



Arizona Department of Environmental Quality

Water Quality Improvement Grant Program



Who am I?

- Samuel “Jake” Breedlove
 - Grant & Watershed Coordinator
 - Arizona Department of Environmental Quality



- Contacted by Winkleman NRCD
 - Chris Postel
 - Seeking funding for septic replacements

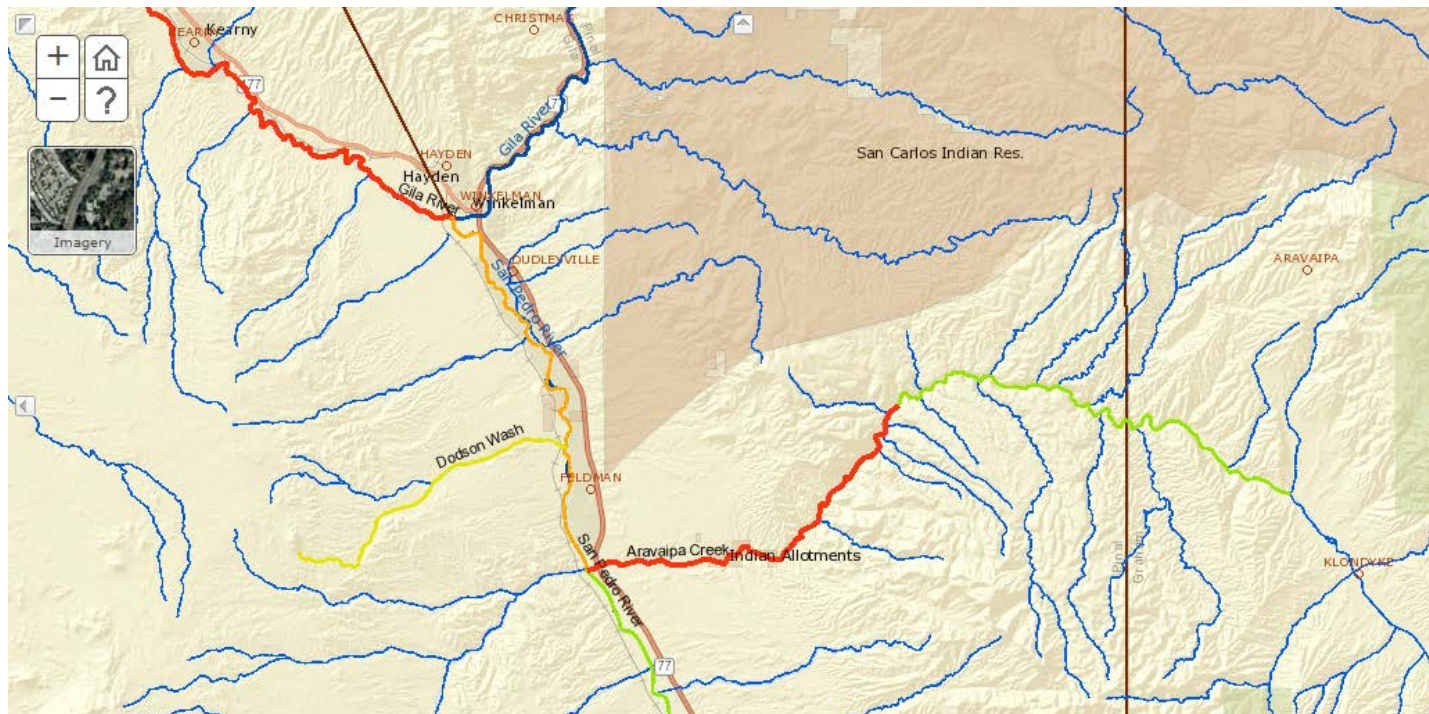


Currently

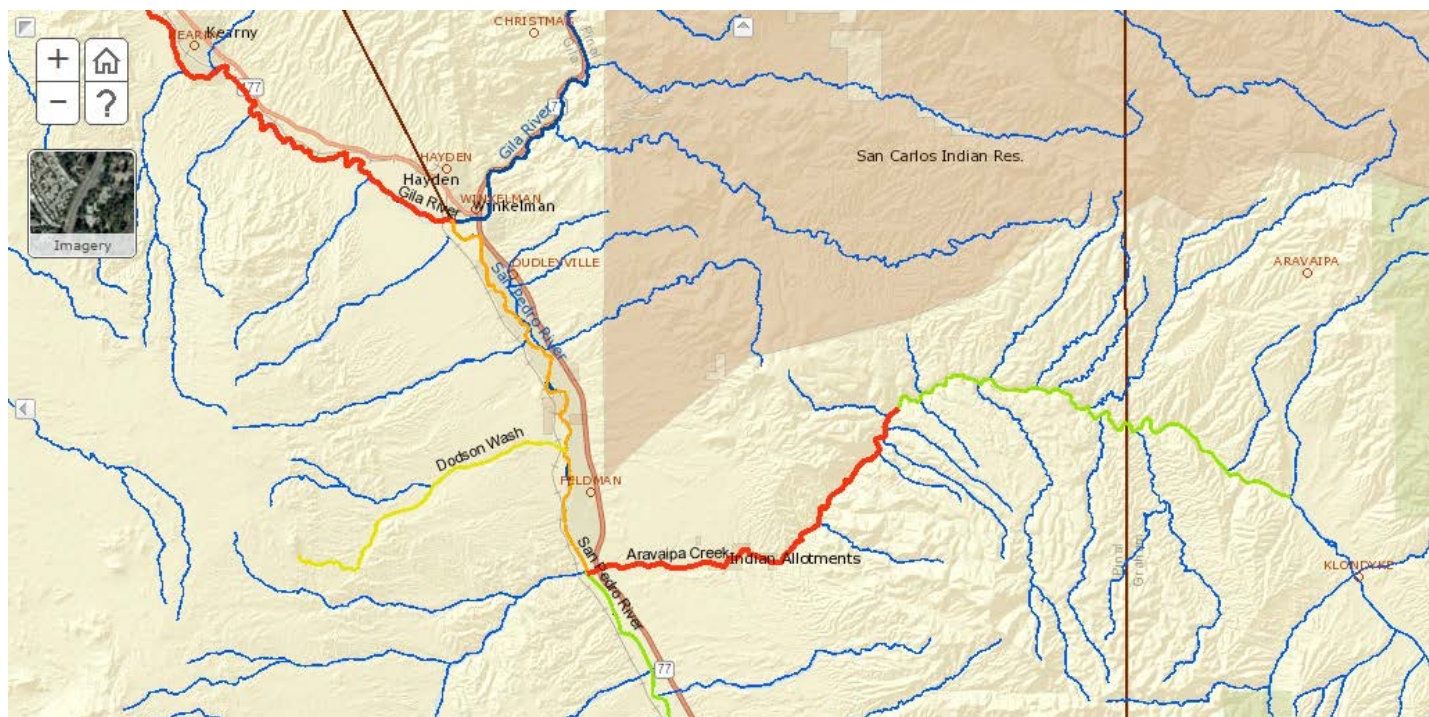
- Reach 15050203-001
- (San Pedro River from Aravaipa Creek to Gila River)

2016 Draft

- Reach 15050203-004
- (Aravaipa Creek to San Pedro River)



San Pedro River
Reach 15050203-001
Escherichia coli
TMDL
Completed September 2012

