emergency hazardous materials spills or releases.

Do

- Manage small spills with dry sweep procedures.
- Protect storm drain inlets from receiving fluids if safe to do so.
- Use sand, cinders, or other means to reduce mobility of fluids by covering, damming, diking, etc.
- Use brooms and non-sparking shovels to remove absorbent materials for disposal.
- Use spill control solution, such as Microblaze, if trained to do so and appropriate for the type of spill.
- Contact ADOT Safety & Health through the Traffic Operations Center if vehicle fluid spills require additional cleanup.
- Contact ADOT Safety & Health through the Traffic Operations Center for diesel saddle tank releases that require further cleanup.

Don't

- Use water to flush fluids off the roadway unless the runoff will be contained for removal and disposal.

Maintain

- All equipment by fueling, cleaning, and repairing equipment as necessary.

Inspect

- The area to determine whether additional cleanup will be required. Impacted soils may require additional cleanup activities.

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Appendix A

ABBREVIATIONS, ACRONYMS, AND DEFINITIONS OF TERMS

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A.A.C. **Arizona Administrative Code**
The *Arizona Administrative Code* is where the official rules of the state of Arizona are published. The A.A.C. is the official compilation of rules that govern state agencies, boards, and commissions.

AASHTO **American Association of State Highway Officials**
A nonprofit, nonpartisan association that represents highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico. AASHTO represents all five transportation modes: air, highways, public transportation, rail, and water.

AC **asphaltic concrete**
A mixture of bitumen (a product of the oil refinery process) and aggregates (coarse and fine, including sand). It is produced as Hot Mix or Cold Mix, and referred to as BC (bituminous concrete) or AC (asphaltic concrete).

ADEQ **Arizona Department of Environmental Quality**

ADOT **Arizona Department of Transportation**

APP **Aquifer Protection Permit**
A state-administered groundwater program in which an individual permit or a general permit (issued under Arizona Revised Statutes [A.R.S.] Sections 49-203, 49-241 through 49-252, and Articles 1, 2, and 3) is needed if you own or operate a facility that discharges a pollutant either directly to an aquifer or to the land surface or the vadose zone (the area between an aquifer and the land surface) in such a manner that there is a reasonable probability that the pollutant will reach an aquifer.

Area of Environmental Importance
Any spatial unit where planned management activities may result in adverse effects to its productivity and/or the environment with respect to its expected ecological, economic, and social functions, such as endangered species habitat (including critical habitat), cultural or historic properties, invasive species infestations, and water supply intakes.

A.R.S. **Arizona Revised Statutes**
The A.R.S. are the laws of Arizona.

ASLD **Arizona State Land Department**

AST **aboveground storage tank**
An aboveground storage tank or aboveground storage tank system (one or more devices, including any connected piping) of which the volume, including the volume of underground pipes, is 90% or more above the surface of the grade.

These tanks are used to store petroleum products, hazardous waste, or other hazardous material.

AZCGP **Arizona Construction General Permit**

This permit (No. AZG2003-001) provides authorization to discharge, for construction projects that disturb 1 or more acres, under the Arizona Pollutant Discharge Elimination System (AZPDES) program, in compliance with the provisions of the A.R.S., Title 49, Chapter 2, Article 31, the A.A.C., Title 18, Chapter 9, Articles 9 and 10 and the Clean Water Act (CWA) as amended (33 USC 1251 et seq.).

AZPDES **Arizona Pollutant Discharge Elimination System**

The state of Arizona program for wastewater and stormwater permits, and imposing and enforcing pretreatment requirements, incorporated by reference under the A.A.C. R18-9-A905.

BLM **Bureau of Land Management**

BMP **Best Management Practice**

Those methods, measures, or practices to prevent or reduce discharges; includes structural and nonstructural controls and operation and maintenance procedures. Best management practices may be applied before, during, and after discharges to reduce or eliminate the introduction of pollutants into receiving waters. Economic, institutional, and technical factors shall be considered in developing best management practices.

BMS **Biological Monitoring Sites**

Sampling stations in which water samples/biological specimens are collected and examined to determine water quality, biological diversity, and ecological health in a given area.

CFR **Code of Federal Regulations**

A codification of the final rules published daily in the Federal Register. Title 40 of the CFR contains the environmental regulations.

CGP **Construction General Permit (see AZCGP or FCGP)**

Contractor

The individual, partnership, firm, corporation, or any acceptable combination thereof, or joint venture, contracting with ADOT for performance of work (ADOT *Standard Specifications for Road and Bridge Construction*).

Corps **US Army Corps of Engineers**

CWA **Clean Water Act**

The CWA established the basic structure for regulating discharges of pollutants into Waters of the US. It gave the US Environmental Protection Agency (EPA) authority to implement pollution control programs such as establishing wastewater standards for industry. The CWA also continued the requirements to set water quality standards for all contaminants in surface waters. The CWA made it unlawful for any person to discharge any pollutant from a point source into Waters of the US, unless a permit was obtained under its provisions.

DEC **District Environmental Coordinator**

Discharge

Any release, spill, leak, pump, flow, escape, dumping, or disposal of any liquid, semisolid, or solid substance to Waters of the US from any point source.

Engineer

The State Engineer, acting by and under the authority of the laws of the State of Arizona, or the State Engineer's representatives in matters relating to contract development, administration, and construction activities (ADOT *Standard Specifications for Road and Bridge Construction*).

EPA **US Environmental Protection Agency**

Erosion

The wearing away of land surface, primarily by wind or water. Erosion occurs naturally as a result of weather or runoff, but can be intensified by clearing, grading, or excavating the land surface.

FCGP **Federal Construction General Permit**

This permit outlines a set of provisions construction operators must follow to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) stormwater regulations. The permit covers any site 1 acre or more, including smaller sites that are part of a larger common plan of development or sale. It replaces and updates previous EPA permits.

