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Arizona's 2005 Nonpoint Source Annual Report

Nonpoint Source Program

July 1, 2004 June 30, 2005

Prepared by the
Arizona Department of Environmental Quality
Hydrologic Support & Assessment Section



Arizona's FY 05 Nonpoint Source Program Annual Report Introduction

Purpose

This report is an overview of the Arizona Department of Environmental Quality (ADEQ) Nonpoint Source Program's activities for fiscal year 2005 (July 1, 2004 - June 30, 2005). A majority of the work performed by ADEQ's Nonpoint Source Program is funded by Clean Water Act Section 319(h) grants, awarded by the U.S. Environmental Protection Agency (EPA). Section 319(h) of the Clean Water Act requires States to report annually on progress in meeting the schedule of milestones contained in their nonpoint source management plans, and report reductions in nonpoint source pollutant loadings and improvements in water quality resulting from program implementation.

Format

The report is divided into seven sections to meet all elements of EPA's annual reporting requirements.

Section I – Measuring Success

Provides a brief summary of progress in meeting approved milestones and the short- and long-term goals and objectives identified in *Arizona's 5-Year Nonpoint Source Management Plan*. The information is provided in a matrix format to display the status of approved milestones for the current fiscal year. The following information is provided for each milestone:

- a. Applicable project or program
- b. Scheduled project completion date
- c. Percent completed

Satisfies elements #1 and #2 of EPA's annual reporting requirements.

Section II – Federal Support

A discussion of the extent to which Federal agencies, lands and activities within the State are supporting the State in meeting approved milestones.

Satisfies element #3 of EPA's annual reporting requirements.

Section III – Water Quality Improvements and Load Reductions

A summary of the available information on the amount of improvement in water quality (including aquatic habitat quality) and the extent of reductions in nonpoint source loadings achieved as a result of nonpoint source program implementation. Where information is not yet available, surrogate measures of environmental progress (such as environmental indicators) are used and progress is reported in terms of the degree or percentage of completion of the project.

Satisfies elements #4, #5, and #6 of EPA's annual reporting requirements.

Section IV – Program Enhancements

Provides a listing of further actions necessary to achieve the goals of the Clean Water Act, including any recommendations for future state or national programs to control nonpoint source pollution.

Section V – Successful Implementation Projects

Brief case studies of particularly successful nonpoint source control efforts.

Section VI – Public Awareness

Provides information on increases in public awareness of nonpoint source pollution and public involvement in addressing it.

Section VII – Program Highlights

Information on products produced or deliverables met by Arizona's Nonpoint Source Program (e.g., outreach materials or BMP documents). Web site references are provided.

Sections IV – VII provide supplemental information as a means of assessing progress to date and improving the program in the future.

Satisfies EPA's recommendations on supplemental elements #1 - #4.

Program Information

Arizona's Nonpoint Source Program gathers information, monitors and focuses on the following land use activities that can negatively impact surface and ground water within the State:

- ◆ Agriculture
- ◆ Forestry
- ◆ Urban runoff
- ◆ Hydromodification
- ◆ Onsite/septic waste treatment systems
- ◆ Mining
- ◆ Recreation

ADEQ's Nonpoint Source Program operates under the guidance of *Arizona's 5-Year Nonpoint Source Management Plan* updated and revised during fiscal year 2005. The new State Management Plan was released in November 2003.

Arizona's Nonpoint Source State Management Program 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 and source water assessment plans, watershed-based plans, and water quality improvement projects to protect the state's water resources from nonpoint source pollution. 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 the issues. Since Arizona has a large amount of publicly owned lands, partnerships with federal, state and tribal land and resource management agencies are a key element in the program's success.

ADEQ was successful in meeting the goals identified in *Arizona's 5-Year Nonpoint Source Management Plan*. Throughout this annual report, ADEQ provides a summary of progress in meeting approved milestones and short- and long-term goals. In addition, the report covers the extent to which Federal agencies are supporting the State, water quality improvements and load reductions, and provides other supplemental information as a means of assessing progress to date and improving the program into the future.



Arizona's FY 05 Nonpoint Source Annual Report Section I – Measuring Success

Arizona's Nonpoint Source Program is a dynamic and adaptive program intended to facilitate and promote statewide efforts to manage nonpoint source pollution. As stated in Arizona's 5-year Nonpoint Source Management Plan, ADEQ continues to focus efforts on restoring waters that have been listed as impaired as well as to protect waters that are attaining their designated uses. To do this, it is critical that ADEQ monitor both: 1) the progress being made towards achieving and maintaining water quality standards; and 2) the implementation of programs and projects to assure that they are successful. ADEQ uses several sets of measures to fully determine the success in implementing the Nonpoint Source Program. These include measures that indicate progress towards achieving and maintaining beneficial uses of water; accomplishing long-term goals of the Program (i.e. achieving load reductions, or implementing particular watershed projects); and shorter-term goals and objectives that are designed to achieve the longer-term goals.

Milestones have been placed on both the long-term goals and short-term objectives which outline the State's implementation strategy for the restoration and protection of beneficial uses impaired due to nonpoint source pollution. The long-term goals listed below are desired end points based on a ten to fifteen year time frame. The short-term objectives or milestones listed below will be implemented and revised as necessary over the next five years such that beneficial uses of the state's waters (to the extent practicable) are fully restored or maintained. Many of the milestones are taken from ADEQ's EPA approved workplan. The tasks and deliverables scheduled as part of the workplan 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. The status of these priority program elements are detailed in the following table.

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
<p>Perform surface and ground water quality monitoring throughout the state.</p> <p>Progress Summary – Surface water – Ambient stream and lakes monitoring completed per sampling plans. Focus in FY05 for the streams program was in the Upper Colorado River/Grand Canyon and San Pedro River basins. The Clean Lakes Program focused on lakes in the San Pedro watershed, the lakes classification project and ongoing TMDL studies.</p> <p>Groundwater basin monitoring – Staffing shortages resulted in only the Dripping Springs Groundwater Basin being completed this year. Pinal Active Management Area and Agua Fria Groundwater Basins were moved to FY06 workplan; Donnelly Wash will be deferred until FY07. The Groundwater Monitoring Unit completed two final reports: Detrital Valley and Meadview Groundwater Basin Reports based on previous years’ monitoring.</p>	<p>Surface Water Monitoring & Standards and Groundwater Monitoring Units</p>	<p>Yearly</p>	<p>100%</p>
<p>Determine water quality improvements and BMP effectiveness through project monitoring and oversight.</p> <p>Progress Summary – Staff continues to provide oversight on 319(h) funded implementation projects and input and track water quality improvements in GRTS. Please refer to GRTS for updated information on BMP effectiveness. 100% of ADEQ’s 319 projects are performing effectiveness monitoring, however, only ~20% are performing water quality monitoring. ADEQ needs to continue improving their understanding of the modeling approaches used to</p>	<p>Watershed, Assessment, & Grants</p>	<p>On-going</p>	<p>65%</p>

estimate load reductions to better provide and determine BMP effectiveness and water quality improvements.			
<p>Develop narrative implementation procedures and utilize narrative standards, as well as numeric water quality standards, to assess Arizona's waters.</p> <p>Progress Summary – Progress continues on all narrative procedures. Held kickoff meeting for narrative nutrients for lakes and reservoirs and bottom deposits in late April, 2005. Both were well received and will be folded into the ongoing Triennial Review of surface water quality standards. Antidegradation procedures received extensive review in fall, 2004 – staff is developing an antidegradation rule to incorporate key pieces of procedures for adoption in Triennial Review. The Narrative toxics has fallen behind schedule and will require a separate stakeholder effort due to complexity of the issues. The toxics implementation procedures will not be included in the 2005/6 triennial review. ADEQ intends to propose the other three in the rulemaking as well as the narrative biocriterion and associated implementation procedures.</p>	Surface Water Monitoring & Standards	June 2006	60%
<p>Develop, initiate, and support a Volunteer Monitoring Program.</p> <p>Progress Summary – To the extent possible, ADEQ will continue to provide support to various volunteer monitoring groups across the state. Although ADEQ made great strides with their partnership with Gateway Community College in the past few years, the current staffing and budget shortages will result in delays to the development of a robust Volunteer Monitoring Program.</p>	Hydrologic Support & Assessment	Program developed = May 2006 Support = On-going	75% (as of FY 05) 100%

Goal: Identify and quantify water quality problems in Arizona.			
Milestone	Project or Program	Completion Date	%Complete
<p>Support watershed rotation based monitoring program to provide water quality data on long-term stations and watershed characterization sites within the 10 surface watersheds.</p> <p>Progress Summary – Completed characterization monitoring in Colorado - Grand Canyon and San Pedro watersheds in FY 05.</p>	Surface Water Monitoring & Standards	Yearly	50%
<p>Complete <i>Arizona's Integrated 305(b) Water Quality Assessment and 303(d) Listing Report</i> due April 1, 2004, 2006, and 2008.</p> <p>Progress Summary – The final Integrated Report was submitted to EPA in late August 2004. Comments from the public and EPA resulted in the need to issue a second draft in late FY 04 which delayed the final submittal to EPA until late August. As a result of both the 2002 and 2004 assessments, staff began stakeholder effort to explore revisions to the Impaired Water Identification rule 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 the 303(d) List in 2006.</p> <p>For the 2006 report, staff has also been working on two other major projects: the loading of non-ADEQ data into the surface water database and the creation of Phase 1 of an assessment calculator (AZAC, or Arizona Assessment Calculator) that will begin to automate portions of the assessment process and make it more efficient. The 2006 report will be delayed until all three of these projects are completed.</p>	Watershed, Assessment, & Grants	April 1, 2004 April 1, 2006 April 1, 2008	100% 15% 0%

<p>Complete 205(j) Report in 2005 and 2007.</p> <p>Progress Summary – <i>Arizona’s Integrated 305(b) Assessment and 303(d) Listing Report</i> submitted to EPA in September 2004 provided a current assessment of water quality in Arizona; therefore, the Arizona Department of Environmental Quality did not prepare a 2005 205j 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, 2004.</p>	<p>Watershed, Assessment, & Grants</p>	<p>April 1, 2005</p> <p>April 1, 2007</p>	<p>N/A (see summary)</p> <p>0%</p>
<p>Complete watershed characterizations for at least three watersheds in Arizona (Bill Williams, Upper Gila, and Verde) by January 2004.</p> <p>Progress Summary – As documented in the FY 04 Annual Report, watershed characterizations have been completed and are online for the Bill Williams, Upper Gila, and Verde River 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 the three 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. View on-line at www.srn.arizona.edu/nemo/index.php?page=characterization.</p>	<p>Watershed, Assessment, & Grants</p>	<p>October 2004</p>	<p>100%</p>

Goal: Develop TMDLs for 303(d) listed waterbodies.			
Milestone & Progress Summary	Project or Program	Completion Date	%Complete
Develop TMDLs.	TMDL	Yearly	100%