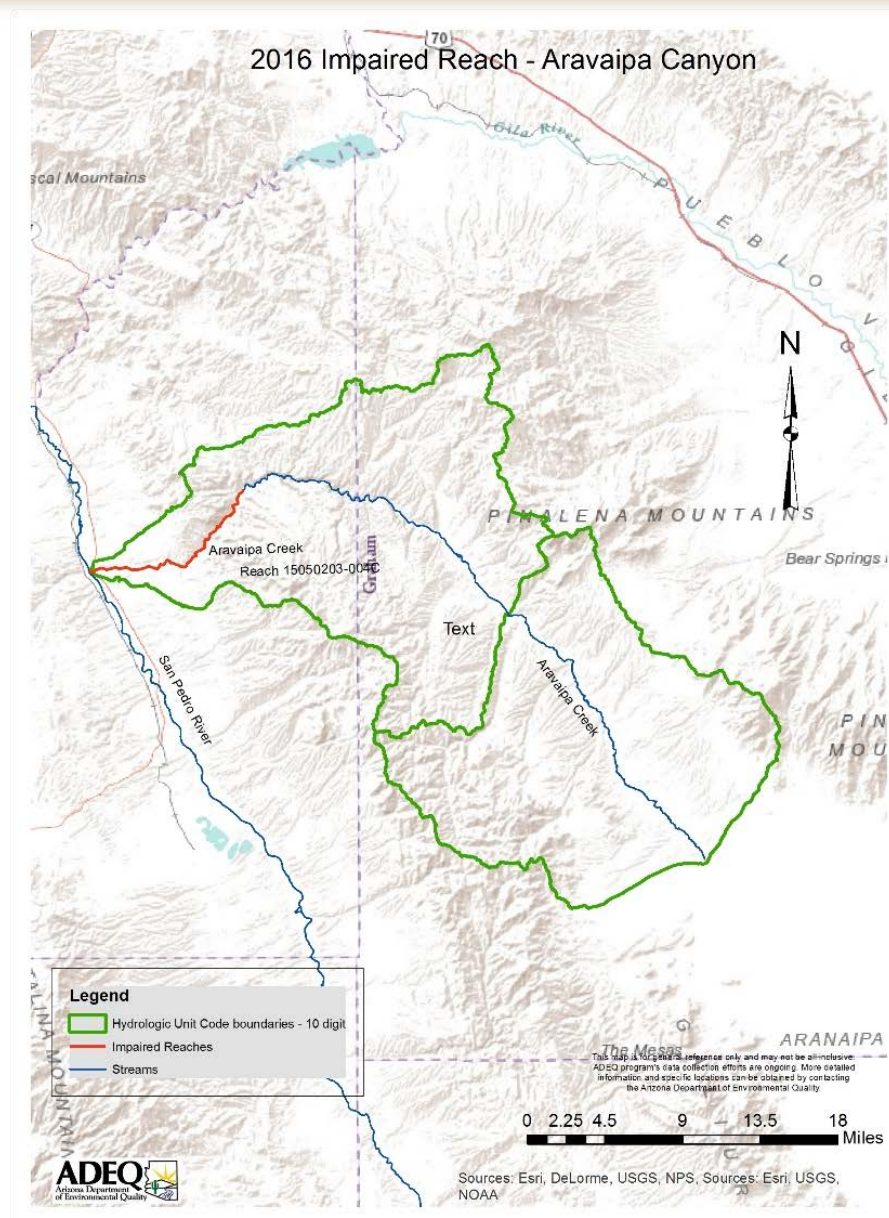


What is a TMDL?

Total Maximum Daily Load

The maximum amount (load) of a water quality analyte which can be carried without causing an exceedance of surface water quality standards.

Impaired for *E. coli*



Arizona's *E. coli* water quality standard:

For Full Body Contact Use only
Single Sample Maximum: 235 CFU/100 ml
Geometric mean (Four sample minimum): 126
CFU/100 ml



What is the significance of *E. coli*?

- Used as an “Indicator” pathogen for possible fecal contamination of water
- *E. coli* has many different serotypes (intra-species variations); some harmful, most not.
- Possible gastroenteritis in elevated densities
- Other pathogens possibly present when *E. coli* is elevated: *Cryptosporidium* spp., *Giardia lamblia*, *Salmonella enterica*, *Norovirus*, rotavirus, adenovirus

CWA 303(d) Listing History

2004 - First listing,
2 exceedances in 11 sampling events.

2006/08 – Continued impairment,
5 exceedances in 18 sampling events.

2010 - Continued impairment,
4 exceedances in 19 sampling events.



How do we get funding?

A: Watershed-based planning

- Watershed-based plans are holistic documents that are designed to protect and restore a watershed. These plans provide a careful analysis of the sources of water quality problems, their relative contributions to the problems, and alternatives to solve those problems.

Why develop a watershed plan?



PLANNING

Still a good thing to do first.

Improvements in water quality do not just happen. They take hard work, cooperation, and most of all, planning. Watershed plans focus remediation efforts at projects critical to water quality improvements.

