

(Please print or copy double sided when possible)



## DUST



## STORMWATER



# ENVIRONMENTAL REQUIREMENTS FOR CONSTRUCTION ACTIVITIES IN THE CITY OF MESA

---

April 2014

## **IMPORTANT NOTE**

Any developer or construction site operator conducting construction activities in the incorporated area of the City of Mesa is required to read and understand the provisions of this Environmental Requirements for Construction Activities in the City of Mesa manual (Manual). Failure to do so may result in time delays on construction projects, civil penalties, or criminal charges.

## **LOCATING THIS MANUAL**

This Manual is subject to revision at any time. Copies of this Manual are located at the City Clerk's Office. The most recent updated version of this Manual may be found at the following website: <http://www.mesaaz.gov/environ/construction.aspx>

## **QUESTIONS**

Questions regarding the contents of this Manual should be directed to the City's Environmental Hotline at 480-644-3599.

## **ENVIRONMENTAL COMPLAINTS**

Complaints regarding violations of City of Mesa ordinances should be directed to the City's Environmental Hotline at 480-644-3599. Complaints regarding violations of Maricopa County air quality rules should be directed to the Maricopa County Air Quality Department at 602-372-2703. Complaints regarding violations of Arizona Department of Environmental Quality (ADEQ) stormwater regulations should be directed to ADEQ Water Quality Division at 602-771-2300.

# TABLE OF CONTENTS

	PAGE
<b>1.0 INTRODUCTION</b> .....	<b>1-1</b>
<b>2.0 DUST CONTROL REQUIREMENTS</b> .....	<b>2-1</b>
2.1 BACKGROUND .....	2-1
2.2 CITY ORDINANCE .....	2-1
2.3 PRIVATE CONSTRUCTION PROJECTS .....	2-1
2.3.1 Permit & Plan Submittals .....	2-2
2.3.2 Inspections.....	2-2
2.3.3 Enforcement .....	2-2
2.4 CITY CONSTRUCTION PROJECTS .....	2-2
2.4.1 Permit & Plan Submittals .....	2-3
2.4.2 Inspections.....	2-3
2.4.3 Enforcement .....	2-3
<b>3.0 STORMWATER POLLUTION CONTROL REQUIREMENTS</b> .....	<b>3-1</b>
3.1 ADEQ CONSTRUCTION GENERAL PERMIT BACKGROUND .....	3-1
3.2 2010 MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMIT SUMMARY .....	3-1
3.3 CITY ORDINANCE .....	3-2
3.4 PRIVATE CONSTRUCTION PROJECTS .....	3-3
3.4.1 Permit & Plan Submittals .....	3-3
3.4.2 Inspections.....	3-3
3.4.3 Enforcement .....	3-4
3.5 CITY CONSTRUCTION PROJECTS .....	3-4
3.5.1 Permit & Plan Submittals .....	3-4
3.5.2 Inspections.....	3-5
3.5.3 Enforcement .....	3-6
<b>4.0 STANDARDS FOR STRUCTURAL AND NON-STRUCTURAL STORMWATER BEST MANAGEMENT PRACTICES</b> .....	<b>4-1</b>
4.1 REQUIREMENTS FOR PRIVATE CONSTRUCTION PROJECTS .....	4-2
4.2 REQUIREMENTS FOR CITY CONSTRUCTION PROJECTS .....	4-2
4.3 SUMMARY OF CITY CHANGES AND AMENDMENTS TO THE FCDMC EROSION CONTROL MANUAL .....	4-2
4.3.1 Section 5.1: Selection Matrix .....	4-3
4.3.2 Erosion Control.....	4-3
4.3.2.1 EC-2 Mulching.....	4-3