<p>Progress Summary – Received approval of three TMDL projects: French Gulch (copper, zinc, cadmium) and Tonto Creek (2 segments for total nitrogen), and Lakeside Lake (total nitrogen and phosphorus, ammonia, DO, and pH). Two TMDLs are nearing completion - Turkey Creek (copper, zinc, cadmium) and Alamo Lake (mercury) (anticipated completion before December 2005).</p>			
<p>Hold public meetings to involve local and affected stakeholders.</p> <p>Progress Summary – Stakeholder meetings were held throughout the year for Turkey Creek, French Gulch, Tonto-Christopher Creeks, Lake Mary, Alamo, and Lakeside Lake. All meetings were a great success with good public turnout and positive feedback.</p>	Watershed, Assessment, & Grants and TMDL	Yearly	100%
<p>Receive and evaluate comments.</p> <p>Progress Summary – Received and evaluated comments for Lakeside Lake and Tonto Creek TMDLs. No comments were received regarding the French Gulch TMDL.</p>	TMDL	Yearly	100%

Goal: Develop and Implement Water Quality Improvement Plans			
Milestone & Progress Summary	Project or Program	Completion Date	%Complete
<p>Write TMDL implementation plans.</p> <p>Progress Summary Great success in developing TMDL implementation plans this year. Boulder Creek (view online at www.azdeq.gov/environ/water/assessment/status.html) was finalized and draft implementation plans were developed for French Gulch, Turkey Creek, Lakeside</p>	Watershed, Assessment, & Grants	Yearly	85%

<p>Lake, and Tonto-Christopher Creek. Due to resource restraints (loss of staff), ADEQ may be behind schedule in finalizing these implementation plans.</p>			
<p>Write and develop watershed-based plans for all ten Arizona watersheds.</p> <p>Progress Summary – Through NEMO, three large scale watershed-based plans were developed in FY05. NEMO is also working with Little Colorado River Watershed Coordinating Council to develop a large-scale watershed-based plan for the Little Colorado River Watershed. In addition, NEMO is working with other watershed partnerships across the state to develop watershed-based plans for at least two sub-watersheds, the Upper Agua Fria and Middle San Pedro.</p> <p>To the extent possible, ADEQ is working with watershed partnerships around the state to develop watershed-based plans or add additional information to current plans to incorporate the 9-elements. Three plans were finalized this year, the <i>Campomochito-Sacaton Watershed-based Plan</i>, <i>Upper Sycamore Creek Watershed-based Plan</i>, and <i>Upper Little Colorado River Watershed Partnership Watershed Based Action and Management Plan</i>.</p>	<p>Watershed, Assessment, & Grants</p>	<p>On-going</p>	<p>40%</p>
<p>Hold public meetings with stakeholders.</p> <p>Progress Summary – During each TMDL public meeting, implementation plans are discussed. These public meetings are proving to be highly successful and beneficial.</p>	<p>Watershed, Assessment, & Grants</p>	<p>Yearly</p>	<p>100%</p>
<p>Receive and evaluate comments.</p> <p>Progress Summary – <i>Boulder Creek TMDL Implementation Plan</i> was sent out for public review and comment in September 2004. No formal comments were received or evaluated, however,</p>	<p>Watershed, Assessment, & Grants</p>	<p>On-going</p>	<p>100%</p>

<p>ADEQ met with stakeholder groups and welcomed any comments or suggestions provided for the development of an implementation plan. All other implementation plans are in draft form and have not gone out for public review and comment to date.</p>			
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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
<p>Coordinate and conduct annual meetings to set internal goals for priority funding.</p> <p>Progress Summary – The Unit met continuously throughout the year to coordinate and set internal goals. It was determined again during FY 05 that the following types of projects will 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 October 2004, were given precedent based on these priorities. The Grants team also developed and Investor Target and Water Quality Target for the Water Quality Improvement Grant Program. Investor Target: Increase the number of awarded projects funded for improving water quality on impaired waters from 35% in 2004 to 50% in 2006. Water Quality Target: By 2010, impaired waters will be reduced by 30%, compared to <i>Arizona's 2004 Integrated 305(b) Assessment and 303(d) Listing Report</i>.</p> <p>The Unit has also been in close contact with the EPA Project Officer to obtain feedback and recommendations</p>	<p>Watershed, Assessment, & Grants</p>	<p>Yearly</p>	<p>100%</p>

on goals.			
<p>Conduct statewide grant workshops annually.</p> <p>Progress Summary – Attendance was up approximately 55% compared to FY 04. Ten grant workshops were held around the state in July and August of 2004 in preparation for the 2004 Grant Cycle (Cycle 7). Also during FY 05 (June 2005), two workshops were held for the 2005 Grant Cycle (Cycle 8). 83 people attended in 2004 and in June of 2005, 30 people attended. The Grants team implemented a few new interactive approaches to the Cycle 8 grant workshops and attendees seemed to really enjoy the more active role they played while learning.</p>	Watershed, Assessment, & Grants	Yearly	100%
<p>Award Section 319(h) grant money each year to implement water quality improvement projects on impaired waterbodies.</p> <p>Progress Summary – ADEQ received 17 grant applications and awarded eight projects in January, 2005. Three out of eight projects will improve impaired waters. Each year we are seeing an increase in priority projects. Also note that two of the eight implemented watershed-based plans so five of eight projects met our priority goals. Attachment #1 lists the projects awarded in FY 05.</p>	Watershed, Assessment, & Grants	Yearly	100%

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.	Watershed, Assessment, & Grants	On-going	80%
Progress Summary –			

<p>All projects awarded in FY 05 were added to the GRTS tracking system in order to track funding. ADEQ continues to learn more about entering data for project effectiveness and will increase their efforts in FY 06. ADEQ met EPA's deadline to submit load reduction data in FY 05. Load reduction estimates were calculated and entered for fourteen projects funded since 2002.</p>			
<p>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.</p> <p>Progress Summary – ADEQ continues to leverage money to target nonpoint source pollution management in priority areas with partnerships, funding sources, in kind services (i.e., U.S. Forest Service, National Fish and Wildlife Foundation, NRCS EQIP funds, Arizona Water Protection Fund, Heritage Fund, Water Infrastructure Finance Authority of Arizona, Arizona Department of Transportation, U.S. Fish and Wildlife Partners Grant, State Parks, State Land Trust, County, and other local groups).</p>	<p>Watershed, Assessment, & Grants</p>	<p>On-going</p>	<p>100%</p>

<p>Goal: Work with and provide technical support to Arizona watershed partnerships.</p>			
<p>Milestone</p>	<p>Project or Program</p>	<p>Completion Date</p>	<p>%Complete</p>
<p>Actively involve the community, including watershed partnerships, with the development of watershed-based plans and TMDL implementation plans.</p> <p>Progress Summary – Through TMDL stakeholder meetings and watershed partnerships, ADEQ is working with the communities in the state to develop watershed-based plans and TMDL implementation plans. Three watershed-based plans were</p>	<p>Watershed, Assessment, & Grants</p>	<p>On-going</p>	<p>100%</p>

<p>finalized this year, <i>Campomocho-Sacaton Watershed-based Plan</i>, <i>Upper Sycamore Creek Watershed-based Plan</i>, and <i>Upper Little Colorado River Watershed Partnership Watershed Based Action and Management Plan</i> The <i>Boulder Creek TMDL Implementation Plan</i> was finalized and draft implementation plans were developed for French Gulch, Turkey Creek, Lakeside Lake, and Tonto-Christopher Creek.</p>			
<p>Provide support to community watershed partnerships.</p> <p>Progress Summary – Whenever a partnership needs ADEQ’s technical assistance or support, we make it a top priority to meet their needs. During the year we attended numerous meetings to discuss watershed-based plans, impaired waters, TMDL studies, implementation plans, and the grant program. With the help of our strong partner, the University of Arizona through the Master Watershed Steward and NEMO programs, we’ve been able to assist many more watershed groups. The coordinators for both of these programs have been a huge help to us and the watershed partnerships statewide. They’ve provided education, maps, technical assistance, review and comment, etc. Their advocacy has benefited ADEQ tremendously.</p>	<p>Watershed, Assessment, & Grants</p>	<p>On-going</p>	<p>100%</p>
<p>Assist with the development and implementation of the Master Watershed Stewardship Program.</p> <p>Progress Summary – The Master Watershed Stewardship Program is up and running. See <i>Section VI - Public Awareness</i>, for more detailed information on the program.</p>	<p>Watershed, Assessment, & Grants</p>	<p>On-going</p>	<p>100%</p>

Goal: Provide statewide nonpoint source pollution education and outreach.			
Milestone	Project or Program	Completion Date	%Complete
<p>Plan, develop and implement a strategy to conduct education/outreach efforts to increase public awareness of nonpoint source pollution impacts to surface and groundwater resources.</p> <p>Progress Summary – The 2003 Nonpoint Source Education & Outreach Program Plan is being implemented statewide. Several times throughout the year, the Watershed, Assessment, & Grants Unit has conducted education/outreach efforts to increase the public's awareness of nonpoint source pollution impacts to surface and groundwater resources. Examples include, Envirothon, Verde River Days, and Tres Rios to name a few of the big events. Staff has also visited with schools throughout the year and made presentations about water quality and nonpoint source pollution impacts. See <i>Section VI - Public Awareness</i>, for more information.</p>	<p>Watershed, Assessment, & Grants</p>	<p>Plan Completion = September 2003</p> <p>Strategy Implemented = On-going</p>	<p>100%</p> <p>100% for FY 05</p>
<p>Update web site information to reflect current activities.</p> <p>Progress Summary – All web site information is up to date and reflects the current activities for the Hydrologic Support & Assessment. Please visit ADEQ's Water Quality Division's homepage at www.azdeq.gov/environ/water/index.html for information on watershed management, monitoring, and assessment (click topic on left hand panel). Note that during FY 05, information regarding water quality improvement plans, watershed-based plans and TMDL implementation plans, was added. With this information readily available, ADEQ encourages groups to utilize and</p>	<p>Hydrologic Support & Assessment</p>	<p>July 2004</p>	<p>100%</p>

incorporate the recommended Nine Key Elements into watershed-based plans. The incentive being that funding opportunities are enhanced as projects and management measures identified within these plans receive priority funding through ADEQ's Water Quality Improvement Grant Program. Web site information will be continuously updated.			
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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
<p>Develop BMP guidance documents for nonpoint source pollution categories, including sediment, mining, and nutrients.</p> <p>Progress Summary – Through our partnership with NEMO, we will develop BMP guidance documents for managing sediment, metals, nutrients, and selenium. Great progress was made during FY 05. 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 are also being 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 (see <i>Section VII - Program Highlights</i>, for more detail). Check the NEMO web site at http://www.srn.arizona.edu/nemo/index.php?page=bmpmanual for updates.</p>	Watershed, Assessment, & Grants	October 2008	35%
<p>Research and identify ways to quantify load reductions as required in EPA's 2003 Nonpoint Source Program Guidance.</p>	Watershed, Assessment, & Grants Unit	June 2006	75%

