

Stormwater Management Training  
for  
**CONSTRUCTION ACTIVITIES**



**City of Cottonwood**

**JUNE 2017**

# AGENDA

## PART 1 - STORMWATER OVERVIEW

- What is stormwater?
- What is an illicit discharge?
- Permit compliance
- Identifying and reporting illicit discharges

## PART 2 - CONSTRUCTION PROGRAM

- Brief Construction General Permit Overview
- Construction Inventory
- Site Plan Review Procedures
- Inspection Procedures
- Contractor Education
- Enforcement
- Unpermitted Discharges

# STORMWATER, WHAT'S IT ALL ABOUT?



- Stormwater is runoff due to rain or snow melt that enters streams and rivers via natural geologic features such as channels as well as urbanized features such as storm drains and gutters *WITHOUT treatment*

# WHERE DOES STORMWATER GO?

Retention basins, washes, rivers, lakes...



# WHERE DOES YOUR STORMWATER GO?

Ultimately, to the Verde River.



# HOW DOES STORMWATER GET THERE?

Through the Municipal Separate Storm Sewer System (MS4 – a system to move stormwater to receiving waters)

- Curbs and gutters
- Storm drains
- Catch basins
- Ditches
- Pipes



And exits through outfalls.



# WHY IS STORMWATER QUALITY IMPORTANT?



Polluted stormwater negatively impacts:

- Human health and safety
- Wildlife and habitat
- Recreation and tourism
- Land preservation

# STORMWATER REGULATIONS

- Stormwater compliance falls under Section 402 of the Clean Water Act and is administered by the EPA.
- EPA delegated authority to the ADEQ in 2002.
- ADEQ re-issued the Small MS<sub>4</sub> General Permit in 2016.
- Arizona Pollutant Discharge Elimination System (AZPDES)  
*"This general permit specifically authorizes stormwater discharges from small MS<sub>4</sub>s in Arizona to Waters of the United States"*

# PERMIT REQUIREMENTS

The City's Stormwater Permit requires many activities, including:

- Developing and implementing a Stormwater Management Plan (SWMP)
- Performing inspections
- Conducting visual assessments
- Compiling and submitting annual reports
- **Prohibiting illicit discharges**
- **Providing employee training**

 **ADEO**  
Arizona Department  
of Environmental Quality

**PERMIT** www.azdeq.gov

PERMIT NO. AZG2016-002

STATE OF ARIZONA  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
PHOENIX, ARIZONA 85007

**ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM  
GENERAL PERMIT FOR STORMWATER DISCHARGES  
FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS  
TO WATERS OF THE UNITED STATES**

This permit provides authorization to discharge under the Arizona Pollutant Discharge Elimination System (AZPDES) program, in compliance with the provisions of the Arizona Revised Statutes (A.R.S) and, Title 49, Chapter 2, Article 3.1, the Arizona Administrative Code (A.C.C.), and Title 18, Chapter 9, Article 9.

This general permit specifically authorizes stormwater discharges from small municipal separate storm sewer systems (MS4s) in Arizona to Waters of the United States, pursuant to 40 CFR § 122.34. All discharges authorized by this general permit shall be consistent with the terms and conditions of this general permit.

This general permit becomes effective on September 30, 2016.

This general permit and the authorization to discharge expires at midnight September 29, 2021.

Signed this 29<sup>th</sup> day of September, 2016.

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

  
Trevor Baggione, Director  
Water Quality Division

# WHAT IS AN ILLICIT DISCHARGE?

Any discharge to the MS<sub>4</sub> not composed entirely of stormwater, except for allowed or separately permitted discharges.

Also includes:

- Illegal dumping and littering
- Illicit connections



# COMMON EXAMPLES OF ILLICIT DISCHARGES



# OTHER TYPES OF ILLICIT DISCHARGES

## Littering and illegal dumping



## Illicit Connections

A physical connection of a non-stormwater source to the storm drain system.



