ADEQ
Arizona Department of Environmental Quality

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Arizona's 2009 Nonpoint Source Annual Report

Nonpoint Source Program July 1, 2008 - June 30, 2009

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Chapter 1

Purpose and Goals

This report presents a synopsis of the Arizona Department of Environmental Quality (ADEQ) Nonpoint Source Program (the Program) activities for fiscal year 2009 (July 1, 2008 through June 30, 2009). The majority of work performed by ADEQ's Nonpoint Source Program is funded by Clean Water Act Section 319(h) grants monies, awarded by the U.S. Environmental Protection Agency (EPA).

ADEQ's Nonpoint Source Program operates under the direction of Arizona's 5-Year Nonpoint Source Management Plan (the State Management Plan) which has been revised and is awaiting public comments and final approval from ADEQ senior management. Therefore, this report follows the guidance defined in the 2003-2008 5-Year Plan. In addition, ADEQ's Nonpoint Source Program is steered by the Watershed Improvement Measure, also known as Measure W. The Measure was developed to track improvement of water quality conditions within 12 digit HUC Watershed using tools defined in the watershed approach concept.

Arizona's Nonpoint Source State Management Plan integrates the state's Clean Water Act and Safe Drinking Water Act programs with voluntary incentives. ADEQ uses a combination of tools including surface and ground water monitoring, watershed inventories, watershed characterizations, Total Maximum Daily Load (TMDL) studies, TMDL implementation plans, source water assessment plans, watershed-based plans, and water quality improvement projects to protect the state's water resources from nonpoint source pollution. ADEQ's staff works closely with stakeholders to develop community led, watershed based planning efforts. These local planning efforts assist the department in developing programs and outreach activities appropriate to the specific area and current issues. Since Arizona has a large amount of publicly owned lands, partnerships with federal, state and tribal land and resource management agencies are key elements in the program's success.

The Program has promoted and facilitated statewide efforts to manage the impact that nonpoint source pollution has on our surface and ground water. ADEQ continues to focus efforts on restoring waters that have been listed as impaired as well as protecting waters that are attaining their designated uses. Throughout this report, ADEQ provides a summary of progress in obtaining short- and long-term goals as well as information for evaluating progress and improving the program in the future. For detailed information about impaired water bodies please visit:
http://www.azdeq.gov/environ/water/assessment/assess.html

Arizona's Primary Nonpoint Source Pollutants

Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and

carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water. Today, nonpoint source pollution remains the nation's largest source of water quality problems. It is the main reason that approximately 40 percent of our surveyed streams and lakes are not clean enough to meet basic uses such as fishing or swimming.

The primary nonpoint source pollutants causing impairments in Arizona's most recent assessment (2006-2008) are:

- Suspended sediment
- Nutrients (low dissolved oxygen, high pH, nitrogen, or phosphorus) or *E. coli* bacteria
- Metals and low pH
- Selenium
- Boron
- Historic pesticides

Some lakes and streams are listed for more than one of these pollutants. The 2006-2008 Draft Status of Ambient Surface Water Quality in Arizona (Arizona's Integrated 305(b) and 303(d) Listing Report) indicates that Arizona has 14 lakes and 72 streams impaired by these pollutants. During the 2004 assessment and listing cycle, EPA listed an additional 14 lakes and 13 streams. (The status of EPA's listings will be determined during EPA's review period.) Although in a few drainages point sources may be contributing, all of these impairments are primarily the result of nonpoint source contributions.

2006-2008 Integrated 305(b) Assessment and 303(d) Listing Report

The 305(b) Water Quality Assessment Report describes the status of surface and ground water resources in Arizona in relation to state water quality standards. The report is integrated because it fulfills requirements of Section 305(b) of the federal Clean Water Act. Accompanying the report is a list of Arizona's impaired waters, as required by Section 303(d) of the Clean Water Act. Together the report is called the Integrated Report of Water Quality.

The Standards and Assessment Unit completed the 2006-2008 Report due to EPA on April 1, 2008. ADEQ submitted the Integrated Report to EPA Region 9 and is waiting for final approval from EPA. The 2008 assessment report will be combined with the 2006 report.

Water Quality Improvement Grant Program

The Water Quality Improvement Grant Program (Grants Program) adopted an innovative approach to envisioning our grant projects as if we were actual "investors" in the end results of the project. The former direction of the Program was to administer grant funds and see to it the project met the required milestones and deliverables at the closure of the project. For the last year the Program is settling into the new way of reviewing and critiquing projects and project applications and experiencing success by

becoming invested in projects. The Grants Program has implemented the following new components: monitoring effectiveness of past and future projects, technical support prior to application submittal, TMDL working group, educational priorities and the development of project criteria, and quantifying load reductions in source pollution. The Grants Program has moved into an outcome based framework and all program and project decisions made are based on results and credibility. The sections below explain the progress made in more detail.

Grant Effectiveness Evaluations

ADEQ continues to systematically review past water quality improvement grant projects and Best Management Practices to determine long-term successes and weaknesses. Although most projects were successful when implemented, ADEQ is determining which on-the-ground projects and educational components have resulted in *long-term* watershed-scale improvements in water quality and lasting changes in behavior.

Information is gathered through discussions with past project managers, visiting the sites, and conducting some monitoring. For projects intended to improve surface water impairment, the evaluation is coordinated with the TMDL Program.

Weaknesses revealed by these effectiveness evaluations have resulted in three significant changes to the Nonpoint Source programs.

- Refocus grants to target impaired waters
- Track and communicate progress on impaired waters
- Develop and implement a locally-driven watershed improvement plan

Grant Program's target on improvements in impaired waters is reflected in its newest request for proposals, revisions in the manual, new workshops, and adjustments in the grant process. When evaluating proposals, staff now consider: the project's *likelihood* of leading to a pollutant being delisted and whether the project has the support needed to continue after the grant cycle concludes. For example, what public involvement was involved in site selection, implementation, monitoring, and maintenance? What binding commitments are being made to maintaining the improvement and changes in land use (e.g., cattle exclusion)? What are we really buying?

To track and communicate progress on impaired waters, an easily understandable spreadsheet was developed. The spreadsheet is used to document priorities among the impaired watersheds for focusing restoration efforts. Development and use of this spreadsheet has encouraged cross-programmatic efforts to address these impairments and has provided a tool for communicating information with our watershed partners. A portion of the spreadsheet is provided in Appendix D (see Impaired Waters Strategy discussion).

A new grant targeted watershed improvement grant was initiated this year to support locally-driven development of watershed improvement plans (WIPs) in an impaired watershed. The goal is for these plans to identify and prioritize the projects that are key

to effectively mitigating water quality impairments. (See Watershed Improvement Plans Grant Opportunity discussion).

Impaired Waters Strategy

The Watershed Improvement Measure or Measure W is a vital component of performance measure in EPA's Strategic Plan. The measure keeps tabs of watersheds where water quality conditions have improved by utilizing a watershed approach. One of the primary purposes of this measure is to model and demonstrate the effectiveness of the watershed approach. EPA has a nation-wide goal to improve water quality conditions in 250 watersheds for 2012. ADEQ is helping EPA to track the watersheds for purposes of reporting on this measure and documenting environmental results, and to better focus water quality restoration activities by identifying needs, sharing information, providing assistance and learning more about the related challenges. ADEQ has identified five watersheds to focus on for the Measure W performance measure. These watersheds are identified in Chapter 3, "Implementation and Effectiveness Monitoring."

ADEQ has a comprehensive strategy for improving water quality on Arizona's impaired waters that will lead to these waters meeting standards. Once a surface water has been listed by either ADEQ or EPA, ADEQ's TMDL and WQIG programs bring together the resources needed to move the surface water through a series of steps or levels until the impairment has been mitigated and the stream or lake is meeting standards for pollutants of concern. The six (6) levels are:

- Level A – Investigate and develop TMDL
- Level B – Develop a strategy that should lead to water quality improvements
    - A Watershed Improvement Plan (WIP)
    - TMDL Implementation Plan (TIP)
    - Lake management plan
- Level C – Implement the plan
- Level D – Re-evaluate impairment due to watershed improvements, new standards, or natural conditions based on new data
- Level E – Request delist

An impaired surface water should progress from Level A to E. However, effectiveness monitoring in Level D may indicate that new strategies or plans need to be developed and implemented to achieve standards. ADEQ also looks for opportunities where plan development and implementation can replace or lessen resources spent on TMDL development.

A spreadsheet was developed which tracks the progress of each impaired surface water. This table is a useful tool for communicating between programs at ADEQ and with other agencies, to coordinate efforts, and bring together funding resources. It should also be useful in tracking the effectiveness of the Nonpoint Source Program in improving surface water quality. A portion of this spreadsheet is provided in Appendix D.

In developing this spreadsheet, one other group of impaired waters was recognized and is being tracked:

- Level F – Assign to EPA because ADEQ lacks jurisdiction (e.g., pollutant sources are entirely in Mexico)

Currently only one impaired water is in this category – Nogales Wash where fecal and chemical contamination in Mexico is flowing into Arizona. After almost 20 years, international efforts may soon resolve this problem.

TMDL Working Group & Watershed Improvement Plans

The Grants Program gives priority to projects that are supported by a Watershed Based Plan and Total Maximum Daily Load (TMDL) Report. Priority is also given to projects that are located in an impaired reach and that can provide estimated load reductions. By investing in these projects, ADEQ is able to provide data proof that water quality improvements are being made. Therefore, it is important that the Grants Program work closely with ADEQ's TMDL Program. Over the past year the Grants Program has developed a strong working group with the TMDL Program. This working group has identified areas that are impaired, have active participation in the community, and could manage a water quality improvement project. The Grants Program will continue to give priority points and target grant dollars to these areas of concern.

Watershed Improvement Plans Grant Opportunity

The Watershed Improvement Plan Grant Opportunity is a new grant opportunity that was piloted in FY09. Targeted Watershed Improvement Plans (WIPS) are needed to identify and prioritize water quality improvement projects critical to restore water quality. These plans are targeted at specific pollutants causing impairments within a targeted drainage area. The objective of WIP grants is to focus future grants on priority projects identified in the plan, so that the impaired water will meet water quality standards. The success of the new opportunity depends on a variety of factors such as community education and involvement, prioritization of projects, resources, funding sources, and successful implementation.

Three impaired subwatersheds were identified as priority areas for the pilot WIP RFGA (Appendix F):

- Oak Creek drainage area from its headwaters to Spring Creek and the Spring Creek drainage, in the Sedona area. Pollutant of concern: *E. coli* bacteria.
- San Francisco River drainage area, primarily from the Blue River to Limestone Gulch, near Clifton. Pollutant of concern: *E. coli* bacteria.
- Granite Creek, from headwaters to Watson Lake, in the Prescott area. Pollutants of concern: nutrients and *E. coli* bacteria. (Note: Although not "impaired" for E. coli bacteria, recent monitoring to identify nutrient sources has shown *E. coli* bacteria exceedances.)

The WIP RFGA resulted in the award of two grants during FY09: one to address the Granite Creek subwatershed, and one to address the San Francisco River subwatershed. A third application to address the Oak Creek subwatershed was submitted in late FY09 and was awarded in FY10.

Educational Priorities

The Grants Program has started targeting funds to educational programs directly tied to water quality impairments and improved water quality. The big picture goal for the education projects is to promote statewide efforts to manage nonpoint source pollution, similar to our on-the-ground grant projects. However, direct emphasis is placed on promoting long-term behavior changes and plenty of hands on, active participation from the public in addition to incorporating an on-the-ground component.

In order to move in this direction, the Grants Program launched its first competitive education grant cycle in FY08. These projects have been monitored closely throughout FY09 to determine success and effectiveness. The Grants Program has also worked on developing education grant opportunities for the FY10 grant cycle that will continue to sharpen the focus of educational projects toward impaired water bodies.

Nonpoint source Education for Municipal Officials (NEMO)

The Arizona Cooperative Extension at the University of Arizona and ADEQ began the NEMO program in the fall of 2002. Since then, the contract has been extended through 2010. The NEMO program provides education for land-use decision makers on watershed-based planning and management practice for restoring, maintaining and protecting watersheds, water quality and water sustainability. NEMO has expanded its service and is working with other active watershed groups to assist them in the development of watershed-based plans. NEMO has identified stakeholders and met watershed education needs with community-based programs, presentations, and publications. NEMO staff regularly attends watershed partnership meetings throughout the state to provide technical assistance and support.

The NEMO Program has generated nine Watershed Based Plans, with the last three scheduled for submittal to ADEQ in May 2010. Since FY03, NEMO has provided support to eight applicants resulting in fourteen successful grants for a total of approximately $2,275,000 toward water quality improvements. This number is anticipated to continue to increase in future years. These plans provide valuable watershed characterizations that will serve as the backbone of future, more refined targeted watershed plans.

The most successful outcomes of ADEQ's collaborations with NEMO have included the development of a statewide Internet Mapping Service (IMS), the ongoing compilation of a manual of Arizona-appropriate best management practices, and support and training for watershed stakeholders. Future NEMO contracts will focus on continuing to provide and enhance these watershed tools.

Memorandum of Understanding

No MOUs were completed or updated during FY09. A list of current MOUs has been developed, and ADEQ will continue to work with both new and existing partners to update and create MOUs that will allow the use of joint resources to address nonpoint source pollution throughout the state. ADEQ will focus future update efforts on MOUs with agencies in our targeted watersheds as they are identified. This includes the Bureau of Land Management, the State Lands Department, and the Arizona Game & Fish Department.

Impaired Water Identification Rule

Arizona's Impaired Water Identification Rule established methods and criteria for identifying impaired waters and developing a Total Maximum Daily Load analysis. This rule was adopted in 2002 and is currently undergoing revisions to incorporate new procedures for identifying impaired waters based on violations of narrative water quality standards. Once the draft revisions are approved by management, a new draft will be released for review and stakeholder meetings will be scheduled. The Impaired Waters Rule impacts the Nonpoint Source Program's direction because any modifications to the Rule will become program priorities, creating a shift in our goals for grant funding and deliverables. There is no timeframe for new rules because all rule development is on hold due as stipulated by State of Arizona Legislature.

Chapter 2

Federal Support

ADEQ continues to work with state and federal land managers to address nonpoint source pollution impacts on water quality. Many activities throughout the year demonstrate ADEQ's commitment to working with federal and state land managers to improve water quality in the State.

Arizona achieves federal support through partnerships and stakeholder efforts implemented through a variety of formal and informal agreements, cooperative projects, sharing and combining of funds, and meetings to share information and ideas. Through these partnerships, Arizona is able to work with federal agencies to incorporate other appropriate water quality controls and further the goals of the Nonpoint Source Program. Another way ADEQ works and partners with Federal agencies is through community-led watershed groups. ADEQ's web site provides a list of Arizona Watershed Partnerships (www.azdeq.gov/environ/water/watershed/partnerships.html). Within these watershed partnership structures, ADEQ and its federal partners are able to more easily identify, assess, and help implement voluntary efforts to control nonpoint source pollution.

Coordinated Resource Management

One forum for interagency coordination is Arizona's Coordinated Resource Management (CRM). A formal agreement between federal and state agencies established an Executive Committee and task groups to coordinate natural resource management across Arizona. Both ADEQ and EPA have been participating in this effort.

Agencies participate in planning, implementation of resource improvements, and monitoring of resource areas. Past focus of this planning has been on development of ranch management plans on ranches where land ownership is a checkerboard of state and federal agencies, which could result in different management objectives.

CRM actually has been successful at two levels. One is at the local level, bringing together land owners (federal, state, and private), environmentalists, and resource managers (other agencies) as a team to formulate and implement plans for the management of resources or to resolve conflicts. Another important function has occurred at the Executive Committee or State Technical Committee level. These meetings provide a forum to exchange information concerning agency priorities, new techniques, and funding opportunities which can then be shared with the local Working Groups.

Environmental Assessment Reviews

Another example of interagency coordination is ADEQ's active participation in the National Environmental Policy Act (NEPA) planning and decision making process. NEPA requires that all federal agencies prepare detailed statements assessing the environmental impact of and alternatives to major federal actions significantly affecting the environment. ADEQ provides technical information concerning the status of water quality in the area of concern and recommends appropriate management practices to improve or maintain the resources. This process encourages the mitigation of nonpoint source impacts on water quality whenever a federal action is being considered.

319 Projects Leveraged with Federal Funds

Of the nine Cycle 11 projects awarded including the two targeted projects, three projects were leveraged with federal money and/or federal support.