**PAGE**

4.3.2.2 EC-3 Protection of Trees and Vegetation in Construction Areas 4-3

4.3.2.3 EC-5 Stabilized Construction Entrance ..... 4-3

4.3.2.4 EC-7 Dust Control ..... 4-4

4.3.2.5 EC-8 Temporary Access Waterway Crossing ..... 4-4

4.3.2.6 EC-10 Drainage Swales ..... 4-4

4.3.3 Sediment and Pollutant Control ..... 4-4

4.3.3.1 SPC-1 Organic Filter Barrier..... 4-4

4.3.3.2 SPC-2 Sand Bag Barrier ..... 4-4

4.3.3.3 SPC-5 Silt Fence..... 4-4

4.3.3.4 SPC-6 Re-Vegetation ..... 4-5

4.3.3.5 SPC-7 Storm Drain Inlet Protection ..... 4-5

4.3.3.6 SPC-8 Temporary Sediment Basins..... 4-6

4.3.3.7 SPC-9 Temporary Sediment Traps ..... 4-6

4.3.4 GH: General Housekeeping..... 4-6

4.3.4.1 GH-4 Designated Washdown Areas..... 4-6

**5.0 REFERENCES ..... 5-1**

## **ACRONYMS AND ABBREVIATIONS**

2010 MS4 Permit – City of Mesa MS4 Stormwater Permit, AZS000004-2010

ADEQ – Arizona Department of Environmental Quality

AZPDES – Arizona Pollutant Discharge Elimination System

BMP – Best Management Practice(s)

CAA – Clean Air Act

CGP – Arizona Department of Environmental Quality Construction General Permit

City – City of Mesa

CWA – Clean Water Act

DSD – Development & Sustainability Department

ESD – Environmental & Sustainability Division

FCDMC – Flood Control District of Maricopa County

MAG – Maricopa Association of Governments

MCAQD – Maricopa County Air Quality Department

MS4 – Municipal Separate Storm Sewer System

NPDES – National Pollutant Discharge Elimination System

NTP – Notice to Proceed

PM-10 – Particulate Matter 10 Microns in Diameter or Smaller

SWMP – Storm Water Management Plan

SWPPP – Storm Water Pollution Prevention Plan

USEPA – United States Environmental Protection Agency

(This page intentionally left blank)

## 1.0 INTRODUCTION

This Environmental Requirements for Construction Activities in the City of Mesa manual (Manual) has been prepared by the City of Mesa (City) Development & Sustainability Department (DSD), the Engineering Department, and the Transportation Department in response to particulate pollution [also referred to as “dust” or “particulate matter 10 microns in diameter or smaller (i.e. PM-10)] and stormwater quality regulatory requirements.

The goals of this Manual are to:

- Inform developers and construction site operators about the environmental requirements for conducting construction activities for private and City projects in the City’s incorporated area;
- Inform construction site operators about City environmental ordinances pertaining to dust and stormwater pollution prevention;
- Inform construction site operators about potential enforcement actions that may be taken by the City when a violation has been noted and not adequately addressed within timeframes provided by City inspectors;
- Provide guidance pertaining to appropriate control measures at construction sites; and,
- Provide references that construction site operators may use to access additional information regarding environmental permitting requirements and City requirements.

(This page intentionally left blank)

## **2.0 DUST CONTROL REQUIREMENTS**

### **2.1 BACKGROUND**

The United States Environmental Protection Agency (USEPA) promulgates regulations to implement the federal Clean Air Act (CAA). The USEPA has also established standards for PM-10, based on protecting human health. Air monitoring stations in Maricopa County continue to show particulate matter levels above the USEPA National Ambient Air Quality Standard for PM-10. As a result, the USEPA has designated Maricopa County as a Serious Non-Attainment Area under the CAA.

In order to address the PM-10 non-attainment issue and to prevent punitive enforcement actions from the USEPA, the Maricopa County Air Quality Department (MCAQD) has established regulations “to limit particulate matter emissions into the ambient air from any property, operation, or activity that may serve as a fugitive dust source.” In general, construction site activities are considered a dust generating operation and therefore require permitting under the County’s fugitive dust rules. The MCAQD requires construction activities that disturb a total surface area of 0.1 acres (4,356 square feet) to obtain a dust control permit and complete a dust control plan.

### **2.2 CITY ORDINANCE**

The City’s dust control ordinance can be found under Title 8 (Health, Sanitation, and Environment); Chapter 2 (Environmental Protection); Article I (Particulate Pollution Control) of the Mesa City Code. This ordinance was designed to mimic the MCAQD Rules. Therefore, in most cases, any violation of the City’s Particulate Pollution Sources ordinance is also a violation of MCAQD rules.

