Arizona Watershed Framework in the Verde River Watershed

Ren Northup[1]

Abstract.— The Arizona Department of Environmental Quality, Water Quality Division drafted a six-step approach to guide its staff and local participants in developing and implementing watershed management plans. From January 1999 through June 2000, the draft *Arizona Statewide Watershed Framework* will be tested in Arizona's Verde River watershed. This concept proofing compares the observed watershed planning process to the *Framework*; assesses the outcomes of the process; and concludes with recommendations for improving the *Framework*. The watershed process will be more effective if more time and flexibility are provided so that the process can involve and be driven by local stakeholders.

Introduction

Watershed approaches help stakeholders coordinate environmental management activities to improve water quality. Operating natural resource programs within hydrologically-defined areas helps stakeholders to: a) identify environmental goals; b) leverage and link financial, institutional and human resources; c) enhance communication; and d) reduce redundancy and conflict. With active and broad involvement, people grow more committed to supporting sustainable resource management by changing everyday practices, budgets, plans, and programs.

The Arizona Department of Environmental Quality (ADEQ), Water Quality Division is charged with restoring waters with impaired quality and protecting water quality where it is not impaired. This is achieved by issuing National Pollutant Discharge Elimination System (NPDES) permits and developing Total Maximum Daily Loads (TMDLs). Watershed stakeholders are involved in the TMDL process so that practices to reduce loads can be appropriate to local needs.

ADEQ has drafted a six-step approach to guide public and private stakeholders as they develop and carry out a watershed management plan. The draft *Arizona Statewide Watershed Framework* (Arizona Department of Environmental Quality, 1997) describes how the watershed approach could integrate ADEQ's activities with those of

other public and private partners. It calls for ADEQ to rotate activities and resources among Arizona's ten watersheds on a five-year cycle. The *Framework* has not been carried out in Arizona because, by its own admission, ADEQ did not align its organization, finances, work plans, and management focus to ensure success (Arizona Department of Environmental Quality, 1999). This study identifies changes that could help implement the *Framework*.

The Arizona Watershed Framework

Between January 1999 and August 2000, the draft *Arizona Statewide Watershed Framework* will be tested in Arizona's Verde River Watershed. The *Framework's* six steps are described below. These steps are not intended to be followed in rigid sequence.

Step one, "Stakeholder Outreach and Involvement," is to enlist potential stakeholders, solicit a local sponsor and generate a community profile.

Step two, "Collect and Evaluate Watershed Data," is to identify areas of focus, evaluate monitoring data, and fill information gaps.

Step three, "List and Target Environmental Concerns," is to rank areas, evaluate issues to decide when they can and should be addressed, and list available resources.

Step four, "Develop Management Strategies and Measures of Success," is to develop a strategy, schedule and action plan and identify indicators of success to incorporate into a monitoring plan.

Step five, "Compile the Watershed Plan," is to document the results of steps one through four, ratify the plan, and formalize budgets and partnerships.

Step six, "Implement and Evaluate Watershed Plan," is to carry out activities and projects according to the plan, track progress, and evaluate success.

---

[1] *Verde Watershed Project Manager, Water Quality Division, Arizona Department of Environmental Quality, Phoenix, AZ*

The Verde Initiative

The Verde River watershed is struggling with rapid population growth as tourism joins mining and agriculture as local economic drivers. Population and land use changes have introduced and exacerbated water quantity and quality issues. Additionally, much of the Verde River's flow provides water for the metropolitan Phoenix area, 100 miles to the south.

The Verde River drains approximately 6,188 square miles and traverses about 140 miles in north central Arizona. It runs from the Sullivan Lake Dam east and southeast to join Fossil Creek, where it veers south to join the Salt River. Parts of the drainage are in the Prescott Aquifer Management Area (AMA); and 25 miles of the Verde River are in the Phoenix AMA.

Study Objectives

This study has three objectives. First is to compare the observed watershed planning process to the model presented in the draft *Arizona Statewide Watershed Framework*. The second objective is to draw conclusions about the outcomes of the watershed planning process. The last objective is to recommend improvements to the watershed planning process.

