

ALTERNATIVE STRATEGIES FOR RIPARIAN AREA PROTECTION POSSIBLY APPLICABLE TO ARIZONA

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INTRODUCTION

The purpose of developing and evaluating four different riparian protection and enhancement alternative strategies was to provide ideas for RAAC to consider in the development of their preferred alternative. The four alternative strategies and the no change alternative included in this will be used to identify or eliminate components to be included in the preferred alternative.

The four alternative strategies were decided upon by the RAAC Steering Committee, based upon their analysis of the enabling legislation for RAAC. This legislation instructed the group to consider both regulatory and nonregulatory approaches to protecting riparian areas. As a result, it was decided that the four alternative strategies would be: nonregulatory, mostly nonregulatory, mostly regulatory, and regulatory.

During the development of the strategies, there was a great deal of discussion about what measures are regulatory and what are nonregulatory. Not all changes to statutes or rules are regulatory in nature. For example, in order to establish a tax incentive, one must change a statute, or possibly develop rules. However, this does not mean that a tax incentive is considered a regulatory measure.

For the purposes of the development of the alternative strategies, the term "regulatory" was used to describe state-mandated requirements for non-state entities. "Nonregulatory" was used to refer to all other activities, and included enabling local governments to regulate more effectively, requiring state agencies to address certain provisions in their plans, establishing voluntary programs, planning, coordinating, and the like.

In order to establish a common vocabulary, a glossary of terms was distributed at RAAC meetings during the discussion of regulatory and nonregulatory measures. This is included in Appendix C.

Identification of Issue Areas

Major impacts to riparian areas were categorized as issue areas. These five major riparian issues were identified by the Steering Committee and used as the basis for structuring the alternative strategies: (1) water availability, (2) large scale destruction or river channel alterations, (3) adjacent land uses (erosion, sedimentation, vegetation change, water quality impacts), (4) effluent and point sources, and (5) restoration/enhancement.

The **water availability** issue was described as: Groundwater pumping may deplete surface water flows, or lower water table below root zones. New surface water diversions or changes in current diversion points may reduce stream flows. Reservoir release patterns may affect seasonal availability and disrupt flood cycles. Streams may be affected by adjacent pumping of groundwater, or in some cases, pumping groundwater at a distance. Water tables may also be lowered by erosion, by lowering streambed elevations. This "headcutting" can be natural or manmade.

The **large scale destruction or river channel alterations** issue was described as: Riparian areas may be destroyed or damaged by river channel alterations and other activities that include sand and gravel mining, placer mining, dredging and filling, landfills, road construction, channelization and bank stabilization, commercial, industrial, and recreational uses, and inundation caused by new reservoir construction.

The **adjacent land uses** (erosion, sedimentation, vegetation change, water quality impacts) issue was described as: Degradation of riparian resources can occur as the result of uses of lands adjacent to and within the riparian areas as well as within the watershed. Land uses that occur within riparian areas and within the watershed could affect riparian, including grazing, timber harvesting, agriculture, mining, road construction, commercial/residential/industrial development, and recreation. These land uses also can cause water pollution.

The term "adjacent" needs to be defined to clarify the zone in which regulation would be most effective. A particular "zone" will vary in size depending on the impacts being regulated. Many impacts are realized on a watershed basis and a simple "zone" along a watercourse may not be adequate to reduce the impact.

The **effluent and point sources** issue was described as: Effluent discharges from sewage treatment plants can cause potential health problems and ecological changes in riparian areas, but in many southwestern cases, these discharges create or recreate riparian habitat that could not exist otherwise. Discharges from other operations can also cause these problems.

The **restoration/enhancement** issue was described as: Damaged or destroyed riparian areas can be passively or actively managed, enhanced and restored using appropriate protection, revegetation, and management techniques if and where water is available. Existing areas should be actively protected and managed.

These descriptions were reviewed and discussed by the RAAC and modified to reflect their suggestions.

Identification of Measures

Measures were identified that could be used to address each issue area. Sources for ideas were identified by RAAC members and included:

- Arizona Riparian Inventory and Mapping Project (Arizona Game and Fish Department, 1993)
- Arizona's Effluent Dominated Riparian Areas: Issues and Opportunities (Barbara Tellman, 1992)
- Draft report matrices (Riparian Area Technical Subcommittee, January 27, 1994)
- Draft Riparian Protection Program Legislative Report Volume C (Arizona Department of Water Resources, 1994D)
- Entering the Watershed: A New Approach to Save America's River Ecosystems (The Pacific Rivers Council, 1993)
- Evaluation of Activities Occurring in Riparian Areas (Arizona Department of Environmental Quality, 1993)
- Statewide Wetlands Strategies: A Guide to Protecting and Managing the Resource (World Wildlife Fund, 1992)
- Survey of Selected Western State Programs: A Resource for Improving Arizona's Evolving Riparian Protection Program (Virginia Norcross Coltman, May 1994)

- The Private Landowner's Wetlands Assistance Guide: Voluntary Options for Wetlands Stewardship in Maryland (U.S. Environmental Protection Agency and others, October 1992)

Potential measures were grouped by issue area, and were reviewed and discussed in five small groups by RAAC members at a workshop in March 1994; each group was led by a trained facilitator. At the workshop, some measures were added and others were recombined. The RAAC members also indicated those measures they believed had the greatest and the least promise for a successful Arizona program. Subsequent correspondence from RAAC members provided additional insight. Although some members were hesitant to eliminate any measures, there appeared to be strong and widespread feelings that some measures (such as authorizing or mandating local governments to assess certain property at its use value rather than at full market value) would not be effective in Arizona.

There were three areas of general agreement that surfaced during the RAAC workshops at which the possible measures were evaluated. These were never officially adopted by RAAC. First, there appeared to be a preference for decision making on local levels, to the extent possible. In part, this was attributed to the fact that riparian areas are small and distinct and scattered through out the state. Riparian area management is likely to have strong positive or negative local impacts, and therefore should have local involvement. Secondly, there was an interest in making the existing laws and programs work more effectively, through modifications, amendments, and the like. This preference recognizes that the existing programs affecting riparian areas (many of which are federal) are not going to disappear, and their continued existence should be considered and reckoned with. Third, to the extent possible, changes to existing programs and new programs should provide additional flexibility, not less. This would allow for more effective use of these programs in the many different physical and social environments of the state.

Development of Alternative Strategies

The four alternative strategies were developed using comments received at the March meeting (and subsequent written comments) and two sets of guidance which were reviewed and revised by RAAC: a set of criteria to shape the four strategies, and a conceptual summary of the approaches to the four alternative strategies.

The criteria consisted of the following:

1. Each strategy should address all five of the issues discussed at the March 10, 1994 meeting of RAAC.
2. Each strategy should have a distinct guiding concept.
3. Each strategy should stand alone.
4. The strategies should be developed using guidance received at March 10, 1994 meeting and subsequent related comments received by March 18, 1994.
5. Each strategy should at a minimum reflect applicable information from the three agency reports.

6. Each strategy should be structured to be sensitive to issues related to the protection of the ecosystem, social values, property rights, land ownership, environmental costs and benefits and their economic impacts on various classes of landowners and land users and on the state. "Social values" needs to be defined.
7. Each strategy shall build upon, where possible, the strengths of existing programs and laws.
8. Each strategy, to the extent possible, should identify opportunities to reduce conflicts between various interests.
9. Each strategy should address what the state can do. Activities, laws, and programs at other levels of government and private interests should be included to the extent that the state can influence them through coordination, enabling legislation, incentives, assistance, etc.
10. Each strategy will assume the existence and use of a riparian area inventory and hierarchy ranking system to assist in decision-making concerning fund allocations, enforcement actions, etc.
11. Use desired state materials developed by the RAAC in 1993.
12. Where possible, the multitude of potential measures should be combined or grouped by similarities to assist in analysis.

The approaches to the four alternative strategies were:

Nonregulatory strategy concept: The role of the state is to encourage and facilitate the protection of riparian areas by federal and local governments, tribal governments and private property owners as well as non-profit organizations. Emphasizes planning; incentives and disincentives; coordination; technical assistance, education and outreach; research; and enabling local governments to regulate.

Mostly nonregulatory strategy concept: The role of the state is to actively protect riparian resources on state and federal lands and to encourage and facilitate the protection of riparian areas by local government, tribal governments, and private property owners as well as non-profit organizations. Emphasizes planning; incentives and disincentives; coordination; technical assistance, education and outreach; research; enabling local governments to regulate; state acquisition of endangered riparian areas; and requiring state agencies to modify their activities to protect riparian areas, and protection of riparian areas on state lands and from state-financed activities.

Mostly regulatory strategy concept: The role of the state is to actively protect riparian resources throughout the state through effective water resource management and regulation of state agency actions, with an emphasis on activities on state and federal lands, and to facilitate the protection of riparian areas by local government, tribal governments, private property owners, as well as non-profit organizations. Emphasizes planning; coordination; technical assistance, education and outreach; regulation of proposed and ongoing activities that impact riparian areas that are currently regulated, such as water resource management, and requires state agencies to modify their activities to protect riparian areas, and protection of riparian areas on state lands and from state-financed activities.

Regulatory strategy concept: The role of the state is to actively protect riparian resources on federal,

state, and privately owned lands, and to encourage and facilitate protection of riparian areas by tribal governments. Emphasizes regulation and restriction of proposed and ongoing activities that impact riparian areas, requires state agencies to modify their activities to protect riparian areas, and protection of riparian areas on state lands and from state-financed activities. Planning and coordination are used to enhance the regulatory functions.

An initial draft of the four strategies was reviewed by the Steering Committee, who provided written comments that were incorporated into the draft presented to the RAAC for impact analysis at the April meeting. Minor changes to the strategies were made as a result of comments made at that meeting and in related correspondence.

Nonregulatory Approach

In the nonregulatory approach (NR), the role of the state is to encourage and facilitate the protection of riparian areas by federal and local governments, tribal governments and private property owners as well as non-profit organizations. Key elements in this approach are incentives, voluntary programs, coordination, financial assistance, technical assistance, and education; statutory changes that would (1) enable but not require local governments and special districts to protect riparian areas, (2) enable local governments, non-profit organizations, and federal government agencies to protect riparian areas through obtaining instream flow permits and water rights to sustain riparian habitat; riparian best management practices, best management practices, and riparian standards that would be used in the implementation of the incentive programs; and modifications to existing standards, rules, and programs that would give them more flexibility to protect and restore riparian areas.

NR1 Riparian Destruction and Damage

- NR1.1 Statutes would be amended to specify a state policy concerning riparian area protection. This policy would be used as the basis for establishing and implementing state incentive and voluntary programs to protect and restore riparian areas.
- NR1.2 Statutes would be amended to enable the development of "riparian standards" which would delineate the minimal qualities for a healthy riparian ecosystem. These standards would be used as the basis for implementing incentive and voluntary programs for riparian area protection and restoration/enhancement.
- NR1.3 Voluntary riparian best management practices (RBMPs) would be developed for use within riparian areas by a team of riparian experts, with the review and comment of affected businesses and industries, non-profit organizations, agencies and citizens and would be designed to protect water quality and riparian standards, and would be tailored to the individual watershed. The use of these RBMPs would be tied to various incentive programs to protect and restore riparian areas. The RBMPs would be written as performance standards, indicating the allowable impact on the riparian areas, rather than as traditional best management practices (BMPs) which specify how an activity should be carried out. The RBMP program would also have an educational component to disseminate information.
- NR1.4 Local governments, special districts, federal agencies, tribal governments, and non-profit organizations could identify "high priority riparian areas" which would, if they met statutory criteria, be eligible for special incentives and funding for protection and restoration/enhancement. Protection provisions consistent with this designation could be adopted by applicable local government agencies, special districts, the federal government, tribal governments, non-profit organizations, and individuals. The state role would be limited to encouraging, facilitating, and coordinating action by other public and private entities. Designated high priority areas would be considered for nomination as Unique Waters.
- NR1.5 A state riparian protection enhancement and restoration fund would be developed which would provide funding for eligible activities related to high priority riparian areas. (This would be consistent with if not identical to the fund established in HB 2582 which passed

this session.) Statutory wording establishing this fund should protect it from being used for purposes other than those specified in the law.