### **2.3 PRIVATE CONSTRUCTION PROJECTS**

Private construction projects are all of those that are initiated, managed, and constructed by any entity (including other public agencies) other than the City. The City may be part of the development process, but unless these construction projects are managed by or under contract to the City’s Engineering Department, or in some cases another City department, these are considered “private construction projects” for the purposes of this Manual.

### **2.3.1 Permit & Plan Submittals**

The City does not issue dust control permits. However, the City requires the submittal of a properly executed MCAQD dust permit, along with a copy of the associated dust control plan, with the submittal of a building or grading permit application for projects that will cause a surface area disturbance of one tenth (0.10) of an acre or greater. For private construction projects, the permit and plan must be submitted to DSD prior to the City providing a written authorization to proceed with initial grading and drainage operations or other earth disturbing activities.

### **2.3.2 Inspections**

The DSD's Environmental & Sustainability Division (ESD) personnel inspects private construction projects for compliance with the City's Particulate Pollution Sources ordinance. During each visit to the site, an assessment is made regarding dust control activities and for compliance with the City's ordinance, not MCAQD rules. If an issue is identified and cannot be addressed in the presence of the inspector, the construction site operator will be provided an established timeframe to address the issue and a re-inspection will be scheduled. That schedule will usually be determined based on the seriousness of the hazard associated with the violation.

### **2.3.3 Enforcement**

The goal of the City's private construction inspection program enforcement procedure is to obtain voluntary compliance from the construction site operator. Voluntary compliance is the preferred method of ensuring appropriate control measures are implemented to reduce fugitive dust emissions from construction activities. The City has a working relationship with the MCAQD where the City may report any noted violation of the City's Particulate Pollution Sources ordinance to that agency for enforcement. Where voluntary compliance is not successful, the City will report the violation to the MCAQD and will take no further action regarding that particular violation.

## **2.4 CITY CONSTRUCTION PROJECTS**

City construction projects are those projects conducted by the City and under contract to the City's Engineering Department or another City department. These projects do not include maintenance activities (e.g. utility line breaks/repairs) that are conducted by City personnel or maintenance contractors/subcontractors.

### **2.4.1 Permit & Plan Submittals**

The City has a plan submittal process that ensures that all pre-construction submittals (including a properly executed MCAQD dust permit and dust control plan) have been received prior to issuing a Notice to Proceed (NTP). All submittals are managed by a Contract Services Specialist to ensure that they are received, approved, and documented prior to the issuance of the NTP.

### **2.4.2 Inspections**

City construction projects are routinely inspected by Engineering Department construction inspectors. These inspectors have been used by the City as a constant source of inspecting City projects, addressing dust issues as they arise, and contacting ESD when compliance is either uncertain or not being attained. This staff is trained in dust control issues, control measures, regulatory requirements, and the conditions set forth in this Manual. Additionally, ESD personnel conducts environmental audits of City construction site activities to ensure that appropriate training has been provided to Engineering Department construction inspectors and compliance is being maintained.

City construction projects are inspected for compliance with the City's ordinance as well as MCAQD rules. If an issue is identified and cannot be addressed in the presence of the inspector, the contractor will be provided an established timeframe to address the issue and a re-inspection will be scheduled. That schedule will usually be determined based on the seriousness of the hazard associated with the violation.

### **2.4.3 Enforcement**

The goal of the City construction inspection program enforcement procedure is to obtain voluntary compliance from the contractor. Voluntary compliance is the preferred method of ensuring appropriate control measures are implemented to reduce fugitive dust emissions from construction activities. Where voluntary compliance is not successful, the contractor may be issued a Stop Work Order until such time that the issue has been resolved. In some cases (e.g. constant state of non-compliance), a code case may be opened against the contractor and the contractor may be subject to civil or criminal penalties.

