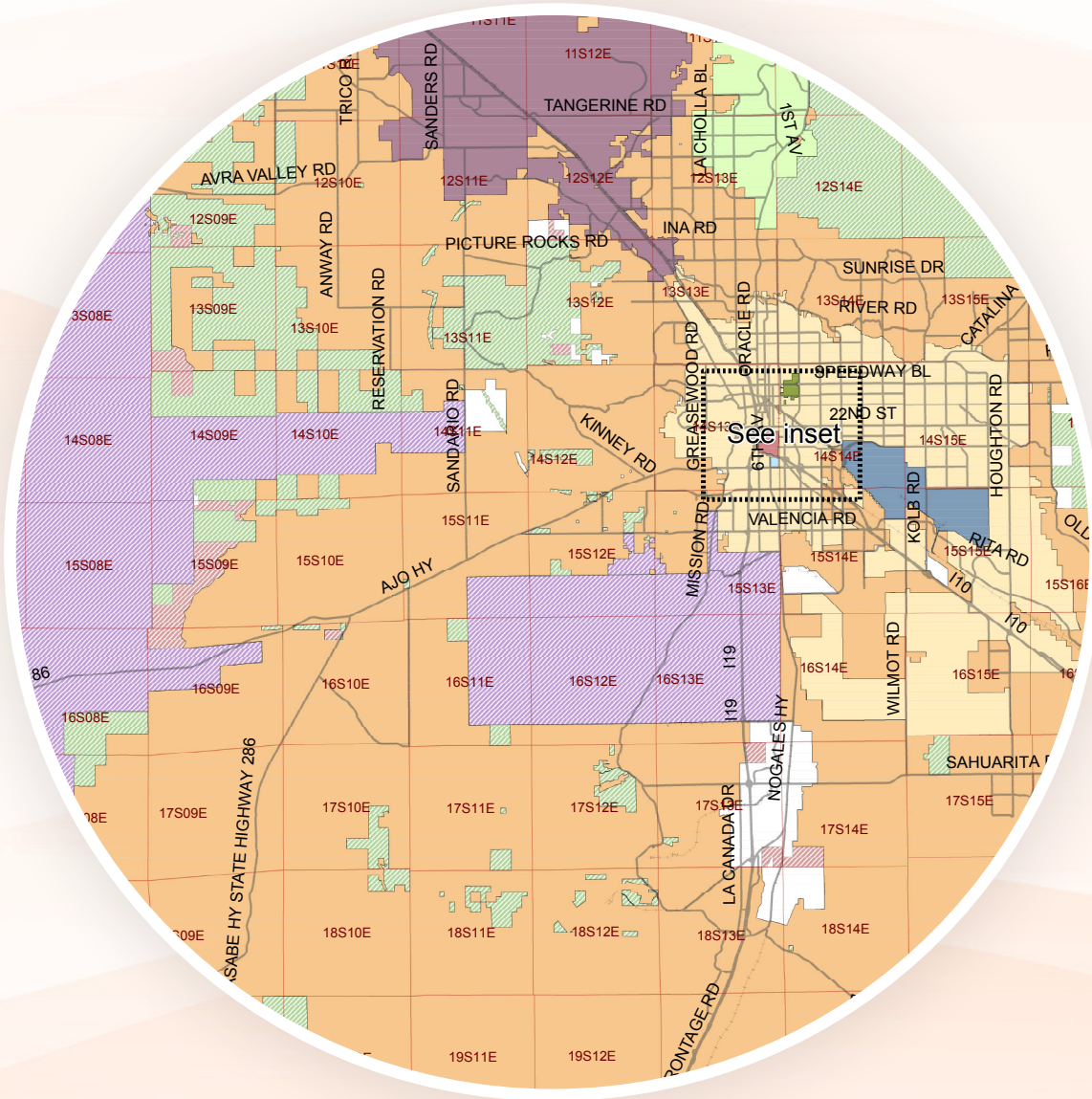


# PAG Stormwater Program

## CONSTRUCTION INDUSTRY RESOURCES



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# Introduction

Arizona Pollutant Discharge Elimination System (AZPDES) regulations require that jurisdictions with municipal separate storm sewer system permits (MS4s) within Arizona protect stormwater quality. As the Designated Planning Agency (DPA) for Section 208 Areawide Water Quality Planning for the county area, it is PAG's responsibility to coordinate regional water quality planning. In addition, PAG's Metropolitan Planning Organization status requires mitigation of stormwater from transportation sources.