- NR1.6 An education program targeting the individuals who own or manage riparian areas would be developed by a designated state agency, and implemented locally by a county planning department, a conservation district, or the cooperative extension service. This would inform these land managers of the values and functions of riparian areas, the laws that regulate them, and the incentives for protecting, enhancing and restoring them.
- NR1.7 A designated state agency would provide technical assistance to landowners and others interested in minimizing riparian destruction and damage or in preserving and enhancing their habitat, but do not understand the regulatory maze nor have the technical expertise to know how to best accomplish the goal. Existing regulatory requirements would be clarified and potential funding sources and benefits identified. Technical expertise would also be available to recommend methods of restoration/enhancement or protection.
- NR1.8 A "stewardship program" to encourage the use of management agreements signed by landowner and conservation agency would be developed by a designated state agency. In these agreements, the landowner or conservation agency agrees to manage his/her property in a certain manner consistent with the goals of the conservation agency and the landowner. This would include use of RBMPs, and be consistent with the state riparian policy. Under this arrangement, direct payments and other types of cost-share assistance would be available to an eligible landowner; a plan would be developed to manage the land, based upon both the agency and the landowner's needs; the organization that helps develop the plan often provides management assistance and monitors compliance. These agreements are usually easier to terminate than a lease and do not involve exclusive possession of property.
- NR1.9 New tax categories of "open space" or "environmental use" would be developed which would have low property tax rates. Criteria for inclusion in these categories would have to be very stringent and specific, and would include protected high priority riparian areas. For example, to be eligible for such preferential taxation, land would need to be identified as environmental in the local general plan and zoned for environmental use in land ordinances.
- NR1.10 Property tax reductions would be provided to landowners who preserve riparian areas or wetlands using RBMPs through easements or voluntary use-restriction agreements, even if those areas do not fall into the "open space" or "environmental use" categories.
- NR1.11 Landowners would be encouraged to donate priority riparian areas to non-profit agencies, special districts, federal and local governments. This could be done as an outright donation or through a will (deathtime transfer), or through donation with reserved life estate. Depending upon the type of donation, owners can receive income tax deductions, and possibly estate, gift, and property tax breaks. Donation by deathtime transfer and donation with reserved life estate allow the landowner to retain full use and control over his/her land while alive and to ensure the land's protection after the owner is deceased. To have a guarantee of perpetual preservation, there must be legally enforceable controls imposed in the donation agreement. Donations would be exempt from subdivision "split"

- constraints in other parts of the law.
- NR1.12 Landowners would be encouraged to attach conservation easements prior to transfer of land to another owner. The tax law would be modified so that the value of the property would be diminished by any restrictions placed by an easement, and there would be an income tax deduction for the donation of the easement to a qualified non-profit conservation organization. Local and federal governments, special districts, and non-profit organizations would be encouraged to purchase easements on riparian areas which would restrict some uses.
- NR1.13 The use of mutual covenants among nearby or adjacent landowners to control the future use of their lands through restrictions agreed upon by all participating landowners would be encouraged. These covenants are permanent and can be enforced by any of the landowners or future landowners of the involved properties. These can also reduce property taxes.
- NR1.14 State statutes pertaining to local floodplain zoning would be changed to also include riparian areas, enabling local government to better protect health, safety and welfare in cases where denudation of channels and adjacent riparian areas leads to more downstream flooding and water quality problems.
- NR1.15 Flood control districts would be encouraged to use non-structural alternatives for flood control, including acquisition, maintenance and restoration/enhancement of riparian areas to slow and reduce floodwaters. Flood plain acquisition programs in Pima County could be used as a model. A designated state agency would develop an educational program (which could include seminars as well as written materials) to carry this out. The most effective way to encourage the use of non-structural alternatives is to devote a higher percentage of state and federal flood repair funds for non-structural measures.
- NR1.16 Enabling statutes would be modified to clearly state that local zoning can protect riparian areas but does not require same.
- NR1.17 Federal budget appropriation requests and proposed federal legislation that would conserve riparian areas would be supported.
- NR1.18 The state would encourage the federal government to use directives in Executive Order 91-6 to protect riparian areas.
- NR2 Prevention of Riparian Area Damage from Land Use Activities in the Watershed**
- NR2.1 Voluntary BMPs for major land uses would be developed and their use promoted and encouraged. These would be developed for riparian areas with the participation of affected businesses and industries, non-profit organizations, agencies and citizens, would be designed to protect water quality and riparian standards, and would be tailored to the individual watershed. The use of these BMPs by eligible participants would be tied to state incentive programs. The BMP program would also have an educational component to disseminate information.

- NR2.2 Cities or counties would be enabled and assisted in the development of riparian conservation plans which would include assessment of riparian functions, identification of threats, designation for protection, conservation or development, a mitigation and replacement plan, and monitoring provisions. A handbook to facilitate this would be developed and distributed.
- NR2.3 Local governments would be encouraged to include riparian area protection as an element in their general plans. A local government handbook to facilitate this would be developed and distributed.
- NR2.4 Interested local governments would be encouraged and assisted in modifying or developing subdivision regulations, cluster zoning regulations, performance-based zoning, overlay zones, transferable development rights, and special permits to protect riparian areas.
- NR2.5 The use of limited development strategies by local government and private landowners would be encouraged and assisted. This involves the sensitive development of the least environmentally significant portions of the property in order to finance conservation of the remaining property and meet landowner economic needs and goals. This approach is particularly useful where land values are high. Tax advantages may be realized from recording an easement over the undeveloped part of the land. A designated state agency would provide information on the use of this technique to all local governments, and be available to work with interested local governments on applications. In some cases the use of these strategies could make the private landowner eligible for riparian protection incentives.
- NR2.6 Information, education programs would be developed to address riparian impacts of commercial industrial and residential development, and inform developers and private landowners of the values and functions of riparian areas, the laws regulating them, and the incentives and means to protect them. These programs would be carried out by the regional councils of government, county planning agencies, or conservation districts with financial assistance from the state.
- NR2.7 State agencies would be required to integrate riparian area protection opportunities and designated high priority riparian areas in the development of related state agency plans, including the state water resource management plan, state recreation plan, state water quality plan, greenway corridor plans, transportation plans, and others.
- NR2.8 Riparian protection and restoration/enhancement activities initiated by tribal governments, special districts, local governments and federal government would be actively coordinated and cooperation elicited through intergovernmental agreements.
- NR2.9 The use of voluntary programs and the work of associations, such as Save our Streams, Friends of the Santa Cruz, Verde Watershed Association, and Friends of the San Pedro would be encouraged by selectively involving them in decision-making, creating financial and nonfinancial incentives for their riparian protection efforts, and when appropriate, using their membership as volunteer staff to assist in riparian protection and enhancement. Guidelines indicating appropriate levels of involvement in specific

- programs would be developed and distributed to interested non-profits and associations to facilitate this effort.
- NR2.10 The state would encourage the U. S. Forest Service and U.S. Bureau of Land Management to develop areas of critical concern which include riparian areas.
- NR3 Water Supply and Quality**
- NR3.1 Title 45 would be amended to include instream uses such as preserving, maintaining and restoring riparian areas as a beneficial use of water, and to allow permits for this specific purpose to be issued to federal agencies, special districts, private entities, local governments, and non-profit organizations. The priority system currently in place for determining the relative values of the uses of surface water when supply is insufficient would be eliminated, or riparian areas would receive a higher relative value exceeded only by domestic or municipal uses.
- NR3.2 Instream flow permits would be facilitated for federal and local governments, special districts, and non-profit organizations.
- NR3.2.1 Severance and transfer of water rights to increase streamflow for instream or riparian uses would be extended to any water rights holder unless senior water right holders would sustain substantial negative impacts. "Substantial negative impacts" would have to be defined and a process for determination delineated.
- NR3.2.2 Natural resources conservation districts, universities, county planning agencies, and non-profit organizations would be funded to conduct studies to identify specific stream segments which need instream flow protection. Stringent standards for methods analysis and reporting would be instituted, enforced, reviewed and updated. Findings from these studies would be made public so that action could be taken by eligible agencies and individuals.
- NR3.2.3 An application for instream appropriation would be reviewed by the Director of the Department of Water Resources. Criteria evaluated would include:
- The economic, social and environmental value of the instream use or uses including but not limited to, recreation, fish, wildlife, induced recharge for municipal water systems, and water quality maintenance.
 - The economic, social and environmental value of water uses that would be foregone or accorded junior status.
- NR3.2.4 State statutes would be amended to allow special districts, local governments (for land within their jurisdiction only), or non-profit organizations to hold an instream flow water right without owning the adjacent land. These statutes would specify that the entity could only hold such rights where there was a clear connection with the entity's purpose or mission.
- NR3.3 Incentives would be developed and provided to switch to other water sources or deeper aquifers that are not hydrologically linked to surface waters.

- NR3.4 Incentives would be developed and provided to change release patterns of reservoirs to favor riparian area protection.
- NR3.5 A system that provides people with surface water rights with an economic benefit from riparian preservation enhancement would be developed. This would affect the use or non-use of a portion of a water right (as the result of water conservation reducing the water used) or an entire water right. A tax deduction would be allowed for the donation of the water rights to an eligible non-profit group, special districts, local or federal governments, or the water rights could be sold separately from the land. The receiving agency or organization also would receive the seniority of the previous rights holder and could use it for instream flow protection or for riparian vegetation restoration/enhancement and maintenance. This would only apply in areas where water rights have been adjudicated or there have been federally legislated Indian water rights settlements.
- NR3.6 Voluntary agreements would be developed with local landowners and water users whose water use pattern affect high priority riparian areas, to encourage, facilitate, and provide incentives for protecting riparian areas.
- NR3.7 Incentives would be developed and provided to encourage recharge projects that develop riparian areas.
- NR3.8 Interested tribes would be assisted in developing their own water quality standards that include standards for riparian vegetation.
- NR4 Effluent and Point Sources**
- NR4.1 Effluent ownership would be redefined in law and rules so that effluent would continue to belong to the entity who discharged it after discharge into a surface water.
- NR4.2 Water quality standards would be developed for "effluent-dominated waters" that allow for the use of effluent in riparian areas without requiring cost-prohibitive treatment, while protecting wildlife and riparian vegetation values.
- NR4.3 Active management area (AMA) requirements would be changed so they do not discourage the use of effluent to support riparian areas.
- NR4.4 In-channel discharge of effluent would be promoted by advocating and publicizing the use of properly constructed wetlands or riparian areas as tertiary treatment for effluent under specified conditions.
- NR4.5 A program would be developed to provide grants and loans for treatment plant upgrades that would benefit or create riparian areas.
- NR4.6 Education-oriented pretreatment programs to supplement existing programs where appropriate would be developed.
- NR4.7 Incentives for effluent reuse or recharge (such as conservation easements, purchase or

lease of the effluent by non-profit agencies, and the like) would be developed and provided that would benefit riparian areas.