- **11-002: E. coli Reduction on the San Francisco River through Alternative Livestock Water on Kaler Ranch** - The initial Federal support was estimated at $25,000, supplied by the Safford BLM biologists and hydrologist. However, it has taken much longer to resolve concerns of the USFW Service that they have expended approximately $40,000 of federal support from the labor of one range conservationist, one fish biologist, the lead biologist, and one hydrologist.

- **11-T01: Granite Creek Watershed Improvement Plan and Council** - A Prescott National Forest hydrologist helps with providing donated time to participate in the Watershed Improvement Council and provide GPS layers/data. There is no estimated dollar amount for the USFS time.

- **11-T02: San Francisco River Targeted Watershed Improvement Plan** - It is estimated that approximately $25,875 in federal support from the USFS, BLM, and NRCS will be given in the form of labor and mileage.

Chapter 3

TMDLs, Implementation and Monitoring

TMDLs

The Total Maximum Daily Load (TMDL) Program is designed to help an impaired stream or lake meet its water quality standards and support its designated uses, such as protection of aquatic life, drinking water, or fish consumption. Section 303(d) of the Clean Water Act establishes authority for the TMDL Program and guides states on how to develop these plans for waters that do not meet water quality standards. Section 319(h) funding is used to support TMDL development and implementation. Information from TMDL reports is then used to help determine targeted watersheds to prioritize for future 319(h) grant funding.

For each TMDL, ADEQ is required to establish a TMDL implementation plan that explains how the allocations and any reductions in existing pollutant loadings will be achieved (Arizona Revised Statute §49-234.G).

Developing implementation plans is an integral piece of the TMDL process. The achievement of water quality standards in most surface waters will occur due to voluntary efforts such as voluntary cleanup actions, voluntary implementation of best management practices, volunteer monitoring, and education. Stakeholders are encouraged to participate throughout the process and identify actions that they will take to ensure that this plan is implemented.

Implementation and Effectiveness Monitoring

The five water bodies listed below are the current Measure W watersheds:

Boulder Creek

Coordination efforts with the three land managers/owners of the Hillside mine tailings piles continues but has not resulted in any improvements. Progress on a third party waiver for remedial options has not progressed in the last year. The private land owner is developing plans to address the adit discharge and potentially re-grading/ moving the tailings out to of the flood plain.

Turkey Creek

Water quality results continue to show that copper and lead loadings have been effectively reduced from the Golden Belt and Golden Turkey mines.

Alum Gulch

Adits in the watershed continue to discharge to the stream with efforts continuing to address these sources of pollutants. Baseflow conditions remained unchanged, low pH and elevated metal concentrations are still being observed. Automated sampling equipment has been deployed to collect stormwater runoff samples but drought conditions have worsened and no sampling has occurred.

Tonto Creek
Additional sampling is ongoing. Laboratory nutrient analytical issues arose rendering some sampling data useless. *E. coli* results have shown few exceedances of the single sample maximum water quality standard. A new watershed group is forming within the area and has had great initial local support.

Pinto Creek
The proposed dissolved copper site specific standard was not included in the last triennial review of water quality standards due to stakeholder input. The model was rerun and a revised standard of 33 ug/L will be proposed. No additional monitoring has taken place.

TMDL Development
For a table showing the current status of each of the TMDLs below, please see http://www.azdeq.gov/environ/water/assessment/download/status.pdf

Lake Mary Region
Additional modeling was undertaken to include updated soil sampling results and local atmospheric mercury data. The TMDL is being updated to include these results prior to being released for public comment.

Alamo Lake
The watershed model was rerun to incorporate new soil and local atmospheric mercury deposition data. The results are being used to redraft the allocations to include a separate natural background load.

Parker Canyon Lake
The TMDL model report was received from the contractor and is under review.

Lyman Lake
ADEQ anticipates completing data collection this summer.

Queen Creek
Hydrologic and dissolved copper chemical modeling has been completed and data indicate a site specific standard may be necessary for one subwatershed. Additional data is being collected to confirm this result and determine the appropriate concentration and stream segment to which the standard will apply.

Gila River
Sediment and *E.coli* TMDLs have been drafted and released for 30-day public comment periods. Upon upper management approval they will be released for their 45 A.A.R. notice and be submitted to EPA for approval.

Little Colorado River
Staff has collected several rounds of sampling along the middle Little Colorado River near Holbrook. Sources of *E. coli*, metals and sediment are being investigated although data indicate the copper and lead do not exceed the applicable water quality standards.

Mule Gulch
Site specific modeling is nearing completion. The TMDL will be drafted based on the new standard.

Urban Lakes
Three lakes within the metropolitan Phoenix area have been studied over the past year for nutrient and *E. coli* impairments. Data collection is almost complete.

Watson Lake and granite Creek
ADEQ has taken the watershed approach and is developing TMDLs for these waterbodies concurrently. Summer monsoon runoff sampling must be completed in order to address seasonality.

Microbial Source Tracking
ADEQ is partnering with Dr. Channah Rock to analyze *E. coli* samples to determine source species as human, cattle, or other. The pilot study will hopefully produce results that identify the sources so that more effective BMPs can be implemented.

Atmospheric Deposition of Mercury
EPA continues to support ADEQ efforts to characterize the rate of atmospheric mercury deposition within the state. Atmospheric deposition, wet or dry, is a major source of mercury contamination throughout the country. While various efforts have been completed to characterize this problem on a national scale, limited data exists specific to Arizona. ADEQ recognizes the lack of atmospheric deposition data poses a serious problem to TMDL development. ADEQ continues to operate the Mercury Deposition Network (MDN) station in Arizona located west of Flagstaff. Weekly wet deposition concentrations and rates are calculated from the data collected at the site.

ADEQ, in cooperation with EPA Region IX, continued to collect atmospheric mercury concentration data at several sites across the state using EPA's mobile Tekran unit over approximately six months in late 2009. Previously collected Tekran data was modeled by an EPA contractor and the results have been incorporated into ongoing mercury TMDLs.

The goal is to establish Arizona specific wet and dry deposition rates to compare to rates determined by national models. For this project, independent estimates of wet and dry deposition were calculated based on direct and indirect measurements. These estimates result in higher wet deposition rates relative to the simulation models but similar dry deposition rates. Estimates of dry deposition rates vary among the three simulation models as well as the calculated rates based on ambient concentration data and foliar accumulation. The table below summarizes the concentrations for each analysis. With the exception of Sycamore Canyon, the calculated values match within

20 percent of those predicted by the CMAQ 2002 model; Sycamore Canyon estimates are approximately 30 percent lower than those simulated by CMAQ 2002.

Comparison of Simulated and Calculated Dry Deposition Rates (g/km2/yr) Site CMAQ 2001 CMAQ 2002 Calculated

Site	CMAQ 2001	CMAQ 2002	Calculated	Percent Difference Between Calculated and CMAQ 2002 Dry Deposition Rates
Lake Pleasant	10.99	23.18	24.27	4.7
Lyman Lake	12.33	25.75	21.15	-17.9
Parker Canyon Lake	11.99	28.19	30.84	9.4
Sycamore Canyon	14.29	33.93	23.42	-31.0

Water Quality Monitoring

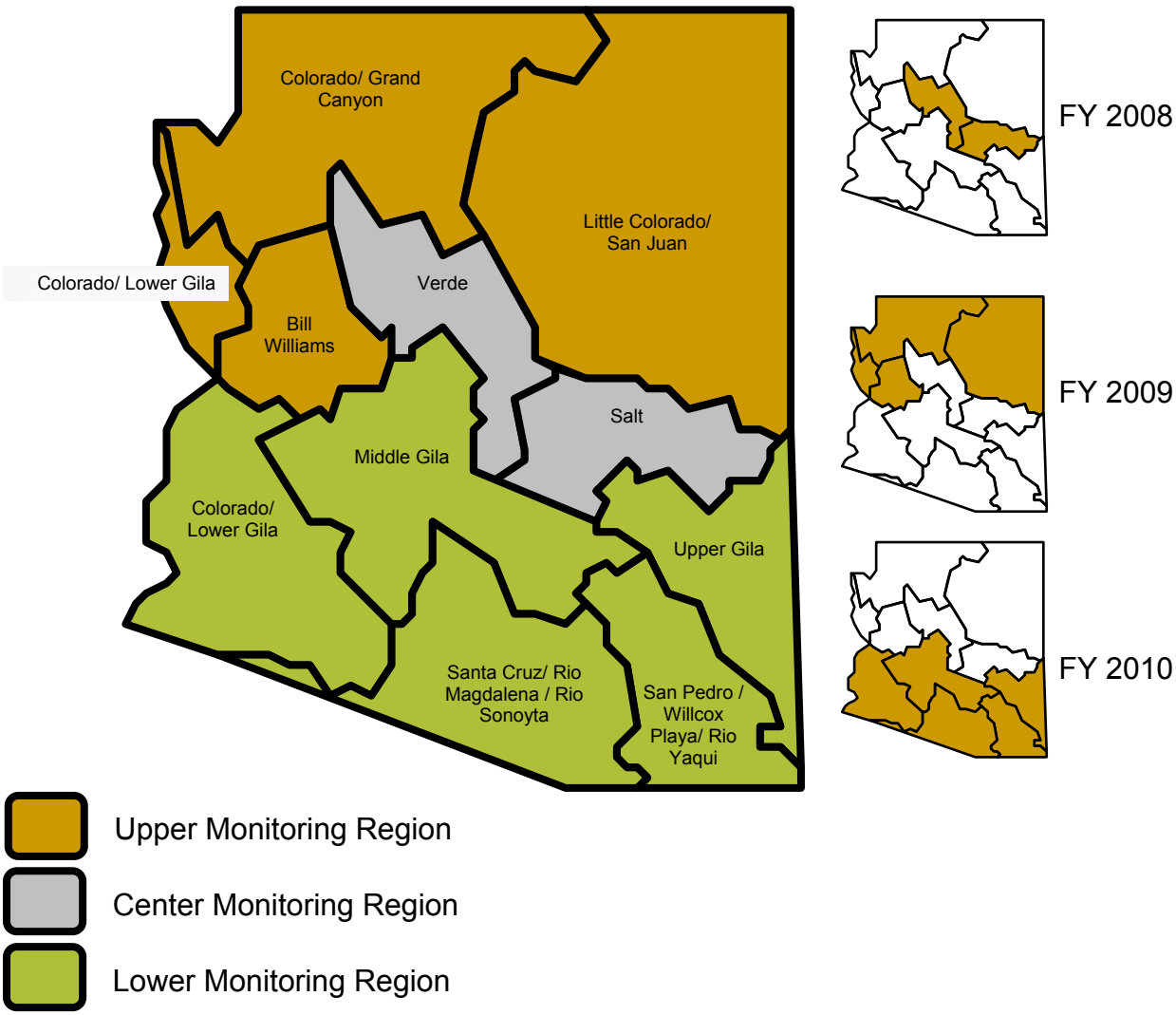
ADEQ employed a probabilistic and targeted approach to sample site selection for wadeable perennial streams in FY 09. ADEQ field personnel visited every sampling site during four quarters of the year and collected field data and water samples to be analyzed for chemical constituents. Biological and habitat information for wadeable perennial streams were collected once during the spring quarter.

ADEQ continues to work with the United States Geological Survey (USGS), under a long-standing cooperative agreement, to determine long term water quality trends on Arizona's larger rivers. For fiscal year 2009, the USGS monitored 11 sites throughout the state for ADEQ.

ADEQ has identified 10 major river basins in Arizona as part of the basin monitoring program. Water quality monitoring has been conducted at sampling sites located in two major basins each water year. All 10 basins are monitored over a three-year cycle.

For detailed water quality data for the recently completed monitoring on the Little Colorado River Watershed visit
http://www.azdeq.gov/environ/water/assessment/download/lcr_report.pdf

ARIZONA MONITORING REGIONS



A map of Arizona showing monitoring regions being sampled in a three-year cycle. Smaller maps of Arizona indicate which basins within each monitoring region will be sampled each year.

Chapter 4

Water Quality Improvement and Load Reductions

As Arizona continues to focus efforts on restoring and protecting waters, it is critical that ADEQ monitor both:

- The progress being made towards achieving and maintaining water quality standards.

- The implementation of programs and projects to assure that they are successful.

ADEQ employs several environmental management measures which indicate progress towards achieving and maintaining beneficial uses of water and thus the success of the Nonpoint Source Program. Ambient water quality monitoring, biological and physical assessment, implementation monitoring, model projections, and photographic evidence are some of the management measures ADEQ staff utilizes to determine effectiveness in restoring and/or protecting water quality. Environmental Management Measures are also an essential tool to enable ADEQ to identify nonpoint source pollution problems, develop effective watershed-based plans, evaluate the effectiveness of actions taken, and meet Section 319 reporting requirements.

Water Quality Improvement

Ambient water quality and biological and physical assessment data are compiled in *Arizona's integrated 305(b) Assessment and 303(d) Listing Report* which reports the status of water quality in Arizona. ADEQ uses the Integrated Report for overall program status and trends and to compare the quality of Arizona's surface waters to water quality standards. The report assesses all surface waters where monitoring has been conducted, reports on the quality of ground water, lists any impaired surface waters, and prioritizes these waters for TMDL development. The water quality assessment report is another means by which ADEQ can determine the effectiveness of management measures implemented to control nonpoint source pollution.

Note that there are many factors that might affect results. For example, completion of a TMDL on a surface water usually allows ADEQ to remove that surface water from the 303(d) List (Category 5) to Category 4 or the "not attaining" list. However, further monitoring during the course of the TMDL study may reveal impairment based on additional parameters. The surface water must then remain on the 303(d) List for the new parameters, giving the appearance that no progress has been made, when in fact some water quality problems have been addressed. These types of variables often skew the results of effectiveness measures and make it difficult to measure water quality improvement by comparing assessments from one year to the next.

Watershed-based Plans and TMDL Implementation Plans
Watershed-based plans are holistic documents that are developed and implemented 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. Furthermore, watershed-based plans deliver proactive measures to protect surface waters.

Water quality improvement plans are vital components to ensure Arizona's lakes, rivers, and streams achieve applicable water quality standards. ADEQ contracts with Arizona NEMO to develop watershed-based plans for Arizona's ten major ten-digit-hydrologic unit code (HUC) watersheds. Watershed Based Plans have been completed and are online for the Bill Williams, Upper Gila, Verde River, Little Colorado River Watersheds, Upper Agua Fria, Middle and Lower San Pedro sub-watersheds, Santa Cruz, Salt, and Middle Gila Watershed. The Plans can be viewed on-line at www.arizonanemo.org. Further watershed-based plans are currently being developed for the Colorado-Lower Gila, Colorado-Grand Canyon, San Juan and San Pedro.

Watershed Partnerships and Other Active Stakeholder Groups
Watershed partnerships and other active stakeholder groups contribute to the progress of the Nonpoint Source Program. ADEQ's web site provides a list of Arizona Watershed Partnerships (www.azdeq.gov/environ/water/watershed/partnerships.html). NPS staff attends watershed partnership meetings, review and provide guidance on project ideas, and provide education and training. The 319(h) program also provides additional education and training opportunities to watershed groups through the NEMO and Master Watershed Steward Programs.

Water Quality Improvement Projects
The availability of grant funds through Section 319 of the Water Quality Act is a critical component to improving and protecting water quality in watersheds throughout Arizona. During the last grant cycle, ADEQ received 10 grant applications of which six were awarded. Of the six projects awarded two projects are located in areas with a completed TMDL. Two targeted grants projects were also awarded during FY 09. Both projects are located in areas with completed TMDL. Below is a list of projects that were awarded in FY 09. Appendix B lists detailed project information.

