

Pima County MS4 and the AZPDES Construction Storm Water Permitting Program

May 5, 2009



Presentation Outline

- **Clean Water Act**
- **Storm Water Pollutants**
- **Pima County MS4 Permit**
- **AZPDES Construction General Permit**

What is storm water?

- Precipitation that accumulates in natural and/or constructed storage and storm water systems during and immediately following storm events
- Storm water runoff, snowmelt runoff and surface runoff and drainage



Why is storm water a problem?

- **As storm water travels overland and through a conveyance system, it carries pollutants to lakes, reservoirs, rivers, washes, playas, etc., and may degrade surface water quality in the receiving water**

Pollutant

- A pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological and non-Atomic Energy Commission radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.



How is storm water regulated?

Regulatory hierarchy

**United States Congress –
Enacts legislation requiring regulations**

**United States Environmental Protection
Agency (EPA) -Develops regulations**

**EPA or States – Permitting authority
issues and enforces permits**

**Regulated Entities
Implement permit requirements**

Regulatory History

- **1948 Federal Water Pollution Control Act (FWPCA) created to address pollution of interstate waters and tributaries**
- **United States Environmental Protection Agency (EPA) established in 1970**
- **1972 FWPCA amendments referred to as the Clean Water Act (CWA) created NPDES**

What is NPDES?

- **NPDES is the *National Pollutant Discharge Elimination System* permit program**
- **CWA prohibits the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized by a NPDES permit**

What is an MS4?

- **Municipal Separate Storm Sewer System (MS4)**
- **An MS4 is a system of conveyances (e.g., storm drains, roads, curbs, man-made channels):**
 - ❖ Owned or operated by a public body
 - ❖ Designed for collecting storm water
 - ❖ Not a combined sewer
 - ❖ Not a Publicly Owned Treatment Works

Is runoff from an MS4 a point source?

- The MS4 has a multitude of discharge points throughout the County. Uhhh, no?



- Yes. The 1987 Water Quality Act designated urban storm-water runoff as a point source discharge of pollutants to waters of the US