Methods

Objective One

Objective one is met by recording and describing the planning process as it is carried out. By observing the watershed groups' activities, and categorizing each activity by the step it helps achieve, each step's effectiveness can be evaluated to identify obstacles.

To help integrate ADEQ activities conducted under diverse water quality programs, the Verde Watershed Project Manager developed a detailed Verde Watershed Team Workplan. The Workplan compiles activities to be carried out in the Verde Watershed described in the FY 2000 Water Quality Division Workplan (Arizona Department of Environmental Quality, 1999). The Workplan will be continuously updated as milestones are reached, and to add new activities. Further, milestones are tracked using the Open Issues and Deliverables, a document maintained by the Verde Watershed Project Manager for the Assistant Division Director.

Watershed group activities are compared with the activities described in the *Framework*. The Open Issues and Deliverables list identifies activities, and the dates they were started and finished. Each activity on the list has been categorized by the *Framework* step it helps achieve.

Objective Two

Objective two will be met by defining and tracking measures of success. Success means meeting the objectives of ADEQ (total maximum daily loads, or TMDLs) and of the watershed (developing a watershed plan). This research is ongoing.

TMDL activities scheduled in the Verde Watershed during the study period include monitoring and assessing five lakes and reaches of Oak Creek and Beaver Creek. Monitoring data will be used to support delisting or to provide basic information to prepare TMDLs. Because a simple "yes or no" toggle may not be possible, interim milestones, such as data collection, public hearings held and models developed will be tracked.

Likewise, progress on the Integrated Watershed Plan cannot be measured as a simple toggle. By the end of the initiative, the plan might be completed as a draft document or a final document. A final document might be fully ratified, ratified by less than all the partners, or different partners might adopt different parts.

Objective Three

The focus of this manuscript is Objective 3, which is met by developing recommendations for improving future watershed planning efforts. Various sources of information on watershed planning techniques were referenced. These sources helped identify the challenges and opportunities that contributed to the successes and shortfalls in the Verde Initiative, and provided insights for improving the Watershed Framework. This manuscript reports preliminary recommendations, based on the chronology analysis, in the discussion.

Improving the Arizona Watershed Framework

Obtaining Buy-In

An obstacle to the Verde Initiative was the lack of perceived need at the local level and the lack of opportunity for local voice. The Verde Initiative was developed as an ADEQ management team-building exercise by Water Quality Division managers without involving the Verde

Watershed Coordinator, the Statewide Watershed Coordinator or local stakeholders. As a result, valuable time was lost educating and obtaining support from these parties.

Not only must initial buy-in be gained, but support must be cultivated throughout the process. Garnering support in a watershed requires clear two-way communication of needs and goals. In the Verde this open exchange is a big time investment, due to the many fora at which information is shared. Consensus building in the Verde watershed may require attending Verde Watershed Association (VWA) general membership and committee meetings, and also meetings of the Oak Creek Task Force, the Yavapai Water Advisory Group, and various Natural Resources Conservation Districts operating in the Verde Watershed. Attending each of these meetings cannot be achieved by one researcher in a given month, since some of these meetings conflict. A two-month communication process is needed to get information to all stakeholder groups. In addition, time must also be scheduled to provide additional information if requested, or to go through the required voting process of each group.

Communicating

Forums used in the Verde Initiative are the media, newsletters, mailings, E-mail user groups, workshops, field trips and fairs. The VWA asked several public libraries to donate shelf space so that minutes, reports and technical data can be made available to all. The effectiveness of outreach would be improved by streamlining the ADEQ's internal process for reviewing and approving press releases. Coordinating press releases and Internet postings with the VWA Outreach and Education Committee is an additional review process, which can delay late-breaking information and announcements so that they become moot or stale.

Organizing

Written operating procedures and bylaws help groups in Arizona qualify for funding. Memoranda of Understanding are common instruments for participants to ratify the scope and bylaws of the partnership. A separate signature sheet for each party allows partners to be added.

Before defining decision-making rules, the authority and scope of each participant must be defined, as well as the extent of the partnership's decision-making authority. The Yavapai County Water Advisory Group chose to limit the voice of some state and federal agencies in local

decision-making. Because the group was formed by the Yavapai County Board of Supervisors, Gila County stakeholders' involvement is limited.