<p>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 on calculation of load reductions. Water resource professionals and the public can view and download the Michigan Department of Environmental Quality's 1999 manual on calculating and documenting pollutant reductions.</p> <p>In addition, during FY 05's grant cycle, ADEQ requested that applicants provide an estimated load reduction for reporting in GRTS. Priority was given to projects in which load reduction estimates (quantitative measure of success) were provided. Out of the 13 eligible applications, three provided usable load reduction data. We are hopeful that the number of grant applications with useable load reduction data will continue to increase. ADEQ focuses on the importance of documentation to support the success of our grant program.</p> <p>One staff member attended the annual GRTS meeting which provided important information and updates to the Region 5 Model (Michigan DEQ) and STEPL models. These are just two models that can be used to calculate Nitrogen, Phosphorus, or Sediment load reductions for input into GRTS.</p>			
<p>Document BMP effectiveness from water quality improvement projects in GRTS and guidance documents.</p> <p>Progress Summary – Staff continues to provide oversight on 319(h) funded implementation projects and input and track water quality improvements and BMP effectiveness in GRTS. Please refer to GRTS for updated information on BMP</p>	Watershed, Assessment, & Grants Unit	On-going	80%

effectiveness.			
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Goal: Maintain and expand partnerships and cooperative opportunities with stakeholders, other agencies, organizations, and citizens.			
Milestone	Project or Program	Completion Date	%Complete
<p>Coordinate with federal land management agencies on water quality and watershed improvements as needed.</p> <p>Progress Summary – Staff continues to work with various federal land managers to address nonpoint source pollutant impacts to water quality. Coordination with state and federal land managers was up-held through a variety of organizations and annual meetings: various watershed partnerships, Southwest Strategy, and annual meetings with the Forest Service. See <i>Section II - Federal Support</i>, for more information on coordination, meeting highlights, etc.</p>	Hydrologic Support and Assessment Section	On-going	90%
<p>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.</p> <p>Progress Summary – MOUs are updated as needed. The current MOUs are working well in carrying out portions of Arizona’s Nonpoint Source Management Plan. Interagency coordination is a continual struggle but NEMO, attending watershed partnership meetings, and holding public meetings improves our ability to coordinate and plan.</p>	Hydrologic Support & Assessment Section	When needed	100%
<p>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).</p>	Hydrologic Support & Assessment Section	Yearly	90%

<p>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. Coordination with state and federal land managers was up-held through a variety of organizations and annual meetings: various watershed partnerships, Southwest Strategy, an annual meeting with the U.S. Forest Service, and various other meetings (i.e. TMDL meetings) with federal, state, and local partners. Always room for improving coordination.</p>			
<p>Provide leadership, technical assistance, expertise and support to outside planning and governmental entities to support watershed planning and 208 regional water quality management planning.</p> <p>Progress Summary – Leadership, technical assistance, expertise, and support was provided throughout the year to planning and governmental entities in support of watershed planning. During the year, staff developed a new application form that requires the applicant or permit writer to provide pertinent information to the program to make the consistency review process more efficient. In addition, we have implemented an expedited review process which has helped cut down on backlog and turn-around for reviews. Work continues on updating the Continuing Planning Process (CPP). Competing priorities resulted in the CPP update falling behind but it is on track for final draft by December 2005. In September 2004, ADEQ hired of an intern to develop GIS covers (and associated databases) of service/planning area and locations of all WWTPs within the state. This new tool has been helpful when reviewing permit applications and amendments to determine the other facilities in the area.</p>	Watershed, Assessment, & Grants	Yearly	100%

Goal: Complete Nonpoint Source Annual Report			
Milestone	Project or Program	Completion Date	%Complete
<p>Write and develop a Nonpoint Source Annual Report summarizing the goals and accomplishments yearly.</p> <p>Progress Summary – This Nonpoint Source Annual Report was developed to summarize the goals and accomplishments of the Nonpoint Source Program from July 1, 2004 – June 30, 2005 (FY 05).</p>	Watershed, Assessment, & Grants	September 30 each year	100%
<p>Use annual reports to gauge progress on five year Plan.</p> <p>Progress Summary – The Nonpoint Source Annual Report provides the status of accomplishing both the short-term and long-term milestones identified in the Nonpoint Source Management Plan.</p> <p>The tasks and deliverables scheduled as part of the workplan 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.</p>	Hydrologic Support & Assessment Section	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
<p>Amend Nonpoint Source Management Plan as necessary.</p> <p>Progress Summary – The Nonpoint Source Management Plan will be amended as necessary. The Unit has been in constant contact with the EPA Project Officer to obtain feedback and</p>	Hydrologic Support & Assessment Section	On-going	100%

recommendations on goals for the upcoming year. No changes to the plan are needed at this time.			
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Arizona's FY 05 Nonpoint Source Annual Report Section II – 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.

Clean Colorado River Alliance

In February 2004, the Clean Colorado River Alliance was formed by Governor Janet Napolitano to develop recommendations to deal with existing water quality problems to ensure Colorado River water quality addresses the needs of Arizona, now and in the future. The Alliance is charged with developing an action plan to deal with pollution affecting the Colorado River. To that end, ADEQ is partnering with the U.S. Fish and Wildlife Service, Bureau of Reclamation, Bureau of Land Management, and the Department of Defense. In addition, the U.S. Department of Agriculture, U.S. Geological Survey, EPA and the Forest Service were contacted to assist the Alliance in identifying water quality concerns for the Colorado River. A successful regional approach, addressing water quality issues in the Colorado River Watershed, requires strong federal and state partnerships.

319 Projects Leveraged with Federal Funds

Two projects awarded during the last grant cycle (January 2005) were leveraged with federal money and/or federal support. The *Red Rock Watershed Project* administered by the Coronado Resource Conservation and Development Area (RC&D) is partnering with the U.S. Department of Agriculture Forest Service (Forest Service) and is utilizing USDA/NRCS Environmental Quality Incentive Program (EQIP) funds to implement their project. The RC&D also administers the *Campomoch/Sacaton Phase 2 Project* which EQIP funding is being used to install practices in the watershed that will support watershed improvement. NRCS is also providing technical assistance. Lastly, federal

money from the Forest Service and National Fish and Wildlife Foundation is being used to implement this watershed project.

Significant Meetings

TMDL Informational Meetings

Forest Service staff from the various National Forests has provided background information, site access, maps, assistance with site selection, water quality data, comments on draft reports, etc. for numerous TMDL projects, including Oak Creek (Slide Rock), Tonto and Christopher Creeks, Lake Mary watershed, Alamo Lake, and the Bill Williams watershed.

Southwest Strategy

Representatives from ADEQ attend the Southwest Strategy meetings quarterly to provide information to the group on developments and similar interests. The Southwest Strategy is a community development and natural resources conservation and management effort by federal, state, tribal, and local governments. Through this effort the partners work in collaboration with each other and the public to restore and maintain the cultural, economic, and environmental quality of life in the states of Arizona and New Mexico.

NRCS/USEPA/ADEQ/ADA Meeting

On April 22, 2005, NRCS, USEPA, ADEQ, and the Arizona Department of Agriculture (ADA) meet to discuss ways to collaborate and work better together. Each agency and program discussed its ongoing work with NRCS, areas for expansion and issues. David McKay, the new State Conservationist from NRCS, opened the meeting by explaining his vision from changes within the local NRCS and the state technical committee. Mr. McKay also presented information on budgets, the Farm Bill, the Environmental Quality Incentives Program, and the Conservation Security Program (CSP). Linda Taunt, ADEQ, provided an overview on ADEQ priorities. NRCS and ADEQ priorities appear to be aligned; NRCS commented on the opportunity to overlay CSP watersheds with ADEQ's water quality improvement projects (319h projects) to leverage resources and coordinate efforts. EPA spoke about outreach efforts and the 2nd Circuit Court's decision regarding concentrated animal feeding operations (CAFO) and nutrient management plans. ADEQ's Ken Johnson provided information on Arizona's regulation of CAFOs and ADEQ's proposed eco-region plan idea. Lastly, ADA provided a program update. The group agreed to try and meet quarterly to keep the dialogue open. A follow-up meeting is scheduled for January, 2006.

TMDLs and TMDL Implementation

Hassayampa River

In the Hassayampa River TMDLs for cadmium, copper, and zinc, approved by EPA in November 2002, the McCluer tailing site was identified as one of a number of pollution sources in the Cash Mine drainage. In 2003-2004, USFS performed some remedial activities in the Hassayampa watershed. Effectiveness monitoring was conducted in March 2005 by ADEQ staff. Results showed that the stream is still impaired, additional

remediation efforts are ongoing and are being coordinated with the EPA and Forest Service.

Boulder Creek

The Bureau of Land Management (BLM) has \$500,000 set aside from the Department of Interior's Central Hazardous Materials fund to cleanup the upper tailings pile at the Hillside Mine. BLM's commitment to clean up its portion of Hillside Mine site is a key component to an integrated cleanup effort for improving water quality in Boulder Creek. ADEQ continues to work with the Arizona State Land Department and a private entity (KFX, Inc.) to cleanup the other two tailings piles on site. The Arizona State Land Department and KFX have committed to applying for 319(h) funding during the 2005 grant cycle. BLM has agreed to provide funding for Hydro Geo Chem to continue with final engineering designs related to the middle and lower tailings piles for an integrated cleanup effort. On the ground improvements may begin as soon as spring/summer 2006.

Turkey Creek

The Forest Service has been very helpful with the Turkey Creek TMDL and implementation. By initiating interest, participating, and presenting on the TMDL study, the Forest Service has been an active partner. In addition, the Forest Service has developed an Environmental Engineering Cost Analysis (EECA) related to restoring the three mine sites in the Turkey Creek watershed. Pending funding, the Forest Service plans to close the French Lily mine and all mine shafts and develop borrow pits for cover material in FY 2006. The Golden Turkey and Golden Belt mines tailing piles would then be pulled out of the flood plain and covered in FY 2007.

Lake Mary Region

Forest Service personnel have been involved in the development of mercury TMDLs in the Lake Mary region. The lakes lie within both the Coconino and Apache-Sitgreaves National Forests. ADEQ sampling efforts have benefited greatly by the support and input provided by the Forest Service. Mercury TMDLs for five lakes will be completed in 2006. Forest Service comments will be sought and incorporated into the final TMDL report.