# SOME TYPES OF DISCHARGES ARE “ALLOWABLE”

*... BUT they still must be pollutant free!*

- Water line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated groundwater infiltration
- Uncontaminated pumped groundwater
- Discharge from potable sources
- Fountain drains
- Air conditioning condensate
- Irrigation water
- Springs
- Water from crawl space pumps
- Footing drains
- Lawn watering
- Individual residential car washing
- Non-commercial, charity car washes
- Discharge from riparian habitats and wetlands
- Street wash water
- Discharges of flows from fire-fighting activities
- Building washing without added cleaning products

# RECOGNIZING POTENTIAL ILLICIT DISCHARGES

- Flow in the gutter or outfall without a rain event
- Unusual water characteristics (color, odor, bubbles, solids, etc)
- Visual observation of discharge / disposal
- Pavement staining



# ILLICIT DISCHARGES: WHAT TO REPORT?

- Chemical dumping
- Information on malfunctioning septic systems
- Leaking or blocked stormwater systems
- Dry weather discharges that may contain pollutant
- Silt and sediment runoff from poorly controlled construction sites

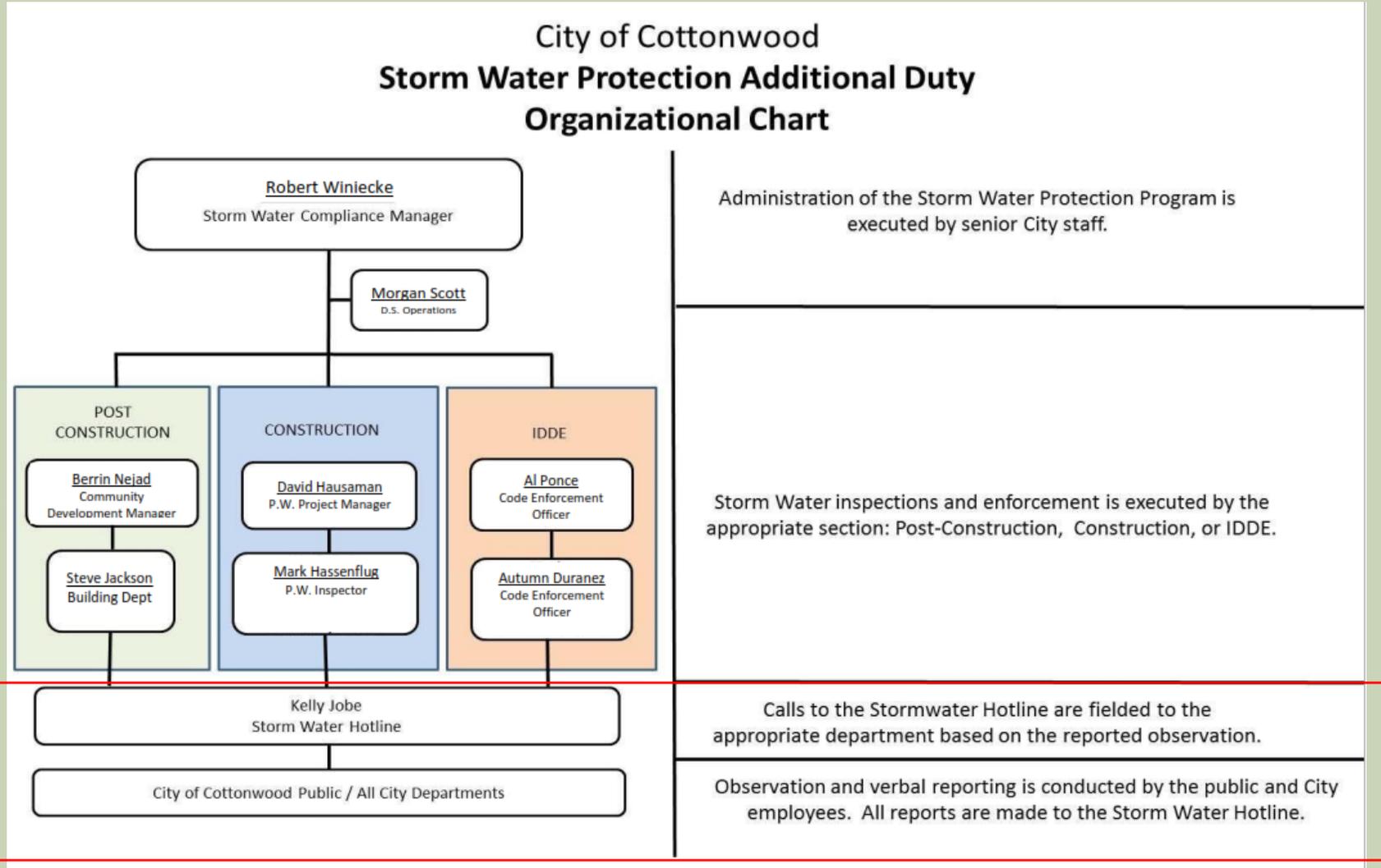


*Anything else that doesn't look like normal rain runoff!*

# HOW TO REPORT ILLICIT DISCHARGES

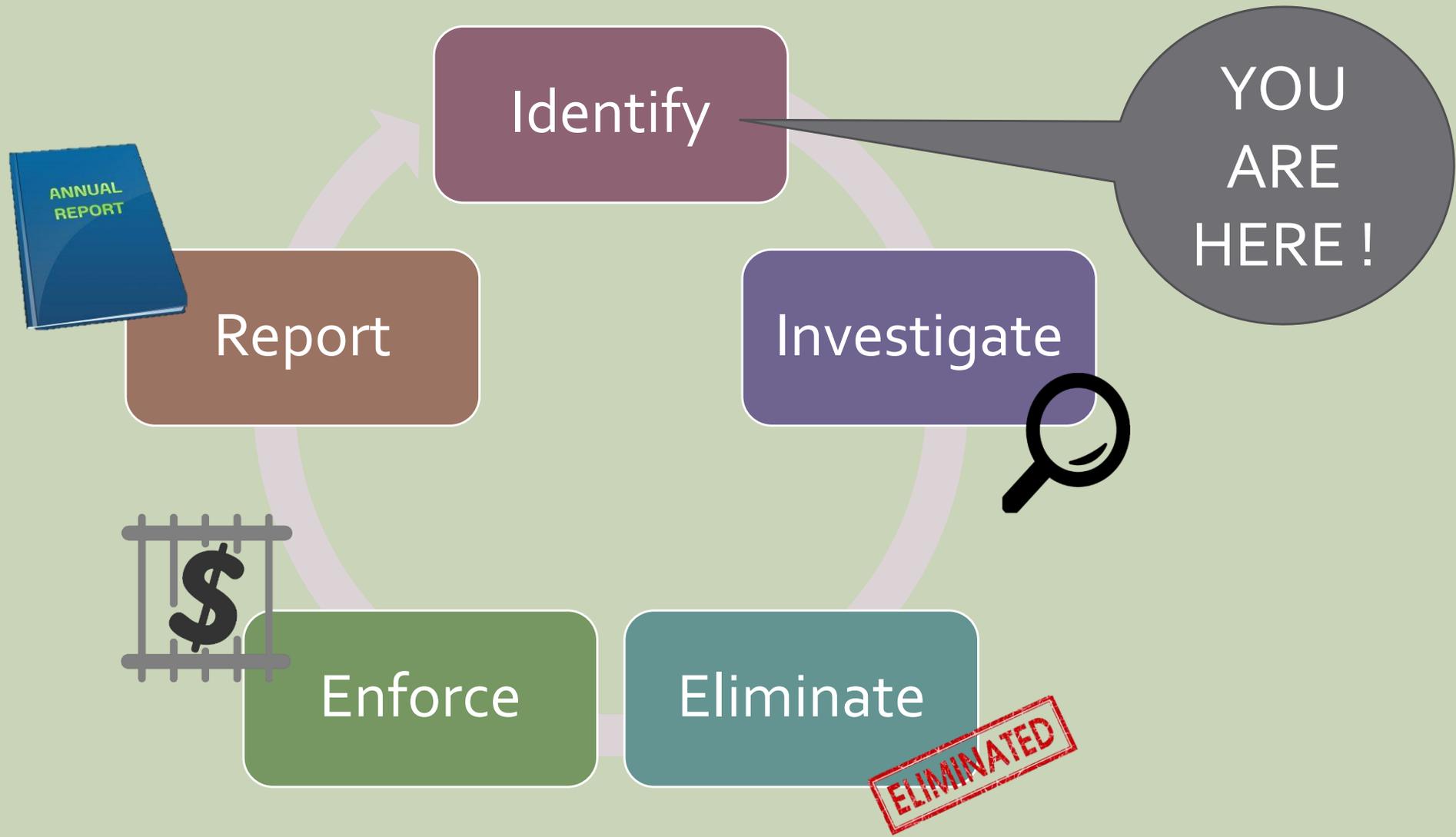
- If a potential illicit discharge is spotted:
  - Identify key information (such as location, discharge characteristics, obvious sources)
  - Take a picture (if safe to do so)
  - Notify Police Department Code Enforcement Officers or Engineering Inspectors by:
    - submitting an online complaint (<http://cottonwoodaz.gov/363/Public-Works>)
    - calling the stormwater hotline (928-340-2775)