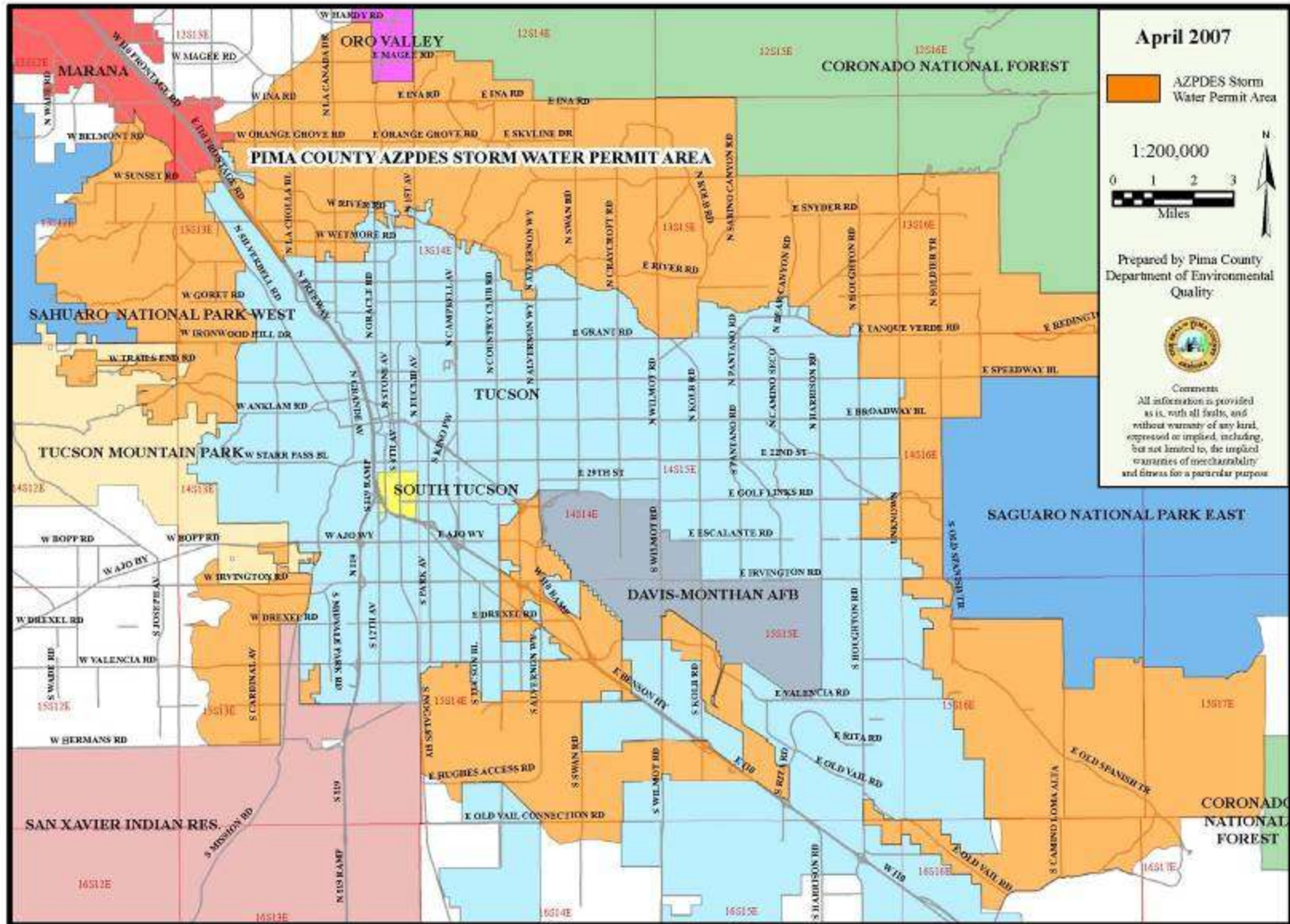
NPDES Regulations

- **1990 EPA regulations established permit application process for Phase I sources:**
 - ❖ Medium Municipal Separate Storm Sewer Systems (MS4) (serving populations $100,000 \leq 249,999$)
 - ❖ Construction sites disturbing over 5 acres
- **Pima County began permit process in 1991, MS4 permit issued by the EPA in 1997**

NPDES Regulations

- **1999 Phase II Final Rule – Other sources**
 - ❖ Construction sites ≥ 1 acre
- **Arizona received authorization from the Environmental Protection Agency to operate the NPDES program at the state level in 2002 establishing the Arizona Pollutant Discharge Elimination System (AZPDES) Permit Program**

Pima County AZPDES Storm Water Permit Area 2007



Why does PDEQ inspect construction sites?

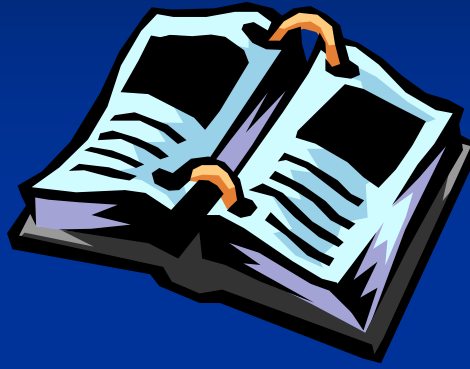
Pima Count NPDES MS4 Permit, Section 5.2.2.1 Construction Site Inspections

- ❖ Visit 25% of all construction sites started within any one year that are required to submit a NOI**
- ❖ Verify the existence of NOI and SWPPP**
- ❖ Any review of SWPPP adequacy is incidental to inspection done for other purposes**
- ❖ If PDEQ observes that the site is out of compliance, ADEQ may be notified**

Construction Permit Requirements

- **Develop Storm-Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to minimize discharge of pollutants in storm water from the site**
- **Submit Notice of Intent to discharge to ADEQ**
- **Implement SWPPP**
 - ❖ Install BMPs for erosion and sediment control at site
 - ❖ Conduct inspections according to schedule in SWPPP
 - ❖ Repair and maintain BMPs
 - ❖ Maintain records

What is a SWPPP?



A document that describes site-specific controls that will be installed, implemented and maintained to control the discharge of pollutants in storm water from your construction site.