PAG's Watershed Planning program uses an integrated approach to planning which builds upon connections between programs, projects and partners across the watershed.

PAG's stormwater quality efforts have engaged the region using a multipronged approach: jurisdictional coordination, industry training and public education. PAG's Stormwater Management Working Group (SMMWG) coordinates with MS4s and community partners through a forum for program development, information exchange and planning of events, strategies and projects. Together, SMMWG and PAG develop and share regionally cohesive stormwater messaging and resources.

One goal of the stormwater engagement program is to share stormwater management resources with construction industry professionals. State law requires proper management of stormwater flow on construction sites to prevent erosion and transport of soils and contaminants. Controlling stormwater discharge is important to prevent harm to washes and fragile desert ecosystems.

This guide provides links to important resources for construction industry professionals, including regulatory guidance and permit information, inspection checklists, guidance for stormwater management practices, training

opportunities and presentations from past construction industry stormwater seminars hosted by PAG. If you would like to recommend additional resources for this guide or encounter broken/outdated links, please contact us at [208info@pagregion.com](mailto:208info@pagregion.com).

# Permits and Regulatory Guidance

Under the Clean Water Act, the discharge of pollutants through a point source into Waters of the United States (WOTUS) is prohibited in the absence of a National Pollution Discharge Elimination System (NPDES) permit. In Arizona, these permits, except those on Native American lands, are administered through the AZPDES program. NPDES permits for discharges from Native American lands are administered through the

U.S. Environmental Protection Agency (EPA). In addition to NPDES and AZPDES permits, other federal, state and local stormwater regulations may apply to construction activities, as shown in the links below.

## NPDES

- [NPDES Program](#)
- [NPDES Permit Basics](#)
- [Other Federal Laws that Apply to the NPDES Permit Program](#)
- [EPA Stormwater Discharges from Construction Activities](#) – includes the “Do I Need a Permit?” flowchart
- [EPA 2017 Construction General Permit \(CGP\) and Related Documents](#) – applicable to Native American lands
- [EPA Proposed 2022 CGP and Related Documents](#)
- [EPA CGP Resources, Tools and Templates](#)
- [EPA WOTUS Page](#) – overview, updates and resources related to WOTUS

## AZPDES

- [ADEQ Permit Directory](#)
- [ADEQ Permit\(s\) needed for a Construction Company](#)
- [AZPDES CGP for stormwater discharges](#)
- [myDEQ](#) – obtain, manage (new/existing Notices of Intent [NOIs]), terminate your stormwater coverage online and apply for No Discharge Certifications
- [Small MS4 General Permit](#)
- [Small MS4 Fact Sheet](#)
- [Stormwater Management Program \(SWMP\) Model for Small MS4s](#)
- [Arizona Administrative Code \(A.A.C.\) Title 18, Chapter 14 – Permit and Compliance Fees \(2015\)](#)
- [ADEQ Updates & Meeting Resources for Federal Navigable Waters Protection Rule, June 23, 2020](#)
- [ADEQ’s Flow Regime Map](#) – under construction; sign up for email updates [here](#). This online map will assist jurisdictional determination for AZPDES permits.
- [U.S. Army Corps of Engineers Traditional Navigable Waters \(TNW\) Decisions](#)

## Stormwater Pollution Prevention Plan (SWPPP) Preparation

- [ADEQ SWPPP template and checklist](#)
- [EPA SWPPP Assistance](#) – guidance and examples
- [EPA Webcasts on Construction SWPPPs: A-Z](#)

- [PimaMaps](#) – may be used to prepare general map and site map
- [Pima County MapGuide – Find Your Site Location](#) (conversion of decimal degrees, degrees minutes seconds, or latitude/longitude [lat/long])
- [Township Range Second \(PLSS\) Conversion to Lat/Long](#)
- [PAG Orthophotography of Tucson Region](#)
- [Pima County GIS Data FTP Server](#) – obtain useful GIS layers