# ORGANIZATIONAL CHART FOR STORMWATER PROGRAM



Illicit discharge reporting

# CITY IDDE PROGRAM RESPONSIBILITIES



# HOW CAN YOU HELP?

## As a Citizen...

- Maintain your vehicles
- Wash your vehicles at car washes
- Don't over fertilize plants and lawns
- Pick up pet waste
- Maintain septic systems

## As an Employee...

- Put vehicles in for service as needed
- Clean vehicles and equipment in designated areas
- Maintain vehicles and equipment in designated areas
- Properly track and report any illicit discharges



# AGENDA

## PART 1 - STORMWATER OVERVIEW

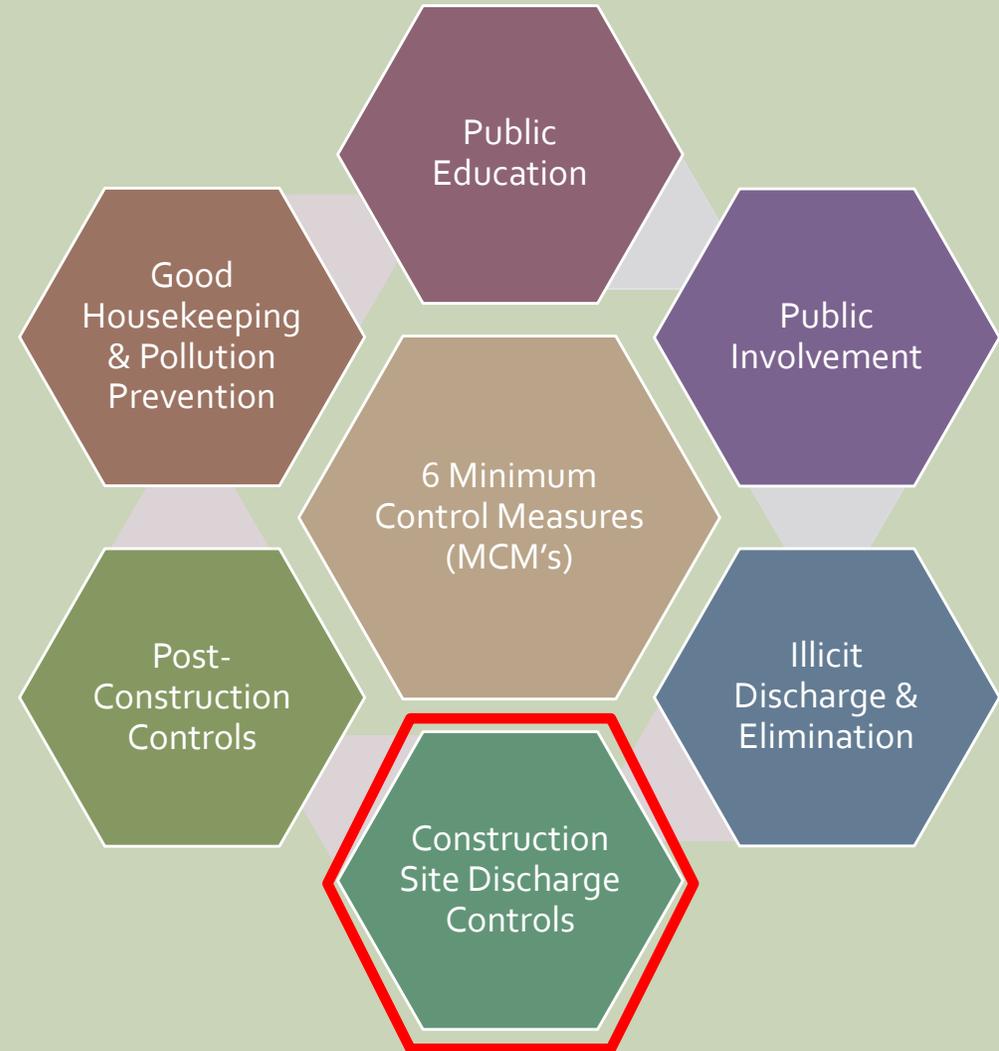
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## PART 2 - CONSTRUCTION PROGRAM

