

Stormwater Management Training for **POST-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 - POST-CONSTRUCTION PROGRAM

- Best Management Practices
- Stormwater Control Inventory
- Site Plan Review Procedures
- Operation & Maintenance

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 MS₄ General Permit in 2016.
- Arizona Pollutant Discharge Elimination System (AZPDES)
"This general permit specifically authorizes stormwater discharges from small MS₄s 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**

 **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 29th day of September, 2016.

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY


Trevor Baggiore, Director
Water Quality Division

WHAT IS AN ILLICIT DISCHARGE?

Any discharge to the MS₄ 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

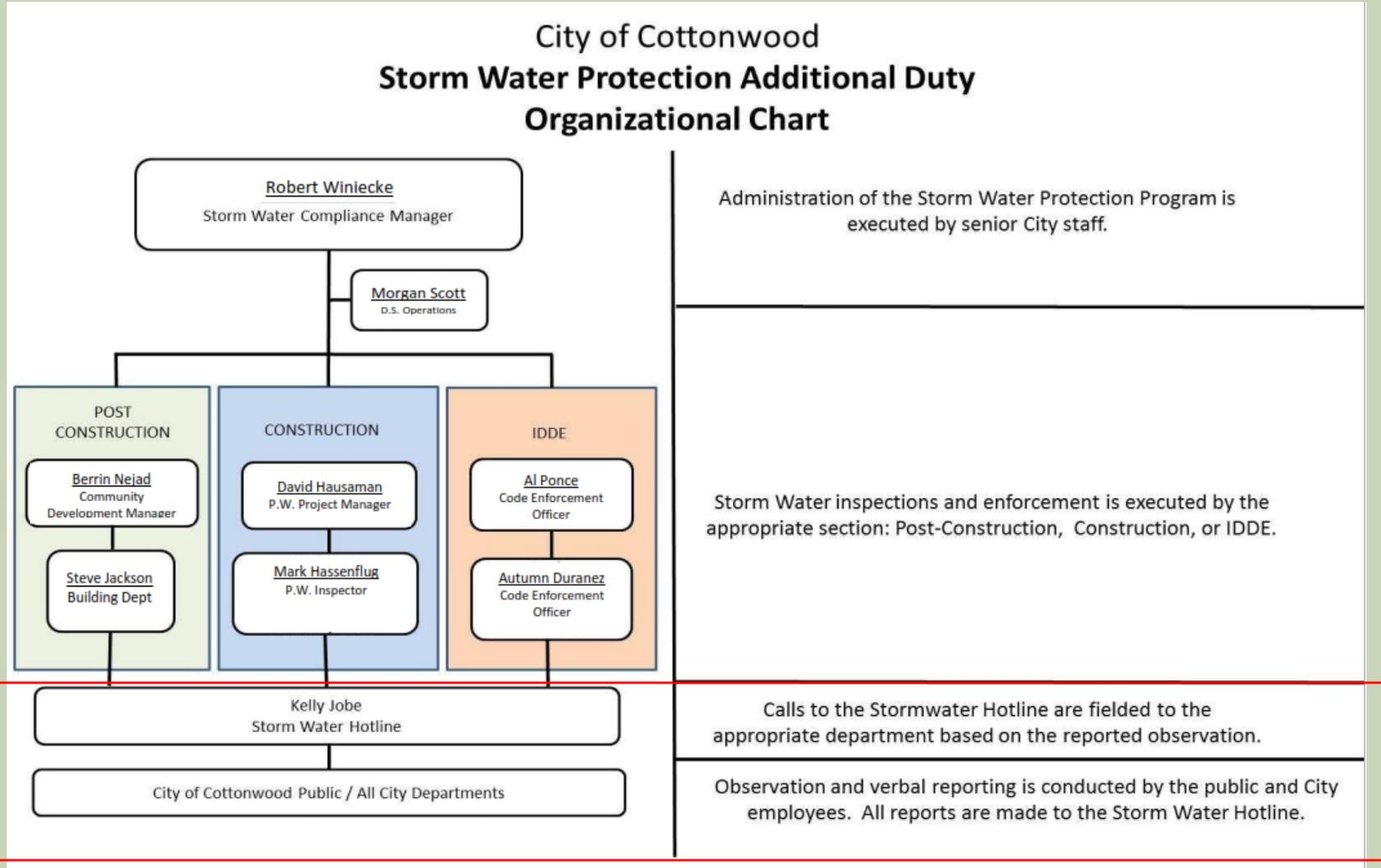


Anything else that doesn't look like normal rain runoff!