(This page intentionally left blank)

## **3.0 STORMWATER POLLUTION CONTROL REQUIREMENTS**

### **3.1 ADEQ CONSTRUCTION GENERAL PERMIT BACKGROUND**

In February 2003, the ADEQ issued the first *Arizona Pollutant Discharge Elimination System General Permit for Discharge from Construction Activities to Waters of the United States (Permit No. AZG2003-001)*; commonly referred to as the Construction General Permit, or CGP. The CGP authorizes stormwater discharges from construction-related activities disturbing at least one (1) acre. The permit also covers construction support activities such as staging areas where clearing, grading, excavating and stockpiling of fill material. Permit waivers are also available from the ADEQ under very specific circumstances for sites less than 5 acres in size. The CGP generally, like all AZPDES based permits, expires every five years (as of the date of this Manual the current version is dated May 29, 2013).

### **3.2 2010 MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMIT SUMMARY**

On July 30, 2010, the ADEQ issued the Municipal Separate Storm Sewer System (MS4) Stormwater Permit, No. AZS000004-2010 to the City under the AZPDES program. The permit became effective on August 30, 2010 (2010 MS4 Permit).

The 2010 MS4 Permit requires the City to implement the following measurable goals pertaining to construction site activities:

1. Develop an inventory, list, database, or map of construction activities that result in land disturbance of one (1) or more acres and that have the potential to discharge to the City's storm sewer system within one (1) year of permit issuance and to be updated at least annually;
2. Review at least 80% of plans for new development and redevelopment (such as grading and drainage plans) to verify conformance with the City requirements for stormwater, including erosion and sediment control. The review must be completed prior to issuing construction approvals or authorizations for construction projects that will result in a land disturbance of one (1) acre or more, and those less than one [1] acre that are part of a larger common plan of development);
3. Require a copy of the ADEQ Authorization Certificate for non-municipal construction projects (as required by municipal stormwater requirements or

- ordinances or state stormwater requirements) be submitted prior to issuing construction approval or authorization for construction projects that will result in a land disturbance of one (1) acre or more, and those less than one (1) acre that are part of a larger common plan of development;
4. Develop or adopt a set of standards for the installation and maintenance of construction site structural and non-structural stormwater control measures as part of a comprehensive program to reduce pollutants in stormwater runoff from construction sites (see [Section 4.0](#));
  5. Establish a prioritization schedule for inspecting construction sites with a higher frequency of inspections for those sites that have a higher potential to discharge to the storm sewer system;
  6. Routinely inspect construction projects to determine whether effective erosion and sediment controls are in place, and verify conformance with local stormwater requirements and approved construction plans;
  7. Inspect higher priority sites, based on the prioritization schedule, a minimum of one (1) time every three (3) months and all other sites at least once every six (6) months until final stabilization is established;
  8. Conduct follow-up inspection of construction sites within 30 calendar days to ensure stormwater deficiencies/concerns/non-compliance identified as a result of a routine inspection were corrected;
  9. Establish an enforcement procedure that provides timeframes and escalation for corrective actions and compliance with Mesa City Code Title 8, Chapter 5. Protocol for escalation should consider severity of violation, repeat offender, willful negligence, and other appropriate factors. The escalated enforcement protocol should focus on having the highest level of enforcement action resolved within one (1) year of the initial inspection/violation; and,
  10. Train existing plan review and construction inspection employees at least once every two (2) years and provide training at least one (1) time per year for new employees.

### **3.3 CITY ORDINANCE**

The City's storm water can be found under Title 8 (Health, Sanitation, and Environment), Chapter 5 (Storm Water Pollution Control) of the Mesa City Code. This ordinance was first enacted in 1993 as part of meeting the Phase I MS4 Permit requirements (predecessor to the 2010 MS4 Permit) that was issued by the USEPA.

This ordinance has been subsequently revised to meet the 2010 MS4 Permit requirements and to be consistent with other parts of the Mesa City Code.

### **3.4 PRIVATE CONSTRUCTION PROJECTS**

Private construction projects are all of those that are initiated, managed, and constructed by any entity (including other public agencies) other than the City. The City may be part of the development process, but unless these construction projects are managed by or under contract to the City's Engineering Department, or in some cases another City department, these are considered "private construction projects" for the purposes of this Manual.