FHWA **Federal Highway Administration**

Final Stabilization

As defined in the CGP means that either:

1. All soil-disturbing activities at the site have been completed and either of the two following criteria are met:
    a. A uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas not covered by permanent structures, or

b. Equivalent permanent stabilization measures (e.g., the use of riprap, gabions, or geotextiles) have been employed.

2. When background native vegetation will cover less than 100% of the ground (e.g., arid areas, beaches), the 70% coverage criteria is adjusted as follows: if the native vegetation covers 50% of the ground, 70% of 50% would require 35% total cover for final stabilization. An area with no natural vegetation, no stabilization is required.

HVAC **Heating, Ventilating, and Air Conditioning**

Illicit Connection

Any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge

Any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES or AZPDES permit (other than the NPDES or AZPDES permit for discharges from the municipal storm sewer) and discharges resulting from firefighting activities.

Impaired Waters

A navigable water for which credible scientific data exist that satisfies the requirements of Section 49-232 and that demonstrates that the water should be identified pursuant to 33 USC Section 1313(d) and the regulations implementing that statute.

ISTEA **1991 Intermodal Surface Transportation Efficiency Act**

This federal government legislation reformed transportation planning in the US by providing greater planning and programming flexibility for local governments and a greater emphasis on multimodal planning.

MS4 **Municipal Separate Storm Sewer System**

A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned by a state, city, town, or other public body that is designed or used for collecting or conveying stormwater, that is not a combined sewer, and that is not part of a publicly owned treatment works [40 CFR 122.26(b)(8)].

MSDS **Material Safety Data Sheets**

A document that contains information on the potential health effects of exposure to chemicals or other potentially dangerous substances, and on safe working procedures when handling chemical products.

MSGP **Multi-sector General Permit**

An umbrella permit that may be issued by a state under EPA-delegated authority, in which certain Standard Industrial Classification industries may be granted a

permit to discharge stormwater in compliance with the regulatory provisions of the General Permit.

MVD **ADOT Motor Vehicles Division**

NFPA **National Fire Protection Association**

NOI **Notice of Intent**
Form completed and signed by a construction site operator or an industrial facility operator notifying EPA or ADEQ that the operator will comply with Arizona's or EPA's applicable stormwater general permits.

Non-additive Management Techniques
Winter storm management techniques implemented by ADOT to reduce potential impacts without compromising public safety. These measures include techniques such as installing snow fences, using traction devices on tires, using corrosive-resistant infrastructure materials, and better training for maintenance staff.

Non-point Source
These sources of pollutants come from nondiscrete discharges such as atmospheric deposition, contaminated sediment, and land uses that generate polluted runoff, such as agriculture, urban land development, forestry, construction, and on-site sewage disposal systems. Non-point source pollution also encompasses activities that either change the natural flow regime of a stream or wetland or result in habitat disturbance.

Non-stormwater Discharge
Any discharge to a storm drain system or receiving water that is not composed entirely of stormwater.

NOT **Notice of Termination**
A formal notice to EPA or ADEQ that a specific site permitted under the NPDES or AZPDES program is no longer discharging stormwater.

Not attaining Waters
A surface water that is not attaining its designated uses due to an impairment. See A.A.C. R18-11-104 for more information on designated uses.

NPDES **National Pollutant Discharge Elimination System**
The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 318, 402, and 405 of CWA.

NWP **Nationwide Permit**

OES **ADOT Office of Environmental Services**

Operator

Used to mean either ADOT alone or ADOT and the contractor in this manual.

PCB **Polychlorinated Biphenyls**

PCBs are mixtures of man-made chemicals with similar chemical structures. PCBs can range from oily liquids to waxy solids. Due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications. Concern over the toxicity and persistence in the environment of PCBs led Congress in 1976 to enact Section 6(e) of the Toxic Substances Control Act that included, among other things, prohibitions on the manufacture, processing, and distribution in commerce of PCBs.

PeCoS **Maintenance Performance Control System**

Maintenance planning and accounting system used by ADOT.

Permanent BMPs

BMPs that are installed during construction and are designed to provide long-term stormwater quality protection after a project's completion.

Point Source

Any discernible, confined, and discrete conveyance or collection system by which pollutants are or may be discharged.

Pollutant

Fluids, contaminants, toxic wastes, toxic pollutants, dredged spoil, solid waste, substances and chemicals, pesticides, herbicides, fertilizers and other agricultural chemicals, incinerator residue, sewage, garbage, sewage sludge, munitions, petroleum products, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and mining, industrial, municipal, and agricultural wastes or any other liquid, solid, gaseous, or hazardous substances (ARS 49-201 [29]).

R/W **right-of-way**

A term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

RWIS **Road Weather Information Systems**

These stations measure atmospheric, pavement, and/or water level conditions. Central RWIS hardware and software are used to process observations from Environmental Sensor Stations to develop nowcasts or forecasts, and display or broadcast road weather information in a format that can be easily interpreted by a manager. RWIS data are used by road operators and maintainers to support decision making.

Secondary Containment

A methodology or system to prevent the discharge of harmful substances into groundwater, storm drains or watercourses by providing additional containment or diversionary structures around the harmful substance's primary container or structure (e.g., barrels, cans, tanks, or piping systems). The secondary containment system must be capable of containing the harmful substance so that any discharge from a primary containment system will not escape the secondary containment system before cleanup occurs. The following are examples of secondary containment systems: dikes, berms, retaining walls, curbing, diversionary culverts, gutters or other drainage systems, booms or other barriers, spill diversion or retention ponds, drip pans, sumps, or other collection systems.

Section 401 of the CWA

Enables the state to review federal permit activities affecting the nation's waters and to ensure that proposed activity does not adversely affect the environment and that it meets the state's water quality standards.