NR5 Restoration/Enhancement

- NR5.1 Statutes would have goals and policies pertaining to riparian restoration/enhancement.
- NR5.2 Financial assistance would be provided to landowners for restoration/enhancement work on priority riparian areas, either as tax incentives, loans, grants, or cost-share programs. Cost share would include a maintenance clause that states the riparian area must be maintained for a specified period before funds are released. Financial assistance would either pay for the use of land (i.e. as with conservation easement purchases) or pay for restoration/enhancement.
- NR5.3 Nonfinancial incentives would be developed to recognize individuals, companies, non-profit organizations or government agencies that have voluntarily protected or restored riparian areas.
- NR5.4 A designated state agency would provide restoration/enhancement technical assistance to landowners both private and public. This would include the creation of "how to" manuals, a compendium of existing strategies and methods for restoration/enhancement and availability of tools, and planning and management techniques. Field personnel time/expertise would be available. Staff would visit an interested individual, and follow-up with additional monitoring. Feedback from the program would be used to revise manuals and programs.
- NR5.5 Universities would be involved in monitoring/review of restoration/enhancement efforts - to develop better information base on the success of restoration methods.
- NR5.6 As necessary, the state would coordinate riparian restoration/enhancement activities among various participants through intergovernmental agreements.
- NR5.7 State agencies would work with local, tribal, and federal governments and non-profit organizations to maintain local stocks of native riparian vegetation for use in voluntary or locally or federally mandated mitigation and restoration/enhancement activities.
- NR5.8 Interagency agreements would be developed to simplify the permit processes associated with restoration/enhancement activities within streambeds, eliminate to the extent possible, delays and complexity, improve coordination among agencies and across different levels of government, and enable federal, local, and Indian governments to provide more effective riparian restoration/enhancement.

Mostly Nonregulatory Approach

In the mostly nonregulatory approach (MN), the role of the state is to actively protect riparian resources on state and federal lands and to encourage and facilitate the protection of riparian areas by local government, tribal governments, and private property owners as well as non-profit organizations. Key elements of this strategy include many of those in the nonregulatory approach, and in addition, include state land lease provisions and active coordination with federal government agencies to protect and restore riparian areas. New special districts, Riparian Planning and Enhancement Districts (RPED), are authorized to plan on a watershed basis for riparian area protection and restoration/enhancement, and to develop special area plans for riparian areas identified as high priority using a standardized hierarchy system. A new state board, the Arizona Watershed Enhancement Board, is established to carry out the RPED functions for watersheds where RPEDs have not been formed, to coordinate the RPEDs planning through a statewide riparian protection plan, and to allocate funds for riparian protection and restoration/enhancement from a newly established fund.

MN1 Riparian Destruction and Damage

- MN1.1 Statutes would be amended to specify a state policy concerning riparian area protection. This policy would be used as the basis for establishing and implementing state incentive and voluntary programs to protect and restore riparian areas, and for directing state agencies in their riparian protection efforts.
- MN1.2 Statutes would be amended to enable the development of "riparian standards" which would delineate the minimal qualities for a healthy riparian ecosystem. These standards would be used as the basis for implementing incentive and voluntary programs for riparian area protection and restoration/enhancement, and by state agencies in their riparian protection efforts.
- MN1.3 State statutes would call for the development of a riparian hierarchy system (such as the one proposed by Arizona Game and Fish Department) to be developed and used to categorize the waters and associated riparian areas for different levels of incentives, protection (mandatory on state lands, aggressively pursued on federal lands, and encouraged on private and tribal lands), and study. This would be coordinated with the Unique Waters program, the national Wild and Scenic Rivers program, and other applicable federal, state, tribal, and local programs and plans.
 - MN1.3.1 The hierarchy system would be a process using scientific information that would be implemented and used to categorize riparian areas based on functions and condition. Arizona Game and Fish Department would identify the level of wildlife use (wildlife value) associated with various riparian areas. A variety of management actions would be suggested for the various categories.
 - MN1.3.2 Simultaneously or before the implementation of the system described above, state objectives would be set for the levels of protection. Some options are briefly mentioned in the Arizona Game and Fish Department's 1993 riparian inventory report.

- MN1.3.3 Based on a public process, priorities for actions and the types of actions to be implemented to attain objectives would be determined by the Riparian Planning and Enhancement Districts and the Arizona Watershed Enhancement Board described in MN2.2. These decisions would need to take into account the various "values" placed on riparian areas. To the extent resources are available, priority actions would be implemented on state lands, aggressively pursued on federal lands, and encouraged for private and tribal lands.
- MN1.3.4 High priority riparian areas would be recommended for designation as Unique Waters.
- MN1.4 Voluntary riparian best management practices (RBMPs) would be developed for use within riparian areas by a team of riparian experts, with the review and comment of affected businesses and industries, non-profit organizations, agencies and citizens and would be designed to protect water quality and riparian standards, and would be tailored to the individual watershed. The use of these RBMPs would be tied to various incentive programs to protect and restore riparian areas, and be required on state lands and the state would aggressively seek their use on federal lands. The RBMPs would be written as performance standards, indicating the allowable impact on the riparian areas, rather than as traditional BMPs which specify how an activity should be carried out. The RBMP program would also have an educational component to disseminate information.
- MN1.5 An education program targeting the individuals who own or manage riparian areas would be developed by a designated state agency and implemented locally by a county planning department, a conservation district, or the cooperative extension service. This would inform these land managers of the values and functions of riparian areas, the laws that regulate them, and the incentives for protecting, enhancing and restoring them.
- MN1.6 Technical assistance would be available to landowners and others interested in minimizing riparian destruction and damage or in preserving and enhancing their habitat, but do not understand the regulatory maze or have the technical expertise to know how to best accomplish the goal. Regulatory requirements would be clarified and potential funding sources and benefits would be identified. Technical expertise would also be available to recommend methods of restoration/enhancement or protection. This assistance would be carried out or conducted in cooperation with local groups such as the county planning agencies, conservation districts, the cooperative extension service, and the RPED described under MN2.2 below.
- MN1.7 New tax categories such as "open space" and/or "environmental use" would be developed which would have the lowest property tax rates. Criteria for inclusion in these categories would have to be very stringent and specific, and would include protected high priority riparian areas. For example, to be eligible for such preferential taxation, land would need to be identified as environmental in the local general plan and zoned for environmental use in land ordinances.
- MN1.8 Property tax reductions would be provided to landowners who preserve riparian areas or wetlands using RBMPs through easements or voluntary use-restriction agreements, even if those areas do not fall into the "open space" or "environmental use" categories.

- MN1.9 A "stewardship program" to encourage the use of management agreements signed by landowner and conservation agency would be developed by a designated state agency. In these agreements, the landowner or conservation agency agrees to manage his/her property in a certain manner consistent with the goals of the conservation agency and the landowner. This would include use of RBMPs, and be consistent with the state riparian policy. Under this arrangement, direct payments and other types of cost-share assistance would be available to an eligible landowner; a plan would be developed to manage the land, based upon both the agency and the landowner's needs; the organization that helps develop the plan often provides management assistance and monitors compliance. These agreements are usually easier to terminate than a lease and do not involve exclusive possession of property.
- MN1.10 Landowners would be encouraged to attach conservation easements prior to transfer of land to another owner. The tax law would be modified so that the value of the property would be diminished by any restrictions placed by an easement, and there would be an income tax deduction for the donation of the easement to a qualified non-profit conservation organization. Local and federal governments, special districts, and non-profit organizations would be encouraged to purchase easements on riparian areas which would restrict some uses.
- MN1.11 Landowners would be encouraged to donate priority riparian areas to non-profit agencies, special districts, federal and local governments. This could be done as an outright donation or through a will (deathtime transfer), or through donation with reserved life estate. Depending upon the type of donation, owners can receive income tax deductions, and possibly estate, gift, and property tax breaks. Donation by deathtime transfer and donation with reserved life estate allow the landowner to retain full use and control over his/her land while alive and to ensure the land's protection after the owner is deceased. To have a guarantee of perpetual preservation, there must be legally enforceable controls imposed in the donation agreement. Donations would be exempt from subdivision "split" constraints in other parts of the law.
- MN1.12 The use of mutual covenants among nearby or adjacent landowners to control the future use of their lands through restrictions agreed upon by all participating landowners would be encouraged. These covenants are permanent and can be enforced by any of the landowners or future landowners of the involved properties. These can also reduce property taxes.
- MN1.13 State statutes pertaining to local floodplain zoning would be changed to also include riparian areas, enabling local government to better protect health, safety and welfare in cases where denudation of channels and adjacent riparian areas leads to more downstream flooding and water quality problems.
- MN1.14 Flood control districts would be encouraged to use non-structural alternatives for flood control, including acquisition, maintenance and restoration/enhancement of riparian areas to slow and reduce floodwaters. Flood plain acquisition programs in Pima County could be used as a model. A designated state agency would develop an educational program (which could include seminars as well as written materials) to carry this out. The most effective way to encourage the use of non-structural alternatives is to devote a higher

percentage of state and federal flood repair funds for non-structural measures.

MN1.15 Enabling statutes would be modified to clearly state that local zoning can protect riparian areas but does not require same.

MN1.16 Federal budget appropriation requests and proposed federal legislation that would conserve riparian areas would be supported.

MN1.17 The state would encourage the federal government to use directives in Executive Order 91-6 to protect riparian areas.

MN2 Prevention of Riparian Area Damage from Land Use Activities in the Watershed

MN2.1 Voluntary BMPs for major land uses would be developed and their use promoted and encouraged. These would be developed for riparian areas with the participation of affected businesses and industries, non-profit organizations, agencies and citizens, would be designed to protect water quality and riparian standards, and would be tailored to the individual watershed. The use of BMPs would be required in lease conditions on state and (to the extent possible) on federal lands, and encouraged for use on privately owned lands and tribal lands. The use of these BMPs by eligible participants also would be tied to state incentive programs. The BMP program would also have an educational component to disseminate information.

MN2.2 Riparian Planning and Enhancement Districts (RPED)

MN2.2.1 Statutes would enable the formation of these districts, with jurisdiction reflecting the boundaries of the watershed. The purpose of these districts would be to comprehensively plan for the protection and enhancement of riparian areas, with an emphasis on high priority riparian areas defined by the riparian hierarchy system.

MN2.2.2 The RPED would use the riparian hierarchy to rank riparian areas within the watershed and assess the need for protection of riparian areas. The results would be the basis for developing a comprehensive watershed plan, providing for various levels of protection of the ranked riparian areas.

MN2.2.3 The RPED, in cooperation with local governments and other affected governments and landowners, would develop special area plans for identified high priority riparian areas to provide for inter-jurisdictional protection and management. Federal, state, tribal, and local activities affecting high priority areas determined by the riparian hierarchy system would be coordinated in these plans. The implications of watershed-wide activities would be factored in and addressed.