Alamo Lake

The Alamo Lake Mercury TMDL employed a watershed scale approach. The lake's watershed encompasses approximately 5,000 square miles. Efforts have been coordinated through various federal agencies including BLM, Army Corp of Engineers, Bureau of Reclamation, Fish and Wildlife, and the U.S. Geological Survey. Federal agencies have supplied lake management practices and data, stream discharge data, technical support and general information that could not have been discovered without their input. Their comments will be sought and incorporated into the final TMDL report due in early 2006.

Atmospheric Deposition of Mercury

EPA has supported 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. Several efforts have been completed to characterize this problem on a national scale. However, little data exists specific to Arizona. ADEQ has recognized that the lack of atmospheric deposition data poses a serious problem to TMDL development. EPA has provided technical assistance and equipment to help solve this problem. ADEQ was allowed to use a mobile Tekran Mercury Vapor Analyzer for two weeks as a first step in characterizing deposition rates in Arizona.

Additionally EPA is providing technical and financial assistance for the development of a Mercury Deposition Network (MDN) station in Arizona. There are currently 85 MDN sites across the nation collecting wet deposition data. No current sites are located in Arizona, with the closest are located in New Mexico and Colorado. Data collected in Arizona will benefit mercury TMDL development.

Water Quality Monitoring

For a number of years, ADEQ has entered into a joint funding agreement with the U.S. Geological Survey to operate the Cooperative Fixed Station Network monitoring program (USGS co-op program). The USGS conducts water quality monitoring at sixteen USGS co-op program sites located on Arizona's larger rivers. USGS maintains gage stations on these rivers which are of a size and annual flow that precludes ADEQ staff from the ability to monitor. The USGS collects water quality data quarterly at sites located on the Colorado River, Salt River, Gila River, Bill Williams River, and the Verde River. The U.S. Fish and Wildlife Service and the Forest Service also monitor and collect water quality data in streams and lakes throughout Arizona.

In addition, the Groundwater Monitoring Unit has conducted groundwater basin studies in collaboration with USGS. They include the Upper San Pedro (Sierra Vista sub Basin) Basin and the Upper Santa Cruz Basin.

Memorandums of Understanding

ADEQ has entered into several Memorandums of Understanding (MOUs) with federal partners in the State to respond to mutual water quality objectives. MOUs help identify responsibilities and activities to be performed by each agency and foster a collaborative effort in meeting natural resource and public health goals to sustain healthy conditions in Arizona's watersheds.



Arizona's FY 05 Nonpoint Source Annual Report Section III - Water Quality Improvement and Load Reductions

As Arizona continues to focus efforts on restoring and protecting waters, it is critical that ADEQ monitor both: 1) the progress being made towards achieving and maintaining water quality standards; and 2) the implementation of programs and projects to assure that they are successful. ADEQ uses several sets of measures to fully determine the success in implementing the Nonpoint Source Program. These include measures that indicate progress towards achieving and maintaining beneficial uses of water; towards other long-term goals of the Program (i.e. achieving load reductions, or implementing particular watershed projects); and towards shorter-term goals and objectives that are designed to lead to the achievement of longer-term goals.

ADEQ uses several approaches, such as ambient water quality monitoring, biological and physical assessment, implementation monitoring, model projections, and photographic evidence to measure ADEQ's effectiveness in restoring and protecting water quality. These environmental indicators help ADEQ to address the public's concerns about water quality in Arizona and what progress ADEQ is making toward its water quality goals.

Water quality monitoring is 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. Monitoring strategies are designed to focus on whether load reductions are being achieved over time and substantial progress is being made towards attaining or maintaining water quality standards. Arizona's surface water quality standards establish the benchmarks for ambient water quality to be achieved for Arizona's streams and lakes.

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* to measure 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. This report assesses all surface waters where monitoring has been conducted, reports on the quality of ground water, and lists any impaired surface waters. This 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 waterbody usually allows ADEQ to remove that waterbody 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 waterbody 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 solely by comparing assessments from one year to the next.

TMDLs

The Total Maximum Daily Load (TMDL) Program is designed to help the state in restoring an impaired stream or lake in meeting its water quality standards and support its designated uses, such as protection of aquatic life, drinking water source, and fish consumption. Section 303(d) of the Clean Water Act established authority for the TMDL Program and guides states on how to develop these plans for waters that do not meet water quality standards.

ADEQ received approval of three TMDL Projects in FY 2005. These included Tonto Creek (headwaters to Haigler Creek for nitrogen), French Gulch (headwaters to Hassayampa River for cadmium, copper, and zinc), and Lakeside Lake (nitrogen, phosphorus, ammonia, chlorophyll, dissolved oxygen, and pH).

Watershed-based Plans and TMDL Implementation Plans

Water quality improvement plans are vital components to ensure Arizona’s lakes, rivers, and streams achieve applicable water quality standards. ADEQ is available to provide technical assistance to watershed partnerships and other stakeholder groups in the development of watershed-based plans or other water resource management documents. For each TMDL, the department is required to establish a TMDL implementation plan that explains how the allocations and any reductions in existing pollutant loadings will be achieved (§49-234G).

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 waterbodies. In watersheds where a TMDL has been developed and approved or is in process of being developed, watershed-based plans should include measures designed to achieve the load reductions called for in the TMDL.

Several watershed partnerships in Arizona have watershed or water management plans already in place. Of those, many contain some, or all, of EPA’s nine required elements. The nine key elements or components of a watershed-based plan are:

- Element 1: Causes and Sources
- Element 2: Expected Load Reductions
- Element 3: Management Measures
- Element 4: Technical and Financial Assistance

- Element 5: Information/Education Component
- Element 6: Schedule
- Element 7: Measurable Milestones
- Element 8: Evaluation of Progress
- Element 9: Effectiveness Monitoring

ADEQ encourages partnerships to incorporate, by reference, pertinent information and materials that exist in other documents as this information may assist in completing watershed-based plans. Utilizing the existing documentation also avoids duplication of any existing processes or documents that already provide the needed information.

Three watershed-based plans were finalized this year, *Campomoch-Sacaton Watershed-based Plan*, *Upper Sycamore Creek Watershed-based Plan*, and *Upper Little Colorado River Watershed Partnership Watershed Based Action and Management Plan*. Throughout FY 06, ADEQ will continue to work with these groups to develop watershed-based plans with all EPA's nine required elements.

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. The *Boulder Creek TMDL Implementation Plan* was finalized and draft implementation plans were developed for French Gulch, Turkey Creek, Lakeside Lake, and Tonto-Christopher Creeks.

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). Other active stakeholder groups include implementation workgroups and stakeholders from the following efforts:

- Boulder Creek TMDL
- Turkey Creek TMDL
- French Gulch TMDL
- Lakeside Lake TMDL
- Stoneman Lake TMDL
- Alamo Lake TMDL
- Tonto and Christopher Creek TMDLs

Water Quality Improvement Projects

Grant funds available through Section 319 of the Water Quality Act are a critical element to improving and protecting water quality in watersheds throughout the state. During the last grant cycle, three of the eight projects (40%) awarded were for projects recommended in a TMDL implementation plan to improve impaired waters (7-001 –

continued work at EC Bar Ranch, 7-004 - Gibson mine cleanup and 7-005 - onsite wastewater systems upgrades on Tonto Creek).

Five of the eight projects (65%) were projects recommended and supported by a watershed-based plan. The five projects recommended and supported by a watershed-based plan include:

- 7-001 - Turbidity Reduction Project Phase VII; *Upper Little Colorado Watershed - Watershed-based Plan*
- 7-002 - Campomocho-Sacaton Watershed Stormwater Runoff Control Phase II; *The Campomocho/Sacaton Watershed – A sub-watershed of the Willcox Playa in Southeastern Arizona*
- 7-003 - Camp Raymond On-site Grand Canyon Council Sewer System Improvements; *Watershed Based Plan for Upper Sycamore Creek Restoration Plan*
- 7-006 - Central Detention Dam Rehabilitation; *Draft Upper Gila Watershed-based Plan (NEMO)*
- 7-007 - Kaler Ranch Erosion Control Project; *Draft Upper Gila Watershed-based Plan (NEMO)*

(Note that 319h Incremental Funds were targeted to four eligible projects in January 2005: 7-001, 7-002, 7-003, 7-004) ADEQ's Water Quality Improvement Grant Program awards money to interested eligible parties throughout Arizona. ADEQ uses these federal funds to implement on-the-ground water quality improvement projects to control nonpoint source pollution.

The following are examples of priority projects; they are being implemented on impaired waters, recognized in a TMDL and therefore have great potential to improve water quality.

7-001 - Turbidity Reduction Project Phase VII

Nutriosso Creek is impaired due to turbidity/suspended sediment concentration. Best management practices include the installation of elk fencing, water wells, drinkers, sprinkler system, vegetative planting and invasive weed control. The *Turbidity Reduction Project Phase VII* project supports the goals and objectives of the *Upper Little Colorado Watershed - Watershed-based Plan* and implementation recommendations from ADEQ's *Nutriosso Creek Total Maximum Daily Load* for turbidity.

7-004 - The Gibson Mine Total Maximum Daily Load Improvement Project

Pinto Creek is impaired by copper as documented in *Arizona's 2004 Integrated 305(b) Assessment and 303(d) Listing Report*. The *Gibson Mine Total Maximum Daily Load Improvement Project* will reduce copper loading from the Gibson Mine Tributary to Pinto Creek by reclamation of mine facilities, including removal of low-grade ore and tailings from the site. The Gibson Mine site has been identified in both the Phase I TMDL report and preliminary Phase II draft TMDL as the major source of contamination to Pinto Creek.

7-005 - Gila County Ground and Surface Water Improvement Project

Tonto Creek has been determined by ADEQ to be impaired by *E.coli* and nitrogen. The *Gila County Ground and Surface Water Improvement Project* is designed to protect and preserve the water quality in Gila County by replacing, repairing and upgrading current failing or substandard on-site waste treatment systems. This type project was highly recommended in the TMDL to reduce the levels of *E. coli* and nitrogen. Note that this project was not funded with incremental funds, although could have been.

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 how the monitoring component will be used to evaluate 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). Please refer to the GRTS database for more detailed information. See *Section V - Successful Implementation Projects*, for examples of actual load reductions attributed to successful project implementation. ADEQ continues to update the GRTS database to include load reduction numbers as information becomes available. See Attachment #4 for estimated load reduction information on current projects that address nitrogen, phosphorus and sediment.

Measuring Water Quality Improvements

Implementation monitoring is used to determine whether water quality improvement activities (319 projects and others) are carried out as planned and how effective the activities have been. ADEQ's TMDL Unit conducted effectiveness monitoring on Oak Creek, Nutrioso Creek, and the Hassayampa River in FY 05.