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- Enforcement
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# CONSTRUCTION PROGRAM

- The Construction Program is just one element described in the Stormwater Management Plan
- The objective of this program is to reduce transport of sediment and other pollutants from construction sites to the MS4



# CGP APPLICABILITY

- All sites that disturb 1 acre or more, or are part of a common plan of development, may be subject to Construction General Permit (CGP) coverage.



# CGP REQUIREMENTS

The CGP is administered by ADEQ and requires contractors to:

- file an NOI before beginning construction
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP)

*SWPPP implementation includes installing and maintaining BMPs, performing inspections, recordkeeping, and reporting.*

- file a NOT at the end of construction

*These elements are all performed by the contractor  
FOR COMPLIANCE WITH ADEQ's PERMIT*

# CITY REQUIREMENTS

The City's MS<sub>4</sub> Permit requires the City to implement the following activities pertaining to construction sites:

- Develop and maintain a construction site inventory
- Document and implement inspection procedures
- Document and implement a site plan review
- Provide operator education
- Identify and report unpermitted discharges

# CONSTRUCTION INVENTORY

- The city maintains an inventory of all construction sites that disturb 1 acre or more (or are part of a larger plan of development)
- Construction projects are uploaded into MS4 Front when project information is submitted for building permits
- The inventory is searchable by address and updated regularly



# CONSTRUCTION PLAN REVIEW

- Review construction site plans and Erosion Control Plans (ECPs)
- City verifies contractors have obtained CGP coverage from ADEQ
  - Notice of Intent (NOI)
  - Authorization To Discharge (ATD)
- Grading permits not issued until all necessary documents are submitted and approved
- Contractors must follow specifications within the Yavapai County Drainage Criteria Manual (rev. July 2015)



# CONSTRUCTION SITE INSPECTION & ENFORCEMENT

- Each site is inspected at least once during construction
- Site are inspected to verify compliance with City code and confirm stormwater controls are installed, maintained, and functioning properly
- City has the authority to cite construction sites not in compliance with the provisions of the Enforcement Response Plan (ERP)
- The Stormwater Plan Review Form and Construction Inspection Form can be seen on the next slides

**Cottonwood Stormwater Checklist**  
 Plan Review

Project Name: \_\_\_\_\_ Project # \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_ Phone: \_\_\_\_\_ Date: \_\_\_\_\_  
 Engineer: \_\_\_\_\_ Phone: \_\_\_\_\_