HOW TO REPORT ILLICIT DISCHARGES

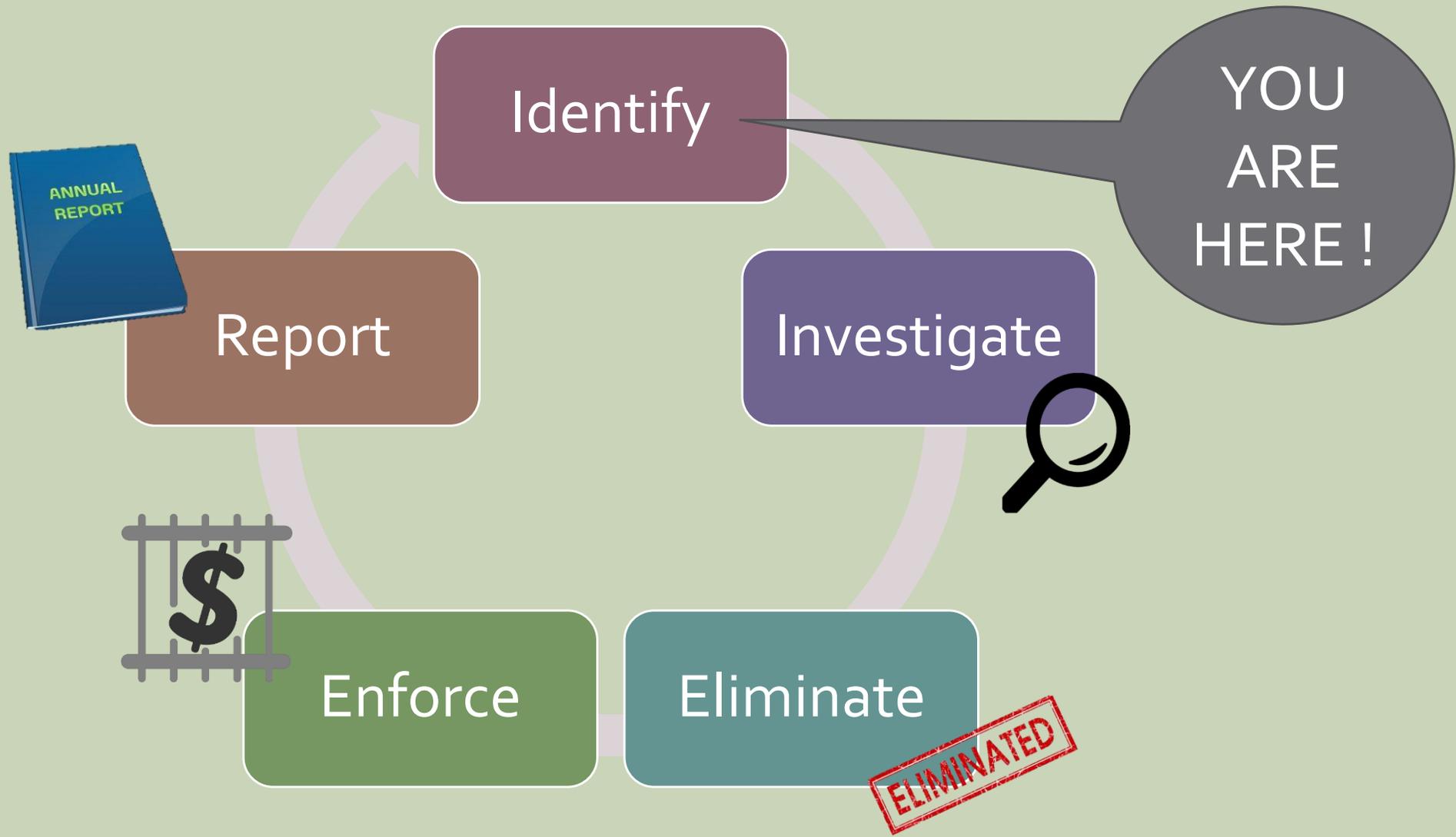
- If a potential illicit discharge is spotted:
 - Identify key information (such as location, discharge characteristics, obvious sources)
 - Take a picture (if safe to do so)
 - Notify Police Department Code Enforcement Officers or Engineering Inspectors by:
 - submitting an online complaint (<http://cottonwoodaz.gov/363/Public-Works>)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