Purpose:

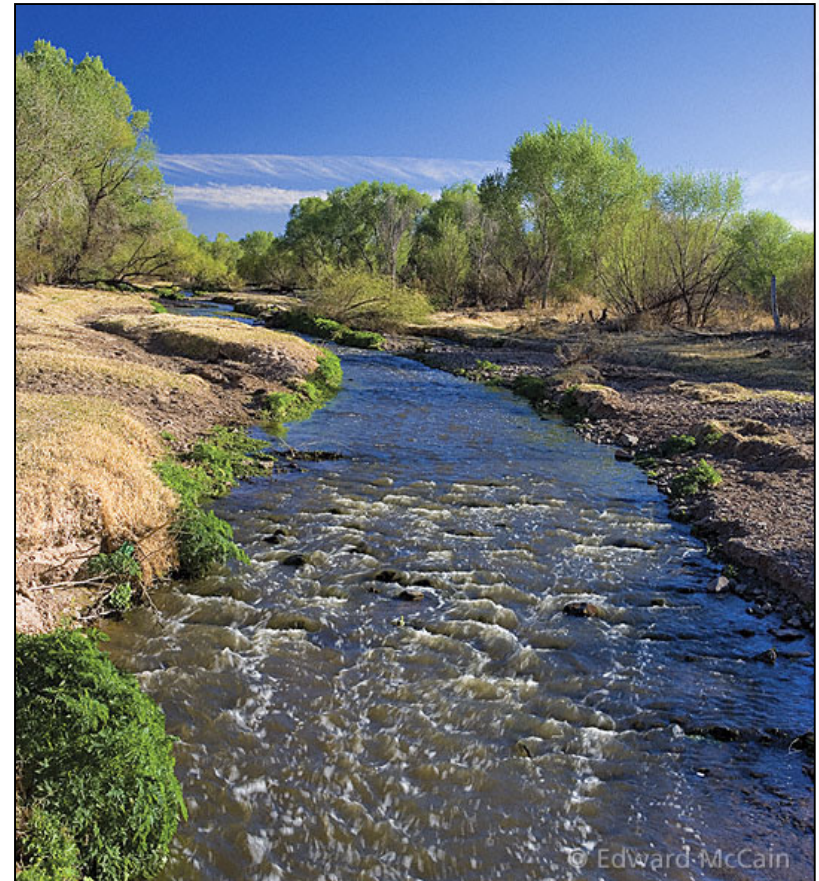
To identify strategies and projects that need to be implemented to reducing pollutant loadings so that water quality standards can be met.

Why a Cooperative Effort?

Plans that are created without the input of those who will ultimately implement them are destined to fail.

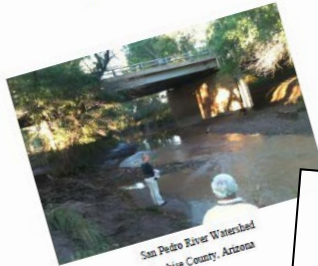
Goal:

- Coordinate with local partners to **develop a plan that is meaningful to those who live, work, and recreate in the watershed, meets water quality goals, and has support for voluntary implementation.**
- Provide Nonpoint Source funding to implement the projects identified in the plan



Four existing AZ plans developed using this format:

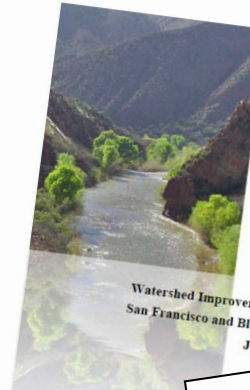
San Pedro Targeted Watershed Improvement Plan ADEQ 12-003



San Pedro River Watershed
Cochise County, Arizona

< San Pedro
River (*E.coli*)

GILA WATERSHED PARTNERSHIP OF ARIZONA



Watershed Improvement Plan
San Francisco and Blue Rivers
June 2012

< San Francisco
& Blue rivers (*E.coli*)

2012 Improvement Plan for the Upper Granite Creek Watershed, Arizona

Version 2.1



Present Creeks & the Granite Creek
Watershed Improvement Council
12/31/2012

Granite Creek
(*E.coli*, low DO) >

Oak Creek
(*E.coli*) >

Improvement Plan for the Oak Creek Watershed, Arizona

Prepared by the Oak Creek Watershed Council
For Arizona Department of Environmental Quality
In partial fulfillment of
CWA § 319(h) contract no. EY09-0035, Project 11703
August 31, 2012