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Construction sites over 1 acre (or those sites that will disturb less than one acre, but are part of a common plan of development or sale that will ultimately disturb one acre or more) are subject to the Arizona Department of Environmental Quality (ADEQ) Arizona Pollution Discharge Elimination System (AZPDES) requirements for construction sites under Construction General Permit (CGP) AZG2013-001. Owners, developers, engineers, and/or contractors are required to prepare all documents required by this regulation, including but not limited to a Stormwater Pollution Prevention Plan (SWPPP), Notice of Intent (NOI), and Notice of Termination (NOT). This checklist is for use by City employees when reviewing construction site plans to comply with provisions of the Phase 2 Municipal Separate Storm Sewer System (MS4) General Permit Number AZG2002-002.

**GENERAL REQUIREMENTS**

Yes No  
  Is a copy of the Notice of Intent (NOI) and certified delivery receipt (delivery receipt required unless submitting via SMART NOI in which case delivery receipt is not required) OR a copy of ADEQs Authorization to Discharge (ATD) included?  
  Are the appropriate resources referenced?  
  Is the nearest receiving water(s) (including ephemeral and intermittent streams, dry washes, and arroyos) identified?

**PROPOSED CONTROL MEASURES**

Verify whether control measures are present (Pres) and appropriate (App) for each category of control measure.

<p><b>Erosion &amp; Sediment Control</b></p> <p>Pres App</p> <input type="checkbox"/> <input type="checkbox"/> Run-On Management <input type="checkbox"/> <input type="checkbox"/> Sediment Basins and Traps <input type="checkbox"/> <input type="checkbox"/> Culvert Stabilization <input type="checkbox"/> <input type="checkbox"/> Velocity Dissipation Devices <input type="checkbox"/> <input type="checkbox"/> Preserve Natural Vegetation <input type="checkbox"/> <input type="checkbox"/> Phase/Sequence Const. Activities <input type="checkbox"/> <input type="checkbox"/> Stabilize Steep Slopes <input type="checkbox"/> <input type="checkbox"/> Perimeter Control <input type="checkbox"/> <input type="checkbox"/> Stockpile Protection <input type="checkbox"/> <input type="checkbox"/> Storm Drain Inlet Protection <input type="checkbox"/> <input type="checkbox"/> Natural Buffers (or alternatives)	<p><b>Site Stabilization</b></p> <p>Pres App</p> <input type="checkbox"/> <input type="checkbox"/> Temporary Stabilization <p><b>Pollution Prevention</b></p> <input type="checkbox"/> <input type="checkbox"/> Concrete Washout <input type="checkbox"/> <input type="checkbox"/> Run-On Management <input type="checkbox"/> <input type="checkbox"/> Provisions for: washing equipment, vehicles, applicators, and containers <input type="checkbox"/> <input type="checkbox"/> Fueling and Maintenance of Equipment and/or Vehicles <input type="checkbox"/> <input type="checkbox"/> Site Egress controls <input type="checkbox"/> <input type="checkbox"/> Good Housekeeping <input type="checkbox"/> <input type="checkbox"/> Material Storage, Handling, and Disposal Considerations (containment, cover)
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**Determination**

Date notification provided to applicant that BMPs for the site are appropriate \_\_\_\_\_

Date plans returned to applicant for revision: \_\_\_\_\_

**CONSTRUCTION SITE STORMWATER INSPECTION FORM  
CITY OF COTTONWOOD**

**Section 1: General Information**

Inspector:	Date:	Time:
Project #:	AZCON #:	
Site Location:	Onsite Rep:	
Site Owner:	Reps phone #:	
Precipitation w/in last 24 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No	Weather (Approx. temp, etc.):	
Phase of construction (check all that apply):		
<input type="checkbox"/> Clearing/Grubbing	<input type="checkbox"/> Infrastructure or Building Construction	<input type="checkbox"/> Abandoned/Inactive
<input type="checkbox"/> Rough Grading	<input type="checkbox"/> Demolition	
<input type="checkbox"/> Final Grading	<input type="checkbox"/> Final Stabilization	<input type="checkbox"/> Post-Construction