Cycle 11 Awarded Water Quality Improvement Grants

Application Title: **11-001 Septic Tank Closures for Program Year 8 of Lake Havasu City's Sewer Expansion Program**
Authorized Agent: City of Lake Havasu City
County: Mohave
Watershed: Colorado/Lower Gila
Funding Amount: $300,000.00

Application Title: **11-002 E. coli Reduction on the San Francisco River through Alternative Livestock Water on Kaler Ranch**
Authorized Agent: Gila Watershed Partnership
County: Greenlee
Watershed: Upper Gila
***Funding Amount*:** $42,750.00

Application Title: **11-004 Wenima Wildlife Area Stream Restoration**
Authorized Agent: Arizona Game & Fish Department
County: Apache
Watershed: Little Colorado/San Juan
Funding Amount: $74,145.00

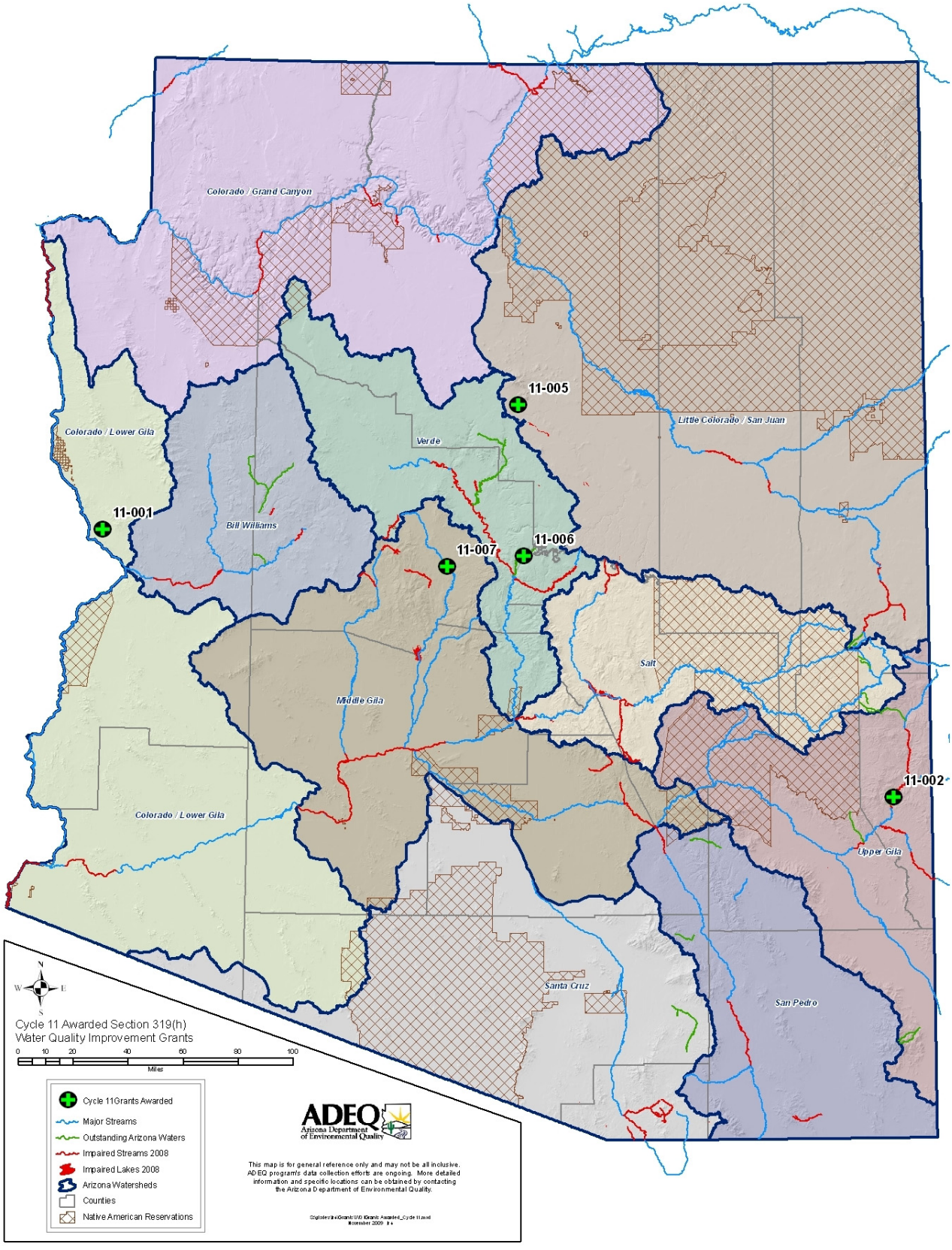
Application Title: **11-005 Water Quality Improvements for Francis Short Pond**
Authorized Agent: City of Flagstaff
County: Coconino
Watershed: Little Colorado/San Juan
Funding Amount: $25,164.00

Application Title: **11-006 Middle Fossil Creek Water Quality Improvement Project**
Authorized Agent: U.S. Forest Service, Coconino National Forest
County: Yavapai
Watershed: Verde
Funding Amount: $211,825.00

Application Title: **11-007 Sediment Reduction from Runoff Using Best Management Practices**
Authorized Agent: Cosanti Foundation
County: Yavapai
Watershed: Upper Agua Fria/Middle Gila
Funding Amount: $37,452.85

Targeted Application Title: **Granite Creek Watershed Improvement Plan and Council**
Authorized Agent: Prescott Creeks Preservation Association
County: Yavapai
Watershed: Verde
Funding Amount: $299,961.00

Targeted Application Title: **San Francisco River Targeted Watershed Improvement Plan**
Authorized Agent: Gila Watershed Partnership
County: Greenlee
Watershed: Upper Gila
Funding Amount: $188,436.60


Colorado / Grand Canyon
Colorado / Lower Gila
Bill Williams
Verde
Little Colorado / San Juan
Salt
Middle Gila
Colorado / Lower Gila
Upper Gila
Santa Cruz
San Pedro
11-001
11-005
11-006
11-007
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W
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S
Cycle 11 Awarded Section 319(h)
Water Quality Improvement Grants
0 10 20 40 60 80 100
Miles
Cycle 11Grants Awarded
Major Streams
Outstanding Arizona Waters
Impaired Streams 2008
Impaired Lakes 2008
Arizona Watersheds
Counties
Native American Reservations
ADEQ
Arizona Department of Environmental Quality
This map is for general reference only and may not be all inclusive. ADEQ program's data collection efforts are ongoing. More detailed information and specific locations can be obtained by contacting the Arizona Department of Environmental Quality.

Load Reductions

319 Project Monitoring

Each project funded by the Water Quality Improvement Grant Program to implement an on-the-ground water quality improvement project must describe a process for evaluating the effectiveness of the implementation efforts over time. Monitoring can include photographic points, vegetative transects, and/or actual water quality monitoring. Information on reductions in nonpoint source pollutant loads are tracked and reported in EPA's Grants Reporting and Tracking System (GRTS). GRTS enables EPA and States to demonstrate the accomplishments achieved with the use of 319h grant funds. The data entered into GRTS is used by the EPA to respond to inquires received from Congressional committees, the White House, and various constituent groups.

ADEQ will continue to be pro-active in securing load reduction estimate information from grantees. In fact, starting in FY08 all projects that deal with nitrogen, phosphorus, or sediment are required under the grant agreements to supply ADEQ with load reduction data on a periodic basis.

Calculating Load Reductions

Projects proposed with useable estimated load reductions will rank higher for funding consideration than projects that do not have projected quantitative measures of success. If estimated load reductions are unknown, ADEQ encourages monitoring either by the grantee or ADEQ so that data can be used to quantify success for GRTS reporting. Model projections are used for measuring load reductions in water quality improvement grant projects.

Evaluating and assessing BMP effectiveness and obtaining more load reduction data remains a program priority.

Approximately 1341 projects had amounts entered into the GRTS system reporting load reductions for FY 08/09.

The following table lists the load reductions in Arizona in 2008 and 2009 for comparison.

	2008	**2009**
Nitrogen (pounds)	8,167	9,341
Phosphorus (pounds)	3,413	3,670
Sediment (tons)	1,606	208,383

The significant increase in sediment load reductions is a result of improved efficiency in entering project data over the past year, as well as the closure of several sediment reduction projects during FY09.

TMDL Load Reductions

ADEQ understands the importance of quantifying load reductions on a watershed, waterbody, and project level. However, quantifiable proof of nonpoint source load reduction estimates are difficult to obtain. Per Arizona statute, ADEQ will review the status of each water where a TMDL study has been performed, at least once every five years to determine if compliance with applicable surface water quality standards has been achieved.

ADEQ conducts effectiveness monitoring activities on diverse projects. Several mine remediation projects have been completed in recent years along Alum Gulch (including Humboldt Canyon), Turkey Creek, Pinto Creek, and the Hassayampa River. Changes in land use practices and improvements in riparian vegetation have occurred along the LCR and upper Nutrioso Creek which should reduce the amount of sediment delivered to the waterbodies. Upgrades to septic systems have been completed along Tonto and Christopher creeks potentially reducing the nitrogen and *E. coli* loads. Data collection and analysis continues on all of these projects.

Chapter 5

Successful Implementation Projects

The following two Arizona success projects illustrate achievements in initial efforts to implement nonpoint source pollution reduction tasks under section 319 of the Clean Water Act. Efforts to improve water quality include reduced pollutant loadings and increased public awareness of nonpoint source water quality issues in Arizona.

White Mountain Apache Tribe's Water Quality Improvement Project

The Rodeo-Chediski Fire, one of the most severe wildfires in Southwest history, occurred in 2002 on Fort Apache Indian Reservation in east-central Arizona and in some off-reservation areas. Almost 1.7 million acres of the White Mountain Apache (WMA) Tribal land was severely burned.

The catastrophic fire has caused soil erosion, loss of vegetative cover and community flooding that continues today. It is estimated that soil erosion has increased from one ton per acre to 40 tons per acre since the fire. In addition, stream runoff and uncontrolled upstream ungulate damage have created an increase in turbidity and *E-coli* levels.

Reducing overland flow is the main goal of the WMA Tribe 319 project because it is the primary cause of increased erosion, and channel widening and downcutting and degraded riparian ecosystems. Soil erosion will be reduced through restoration efforts both in upland watershed areas and within stream channels the WMA community implemented. Best Management Practices implemented focus on restoring uplands by planting tree seedlings, installing check dams and water spreader dikes in areas identified as high erosion risk. Fencing, feral horse removal and monitoring of revegetation will be implemented to reduce contamination by *E. coli* bacteria and to increase and nurture native plant cover. Stream channel degradation will be addressed through stream bank stabilization, channel stabilization, and channel widening to help reduce suspended sediment load.

Restoration and maintenance of riparian ecosystems will be continuously assessed for improvement in hydrologic conditions and by monitoring of benthic invertebrate population diversity and succession.

The following bullet points are some of the on-the-ground work completed to reduce flooding and erosion through this 319 project:

- Culverts were repaired/replaced.
- Ditch lines were cleaned out.
- Low water crossings were installed.
- Roads have been seeded and closed with rock material to help re-establishment of native seeds.
- Signs have been posted at different Day School Wash access routes, and within the community notifying the public of the closures.
- Grave sites along road closures are protected and limited to access by placement of boulders.
- 64 heavy equipment rock riffle bars, 111 rock man labor riffles, and 175 man labor riffle bars were installed.
- Berms were installed around flood prone homes.
- GIS was used to create overlays and maps to support identifying project areas such as seeding sites, riffle bar sites, culvert locations, ditch fills, low water crossings, horse traps, and a road assessment.
- GIS data was collected for rolling dip locations, gravesite protection areas, and photo monitoring points.
- Horse owner survey was documented and forwarded to livestock officers.
- Corrals were repaired and bales of hay were supplied to horse owners.
- 101 stray horses were caught and returned to owners.
- Information was provided about issues concerning the lack of management of stray horses and how it impacts the environment at the community ADEQ BBQ.

Education and Outreach

The WMA Tribe continues to have full cooperation with its departments including those from the Division of Natural Resources: Watershed Program, Hydrology/Water Resources Program, Tribal Forestry, and Land Operations. Other departments for consultation purposes include the Environmental Protection Program, Indian Health Services, Historic Preservation Office, Livestock Association, and community representatives from the town of Cibecue. This cooperation helps make outreach that much more successful.

Community involvement activities upholding traditional Apache values reconnecting people to the land are one component of public outreach. Another component of public outreach and educational activities is to create awareness among the Reservation community members about degraded water quality, soil erosion, flooding, burn area restoration, and their effects on health, community, natural resource, and environmental issues.

Other education and outreach activities include: radio broadcasts, monthly community meetings, as well as articles and posters with best management practice activity

information displayed throughout the community. Website information complete with updates and project maps is also available at www.wmatforestry.com/adeq.

An ADEQ workshop and an ADEQ community outreach BBQ were held on June 10, 2009 for students and community members. During the workshop, 150 people completed a survey that determined their knowledge, future concerns, and willingness to participate in this and future projects. This project, scheduled to be completed in June 2010, has been successful in implementing numerous BMPs to reduce erosion that are expected to improve water quality Community involvement has been a cornerstone of this project and will continue to benefit the watershed.

The Upper Gila Watershed Steward Program Project

For years citizens of Southeastern Arizona –mostly farmers, ranchers, and small business owners have been concerned about water quality in the Gila Watershed. While a few highly motivated citizens were active in pursing solutions to their issues, they felt much more was possible if more residents were informed.

The Upper Gila Watershed Partnership, in collaboration with Graham County Cooperative Extension office, intends to educate the citizens living within the Upper Gila Watershed about water quality issues. Their target audience includes landowners, local companies, organizations and government entities. Emphasis is placed on recruiting those who make decisions affecting the environment, such as county supervisors and city and town managers Some of the nonpoint source pollutants causing impairments to waterbodies within the Upper Gila Watersheds include: sediment, turbidity, dissolved oxygen, selenium, E. coli, lead, copper, and mercury.

Education and Outreach

The first step to educating citizens about water quality issues was to adapt the Master Watershed Seward Program curriculum to make it specific to the Gila Watershed water quality concerns and to the stewards living within the watershed.

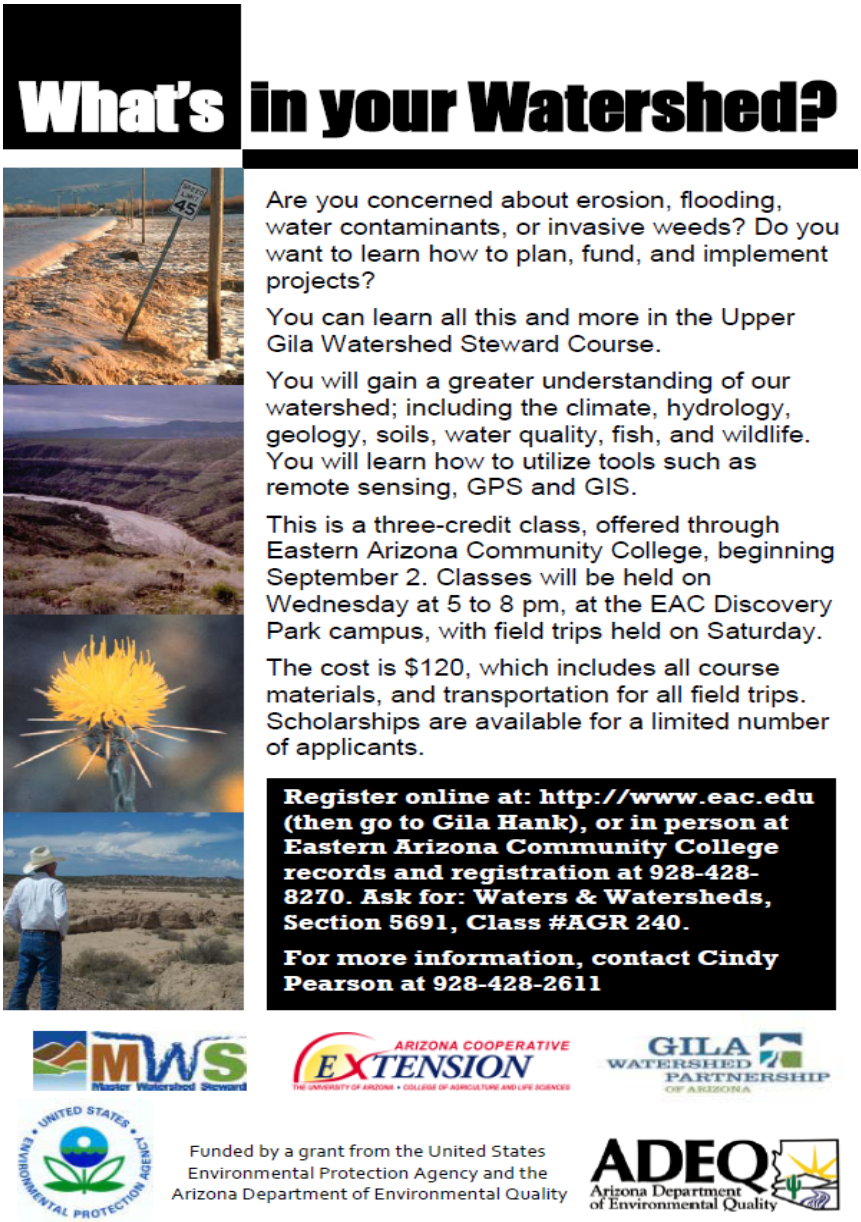
Eight courses were designed to teach participants about water quality issues from monitoring and best management practices to writing an environmental grant. Educating citizens about water quality issues will expand and improve the capability and competence of the Gila Watershed Partnership and thus lead to the reduction of polluted waters. Class curriculum includes material and presentations covering flooding, biotic functions, geospatial technology, land use planning, and watershed planning.