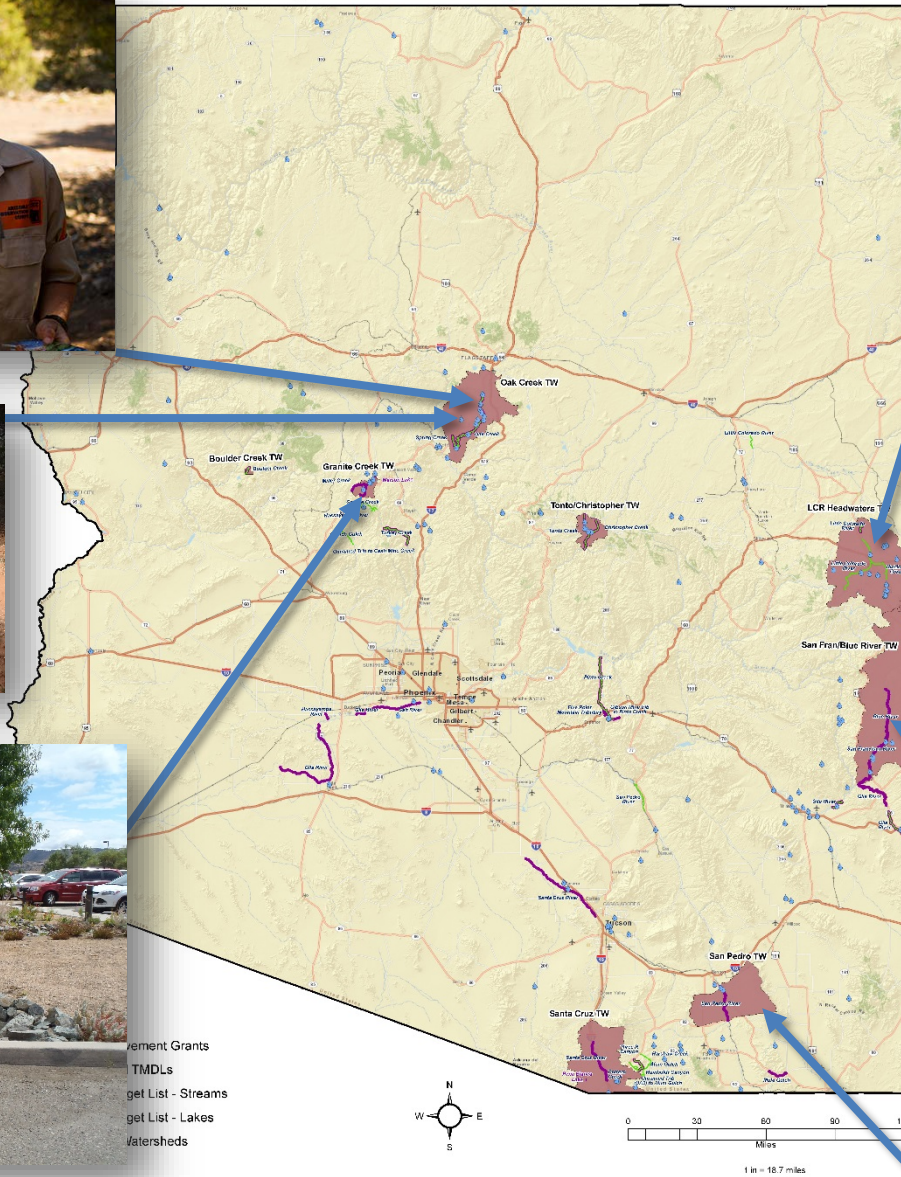
Oak Creek Watershed Improvement Plan



erment Grants
 TMDLs
 get List - Streams
 get List - Lakes
 Watersheds



Targeted Watersheds and Master List Waters



This map is for general reference only and is not to be used for any specific purpose as it is obtained by consulting the Arizona Department of Environmental Quality.

Credit: Photo: Tucson Mountain Club, LLC



To be eligible for Nonpoint Source funding, projects must be supported by a watershed plan that:

1. [ID's causes of impairment](#) and pollutant sources
2. [Estimates the expected load reductions](#) that will result from plan implementation
3. Describes the [nonpoint source management measures](#) that need to be implemented to achieve load reductions, [and the critical areas where they are needed](#)
4. Estimates the amounts of [technical and financial assistance needed](#), associated costs, and/or the sources and authorities needed to implement the plan
5. Includes an [information and education component](#) that will enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing management measures
6. Includes a [schedule for implementing](#) the nonpoint source management measures identified in this plan that is reasonably expeditious
7. Describes interim [measurable milestones](#) for determining whether nonpoint source management measures or other control actions are being implemented.
8. [Provides a set of criteria that can be used to determine whether loading reductions are being achieved](#) over time and substantial progress is being made toward attaining water quality standards.
9. Includes an [effectiveness monitoring](#) component to evaluate the implementation efforts over time, measured against the criteria established under item h above.