Section 404 of the CWA

Regulates the discharge of dredged or fill materials within Waters of the US and establishes a program to issue permits.

Sediment

The soil particles that have been mobilized by erosion.

Sensitive Waters

In this manual, the term includes unique, impaired, and not attaining waters.

Storm drain inlet

Median and ramp catch basins, maintenance (i.e., manhole) holes, and culvert inlets.

Stormwater

Stormwater runoff, snow melt runoff, and surface runoff and drainage (40 CFR 122.26[b][13]).

SWPPP Stormwater Pollution Prevention Plan

A plan to describe a process whereby a facility thoroughly evaluates potential pollutant sources at a site and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in stormwater runoff.

Temporary BMPs

BMPs to address a short-term stormwater contamination threat. Temporary BMPs are removed at the conclusion of a construction project.

TMDL **Total Maximum Daily Load**

A TMDL is a written, quantitative plan and analysis to determine the maximum loading on a pollutant basis that a surface water can assimilate and still attain and maintain a specific water quality standard during all conditions. The TMDL allocates the loading capacity of the surface water to point sources and non-point sources identified in the watershed, accounting for natural background levels and seasonal variation, with an allocation set aside as a margin of safety.

Tribal Lands

In this document, is defined at 40 CFR 122.2 to mean:

1. All land within the limits of any Indian reservation under the jurisdiction of the US government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation;
2. All dependant Indian communities with the borders of the US, whether the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinguished, include rights-of-way running through the same.

Unique Water

A surface water classified as an outstanding state resource water under A.A.C. R18-11-112.

USC **United States Code**

The codification by subject matter of the general and permanent laws of the United States.

Watercourse

A lake, river, creek, stream, ditch, canal, wash, arroyo, drainage channel (natural or man-made) or other topographic feature on or over which waters flow at least periodically. They include specifically designated areas in which substantial flood damage may occur (floodplain).

Waters of the United States (US)

All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide. Waters of the US include all interstate waters and intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds (see 40 CFR 122.2 for the complete definition).

Appendix B

INSTRUCTIONS FOR OBTAINING ARIZONA OR FEDERAL CONSTRUCTION GENERAL PERMIT AUTHORIZATION FOR ADOT MAINTENANCE PROJECTS

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Although it is anticipated that most maintenance activities/projects will not require the preparation of a SWPPP under the NPDES or the AZPDES, maintenance activities/projects that result in ground disturbance equal to or greater than 5 acres or new construction disturbing 1 or more acres will require the preparation and implementation of a SWPPP. The information presented in this appendix is intended to assist Maintenance personnel and/or the contractor in the preparation and implementation of a SWPPP, if applicable to the planned activity. Many maintenance activities will be performed by ADOT personnel; however, a contractor may also be used. In those cases, the contractor must abide by the same requirements as ADOT. *Note:* In the following sections, "operator" is used to mean either ADOT alone or ADOT and the contractor.

Because ADOT maintenance activities are continuously occurring along state highways and they can also be initiated as the result of an event such as a rainstorm, it is important to identify the criteria for defining the parameters of a maintenance activity or undertaking. For compliance with the FCGP or AZCGP, a single and complete undertaking is defined as any PeCoS activity conducted within an ADOT-designated segment of the highway. The segment length will be designated by ADOT prior to initiating field activities using mileposts, natural watershed boundaries, washout limits, or other criteria deemed appropriate for the needed maintenance activity. The disturbance area within the designated segment will be evaluated against the 5-acre threshold to determine whether a SWPPP is required. In addition, activities separated by time will be considered as separate undertakings for purposes of comparisons to the 5-acre threshold. The following steps have been developed to provide direction and resources to facilitate the completion of the SWPPP.

1.1. Step 1: Prepare a Stormwater Pollution Prevention Plan

A complete SWPPP will be developed by the operator to describe operational activities and physical controls (BMPs) that will be used to prevent the discharge of pollutants into Waters of the US. SWPPPs are site-specific and, for ADOT maintenance projects, the contractor or ADOT Maintenance develops the SWPPP as a first step in obtaining CGP coverage. A useful SWPPP checklist can be downloaded from the ADEQ Web site (http://www.azdeq.gov/). A construction SWPPP template is also provided on the ADOT Web site (http://www.azdot/adot_and/ storm_water/stormwater.asp#three).

1.1.1 Identify All Operators for the Project

An operator is any person associated with the project who has control over the maintenance site.

1.1.2 Describe the Site and Prepare a Schedule of Maintenance Activities

Much of the information needed to complete this portion of the SWPPP is included in the project description, project plans, or contract documents, if a contractor is to be retained. These documents include the soils/geotechnical report, the project drainage report, and the environmental clearance documents.

For larger projects, the project site may be divided into subareas based on the maximum allowable exposed area as specified in the project specifications. A schedule of maintenance activity will be developed for each subarea.

1.1.3 Select BMPs to Reduce Pollutants

To comply with the FCGP or AZCGP, the SWPPP must describe all BMPs that will be implemented as part of the maintenance project to control pollutants in stormwater discharges. The SWPPP must clearly describe appropriate control measures to be used in each subarea. Refer to the BMPs in Chapters 2 and 3 when selecting appropriate permanent and temporary controls.

ADOT Roadside Development can assist in preparing Erosion and Sediment Control plans and details as part of the maintenance documents. These will provide direction and specific BMP expectations to the operator. However, the project documents will not be considered a complete SWPPP and will not replace the operator's SWPPP because the project plans and details are prepared assuming standard maintenance practices and may not reflect the operator's actual methods of maintenance, access requirements, or project phasing. The operator will use the project plans as a guide in developing the SWPPP.