Initially, three phases: summer 08 preplanning, fall 08 curriculum preparation, and spring 09 class instruction- taught at Eastern Arizona Community College- were

scheduled. But because of unexpected in-kind work match dollars, the Partnership was able to schedule another class as advertised in the flyer below.

Expected Outcomes

Citizens and other stakeholders educated through this curriculum program will expand the capacity and effectiveness of the Gila Watershed and lead to identification of areas of water quality concern and eventually to water quality improvement and long term maintenance. As an example of this education project effort, two participants in the 319 grant project are now working on projects in the watershed. One student is working on setting up wet/dry mapping of the Gila River with the help of NEMO. The other student is working on a water harvesting project. This project is set to expire June 2010 and so far has been a great example toward taking a well established watershed group to the next level by educating more interested citizens who will expand their knowledge and make a difference in the environment.



APPENDIX A **Note: reporting on the last EPA approved Nonpoint Source 5 Year Plan**

Goal: Support ground and surface water quality monitoring that provides data for assessments, identification of impaired waters, TMDLs, and effectiveness of remediation and protection strategies.			
Milestone & Progress Summary	**Project or Program**	**Completion Date**	**%Complete**
Perform surface and ground water quality monitoring throughout the state. **Progress Summary** – Surface water – The ambient stream and lakes monitoring programs monitored per the applicable sampling plan. Focus in FY09 for the streams program was in the Middle Gila, Upper Gila, Lower Gila, the Santa Cruz and San Pedro basins. The Clean Lakes Program focused on Havasu, Apache, Canyon, Roosevelt, Saguaro, and Bartlett Lakes and ongoing TMDL studies. Ground water basin monitoring – The ambient groundwater monitoring program is limited to one sampler and one data entry person. Despite that limitation the following activities were accomplished in FY09. Over 148 wells/springs in Arizona were sampled and the results were provided to well owners Sampling for the Bill Williams characterization included sampling 76 wells/springs to characterize the groundwater quality of the Bill Williams basin. Sampling for the McMullen Valley included sampling 76 wells to characterize the groundwater quality of the McMullen Valley basin has been completed. Some of these wells were sampled specifically to examine in depth potential elevated nitrogen concentrations in the Salome area. The final groundwater reports for the Agua Fria and Safford Basins were completed. Approximately 5,858 water quality results were entered into groundwater water quality database.	Monitoring Unit	Yearly	100%

Goal: Support ground and surface water quality monitoring that provides data for assessments, identification of impaired waters, TMDLs, and effectiveness of remediation and protection strategies.			
Milestone & Progress Summary	**Project or Program**	**Completion Date**	**%Complete**
Determine water quality improvements and BMP effectiveness through project monitoring and oversight. **Progress Summary –** Staff continues to provide oversight on 319(h) funded implementation projects and input and track water quality improvements in GRTS. Staff has also developed verification methods to incorporate into new and previous or existing projects to help determine success. Grantees (project managers) are required to submit to ADEQ an evaluation with specific measurements of the project success or failure. These evaluations are required for both on-the-ground and educational grants.	Grant and Outreach Unit	Ongoing	90%
Develop narrative implementation procedures and utilize narrative standards, as well as numeric water quality standards, to assess Arizona's waters. **Progress Summary –** The toxics implementation procedures were not included in the 2007 Triennial Review due to the complexity of the issues. Revisions to water quality standards rules and IPs (narrative bottom deposits, narrative nutrient standard for lakes and reservoirs, antidegradation, and biocriteria for wadeable perennial streams) were adopted in January 2009. ADEQ is awaiting final EPA approval at this time.	Surface Water Section	June 2007	80%

Goal: Support ground and surface water quality monitoring that provides data for assessments, identification of impaired waters, TMDLs, and effectiveness of remediation and protection strategies.			
Milestone & Progress Summary	**Project or Program**	**Completion Date**	**%Complete**
Develop, initiate, and support a Volunteer Monitoring Program. **Progress Summary** – Volunteer monitoring can provide data for determining the effectiveness of water quality improvement projects. Volunteer monitoring can also serve in identifying the need for future water quality improvement projects by quantitatively and qualitatively measuring conditions in a watershed. ADEQ has worked closely with volunteer groups to develop monitoring plans and provide adequate training to make certain that monitoring procedures produce credible data. In order to use the data, ADEQ must ensure that the volunteer groups can produce Quality Assurance Plans (QAPs) and Sampling and Analysis Plans (SAPs) for their sampling projects. ADEQ has worked with volunteer groups during the planning phase of a monitoring project and has created a manual to assist in the development of effective monitoring plans. ADEQ supports the concept of properly trained volunteers and will continue working towards this goal as staffing and resources allow. Unfortunately, to date ADEQ has not been successful in establishing a full-time position dedicated to implementation of a monitoring program.	Surface Water Section	Support Ongoing	100%

Goal: Identify and quantify water quality problems in Arizona.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Support watershed rotation based monitoring program to provide water quality data on long-term monitoring stations and watershed characterization sites within the 10 surface watersheds. **Progress Summary –** Staff completed monitoring in the Middle Gila, Upper Gila, Lower Gila, the Santa Cruz and San Pedro basins in FY09.	Monitoring Unit	Yearly	100%
Complete *Arizona's Integrated 305(b) Water Quality Assessment and 303(d) Listing Report* due April 1, 2004, 2006, and 2008. **Progress Summary –** As a result of both the 2002 and 2004 assessments, staff began stakeholder effort to explore revisions to the Impaired Water Identification Rule (IWIR) in June, 2004. Key issues include revisions to the binomial approach and assessment of chronics and bacteria. Changes should result in fewer federal additions to Arizona's 303(d) Lists. Changes to the IWIR will be proposed in the future. The final 2006/2008 Integrated Report was submitted to EPA in December 2008. EPA's public comment period closed on September 21, 2009 and ADEQ is currently waiting for final EPA-approval. Phase 2 of AZAC (Arizona Assessment Calculator) was completed in 2008, but the software is still problematic. There will be no further development of AZAC at this time. The 2010 assessment is now underway, and facing serious delays due to issues with non-ADEQ data loads into the water quality database and loss of AZAC functionality.	Standards and Assessment Unit	April 1, 2004 April 1, 2006 April 1, 2008	100% 100% 100%

Goal: Identify and quantify water quality problems in Arizona.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Complete 205(j) Report in 2005 and 2007. **Progress Summary –** *Arizona's Integrated 305(b) Assessment and 303(d) Listing Report* submitted to EPA in September 2004 provided a current assessment of water quality in Arizona; therefore, ADEQ did not prepare a 2005 205(j) report. The 2006 integrated assessment and listing report will include an assessment of all readily available data collected between January 1, 2000 and December 31, 2005. Arizona's Integrated 305(b) Assessment and 303(d) Listing Report submitted in EPA in December 2008 provided a current assessment of water quality in Arizona; therefore, ADEQ did not prepare a 2009 205(j) report.	Standards and Assessment Unit	April 1, 2005 April 1, 2007	N/A (see summary) N/A (see summary)
Complete watershed characterizations for at least three watersheds in Arizona (Bill Williams, Upper Gila, and Verde) by January 2004. **Progress Summary –** Watershed Based Plans are completed for the Bill Williams, Upper Gila, Verde River, Little Colorado Rive, Salt, Santa Cruz, and Middle Gila Watersheds as well as the Upper Agua Fria and Middle and Lower San Pedro sub-watersheds. Modeling of watershed response to land use change has been included within the Watershed Characterization & Classification Reports, now referred to as Watershed-based Plans, for each of these watersheds. Sub-watershed areas have been ranked based on susceptibility to nonpoint source pollutant contribution to water quality degradation, and stakeholders have been identified for these priority sub-watersheds. The characterizations and reports can be viewed on-line at www.arizonanemo.org. Further watershed-based plans are currently being developed for the Colorado/Middle Gila, San Pedro, and Colorado/Grand Canyon watersheds. These watershed plans will be final in May 2010.	Surface Water Section & Grants and Outreach Unit	October 2004	100% 100% 100%

Goal: Develop TMDLs for 303(d) listed waterbodies.			
Milestone & Progress Summary	**Project or Program**	**Completion Date**	**%Complete**
Develop TMDLs. **Progress Summary –** Several TMDLs are near completion, including the Alamo Lake, Lake Mary Regional, and Parker Canyon Lake mercury TMDLs. These mercury TMDLs have been delayed due to two main issues; adoption of the fish tissue standard and determining the watershed natural background mercury concentrations. The fish tissue standard has been adopted and additional monitoring and analysis has addressed the natural background issue. The Oak Creek and upper Gila River TMDLs are near completion also.	TMDL Unit	Yearly	85%
Hold public meetings to involve local and affected stakeholders. **Progress Summary –** A public meeting was held to discuss the Gila River TMDLs. Additional watershed group meetings were attended by TMDL staff members.	TMDL Unit	Yearly	100%
Receive and evaluate comments. **Progress Summary –** Written comments were received from EPA and Freeport McMoRan regarding the Gila River TMDLs.	TMDL Unit	Yearly	100%

Goal: Develop and Implement Water Quality Improvement Plans			
Milestone & Progress Summary	**Project or Program**	**Completion Date**	**%Complete**
Write TMDL implementation plans. **Progress Summary –** Little progress was made on writing TMDL implementation plans. New staff came on board and changing priorities slowed development. Additionally the TMDL and Grants unit explored the possibility of "direct to implementation" methods and spent considerable time determining how TIPs could and should be included in this approach. Discussions are ongoing.	TMDL Unit	Yearly	85%
Write and develop Watershed-based Plans (WBP) for all ten Arizona watersheds. **Progress Summary –** Water quality improvement plans are vital components to ensure Arizona's lakes, rivers, and streams achieve applicable water quality standards. ADEQ contracts with Arizona NEMO to develop watershed-based plans for Arizona's ten major ten-digit-hydrologic unit code (HUC) watersheds. Watershed Based Plans have been completed and are online for the Bill Williams, Upper Gila, Verde River, Little Colorado River Watersheds, Upper Agua Fria, Middle and Lower San Pedro sub-watersheds, Santa Cruz, Salt, and Middle Gila Watershed. The Plans can be viewed on-line at www.arizonanemo.org. Further watershed-based plans are currently being developed for the Colorado-Lower Gila, Colorado-Grand Canyon, San Juan and San Pedro. Arizona's 10 major watersheds will be supported by final plans by 2010.	Grant and Outreach Unit	Ongoing	100% 100% 70%

Goal: Develop and Implement Water Quality Improvement Plans			
Milestone & Progress Summary	**Project or Program**	**Completion Date**	**%Complete**
Hold public meetings with stakeholders. **Progress Summary –** During each TMDL public meeting, implementation plans are discussed. The TMDL watershed coordinator attends approximately 4 watershed meetings a month relaying information about TMDLs, TIPs and grant funding	TMDL Unit	Yearly	100%
Receive and evaluate comments. **Progress Summary –** No TIP related comments were received in FY 09	TMDL Unit	Ongoing	NA

Goal: Focus Section 319 incremental grant funds and non-federal matching resources on priority watersheds with impaired waters.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Coordinate and conduct annual meetings to set internal goals for priority funding. **Progress Summary –** The NPS team met several times throughout the year to coordinate and set internal goals. Again during FY 09 it was determined that the following types of statewide projects would score higher (i.e. priority funding): projects which include activities identified in a watershed-based plan or TMDL implementation plan; projects proposed to improve impaired or not attaining waters; or projects proposed with estimated load reductions (projected quantitative measures of success). Potential projects submitted in February 2009 were given preference based on these priorities. In addition, a new, targeted watershed grant was developed to prioritize specific watersheds with water quality impairments for funding (see page 4, "Watershed Improvement Plans Grant Opportunity").ADEQ has also been in close contact with the EPA Project Officer to obtain feedback and recommendations on goals.	Grant and Outreach Unit	Yearly	100%
Conduct statewide grant workshops annually. **Progress Summary –** Five grant workshops were held statewide from October 27 through October 31, 2009 in preparation for the 2009-2010 Grant Cycle (Cycle 11). A total of 50 people attended these workshops. Surveys filled out by workshop attendees demonstrated high satisfaction levels with all aspects of the workshops.	Grant and Outreach Unit	Yearly	100%
Award Section 319(h) grant money each year to implement water quality improvement projects on impaired waterbodies. **Progress Summary –** During FY2009, ADEQ received thirteen grant applications for the	Grant and Outreach Unit	Yearly	100%

Goal: Focus Section 319 incremental grant funds and non-federal matching resources on priority watersheds with impaired waters.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Statewide and Targeted grant opportunities. Of the nine projects awarded in June 2009, four will address water quality improvements in impaired waters. All four of these projects are located in areas that have a completed TMDL. Appendix B lists the projects awarded in FY 09. Appendix C lists current Water Quality Improvement Grant projects funded by open NPS Project grants.			

Goal: Effectively and efficiently use financial resources and leverage funds with other programs to target nonpoint source pollution priority issues and areas.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Use the Grants Reporting Tracking System (GRTS) to track grant funding and effectiveness. **Progress Summary –** All projects awarded in FY 09 were added to the GRTS tracking system in order to track funding. ADEQ continues to learn more about entering data to track project effectiveness and will increase these efforts in FY 10. Grants staff has participated in GRTS and Oracle Business Intelligence (OBI) web-based trainings, and is using OBI internally to track the status of open grants. ADEQ met EPA's deadline to submit load reduction data for FY 09.	Grant and Outreach Unit	Ongoing	100%
Coordinate with other funding programs (i.e. Arizona Water Protection Fund, Water Infrastructure Finance Authority, Environmental Quality Incentives Program) to leverage money to target nonpoint source pollution management in priority areas. **Progress Summary –** ADEQ continues to build relationships with other funding programs that could be used to leverage money to target nonpoint source pollution. Due to grant cycle timeline, leveraging funds with other funding programs has proved difficult. ADEQ has met with the Arizona Water Protection Fund and the Water Infrastructure Finance Authority of Arizona to discuss how we can collaborate efforts in the future. ADEQ has had numerous grant awards with matching funds from Arizona Department of Agriculture and the Arizona Department of Transportation. ADEQ will continue to have these discussions with other funding programs to target priority areas.	Grant and Outreach Unit	Ongoing	100%

Goal: Work with and provide technical support to Arizona watershed partnerships.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Actively involve the community, including watershed partnerships, with the development of watershed-based plans and TMDL implementation plans. **Progress Summary –** Through the TMDL stakeholder meetings and watershed partnerships, ADEQ continues to work with communities in the state. Watershed-based plans have been developed though the work of NEMO. NEMO provides technical support to the groups by providing them with detailed watershed maps, technical plans, and data interpretation. By participating in watershed partnership meetings, ADEQ is able to stay connected to the community's environmental needs and concerns.	TMDL Unit and the Grant and Outreach Unit	Ongoing	100%
Provide support to community watershed partnerships. **Progress Summary –** Whenever a partnership needs ADEQ's technical assistance or support, we make it a priority to meet their needs. During the year staff attended numerous meetings to discuss watershed-based plans, impaired waters, TMDL studies, implementation plans, and the Grants Program. ADEQ's strong partnerships with University of Arizona's Master Watershed Steward and NEMO programs have enabled the department to better assist the watershed groups. The coordinators of these programs have enhanced the Grants Program and watershed partnerships statewide by providing education, maps, and technical assistance.	TMDL Unit and the Grant and Outreach Unit	Ongoing	100%

Goal: Work with and provide technical support to Arizona watershed partnerships.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Assist with the development and implementation of the Master Watershed Stewardship Program. **Progress Summary –** The Master Watershed Stewardship (MWS) Program offers county-based classes for educating people about local watershed issues. The goals of the Master Watershed Steward Program are to create a network of motivated volunteers to tackle watershed issues, enhance critical thinking and critical observation skills in the target audience, facilitate collaboration among citizens, watershed groups, and natural science managers, and enhance public knowledge of watershed issues throughout the state. The Master Watershed Steward Program has completed the tasks outlined in the FY06-08 contract and has successfully secured funding from FY08-FY10. The expansion of the program was funded through a competitive education grant opportunity. The expanded role of MWS Program will include education activities tailored for targeted programs in watersheds with identified water quality problems to facilitate the development and implementation of water quality improvement projects through community-driven, sustained actions.	Grant and Outreach Unit and TMDL Unit	Ongoing	100%