Basic Plan Content

Title Page

Acknowledgements

Forward

Table of Contents

Abbreviations

Chapter 1 -- Background

- Water quality concern and watershed description

- Past efforts to reduce pollutant loading

- Plan development

Chapter 2 – Watershed Investigation

- Field survey methods & findings

- Potential project sites

- Cost-effectiveness comparison

- Load reductions

- Resources and barriers considered

Chapter 3 – Watershed Improvement Strategy

- Priority water quality improvement projects

- Project schedule and milestones

- Outreach and education

- Monitoring and evaluating effectiveness

Past

Present

Future

Plan Development Steps

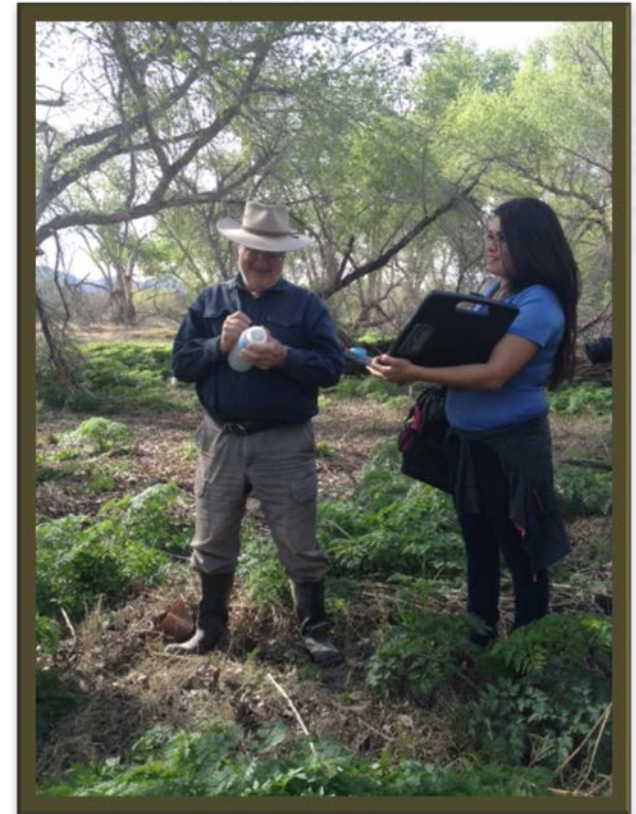
- Scoping meeting
- Begin field reconnaissance
- Development of a Watershed Improvement Council
- Develop sampling plan and share with WIC for review and comment
- Conduct monitoring trainings
- Data collection (water quality data, physical watershed surveys, social surveys)
- Data analysis, modeling
- BMP and project selection, modeling
- Project prioritization and research (potential partners, funding sources, etc.)
- Draft watershed plan
- Public comment
- Finalize plan and submit to EPA
- Begin implementing projects



- ADEQ has been coordinating with U of A, US EPA and local partnerships (YOU) to develop a Watershed Implementation Plan for keeping polluted runoff out of the Upper Santa Cruz River.
- This plan will identify:
 - Pollution Reduction Needs
 - Best Management Practices
 - Priority Projects



- ADEQ uses the help of Citizen Scientist to obtain water quality samples
- Assist in project identification
- 25 samples collected thus far between 07/01/15 – 09/06/16



■ Needs

- Identify areas of concern in the watershed
- Document (sampling) areas of concern
- Prioritize project areas
- Identify projects to improve water quality
- Prioritize projects
- Development specific projects within the watershed



Why should we go through all of this?