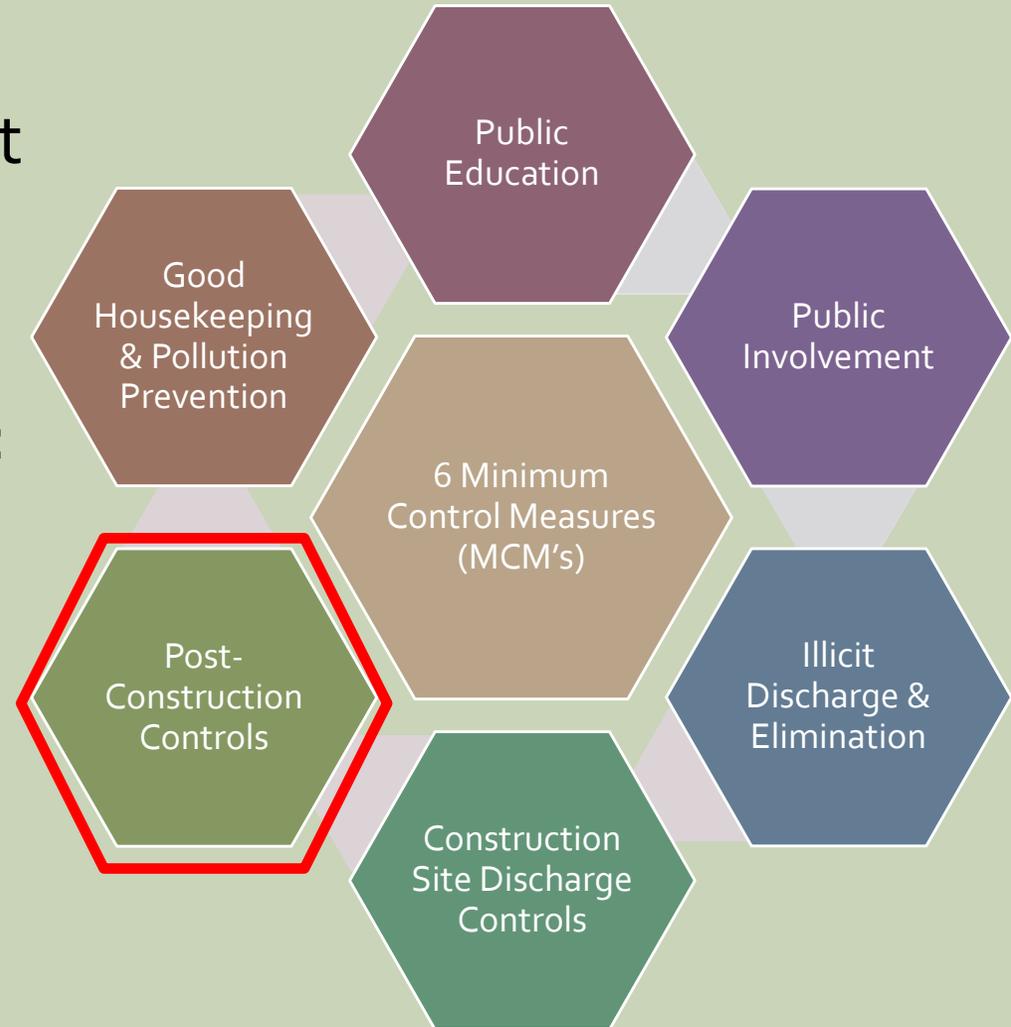
- What is stormwater?
- What is an illicit discharge?
- Reporting illicit discharges
- Examples

▪ PART 2 - POST-CONSTRUCTION PROGRAM

- Best Management Practices
- Stormwater Control Inventory
- Site Plan Review Procedures
- Operation & Maintenance

POST-CONSTRUCTION PROGRAM

- The Post-Construction Program is just one element described in the Stormwater Management Plan
- The objectives of this program are to:
 1. reduce the discharge of pollutants to stormwater runoff
 2. provide for long term Best Management Practices (BMPs) and inspection programs to improve stormwater quality