**Section 2: Permit Status**

NOI Submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No	Self-inspection reports on file: <input type="checkbox"/> Yes <input type="checkbox"/> No
SWPPP onsite: <input type="checkbox"/> Yes <input type="checkbox"/> No	All discharges composed of stormwater: <input type="checkbox"/> Yes <input type="checkbox"/> No
SWPPP up-to-date: <input type="checkbox"/> Yes <input type="checkbox"/> No	Non-stormwater discharges present: <input type="checkbox"/> Yes <input type="checkbox"/> No
NOT Submitted: <input type="checkbox"/> Yes <input type="checkbox"/> No	

**Section 3: Active Sites**

Inspect the following areas to determine if the condition is not applicable (NA), poor (P), fair (F), or good (G). If the condition is poor – follow-up is required. If the condition is fair – follow-up may be required. Areas in good condition do not require follow-up.

Area	Condition?	Repair Needed?	Localized or Widespread?	Comments/Observations
General Cleanliness	<b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Construction Site Entrance/Exit	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Surrounding Streets	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Perimeter controls (silt fences, wattles)	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Inlet protection	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Concrete washout area	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Material storage areas	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Onsite fueling areas	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Refuse areas	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Other:	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Other:	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	
Other:	<b>NA</b> <b>P</b> <b>F</b> <b>G</b>		<b>L</b> <b>W</b>	

**CONSTRUCTION SITE STORMWATER INSPECTION FORM  
CITY OF COTTONWOOD**

**Section 4: Post-Construction Sites**

Have all temporary stabilization measures been removed? **YES** **NO**

Area	Required Per Plan?	Installed?	Operating as Intended?	Comments/Observations
Check dams	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Embankment Protection	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Rip Rap	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Retention / Detention Pond	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Vegetation	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Soil Retention Blankets	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Inlet Protection	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Outlet Protection	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Headwalls	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Other:	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Other:	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	
Other:	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	<b>Y</b> <b>N</b>	

**Section 5: Enforcement and Resolution**

<input type="checkbox"/> Site <b>IN</b> Compliance	Evidence Collected (choose all that apply) <input type="checkbox"/> Photographs <input type="checkbox"/> Documents <input type="checkbox"/> Samples
<input type="checkbox"/> Site <b>NOT</b> in Compliance (choose option below and describe) <input type="checkbox"/> Follow-up Inspection required <input type="checkbox"/> Enforcement Action applied <input type="checkbox"/> Stop Work Order	
Enforcement action taken? <input type="checkbox"/> Yes <input type="checkbox"/> No if yes, describe: <input type="checkbox"/> Verbal Notice <input type="checkbox"/> Written Notice <input type="checkbox"/> Fines <input type="checkbox"/> Injunctive Relief	
Resolution:	

**Section 6: Inspector Signature**

Inspector Signature:
Inspector Name:
Date and Time Completed:

# CONTRACTOR EDUCATION



- Contractors must follow Cottonwood's stormwater practices and requirements described in the Ordinance
- The City provides training pamphlets to contractors with new permit applications
- Interaction between the City and contractors provides the best means of education

# ENFORCEMENT

- The City has legal authority to fully implement the SWMP including the right to prohibit illicit discharges to the MS<sub>4</sub>, conduct inspections, and carry out necessary enforcement procedures.
- The basis for enforcement is codified in the City Code
  - Chapter 15.40 Ord 172 § 1, 1985 Post-Construction Stormwater Detention Code
  - Chapter 15.44.090 Ord. 144 § 10, Illegal Discharge and Illegal Connection Stormwater Code
- The Enforcement Response Plan (ERP) describes the City's procedures and policies regarding enforcement of the City's municipal ordinances relating to stormwater quality.