- Oak Creek still has periodic exceedances of the *E.coli* standard at Slide Rock State Park and other sites along the creek. ADEQ's strategy is to write a Phase II TMDL with effectiveness monitoring targets since the standard has changed since the Phase I TMDL was completed and exceedances still occur. ADEQ will compare the new data to the old standard as this may show less exceedances due to the best management practices being implemented through 319 funding.
- An Effectiveness Report is being written for Nutrioso and draft will be completed by December 2005. ADEQ is currently evaluating the data collected and preliminary results appear to show improvement.
- Hassayampa River (specifically the Cash Mine and McCleure Mine (unnamed tributaries) were monitored in support of the USFS remediation efforts at the McCleure Mine. Only one set of samples were collected and indicate that further remediation efforts are needed in the area.

ADEQ will provide results on the effectiveness monitoring at these three sites in the FY 06 Nonpoint Source Program Annual Report.

Monitoring can also be used to help project managers determine whether BMPs are implemented as specified in a watershed plan, environmental assessment, or contract, and how successful the BMPs were for a given set of project goals.

For example, several projects have been implemented to improve water quality in Nutrioso Creek, a waterbody impaired by turbidity. ADEQ has provided over \$500,000 to Mr. James W. Crosswhite, owner and manager of the EC Bar Ranch in Nutrioso, Arizona to carry out several recommendations presented in the Nutrioso Creek TMDL implementation plan. After four years of active implementation, ADEQ has dedicated resources to evaluate the effectiveness of these projects and has conducted monitoring throughout FY 04 and FY 05. It is our hope that monitoring results will conclude that the projects implemented on Nutrioso Creek have been successful and the waterbody is now meeting surface water quality standards.

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 navigable 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.

Therefore, ADEQ is required to revisit each waterbody where a TMDL study has been conducted to perform further monitoring and determine whether or not the waterbody has improved. Currently, ADEQ is assessing data from the effectiveness monitoring projects on Oak Creek, Nutrioso Creek, and Hassayampa River. To date, load reductions achieved on a watershed or waterbody scale have not been calculated. As stated above, ADEQ will provide results on the effectiveness monitoring and reductions in nonpoint source pollutant loading in impaired waters and priority watersheds in future reports.

At a project level, ADEQ is required to enter estimated load reductions for all 319 funded projects in EPA's Grant Reporting and Tracking System database (see Attachment #4). There are many challenges to this requirement as nonpoint source load reductions are difficult to quantify, recognizing the natural variability and the difficulty in precisely predicting the performance of management measures or BMPs over time. Model projections are used for measuring load reductions in water quality improvement grant projects. Using nonpoint source load reduction models is a continuous struggle as there are many different modeling programs and it is necessary to know what model will provide the correct end result. Another challenge is the level of technical expertise (i.e., hydrology, pollutant loading processes, limitations of environmental data) needed to run a model and if the grantee or an ADEQ project manager has the particular expertise

needed to provide estimates on load reduction. Nonetheless, information and load reduction data is uploaded as it is received either from grantees or project managers.

More and more projects in GRTS have load reduction information. Obtaining more load reduction data will be one of the main focuses again in FY 06. Refer to GRTS for more detailed information on load reductions.



Arizona's FY 05 Nonpoint Source Annual Report Section IV – Program Enhancements

Calculating Load Reductions

Again in FY 06, ADEQ will request that grant applicants provide estimates of load reductions. ADEQ will continue to be pro-active in securing this information from grantees. Proposed projects with estimated load reductions will rank higher in the evaluation phase than projects that do not have projected quantitative measures of success. If estimated load reductions are unknown, ADEQ will encourage monitoring either by the grantee or ADEQ so that we can obtain data and quantify success for GRTS reporting. In FY 06, ADEQ will learn more about the tools and models available to calculate load reductions and hopes to become a leader in the nation on GRTS load reduction input. Evaluating and assessing BMP effectiveness and obtaining more load reduction data will remain top priorities.

Volunteer Monitoring

ADEQ had planned to expand the Volunteer Monitoring Program and increase the number of volunteer groups that are trained on water quality sampling concepts and techniques in FY 05. However staffing shortages and budget constraints have tempered this goal. To the extent that ADEQ can participate in volunteer monitoring, training will be done in accordance with curriculum developed by ADEQ and GateWay Community College or other similar training courses. The goal of the ADEQ Volunteer Monitoring Program is to train and encourage the volunteer groups to collect water quality data that is credible and defensible and can be used by ADEQ for research, screening or assessment purposes. In order to use the data for these purposes, ADEQ must also ensure that the volunteer groups can produce Quality Assurance Project Plans (QAPP) and Sampling and Analysis Plans (SAP) for their sampling projects. Having the Volunteer Monitoring Program would also provide grantees with the technical expertise to develop QAPPs and SAPs and collect credible and scientifically defensible data. Once established, ADEQ would also have to make sure QAPPs and SAPs are current and reflect any changes in monitoring objectives. ADEQ strongly supports the concept of properly trained volunteer monitors and will continue working towards this goal as staffing and resources allow.

Grant Agreement

ADEQ continues to work closely with the Arizona Attorney General's Office and the U.S. Forest Service's legal counsel to resolve ongoing contracting issues. We anticipate that concurrence will be reached in FY 06. ADEQ and the Forest Service will continue to work on the terms and conditions of the Grant Agreement in hopes that the Forest Service will be able to enter into an agreement with ADEQ to manage nonpoint source pollution and improve water quality in Arizona. With approximately 15% of the land in Arizona managed by the Forest Service, ADEQ is committed to developing a Grant

Agreement which will work for the Forest Service while maintaining conformance to the Grant Program.

CPP

In FY 06, the Arizona Continuing Planning Process (CPP) last updated in 1993, will be rewritten and a new CPP will be finalized to fulfill the requirements of Section 303(e) of the Clean Water Act. The CPP for water quality management is a compendium of procedures for planning and implementing water quality management programs in Arizona. It is a guidance document for matters of process related to the protection of the physical, chemical and biological integrity of the waters of the state. The CPP addresses procedural guidelines and provides a framework for most state-mandated water quality management programs designed to achieve and maintain beneficial uses of water. This document is intended to be used as a reference tool by all persons interested in water quality management in the state of Arizona.

According to Arizona Revised Statutes Title 49, ADEQ has been given authority for planning and implementing water quality management programs. This authority includes establishing aquifer boundaries, implementing an aquifer permitting program, adopting surface and aquifer water quality standards, developing agricultural and other nonpoint source management programs, and performing remedial actions through the Water Quality Assurance Revolving Fund (WQARF). This document describes the current processes that ADEQ uses for planning and implementing water quality management programs.

Arizona's CPP is an important tool that addresses how Arizona will accomplish federal, state and local water quality management planning objectives. The CPP outlines how water quality can be better managed and controlled at both statewide and local levels with improved coordination, collaboration and combined agency efforts. Through the CPP update, Arizona can better achieve restoration, maintenance and protection of the beneficial uses of both surface and ground water bodies.



Arizona's FY 05 Nonpoint Source Annual Report Section V - Successful Implementation Projects

Sedona Gun Range Lead Removal and Site Restoration

Success Summary

The Jordan Road Shooting Range (JSRS), an outdoor shooting range for pistol and rifle target practice and trap and skeet shooting using clay pigeons, operated on U.S. Forest Service Land under a special use permit from 1961 to 1997. They occupied approximately 5 acres of land with drainages to nearby Oak Creek. Range operations resulted in the deposition of lead onto the site from the use of firearms, as well as debris from clay pigeons resulting in the deposition of material containing polynuclear aromatic hydrocarbons.

The *Sedona Gun Range Lead Removal and Site Restoration Project*, ADEQ Project #4-017, was awarded a Water Quality Improvement Grant on March 14, 2002. The total project cost for the removal and remediation of environmental contaminants was \$316,132. The project was completed in June 2004.

The Forest Service contracted with Weston Solutions and their subcontractors to clean up the site at the JSRS. The major tasks involved in this project included:

- the removal and disposal of asphalt walkways, clay pigeon debris, lead projectiles from firing points, firing lines and downrange areas
- the 5 acre site was graded, prepared, and seeded with a native seed mix
- BMPs for erosion control were installed including straw bales, wattles, and mulching
- Soils testing to determine the removal of contaminated material in excess of 400 mg/kg.

The level of lead contaminants in the soil were substantially reduced to at or below 400 ppm as a result of project remediation measures. 423 tons of clay pigeon debris and 800 tons of excavated soil were removed from the area. This is opposed to the original contracted amounts of 186 tons of clay pigeon debris and 627 tons of excavated soil. This was done at no additional charge which demonstrates considerable economic benefits as a result of funding with section 319 dollars.

Erosion and runoff BMPs have been implemented at the project site to protect water quality in Oak Creek, a unique water. The site is immediately adjacent to Mormon Wash which drains directly to Oak Creek less than a mile downstream. The implemented BMPs provide high quality nonpoint source pollution protection on threatened waters.

As a result of the successful lead and contaminant cleanup a new, multi-purpose "hub" trailhead is planned within the confines of the project site. The trailhead will serve three

major trail systems: the Jim Thompson Trail, Bins Mesa Trail, and Sedona Urban Trails. This public outreach component of the Sedona Gun Range 319 success story is a direct result of the elimination of lead contamination to public health.

Note that this project was submitted to EPA Region IX and forwarded to EPA Headquarters as a success story from Arizona. This project was one of four submitted by EPA Region IX.

The Nature Conservancy 3 Links Farm

Success Summary

The Nature Conservancy's 3 Links Farm project, located near Benson, Arizona, improved stream conditions on approximately six miles of the San Pedro River (stream conditions as well as historically farmed agricultural fields on both sides). In order to accomplish the goals and measure effectiveness, the Nature Conservancy implemented the following:

- Relocated cattle that were trespassing within the river.
- Created an 814 acre Riparian Management Zone surrounding the six miles of river. The fence line serves to keep out cattle, ATV travel, and other activities inconsistent with improving the health of the ecosystem. The fence line also encourages vegetation growth along the stream banks.
- Retired over 3000 acre-feet of groundwater pumping from the stream alluvium to replenish surface water flow. The project also monitored well depth.
- Developed and executed a Quality Assurance Project Plan to ensure proper and consistent water quality sampling of various points along the river channel.
- Four stream channel contour cross sections were surveyed and vegetation transects were established on either side of the channel so to track changes in both the stream morphology and riparian plant communities.
- Interested groups and individuals were invited to the ranch spanning from February 2003 to June 2005. Speakers were present at the events covering everything from the work within the river, groundwater interaction and the Native American artifacts that are located on the project.

In conclusion, this project is a success as nonpoint source pollution was addressed through a variety of best management practices. The Nature Conservancy plans to continue tracking vegetation health and monitoring surface water quality in order to quantify the cumulative effects.