#### **3.4.1 Permit & Plan Submittals**

The City does not issue stormwater pollution control permits nor does the City require the submittal of a Storm Water Pollution Prevention Plan (SWPPP) for private construction projects. However, the City requires the submittal of the ADEQ Authorization Certificate or Permit Waiver Certification with the submittal of a building or grading permit application to DSD for projects that will cause a land area disturbance of one acre (43,560 square feet) or more.

DSD permit technicians review submitted plans to ensure proper permits have been obtained and these documents then become part of the development's record and are entered into the City's private construction database. In developing a SWPPP, the construction site operator is responsible for following the standards for structural and non-structural best management practices (BMPs) as provided in [Section 4.0](#) of this Manual with respect to private construction projects.

#### **3.4.2 Inspections**

ESD personnel inspect private construction projects for compliance with the City's Storm Water Pollution Control ordinance. During each visit to the site, an assessment is made regarding stormwater pollution control activities and for compliance with the City's ordinance, not ADEQ permit conditions. If an issue is identified and cannot be addressed in the presence of the inspector, the construction site operator will be provided an established timeframe to address the issue and a re-inspection will be scheduled. That schedule will usually be determined based on the seriousness of the hazard associated with the violation.

### **3.4.3 Enforcement**

The goal of the City’s private construction inspection program enforcement procedure is to obtain voluntary compliance from the construction site operator. Voluntary compliance is the preferred method of ensuring appropriate BMPs are implemented to reduce pollutant discharges to the City’s storm sewer system. This includes, but is not limited to, cleaning-up any discharges to the City’s storm sewer system that were caused by site operations and ensuring BMPs are appropriately installed.

Where voluntary compliance is not obtained within the established timeframe, the City has the ability to issue a civil violation and citation, issue a notice to abate, or suspend any license issued by the City. Additionally, the City may impose criminal violations for responsible parties identified as habitual offenders. The most common form of enforcement that the City takes for stormwater code violations regarding private construction activities is to not issue approval of work performed by the construction site operator until such time that compliance with the Mesa City Code has been obtained.

## **3.5 CITY CONSTRUCTION PROJECTS**

City construction projects are those projects conducted by the City and under contract to the City’s Engineering Department or another City department. These projects do not include maintenance activities (e.g. utility line breaks/repairs) that are conducted by City personnel or maintenance contractors/subcontractors.

### **3.5.1 Permit & Plan Submittals**

The City reviews construction plans, including grading and drainage plans, before the project is put out to bid. The Engineering Department has a plan submittal process that ensures that all pre-construction submittals (including the ADEQ Authorization Certificate and the SWPPP, or the ADEQ Permit Waiver Certification) are received, approved and documented prior to issuing a NTP. All submittals are managed by a Contract Services Specialist to ensure that they are received, approved, and documented prior to the issuance of the NTP.

The City has determined that the City and the City’s contractor both meet the definition of an “operator” as defined in the CGP and are therefore co-permittees. All operators are required to obtain coverage for stormwater discharges associated with construction activity under the CGP. Therefore, both the City and the Contractor must receive

separate ADEQ Authorization Certificates or Permit Waiver Certifications for each project.

The CGP allows for the division of responsibility for compliance with the terms of the CGP for multiple operators as long as they develop a joint or common SWPPP that documents which operator has responsibility for each requirement of the permit. As a co-permittee, the City has operational control over project plans and specifications including the ability to make modifications to those plans or specifications. The City's contractor, usually the General Contractor, is responsible for the day-to-day operational control of the activities at the project site.

As a co-permittee, the contractor is responsible for submitting the SWPPP to the City for review to determine compliance with City requirements. The City has developed a Review of SWPPP Content Form that is required for all City projects which is available on the City's Environmental Requirements for Construction Activities website (see [Section 5.0](#)).

After the SWPPP has been approved by the City, the contractor is responsible for maintaining and updating the SWPPP as well as for compliance with all applicable effluent limits, terms, and conditions of the CGP, including implementation of BMPs described in the SWPPP. The contractor is also responsible for following the standards for structural and non-structural BMPs as provided in [Section 4.0](#) of this Manual.