### Other State and Federal Programs

- [Arizona Department of Transportation \(ADOT\) Statewide Stormwater Discharge Permit](#)
- [U.S. Army Corps of Engineers – Los Angeles District Regulatory Program](#)
- [U.S. Army Corps of Engineers – Regulatory Jurisdiction Overview](#)
- [Electronic Code of Federal Regulations](#)

### Local Stormwater Management Programs

- [Map of MS4s within Pima County \(June 2019\)](#) – identify your local MS4
- [City of Tucson Stormwater Management Program](#)
- [Town of Marana Stormwater Management Program](#)
- [Town of Oro Valley Stormwater Management Program](#)
- [Pima County Stormwater Management Program](#)
- [ADOT Water Resources Program](#)

### Local Codes and Regulations Related to Stormwater

- [PAG's Local Jurisdiction Comparison Matrix \(2018\)](#) - compares the jurisdictions' stormwater regulatory requirements for the construction industry
- [AZPDES Regulations Hierarchy Flow Diagram \(2013\)](#)
- [City of Tucson Stormwater Quality Ordinance](#)
- [City of Tucson Commercial Rainwater Harvesting Ordinance](#)
- [Town of Marana Stormwater Town Code – Chapter 17-16 Stormwater Management](#)
- [Town of Oro Valley Town Code – Article 15-24 Stormwater](#)
- [Town of Oro Valley Town Code - Sections 15-18-10 and 15-18-11](#) – residential and commercial RWH
- [Pima County Construction Site Requirements and Related Ordinances](#)

# Inspections and Enforcement

The following resources will help construction professionals conduct stormwater monitoring if required and prepare for permit-related site inspections. Additional links provide contact information in case of violations or events that release potential stormwater pollutants.

## Stormwater Inspections and Monitoring

- [ADEQ Stormwater Construction Pre-Inspection Checklist \(2020 CGP\)](#)
- [EPA CGP Inspection and Corrective Action Report Templates](#)
- [ADOT Quality Assurance/Quality Control Manual – MS4 Stormwater Monitoring](#)
- [Lists of Outstanding Arizona Waters, Not Attaining Waters and Impaired Waters](#) – CGP may require stormwater monitoring if within ¼ mile of these waterways

## Reporting Violations and Spills

- [City of Tucson Stormwater Management Program – Report a Concern](#)
- [Report an Environmental Emergency to ADEQ](#) – oil and chemical spills, accidents causing release of pollutants, radiological and biological discharges
- Report Wildcat Dumping/Illegal Dumping:
  - City of Tucson: [online](#) or (520) 791-5843, Monday-Friday 9:30 a.m. - 4 p.m.
  - Pima County: (520) 724-7400, Monday-Friday 8 a.m. - 5 p.m.
  - Pima County: (520) 622-5800, 24-hours/day
- [Don't Trash Arizona](#)

# Guides and Resources

Best management practices (BMPs) should be employed to prevent erosion and transport of sediment and pollutants both during and after construction. Valuable post-construction BMPs include green infrastructure (GI), low impact development (LID) and rainwater harvesting (RWH). Resources for selecting and implementing effective BMPs are provided below, along with tools for calculating rainfall erosivity.

## Rainfall Erosivity Factor (“R” Factor)

- [EPA Construction Rainfall Erosivity Waiver Fact Sheet](#)
- [EPA “R” Factor Calculator for Small Construction Sites](#)

## Rainfall Data

- [Pima County ALERT system](#)
- [USGS Water Data for Arizona](#)

## Best Management Practices and Design

- [ADOT Erosion and Pollution Control Manual \(2020\)](#)
- [ADOT Roadside Development](#) – landscape architectural service and design, stormwater and erosion/sediment control maps and manuals, erosion/sediment and water quality protection BMPs
- [ADOT Methodology for Determining Final Stabilization](#)
- [ADOT Post Construction BMP Manual \(2016\)](#)
- [ADOT Maintenance and Facilities BMP Manual](#)
- [Construction Stormwater Field Guide](#) – Available to American Association of State Highway and Transportation Officials (AASHTO) E-Affiliates
- [Caltrans Construction Site BMP Manual](#) – California Department of Transportation
- [Drainage Design Manual for Maricopa County, Volume III Erosion](#) – BMPs, sample inspection report, SWPPP checklist and vendor product registration and information

## Green Infrastructure/Low Impact Development

GI/LID is a post-construction BMP that uses natural features including vegetation to retain stormwater and is effective for final stabilization of soils and non-point source pollution controls.