SWPPP Review

- **Pima County does not review or “approve” a Storm Water Pollution Prevention Plan (SWPPP) for projects within our jurisdiction prior to construction activities**
- **Why not? Pima County does not have authority to enact an ordinance that would require SWPPP submittal and approval**
- **PDEQ reviews SWPPPs at construction sites**

SWPPP Preparation Considerations

- **Potential onsite pollutant sources**
- **Where potential pollutants may discharge offsite (outfalls)**
- **How to control potential pollutant discharge (BMPs!)**



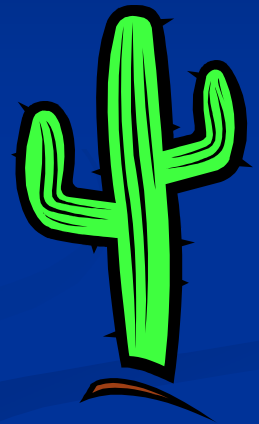
Types of Storm Water BMPs

The three general types of storm water ground controls, or best management practices (BMPs):

- Erosion Prevention – Preventing sediment from being entrained in storm water from disturbed soil**
- Sediment Control – Devices that prevent eroded sediment from leaving the site**
- Materials and Waste Management Control – BMPs that control industrial type materials and waste**

I. Erosion Control

- Phasing -Sequence soil disturbing activities to reduce the exposure time of bare soil
- Keep native vegetation and soil cover – clearing and grading increase soil erosion rates up to 1,000 X
- Vegetate, mulch, or otherwise stabilize all exposed areas as soon as land alterations have been completed or when site is inactive for 14 days or more
- Rough grade or terrace slopes



II. Sediment Control – Velocity Dissipation Devices

- **Silt fences, straw bales, or straw waddles impede the flow of water and create a still body of water upslope of the device to allow sediment to settle out and slowly let clean water pass through the openings in the device**



II. Sediment Control – Velocity Dissipation Devices (cont.)

- **Sediment basins collect runoff and allow the water to pond and sediments to settle out**



II. Sediment Control: Track Out—preventing offsite sediment tracking

- Track out pad – large stones scrape sediment off tires as the vehicle rolls over them



- Wash sediment off tires at exits

III. Materials and Waste Management Control

- **Good Housekeeping – Properly dispose of used construction materials and other garbage**
- **Use and enforce designated concrete washout areas**



What I Look for During a Storm Water Inspection

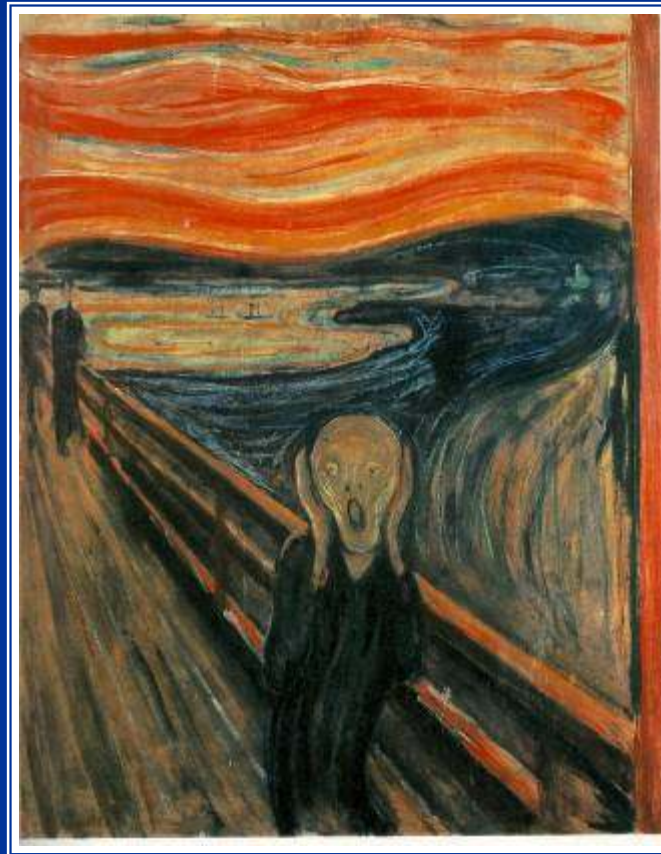


- **Verify that the project has obtained authorization to discharge storm water**
- **Review the site-specific Storm Water Pollution Prevention Plan (SWPPP) for permit compliance**
- **Verify that the BMPs required by the SWPPP have been implemented and maintained by conducting a site walk**