### **3.5.2 Inspections**

City construction projects are inspected routinely by Engineering Department construction inspectors. These inspectors have been used by the City as a constant source of inspecting City projects, addressing stormwater issues as they arise, and contacting ESD when compliance is either uncertain or not being attained. This staff is trained in the 2010 MS4 Permit requirements, City ordinances, AZPDES permit conditions, construction BMPs, and the conditions set forth in this Manual. Additionally, ESD inspectors conduct environmental audits of City construction site activities to ensure that appropriate training has been provided to Engineering Department construction inspectors and compliance is being maintained.

City construction projects are inspected for compliance with the City’s ordinance as well as ADEQ permit requirements. If an issue is identified and cannot be addressed in the presence of the inspector, the contractor will be provided an established timeframe to address the issue and a re-inspection will be scheduled. That schedule will usually be determined based on the seriousness of the hazard associated with the violation.

### **3.5.3 Enforcement**

The goal of the City construction inspection program enforcement procedure is to obtain voluntary compliance from the contractor. Voluntary compliance is the preferred method of ensuring the contractor is taking appropriate “corrective actions” to reduce pollutant discharges to the City’s storm sewer system. Where voluntary compliance is not successful, the contractor may be issued a Stop Work Order until such time that the issue has been resolved. In some cases (e.g. constant state of non-compliance), a code case may be opened against the contractor and the contractor may be subject to civil or criminal penalties.

## 4.0 STANDARDS FOR STRUCTURAL AND NON-STRUCTURAL STORMWATER BEST MANAGEMENT PRACTICES

For construction activities that require permitting under the 2013 CGP, the ADEQ requires, among other things, the “operator” of a construction activity to:

1. Implement technology-based effluent limitations to meet water quality standards that, where applicable, apply to all stormwater and allowable non-stormwater discharges from construction sites.
2. Comply with the control measures requirements included in Part 3 of the CGP through site planning and designing, installing, and maintaining these controls.
3. Design, install, and maintain the following control measures at construction sites:
  - Erosion and sediment control
  - Site stabilization
  - Pollution prevention
  - Controls for Allowable Non-Stormwater Discharges and Dewatering Activities.
4. Control discharges from the site as necessary to not cause or contribute to an exceedance of an applicable water quality standard.

The Flood Control District of Maricopa County (FCDMC) has developed a Drainage Design Manual for Maricopa County, Erosion Control manual (Erosion Control Manual) dated November 28, 2012. The objective of the this manual is to provide technical guidance to agencies, municipalities, developers, property owners, engineers, contractors and others involved with construction activities as a means to comply with the AZPDES stormwater permitting process for those activities. This manual was developed as part of a regional effort for use within Maricopa County. City of Mesa representatives participated in the development of that manual.

In order to meet the conditions of the 2010 MS4 Permit (see [Section 3.2](#), item #4), the City has adopted the Erosion Control Manual and incorporated amendments as provided in Section 8-5-3 of the City’s Storm Water Pollution Control ordinance along

with provided changes and amendments. The effective date for construction operators to meet these requirements is May 15, 2013. Any projects that are required to submit an ADEQ Authorization Certificate (see [Section 3.4.1](#) and [Section 3.5.1](#)) upon or after this date are required to comply these standards. A copy of the Erosion Control Manual dated November 28, 2012 is available on the City's Environmental Requirements for Construction Activities website (see [Section 5.0](#)).

#### **4.1 REQUIREMENTS FOR PRIVATE CONSTRUCTION PROJECTS**

Although the City does not meet the definition of an “operator” for private construction projects, any BMP that is installed on City property, including City public right-of-way areas (e.g. City streets, catch basins and scuppers), is subject to the requirements of the adopted Erosion Control Manual and City amendments to that manual. As such, operators of private construction activities should make themselves aware of the Erosion Control Manual and the City amendments. Failure to implement approved BMPs on City property is subject to enforcement action.

#### **4.2 REQUIREMENTS FOR CITY CONSTRUCTION PROJECTS**

The contractor shall identify in the SWPPP BMPs selected from the Erosion Control Manual and City amendments to be used at the site. The location of these BMPs must be shown on a site map where required in the City's Review of SWPPP Content Form available on the City's Environmental Requirements for Construction Activities website (see [Section 5.0](#)).