MN2.2.4 The planning, development, and approval processes for the ranking of the riparian areas, the comprehensive plan and special area plans would involve all affected government jurisdictions, interested citizens, non-profit organizations and industries. Planning would be highly participatory and

- involve all segments of the public.
- MN2.2.5 The statute would specify steps in the ranking and planning process, a time frame for completion, representation on the RPED, and funding sources.
 - MN2.2.6 Protection provisions consistent with the comprehensive and special area plans would be recommended by RPED for adoption by applicable local government agencies, special districts, the federal government, tribal government, and the state (for state managed lands and activities only) - all of whom would be active participants in the planning and decision-making process. The state would implement all recommendations for the state that were consistent with the state riparian policy, and aggressively pursue implementation of recommended provisions on federal lands.
 - MN2.2.7 State agencies could contract with the districts to perform some functions, such as studies, providing technical assistance, initiating agreements with local landowners, monitoring for riparian area destruction, success of restoration/enhancement, and the like.
 - MN2.2.8 RPEDs could maintain stocks of riparian vegetation for remediation and restoration/enhancement projects, or work with private nurseries and other agencies to maintain such local stocks.
 - MN2.2.9 The use of volunteers would be encouraged and facilitated to the extent possible.
- MN2.3 The Arizona Watershed Enhancement Board (AWEB) would be established in state statutes, and its responsibilities would include coordinating the activities of the RPEDs, and in the absence of a RPED for a portion of the state, carrying out the activities that would have been authorized for the RPED.
- MN2.3.1 AWEB would develop a statewide riparian protection and enhancement plan that would coordinate, and integrate the RPED plans and other related plans, and which would be updated biannually. Each plan would include geographic areas where protection and restoration/enhancement would be emphasized, identification of issues of concern and types of measures needed to address the issues of concern.
 - MN2.3.2 All planning would be highly participative and involve all of the affected jurisdictions, landowners, land managers, and interested groups and individuals.
 - MN2.3.3 A riparian protection, enhancement and restoration fund would be established to provide financial assistance for restoration/enhancement and protection activities throughout the state. This fund would have a dedicated source of funding. Funds would be awarded according to criteria established by the board, which would at a minimum reflect and be consistent with the statewide plan, and the riparian hierarchy system.

- MN2.4 The RPEDs and AWEB would assist and enable cities or counties to develop their own riparian conservation plans which would include an assessment of riparian functions, identification of threats, designation for protection, conservation or development, a mitigation and replacement plan, and monitoring provisions. These plans would be integrated into the watershed plans developed by RPED and AWEB.
- MN2.5 State agencies would be required to prepare riparian area impact assessments for all state agency actions, in order to prevent them from approving or carrying out programs and activities that damage riparian areas.
- MN2.6 State agencies would be required to integrate riparian area protection and the results of the RPED and AWEB plans in the development of their plans, including the state water resource management plan, state recreation plan, state water quality plan, transportation plans, greenway corridor plans, and others.
- MN2.7 Local governments would be encouraged to develop comprehensive local ordinances, like those in Tucson, Flagstaff, Scottsdale, which address activities in floodplains that would adversely impact riparian areas. This would be accomplished by developing a model local ordinance which would be circulated to interested local governments.
- MN2.8 Interested local governments would be encouraged and assisted in modifying or developing subdivision regulations, cluster zoning regulations, performance-based zoning, overlay zones, transferable development rights, and special permits to protect riparian areas.
- MN2.9 The use of limited development strategies by local government and private landowners would be encouraged and assisted. This involves the sensitive development of the least environmentally significant portions of the property in order to finance conservation of the remaining property and meet landowner economic needs and goals. This approach is particularly useful where land values are high. Tax advantages may be realized from recording an easement over the undeveloped part of the land. A designated state agency would provide information on the use of this technique to all local governments, and be available to work with interested local governments on applications. In some cases the use of these strategies could make the private landowner eligible for riparian protection incentives.
- MN2.10 Information, education programs would be developed to address riparian impacts of commercial industrial and residential development, and inform developers and private landowners of the values and functions of riparian areas, the laws regulating them, and the incentives and means to protect them. These programs would be carried out by the regional councils of government, county planning agencies, or conservation districts with financial assistance from the state.
- MN2.11 The use of voluntary programs and the work of associations, such as Save our Streams, Friends of the Santa Cruz, Verde Watershed Association, and Friends of the San Pedro would be encouraged by involving them in decision-making, creating financial and nonfinancial incentives for their riparian protection efforts, and when appropriate, using their membership as volunteer staff to assist in riparian protection and enhancement.

MN2.12 The state would encourage the U.S. Forest Service and U.S. Bureau of Land Management to develop areas of critical concern which include riparian areas.

MN3 Water Supply and Quality

MN3.1 Title 45 would be amended to include instream uses such as preserving, maintaining and restoring riparian areas as a beneficial use of water, and to allow permits for this specific purpose to be issued to federal agencies, special districts, private entities, local governments, and non-profit organizations. The priority system currently in place for determining the relative values of the uses of surface water when supply is insufficient would be eliminated, or riparian areas would receive a higher relative value exceeded only by domestic or municipal uses.

MN3.2 Clarification and expansion of instream flow statutes.

MN3.2.1 Conversion of a consumptive water right to an instream flow right would be permanent. Permanent conversion would allow a new junior right downstream.

MN3.2.2 Severance and transfer of water rights to increase streamflow for instream or riparian uses would be extended to any water rights holder unless senior water right holders would sustain substantial negative impacts. "Substantial negative impacts" would have to be defined and a process for determination delineated.

MN3.2.3 Natural resources conservation districts, appropriate state agencies, universities, county planning agencies, and non-profit organizations would be funded to conduct studies to identify specific stream segments which need instream flow protection. Stringent standards for methods analysis and reporting would be instituted, enforced, reviewed and updated. Findings from these studies would be made public so that action could be taken by eligible agencies and individuals.

MN3.2.4 The application for instream appropriation would be reviewed by the Director of a designated state agency. Criteria evaluated would include:

- The economic, social and environmental value of the instream use or uses including but not limited to, recreation, fish, wildlife, induced recharge for municipal water systems, and water quality maintenance.
- The economic, social and environmental value of water uses that would be foregone or accorded junior status.

MN3.2.5 State statutes would be amended to allow state agencies, special districts, local governments (for land within their jurisdiction only) and non-profit organizations to hold an instream flow water right without owning the adjacent land. These statutes would specify that the entity could only hold such rights where there was a clear connection with the entity's purpose or mission.

- MN3.3 Incentives would be developed and provided to switch to other water sources or deeper aquifers that are not hydrologically linked to surface waters.
- MN3.4 Incentives would be developed and provided to change release patterns of reservoirs to favor riparian area protection.
- MN3.5 A system that provides people with surface water rights with an economic benefit from riparian preservation enhancement would be developed. This would affect the use or non-use of a portion of a water right (as the result of water conservation reducing the water used) or an entire water right. A tax deduction would be allowed for the donation of the water rights to an eligible non-profit group, special districts, state, local or federal governments, or the water rights could be sold separately from the land. The receiving agency or organization also would receive the seniority of the previous rights holder and could use it for instream flow protection or for riparian vegetation restoration/enhancement and maintenance. This would only apply in areas where water rights have been adjudicated or there have been federally legislated Indian water rights settlements.
- MN3.6 Voluntary agreements with local landowners and water users whose water use pattern affect high priority riparian areas would be developed to encourage, facilitate, and provide incentives for protecting riparian areas.
- MN3.7 Provisions protecting high priority riparian areas would be included in all applicable state land leases, which would include land use practices and water use practices.
- MN3.8 Agreements with federal agencies whose water use patterns (either the agency itself or the lessees of federal land) affect high priority areas would be developed to change these patterns to protect the areas.
- MN3.9 Incentives would be developed and provided to encourage recharge projects that develop riparian areas.
- MN3.10 Tribes would be encouraged to develop their own water quality standards that include standards for riparian vegetation.

MN4 Effluent and Point Sources

- MN4.1 Effluent ownership would be redefined in law and rules so that effluent would continue to belong to the entity who discharged it after discharge into a surface water.
- MN4.2 The state would purchase effluent that currently supports high priority riparian areas, in order to maintain them.
- MN4.3 Active management area (AMA) requirements would be changed so they allow use of effluent to support riparian areas.
- MN4.4 Water quality standards for "effluent-dominated waters" would be developed that allow for the use of effluent for riparian areas without requiring cost-prohibitive treatment,

while protecting wildlife and riparian vegetation values.

- MN4.5 In-channel discharge of effluent would be promoted by advocating and publicizing the use of properly constructed wetlands or riparian areas as tertiary treatment for effluent under specified conditions. This would be required for new wastewater treatment plants on state lands or state-owned wastewater treatment plants (such as any owned and or operated at a state park or other state facility), and the state would aggressively pursue similar requirements on federal land.
- MN4.6 A program would be developed to provide grants and loans for treatment plant upgrades where riparian areas would benefit or be created.
- MN4.7 Education-oriented pretreatment programs to supplement existing programs where appropriate would be developed.
- MN4.8 Incentives for effluent reuse or recharge (such as conservation easements, purchase or lease of the effluent by non-profit agencies, and the like) would be developed and provided that would benefit riparian areas.
- MN4.9 Current dischargers of effluent that creates high priority riparian areas (as identified by the RPEDs or AWEB) on state lands or state-owned plants would be required to develop plans for the future of the riparian areas and for the use of the effluent. This would be aggressively sought for federal lands, and encouraged elsewhere in the state.
- MN4.10 RPEDs and AWEB would incorporate effluent/riparian issues in their various plans, and additional programs addressing these issues could be developed.
- MN5 Restoration/enhancement**
- MN5.1 Statutes establishing AWEB and RPEDs would have goals and policies pertaining to riparian restoration.
- MN5.2 The state would actively restore identified high priority riparian areas on state lands, and aggressively seek their restoration/enhancement on federal lands.
- MN5.3 As necessary, the state would coordinate riparian restoration/enhancement activities among various participants through intergovernmental agreements.
- MN5.4 Financial assistance would be provided to landowners for restoration/enhancement work on priority riparian areas, either as tax incentives, loans, grants, or cost-share programs. Cost share would include a maintenance clause that states the riparian area must be maintained for a specified period before funds are released. Financial assistance would either pay for the use of land (i.e. as with conservation easement purchases) or pay for restoration/enhancement.
- MN5.5 A designated state agency would provide restoration/enhancement technical assistance to landowners both private and public. This would include the creation of "how to" manuals, a compendium of existing strategies and methods for restoration/enhancement

and availability of tools, and planning and management techniques. Field personnel time/expertise would be available. Staff would visit an interested individual, and follow-up with additional monitoring. Feedback from the program would be used to revise manuals and programs.

- MN5.6 Universities would be involved in monitoring/review of restoration/enhancement efforts - to develop better information base on the success of restoration/enhancement methods. This would be tied into many of the regulatory and nonregulatory measures.
- MN5.7 State agencies would work with RPEDs, tribal and federal governments and non-profit organizations to maintain stocks of native riparian vegetation for use in mitigation and restoration/enhancement activities.
- MN5.8 Nonfinancial incentives would be developed to recognize individuals, companies, non-profit organizations, or government agencies that have voluntarily protected riparian areas.
- MN5.9 Interagency agreements would be developed to simplify the permit processes associated with restoration/enhancement activities within streambeds, eliminate to the extent possible, delays and complexity, improve coordination among agencies and across different levels of government, and enable federal, local, and Indian governments to provide more effective riparian restoration/enhancement.