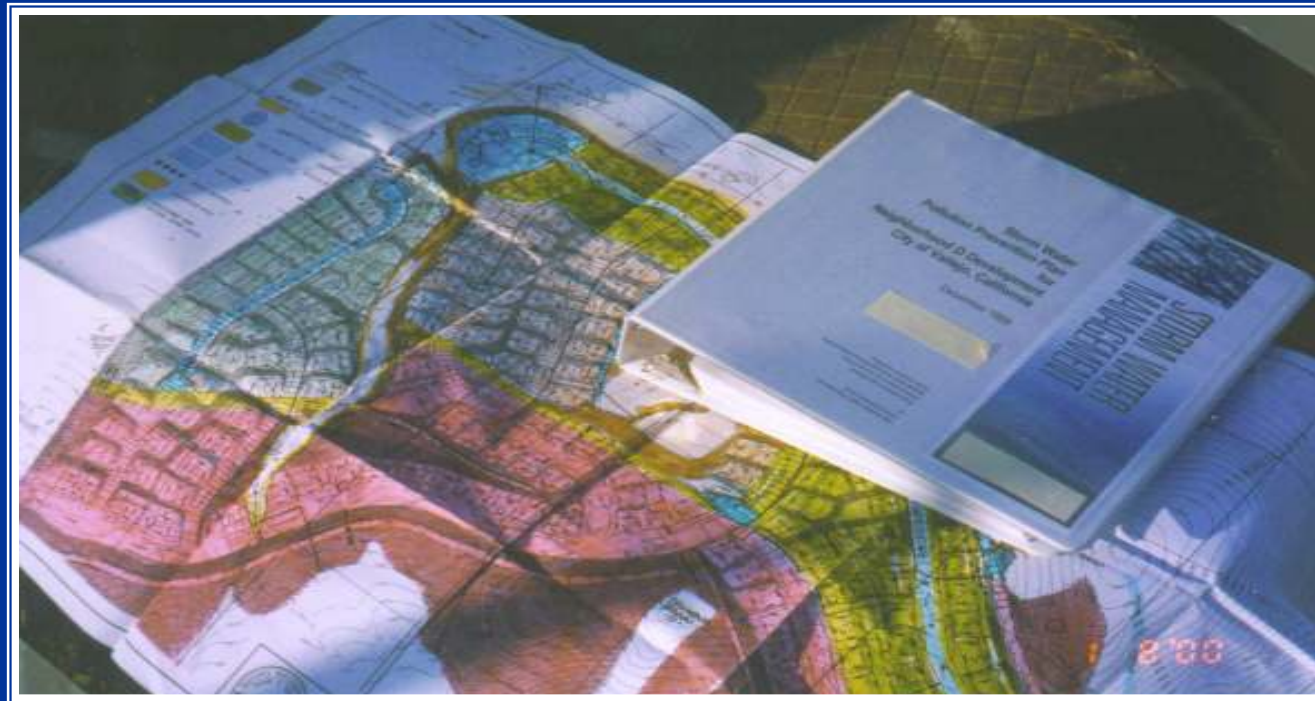
Bill's Top Ten List of Compliance Issues



10. No NOI submitted for the site



9. Site does not have a SWPPP prepared



8. SWPPP Certification page is not signed



7. Improperly installed BMPs



6. Improperly maintained BMPs



5. SWPPP is incomplete, e.g.,

- **Does not identify responsible party for onsite SWPPP implementation**
- **Copy of permit not included**
- **No inspector qualifications**
- **No sequence of activities**
- **No description of interim/permanent stabilization practices**
- **Receiving water not identified**