The SWPPP must also describe the "Good Housekeeping" procedures and practices. The BMPs may be referenced in the General BMP section of this manual. These include:

- An inventory of chemicals and materials needed for maintenance activities.
- A spill prevention and cleanup plan.
- A description of storage, use, and disposal of chemical and maintenance materials.
- A hazardous waste management plan.
- A solid waste management plan.
- Sanitary/septic waste storage and disposal procedures.

1.1.4 Prepare a Plan for Maintenance of BMPs

Proper maintenance of BMPs is an integral part of the effort to prevent stormwater pollution. BMPs must be cleaned or replaced where design capacity is reduced by 50%. Procedures and activities for this purpose must be included in the SWPPP.

1.1.5 Collect Permit-Related Documents

The following documents must be included in the SWPPP:

- Copy of the FCGP or AZCGP.
- NOI as completed by the contractor or ADOT Maintenance. *Note:* If the contractor is submitting the NOI, the SWPPP and NOI must be reviewed by ADOT Maintenance with assistance by the DEC prior to submittal to ADEQ.
- NPDES or AZPDES authorization number for the project.
- Other agreements with state, local, or federal agencies that affect the provisions or implementation of the SWPPP.

The Smart NOI form is available at the ADEQ Web site (http://www.azdeq.gov/).

1.1.6 Comply with Applicable Federal, State, and Local Programs

Chapter 1 described the federal, state, and local soil and erosion control programs that must be followed to prevent pollution to Waters of the US.

1.1.7 Develop a Site-Specific Inspection Plan

An inspection plan must be developed as part of the SWPPP. Include the inspector's name and qualified inspector's credentials in the SWPPP to simplify the completion of inspection reports in the field.

1.2. Step 2: Certify the SWPPP

The operator who is responsible for installing the pollution controls must certify the SWPPP. The certification will occur before maintenance work begins.

It is the obligation of all personnel involved in the maintenance project to protect the environment. The certification requirement will reinforce the fact that it takes a team effort to properly control stormwater pollution and that the responsibility is equally shared between ADOT and its contractors. The FCGP and AZCGP require the following SWPPP certification language to be signed by ADOT and its contractors.

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 the 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.

1.3. Step 3: Submit Notice of Intent

As previously mentioned, ADEQ has issued an AZCGP No. AZG2003-001, which is available to provide stormwater permit coverage to all construction projects in the State of Arizona (except on Tribal Trust Lands where the FCGP is issued by the EPA). To comply with the conditions of either the AZCGP or the FCGP, the operator is required to file a NOI with ADEQ or EPA if maintenance and maintenance-related activities, including all clearing, grading excavation, and stockpiling activities, will result in the disturbance of equal to or greater than 5 acres. ADEQ or EPA approves the specific project use of the general permit for stormwater discharges by accepting and approving the NOI. If ADEQ or EPA denies NOI approval, the operator may have to pursue an individual stormwater discharge permit for the project.

A complete and accurate NOI form must be prepared and signed by the operators to receive coverage under the AZCGP or FCGP. The NOI form serves as a promise that the operators will comply with the AZCGP or FCGP conditions. An operator is any person associated with the project that has control over the maintenance plans or special provisions or day-to-day operational control of the site (the contractor, the District, or the Facilities Manager) directly associated with installation or maintenance of BMPs (refer to Part IX of the AZCGP for a complete definition of operator).

The NOI must be mailed to ADEQ or EPA at least 2 business days before any maintenance activities occur at the site (AZCGP part III.C.1). If the project is located within or has the potential to discharge to an MS4, a copy of the NOI must also be submitted to the MS4 (AZCGP Part III.F). A list of MS4 municipalities in Arizona is located on the ADEQ Web site (http://www.azdeq.gov/). Also, operators working under an approved local sediment and erosion control plan or stormwater management plan will submit a signed copy of the NOI to the local authority upon request. If the project site is located within ¼ mile of unique or impaired waters, the NOI must be submitted at least 32 business days before any maintenance activities occur at the site (AZCGP Part II.B.1).

The NOI form and detailed instructions for completing the form are available at the ADEQ Web site (http://www.azdeq.gov/) or by calling 602.771.4665 or 602.771.4449.

Submit the NOI form by certified mail or hand delivery to:

Arizona Department of Environmental Quality
Water Permits Section/Stormwater NOI (5415B-3)
1110 W. Washington Street
Phoenix, AZ 85007

Forms can be faxed to 602.771.4674.

The agency now offers a Web-based service to assist individuals in applying for stormwater discharge permits (Smart NOI). Access the Web site as described above.

For activities located on tribal lands, submit the NOI form to:

Stormwater Notice Processing Center
Mail Code 4203M
US EPA
1200 Pennsylvania Avenue NW
Washington, DC 20460

Electronic NOI forms are available from the following Web site:
http://cfpub.epa.gov/npdes/stormwater/enoi.cfm

If the project site is located on the White Mountain Apache Reservation, the NOI form will be sent to:

Tribal Environmental Planning Office
P.O. Box 2109
Whiteriver, AZ 85941

1.4. Step 4: Retain Document at a Maintenance or District Office

The SWPPP must be retained on-site (or in the vehicle at the project location) during working hours and at a maintenance or District office throughout the maintenance activity. If a contractor is involved and maintains a nearby office, the SWPPP will be kept at the office. The most current SWPPP updates will be maintained at the project location.

1.5. Step 5: Implement the SWPPP

After the NOI is accepted and an authorization number received, maintenance activities that will require implementation of the SWPPP may begin. The pollution controls (BMPs) will be constructed in accordance with the SWPPP.

The SWPPP is intended to be a dynamic plan that will be revised as a result of unanticipated or changing conditions during maintenance activities. Making changes to the plan where it is not effective is a requirement of the AZCGP. Any changes to the plan will be noted and dated on the plan.