Mostly Regulatory Approach

In the mostly regulatory approach (MR), the role of the state is to actively protect riparian resources throughout the state through effective water resource management and regulation of state agency actions, with an emphasis on activities on state and federal lands, and to guide and facilitate the protection of riparian areas by local government, tribal governments, private property owners, and non-profit organizations. In addition to many of the measures in the mostly nonregulatory approaches, key elements of this strategy include (1) authorization of the formation of Riparian Planning, Management, and Enhancement Districts (RPMEDs) which are similar to RPEDs, but have additional management responsibilities and authority; (2) establishment of AWEB which would carry out the functions of an RPMED in watersheds where none have been formed, provide guidance and oversight to the RPMEDs, allocate riparian protection and management financial assistance, and prepare a statewide riparian protection plan; (3) maintenance of separate laws for ground and surface waters, with new links between them so that well applications are reviewed for their impacts on surface water rights and flow; (4) establishment of a groundwater withdrawal permit program to prevent depletion of perennial streams; (5) specific statutory authorization of instream flow water rights; and (6) additional provisions addressing water quality aspects of riparian protection.

MR1 Riparian Destruction and Damage

- MR1.1 Statutes would be amended to specify a state policy concerning riparian area protection. This policy would be used as the basis for establishing and implementing state incentive voluntary, and regulatory programs to protect and restore riparian areas, and for directing state agencies in their riparian protection efforts.
- MR1.2 Statutes would be amended to enable the development of "riparian standards" which would delineate the minimal qualities for a healthy riparian ecosystem. These standards would be used as the basis for implementing incentive, voluntary, and regulatory programs for riparian area protection and restoration/enhancement, and by state agencies in their riparian protection efforts.
- MR1.3 Riparian best management practices (RBMPs) would be developed for use within riparian areas by a team of riparian experts, with the review and comment of affected businesses and industries, non-profit organizations, agencies and citizens and would be designed to protect water quality and riparian standards, and would be tailored to the individual watershed. Activities that occur in riparian areas would be under a general Aquifer Protection Permit program and required to implement RBMPs to comply with permit conditions on State and (to the extent possible) on federal lands, and encouraged to use them on privately owned lands and Indian reservations. (This differs from the mostly nonregulatory approach in that the use of RBMPs is tied to obtaining an aquifer protection permit.) The use of these RBMPs also would be tied to various incentive programs to protect and restore riparian areas. These RBMPs would be written as performance standards, indicating the allowable impact on the riparian areas, rather than as traditional BMPs which specify how an activity should be carried out. The RBMP program would also have an educational component to disseminate information.
- MR1.4 State statutes would call for the development of a riparian hierarchy system (such as the one proposed by Arizona Game and Fish Department) to be developed and used to categorize the waters and associated riparian areas for different levels of incentives,

protection (mandatory on state lands, aggressively pursued on federal lands, and encouraged on private and tribal lands), and study. This would be coordinated with the Unique Waters program, the national Wild and Scenic Rivers program, and other applicable federal, state, tribal, and local programs and plans.

- MR1.4.1 The hierarchy system would be a process using scientific information that would be implemented and used to categorize riparian areas based on functions and condition. Arizona Game and Fish Department would identify the level of wildlife use (wildlife value) associated with various riparian areas. A variety of management actions would be suggested for the various categories.
- MR1.4.2 Simultaneously or before the implementation of the system described above, state objectives would be set for the levels of protection. Some options are briefly mentioned in the Arizona Game and Fish Department's 1993 riparian inventory report.
- MR1.4.3 Based on a public process, priorities for actions and the types of actions to be implemented to attain objectives would be determined by the Riparian Planning, Management and Enhancement Districts (RPMED) and the Arizona Watershed Enhancement Board described in MR2.2. These decisions would need to take into account the various "values" placed on riparian areas. To the extent resources are available, priority actions would be implemented on state lands, aggressively pursued on federal lands, and encouraged for private and tribal lands.
- MR1.4.4 High priority riparian areas would automatically be designated as Unique Waters.
- MR1.5 An education program targeting the individuals who own or manage riparian areas would be developed by a designated state agency and implemented locally by a county planning department, a conservation district, or the cooperative extension service. This would inform these land managers of the values and functions of riparian areas, the laws that regulate them, and the incentives for protecting, enhancing and restoring them.
- MR1.6 A designated state agency (or the RPMED described in MR2.2) would provide technical assistance to landowners and others interested in minimizing riparian destruction and damage or in preserving and enhancing their habitat, but do not understand the regulatory maze or have the technical expertise to know how to best accomplish the goal. This assistance would be carried out or conducted in cooperation with local groups such as the county planning agencies, conservation districts, the cooperative extension service, and the RPMED described under MR2.2 below. Regulatory requirements would be clarified and potential funding sources and benefits would be identified. Technical expertise would also be available to recommend methods of restoration/enhancement or protection.
- MR1.7 New tax categories such as "open space" and/or "environmental use" would be developed which would have the lowest property tax rates. Criteria for inclusion in these categories would have to be very stringent and specific, and would include protected high priority

riparian areas. For example, to be eligible for such preferential taxation, land would need to be identified as environmental in the local general plan and zoned for environmental use in land ordinances.

- MR1.8 Property tax reductions would be provided to landowners who preserve riparian areas or wetlands using RBMPs through easements or voluntary use-restriction agreements, even if those areas do not fall into the "open space" or "environmental use" categories.
- MR1.9 A "stewardship program" to encourage the use of management agreements signed by landowner and conservation agency would be developed by a designated state agency. In these agreements, the landowner or conservation agency agrees to manage his/her property in a certain manner consistent with the goals of the conservation agency and the landowner. This would include use of RBMPs, and be consistent with the state riparian policy. Under this arrangement, direct payments and other types of cost-share assistance would be available to an eligible landowner; a plan would be developed to manage the land, based upon both the agency and the landowner's needs; the organization that helps develop the plan often provides management assistance and monitors compliance. These agreements are usually easier to terminate than a lease and do not involve exclusive possession of property.
- MR1.10 Landowners would be encouraged to donate priority riparian areas to non-profit agencies, special districts, federal and local governments. This could be done as an outright donation or through a will (deathtime transfer), or through donation with reserved life estate. Depending upon the type of donation, owners can receive income tax deductions, and possibly estate, gift, and property tax breaks. Donation by deathtime transfer and donation with reserved life estate allow the landowner to retain full use and control over his/her land while alive and to ensure the land's protection after the owner is deceased. To have a guarantee of perpetual preservation, there must be legally enforceable controls imposed in the donation agreement. Donations would be exempt from subdivision "split" constraints in other parts of the law.
- MR1.11 Landowners would be encouraged to attach conservation easements prior to transfer of land to another owner. The tax law would be modified so that the value of the property would be diminished by any restrictions placed by an easement, and there would be an income tax deduction for the donation of the easement to a qualified non-profit conservation organization. Local and federal governments, special districts, and non-profit organizations would be encouraged to purchase easements on riparian areas which would restrict some uses.
- MR1.12 State statutes pertaining to local floodplain zoning would be changed to also include riparian areas, enabling local government to better protect health, safety and welfare in cases where denudation of channels and adjacent riparian areas leads to more downstream flooding and water quality problems.
- MR1.13 Flood control districts would be encouraged to use non-structural alternatives for flood control, including acquisition, maintenance and restoration/enhancement of riparian areas to slow and reduce floodwaters. Flood plain acquisition programs in Pima County could be used as a model. A designated state agency would develop an educational program

(which could include seminars as well as written materials) to carry this out. The most effective way to encourage the use of non-structural alternatives is to devote a higher percentage of state and federal flood repair funds for non-structural measures.

- MR1.14 Enabling statutes would be modified to clearly state that local zoning can protect riparian areas but does not require same.
- MR1.15 The state would actively initiate interagency agreements with federal agencies and tribal governments incorporating state riparian standards, policies, and goals into federal and tribal practices.
- MR1.16 The state would encourage the federal government to use directives in Executive Order 91-6 to protect riparian areas.

MR2 Prevention of Riparian Area Damage from Land Use Activities in the Watershed

MR2.1 BMPs for major land uses would be developed and their use promoted and encouraged. These would be developed for riparian areas with the participation of affected businesses and industries, non-profit organizations, agencies and citizens, would be designed to protect water quality and riparian standards, and would be tailored to the individual watershed. These BMPs would be developed to protect riparian standards as well as water quality standards. BMPs would be flexible to respond to individual watersheds. The use of BMPs would be required in lease conditions on State and (to the extent possible) on federal lands, and encouraged for use on privately owned lands and tribal lands. The use of these BMPs by eligible participants also would be tied to state incentive programs. The BMP program would also have an educational component to disseminate information.

MR2.2 Riparian Protection, Management and Enhancement Districts (RPMED)

MR2.2.1 Statutes would enable the formation of these districts, with jurisdiction reflecting the boundaries of the watershed. The purpose of the districts would be (1) to establish watershed goals and direction for riparian protection and enhancement which are consistent with state statutory policy, (2) comprehensively plan for the protection, management and enhancement of riparian areas on a watershed basis, and to develop special area plans for high priority riparian areas (3) to identify specific stream segments which need instream flow protection; (4) to measure, control and manage groundwater withdrawal and surface water diversions where there is an established connection between the surface and ground water, (5) to oversee the implementation of the plans, and (6) monitor and coordinate, to the extent possible, federal, state, tribal, local, non-profit, and individual activities within the watershed that affect riparian areas. The district would also have the authority to implement some portions of the plan, if it desires.

MR2.2.2 The RPMED would use the riparian hierarchy to rank riparian areas within the watershed and assess the need for protection of riparian areas. The results would be the basis for developing a comprehensive watershed plan,

providing for various levels of protection of the ranked riparian areas.

- MR2.2.3 The RPMED, in cooperation with local governments and other affected governments and landowners, would develop special area plans for identified high priority riparian areas to provide for inter-jurisdictional protection and management. Federal, state, and local activities affecting high priority areas determined by the riparian hierarchy system would be coordinated in these plans. The special area plans would allow for intensive water rights management, control of groundwater withdrawals and surface water diversions, and other factors threatening or limiting high priority riparian areas. The implications of watershed-wide activities also would be factored in and addressed.
- MR2.2.4 The planning, development, and approval processes for the ranking of the riparian areas, the comprehensive plan and special area plans would involve all affected government jurisdictions, interested citizens, non-profit organizations and industries. Planning would be highly participatory and involve all segments of the public.
- MR2.2.5 The statute would specify steps in the ranking and planning process, a time frame for completion, representation on the RPMED, and funding sources.
- MR2.2.6 The district would be given the authority to acquire property and water rights to preserve riparian areas, implement programs to manage land and water uses, enter into agreements with government agencies to implement and coordinate projects, and monitor surface water rights. State agencies could contract with the districts to perform some functions, such as studies, providing technical assistance, initiating agreements with local landowners, monitoring for riparian area destruction as well as success of restoration/enhancement, negotiate permits for ground and surface water withdrawal, and the like.
- MR2.2.7 Protection provisions consistent with the comprehensive and special area plans would be recommended by RPMED for adoption by applicable local government agencies, the federal government, tribal government, and the state (for state managed lands and activities only) - all of whom would be active participants in the planning and decision-making process. The state would implement all recommendations for the state that were consistent with the state riparian policy, and aggressively pursue implementation of recommended provisions on federal lands. In addition, portions of the plan could be implemented by the district.
- MR2.2.8 RPMEDs could maintain stocks of riparian vegetation for remediation and restoration/enhancement projects, or work with private nurseries and other agencies to maintain such local stocks..
- MR2.2.9 The use of volunteers would be encouraged and facilitated to the extent possible.