Goal: Provide statewide nonpoint source pollution education and outreach.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Plan, develop and implement a strategy to conduct education/outreach efforts to increase public awareness of nonpoint source pollution impacts to surface and ground water resources. **Progress Summary –** The Grant and Outreach Unit participated in and funded education/outreach efforts to increase the public's awareness of nonpoint source pollution impacts to surface and groundwater resources. Some examples of education events attended, funded, or assisted by other divisions are: Verde River Days, World Water Monitoring Day, Water Expo, and the Tres Rios Nature Festival. Upper Management and other ADEQ outreach groups have helped the education/outreach efforts of the unit by attending events representing ADEQ. These events include Earth Day at the Phoenix Zoo, Youth Day at the Arizona Game and Fish Outdoor Expo, Girls Scouts Environmental Fair at the Phoenix Zoo, and the National Public Lands Day at South Mountain Park. Our strategy is to improve impaired waters by placing stronger emphasis on effective education and outreach in funded grant projects and by continuing our long-term commitment to educating Arizona's citizens.	Grant and Outreach Unit	Plan Completion September 2003 Strategy Implemented Ongoing	100% 100%
Update web site information to reflect current activities. **Progress Summary –** All web site information is up to date and reflects the current activities for the WQD. Please visit ADEQ's Water Quality Division's homepage at www.azdeq.gov/environ/water/index.html for information on watershed management, monitoring, and assessments (click topic on left hand panel).	Surface Water Section	July 2004	100%

Goal: Develop, implement, and evaluate nonpoint source pollution management measures and other pollution prevention strategies to minimize degradation and protect surface water and groundwater quality.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Develop BMP guidance documents for nonpoint source pollution categories, including sediment, mining, and nutrients. **Progress Summary –** Through partnership with NEMO, ADEQ has developed BMP guidance documents for managing sediment, metals, nutrients, and selenium. A great deal of progress was made during FY 09. BMP documents for soil erosion and urban runoff/stormwater were developed. Irrigation practices (agriculture), livestock grazing, riparian areas, onsite septic systems, mining and abandoned mine land, forestry, and recreation BMP documents have also been developed. Included on the NEMO web site are case studies or examples of successful mitigation projects and links to other BMP materials, both of which are highly beneficial to the public and water resource managers The NEMO web site, www.arizonanemo.org, is updated on a regular basis.	Grant and Outreach Unit	October 2008	90%

Goal: Develop, implement, and evaluate nonpoint source pollution management measures and other pollution prevention strategies to minimize degradation and protect surface water and groundwater quality.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Research and identify ways to quantify load reductions as required in *EPA's 2003 Nonpoint Source Program Guidance*. **Progress Summary –** ADEQ continues to research and identify ways to quantify load reductions. On NEMO's web site under "Links to Other BMP Information" there is information for the calculation of load reductions. Water resource professionals and the public can view and download (for example) the Michigan Department of Environmental Quality's 1999 manual on calculating and documenting pollutant reductions. In FY09, all projects aimed at reducing nitrogen, phosphorus, or sediment were required to submit yearly load reduction reports to the WQIGP. The purpose of these reports is to track reductions not only based on the overall project duration, but on an annual basis. Grantees were provided with the STEPL program that will enable them to input variables specific to their projects to model pollutant load reductions.	Grant and Outreach Unit	June 2006	100%

Goal: Develop, implement, and evaluate nonpoint source pollution management measures and other pollution prevention strategies to minimize degradation and protect surface water and groundwater quality.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Document BMP effectiveness from water quality improvement projects in GRTS and guidance documents. **Progress Summary –** 319(h) funded water quality improvement projects must include an effectiveness evaluation component that measures the effectiveness of each improvement. Staff continues to provide technical oversight. Short-term measurable or estimated water quality improvements in sediment, nitrogen, and phosphorus and BMP effectiveness are tracked in GRTS. In addition, staff has recently initiated a program to evaluate the long-term impact of funded projects. Through Grant Effectiveness Evaluations ADEQ looks at maintenance issues, long-term effectiveness, issues that arose during and after the project period, and other aspects of the project to determine BMP effectiveness and recommend improvements in the grant process. ADEQ will continue to work on the Grant Effectiveness Evaluation in FY10 and future years to continue to improve our selection of projects that lead to water quality benefits.	Grant and Outreach Unit	Ongoing	90%

Goal: Maintain / expand partnerships & cooperative opportunities with stakeholders, other agencies, organizations, and citizens.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Coordinate with federal land management agencies on water quality and watershed improvements as needed. **Progress Summary –** Staff continues to work with various federal land managers, such as USFS and BLM, to address nonpoint source pollutant impacts to water quality. Coordination with state and federal land managers is obtained through various watershed partnerships, TMDL public meetings, surface water monitoring and collaboration on water quality improvement projects.	TMDL Unit and the Grant and Outreach Unit	Ongoing	100%
Oversee and update as needed, all Memorandum of Understandings (MOUs) so that state, federal, tribes, and local resource management agencies have identified responsibilities in carrying out portions of Arizona's Nonpoint Source State Management Plan. **Progress Summary –** MOUs are updated as needed. The MOU between the USFS and ADEQ was updated in FY08. MOUs are working well in carrying out portions of Arizona's Nonpoint Source Management Plan. MOUs are updated as needed and will be reviewed over the next two years. New MOUs will be drafted to replace existing MOUs to carry out new portions of the FY08-2013 Nonpoint Source 5 Year Management Plan. ADEQ plans to reevaluate current MOUs in order to determine their necessity.	TMDL Unit and the Grant and Outreach Unit	When needed	100%

Goal: Maintain / expand partnerships & cooperative opportunities with stakeholders, other agencies, organizations, and citizens.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Coordinate meetings and updates with other state, federal, tribal, and local partners in the state (i.e., Arizona Department of Water Resources, Arizona Game and Fish Department, Bureau of Reclamation). **Progress Summary –** Staff continues to work with various watershed partnerships and state and federal land managers to address nonpoint source pollutant impacts to water quality. After five years, the established watershed groups have evolved and expanded enough so that ADEQ has had less of a coordinating role with the key players. ADEQ sends technical staff, liaison and NEMO to annual meetings: including various statewide watershed partnerships, the U.S. Forest Service, and other meetings (i.e., TMDL meetings).	TMDL Unit and the Grant and Outreach Unit	Yearly	100%

Goal: Maintain / expand partnerships & cooperative opportunities with stakeholders, other agencies, organizations, and citizens.			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Provide leadership, technical assistance, expertise and support to outside planning and governmental entities to support watershed planning and 208 regional water quality management planning. **Progress Summary –** Leadership, technical assistance, and expertise were provided throughout the year to planners and governmental entities in support of a regional wastewater planning approach. ADEQ was awarded an American Reinvestment and Recovery Act (ARRA) 604 (b) grant. The funds are assisting regional planners and local entities to cooperate and plan for wastewater infrastructure, that will employ Arizonans now and in the near future for infrastructure to be permitted through ADEQ. In addition, the 208 program is working on a new approach to 208 planning that will clarify coordination among local agencies, clarify the planning procedures and clarify the infrastructure needs for current service areas as well as the unincorporated areas.	Surface Water Section: Permits Unit	Yearly	100% 45%

Goal: Complete Nonpoint Source Annual Report			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Write and develop a Nonpoint Source Annual Report summarizing the goals and accomplishments yearly. **Progress Summary –** This Nonpoint Source Annual Report was developed to summarize the goals and accomplishments of the Nonpoint Source Program from July 1, 2008 – June 30, 2009 (FY 09).	Grant and Outreach Unit	September 30 each year	100%
Use annual reports to gauge progress on five year Plan. **Progress Summary –** The Nonpoint Source Annual Report provides the status in accomplishing both the short-term and long-term milestones identified in the Nonpoint Source Management Plan. The tasks and deliverables scheduled as part of the work plan are designed to attain our long-term goal of implementing a dynamic and effective Nonpoint Source Program designed to achieve and maintain beneficial uses of water.	Surface Water Section and Grants and Outreach Unit	Yearly	100%

Goal: Review and assess the goals and objectives of the Nonpoint Source Management Plan and revise the Plan as appropriate			
Milestone	**Project or Program**	**Completion Date**	**%Complete**
Amend Nonpoint Source Management Plan as necessary. **Progress Summary –** The Unit has been in routine contact with the EPA Project Officer to obtain feedback and recommendations on goals for the program. Staff has developed a draft for the 2008-2013 management plan, which will be submitted to EPA for review.	Surface Water Section and Grants and Outreach Unit	Ongoing	90%

APPENDIX B

Water Quality Improvement Grant Projects Awarded in FY 2009

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
State-wide Cycle 11 grants							
11-001/ 989613-08	Septic Tank Closures for Program Year 8 of Lake Havasu City's Sewer Expansion Program/ Septic tanks will be decommissioned and wastewater drain lines from residential properties will be connected to a centralized sewer collection system for treatment at an A+ wastewater treatment facility.	City of Lake Havasu City	Colorado/Lower Gila/Lake Havasu	Reduce nitrate loadings to groundwater in the Lake Havasu City area./ Septic tank decommissioning	No/ Nitrates	Yes/ 1996 Lake Havasu City Phase I Comprehensive Wastewater Master Plan, 1998 Phase II Wastewater Master Plan Colorado River Sewer Coalition crrsco.org	$300,000.00/ $547,450.00
11-002/ 969984-07	E. coli Reduction on the San Francisco River through Alternative Livestock Water on Kaler Ranch/ The San Francisco River in Greenlee County is listed on the EPA's 303(d) list for E.coli. The Gila Watershed Partnership has determined that the Kaler Ranch may be a major contributing factor to the E.coli problem. In order to remove the source of E.coli, we must provide the landowner sufficient alternative water sources. Funding is for the first of five solar-pumped wells the needed in order to permanently exclude all 100 head of cattle from the San Francisco River.	Gila Watershed Partnership	Upper Gila/ San Francisco River Installing a solar-powered well to provide alternative water sources for cattle that currently have access to the San Francisco River.	Reduce cattle access to the San Francisco River, resulting in significant water quality improvements	Yes, *E.coli/ E.coli,* bacteria, nutrients	Yes/ NEMO Watershed Based Plan for the Upper Gila Watershed, TMDL in process	$42,750.00/ $55,267.25

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
11-004/ 969984-07	Wenima Wildlife Area Stream Restoration/ This is a streambank stabilization/riparian restoration project located on the Little Colorado River near Springerville, AZ. The goal of this project is to improve the water quality by reducing the amount of fine sediments entering the Little Colorado River in the Wenima Reach.	Arizona Game & Fish Department	Little Colorado/San Juan/ Little Colorado River	Project includes an initial phase in which critical sites for BMPs will be determined, and what those BMPs will be. Bank resloping, toe rock, and bioengineering including pole and post plantings, brush revetment, erosion cloth, and reseeding.	Yes/ turbidity turbidity and sediment	Yes/ 2002 ADEQ TMDL; NEMO Watershed Based Plan for the Little Colorado River Watershed	$74,145.00/ $50,042.00
11-005/ 989613-08	Water Quality Improvements for Francis Short Pond/ This project will address water quality concerns in the Francis Short Pond, the only permanent body of water in the City of Flagstaff, by reducing nutrient and fecal coliform loadings to the Pond and increasing the dissolved oxygen concentration. This will be accomplished through the installation of sedimentation and bio-retention cells at an upstream Dog Park.	City of Flagstaff	Little Colorado/San Juan/ Francis Short Pond/Rio de Flag	Bioretention area will double as a Low Impact Development (LID) Demo site. Partnerships with AG&F and the Audubon Society & schools where water quality and NPS reduction will be incorporated into science curriculum.	No/ sediment, nutrients, and bacteria	Yes/ NEMO Watershed Based Plan for the Little Colorado River Watershed	$25,164.00/ $22,522.00
11-006/ 989613-08	Middle Fossil Creek Water Quality Improvement Project/ The Middle Fossil Creek Water Quality Improvement Project will address recreational	U.S. Forest Service, Coconino National	Verde/ Fossil Creek	USFS is currently unable to install permanent toilets until a mang.	No/ bacteria/nutrients	NEMO Watershed Based Plan for the Verde River Watershed	$211,825.00/ $250,348.00

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
	impacts along the 4.6 mile Middle Reach of Fossil Creek where ~ 100 dispersed campsites are located in and immediately adjacent to the riparian zone. In conjunction with an Arizona Water Protection Fund grant and internal Forest Service funding, this project will address issue of human waste impacts in this reach of Fossil Creek through the initiation 2 year "pilot" program to address issues of efficiency and appropriate placement of temporary toilets along Middle Fossil Creek. Monitoring will be conducted to determine if toilets are used, their potential positive effects on water quality, and the potential for installation of permanent toilets in Middle Fossil Creek.	Forest		plan has been developed. If well maintained, temporary toilets will be an important piece of protecting Fossil Creek (an Outstanding/Unique water) in the interim. Strong education and outreach, as well as appropriate verification and monitoring methods to determine project success. Site planning and installation of temporary toilet facilities to mitigate recreational impacts at Fossil Creek.			

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
11-007 /969984-07	Sediment Reduction from Runoff Using Best Management Practices/ Many areas on the property have been identified that are subject to severe side channel scour and down cutting from runoff and/or main stream bank erosion that send sediment to the river and can impact ranch structures – buildings, fences, roads. The focus area of this project will include the Ranch area downstream towards the Arcosanti Site and the Mind Garden Drainage.	Cosanti Foundation	Upper Agua Fria/Middle Gila/ Agua Fria River	Grant funds will be "buying" the planning process for the implementation (this grant, and also future implementation). Benefit: this project will demonstrate to the public the steps that should to be taken to plan successful projects. Project site is a typical representation of wq issues in this area/along the Agua Fria. Teach the public how to handle these issues appropriately. Expertise involved in planning, implementation, and workshops (Natural Channel Design) makes this project likely to be successful.	No/ sediment	Yes/ NEMO Watershed Based Plan for the Upper Agua Fria Watershed	$37,452.85/ $25,010.00

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
Targeted Watershed Improvement Grants							
11-T01/ 969984-07	Granite Creek Watershed Improvement Plan and Council/ Granite Creek Watershed from the headwaters downstream to, and including, Watson Lake in the Prescott area will be the focus of the Watershed Improvement Plan. Pollutants of concern include nutrients and *E. coli* bacteria. Although not "impaired" for *E. coli* bacteria, recent monitoring to identify nutrient sources has shown *E. coli* bacteria exceedances.	Prescott Creeks Preservation Association	Verde/ Granite Creek, Watson Lake	Water quality monitoring, compilation and preliminary data analysis of water quality in the Upper Granite Creek Watershed, physical and social surveying, and a comprehensive understanding of the current state of water quality in the watershed and the potential contributing sources of pollutants leading to information to determine BMP sites for future projects.	Yes/ Granite Creek for low DO, Watson Lake for low DO, high pH, and high nutrients.	Yes/Verde Watershed Based Plan in development	$299,961.00/ $202,887.00

WQIG #/EPA Grant #	Title/Description	Authorized Agent	Watershed/ Water Body	Deliverables/ Outcomes	Impaired / Pollutant of Concern	TMDL or WBP Support/ Implementation Plan	Award Amount/ Match
11-T02/ 969734-06	San Francisco River Targeted Watershed Improvement Plan/ This project is located in the Upper Gila Watershed of Arizona and the San Francisco and Blue Rivers in Greenlee County, Arizona. The pollutant of concern is E.coli. The scope of the project includes hiring a Watershed Improvement Coordinator, establishment of a Watershed Improvement Council (WIC) to direct the planning process and, a watershed survey to determine the source(s) of the pollutant, analysis of data, preparation of a Watershed Improvement Plan (WIP), recommendations, prioritization of and implementation of Best Management Practices, and monitoring to reduce the E.coli in the San Francisco River.	Gila Watershed Partnership	Upper Gila/ San Francisco River, Blue River	Physical surveys include recreation sites, wildlife, livestock, septic systems, social and financial surveys, analysis of data and interpretation and prioritization of the project including recommendation BMP sites	Yes/ E. coli	Yes/ NEMO Watershed Based Plan for the Upper Gila Watershed, TMDL in process	$188,436.60/ $128,702.80