All BMPs identified in the Erosion Control Manual shall be installed per the Erosion Control Manual, City amendments, manufacturer's directions, and using good engineering practices to ensure these BMPs remain functional and effective in order to prevent the discharge of pollutants to the City's storm sewer system. The BMPs selected and detailed in the SWPPP will be reviewed prior to approval of the SWPPP. It is the responsibility of the contractor to ensure the BMPs are properly installed and maintained throughout the duration of the project.

#### **4.3 SUMMARY OF CITY CHANGES AND AMENDMENTS TO THE FCDMC EROSION CONTROL MANUAL**

Any federal, state, or county dust control or stormwater requirements take precedence over the FCDMC Erosion Control manual or City amendments thereto. To the extent

practicable, sources of sediment should be addressed using erosion control BMPs (those designed to reduce the volume or velocity of stormwater runoff from exposed areas) instead of treating sediment impacted runoff using sediment control BMPs (i.e. separating and containing suspended sediment).

A summary of changes and amendments to Section 5 (BEST MANAGEMENT PRACTICES) of the Erosion Control Manual as provided in Section 8-5-3 of the City's Storm Water Pollution Control ordinance and summarized, with some additional notation, is provided in the following subsections.

#### **4.3.1 Section 5.1: Selection Matrix**

The SWPPP must address each of the BMPs listed in Section 5 of the Erosion Control Manual. If any particular BMP is not applicable to a particular project (e.g. the site is basically flat so slope protection is not needed) that must be noted in the SWPPP.

#### **4.3.2 Erosion Control**

##### **4.3.2.1 EC-2 Mulching**

The use of emulsified asphalt is not permitted as a mulching option on City properties or for City projects.

##### **4.3.2.2 EC-3 Protection of Trees and Vegetation in Construction Areas**

Where plans provide for the preservation of trees and other vegetation, these areas shall be delineated (i.e. staked, flagged, or fenced) to prevent damage from construction equipment and other forms of access.

##### **4.3.2.3 EC-5 Stabilized Construction Entrance**

Course aggregate pad dimensions must be a minimum of thirty (30) feet in width, three (3) inches in depth, and fifty (50) feet in length or the length of the longest haul truck, whichever is greater. Instead of a course aggregate pad, construction site entrance stabilization may also include a paved surface one hundred (100) feet in length and twenty (20) feet in width or a grizzly or rumble grate consisting of raised dividers a minimum of three (3) inches tall, six (6) inches apart, and twenty (20) feet in length.

#### 4.3.2.4 EC-7 Dust Control

The City allows use of collected rainwater for dust control.

#### 4.3.2.5 EC-8 Temporary Access Waterway Crossing

Temporary access waterways crossings over or through a water of the United States may require a 404 permit.

#### 4.3.2.6 EC-10 Drainage Swales

Design of drainage swales impacting a water of the United States may require a 404 permit.

### **4.3.3 Sediment and Pollutant Control**

#### 4.3.3.1 SPC-1 Organic Filter Barrier

Per the Erosion Control Manual, the proper installation for organic filter barriers (e.g. wattles) requires them to be staked to the ground. These types of materials are not appropriate for preventing sediment discharges from soil or material stockpiles or other sediment sources stored on paved surfaces, or for use as inlet protection (see [Section 4.3.3.5](#)) where they cannot be staked down. However, they may be used as a secondary sediment control source (i.e. installed around a soil stockpile on a paved surface where appropriate inlet protection is also provided).

#### 4.3.3.2 SPC-2 Sand Bag Barrier

Sand bags may not be used for the purposes of inlet protection. Where sand bags are used for other purposes, they shall be delineated (i.e. staked and flagged) to keep construction equipment from running over these structures. These must be inspected on at least a weekly basis to ensure they have not ruptured and the sand has become a stormwater pollutant.

#### 4.3.3.3 SPC-5 Silt Fence

For projects greater than five (5) acres requirements regarding perimeter control of the construction activity as provided in any applicable stormwater permit shall be met through the use of silt fences excepting those areas of high flow, construction site entrances areas where perimeter control are impracticable (i.e. projects in the public right-of-way); and areas where all stormwater flows are directed to an on-site temporary

sediment basin or sediment trap. Silt fence use at smaller projects is highly recommended as a perimeter control.