- MR2.3 The Arizona Watershed Enhancement Board (AWEB) would be established in state statutes, which would coordinate and provide oversight to the activities of the RPMEDs, and in the absence of a RPMED for a portion of the state, would be authorized to carry out the activities that would have been authorized for the RPMED.
- MR2.3.1 The board would develop a statewide riparian protection and enhancement plan that would guide, coordinate, and integrate the RPMED plans and other related plans (including local riparian conservation plans or riparian elements in general plans) and which would be updated biannually. Each plan would include geographic areas where protection and restoration/enhancement would be emphasized, identification of issues of concern and types of measures needed to address the issues of concern.
- MR2.3.2 All planning would be highly participative and involve all of the affected jurisdictions, landowners, land managers, and interested groups and individuals.
- MR2.3.3 A riparian protection, enhancement and restoration fund would be established to provide financial assistance for restoration/enhancement and protection activities throughout the state. This fund would have a dedicated source of funding. Funds would be awarded according to criteria established by the board, which would at a minimum reflect and be consistent with the statewide plan, and the riparian hierarchy system.
- MR2.4 State agencies would be required to prepare riparian area impact assessments for all state agency actions in order to prevent them from approving or carrying out programs and activities that damage riparian areas.
- MR2.5 State agencies would be required to integrate riparian area protection and the results of the RPMED and AWEB plans in the development of their plans, including the state water resource management plan, state recreation plan, state water quality plan, transportation plans, greenway corridor plans, and others.
- MR2.6 Local governments would be encouraged and assisted in modifying or developing subdivision regulations, cluster zoning regulations, performance-based zoning, overlay zones, transferable development rights, and special permits to protect riparian areas.
- MR2.7 Information, education programs would be developed to address riparian impacts of commercial industrial and residential development, and inform developers and private landowners of the values and functions of riparian areas, the laws regulating them, and the incentives and means to protect them. These programs would be carried out by the regional councils of government, county planning agencies, or conservation districts with financial assistance from the state.
- MR2.8 The use of limited development strategies by local government and private landowners would be encouraged and assisted. This involves the sensitive development of the least environmentally significant portions of the property in order to finance conservation of the remaining property and meet landowner economic needs and goals. This approach

is particularly useful where land values are high. Tax advantages may be realized from recording an easement over the undeveloped part of the land. A designated state agency would provide information on the use of this technique to all local governments, and be available to work with interested local governments on applications. In some cases the use of these strategies could make the private landowner eligible for riparian protection incentives.

MR2.9 Local governments would be encouraged to develop comprehensive local ordinances, like those in Tucson, Flagstaff, Scottsdale, which address activities in floodplains that would adversely impact riparian areas. This would be accomplished by developing a model local ordinance which would be circulated to interested local governments.

MR2.10 The state would encourage the U.S. Forest Service and U.S. Bureau of Land Management to develop areas of critical concern which include riparian areas.

MR3 Water Supply and Quality

MR3.1 To the extent possible, State agencies would implement statutes to reflect the potential interactions between groundwater and surface water. In addition, the RPMED (or AWEB in the absence of a RPMED) would actively seek to conjunctively manage all water resources to the extent possible under current state laws (including any changes that would be made under this strategy). This would seek to manage water in a flexible fashion, incorporating effluent, recharge, transfers, conservation, and anything else relevant into a water management program.

3.1.1 The RPMED or AWEB would seek to achieve no net loss of streamflow for high priority riparian areas and others identified through a process with active public involvement.

3.1.2 Statutes would be amended so that in the absence of a RPMED, the AWEB could extend authority (but not responsibility) to local governments to establish their own programs to preserve streamflow.

MR3.2 State statutes would be amended so that it is illegal to adversely affect perennial streams by groundwater pumping. All new groundwater withdrawals in the state would be subject to a groundwater withdrawal permit. Existing groundwater withdrawals would be grandfathered in at current withdrawal levels. Increased pumping would be treated as a new withdrawal and subject to a permit. Part of the permit application would be a requirement to demonstrate that the proposed or actual pumping would not adversely affect the flows or water rights in any existing perennial or intermittent stream, or adversely impact any wetlands, or riparian areas. The Arizona Department of Water Resources would be given the authority and resources to enforce violations.

MR3.3 Title 45 would be amended to include instream uses such as preserving, maintaining and restoring riparian areas as a beneficial use of water, and to allow permits for this specific purpose to be issued to federal agencies, special districts, private entities, local governments, and non-profit organizations. The priority system currently in place for determining the relative values of the uses of surface water when supply is insufficient

would be eliminated, or riparian areas would receive a higher relative value exceeded only by domestic or municipal uses.

MR3.4 Specific statutory authorization would be provided for instream flow permits.

MR3.4.1 Conversion of a consumptive water right to an instream flow right would be permanent. Permanent conversion would allow a new junior right downstream.

MR3.4.2 Severance and transfer of water rights to increase streamflow for instream or riparian uses would be extended to any water rights holder unless senior water right holders would sustain substantial negative impacts. "Substantial negative impacts" would have to be defined and a process for determination delineated.

MR3.4.3 The preference ladder would be eliminated to give the Arizona Department of Water Resources director discretion. Recreation, wildlife including fish, and ground water recharge would no longer be given lowest preference.

MR3.4.4 State statutes would be amended to allow state agencies, special districts, local governments (for land within their jurisdiction only) and non-profit organizations to hold an instream flow water right without owning the adjacent land. These statutes would specify that the entity could only hold such rights where there was a clear connection with the entity's purpose or mission.

MR3.5 The Arizona Department of Water Resources would be given the authority and resources to enforce surface water rights violations.

MR3.6 The statutory provision which gives an irrigation district the right to veto any new water right would be repealed, although they would be required to be consulted prior to determination.

MR3.7 In cases where the state is a managing authority, release patterns of reservoirs would be required to change so they favor protection of high priority riparian area protection; other managing authorities would be encouraged to do so.

MR3.8 Incentives would be developed and provided to switch to other water sources or deeper aquifers that are not hydrologically linked to surface waters.

MR3.9 A system that provides people with surface water rights with an economic benefit from riparian preservation enhancement would be developed. This would affect the use or non-use of a portion of a water right (as the result of water conservation reducing the water used) or an entire water right. A tax deduction would be allowed for the donation of the water rights to an eligible non-profit group, special districts, local or federal governments, or the water rights could be sold separately from the land. The receiving agency or organization also would receive the seniority of the previous rights holder and could use it for instream flow protection or for riparian vegetation

restoration/enhancement and maintenance. This would only apply in areas where water rights have been adjudicated or there have been federally legislated Indian water rights settlements.

- MR3.10 Voluntary agreements would be developed with local landowners and water users whose water use pattern affect high priority riparian areas, to encourage, facilitate, and provide incentives for protecting riparian areas.
- MR3.11 Recharge projects would be encouraged and assisted to include in their design, the establishment of riparian areas.
- MR3.12 Statutes defining Active Management Area responsibilities would be amended to include riparian protection.
- MN3.13 Provisions protecting high priority riparian areas would be included in all applicable state land leases, which would include land use practices and water use practices.
- MN3.14 Agreements with federal agencies whose water use patterns (either the agency itself or the lessees of federal land) affect high priority areas would be developed to change these patterns to protect the areas.
- MR3.15 Narrative water quality standards for riparian vegetation would be developed and adopted. "Preserving, maintaining and restoring riparian areas" would be recognized as a designated use of water.
- MR3.16 Total maximum daily loads (TMDL) would be developed for all surface waters and included in the standards, and would be reflected in discharge requirements under the National Pollutant Discharge Elimination System (NPDES) permits.
- MR3.17 Tribes would be encouraged and assisted in developing their own water quality standards that include standards for riparian vegetation.
- MR3.18 Arizona Department of Environmental Quality (ADEQ) would be provided additional resources and staff to carry out the Clean Water Act Section 401 program.
- MR3.19 The Clean Water Act Section 401 program would be established in state rules, enabling ADEQ to enforce the provisions.
- MR3.20 Funding would be increased for all ADEQ programs related to water quality and the Clean Water Act.
- MR4 Effluent and Point Sources**
- MR4.1 Effluent ownership would be redefined in law and rules so that effluent would continue to belong to the entity who discharged it after discharge into a surface water.
- MR4.2 The state or RPMEDs would purchase effluent that currently supports high priority riparian areas, in order to maintain them.

- MR4.3 Active management area (AMA) requirements would be changed so they allow use of effluent to support riparian areas.
- MR4.4 Water quality standards for "effluent-dominated waters" would be developed that allow for the use of effluent for riparian areas without requiring cost-prohibitive treatment, while protecting wildlife and riparian vegetation values.
- MR4.5 In-channel discharge of effluent would be promoted by advocating and publicizing the use of properly constructed wetlands or riparian areas as tertiary treatment for effluent under specified conditions. This would be required for new wastewater treatment plants on state lands or state-owned wastewater treatment plants (such as any owned and or operated at a state park or other state facility), and the state would aggressively pursue similar requirements on federal land.
- MR4.6 A program would be developed to provide grants and loans for treatment plant upgrades where riparian areas would benefit or be created.
- MR4.7 Education-oriented pretreatment programs to supplement existing programs where appropriate would be developed.
- MR4.8 Incentives for effluent reuse or recharge (such as conservation easements, purchase or lease of the effluent by non-profit agencies, and the like) would be developed and provided that would benefit riparian areas.
- MR4.9 Current dischargers of effluent that creates high priority riparian areas (as identified by the RPMEDs or AWEB) on state lands or state-owned plants would be required to develop plans for the future of the riparian areas and for the use of the effluent. This would be aggressively sought for federal lands, and encouraged elsewhere in the state.
- MR4.10 RPMEDs and AWEB would incorporate effluent/riparian issues in their various plans, and additional programs addressing these issues could be developed.
- MR5 Restoration/enhancement**
- MR5.1 Statutes establishing AWEB and RPMEDs would have goals and policies pertaining to riparian restoration/enhancement.
- MR5.2 The state would restore identified high priority riparian areas on state lands, and aggressively seek their restoration/enhancement on federal lands.
- MR5.3 As necessary, the state would coordinate riparian restoration/enhancement activities among various participants through intergovernmental agreements.
- MR5.4 Financial assistance would be provided to landowners for restoration/enhancement work on priority riparian areas, either as tax incentives, loans, grants, or cost-share programs. Cost share would include a maintenance clause that states the riparian area must be maintained for a specified period before funds are released. Financial assistance would either pay for the use of land (i.e. as with conservation easement purchases) or pay for

restoration/enhancement.

- MR5.5 A designated state agency and the RPMEDs would provide restoration/enhancement technical assistance to landowners both private and public. This would include the creation of "how to" manuals, a compendium of existing strategies and methods for restoration/enhancement and availability of tools, and planning and management techniques. Field personnel time/expertise would be available. Staff would visit an interested individual, and follow-up with additional monitoring. Feedback from the program would be used to revise manuals and programs.
- MR5.6 Universities would be involved in monitoring/review of restoration/enhancement efforts, to develop better information base on the success of restoration/enhancement methods. This would be tied into many of the regulatory and nonregulatory measures.
- MR5.7 State agencies would work with RPMEDs, tribal and federal governments and non-profit organizations to maintain stocks of native riparian vegetation for use in mitigation and restoration/enhancement activities.
- MR5.8 Nonfinancial incentives would be developed to recognize individuals, companies, non-profit organizations, or government agencies that have voluntarily protected riparian areas.
- MR5.9 A mitigation banking program would be developed by the state and implemented and would consider guidance that has been developed by EPA. Mitigation would be implemented on a watershed basis in order to focus restoration/enhancement activities on high priority riparian areas. Individuals or businesses that conduct activities that adversely affect low priority riparian areas would, under some circumstances, be required to contribute to the restoration/enhancement of high priority riparian areas.