Coal Creek Riparian Corridor Enhancement Project

Success Summary

Coal Creek is located in the southeastern corner of the Apache-Sitgreaves National Forest in the Clifton Ranger District along Highway 78 near the Arizona/New Mexico Stateline. The project area encompasses two major drainages: Coal and White Mule Creeks which cross the highway at four locations. The original road construction in this area did not allow for proper drainage during high flow events and thus resulted in flooding of the roads. The primary project objectives of the *Coal Creek Riparian Corridor*

Enhancement Project were to improve effectiveness of the culvert crossings for motorists and to allow the natural flow to occur within the affected watersheds. The secondary objectives were to reduce erosion and maintenance, enhance aesthetics and, improve wildlife habitat conditions and riparian conditions in Coal Creek and other nearby creeks.

The best management practices applied to achieve the project goals included:

- Highway 78 realignment and culvert battery reconstruction
- Cottonwood and willow planting
- Under-story removal and prescribed burning
- Corridor fencing
- Proper planned rest/grazing guidelines for the livestock permittee on Blackjack allotment which would enable recovery of the riparian corridor

Public involvement activities included presentations made to District personnel at annual functions, including recognition of ADOT for funding and installing culverts at Coal Creek. ADOT also included articles of the projects progress in the local papers. A brass plaque was imbedded into a large boulder and placed at Coal Creek Campground.

During the course of this project the USFS discovered the native Chiricahua leopard frog which they previously believed to be extinct from the area. The frog was reconfirmed in the area in 2004. Another accomplishment of the project is that the USFS were able to collect baseline water quality data to establish a trend within Coal Creek.



Arizona's FY 05 Nonpoint Source Annual Report Section VI – Public Awareness

Several times throughout the year, the Watershed, Assessment, and Grants Unit has conducted education/outreach efforts to increase the public's awareness of nonpoint source pollution impacts to surface and groundwater resources. Below are descriptions of the events and ADEQ's role in increasing public awareness of nonpoint source pollution and public involvement in addressing it.

Water Expo at State Capital

The University of Arizona's Water Sustainability Program, with support from Central Arizona Project (CAP) and Salt River Project (SRP) coordinated a Water Expo to inform and educate Arizona state legislators about the current efforts towards water sustainability in Arizona. ADEQ was invited to be a part of this opportunity to share our current efforts. The Water Quality Improvement Grant Team put on an educational display at this event for the legislators and Arizona Governor, Janet Napolitano.

Tres Rios Nature Festival

This Festival was an opportunity for the public to celebrate and learn about wildlife, river ecology, water resources, history, and the heritage of the Gila, Salt and Agua Fria Rivers. Through the use of models, posters, and hands-on opportunities, ADEQ's display booth and staff have educated over 10,000 people in the past two years at this event.

Master Watershed Stewards Water Quality Demo

ADEQ, along with the Master Watershed Steward Program, Gateway Community College, and the University's Cooperative Extension put on a water quality demo at Papago Park for the students attending the Master Watershed Steward course. ADEQ's staff coordinated all of the demo stations and provided technical knowledge and principles to the students on water quality sampling.

The Nature Conservancy 3 Links Farm Monitoring

ADEQ, together with the Nature Conservancy, participated in surface water quality monitoring of the San Pedro River. Sampling was conducted every quarter to determine water quality trends and effectiveness of the water quality improvement projects implemented.

Willcox Water Forum

ADEQ presented groundwater study results of the Wilcox Playa to concerned citizens as well a map display to citizens and state and federal agencies.

Statewide Meeting - Master Watershed Steward Program

ADEQ participated in the Master Watershed Steward Program's state wide meeting. This meeting consisted of sharing feedback about the Master Watershed Steward Program. Attendees also learned about pedagogy, presentation, and program delivery. ADEQ staff provided grant, assessments, and monitoring information to the group.

Envirothon

Envirothon is a natural resources competition for high school students. Teams of five students work to answer natural resource questions and develop solutions to environmental problems. Envirothon integrates five areas of study: forestry, aquatics, wildlife, soils, and an environmental issue that changes each year. With Section 319 funding, ADEQ has been able to support the Arizona Envirothon since its establishment in 1998. Arizona's high school students are the hope for the future and Envirothon provides a great learning experience that can strengthen the foundation for environmental stewardship.

Arizona Water Summit

The Summit brought together tribal representatives, university researchers, water managers and government officials to discuss water resources, water management and water conservation in Arizona and the Southwest. Session topics included:

- Climate Change and Water Resource Management
- Creating a Culture of Conservation
- Water and Electricity
- Urban Water Sustainability

Southwest Sustainability Expo

This event provided the latest technologies and products for solar, wind, hydrogen and biomass energy; green building materials and design; and alternative fuel vehicles and concept cars. The Southwest Sustainability Expo was extensively marketed through trade and consumer media and attracted thousands of visitors and 75 vendors. A Water Quality Improvement Grant workshop was presented as part of the scheduled events.

Water Quality Improvement Grant Program Outreach

The Watershed, Assessment and Grants Unit provides program oversight for the Water Quality Improvement Grant Program. This includes assuring compliance with state and federal law, guidance and policy. Staff are responsible for holding workshops for the public which describe the grant program and how to apply. Once the applications are received, staff is responsible for processing of the grant applications including receipt, evaluation, and award. After the grants are awarded, staff must negotiate and execute grant agreements, maintain contractual and programmatic files and provide project oversight and management.

Water Quality Improvement Grant Workshops – July 2004 - June 2005

Ten grant workshops were held around the state in July and August of 2004 in preparation for the 2004 Grant Cycle (Cycle 7). During FY 05 (June 2005), two workshops were held for the 2005 Grant Cycle (Cycle 8). 83 people attended in 2004

and in June of 2005, 30 people attended. The Grants team implemented a few new interactive approaches to the Cycle 8 grant workshops and attendees seemed to enjoy the more active role they played while learning. During the workshops, staff covered many aspects of nonpoint source pollution, including: causes and sources of pollution, TMDL studies, watershed-based plan guidance, and recommended management measures to manage nonpoint source pollution.

2004 Project WET (Water Education for Teachers) Water Festival

The Water Festival is an opportunity for 4th graders to learn about Arizona's water resources by participating in fun, interactive activities. Interactive activities are developed to enhance critical thinking and build an understanding and awareness of local water resources; the concept of a watershed; groundwater/aquifers; the water cycle; and the importance of water in our lives. The Water Festival is correlated to the Arizona Academic Standards. The Water Festival was held in two locations in Arizona, a rural location and an urban location. In FY 05, the event reached over 1,500 students.

Verde River Days

A consortium of organizations including ADEQ, U.S. Forest Service, and U.S. Fish and Wildlife Service presented and distributed literature on environmental topics. ADEQ presented an interactive "wheel of fortune" where the public received prizes for correctly answered environmental questions.

University of Arizona - Master Watershed Steward and NEMO Programs

With the help of our partner, the University of Arizona, through the Master Watershed Steward and NEMO programs, ADEQ has been able to provide technical assistance on water resource management and assist many more watershed groups. The coordinators for both of these programs have been a huge help to ADEQ and the watershed partnerships statewide. They've provided education, maps, technical assistance, review and comment, etc. Their advocacy has benefited ADEQ tremendously.



Arizona's FY 05 Nonpoint Source Annual Report Section VII – Program Highlights

Clean Colorado River Alliance

The Clean Colorado River Alliance was formed by Governor Napalitano to develop recommendations to deal with existing water quality problems to ensure Colorado River water quality addresses the needs of Arizona, now and in the future. ADEQ is the lead on this project which commenced in April, 2005. The Alliance is charged with developing an action plan to deal with pollution affecting the Colorado River. The final report is due to Governor Napolitano on Dec. 9, 2005 and the results will be documented in the FY 06 Nonpoint Source Annual Report. More detailed information on the Alliance and their progress can be located at <http://www.azdeq.gov/environ/water/ccra.html>.

Impaired Water Identification Rule

In June 2004, staff began stakeholder effort to explore revisions to the Impaired Water Identification Rule. The Impaired Water Identification Rule establishes Arizona's rules for determining surface water impairment (303(d) listings) and establishes credible data requirements. Section 303(d) of the Clean Water Act and implementing regulations in 40 CFR 130.7 require that states compile a list of impaired surface waters, those not meeting standards, every two years. Arizona State statute, A.R.S. § 49-232(C), requires that the Department adopt by rule the methods to be used in identifying impaired waters, including minimum data requirements, quality assurance and quality control requirements, appropriate water sampling and analytical techniques, statistical and modeling techniques, and methods for including and removing waters from the 303(d) List of impaired waters. In accordance with state statute, the Impaired Water Identification rules, 18 A.A.C. 11, Article 6, were adopted in 2002.

Rule revisions are being proposed to provide greater assurance that 303(d) listings are accurate and to improve consistency with federal listing guidance. All of the changes will improve protection of Arizona's surface water resources and will make the assessment process more efficient by reducing federal intervention. The most substantive revisions to the rule are:

- Simplifying the Credible Data requirements in R18-11-602;
- Repeal of the Planning List in R18-11-604 - the current rule does not address all methods by which a water can be placed in the Planning List;
- Modifications to determining impairment in R18-11-605, including;
 - Evaluation of chronic standards and criteria for the Aquatic and Wildlife designated use;
 - Modification of the binomial distribution method for identification of impaired waters;
 - Modification of listing methods for *E. coli*, including the use of a screening value;

- Increase in the minimum sample size to evaluate acute and chronic aquatic and wildlife standards and criteria, *E. coli* standards, and nitrate criteria;
- Exceptions to the minimum sample size requirements once sufficient samples are collected to demonstrate impairment;
- Decrease in number of exceedances needed to make a listing based on statistically-derived standards;
- Additions to weight-of-evidence considerations; and
- Addition of more explicit requirements for determining a surface water is no longer impaired.

208 Program Improvements

208 Consistency Review Form

In FY 05, 208 Program staff developed a new application form (Attachment #2) that requires applicants or the ADEQ permit writer to provide pertinent information to the program to make the consistency decision. ADEQ has developed a hierarchy of reviews: no review needed, expedited review, or a full review. This change has resulted in a more efficient consistency review process by reducing the time spent on each review and therefore cutting down on the backlog of reviews.

Service/Planning Area GIS Covers

In September 2004, ADEQ hired of an intern to develop GIS covers (and associated databases) of service/planning areas and locations of all waste water treatment plants within the state. This new tool has been helpful when reviewing permit applications for 208 consistency and amendments to determine the other facilities in the area. The eventual goal is to provide this information via ADEQ's website.

2004 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 so named 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.

The final Integrated Report was revised to include additional filing decisions made by EPA. EPA made the decision to add 19 surface waters and eight additional pollutants on waters already listed to Arizona's list and therefore resulted in the need to issue a second draft in late FY 04. All corresponding tables, maps and assessment statistics were changed to reflect these additions which delayed the final submittal to EPA until late August. The final 2004 Integrated Report was submitted to EPA in late August 2004 and is available at: www.azdeq.gov/environ/water/assessment/2004.html.