APPENDIX C

Current Water Quality Improvement Projects Funded by Open NPS Project Grants

Project (Contract) Title	Contract No.	Contract Expiration Date	Award Amount	Grant Phase
2008 Canon Envirothon	EV06-0063	6/30/10	$197,000.00	NPS 16Base
Arizona Master Watershed Steward Program	EV04-0013	6/30/10	$441,229.14	NPS 16Base
Arizona Master Watershed Steward Program	EV04-0013	6/30/10	$37,167.56	NPS 17Base
Arizona State Envirothon	EV07-0136	6/30/10	$0.00	NPS 17Base
Arizona State Envirothon 2006 - 2008 (EV07-0028)		6/30/10	$42,790.00	NPS 16Base
Arizona State Envirothon, Inc	EV08-0119	6/30/10	$68,064.28	NPS 17Base
Ash Creek Watershed Improvement Project	10-009	6/30/11	$58,637.27	NPS 18Base
Bank Stabilization at Spencer Ranch	8-009	6/30/10	$41,103.28	NPS 17Base
Campomocho-Sacaton Watershed Stormwater Runoff-Control Phase II	7-002	6/30/11	$0.00	NPS 18Incremental
Campomocho-Sacaton Watershed Stormwater Runoff-Control Phase II	7-002	6/30/10	$70,584.62	NPS 17Incremental
Composting Restroom for the Hualapai Helipad Tourist Destination	8-010	6/30/10	$18,450.98	NPS 17Base
Creating a Neighborhood Model to Address Urban Stormwater Pollutants	10E-010	6/30/11	$188,903.63	NPS 18Base
E. Coil Reduction on the San Francisco River through Alternative Livestock Water on Kaler Ranch	11-002	6/30/11	$42,750.00	NPS 18Incremental
Eagle Creek Watershed Restoration - Double Circles Ranch Phase	9-003	6/30/10	$189,800.00	NPS 17Incremental
Eagle Creek Watershed Restoration Double Circles Ranch Phase II	10-003	6/30/10	$148,849.64	NPS 17Base
From Education to Action in the Granite Creek Watershed	10E-014	6/30/11	$85,828.97	NPS 18Incremental
Gatlin Site, NHL, Soil Stabilization Demonstration Project	11-003	6/30/12	$12,850.00	NPS 19Base
Gila River Cleanup	8-006	6/30/10	$16,341.66	NPS 16Base
Gila River Water Quality Improvement	9-004	6/30/10	$16,341.66	NPS 17Base
Gila River Water Quality Improvement - Duncan Valley	9-004	6/30/10	$476,408.18	NPS 16Base

Project (Contract) Title	Contract No.	Contract Expiration Date	Award Amount	Grant Phase
Gila Valley Best Management Practices on Crop Land	10E-013	6/30/11	$12,880.00	NPS 18Incremental
Graham County Abandoned Vehicle Removal Project	9-002	6/30/10	$123,798.00	NPS 17Incremental
Granite Creek Watershed	8-013	6/30/10	$104,273.78	NPS 16Incremental
Granite Creek Watershed - Water Quality Improvement Phase II	9-007	6/30/10	$121,830.70	NPS 16Incremental
Granite Creek Watershed - Water Quality Improvement Phase II	9-007	6/30/10	$32,296.23	NPS 17Incremental
Kaler Ranch Erosion Control Project (Phase II)	8-008	6/30/10	$50,557.12	NPS 17Incremental
Lamotte Chemical - AZ World Water Monitoring Day		6/30/10	$2,900.00	NPS 17Base
Master Watershed Steward Program	10E-012	6/30/12	$59,282.73	NPS 19Base
Master Watershed Steward Program	10E-012	6/30/11	$133,417.99	NPS 18Base
Middle Fossil Creek Water Quality Improvement Project	EV09-0035	6/30/11	$100,465.21	NPS 18Incremental
Middle Fossil Creek Water Quality Improvement Project	11-006	6/30/12	$211,825.00	NPS 19Base
National Nonpoint Source Education of Municipal Officers Model (NEMO)	EV08-0168	6/30/11	$429,777.15	NPS 18Base
National Nonpoint Source Education of Municipal Officers Model (NEMO)	EV08-0168	6/30/12	$85,383.10	NPS 19Base
National Nonpoint Source Education of Municipal Officers Model (NEMO) EV07-0074	EV07-0074	6/30/10	$470,800.00	NPS 16Base
Oak Creek Canyon Water Quality Improvement Program	10E-011	6/30/11	$73,876.82	NPS 18Incremental
Optimizing Reclaimed water, groundwater & Stormwater Inputs at Tucson's Lakeside Lake	9-006	6/30/11	$30,058.14	NPS 18Incremental
Optimizing Reclaimed Water, Groundwater, & Stormwater Inputs at Tucson's Lakeside Lake	9-006	6/30/10	$72,222.19	NPS 17Incremental
Peterson Wash Stabilization	6-010	6/30/10	$30,505.26	NPS 17Base
Pioneer Park Stormwater Quality Improvement Plan	10-001	6/30/10	$732,242.35	NPS 17Base
Project WET	EV06-0052	6/30/10	$30,000.00	NPS 16Base

Project (Contract) Title	Contract No.	Contract Expiration Date	Award Amount	Grant Phase
Rainbow Lake Water Quality Enhancement	9-005	6/30/10	$41,582.10	NPS 16Incremental
San Francisco River - Blue River Watershed Improvement Plan Grant	EV09-0035	6/30/11	$62,873.98	NPS 18Incremental
Sediment Reduction from Runoff Using Best Management Practices	11-007	6/30/11	$37,452.85	NPS 18Incremental
Sediment Reduction in Whitewater Draw using Watershed Partnership Approach	9-001	6/30/10	$175,233.05	NPS 16Base
Sediment Reduction into Diamond Creek and the Colorado River	10-002	6/30/10	$35,000.00	NPS 17Base
Septic Tank Closures for Program Year 8 of Lake Havasu City's Sewer Expansion Program	11-001	6/30/10	$49,549.95	NPS 17Base
Septic Tank Closures for Program Year 8 of Lake Havasu City's Sewer Expansion Program	11-001	6/30/12	$204,401.65	NPS 19Base
Stormwater Pollution Prevention in YOUR Neighborhood	10E-018	6/30/12	$9,995.16	NPS 19Base
Sustainable Design for the SW Family Services Center Previous Concrete Demo Project to Mitigate	10-007	6/30/10	$219,341.00	NPS 17Incremental
Sustainable Design for the Southwest Family Services Center Pervious Concrete Demonstration Project	10-007	6/30/11	$57,337.41	NPS 18Incremental
The Dzil Nchaa Si'am/Mt.Graham Youth Practicum Education Project Grant	10E-016	6/30/12	$8,050.00	NPS 19Base
The Gibson Mine TMDL Reduction to Mineral Creek	8-004	6/30/10	$107,300.16	NPS 17Base
The Gila River Box Conservation Area Livestock Deterrent Fence	10-008	6/30/11	$232,617.92	NPS 18Incremental
The Mesquital Fence Project	10-004	6/30/10	$21,519.00	NPS 17Base
The Tonto Rim Christian Camp Water Quality Improvement Project	10-006	6/30/10	$405,569.97	NPS 17Incremental
The Upper Gila Watershed Steward Program	10E-017	6/30/12	$54,160.42	NPS 19Base
Upper Eagle Creek Watershed	8-007	6/30/10	$588,742.25	NPS 16Incremental
Water Quality Improvement for Francis Short Pond	11-005	6/30/12	$25,164.00	NPS 19Base
Watson Woods Riparian Preserve Restoration Project	9-008	6/30/10	$741,402.09	NPS 16Incremental
Wenima Wildlife Area Stream Restoration	11-004	6/30/11	$74,145.00	NPS 18Incremental

Project (Contract) Title	Contract No.	Contract Expiration Date	Award Amount	Grant Phase
West Clear Creek Tributary Watersheds	6-019	6/30/10	$25,305.48	NPS 16Base
White Mountain Apache Tribe's Water Quality Improvement Grant	10-005	6/30/11	$200,148.01	NPS 18Base
White Mountain Apache Tribe's Water Quality Improvement Grant Program	10-005	6/30/10	$135,415.61	NPS 17Base

APPENDIX D

The Impaired Water Strategy

ADEQ has a comprehensive strategy for improving water quality on Arizona's impaired waters that will lead to these waters meeting standards. The TMDL and WQIG programs bring together the resources needed to move the surface water through a series of steps or levels until the impairment has been mitigated and the stream or lake is meeting standards for the pollutants of concern. A spreadsheet was developed which tracks progress of each impaired lake or stream as it moves generally from Level A to F. The six (6) levels are:

- Level A – Investigate and develop TMDL
  Most impaired waters start in Level A. The TMDL Program will develop further monitoring data to determine the extent of impairment (e.g., seasonality, area), likely sources, and develop a Total Maximum Daily Load (TMDL) that indicates the load and waste load reductions needed for the surface water to meet standards.

- Level B – Develop a plan or other strategy that identifies and prioritizes effective water quality improvement projects. This step is key to diminishing the pollutant sources and impacts and may be initiated even before a TMDL has been completed if there is adequate local support for development of a plan or if the land owner wishes to actively remediate the pollution. If the pollutant can be mitigated easily, a formal TMDL may not be necessary. Watershed Improvement Plans, TMDL Implementation Plans, or other formal strategies developed must include EPA's nine key elements of a watershed plan. These plans include a load or waste load reduction estimation, although not at the level of sophistication of a TMDL. If a TMDL has been completed first, the surface water automatically moves to Level B for development of the TMDL Implementation Plan (i.e., TIP). ADEQ works with watershed groups, other agencies, land owners, and other interested parties in Level B phase, bringing in expertise needed to identify and technically evaluate key projects.

- Level C – Implement the plan or other strategy
  Level C - Surface waters move to Level C when the Watershed Improvement Plans, TMDL Implementation Plan, or other strategy is being implemented. Implementation may take years and require multiple phases.

- Level D – Re-evaluate impairment due to watershed improvements, new standards, or natural conditions. The impairment decision will be re-evaluated when water quality improvements are implemented, when relevant water quality standards change, or when preliminary data indicates that pollutants are solely due to natural conditions. New data are collected during this stage during critical conditions (conditions when exceedances have occurred in the past).

- Level E – Request removal from Arizona's impaired water list
  If the data evaluation indicates that the surface water is no longer impaired by the pollutant(s) of concern, the surface water moves to this level for a short time. This level reflects the reality that surface waters must be officially removed from the impaired waters list, and this may take time.

- Level F – Assign to EPA because ADEQ lacks jurisdiction (e.g. pollutant source are entirely in Mexico) When all pollutant sources are outside of Arizona, particularly in Mexico, EPA will be notified and will be expected to take the lead in implementing pollutant mitigation actions.

The spreadsheet shown in this appendix is a tool to coordinate efforts between several of ADEQ's programs and help focus efforts and funding opportunities with other federal, state, and local agencies. Improving water quality on *all* surface waters listed as impaired is a high priority for ADEQ, so the level does not infer a priority.

The following table is a slightly abridged version of the spreadsheet kept by ADEQ. The discharges under permit are not shown in this version due to space constraints.

Impaired Water Improvement Tracking Table

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL A Investigations and TMDL development TMDL drafted	Bill Williams Watershed **Alamo Lake**	Mercury in fish (2002 by EPA) (ADEQ listing prior 2002)	Confirming NB numbers to recalculate TMDL.	Mining, and air deposition	Proposed: Identify, prioritize, and remediate mining sites in drainage, especially adjacent to streams and washed. Fish consumption advisory posted.	Bill Williams Steering Committee. Lake operated by Corps of Engineers
LEVEL A Investigations and TMDL development	Bill Williams Watershed **Alamo Lake**	Ammonia (2004) pH (1996) DO (2006-2008)	Ongoing US Fish & Wildlife / Corps of Engineers monitoring will support TMDL development.	Grazing and recreation	Proposed: Identify and prioritize nutrient sources and implement appropriate BMPs.	Bill Williams Steering Committee. Lake operated by Corps of Engineers
LEVEL A Investigations and TMDL development	Middle Gila Watershed **Alvord Park Lake**	Ammonia (2004)	To initiate in 2008-09	Source water contamination by agricultural runoff	Proposed: Identify and prioritize sources and implement appropriate BMPs.	City of Phoenix Parks Department Arizona Game and Fish
LEVEL A Investigations and TMDL development	Salt Watershed **Apache Lake, Canyon Lake**, and **Salt River** (from Saguaro Lake to Verde River)	Low dissolved oxygen (2004) (Added Apache in 2006-2008)		Wildfire, dam operations grazing, forestry, roads.	Proposed: Identify and prioritize sources and implement appropriate BMPs. WQIGs: Trees for the Rim (after wildfire)	US Forest Service MOU; Frientd of the Forest
LEVEL A Investigations and TMDL development	Little Colorado Watershed **Bear Canyon Lake**	pH (2004 by EPA)		Recreation or grazing	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Little Colorado River Watershed Coordinating Council; USFS MOU
LEVEL A Investigations and TMDL development	Bill Williams Watershed **Bill Williams River** (from Alamo Lake to Castaneda Wash)	Ammonia (2006 draft) pH (2006 draft), DO (2006 draft)		See source discussion for Alamo Lake nutrient TMDL	Proposed: Identify and prioritize nutrient sources and implement appropriate BMPs.	Bill Williams Steering Committee. Lake operated by Corps of Engineers
LEVEL A Investigations and TMDL development	Middle Gila Watershed **Chaparral Lake**	DO (2004) *E. coli* (2004)	To initiate in 2008-09	Urban runoff, duck feeding	Proposed: Identify and prioritize sources and implement appropriate BMPs.	City of Scottsdale Parks Dept. Arizona Game and Fish Dept.

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL A Investigations and TMDL development	Colorado – Grand Canyon Watershed **Colorado River** (from Lake Powell to Paria River)	Selenium (2006-2008) Suspended sediment concentration (2004 by EPA)	To initiate in 2011 (Investigations on hold due budget/staff)	Primarily natural sandstone formations (SSC) Natural springs, and out of state sources (Se)	Proposed: Identify and prioritize sources and implement appropriate BMPs. Identify source loads contributed from other states.	Colorado River Salinity Control Forum. Lower Colorado River Basin Compact. National Parks Service MOU
LEVEL A Investigations and TMDL development	Colorado - Grand Canyon Watershed **Colorado River** (from Parashant Canyon to Diamond Creek)	Selenium (2004) Suspended sediment concentration (2004)	To initiate in 2011 (Investigations on hold due budget/staff)	Primarily natural sandstone formations, with potential contribution from recreation and grazing (SSC) Natural springs, and out of state sources (Se)	Proposed: Identify source loads contributed from other states. Water quality improvement grants: four rangeland improvement grants; bank stabilization at Spencer Beach (2007), and Diamond Creek road improvement (2008)	Colorado River Salinity Control Program (B of R); Lower Colorado River Basin Compact (with other states); National Parks Service MOU
LEVEL A Investigations and TMDL development	Colorado - Lower Gila Watershed **Colorado River** (from Hoover Dam to Lake Mohave)	Selenium (2004)	To initiate in 2011 (Investigations on hold due budget/staff)	Natural springs and out of state sources	Proposed: Identify and prioritize sources and implement appropriate BMPs. Identify source loads contributed from other states.	Nattional Park Service MOU
LEVEL A Investigations and TMDL development	Colorado - Lower Gila Watershed **Colorado River** (from Main Canal to Mexico)	Selenium (2006-2008) DO (2006-2008)	To initiate in 2011 (Investigations on hold due budget/staff) California's Colorado River Basin Board also listed river as impaired by selenium.	Crop production, WWTP discharges, septic systems, out-of-state loads, natural springs	Proposed: Identify and prioritize sources and implement appropriate BMPs. Identify source loads contributed from other states.	Colorado River Salinity Control Program (B of R); Lower Colorado River Basin Compact (with other states);
LEVEL A Investigations and TMDL development	Bill Williams Watershed **Coors Lake**	Mercury in fish (EPA listed in 2004)		Mining, natural background and atmospheric	Proposed: Identify and prioritize mercury sources and implement appropriate remediation. Fish consumption advisory.	
LEVEL A Investigations and TMDL development	Middle Gila Watershed **Cortez Park Lake**	DO (2004) High pH (2004)	To initiate in 2008-09	Source water contamination	Proposed: Identify and prioritize sources and implement appropriate BMPs.	City of Phoenix Parks Department Arizona Game and Fish Dept.
LEVEL A Investigations and TMDL development	Salt Watershed **Crescent Lake**	pH (2002 - EPA)	To initiate in 2009	Grazing	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Friends of the Forest; US Forest Service MOU