CITY REQUIREMENTS

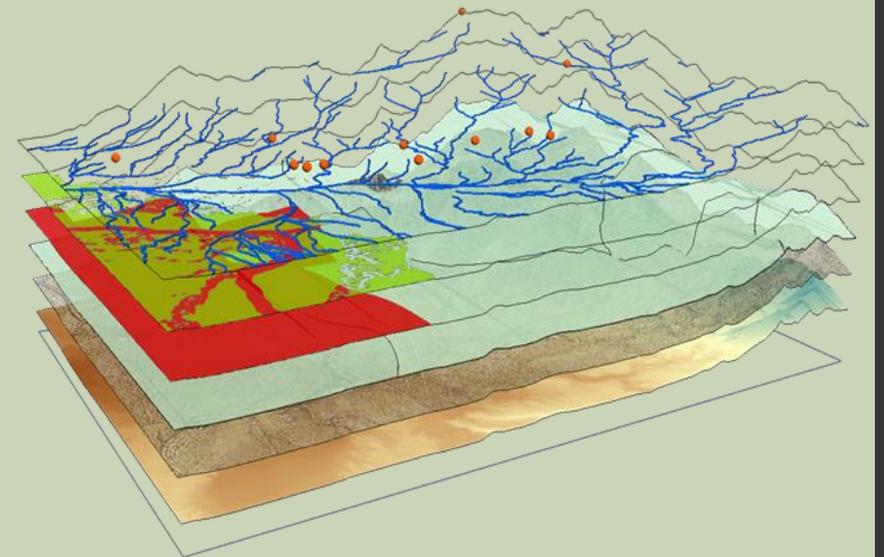
The City's MS₄ Permit requires the City to implement the following activities pertaining to post-construction sites:

- Develop and maintain a stormwater control inventory
- Inspect post-construction controls
- Describe site plan review procedures
- Verify proper operation and perform maintenance on controls

STORMWATER CONTROL INVENTORY

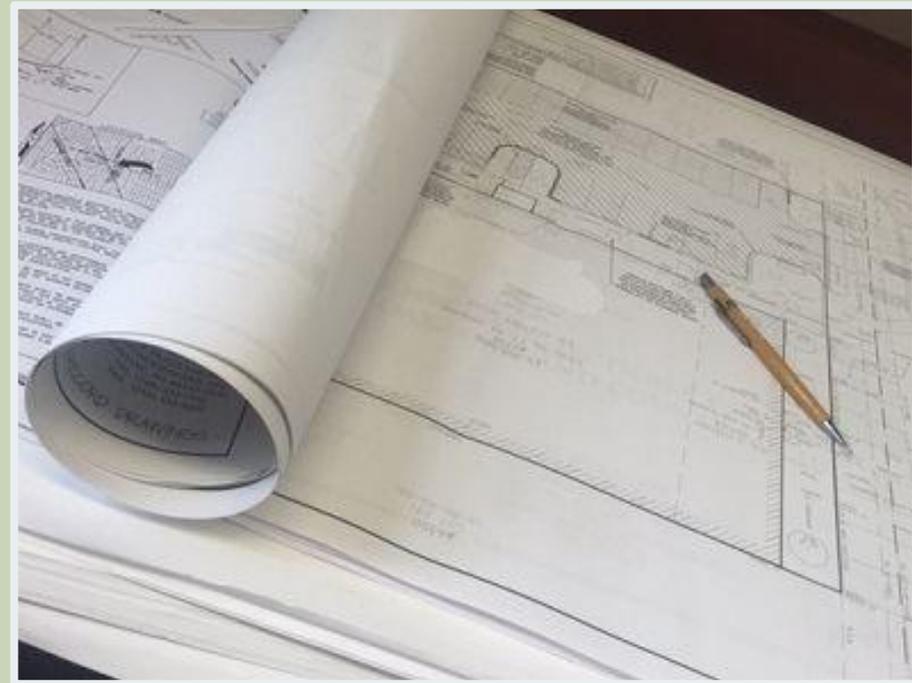
- All Post-Construction stormwater control BMPs are recorded in GIS
- As-Builts plans are submitted by the contractor prior to issuance of the Certificate of Occupancy
- As-Built plans are digitized by Public Works

An accurate map and inventory are helpful when tracking the source and/or destination of spills and illicit discharges!