Regulatory Approach

In the regulatory approach (R), the role of the state is to actively protect riparian resources on federal, state, and privately owned lands, and to encourage and facilitate protection of riparian areas by tribal governments. The regulatory strategy includes no incentives or voluntary programs. Key elements are three new or expanded permit programs: (1) riparian protection permits, for all activities which would impact riparian areas; (2) aquifer protection permits for all other activities; and (3) groundwater withdrawal permits, for all groundwater pumping. State statutes would be amended to provide for conjunctive management of all water resources. In addition, many of the existing regulatory programs are expanded or modified to include riparian protection.

R1 Riparian Destruction and Damage

- R1.1 Statutes would be amended to specify a state policy concerning riparian area protection. This policy would be used as the basis for establishing and implementing state regulatory programs to protect and restore riparian areas, and for directing state agencies in their riparian protection efforts.
- R1.2 Statutes would be amended to enable the development of "riparian standards" which would delineate the minimal qualities for a healthy riparian ecosystem. These standards would be used as the basis for implementing regulatory programs for riparian area protection and restoration/enhancement.
- R1.3 Riparian protection permits would be required for all new and existing activities in and immediately adjacent to stream channels or that will result in the damage or destruction of riparian areas. This would include water diversion, as well as dredge, fill, mining, construction, urban and rural land uses, among others.
 - R1.3.1 The maintenance of riparian standards would be required for all activities granted permits. This approach would give maximum flexibility to the person or entity doing a project, and would encourage creativity by allowing the project to be carried out in any legal manners as long as it does not adversely impact (as defined by the standards) the riparian areas.
 - R1.3.2 Permittees would be required to show compliance with water quality standards through monitoring reports.
 - R1.3.3 Permittees would be required to consider alternatives with less impact, including the no action alternative.
 - R1.3.4 Use of exotic plant species would be restricted in permitted areas.
 - R1.3.5 Mitigation would be required where permitted activities result in the damage of riparian areas unless physically or economically impracticable. This program would be developed to meet both federal and state mitigation requirements. A mitigation bank (discussed under R5.4 below) would be established to allow for restoration/enhancement of high priority riparian areas.

- R1.3.6 The program would be coordinated with U.S. Army Corps of Engineers Section 404 program and other applicable local, state, tribal, and federal programs and plans.
- R1.3.7 Permits would be issued when there was a finding of no negative impact to riparian areas.
- R1.3.8 Conditional permits could be issued that limit the proposed activities or require mitigation.
- R1.4 Affected and interested public and private groups and industries would be informed of the regulatory requirements through an ongoing information dissemination program.
- R1.5 A state program modelled loosely after the federal Wild and Scenic Rivers program, called "Arizona Rivers and Streams Program" would be developed for all perennial streams in the state, including those on federal and Indian lands. This program would classify waters and associated riparian areas (using a riparian hierarchy system such as the one developed by Arizona Game and Fish Department) for different categories of protection and management actions. On state and private lands, protection would be implemented through the groundwater permits and riparian protection permit systems described above. Protection on federal and Indian lands would be sought by the state through the use of interagency agreements. Federal and tribal government ideas, opinions, and information would be sought in the classification of the streams and riparian areas (described in greater detail below) as well as for the identification of effective protection methods.
- R1.6 The Arizona Rivers and Streams Program would be coordinated with the Unique Waters program, the national Wild and Scenic Rivers program, and other related local, state, federal and tribal programs and plans.
- R1.7 State statutes would call for the development of a riparian hierarchy system (such as the one proposed by Arizona Game and Fish Department) to be used to categorize the waters and associated riparian areas for different levels of protection
 - R1.7.1 The hierarchy system would be a process using scientific information that would be implemented and used to categorize riparian areas based on functions and condition. Arizona Game and Fish Department would identify the level of wildlife use (wildlife value) associated with various riparian areas. A variety of management actions would be suggested for the various categories.
 - R1.7.2 Simultaneously or before the implementation of the system described above, state objectives would be set for the levels of protection. Some options are briefly mentioned in the Arizona Game and Fish Department's 1993 riparian inventory report.
 - R1.7.3 Based on a public process, the Arizona Game and Fish Commission would decide priorities for actions and the types of actions to be implemented to

attain objectives. These decisions would need to take into account the various "values" placed on riparian areas. To the extent possible, these actions would be carried out through existing programs and the new programs proposed in this strategy.

- R1.7.4 High priority riparian areas, determined by the hierarchical system, would be classified as Unique Waters.
- R1.8 Local governments and special districts would be directed to include riparian area protection as an element in their flood control plans. Change state law pertaining to local floodplain zoning to also include areas in order to protect health, safety and welfare in cases where denudation of channels and adjacent riparian areas leads to more downstream flooding and water quality problems.
- R1.9 The state would continue to seek discretionary authority in the interpretation of "ordinary high water" in the Clean Water Act Section 404 program, so that it is more applicable to conditions in arid environments.
- R1.10 The state would encourage the federal government to use directives in Executive Order 91-6 to protect riparian areas.
- R2 Prevention of Riparian Area Damage from Land Use Activities in the Watershed**
 - R2.1 All activities that alter the land or its vegetation would be subject to a general aquifer protection permit program and required to implement best management practices (BMPs) to comply with permit conditions. These would be developed with the participation of affected businesses and industries, non-profit organizations, agencies and citizens, would be designed to protect water quality and riparian standards, and would be tailored to the individual watershed. These BMPs would be developed to protect riparian standards as well as water quality standards. BMPs would be flexible to respond to individual watersheds. The BMP program would also have an educational component to disseminate information.
 - R2.2 The state would actively initiate agreements with tribal governments and federal agencies to encourage their use of the BMPs on their lands.
 - R2.3 State agencies would be prohibited from approving or carrying out programs and activities that damage riparian areas. In order to achieve this, state agencies would be required to prepare riparian area impact assessments for all state agency actions.
 - R2.4 State agencies would be required to integrate riparian area protection and priorities using the hierarchy system in the development of their plans, including the state water resource management plan, state recreation plan, state water quality plan, transportation plans, greenway corridor plans, and others.
 - R2.5 State law would be amended to require cities and counties to include a riparian protection element in their general plans, which reflects and is at least as protective as that called for in state policy and programs.

- R2.6 The state would encourage the U.S. Forest Service and U.S. Bureau of Land Management to develop areas of critical concern which include riparian areas.

R3 Water Supply and Quality

- R3.1 State statutes would be amended to allow for conjunctive management of water resources, recognizing the potential interactions between groundwater and surface water. This would provide a unification of the groundwater and surface water statutes to regulate water under an appropriations system, and allow for the management of water in a flexible fashion, incorporating effluent, recharge, transfers, conservation, and anything else relevant into a water management program.
- R3.2 State statutes would be amended so that it is illegal to adversely affect perennial streams by groundwater pumping. All new and existing groundwater withdrawals in the state would be subject to a groundwater withdrawal permit. Part of the permit application would be a requirement to demonstrate that the proposed or actual pumping would not adversely affect any existing perennial or intermittent stream, wetland, or riparian area. The Arizona Department of Water Resources would be given the authority and resources to enforce violations.
- R3.3 Title 45 would be amended to include instream uses such as preserving, maintaining and restoring riparian areas as a beneficial use of water, and to allow permits for this specific purpose to be issued to federal agencies, special districts, private entities, local governments, and non-profit organizations. The priority system currently in place for determining the relative values of the uses of surface water when supply is insufficient would be eliminated, or riparian areas would receive a higher relative value exceeded only by domestic or municipal uses.
- R3.4 Specific statutory authorization would be provided for instream flow permits.
- R3.4.1 Conversion of a consumptive water right to an instream flow right would be permanent. Permanent conversion would allow a new junior right downstream.
- R3.4.2 Severance and transfer of water rights to increase streamflow for instream or riparian uses would be extended to any water rights holder unless senior water right holders would sustain substantial negative impacts. "Substantial negative impacts" would have to be defined and a process for determination delineated.
- R3.4.3 The preference ladder would be eliminated to give the Arizona Department of Water Resources director discretion. Recreation, wildlife including fish, and ground water recharge would no longer be given lowest preference.
- R3.4.4 State statutes would be amended to allow state agencies to hold an instream flow water right without owning the adjacent land. These statutes would specify that the entity could only hold such rights where there was a clear connection with the entity's purpose or mission.

- R3.5 The Arizona Department of Water Resources would be given the authority and resources to enforce surface water rights violations.
- R3.6 The statutory provision which gives an irrigation district the right to veto any new water right would be repealed, although they would be required to be consulted prior to determination.
- R3.7 Management agencies would be required to change release patterns of reservoirs so they favor protection of high priority riparian area protection.
- R3.8 Recharge projects would be required to include in their design, the establishment of riparian areas.
- R3.9 Statutes defining Active Management Area responsibilities would be amended to include riparian protection.
- R3.10 Narrative water quality standards for riparian vegetation would be developed and adopted. "Preserving, maintaining and restoring riparian areas" would be recognized as a designated use of water.
- R3.11 Total maximum daily loads (TMDL) would be developed for all surface waters and included in the standards, and would be reflected in discharge requirements under the NPDES permits.
- R3.12 Tribes would be encouraged and assisted in developing their own water quality standards that include standards for riparian vegetation.
- R3.13 ADEQ would be provided additional resources and staff to carry out the Clean Water Act Section 401 program.
- R3.14 The Clean Water Act Section 401 program would be established in state rules, enabling ADEQ to enforce the provisions.
- R3.15 Funding would be increased for all ADEQ programs related to water quality and the Clean Water Act.
- R4 Effluent and Point Sources**
- R4.1 Effluent ownership would be redefined in law and rules so that effluent would continue to belong to the entity who discharged it after discharge into a surface water.
- R4.2 Active management area (AMA) requirements would be changed so they allow use of effluent to support riparian areas.
- R4.3 Water quality standards for "effluent-dominated waters" would be developed that allow for the use of effluent for riparian areas without requiring cost-prohibitive treatment, while protecting wildlife and riparian vegetation values.

- R4.4 Monitoring and enforcement of NPDES program would be improved.
- R4.5 The discontinuation of effluent for high priority riparian areas (as defined in the Arizona Rivers and Streams program in R1.5) that depend upon them would be prohibited.
- R4.6 In-channel discharge of effluent would be promoted by requiring the use of properly constructed wetlands or riparian areas as tertiary treatment for effluent under specified conditions.
- R4.7 Current dischargers of effluent that creates high priority riparian areas would be required to develop plans for the future of the riparian areas and for the use of the effluent. This would apply to state and privately owned lands, and be aggressively sought for federal lands.

R5 Restoration/enhancement

- R5.1 Statutes would have goals and policies pertaining to riparian restoration/enhancement.
- R5.2 The state would actively coordinate riparian restoration/enhancement activities with Indian nations and federal government through intergovernmental agreements.
- R5.3 The state would maintain a stock of native riparian vegetation for use in mitigation and restoration/enhancement activities.
- R5.4 A mitigation banking program would be developed by the state and implemented and would consider guidance that has been developed by EPA. Mitigation would be implemented on a watershed basis in order to focus restoration/enhancement activities on high priority riparian areas. Individuals or businesses that conduct activities that adversely affect low priority riparian areas would, under some circumstances, be required to contribute to the restoration/enhancement of high priority riparian areas.