- [PAG Resiliency Planning Maps](#)
- [EPA GI Page](#)
- [EPA Urban Runoff: LID Page](#)
- [EPA National Menu of BMPs for Stormwater](#) – a searchable database of BMPs including design, cost, water quality effectiveness, maintenance and limitations considerations
- [Watershed Management Group GI Manual for Desert Communities](#)
- [Water Harvesting from Low-Standard Rural Roads, 2006](#) – The Quivira Coalition, Zeedyk Ecological Consulting, LLC, The Rio Puerco Management Committee, and New Mexico Environment Department
- [Pima County LID Working Group](#) – manual review, LID/GI resources, stormwater resources, water harvesting spreadsheets, cost effectiveness of LID, case studies, plant guidance, schematics
- [City of Tucson/Pima County LID and GI Guidance Manual](#)
- [Sonoran Desert GI Resource Library: A Playbook for Transportation Projects in Pima County Communities](#)
- [ADOT 2009 Post Construction BMP Manual](#) – See Table 2.1 for ADOT’s recommended list of post-construction BMPs, which includes LID practices and RWH for some project types. The manual

includes specified ratings, appropriate applications, materials, design standards, design considerations, maintenance and schematics for a variety of BMPs.

## Rainwater Harvesting and Xeriscape

- [City of Tucson RWH Guidance Manual](#)
- [City of Tucson Xeriscape Landscaping and Screening Regulations – Ordinance 7522](#)
- [Town of Oro Valley Commercial Design Review Guide](#) – includes guidance for final RWH plan
- [ADWR Landscaping – Residential and Professional Guidance](#) – guides and resources for low water use landscaping, irrigation and water harvesting, and training and certifications
- [Rainwater Harvesting for Drylands and Beyond](#) – comprehensive website by local RWH guru, Brad Lancaster
- [Local RWH Resources](#) – books, consultants, incentives, demo sites, vendors, workshops
- [RWH Storage and Use Calculator](#)

## Training and Presentations

Training opportunities are available to aid regulatory compliance by the construction industry. The section below also includes links to presentations from construction industry stormwater seminars that were hosted by PAG. Although these seminars are from past years, the resources are still valuable for current projects.

### Training for the Construction Industry

- [Southern Arizona Home Builders Association \(SAHBA\)](#)
- [Stormwater Training Resources in Arizona](#) – National Center for Manufacturing Sciences
- Contact your [local MS4](#) to inquire about additional training opportunities or resources.

### PAG Construction Industry Stormwater Seminars

#### 2013

- [CGP 2013 Presentation Reference Guide](#)

#### 2012

- [Stormwater Regulations: Why do we care?](#)
- [What to Do for Stormwater Regulations: NOIs, SWPPP and NOTs](#)
- [The Good, The Bad, and The Ugly: BMPs /Control Measures](#)
- [Final Stabilization and the AZPDES Permit](#)
- [Retrofitting with Green Infrastructure and Low Impact Development Strategies](#)



- [First Flush Retention and Water Quality Benefits](#)
- [AZPDES Stormwater Construction General Permit Update](#)
- [Arizona's Regulatory Bill of Rights](#)

### **2010**

- [Tucson Rainwater Harvesting Ordinance Presentation](#)
- [Watershed Management Group Rainwater Harvesting Presentation](#)
- [SWPPP – From Submission Through Implementation](#)
- [Town of Oro Valley Stormwater Utility Updates](#)
- [ADEQ AZPDES Presentation](#)
- [Unincorporated Pima County Hand-Out](#)
- [Good and Bad Uses of BMPs \(photo presentation\)](#)

### **2009**

- [ADEQ – Arizona's Stormwater Program](#)
- [Town of Marana – Stormwater Ordinance and Common Mistakes](#)
- [Pima County - MS4 and AZPDES](#)

### **2006**

- [PAG – Regulations and BMPs](#)

### **2005 BMP Training Class**

- [Part 1a Project and Site Management](#)
- [Part 1b Project and Site Management, cont'd.](#)
- [Part 2a Best Management Practices](#)
- [Part 2b Best Management Practices, cont'd.](#)