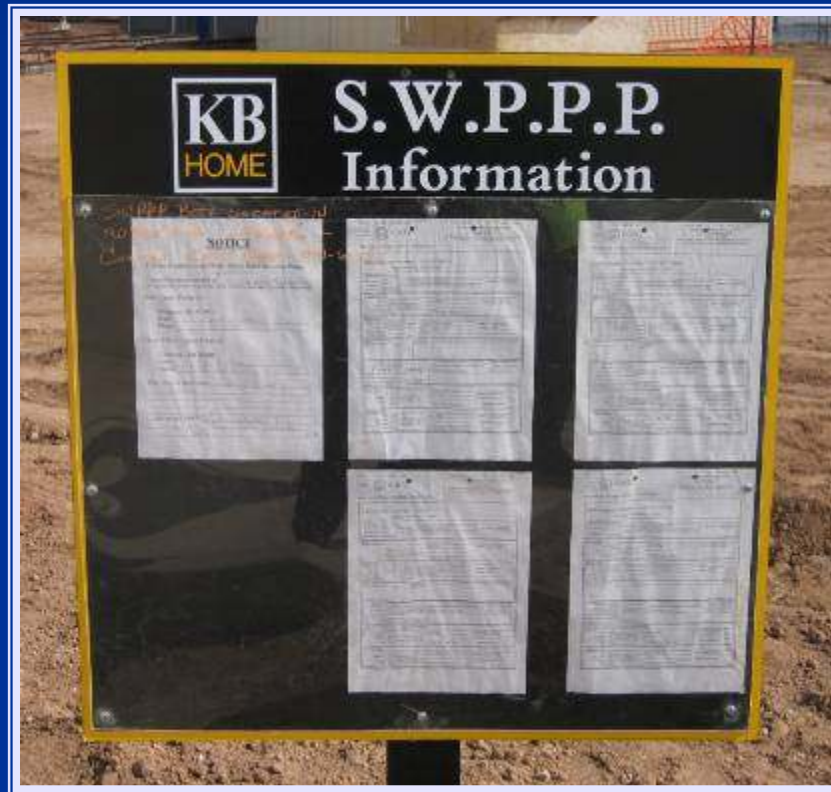


4. Site map is incomplete and does not show, e.g.,

- **Directions of storm-water flow**
- **Disturbed and undisturbed areas**
- **Locations of BMPs**
- **Locations of expected stabilization practices**
- **Locations of storm-water discharges**



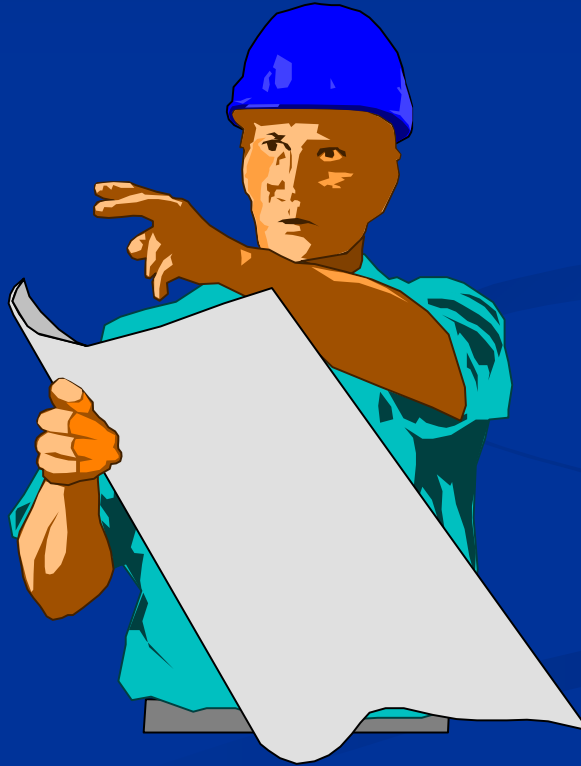
3. No signage at site entrance



2. SWPPP is not updated as site conditions change during construction



1. Regular inspections are not conducted as required by the permit



Information

- **Arizona Department of Environmental Quality
– AZPDES Stormwater Program:**

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

- **Pima County Department of Environmental
Quality – Storm Water Program:**

<http://www.deq.pima.gov/water/stwmgmprog.html>