#### 4.3.3.4 SPC-6 Re-Vegetation

Where plans provide for re-vegetation, installation of such vegetation shall take place as soon as practicable and these areas shall be delineated (i.e. staked, flagged, or fenced) to prevent damage from construction equipment and other forms of access.

#### 4.3.3.5 SPC-7 Storm Drain Inlet Protection

To prevent flooding issues, storm drain inlet protection should only be used when sufficient construction site perimeter control is not possible (e.g. utility installations in public roadways or other public right-of-way areas). City of Mesa personnel may remove any storm drain inlet protection device where flood conditions may exist. It is the responsibility of the operator in charge of day-to-day operations to replace or re-install these devices after the threat of flooding has subsided.

1. Course gravel and cinder block configurations and sand bags are not to be used to protect storm drains.
2. Geotextiles or fiber mats are the preferred storm inlet protection because they can be secured to the storm drain grate or by the weight of the storm drain grate, and allow sufficient drainage to prevent flooding in normal conditions. Where geotextiles or fiber mats are used, these shall be connected to or secured by the storm drain grate and shall cover all areas of the inlet where sediment can enter.
3. When installing any storm drain inlet protection that is installed above grade traffic control devices must be placed at the end of both sides of the installation to prevent damage from public and construction traffic. All traffic control devices must be installed in accordance with temporary traffic control requirements as provided in title 10, chapter 10 of the Mesa City Code, specifically the City's Traffic Barricade Manual.
4. Organic filter barriers (e.g. wattles) cannot be used as a BMP for storm drain inlet protection where they cannot be staked down (see [Section 4.3.3.1](#)). However, they may be used in conjunction with acceptable methods of storm drain inlet protection (i.e. geotextile or fiber mats) as described above.

#### 4.3.3.6 SPC-8 Temporary Sediment Basins

The City would prefer to limit temporary sediment basins to one per site. However it recognizes that more than one may be needed at larger sites. If a basin is used that is intended to become a permanent basin (e.g. retention or detention post-construction basins), the basin may require additional grading as necessary to ensure the basin performs as originally designed.

#### 4.3.3.7 SPC-9 Temporary Sediment Traps

The City would prefer to limit temporary sediment traps to one per site. However it recognizes that more than one may be needed at larger sites.

### **4.3.4 GH: General Housekeeping**

#### 4.3.4.1 GH-4 Designated Washdown Areas

The City would prefer to limit wash down areas to one per site. However it recognizes that more than one may be needed at larger sites.

## 5.0 REFERENCES

Arizona Department of Environmental Quality: Water Quality Division, Permits, Stormwater (Construction Activities) webpage.

<http://www.azdeq.gov/environ/water/permits/stormwater.html>

Arizona Department of Environmental Quality: SMART NOI webpage.

<https://az.gov/app/smartnoi/>

City of Mesa: Barricades and Block Party Guidelines webpage.

<http://www.mesaaz.gov/transportation/barricades.aspx>

City of Mesa: Environmental Requirements for Construction Activities webpage.

<http://www.mesaaz.gov/environ/construction.aspx>

Maricopa County Air Quality Department; Adopted Rules (see Rule 310):

[http://www.maricopa.gov/aq/divisions/planning\\_analysis/AdoptedRules.aspx](http://www.maricopa.gov/aq/divisions/planning_analysis/AdoptedRules.aspx)

Maricopa County Air Quality Department; Air Quality Compliance webpage.

<http://www.maricopa.gov/aq/divisions/compliance/dust/Default.aspx>

Maricopa County Air Quality Department; Resources (e.g. permit application forms)

webpage. <http://www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx>

Mesa City Code: Title 8 (Health, Sanitation, and Environment); Chapter 2 (Environmental Protection) and Chapter 5 (Storm Water Pollution Control)

webpage. [http://mesaaz.gov/clerk/CodeBook/Table\\_of\\_Contents.aspx](http://mesaaz.gov/clerk/CodeBook/Table_of_Contents.aspx)