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL A Investigations and TMDL development	Verde Watershed **East Verde River** (from Ellison Creek to American Gulch)	Selenium (2004)	To initiate in 2009	Natural springs. WWTP discharges	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Verde Watershed Association
LEVEL A Investigations and TMDL development	Verde Watershed **East Verde River** (from American Gulch to Verde River)	Arsenic and Boron (2006-2008)	To initiate in 2009	Natural springs. WWTP discharges	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Verde Watershed Association
LEVEL A Investigations and TMDL development	Middle Gila Watershed **Gila River** (from San Pedro River to Mineral Creek)	Sediment (2006-2008)	To initiate in 2009	Wildfire grazing, forestry, roads, construction	Water quality improvement grants: Trees for the Rim (after wildfire)	
LEVEL A Investigations and TMDL development	Middle Gila Watershed **Gila River** (from Salt River to Painted Rocks Reservoir) (8 reaches) **Hassayampa River** (from Buckeye Canal to Gila River) **Painted Rocks Res.** **Painted Rock Borrow Pit Lake** **Salt River** (below 23rd Ave WWTP)	DDT, toxaphene, and chlordane in fish tissue (EPA listing 2002) (ADEQ had this listing from 1992 to 2002)	To initiate data review in 2010	Runoff from historically treated areas (primarily ag fields and overspray areas). Potential on-site disposal of banned pesticides.	Proposed: Identify and prioritize sources and implement appropriate BMPs. Fish consumption advisory	
LEVEL A Investigations and TMDL development	Middle Gila Watershed **Gila River** (from Centennial Wash to Gillespie Dam)	Boron (2004) Selenium (2004)		Wastewater discharges, crop production (including canal return flows), and natural spring sources	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Corps of Engineers
LEVEL A Investigations and TMDL development	Colorado - Lower Gila Watershed **Gila River** (from Coyote Wash to Fortuna Wash)	Boron (2004 relist) Selenium (2004)		Crop production and, natural springs	Proposed: Identify and prioritize sources and implement appropriate BMPs.	
LEVEL A Investigations and TMDL development TMDL drafted	Little Colorado Watershed **Lake Mary** (Upper and Lower)	Mercury in fish (2002 by EPA)	Recalculating TMDL based on revised model	Primarily air deposition	Proposed: Identify and prioritize mercury sources and implement appropriate remediation. Fish consumption advisory	USFS MOU; Flagstaff; Little Colorado River Watershed Coordinating Council

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL A Investigations and TMDL development	Middle Gila Watershed **Lake Pleasant**	Mercury in fish tissue (EPA 2009)		Mining operations in the watershed. Air deposition.		Agua Fria Watershed Partnership
LEVEL A Investigations and TMDL development	Salt Watershed **Lake Roosevelt**	Mercury in fish tissue (EPA 2009)		Mining operations in the watershed. Air deposition.		
LEVEL A Investigations and TMDL development	Little Colorado Watershed **Little Colorado** (from Silver Creek to Carr Wash)	Sediment (EPA 2004) *E. coli* (2004)	Initiated in 2007	Grazing, small urban areas.	Water quality improvement grant: Silver Creek sediment reduction (1994)	Silver Creek Advisory Commission and the Show Low Creek
LEVEL A Investigations and TMDL development	Little Colorado Watershed **Little Colorado** (from Porter Tank to McDonalds Wash)	Copper (1992) Silver (1992) Suspended sediment conc. (2004 EPA, 2006-2008 ADEQ)	Initiated in 2007	Unknown (metals). Grazing, roads, recreation, urban runoff (SSC)	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Little Colorado River Watershed Coordinating Council
LEVEL A Investigations and TMDL development TMDL drafted	Little Colorado Watershed **Long Lake** (lower)	Mercury in fish (2004 by EPA)	Recalculating TMDL based on revised model	Air deposition	Proposed: Identify and prioritize mercury sources and implement appropriate remediation. Fish consumption advisory	Little Colorado River Watershed Coordinating Council
LEVEL A Investigations and TMDL development	Little Colorado Watershed **Lyman Lake/Reservoir**	Mercury in fish (2004 by EPA)	Currently monitoring.	Air deposition	Proposed: Identify and prioritize mercury sources and implement appropriate BMPs. Fish consumption advisory	Little Colorado River Watershed Coordinating Council
LEVEL A Investigations and TMDL development	San Pedro Watershed **Mule Gulch** and tributaries, including **Brewery Gulch** (from headwaters to Highway 80 bridge) (3 reaches)	Copper (1990) a portion listed for: Zinc (2004) Cadmium (2004) pH (2004 EPA)	Draft TMDL being developed. Must establish site specific standard first. Modeling NB data ongoing.	Current and historic mining	Completed: Phelps Dodge has re-routed stormwater and seeps to minimize impacts to Mule Gulch. ADEQ is working on a site-specific copper standard .	
LEVEL A Investigations and TMDL development	Colorado - Lower Gila Watershed **Painted Rocks Borrow Pit Lake**	DO (1992)	Will initiate when lake refills.	Urban, agriculture, grazing, roads, construction. Lake management and flow.	Diagnostic feasibility study (in 1990's) proposed operating lake in a manner that increases DO levels (e.g. higher levels).	

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL A Investigations and TMDL development	Colorado - Grand Canyon Watershed **Paria River** (from Utah border to Colorado River)	Suspended sediment concentration (2004) *E. coli* (2006 draft)	To initiate in 2011 (Investigations on hold due budget/staff) National Park Service collecting *E. Coli* at USGS gage station.	Primarily natural sandstone formations (SSC) Natural springs, and out of state sources (Se)	Proposed: Identify and prioritize sources and implement appropriate BMPs. Identify source loads contributed from other states.	National Parks Service MOU
LEVEL A Investigations and TMDL development	Santa Cruz Watershed **Parker Canyon Lake**	Mercury in fish (2004 by EPA)	TMDL being drafted	Air deposition.	Proposed: Identify and prioritize sources and implement appropriate BMPs. Fish consumption advisory	
LEVEL A Investigations and TMDL development High priority for water quality improvements (Plan to delist by 2012)	Salt Watershed **Pinto Creek** (from headwaters to Roosevelt Lake)	Copper (1990)	Phase I TMDL completed in 2001. Phase II TMDL under development. Awaiting site-specific copper standard.	Historic and current mining along Pinto Creek and its tributaries.	TMDL indicated mining sources, especially at Gibson Mine. Identify abandoned mining operations and prioritize for remediation. WQIGs: Gibson Mine remediation (2006). Setting a site-specific copper standard.	Friends of Pinto Creek
LEVEL A Investigations and TMDL development	Salt Watershed **Pinto Creek** (from unnamed tributary to Roosevelt Lake)	Selenium (2004)	To initiate in 2010	Historic and current mining		Friends of Pinto Creek.
LEVEL A Investigations and TMDL development TMDL drafted	Middle Gila Watershed **Queen Creek** (from headwaters to Potts Canyon)	Copper (2002)	TMDL to be completed in 2009	Historic and current mining	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Arizona Parks Dept; and Friends of Boyce Thompson Arboretum.
LEVEL A Investigations and TMDL development	Santa Cruz Watershed **Rose Canyon Lake**	Low pH (2004 by EPA)	To initiate in 2011	Wildfire damage.	Proposed: Identify, prioritize and implement appropriate nutrient BMPs.	
LEVEL A Investigations and TMDL development	Salt Watershed **Salt River** (from Pinal Creek to Roosevelt Dam)	Sediment (2006-2008)	To initiate in 2011	Grazing, forestry, roads, stream bank, channel destabilized, wildfires, and mining.	Proposed: Identify and prioritize sources and implement appropriate BMPs. WQIG: Trees for the rim (wildfire restoration)	US Forest Service MOU

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL A Investigations and TMDL development	San Pedro Watershed **San Pedro River** (from Aravaipa Creek to Gila River)	*E. coli* (2004) Selenium (2004)	Initiated in 2006. Currently monitoring.	Grazing, mining, and stream bank or channel destabilization	Water quality Improvement Grants: 1. Arivaipa Cyn riparian restoration (2000) 2. San Pedro riparian improvements (2000) 3. Wildlife habitat restoration (2003) 4. San Pedro cleanup trash (2003) 5. 3-Links Farm riparian restoration (2005) 6. S.P Initiative sediment controls (2000) 7. Manzanita Erosion control (2006)	
LEVEL A Investigations and TMDL development TMDL drafted	Little Colorado Watershed **Soldiers Lake and Soldiers Lake Annex**	Mercury in fish (2004 by EPA)	Draft TMDL developed. Recalculating TMDL	Air deposition	Proposed: Identify and prioritize mercury sources and implement appropriate remediation. Fish consumption advisory	Little Colorado River Watershed Coordinating Council
LEVEL A Investigations and TMDL development	Santa Cruz Watershed **Sonoita Creek** (from 750 feet below Patagonia WWTP discharge to Santa Cruz River)	Zinc (2004) Low DO (1998)	Initiated in 2006. ADEQ to extend EDW, which would eliminate the DO impairment.	Mining or wastewater discharges.	Water quality improvement projects: 1. Audubon septic system improvements (2002) 2. Three (3) rangeland improvement projects 3, Improvements at mining sites (see Alum Gulch, Harshaw Creek, and 3R Canyon)	Friends of Sonoita Creek and Friends of Santa Cruz
LEVEL A Investigations and TMDL development	Colorado - Grand Canyon Watershed **Virgin River** (from Beaver Dam Wash to Bend Wash)	Selenium (2004) Suspended sediment concentration (2004)	To initiate in 2011 (Investigations on hold due budget/staff)	Primarily natural sandstone formations. Natual Springs (Se). Out of state sources (Se and SSC)	Proposed: Identify and prioritize sources and implement appropriate BMPs. Identify source loads contributed from other states.	National Parks Service MOU
LEVEL B Develop plan	Middle Gila Watershed **French Gulch** (from headwaters to Hassayampa River)	Copper (1994) Zinc (1994) Cadmium (1994)	TMDL completed in 2004	Mining (primarily Zonia Mine)	Remediate mining impacts at Zonia Mine. Identify, prioritize, and implement appropriate BMPs at other mines.	
LEVEL B Develop plan Draft TMDL	Upper Gila Watershed **Gila River** (from New Mexico to Bitter Creek)	*E. coli* (2006-2008) Suspended sediment concentration (2006-2008)	Initiated in 2006 Draft TMDL completed	Grazing, crop production, septic systems	Water quality improvement grant: Duncan Valley canal replacement (2007)	Upper Gila Watershed Partnership

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL B Develop plan Draft TMDL	Upper Gila Watershed **Gila River** (from Bonita Creek to Yuma Wash)	*E coli* (2004) Suspended sediment concentration (2004 by EPA)	Initiated in 2006 Draft TMDL completed	Grazing, roads, crop production, mining, recreation	Water Quality Improvement Projects: 1. Gila River clean up (2006) 2. Gila Box fencing (2008) 3. Crop filter strips (2008)	Upper Gila Watershed Partnership
LEVEL B Develop plan Target watershed for Watershed Improvement Plan Development – 2009-2011	Verde Watershed **Granite Creek** (from headwaters to Willow Creek) and **Watson Lake** (on Granite Creek)	DO (2004 - EPA - Granite Creek) Low DO (EPA 2004) Nitrogen (EPA 2004) High pH (EPA 2004)	Initiated Watson Lake TMDL in 2007. Investigation includes Granite Creek and its tributaries. Monitoring has revealed *E. coli* bacteria problems.	Urban, old city infrastructure, hobby farms, recycled wastewater, inadequate public restrooms	WQIG: 1. Retention basin improvement & storm water education (2007) 2. Granite Creek channel re-contouring in Watson Woods (2007) 3. Watson Woods riparian improvement 2008. 4. Monitoring. 5. Watershed education (2009). 6 WIP Grant (2010-11)	Prescott Creeks Preservation Association
LEVEL B Develop plan	Santa Cruz Watershed **Harshaw Creek** (from headwaters to Sonoita Creek)	Copper (1988) Low pH (1988)	TMDL completed in 2003	Mine tailings	TMDL sources identified: Remediate mining area by: removing or filling over mining residue; redirecting runoff away from mining deposits; removing mine wastes in the stream bed or combine with neutralizing materials; and constructing wetlands to treat mine discharges.	Friends of Sonoita Creek and Friends of Santa Cruz
LEVEL B Develop plan	Middle Gila Watershed **Hassayampa River** (from headwaters to Copper Creek) and tributaries such as Cash Mine Creek	Cadmium (1992) Copper (1992) Zinc (1992) Low pH (2006 draft)	TMDL completed in 2002	Mining, including, but not limited to McCleur Mine, Senator Mine, Sheldo Mine, and Cash Mine.	Identified in TMDL and Proposed: Remediate abandoned or inactive mine sites (McCleur Mine) contributing pollutants, including tailings and adits at these sites.	Prescott National Forest
LEVEL B Develop plan	Upper Gila Watershed **Luna Lake**	High pH (1998) DO (1998) Narrative nutrients (1998)	TMDL completed in 2000, including TIP	Grazing, septic systems, sporadic NPDES discharges, recycled nutrients in lake	TMDL identified need to upgrade septic systems and reduce loadings from grazing and construction or development. WQIGs: Luna Lake septic system upgrades (2001)	Upper Gila Watershed Partnership

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL B Develop plan Target watershed for Watershed Improvement Plan Development – 2009-2011	Verde Watershed **Oak Creek** (from headwaters to Spring Creek - 5 reaches) and **Spring Creek** (from headwaters to Oak Creek)	*E. coli* (1994 - Slide Rock portion) (2006 draft – four additional reaches of Oak Creek and Spring Creek)	Phase I TMDL completed in 1999, with a TIP. Drafted Phase II TMDL.	Recreation, septic systems, urban runoff, grazing	Water quality improvement grants: 1. Education (1998). 2. Sediment traps - 2000. 3. 16 Septic systems and survey 2000-2002 3. Don't trash Slide Rock 4. DNA Genotyping (1999) 5. Trailhead toilets and riparian improvements (2002) 6. Redrock State Park constructed wetland (2006) 7. Trailhead toilet (2008)	Oak Creek Task Force
LEVEL B Develop plan	Verde Watershed **Peck's Lake**	High pH (1998) Low DO (1998)	TMDL Completed in 2001, including TIP	Primarily recycling of nutrients. Watershed is tiny and not developed	TMDL sources identified: riparian area degradation contributing sediments and nutrient loads.	Northern Arizona Audubon Society Verde Watershed Association
LEVEL B Develop plan Target watershed for Watershed Improvement Plan Development – 2009-2011	Upper Gila Watershed **San Francisco River** (from Blue River to Limestone Gulch) and **Blue River** (from Strayhorse Creek to San Francisco River)	*E. coli* (2006 draft)	Initiated in 2008	Grazing, septic systems, recreation	Proposed: Identify and prioritize sources and implement appropriate BMPs. Water quality improvement grants: 1. Martinez Ranch 2. Kaler Ranch erosion control (2006), wells (2009) 3. Cole Creek and White Mule Creek sediment reduction (2004)	Upper Gila Watershed Partnership
LEVEL B Develop plan Focus watershed for 319(h) grants – 2009-2010	San Pedro Watershed **San Pedro River** (from Babocomari Creek to Dragoon Wash)	*E. coli* (2004)	Initiated in 2006.	Grazing, septic systems, and urban runoff in Fairbank and Benson area	Water quality improvement grants: 1. San Pedro urban sediment reduction (Sierra Vista, 1995) 2. San Pedro sediment reduction (1997) 3. Borderlands upland improvements (2002) 4. Fort Huachuca road closure & crossing improve (2002)	
LEVEL B Develop plan	Santa Cruz Watershed **Santa Cruz River** (from Mexico to Nogales WWTP)	*E. coli* (2002)	Initiated in 2007	Grazing and unknown sources in Mexico.	Water quality improvement grants: 1. Santa Fe Ranch riparian area improvement (2000) 2. Riparian improvement and monitoring (2003) 3. SC River sediment control (2006) 4. Mesquital fencing (2008)	Friends of Santa Cruz