Partnerships can benefit from a trained facilitator. Watershed partnership training was offered to Verde stakeholders and focused largely on the planning process and team-building skills. An idea that could prove valuable, which has not yet been tried in the Verde, is to train a local leader in professional conflict mediation and facilitation skills.

Planning

The VWA's planning efforts have focused on developing an Upper/Middle Verde study, which will provide a comprehensive and detailed look at water resources in the watershed. Many members prefer to defer planning until results are available, over a two to ten-year period. This would effectively retard the planning process at step two, "Collect and Evaluate Watershed Data."

Technical assistance may provide a way around this obstacle. The ADEQ Verde Watershed Project Manager has offered to compile existing plans from public sector stakeholders and land managers. Place holders would be inserted for future data and plan components. This would offer a guiding document while still respecting the local need for more up-to-date information, without diverting local energy and resources from other activities. It would use ADEQ expertise, without bringing too strong an outside voice to local decision-making.

Conclusion

To date, the Verde Initiative has underscored the importance of respecting the needs of all participants, and the time required throughout the watershed process. As groups are formed, the authority of the participants and of the partnership must be considered. Ratification instruments should allow flexibility to add participants over time. Cultivating buy-in and consensus is thwarted by attempts to hurry the process. Reviewing proposed activities and press releases can be streamlined. Even the decision of whether and how to develop a plan document should remain at the local level.

More findings and results will be available March 14, 2000, at the poster session of the Conference on Land Stewardship in the 21st Century: Contributions of Watershed Management.

Acknowledgments

Literature Cited

Arizona Department of Environmental Quality Water Quality Division. 1997. "The Arizona Statewide Watershed Framework," draft guidance. (Phoenix: Arizona Department of Environmental Quality).

Arizona Department of Environmental Quality Water Quality Division. 1999. "Arizona Department of Environmental Quality Watershed Framework — Verde Initiative," internal document. (Phoenix: Arizona Department of Environmental Quality).

Arizona Department of Environmental Quality Water Quality Division. 1999. "FY 2000 Water Quality Division Workplan," (Phoenix: Arizona Department of Environmental Quality, 1999)

Arizona Department of Environmental Quality Water Quality Division and U.S. Department of Agriculture Natural Resources Conservation Services. 1998. The Arizona Unified Watershed Assessment. (Phoenix: Arizona Department of Environmental Quality).

Clark, Jo. 1997. Watershed Partnerships: a Strategic Guide for Local Conservation Efforts in the West. (Denver: Western Governors' Association).

James, Sarah; Power, Joe; Forrest, Clyde. 1999. "American Planning Association Policy Guide on Sustainability." (Electronic document at http://www.planning.org/govt/sustdvpg.htm, January 8, 1998; revised April 10, 1999).

Moot, Ann, compiler. 1997. "Partnership Handbook." (Electronic document at http://ag.arizona.edu/partners). (Tucson: Water Resources Research Center, College of Agriculture, The University of Arizona).

Schauz, Jane W.; Conway, Christopher M. 1995. The Self-help Handbook for Small Town Water and Wastewater Projects. (Rensselaerville, NY: The Rensselaerville Institute)

U.S. Department of Agriculture Natural Resources Conservation Service and Cooperating Agencies. 1996. Verde Cooperative River Basin Study Summary Report. (Phoenix: U.S. Department of Agriculture Natural Resources Conservation Service).

U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, 1996. Why Watersheds? EPA800-F-96-001 (February 1996) (Electronic document at http://www.epa.gov/surf2/why.html)

U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, 1998. Watershed Approach -- An Introduction. (Electronic document at http://www.epa.gov/surf/why.html).

U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds, 1996. Watershed Approach Framework. (Electronic document at http://www.epa.gov/OWOW/watershed/framework.html)

Verde River Watershed Conference Bridging Committee Water Subcommittee. 1993. Verde Watershed Management Plan. (Phoenix: Verde River Watershed Conference Bridging Committee Water Subcommittee).