Outcome Framework Workshop

In February 2005, the Watershed, Assessment and Grants supervisor attended an Outcome Framework Workshop held at EPA in San Francisco. The workshop was excellent. In May, The Renselaerville Institute, with funding from EPA, was able to travel

to Phoenix to provide the same workshop to the Grants team and other ADEQ staff. Several outcomes resulted from the workshop:

- A mission statement was developed for the Water Quality Improvement Grant Program and added to the logo. The mission is *Working To Make Arizona's Waters Clean and Safe*.
- Created a program goal that was added to the 2005 Request for Grant Applications (Attachment #3) - *Increase the number of awarded projects funded for improving water quality on impaired waters from 35% in 2004 to 50% in 2006*.
- Added to the Request for Grant Applications a statement titled *Results Matter* and provided information about the ideal project - *The ideal project is one that can verify or demonstrate water quality improvements*.
- The Grants team now thinks of themselves as investors and asks the following questions when reviewing an application:
 - What are we buying?
 - What are the chances we will get it?
 - Is this the best use of money?

The Outcome Framework Workshop has enabled ADEQ to perform at a higher level by providing focus, not upon activities and procedures, but on the results that we wish to achieve.

Web Site Update

ADEQ updated and revised their Watershed Management web site link (www.azdeq.gov/environ/water/watershed/index.html) to include a link on Water Quality Improvement Plans. This newly developed link provides information on both watershed-based plans and TMDL implementation plans. The NEMO web site provides an inventory on which plans are complete and links to the plans. The elements necessary to have an acceptable watershed-based plan per EPA's guidance are included. Lastly, an explanation on the importance of watershed-based planning in relation to priority grant funding is incorporated. Watershed-based plans, TMDLs, and TMDL implementation plans provide project ideas. Projects which include activities identified in a watershed-based plan or TMDL implementation plan will be given priority for ADEQ's Water Quality Improvement Grant Program.

Grant Manual

ADEQ's Water Quality Improvement Grant Manual (2002-2004) expired in FY 04, therefore ADEQ updated the grant manual in FY 05 to facilitate compliance with newly established state and federal requirements. As a state agency authorized to provide federal funds, ADEQ is required to meet certain federal requirements and assure that grantees (sub-awardees) also comply with all federal requirements. In addition, ADEQ worked with the Attorney's General's Office to receive approval on the Grant Agreement (contract). Interactive electronic application forms were developed to make applying easier and more efficient. Questions on the application reflect information needed by ADEQ and EPA for entry into GRTS, including estimated load reductions. Ways to receive priority through the program were expanded to include projects implemented to improve impaired (and not attaining) surface waters and projects that provide estimated

pollutant load reductions. ADEQ's new manual was used for the last grant cycle and will be used until 2007.

NEMO

In FY 05, the NEMO contract between the University of Arizona and ADEQ was amended which provided an extension to NEMO program and changed the scope of work. The Watershed Characterization and Classification texts (original contract) will be expanded to complete watershed-based plans containing all EPA's nine essential elements. The following were added as tasks to the NEMO contract:

- Estimates of the amount of technical and financial assistance to implement the plan (element #4);
- Schedule for implementing management measures (element #6);
- Interim, measurable implementation milestones (element #7);
- Set of criteria that can be used to determine progress in attaining load reductions and water quality improvements (element #8); and,
- Monitoring component to evaluate the effectiveness of proposed implementation efforts (element #9).

The first of the three plans to be expanded to a complete watershed-based plan will be the Upper Gila Watershed. NEMO will use a consensus building decision tool to establish weights for individual environmental factors for the 10-digit HUC classifications; this process will allow for incorporating stakeholder concerns in the classification process. Concurrent with the development of the Upper Gila Watershed-Based Plan, the NEMO program will continue establishing working relationships with the stakeholders within the Verde and Bill Williams watersheds and initiate the expansion of the Verde and Bill Williams plans to incorporate all nine elements into their watershed-based plans.

In addition, NEMO will expand their service and begin working and collaborating with other active watershed groups to assist them in the development of watershed-based plans. For example, several watershed partnerships already exist and are in the process of developing their own plans. These groups include: the Upper Agua Fria Watershed Partnership; the Benson Community Water Alliance (formerly the Middle San Pedro Watershed Partnership); the Little Colorado River Watershed Coordinating Council; and, the Northwest Arizona Watershed Council. NEMO will work with these groups and will provide technical assistance in developing complete watershed-based plans. Technical assistance will include education and training on the nine essential elements, outreach to and coordination of stakeholders and land use decision makers in plan development, and application of NEMO GIS and decision models to support plan development.

**ADEQ Water Quality Improvement Grant Projects
FY 05 Awards**

Apache

*7-001: EC Bar Ranch

Turbidity Reduction Project Phase VII

\$60,000.00

Best management practices will be implemented to control nonpoint source pollution and restore natural resources. Project BMPs include the installation of elk fencing, water well, drinker, sprinkler system, vegetative planting, and invasive weed control. This grant supports the goals and objectives of the Upper Little Colorado Watershed Watershed-based Plan and implementation recommendations from ADEQ's Nutrioso Creek Total Maximum Daily Load for turbidity. Partnerships include: Steward Incentive Program, Environmental Quality Incentive Program, Arizona Water Protection Fund, Arizona Game and Fish Department, US Fish and Wildlife, Western Region Sustainable Agriculture Research and Education and the U.S Forest Service. The project area includes about 3 miles of Nutrioso Creek located on the 400 acre EC Bar Ranch owned by Mr. Crosswhite.

Cochise

*7-002: Coronado RC&D Area, Inc.

Campomocho-Sacaton Watershed Stormwater Runoff Control Phase II

\$179,800.00

This project will reduce the amount of sediment produced off 12,800 acres of rangeland in the Campomocho sub-watershed of the Willcox Playa. The objective is to manage precipitation that falls in the upper watershed, utilizing it for plant growth and reducing runoff. The best management practices that will be implemented include installing sediment retention structures and contour ripping and seeding to reestablish vegetation. Water quality will be improved by reducing the amount of sediment being transported off the upper watershed during rain fall events. In addition to erosion control, best management practices will be implemented to improve wildlife habitat and reduce safety concerns brought by flooding and sediment deposition.

Coconino

*7-003: Boy Scouts of America

Camp Raymond On-site Grand Canyon Council Sewer System Improvements

\$150,600.00

The primary goal of this project is to reduce potential pollution to a pristine area of the Verde Watershed. The goal is to effectively eliminate any potential contamination to the ground water, adjacent springs, streams and an existing well by upgrading the sewer systems at the camp that have been in place for over 30 years. Modifications to include septic tank replacement, addition of secondary treatment facilities, addition to subsurface disposal facilities, and conversion of individual campsite pit toilets to sealed vault and haul units.

Gila

*7-004: Franciscan Friars of California, Inc.

The Gibson Mine Total Maximum Daily Load Reduction to Pinto Creek

\$570,106.00

The Franciscan Friars of California, Inc. and Brown and Caldwell will remediate the abandon Gibson Mine (near Globe) to improve water quality in Pinto Creek. Pinto Creek is impaired by copper and the Gibson mine has been identified in both the Phase I Pinto Creek Total Maximum Daily Load (TMDL) report and the preliminary Phase II TMDL as the major source of copper contamination.

7-005: Gila County Division of Gila County Ground and Surface Water
Health and Community Improvement Project Services \$252,467.00
The Gila County water quality improvement project will protect and preserve the ground water and surface water in Gila County by replacing, repairing, and upgrading current waste water systems (i.e. cess pools, pit privy, structurally unsound and/or failing septic systems) in the Tonto Creek (headwaters) and Christopher Creek Total Maximum Daily Load focus areas. As a result, ground water and surface water will improve as well as the health and safety of residents.

Graham

7-006: Gila Watershed Partnership
Central Detention Dam Rehabilitation \$15,600.00
The Gila Watershed Partnership will rehabilitate the Central Detention Dam, a 27-foot high earthen structure that was built in 1948 to serve as a flood control dam. It serves to reduce erosion during periods of heavy rainfall and allows for maximum recharge to the hydrologic system. However, since 1948, the detention dam has been poorly maintained and desperately needs maintenance. Maintenance practices include: cleaning the spillway, removing debris and sediment, and clearing the excessive vegetation (mesquite, creosote, and salt cedar) in the outlet structure and emergency spillway. Off-highway vehicle damage will also be repaired and a fence will be installed to serve as a vehicle deterrent. Lastly, signage will be placed to provide the necessary education and outreach.

Greenlee

7-007: Gila Watershed Partnership
Kaler Ranch Erosion Control Project \$167,000.00
The goal of this project is to preserve, protect and improve water quality by reducing sediment discharge and excess organic input to the San Francisco River. This project, located in the San Francisco River sub-watershed of the Upper Gila, includes extending and improving road drainage culverts that are used to drain water from a highway and construct streambank protection structures. The project also includes an education and outreach effort designed to inform and educate the community.

Santa Cruz

7-008: Coronado RC&D Area, Inc.
Partnership to Improve Water Quality in the Upper Santa Cruz Watershed \$249,302.00
This project addresses sediment production on the entire Red Rock Canyon Watershed that drains the Canelo Hills east of the Town of Patagonia in Santa Cruz County. 95% of the Red Rock Watershed is contained in 5 grazing allotments. These allotments have joined together to implement best management practices over the entire watershed. The best management practices will include alternative sources of water in the uplands, fencing, and revegetation.

*Funded with 319h Incremental Funds.

208 Consistency Review Form



This facility review is based on information obtained from the applicant, permit writer, the associated Water Quality Management Plan (WQMP) and amendments, and other related documents as cited.

Permit Writer or Applicant – Please Complete Sections 1-14

Facility Information	Explanation (Provide a brief description)
1. Facility name	
2. Permit category - (a, b, or c) a. AZPDES (describe discharge) b. Individual APP (describe facility) c. General permit (describe type)	
3. Facility location (<i>watershed, county, Lat/Long or Township, Range & Section</i>)	
4. Type of permit - (a, b, c, or d) a. New WWT facility b. AZPDES renewal c. Modification to an existing facility d. On-site subdivision	
5. Attach a descriptive map <i>Include a, b, c, & d</i> a. Facility/site location b. Discharge location(s) c. Adjacent urban areas (<i>the nearest urban area may be miles away</i>) d. Nearest surface water(s)	
6. Annual average daily flow <i>Note: If renewal with no changes in discharge location, technology, treatment and disposal methods, and capacity - STOP HERE</i>	
7. Change in annual average daily flow – (a, or b)? a. No change b. Increase (explain)	
8. Treatment method (explain)	
9. Change in treatment method – (a, b, or c)? a. No change b. Improvement to technology c. Septics/alternative systems (attach ADEQ Forms 113 and 115)	
10. Effluent disposal method(s) <i>If discharge is to a surface water or lake, provide name of surface water.</i>	

11. Change in effluent disposal method (a, b, c, or d)? a. No change b. Change in location (explain) c. Change in method (explain) d. Additional locations (explain)	
12. Sludge handling – describe how sludge will be handled	
13. Entity type a. Municipality/public utility b. Private utility c. Semi public (<i>sanitary district</i>) d. Other (<i>individual homeowner or homeowners association</i>)	
14. Service area (if known) <i>Attach map & legal description</i> a. New service area for CC &N b. Expansion of existing service area c. Increase # of lots in subdivision	

For ADEQ 208 Review Staff Only –

Facility Information	Explanation (Reference the page # and COG WQMP)
1. DPA	
2. Permit number	
3. Service area <i>Attach map & legal description</i> a. New service area for CC &N b. Expansion of existing service area c. Increase # of lots in subdivision	
4. Planning area <i>Attach map & legal description</i> a. New b. Expansion of planning area	
5. Designated Management Agency a. Facility is a DMA b. Distance to nearest DMA c. Ordinance requiring hookup	

Does the facility meet any of the following conditions?