To effectively implement the SWPPP, the operator will monitor and record weekly extended weather forecasts. In the event that extended forecasts report a high probability for precipitation in the project area, the operator will ensure that all BMPs in the SWPPP have been properly installed and maintained. The operator will also install additional measures in areas determined to be susceptible to erosion.

Stabilization measures will be installed within 14 calendar days in portions of the site where maintenance activities have temporarily or permanently ceased. Exceptions can be found in the AZCGP Part IV.D.4.

The operator is responsible for implementing the SWPPP and maintaining dated records of:

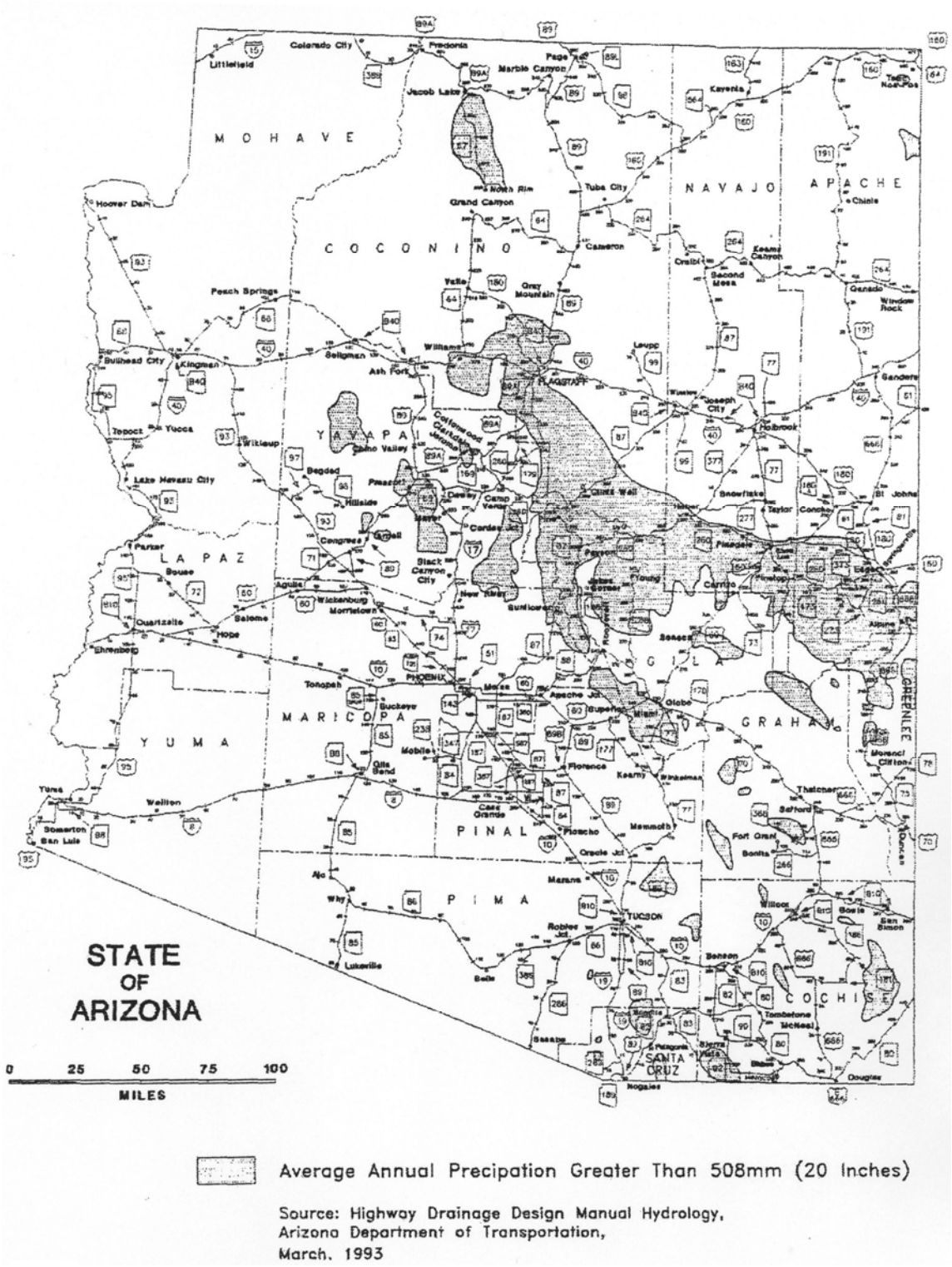
- Major grading activities.
- Areas where maintenance activities have temporarily or permanently stopped.
- Installation of stabilization measures (BMPs).
- Delays and reasons for delays of installation of stabilization measures.

These records will be included in the SWPPP.

1.6. Step 6: Inspect the BMPs Regularly

Regular site inspections are required as part of the AZCGP (Part IV.H) to ensure that BMPs are functional and that the SWPPP is properly maintained. In areas of the state that receive greater than 20 inches mean annual precipitation, the inspection requirement is every 7 calendar days or once every 14 calendar days and within 24 hours after a precipitation event of ½ inch or greater. In areas of the state that receive less than 20 inches mean annual precipitation and maintenance occurs during the seasonal dry period, inspections are required monthly, anytime rain is predicted, and within 24 hours following a precipitation event of ½ inch or greater. Refer to the map on page B-8 to determine the locations in Arizona where the mean annual precipitation is less than or greater than 20 inches. The reduced inspection frequency requirement also applies to sites where runoff is unlikely due to winter conditions.

Inspections must include all areas of the site disturbed by maintenance activity, staging areas, and areas used for storage of materials that are exposed to precipitation. Refer to AZCGP Part IV.H.4 for a complete scope of inspections. The completed checklist and any additional sheets necessary to record the results of the inspection will serve as the Compliance Evaluation Report



Arizona precipitation map

(AZCGP Part IV.H.5). The report and the record of any follow-up actions taken will be retained as part of the SWPPP.