Water Quality Improvement Grant Program



Water Quality Improvement Grants

- RFGA released
September 2016
- Funding only available
for impaired waterways
- ~\$1 million funds
available annually
- Funding Priorities
 - Watershed
Implementation Plan
Implementation
 - Targeted Watersheds

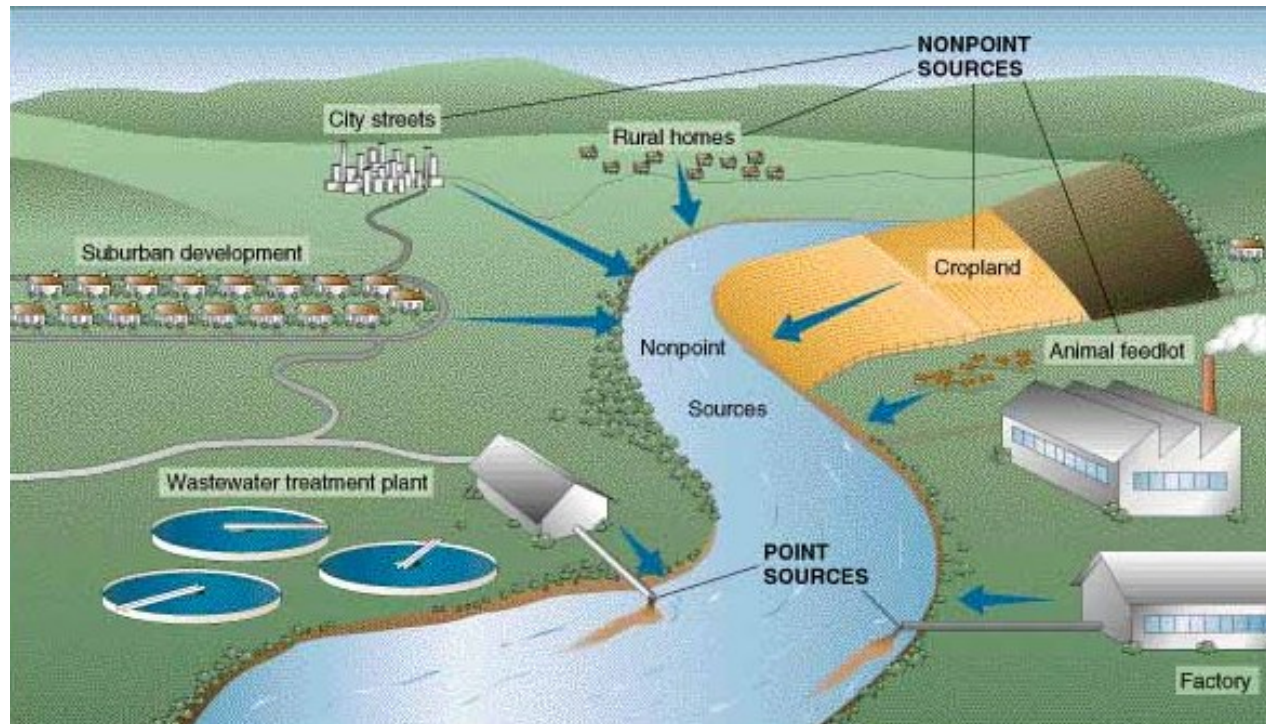


Where does the money come from?

- Federal funding provided by EPA
- Clean Water Act Section 319(h)
- Administered by ADEQ as a reimbursement-based grant program
- Funds are used to implement on-the-ground water quality improvement projects to reduce nonpoint source pollution



What is nonpoint source pollution?



Nation's largest source of water quality problems



Point Source Pollution



Nonpoint Source Pollution

Who can apply?

- Private landowners
- State, Federal, Local Governments
- Universities
- Tribes
- Environmental Groups
- Watershed Groups
- Schools, Colleges, Universities
- Non-profit Organizations
- Individuals



General Grant Requirements

- On-the-ground implementation emphasis
- Education and outreach components
- 40% non-federal match
- **Funding is only available for waterways designated as impaired by ADEQ**



What about that match requirement?

- 40 percent (40%) non-federal match
 - Cash
 - State or foundation grants
 - In-kind services such as donated labor
 - Office space
 - Equipment usage
 - Base salaries of existing employees
- See Grant Manual for more information
- Match can only begin to accrue after grant has been awarded
- Match sources must be pertinent to the project



Previous Grant Projects

Stream Bank Restoration



Looking upriver



Previous Grant Projects

Wetland Restoration



Wetland 6 in 2009



Wetland 6 in 2012



Previous Grant Projects



Off-Stream Drinkers



Previous Grant Projects



Restrooms

- Determine interest in water quality sampling
- Develop and train sampling teams
- Develop a Sampling Analysis Plan (SAP)
- Capture necessary samples (equipment provided)
- Identify areas of concern
- Develop a plan
- Apply and fund projects



Thank you



PERSISTENCE

Little by little, one travels far.

~J. R. R. Tolkien