*The ERP is contained  
within SWMP Attachment E.*

# ENFORCEMENT (Cont.)

- Compliance is achieved through progressively stricter measures, as needed.
- The City applies the following enforcement measures:
  1. A verbal warning.
  2. Written warning.
  3. Notice of Violation (NOV)
  4. Civil Citation
  5. Criminal penalties

## Enforcement Response Plan (ERP)

### INTRODUCTION

As required by the by the Arizona Department of Environmental Quality's (ADEQ) Arizona Pollutant Discharge Elimination System (AZPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) to Waters of the United States No. AZG2016-002 (Permit), the City of Cottonwood is required to develop and implement an Enforcement Response Plan (ERP). This ERP describes the City's procedures and policies regarding enforcement of the City's municipal ordinances relating to stormwater quality, including illicit discharges. Compliance shall be achieved through progressively stricter responses as needed. The ERP includes the following items relative to the City's enforcement procedures:

- A description of the types of enforcement issued by the City.
- A description of specific strategies for escalating enforcement response, where necessary, to address persistent, repeat or escalating violations.

The basis for the City's stormwater program enforcement can be found in the following documents:

- City Code Chapter 15.40 Ord. 172 § 1, 1985 City of Cottonwood Post Construction Stormwater Detention Code
- City Code Chapter 15.44.090 Ord. 144 § 10, 1984 City of Cottonwood Illegal Discharge and Illegal Connection Stormwater Code

This ERP documents the policies and procedures in support of the documents noted above.

### 1.0 ENFORCEMENT PROCESS

The City's enforcement of construction stormwater violations, water quality violations and illicit discharges is authorized by multiple sections of the City's municipal code.

#### 1.1 NEW DEVELOPMENT

For new development and redevelopment sites, the City issues Planning and Zoning, and Building Permits. Permits are issued by the Planning and Zoning and Building Safety Divisions of the Community Development Department, respectively. Prior to issuing a building permit, Building Safety staff ensure that Planning and Zoning Permits and/or other stormwater-related permits have been submitted and approved. Once development is completed, Building Safety staff ensures as-builts have been submitted and approved by the Public Works Department before issuing a Certificate of Occupancy. If issues arise during construction, the City will withhold inspections and/or Certificates of Occupancy as necessary. Withholding inspections and/or Certificates of Occupancy is found to be the most effective in achieving compliance.

#### 1.2 ILLICIT DISCHARGES

The City has a training program to educate appropriate employees on the identification of illicit discharges. Where an illicit discharge has been identified, it is routed to Code Enforcement for investigation. The Code Enforcement Officer performs an inspection to

# ENFORCEMENT (Cont.)

For development-related violations, the following enforcement tools may be applied:

- Issue Stop Work Order
- Withhold Building Inspections
- Withhold Plan Approvals
- Withhold Release of Certificate of Occupancy

*Refer to the ERP for more detailed information on when and how to apply enforcement measures.*

# UNPERMITTED DISCHARGES

- Identify and report construction sites operating without CGP coverage
- City will cross-reference the list of businesses using ADEQ's MegaSearch database (<http://megasearch.azdeq.gov/megasearch/>)
- List of sites without CGP coverage is reported to ADEQ annually



# SUGGESTED FIELD EQUIPMENT AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Camera
- Clipboard
- Inspection forms
- First Aid Kit
- Flashlight or spotlight
- Handheld GPS
- Tape Measure
- Traffic cones
- Waterproof marker/pen
- Mirror
- Hook/Crowbar
- Reflective safety vests
- Hearing protection
- Safety glasses
- Steel-toe boots



*PPE needs may vary based on site and weather conditions!*

# HEALTH AND SAFETY CONCERNS

- If evidence of a health or safety issue exists....STOP the inspection.
- Notify your supervisor, fire department, or police department.



# RECORDKEEPING

The City will keep any records pertaining to the Permit for a minimum of 3 years.

This includes:

- Reports
- Inspection Records
- Enforcement Actions
- Follow-up Documentation



# QUESTIONS/COMMENTS?

Any questions or concerns contact:

Robert Winiecke

[rwiniecke@cottonwoodaz.gov](mailto:rwiniecke@cottonwoodaz.gov)

(928) 634-8033



**City of Cottonwood**