Inspections must be performed by qualified personnel as described in Part IV.H.3 of the AZCGP, or as determined by the ADOT District Maintenance Organization.

1.7. Step 7: Adjust the SWPPP to Fit Site Conditions

The operator will implement follow-up actions based on results of the inspection process within 7 calendar days following the inspection, or as required by the project specifications. Where adjustments to the SWPPP are deemed necessary, implementation must be completed before the next anticipated storm event or as soon as practicable (AZCGP Part IV.H.7).

1.8 Step 8: Maintain an Updated SWPPP

It is imperative that the SWPPP remain current with the changes and adjustments made in the field. Failure to update the SWPPP is considered a violation of AZCGP conditions and grounds for issuance of a failure notice.

The SWPPP will be updated within 15 calendar days if changes in design, scheduling, or maintenance activities have a significant effect on the discharge of pollutants or it is determined that discharges from the maintenance area are causing or contributing to water quality exceedances (refer to AZCGP Part IV.I).

1.9 Step 9: Maintain the BMPs

All erosion and sediment control measures and other protective measures identified in the SWPPP must be maintained in effective operational condition (refer to AZCGP Part IV.E.1-3).

1.10 Step 10: Evaluate Job Site to Determine Final Stabilization

Final Stabilization will be defined as the completion of all soil-disturbing activities and the two following criteria have been met:

- A uniform (i.e., evenly distributed, without large bare areas) perennial vegetative cover with a density equivalent to 70% of the native background vegetative cover has been established on all unpaved areas and areas not covered by permanent structures. Where perennial vegetation is not yet fully established, temporary erosion control devices are properly installed and fully operational.
- Permanent erosion control measures (e.g., riprap, gabions, or geotextiles) have been employed and are fully operational.

1.11 Step 11: Submit Notice of Termination

A complete and accurate NOT must be submitted to ADEQ or EPA after it has been determined that the project has met the submittal criteria as described in Section 1.10. The operator is responsible for filling out, signing, and submitting the NOT form to ADEQ or EPA. If the operator is a contractor, one copy must be provided to the Maintenance Engineer. ADOT Maintenance, with the assistance of the DEC, will review the final stabilization for the project prior to authorizing submittal of the NOT.

The NOT form is available at the ADEQ Web site (http://www.azdeq.gov/) or by calling 602.771.4665 or 602.771.4449.

Submit form by certified mail or hand delivery to:

Arizona Department of Environmental Quality
Stormwater Program – Water Permits Section/NOT (5415B-3)
1110 W. Washington Street
Phoenix, AZ 85007

In some cases, there may be projects that have not yet achieved final stabilization that are "inherited" from the District Construction. In such cases, District Maintenance will be responsible for satisfying the AZCGP requirements on ADOT's behalf. Upon final stabilization, District Maintenance can submit the NOT.

1.12 Step 12: Retention of Records

The operator will retain copies of SWPPPs and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, for at least 3 years from the date of final stabilization of the site (AZCGP Part VI).

1.13 Permit Requirements on Tribal Lands

If the project is over 5 acres and is located entirely on Tribal Trust Lands, permit coverage will be obtained through the EPA (http://cfpub.epa.gov/npdes/index.cfm). Follow these steps (described in detail on the EPA Web site) and refer to the ADOT Stored Specification 104SWEPA to obtain coverage:

Step 1: Read the FCGP and fact sheet.
Step 2: Determine if project is eligible for coverage under the FCGP.
Step 3: Develop and implement SWPPP.
Step 4: Complete and submit NOI.

Forms can be submitted by mail to:

Stormwater Notice Processing Center
Mail Code 4203M
US EPA
1200 Pennsylvania Avenue NW
Washington, DC 20460

Electronic NOI forms are available from the following Web site:
http://cfpub.dpa.gov/npdes/stormwater/enoi.cfm

If the project site is located on the White Mountain Apache Reservation, the NOI form will be sent to:

Tribal Environmental Planning Office
P.O. Box 2109
Whiteriver, AZ 85941

1.14 Permit Requirements for Projects Located Within ¼ mile of Sensitive Waters

If the project site is located within ¼ mile of unique (R18-11-112) or impaired (Section 303[d] of the CWA) waters, the NOI and the SWPPP must be submitted to ADEQ at least 32 business days before any maintenance activities occur at the site (AZCGP Part II.B.1). This extra time allows ADEQ to review the SWPPP to determine whether selected BMPs are sufficiently protective of water quality.

The SWPPP must include a proposal for monitoring to determine whether BMPs and controls are effective (AZCGP Part I.D.5.a).

1.15 Permit Requirements for Batch Plants, Borrow Pits, and Material Pits

Discharges from support activities such as concrete or asphalt batch plants, equipment storage yards, material storage areas, screening and crushing plants, excavated material disposal areas, and borrow areas are covered under the AZCGP if the conditions of the permit are followed (AZCGP Part I.C.1). The operator must obtain coverage under a separate Multi-Sector General Permit for activities that do not fall under the allowable discharges for the AZCGP. Commercial plants and material sources are required to demonstrate compliance with stormwater regulations prior to use on ADOT projects.

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Appendix C

MATERIAL SOURCE MINING SITES BEST MANAGEMENT PRACTICES

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The following list of BMPs has been compiled from the ADOT *Erosion and Pollution Control Manual for Highway Design and Construction* (February 2005). These BMPs were selected based on existing conditions at many ADOT material source mining sites, including access/haul roads.