SITE PLAN REVIEW PROCEDURES

- Plans are reviewed prior to construction to verify post-construction stormwater quality controls and methods.
- Plans are reviewed against the Stormwater Ordinance, Grading, and Retention Ordinances as well as the Yavapai County Drainage Criteria Manual



OPERATIONS AND MAINTENANCE

- All post-construction stormwater structures that discharge to the MS4 are maintained by their respective Owner
- Responsibility for stormwater controls is determined prior to issuance of the Final Plat and is typically documented through an Operation and Maintenance Agreement.
- Privately-owned structures are inspected by City staff only on a complaint driven basis
- City-owned structures are inspected by the City or their contractor.
The City will inspect 20% of post-construction stormwater controls annually.



DOCUMENT INSPECTIONS

Inspection results are documented on page 2 of the construction site inspection form.

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
	Y	N	Y	N	Y	N	
Check dams	Y	N	Y	N	Y	N	
Embankment Protection	Y	N	Y	N	Y	N	
Rip Rap	Y	N	Y	N	Y	N	
Retention / Detention Pond	Y	N	Y	N	Y	N	
Vegetation	Y	N	Y	N	Y	N	
Soil Retention Blankets	Y	N	Y	N	Y	N	
Inlet Protection	Y	N	Y	N	Y	N	
Outlet Protection	Y	N	Y	N	Y	N	
Headwalls	Y	N	Y	N	Y	N	
Other:	Y	N	Y	N	Y	N	
Other:	Y	N	Y	N	Y	N	
Other:	Y	N	Y	N	Y	N	

Document if maintenance is needed or if enforcement actions are required.

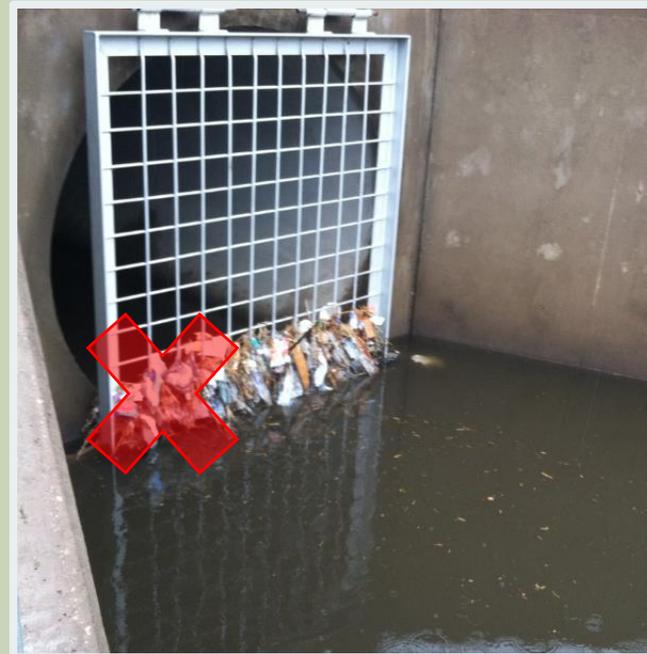
COMMON POST-CONSTRUCTION BMPs

- Retention basins
- Headwalls
- Culverts
- Catch basins
- Spillways
- Washes and waterways



BASINS AND HEADWALLS

- Use grate to cover and protect pipe opening
- Remove sediment and trash trapped behind or in front of grate
- Perform maintenance of grate, headwalls, wingwalls, and surrounding landscaping as needed



CULVERTS

- Clean out sediment, trash and debris trapped in or near culvert opening
- Properly dispose of debris removed
- Maintain slopes and opening size of ditch leading to and from culvert



CATCH BASINS



- Remove sediment, trash and debris near inlet, on the surface, to allow water to flow into catch basins
- Periodically clean-out collected vegetation and debris



- Repair cracks and repair damaged grates

WASHES AND WATERWAYS

- Keep washes free of overgrown vegetation, sediment and trash
- Report illegal dumping
- Perform maintenance as-needed to maintain shape and flow



ENFORCEMENT

- The City has legal authority to fully implement the SWMP including the right to prohibit illicit discharges to the MS₄, 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 Illicit Discharge and Illicit 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.

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:

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(928) 634-8033



City of Cottonwood