Special Conditions	Explanation
6. Discharge to a unique water?	
7. Discharge to an impaired/not attaining water?	
8. Pollutant load allocations specified in a TMDL?	
9. Located in a nitrogen management area?	

10. Change in ownership? <i>(Pima County only)</i>	
11. Other <i>(compliance issues, site specific standards, etc.)</i>	

Based on Section 208 of the Federal Water Pollution Control Act, Arizona Administrative Code R18-9-108(B)(10), and/or the Certified Area WQMP, this application for permit is determined to be:

Determination By:

Date:

Consistent	Not Inconsistent	Inconsistent	208 Coordinator	Unit Manager	Section Manager

If determination is "inconsistent," an amendment to the Water Quality Management (208) Plan must be processed and submitted for approval by ADEQ.

If determination is "Not inconsistent," this means the project was not identified in the current 208 Water Quality Management Plan, but is consistent with regional water quality management goals.

The 2005 Grant Cycle is underway. 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.

The Money



Approximately \$1.5 million is available for multiple awards. The funds are provided by section 319(h) of the Clean Water Act, administered by the United States Environmental Protection Agency.

The Requirements

For a grant application to be considered eligible for evaluation, it must accomplish all of the following.

- ◆ **Improve**, protect or maintain water quality in a water body in the state of Arizona by addressing a nonpoint source of pollution.
- ◆ **Demonstrate** acceptable water quality management principles, sound design and appropriate procedures.
- ◆ **Yield benefits** at a level commensurate with project costs for the benefit of the state.
- ◆ **Have an on-the-ground implementation component** within the state of Arizona.
- ◆ **Provide for at least 40 percent** of the project costs as non-federal match.
- ◆ **Support** the ADEQ, Water Quality Division Mission (www.azdeq.gov/environ/water/index.html).
- ◆ **Be eligible** under applicable state and federal regulations, and comply with the application process described in the *2004-2007 Water Quality Improvement Grant Manual*.

All Waters in Arizona Are Clean and Safe



The Evaluation



Eligible applications will be evaluated based on the following criteria.

1. Scope of Work
 - ◆ Water Quality Problem
 - ◆ Action Plan
 - ◆ Expected Outcomes
 - ◆ Project Evaluation
 - ◆ Public Education, Outreach, and Partnerships
 - ◆ Key Personnel
 - ◆ Location & Site Plan
2. Project Milestones
3. Water Quality Improvement Plan(s)
4. Budget
5. Compliance with the grant application process

Note - applicant interviews and site visits may be requested.

The Deadline

The deadline to submit grant applications for this grant cycle is **3 p.m., October 5, 2005**.

The Awards

We expect to make award announcements in January 2006.

Tips:

- ◆ Program Goal - Increase the number of awarded projects funded for improving water quality on impaired waters from 35% in 2004 to 50% in 2006.
- ◆ Results Matter - The ideal project is one that can verify or demonstrate water quality improvements.

The Application

The *2004-2007 Water Quality Improvement Grant Manual* details the grant program and includes the application forms. Note that minor revisions have been made to the grant application instructions and forms. Both the complete grant manual and revised grant application can be downloaded from ADEQ's Water Quality Improvement Grant Program web site.

azdeq.gov/environ/water/watershed/fin.html

If you wish to have a hard copy of the grant manual sent to you, please call Danese Cameron at (602) 771-4569 or, toll free, (800) 234-5677, Ext. 771-4569.

2005 Water Quality Improvement Grant Workshop Schedule

Location	Date / Time	Place	Address
Phoenix	June 22nd at 1:30 p.m.	Arizona Department of Environmental Quality, Conference Room 5100B	1110 W. Washington St.
Show Low	June 29th at 2 p.m.	City Hall Council Chambers	200 W. Cooley
Tucson	July 13th at 1:30 p.m.	Tucson-Pima Public Library Meeting Room Lower Level 1	101 N. Stone Ave.
Sedona	July 27th at 1:30 p.m.	Red Rock State Park Visitors Center	4050 Red Rock Loop Rd.
Safford	August 10th at 10 a.m.	Graham County General Services Building	921 Thatcher Blvd.



Please RSVP. If we do not have at least five people signed up to attend, the workshop will be cancelled. We can only notify and reschedule a meeting with those who have contacted us.

RSVP to Jean Ann Rodine, Grant Coordinator, at (602) 771-4635, (800) 234-5677, Ext. 771-4635, or jr4@azdeq.gov.

ADEQ is committed to complying with the Americans with Disabilities Act. If any individual with a disability needs any type of accommodation, please contact ADEQ at least 72 hours before the workshop.



Load Reductions for Project That Address Nitrogen, Phosphorus and Sediment

Attachment #4

State Project #	Grant#	Project#	Project Title	Pollutant Type	Amount	Unit
2-009	98960800	3	Road Rehabilitation To Reduce Sediment In San Simon Watershed	1100 Sedimentation-Siltation	2.3	tons/year
3-012	98960800	13	Greenwood Sediment Reduction Project	1100 Sedimentation-Siltation	TBD	
4-001	98960800	15	Palo Alto Runoff Control	Sediment	27,900	tons/year
5-002	97917302	4	Vegetative Rehabilitation to Control Runoff and Sediment from Frye Mesa	1100 Sedimentation-Siltation	17.7	tons/year
5-008	97917302	6	Trees for the Rim	1100 Sedimentation-Siltation	89.2	tons/year
5-013	98960800	21	Maughan Ranches - Upper Hassayampa River Watershed Restoration	Drainage Area #1 - Crooks-Maverick: 1100 Sedimentation-Siltation Drainage Area #2 - Wagoner: 1100 Sedimentation-Siltation	Area #1 - 37.5 Area #2 - 32.1	tons/year tons/year
5-014	97917302	1	Demonstration of an Algal Bioreactor Filtration System for Removal of Nutrient Contamination	0920 Nitrogen	TBD	
5-016	97917302	2	Santa Cruz River Riparian Revegetation Plan	1100 Sedimentation-Siltation	2.3	tons/year
6-001	97959603	5	Cottonwood Creek Restoration Through Sediment Control	1100 Sedimentation-Siltation	16.2	tons/year
6-002	98960801	31	Cottonwood Creek Restoration Through Sediment Control	1100 Sedimentation-Siltation	0	tons/year
6-003	97959603	13	Upper Verde River Wildlife Area Turbidity Reduction Project	1100 Sedimentation-Siltation	5.7	tons/year
6-004	97959603	7	EC Bar Ranch Turbidity Reduction Project Phase VI	Drainage Area #1 - PhaseVI 1100 Sedimentation-Siltation Drainage Area #2 - Reach 6 1100 Sedimentation-Siltation	Area #1 - 8.3 Area #2 - TBD	tons/year tons/year
6-007	97917302	14	Santa Cruz River Sediment Control	1100 Sedimentation-Siltation	14.4	tons/year
	98960801	32		Sediment	27,878	tons/year
6-008	97917302	15	Overgaard Townsite Water Protection Project Phase II	0920 Nitrogen 1100 Sedimentation-Siltation	278 20.3	LBS/year tons/year
6-010	97917302	16	Peterson Wash Stabilization	1100 Sedimentation-Siltation	6.5	tons/year
6-012	98960801	34	Point of Pines Crossing Rehabilitation Project	1100 Sedimentation-Siltation	TBD	

6-013	97959603	8	Boy Scout Camp Geronimo On-Site Sewer Improvements	9008 Pathogens (E Coli), 1750 Pathogens (Coliform), 0920 Nitrogen	175.5	LBS/year
6-015	98960801	35	Juan Curley Project, Navajo Nation	Sediment	0.008	tons/year
6-017	97959603	9	Red Rock State Park Constructed Wetland and Restoration 2003-2004	0920 Nitrogen	5.5	LBS/year
	97917302	18		1100 Sedimentation-Siltation	0.6	tons/year
6-019	97917302	17	West Clear Creek Tributary Watersheds	Drainage Area #1 - Wickiup 1100 Sedimentation-Siltation Drainage Area #2 - Boulder 1100 Sedimentation-Siltation Drainage Area #3 - Bald Hill 1100 Sedimentation-Siltation, Drainage Area #4-Indian Flat Painted Tank 1100 Sedimentation-Siltation Drainage Area #5 - Buckhorn 1100 Sedimentation-Siltation	Area #1 - 71 Area #2 - 71 Area #3 - 71 Area #4 - 71 Area #5 - 71	tons/year tons/year tons/year tons/year tons/year
6-021	98960801	36	Wildcat Dumpsite Clean-up Phase II	2600 Trash, Debris, Floatables 0 1100 Sedimentation-Siltation	0	tons/year
6-023	97959603	10	Oak Creek Canyon Task Force Water Quality Program	1750 Pathogens (Coliform) 0920 Nitrogen 1100 Sedimentation-Siltation	10.9 1.7	LBS/year tons/year
7-001	97959603	6	EC Bar Ranch Trubidity Reduction Project Phase XII	1100 Sedimentation-Siltation	TBD	
7-002	97959603	56	Campomocho/Sacaton Watershed Stormwater Runoff Control Project Phase II	1100 Sedimentation-Siltation	TBD	
7-003	97959603	15	Boy Scout Camp Raymond On-site Sewer System Improvements	0920 Nitrogen	TBD	
	97917302	21				
7-005	97917302	22	Gila County Ground and Surface Water Improvement Project	0920 Nitrogen	TBD	
	97994404	5				
7-006	97917302	3	Central Detention Dam Rehabilitation	1100 Sedimentation-Siltation	TBD	
7-007	97959603	14	Kaler Ranch Erosion Control Project	1100 Sedimentation-Siltation	TBD	
7-008	97917302	20	Partnership to Improve Water Quality in Redrock Canyon/Upper Santa Cruz Watershed	1100 Sedimentation-Siltation	TBD	
	97994404	7				