BMP	Item/Page Number	Function	Example
Soil Stabilization BMPs			
Preserve Existing Vegetation	5.1.2/5–38	Decrease surface area of disturbance.	Clear/grub no more than needed for the project.
Minibenches/Slope Roughening	5.1.3/5–40	Decrease velocity of sheet flows across the excavated area.	Contour excavated areas and create different levels to reduce flow velocity.
Geotextiles, Plastic Covers, Erosion Control Blankets/Mats	5.1.8/5–56	Reduce exposure of disturbed area to wind and rain.	Cover excavated areas between uses.
Concentrated Flow Conveyance BMPs			
Earthen Dikes/Drainage Swales (see also Slope Drains)	5.2.1/5–68 (see also 5.2.5/5–76)	Divert flow around work area.	Create crown ditch above excavated slope to divert run-on from contacting excavated area.
Rock Outlet Protection	5.2.4/5–74	Prevent scour.	Place at outfall (e.g., at terminus of drainage swale).
Sediment Control BMPs			
Sediment Control Berm (see also silt fence)	5.3.1/5–80 (see also 5.3.2/5–84)	Trap sediment.	Stockpile topsoil down-gradient of work area to allow runoff to infiltrate and reduce sediment transport.
Desilting Basin/Sediment Trap	5.3.3/5–84	Allow sediment to settle out.	For uses and limitations, refer to manual.
Check Dams	5.3.4/5–92	Reduce velocity of flow and extent of erosion, and allow sediment to drop out.	Use along access/haul road or in combination with drainage swale.
Sediment Wattle	5.3.5/5–96	Reduce velocity of flow and extent of erosion, and allow sediment to drop out.	Use on erodible slopes at regular intervals.
Sediment Log	5.3.6/5–100	See sediment wattle.	Use as check dam in drainage swale or at outfall.
Other BMPs			
Wind Erosion Control	5.4.1/5–120	Prevent/alleviate dust nuisance.	Apply water or chemical dust palliative to excavated areas, access/haul roads, and/or stockpiles.
Stabilized Construction Access and/or Stabilized Construction Roadway	5.5.1/5–124 and/or 5.5.2/5–126	Eliminate track-out.	Provide gravel or paved access.

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Appendix D

VEGETATION MANAGEMENT GUIDELINES
BEST MANAGEMENT PRACTICES
(Excerpts from ADOT Office of Environmental Services)

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ADOT is responsible for the integrity of the state's highway infrastructure while complying with state and federal environmental laws. To help accomplish this task, the ADOT OES routinely maintains vegetation within the transportation R/W for safety and aesthetic purposes. In doing so, OES uses a variety of BMPs to manage potential environmental impacts resulting from routine highway maintenance activities. BMPs to help manage stormwater pollution are explored in detail below.

Vegetation Management

Roadside vegetation management is an ongoing agency requirement and priority. Accordingly, OES uses a variety of vegetation management techniques—mechanical, chemical, manual, and behavioral—in an integrated approach to control hazardous vegetation and invasive plant species along Arizona highways. OES routinely reviews available literature and explores other management techniques, methods, and practices.

BMPs

- Use an integrated resource management approach to promote low-growing native vegetation on all highways under the state's jurisdiction. Use mechanical methods, herbicides, prescribed fire, tillage, biological controls, and seeding to establish a stable roadside environment that, over time, requires minimal maintenance inputs.
- Manage recovery zones along Arizona's state highways and roads using methods that encourage the establishment of native plant species that suppress the spread of invasive species, inhibit fire, reduce soil erosion, stabilize roadsides, and are aesthetically pleasing without compromising traffic operations.
- Conduct environmental reviews to determine potential impacts to the natural and human environment and complete environmental documents, such as Environmental Determinations and Herbicide Risk Assessments, prior to conducting vegetation management activities. Proceed only after all facets of resource protection, including clean water, clean air, threatened and endangered species, and cultural resources, are addressed and determined to be safeguarded from roadside vegetation management activities.
- Coordinate with federal, state, and local agencies to develop practicable work methods where appropriate.

Tree Removal

Large trees, overgrown brush, and tall vegetation within the recovery area and R/W may present a collision threat to motorists; obstruct motorists' visibility of road signs, highway safety features, and approaching wildlife; and can shade pavement during winter months, thereby contributing to icy conditions.

BMPs

- Inspect roadways and exceptional areas prior to conducting cutting operations and establish and mark clearing limits.
- Conduct vegetation removal activities when precipitation is not forecasted.
- Use equipment that will cause the least amount of ground disturbance.
- Avoid working in wetlands (regardless of season), riparian areas, washes, or culverts.
- Do not place slash or chips in watercourses.

- Install check dams or equivalent to minimize sediment loss and protect drainage features as needed.
- Reseed disturbed soils that will not be landscaped or otherwise permanently stabilized as needed.
- Fuel, clean, and repair equipment away from storm drain inlets and watercourses.

Herbicide Use

ADOT's goal is to reduce the use of herbicides and mowing on roadway shoulders by the establishment of low-maintenance native grasses and wildflowers for highway visibility, soil stabilization, and weed control. Although OES uses an integrated approach to vegetation management, herbicide application is currently the most efficient means of controlling hazardous and invasive plant species. Proper chemical treatment provides the greatest degree of control for the least amount of cost and labor. All management activities, methods, and results are available for public review, and OES goes out of its way to disclose all of its activities to the public, within reasonable means.

BMPs

- Use the safest, most effective, efficient, state-of-the-art, and inexpensive vegetation management techniques available.
- Conform to all applicable state and federal regulations and herbicide label directions controlling the loading, mixing, use, storage, and containment of herbicides.
- Use only compounds registered and approved by EPA and the State Chemist.
- Use only compounds approved by the land-managing agency (e.g., USDA Forest Service, BLM, tribes).
- Use a Certified Pesticide Applicator to conduct all herbicide applications.
- Inspect roadways and exceptional areas prior to conducting herbicide application activities.
- Conduct spray operations when meteorological conditions are favorable.
- Use the lowest pressure, largest droplet size, and largest volume of water permitted by the herbicide label to obtain adequate treatment success.
- Choose the most effective herbicide that requires the least number of applications.
- Choose the lowest effective rate of application.
- Use only those herbicides with aquatic labeling within no-spray buffer areas around watercourses, when necessary.
- Inspect and maintain herbicide application equipment.
- Fuel, clean, and repair equipment away from storm drain inlets and watercourses.