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL B Develop plan	Santa Cruz Watershed **Three R Canyon** (from headwaters to Sonoita Creek) and tributaries (Cox Canyon)	Beryllium (1994) Cadmium (1994) Copper (1994) Zinc (1994) Low pH (1994)	TMDL completed in 2003	Mining	TMDL sources identified: Remediate mining area by: removing or filling over mining residue; redirecting runoff away from mining deposits; removing mine wastes in the stream bed or combine with neutralizing materials; and constructing wetlands to treat mine discharges.	Friends of Sonoita Creek and Friends of Santa Cruz
LEVEL B Develop plan Focus watershed for 319(h) grants – 2009-2010	Salt Watershed **Tonto Creek** (from headwaters to unnamed tributary) and **Christopher Creek** (from headwaters to Tonto Creek)	*E. coli* (1998) Phosphorus (relist 2006) Low DO (EPA 2004) Nitrogen (1998)	TMDLs for nitrogen and *E. coli* were completed in 2005.	Inadequate septic systems for subdivisions along streams. Grazing, fish hatchery, and horse corrals may also be contributing.	Water quality improvement grants: 1. Gila County septic system upgrades (2006) 2. R-Bar-C Boy Scout septic improvements (2007) 3. Tonto Christian Camp septic improvements (2008)	Friends of the Forest. New partnership -- Tonto Watershed Improvement Group (TWIG)
LEVEL C Plan implementation	Santa Cruz Watershed **Arivaca Lake**	Mercury in fish (1992)	TMDL completed in 1999, included TIP.	Air deposition and natural deposition from local substrates.	TMDL sources identified: Manage lake to mitigate methylmercury. Possibly dredge lake sediments Fish consumption advisory	US Forest Service MOU
LEVEL C Plan implementation High priority for water quality improvements (Plan to delist by 2012)	Bill Williams Watershed **Boulder Creek** (from Wilder Creek to Butte Creek)	Be, Mn, pH, As, Cu, Zn (before 1998)	Completed TMDL in 2004 Completed TIP in 2005	Mining, especially inactive Hillside Mine tailings piles	Remediation of Hillside Mine planned. Identify and prioritize other mining contributions in the drainage.	Bill Williams Steering Committee
LEVEL C Plan implementation High priority for water quality improvements (Plan to delist by 2012)	Bill Williams Watershed **Boulder Creek** (from Butte Creek to Copper Creek)	Arsenic (before 1998)	Completed TMDL in 2004 Completed TIP in 2005	Mining, especially inactive Hillside Mine tailings piles	Remediation of Hillside Mine planned. Identify and prioritize other mining contributions in the drainage.	Bill Williams Steering Committee

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL C Plan implementation	Middle Gila Watershed **Mineral Creek** (from Devils Canyon to Gila River)	Selenium (2004) Copper (1992) Low DO (2006-2008)	Consent decree requires mine to meet all surface water standards; therefore, TMDL has not been initiated.	Mining (Ray Mine and Gibson Mine)	ASARCO developing planst to mitigate selenium and low dissolved oxygen occurring in mining tunnel containing Pinto Creek stream flow. Water quality improvement grants - Gibson Mine remediation expected to mitigate copper.	
LEVEL C Plan implementation	Little Colorado Watershed **Rainbow Lake**	Narrative nutrient (weeds) (1992) High pH (1992)	Completed TMDL and TIP in 2000 Watershed is developing a new mitigation plan	Primarily nutrient recycling. Area was sewered. Grazing and urban runoff may contribute.	Lake was sewered in the early 1990's. Dredging found to not be cost-effective. Water quality improvement grant to demonstrate use of riparian buffer strips.	Little Colorado River Watershed Coordinating Council and Show Low Watershed Enhancement Partnership
LEVEL D Effectiveness monitoring and listing evaluation High priority for water quality improvements (Plan to delist by 2012)	Santa Cruz Watershed **Alum Gulch** (from headwaters to end of intermittent flow) and tributaries (e.g. Humboldt Canyon)	Cadmium (1996) Copper (1996) Zinc (1996) Low pH (1996)	TMDL completed in 2003	Mine tailings and adit	TMDL sources identified: Remediate mining sources. USFS has remediated Worlds Fair and Humboldt Canyon mines (Worlds Fair mine adit not addressed).	Friends of Sonoita Creek and Friends of Santa Cruz
LEVEL D Effectiveness monitoring and listing evaluation	Upper Gila Watershed **Cave Creek** (from headwaters to South Fork of Cave Creek)	Selenium (2004)	ADEQ proposing delist. New monitoring shows no exceedances.	Pristine area		Gila Watershed Partnership
LEVEL D Effectiveness monitoring and listing evaluation	Santa Cruz Watershed **Lakeside Lake**	Nitrogen (2004 EPA) Phosphorus (2004 EPA) Chlorophyll (2004 EPA), DO (2004) NH3 (2004)	TMDL completed in 2005	County has discontinued disposing of wastewater effluent at the lake.	City of Tucson is implementing treatment and practices identified in the TMDL. Increased aeration and treating water with alum to remove phosphorus from water column.	City of Tucson Park and Recreation. Arizona Game and Fish Department
LEVEL D Effectiveness monitoring and listing evaluation Focus watershed for 319(h) grants – 2009-2010	Little Colorado Watershed **Little Colorado River** (from West Fork LCR to Lyman Lake) (several reaches)	Sediment/turbidity (1992)	TMDL, including TIP completed in 2002. Need to reevaluate using SSC standards	Grazing, recreation, silviculture (forestry), stormwater, roads, smaller urban areas. Stream bank and channel degradation.	Water quality improvement grants: 1. Coyote Creek sediment reduction (1998) 2. Big Ditch project (2000). Need to monitor to evaluate effectiveness.	US Forest Service MOU Little Colorado River Watershed Coordinating Council

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL D Effectiveness monitoring and listing evaluation	Little Colorado Watershed **Nutrioso Creek** (from Nelson Reservoir to Little Colorado River)	Turbidity/sediment (1992)	Completed TMDL and TIP in 2002 Delisted upper portion (headwaters to Nelson Reservoir).	Grazing, forestry, roads. Stream bank and channel destabilized.	Water quality improvement grant: Murray-Saffel Canyon sediment controls (2001)	Little Colorado River Watershed Coordinating Council
LEVEL D Effectiveness monitoring and listing evaluation	Santa Cruz Watershed **Pena Blanca Lake**	Mercury in fish	TMDL completed in 1999, included TIP.	Three sources identified in TMDL: atmospheric deposition, St. Patrick Mine ball mill site, and natural substrates.	USF S removed tailings at St Patrick Mine Ball Mill site and reduced sediment to lake. USFS has dredged lake sediments to remove mercury recycling in lake sediments.	Friends of Santa Cruz
LEVEL D Effectiveness monitoring and listing evaluation	Verde Watershed **Stoneman Lake**	Low DO (1998) High pH (1998) Narrative Nutrients	TMDL Completed in 2001, including TIP	TMDL indicated sources primarily recycling of nutrients. Septic systems have potential to add nutrients. Lake is ephemeral.	TMDL sources identified natural conditions as primary source of nutrients. Recommended increasing water sources for lake and decreasing potential for septic system inputs. WQIGs: Replaced septic systems, created grey water use systems, and constructed sediment traps.	Stoneman Lake Owners Association
LEVEL D Effectiveness monitoring and listing evaluation High priority for water quality improvements (Plan to delist by 2012)	Middle Gila Watershed **Turkey Creek** (from unnamed tributary to Poland Creek)	Copper (1992) Lead (2004)	TMDL completed in 2007. ADEQ is doing effectiveness monitoring.	Historic mining	US Forest Service has remediated tailings at Golden Belt and Golden Turkey mine sites and is doing effectiveness monitoring.	
LEVEL D Effectiveness monitoring and listing evaluation	Verde Watershed **Verde River** (from unnamed tributary to Railroad Draw) (from Sycamore Creek to Beaver Cr) and (from HUC boundary to Fossil Creek)	Turbidity/sediment (1994)	Completed TMDL in 2002, including TIP. Need to reevaluate. Monitoring SSC and turbidity for effectiveness.	Grazing, urban development, roads, etc	Water quality improvement grants: 1.Verde Riparian Project (1990) 2. Yavapai Ranch (1994) 3. Hickey Irrigation project (1996) 4. West Clear Creek riparian improvements (2001) 5. Upper Verde restoration (Chino) (2002) 6. Upper Verde wildlife area (2006) 7. Hart Prairie sediment control (2006).	Verde Watershed Association

Water Quality Improvement Strategy	WATERSHED SURFACE WATER	POLLUTANTS (Year Listed)	TMDL DEVELOPMENT	POTENTIAL SOURCES	PROJECTS AND ACTIVITIES	SUPPORT AND PARTNERSHIPS
LEVEL E Requesting delist Based on new standard	San Pedro Watershed **San Pedro River** (from Dragoon Wash to Tres Alamos Wash)	Nitrate (1990)	Nitrate standard is not applicable.	Ongoing superfund site remediation at St David (Apache Nitrogen Products)	Ongoing Superfund remediation and monitoring WQIGs: San Pedro River cleanup near St David (2003)	Community Watershed Alliance (Middle San Pedro)
LEVEL E Requesting delist Based on new monitoring data	Upper Gila Watershed **Gila River** (from Skully Creek to San Francisco River)	Selenium (2004)	ADEQ proposing delist. New monitoring data show no exceedances.	Crop production and grazing	Proposed: Identify and prioritize sources and implement appropriate BMPs.	Upper Gila Watershed Partnership
LEVEL F EPA has lead in mitigation efforts because pollutant sources are in Mexico	Santa Cruz Watershed **Nogales Wash** (from Mexico to Portrero Wash)	*E. coli* (1988) Ammonia (2004) Chlorine (1988) Copper (2004)	To initiate TMDL in 2009	Infrastructure deterioration in Mexico, which allows raw sewage to flow into Arizona. Chlorine is added to reduce human health risks.	Infrastructure upgrades must be accomplished in Mexico.	Friends of the Santa Cruz

APPENDIX E

ADEQ Arizona Department of Environmental Quality

Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

Water Quality Improvement Grant Program Request for Grant Applications EV09-0036 2008-2009

The Arizona Department of Environmental Quality (ADEQ) is requesting applications for projects that implement on-the-ground water quality improvements to manage nonpoint source pollution in Arizona.

AVAILABLE FUNDING

Approximately $1 million is available for funding for the upcoming cycle. The distribution of these funds from the United States Environmental Protection Agency is provided pursuant to Section 319(h) of the Clean Water Act.

INVESTING IN CLEAN WATER

The ultimate vision of the program is for all of Arizona's waters to be clean and safe. However, all journeys begin with small steps. To reach this vision, the Water Quality Improvement Grant Program strives to fund projects that implement sufficient, economically and scientifically sound management practices that result in quantifiable improvements to surface water quality. Other outcomes of strong projects include education and public awareness of water quality issues, active citizen involvement, innovative approaches to problem solving, and long-term project maintenance and results.

REQUIREMENTS FOR ALL INVESTMENTS

- On-the-ground implementation component
- 40% nonfederal match
- Education and outreach component with specified projected results
- Demonstrated water quality improvements

EVALUATION

Grants will be awarded based on the answers to three basic questions asked of each potential investment proposal:

- What are the water quality outcomes that ADEQ is buying?
- What is the likelihood those outcomes will be achieved?
- Is this the best use of money?

Water Quality Improvement Grant Program
INVESTING IN CLEAN AND SAFE WATER FOR THE STATE OF ARIZONA

Publication Number: C 08-09

City	Location	Address	Date	Time
Flagstaff	ADEQ Northern Regional Office	1801 W. Route 66, Suite 117	10/27/08	10 a.m. - noon
Lake Havasu City	LHC Parks and Rec Community Rec Center	100 Park Ave. Rooms 153/154	10/28/08	10 a.m. - noon
Safford	Graham County General Services Bldg.	921 Thatcher Blvd.	10/29/08	10 a.m. - noon
Eagar	Apache Sitgreaves National Forest Headquarters	30 S. Chiricahua Trail	10/30/08	10 a.m. - noon
Phoenix	ADEQ Phoenix Office	1110 W. Washington St.	10/31/08	10 a.m. - noon

If you are interested in attending a grant workshop, **please RSVP** to Grant and Outreach Coordinator **Krista Osterberg** either via phone at **(602) 771-4635 or, toll free, (800) 234-5677, Ext. 771-4635**; or via e-mail at **osterberg.krista@azdeq.gov**.

Workshops with less than 5 RSVPs will be cancelled or rescheduled. We can only contact those who RSVP to notify them of workshop schedule changes.

APPLICATION

The *Water Quality Improvement Grant Manual* details the grant program and includes application forms and instructions on how to apply.

Extensive revisions have been made to the grant application, grant instructions and appendices. It is recommended that applicants access/download all new materials from our Web page at: www.azdeq.gov/environ/water/watershed/improvement.html#statewide.

If you wish to have a hard copy of the grant manual and/or workbook sent to you, please call Bertha Thomas at (602) 771-4630 or, toll free, (800) 234-5677, Ext. 771-4630.

DEADLINES

- The deadline for **mandatory pre-proposals** is **Thursday, December 4, 2008 at 3 p.m.** Staff will provide written feedback on the pre-proposals as well as the opportunity for a one-on-one meeting with staff to review submissions and feedback.
- The deadline for the final, completed **grant application** is Friday, February 6, 2009 at 3 p.m.

Late applications will not be considered.

AWARDS

Grant awards will be announced in **June/July 2009**.

APPENDIX F

ADEQ Arizona Department of Environmental Quality

Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

Water Quality Improvement Grant Program Request for Grant Applications EV09-0035 2008-2009

The Arizona Department of Environmental Quality (ADEQ) is requesting applications for Targeted Watershed Improvement Plans that identify, prioritize and implement water quality improvement projects within the state of Arizona. Please note that this request for grant applications (RFGA) is for the targeted watersheds identified below. The RFGA for statewide projects will be announced in early October 2008.

AVAILABLE FUNDING

Approximately $800,000 is available for projects focusing on areas that ADEQ has identified as Priority Watersheds. The distribution of these funds from the U.S. Environmental Protection Agency is provided pursuant to Section 319(h) of the Clean Water Act.

INVESTING IN CLEAN WATER

Targeted Watershed Improvement Plans (WIPs) are needed to identify and prioritize water quality improvement projects critical to restore water quality. This grant will fund a two-year two-phased process to develop and implement targeted plans:

Phase I-Plan Development (first year)
Phase II-Initial Plan Implementation (second year)

ADEQ will provide technical support throughout the development and implementation of these watershed improvement plans.

TARGETED WATERSHEDS

ADEQ has selected the following watersheds for development of targeted plans because of the known pollutant impairments and anticipated community support:

- Oak Creek drainage area from its headwaters to Spring Creek and the Spring Creek drainage, in the Sedona area. Pollutant of concern: *E. coli* bacteria.
- San Francisco River drainage area, primarily between the Blue River and Limestone Gulch, near Clifton. Pollutant of concern: *E. coli* bacteria.
- Granite Creek from headwaters to Watson Lake, in the Prescott area. Pollutants of concern: nutrients and *E. coli* bacteria. (Note: Although not "impaired" for *E. coli* bacteria, recent monitoring to identify nutrient sources has shown *E. coli* bacteria exceedances.)

REQUIREMENTS FOR ALL GRANTS

- On-the-ground implementation component
- Education and outreach component
- Demonstrated water quality improvements
- 40% nonfederal match

Publication Number: C 08-08

EVALUATION

Proposals will be evaluated based on the following set of desired outcomes:

- Community becomes knowledgeable about pollutants of concern and potential restoration methods, especially methods that the general public can implement
- Community involvement in science-based identification of critical sites and potential projects
- Development of resources and community desire to implement priority projects and management practices or mitigation methods
- Identification of funding sources and opportunities to leverage funds
- Initiate implementation of projects identified in the plan to obtain pollutant of concern load reductions

WORKSHOP SCHEDULE

Grants staff will be holding one workshop devoted to the specific needs and issues of each targeted watershed. All workshops will be held at ADEQ's central office, located at 1110 W. Washington Street in Phoenix. If you are interested in attending a grant workshop, please **RSVP** to Grant and Outreach Coordinator Krista Osterberg at (602) 771-4635 or (800) 234-5677, Ext. 771-4635 or by e-mail at Osterberg.Krista@azdeq.gov.

Targeted Watershed	Date	Time
Oak Creek Drainage	9/15/08	10 a.m. - noon
Granite Creek Drainage	9/16/08	10 a.m. - noon
San Francisco River Drainage	9/17/08	10 a.m. - noon

APPLICATION

The *2008 Watershed Improvement Plan Grant Manual* details the grant program and includes application forms and instructions on how to apply.
If you wish to have a hard copy of the grant manual, please contact Krista Osterberg at (602) 771-4635 or (800) 234-5677, Ext. 771-4635 or by e-mail at Osterberg.Krista@azdeq.gov.

DEADLINES

The deadline for **mandatory** pre-proposal is October 7th, 2008 at 3:00 pm. Staff will provide written feedback on pre-proposals as well as the opportunity for a one-on-one meeting with Staff to review their submissions and feedback.
The deadline for the final, completed grant application is November 12th, 2008 at 3:00 pm. Late applications will not be considered.

AWARDS

Grant awards will be announced in January 2009.

TECHNICAL SUPPORT AND ASSISTANCE

Interested applicants may contact ADEQ at any time during the grant process for technical support, assistance, or general grant information.
Krista Osterberg, Grant and Outreach Coordinator
(602) 771-4635 or (800) 234-5677, Ext. 771-4635 or by e-mail at Osterberg.Krista@azdeq.gov.