Erosion Control and Management

Erosion can be expected as roadways age and is currently the biggest threat to Arizona's 7,140 miles of roadways. Precipitation, wind, and human activities are the main causes.

Moisture from weather events collects on impervious road surfaces and flows to the adjacent permeable shoulders. Water exits road surfaces as sheet flow. Subsequently, the volume of water accumulating along roadsides is greater than the soil's ability to absorb the increased surface flows, resulting in the formation of rills and gullies.

The highly disturbed nature of the roadside environment and the lack of adequate plant cover on road shoulders play a role in soil loss and sediment movement. Other factors that contribute to erosion potential include percent slope, size of the exposed area, soil texture and type, precipitation type, and quantity. Wind will erode exposed soils along roadsides as well.

OES shares responsibility with Maintenance for erosion control along state roadways.

BMPs

- Promote the use of a top dressing soil mixture consisting of the original topsoil (stockpiled during the construction phase) and plant materials to roadway shoulders during the construction portion of highway development.
- Clearly mark limits of disturbance.
- Add material (salvaged AC pavement, aggregate, borrow material) to shoulder and slope to eliminate pavement drop-off, and rutted or eroded conditions, as needed.
- Minimize disturbance to existing vegetation and topsoil when leveling, pulling, or floating shoulder material with a motor grader.
- Shape and contour material to minimize erosion potential.
- Seed and cover disturbed soils as needed.
- Install temporary sediment control measures, as needed, to address concentrated water flows.
- Minimize changes to watercourse dynamics and minimize removal of native riparian vegetation.
- Fuel, clean, and repair equipment away from storm drain inlets and watercourses.
- Consult the ADOT *Erosion Control and Pollution Prevention Manual for Highway Design and Construction* as appropriate.

Note: Maintenance activities that disturb Waters of the US may require either a nationwide permit or an individual Section 404 permit.

Contact Information

Bruce D. Eilerts
Statewide Natural Resources Program Manager
Arizona Department of Transportation
Office of Environmental Services
206 S. 17th Avenue, Mail Drop 043R
Phoenix, AZ 85007
Telephone 602.712.7398
Fax 602.712.3492

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Appendix E

DRAFT ENVIRONMENTAL ASSESSMENT: WINTER STORM MANAGEMENT OF ARIZONA STATE HIGHWAYS (Chapter 6: Recommended Mitigation Measures)

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ADOT is responsible for keeping transportation corridors safe and operational during winter months, despite costs associated with winter storm management techniques. However, potential short- and long-term impacts must be considered. The following list of mitigation measures is recommended for implementation by ADOT to reduce potential impacts without compromising public safety. These measures are not site-specific.

Chemical Additives

- Minimize sodium ion use in fine-textured soils.
- Minimize chloride ion use in highly permeable (high percolation rate) soils.
- Minimize use of chemicals near surface waters.
- Minimize splash of pavement slush on trees within the transportation corridor by reducing plow speeds.
- Keep chemical additions to a minimum (BMPs).
- Require vendors to provide an independent third-party test of chemical additives content prior to purchase.

Abrasives

- Maximize efforts to recover abrasives in urban areas and near rivers or streams.
- Handle recovered abrasives so as to minimize absorption of other contaminants during recovery.
- Maximize use of abrasives in highly permeable (high percolation rate) soils.

Non-Additive Management Techniques

- Use corrosive-resistant infrastructure materials.
- Closely monitor signs to match transportation corridor conditions (RWIS).
- Incorporate mitigation into decision-making process during annual District "snow meeting."
- Require traction devices on tires such as chains, studs, or cables where conditions warrant.
- Install snow fences in high drift areas where feasible.
- Expand shade reduction activities and coordinate these activities with adjacent land-managing agencies. Vegetation modification should conform to visual management plans or objectives and follow recommendations to conserve scenic values along Arizona's Parkways, Historic, and Scenic Roads.
- Provide the USDA Forest Service with each District's annual Snow Plan.
- Improve training for all ADOT Maintenance District staff at the statewide level.
- Invest in additional RWIS stations to enable ADOT Maintenance District staff to forecast, monitor, and use real-time weather data to assist in winter storm management.
- Provide ADOT Maintenance District staff with adequate equipment, such as computer-controlled spray trucks, to accommodate chemical additive and abrasive applications to reach annual Snow Plan objectives.

Areas of Environmental Importance

In addition to implementing the mitigation measures described previously, the following mitigation measures should be followed in areas of environmental importance.

- Maximize plowing in areas of environmental importance.
- Minimize use of chemical additives near sensitive waters.
- Districts with transportation corridors in close proximity to critical habitat should contact the appropriate agency before vegetation removal.

Monitoring and Study Needs

In addition to the mitigation measures described previously, the following is a list of recommended monitoring and study needs.

- Sodium ion use in fine-textured soils.
- Chloride ion use in highly permeable (high percolation rate) soils.
- Use of chemicals near surface waters.
- Establish a water quality monitoring program in Oak Creek to monitor potential impacts resulting from winter storm management.
- Improve winter storm management recordkeeping. Records should identify areas that receive chemical additives, abrasives, and/or non-additive management techniques; method and frequency of abrasive cleanup; and type and effectiveness of employed methods.
- Compare annual results from BMS samples and modify winter storm management techniques as indicated by BMS results.