Status Quo Approach

The status quo approach (SQ) considered what role the state currently is taking regarding riparian areas through existing state and local programs. Existing federal programs which deal with protection and restoration of riparian areas were also considered. The conservation goal of the RAAC "To sustain and enhance Arizona's riparian areas by managing land, water and resource uses to protect ecological integrity" was used in reviewing these programs. Brief summaries of the programs are identified in relation to how programs are used or apply to riparian areas, and possible problems or conflicts.

SQ1 Riparian Destruction and Damage

REGULATORY PROGRAMS

Local

SQ1.1 Flood Plain Ordinances
Statutes deal with delineated floodplains and regulate structures which may divert, retard, or obstruct floodwater. Potential conflict with revegetation projects.

State

SQ1.2 Clean Water Act Section 401
State certification of all activities requiring a Section 404 permit. Program not in rule; terms and conditions of certification are not enforceable by the State.

SQ1.3 Water Quality Standards
Activities must not violate standards.

SQ1.4 Antidegradation Standard
Addresses stream channels not riparian areas. Water quality can not be degraded. Activities that occur in or near stream channels may be limited.

SQ1.5 Unique Waters Designation
Addresses stream channels not riparian areas. Water quality within a designated stream reach cannot be degraded. Does not specify water quantity as part of designation.

SQ1.6 Arizona Native Plant Law
Removal of one acre or more of riparian vegetation, except mesquite trees, requires notification of the Arizona Department of Agriculture.

SQ1.7 Executive Order 91-6
Directs State agencies to protect and restore riparian areas through management and cooperative efforts. ADEQ shall consider the protection of riparian areas in its review of Section 401 State Water Quality Certifications.

Federal

SQ1.8 Clean Water Act Section 404
Evaluates all activities that occur within the ordinary high water mark and/or delineated wetlands.

- SQ1.9 **Endangered Species Act**
Provides protection for endangered riparian species and critical habitat.
- SQ1.10 **National Environmental Policy Act (NEPA)**
Requires analysis of potential impacts from a project involving a major federal action to be evaluated.
- SQ1.11 **National Flood Insurance Program**
Restricts development in delineated floodways and effects what can be done in floodplain.
- SQ1.12 **National Forest Management Act**
Agency policy to restore and maintain riparian areas. May limit or strictly manage activities near riparian areas.
- SQ1.13 **BLM Management Plans and BLM Riparian Initiative**
Agency policy to protect and improve riparian areas. Management of activities would be addressed in Activity Plan. Activities near riparian areas may be restricted or limited or require mitigation.
- SQ1.14 **Wild & Scenic Rivers Act**
Natural character of river shall be maintained. Degree of protection ranges from highest protection of "wild" to "recreation".

NONREGULATORY PROGRAMS

State

- SQ1.15 **ADEQ Nonpoint Source Management Program - BMPs**
BMPs are being developed for sand and gravel operations that need 404/401 permit.
- SQ1.16 **ADEQ Nonpoint Source Zone Management Plan**
ADEQ assists stakeholders in a watershed to identify and address water quality issues. Work on two watersheds, the Verde and the Safford/Duncan, has been initiated. Funds can be available from EPA to support effort to improve watershed condition.
- SQ1.17 **ADOT Wetlands Preservation Policy**
New construction projects are encouraged to avoid impacts to wetlands. Materials that are extracted from wetlands are required to have all appropriate federal and state permits and approvals.
- SQ1.18 **AGFD Heritage Data Management**
Information on threatened and endangered species and species of special concern to the state is available to agencies.
- SQ1.19 **AGFD IIPAM - Heritage Funds**
Areas acquired are managed for riparian resources. Activities may restricted in the acquired area.

- SQ1.20 **AGFD Policy and Procedure for Wildlife and Wildlife Compensation**
Avoid or minimize habitat losses from federally funded and state administered land and water projects by requiring 100% compensation. Not a statutory regulation.
- SQ1.21 **ASL Riparian Ecosystem Strategic Plan**
Conservation and preservation of riparian resources may be in conflict with revenue generation for State Trust.
- SQ1.22 **ASP Natural Areas Program**
Areas acquired are managed for riparian resources. Activities may be restricted in the acquired area.
- SQ1.23 **CAP Water Protection Fund**
Funds for acquisition of areas for the purpose of protecting and restoring rivers and streams and associated riparian habitats. Activities may be restricted on acquired areas.
- SQ1.24 **Natural Resource Conservation Districts**
Provide technical assistance to landowners for resource management plans.
- SQ1.25 **State Lake Improvement Fund**
Funding for projects designed to increase or enhance boating opportunities. Could apply to boatable streams. Program has limited funds and has not been used recently. Public entities eligible to participate are Arizona State Parks Board, Arizona Game and Fish Commission, Board of Supervisors of any County, and Governing Body of a city or town.
- SQ1.26 **Statewide Comprehensive Outdoor Recreation Plan**
Report provides recommendations to protect and enhance Arizona's natural resources, including riparian areas.
- Federal**
- SQ1.27 **Clinton Administration Policy on Wetlands**
Directed the following actions: Corps to modify its regulations to establish regulatory deadlines for reaching decisions regarding permit applications; certification program required to improve consistency of wetland delineations.
- SQ1.28 **Emergency Wetlands Resources Act**
Required wetlands to be addressed in state SCORP report.
- SQ1.29 **EPA Wetlands Program State Development Grants**
EPA provides funds to State agencies to develop management tools to protect wetland and riparian resources.
- SQ1.30 **Executive Order 11988**
Floodplain development activities are to be avoided.
- SQ1.31 **Executive Order 11990**
Limited to wetlands and directed Federal agencies to take actions to minimize destruction

or degradation of wetlands.

- SQ1.32 **Flood Control Act of 1936**
Technical assistance to minimize soil erosion is provided through SCS.
- SQ1.33 **Land and Water Conservation Fund**
Funds available to acquire areas by U.S. Fish and Wildlife Service into Wildlife Refuge System. Activities may be restricted, however, compatible uses are allowed.
- SQ1.34 **National Wetlands Priority Conservation Plan (USFWS)**
Funds are available to acquire wetlands based on priority based on a coordinated national plan. Acquired areas can restrict activities. Monies for acquisition are available through the Land and Water Conservation Fund but these funds are limited. Changes to or destruction of non-acquired lands is quite possible. The non-acquired lands may be considered as "expendable" because they have no protection status.
- SQ1.35 **Partners for Wildlife**
Provides technical assistance and funds to restore habitat through voluntary partnerships, while leaving the land in private ownership.
- SQ1.36 **Section 404 Advance Identification**
Suitability of sites for potential Section 404 activities are evaluated.
- SQ1.37 **SCS Riparian Policy**
Involved with channelization and bank protection projects under Emergency Watershed Protection Act to protect property. Technical assistance can be provided to private landowners and land managers to protect property, conserve natural resources, and improve management practices in riparian areas.

SQ2 Prevention of Impacts to Riparian Areas from Land Use Activities in the Watershed

REGULATORY PROGRAMS

State

- SQ2.1** Clean Water Act Section 401
Activities adjacent to and within riparian areas do not require water quality certification. Activities occurring within tributaries to perennial that are ephemeral or intermittent require 401 certification.
- SQ2.2** Nonpoint Source Management Program - BMPs for Regulated Agricultural Activities
Concentrated Animal Feeding Operations and application of nitrogen fertilizer must follow BMPs as condition of General Permit.
- SQ2.3** State Water Quality Standards
Turbidity standard most frequently violated by adjacent land uses causing increased erosion.
- SQ2.4** Arizona Native Plant Law
Removal of one acre or more of riparian vegetation, except mesquite trees, requires notification of the Arizona Department of Agriculture.
- SQ2.5** ASL Riparian Ecosystem Strategic Plan 1989
Conservation and preservation of riparian resources may be conflict with revenue generation for State Trust.
- SQ2.6** Executive Order 91-6
Directs State agencies to protect and restore riparian areas through management and cooperative efforts.
- SQ2.7** Groundwater Transportation (Basin Transfer)
Restrict the transport of groundwater from rural groundwater basins to initial AMAs unless certain exceptions apply. A 1993 amendment to the Code further restricts the transportation of groundwater from all groundwater basins outside AMAs to their groundwater basins unless explicitly allowed.
- SQ2.8** Instream Flow
Surface water right specific to instream uses that can provide protection from future water exchanges and transfers. Due to the priority dates associated with these rights, they are generally junior to other surface water rights.
- SQ2.9** Water Right Sever and Transfer
Provides opportunity to obtain senior water rights with early priority dates for instream uses. Currently, availability limited to state and its political subdivisions and affected irrigation districts and water users associations can veto these actions.

Federal

- SQ2.10** Clean Water Act Section 404
Perennial and ephemeral stream channels are considered Waters of the U.S. Activities

occurring within channels should be reviewed by Corps to determine whether a 404 permit is required. Activities outside of channels may impact riparian areas and are not covered by 404 permit review.

- SQ2.11 **Wilderness Act**
Acquired areas may restrict certain activities. Reserved water right is junior and needs to be approved from state.
- SQ2.12 **Wild & Scenic Rivers Act**
Three types of designations. If designation of river is 'wild" activities up to 1/4 mile on each side of the river are limited. "Scenic" or "recreation" may regulate management of an activity.
- SQ2.13 **National Environmental Policy Act (NEPA)**
Requires analysis of potential impacts from a project involving a major federal action to be evaluated.
- SQ2.14 **National Forest Management Act**
US Forest Service manages grazing, timber harvesting, mining, and road construction activities.
- SQ2.15 **BLM Management Plan and BLM Riparian Initiative**
Agency policy to protect and improve riparian areas. Activity Plans may restrict or limit activities such as grazing, timber harvesting, mining, and road construction in riparian areas.

NONREGULATORY PROGRAMS

State

- SQ2.16 **Nonpoint Source Management Program - BMPs**
BMPs are being developed for rangeland activities and for urban runoff. Forest Service has developed BMPs for timber harvesting and associated road construction.
- SQ2.17 **Nonpoint Source Zone Management Plan**
ADEQ assists stakeholders in a watershed to identify and address water quality issues. Work on two watersheds, the Verde and the Safford/Duncan, has been initiated. Funds can be available from EPA to support effort to improve watershed condition.
- SQ2.18 **ADOT Wetlands Preservation Policy**
Addresses road construction activities to avoid wetlands, but does not explicitly protect riparian areas.
- SQ2.19 **AGFD Heritage Data Management**
Information on threatened and endangered species and species of special concern to the state is available to agencies.
- SQ2.20 **AGFD IIPAM - Heritage Funds**
Areas acquired are managed for riparian resources. Activities may restricted in the

acquired area.

- SQ2.21 **AGFD Policy & Procedure for Wildlife and Wildlife Compensation**
Avoid or minimize habitat losses from federally funded and state administered land and water projects by requiring 100% compensation. Not a statutory regulation.
- SQ2.22 **ASP Natural Areas Program - Heritage Funds**
Areas acquired are managed for riparian resources. Activities may be restricted in the acquired area.
- SQ2.23 **CAP Water Protection Fund**
Funds for acquisition of areas for the purpose of protecting and restoring rivers and streams and associated riparian habitats. Activities may be restricted on acquired areas.
- SQ2.24 **Natural Resource Conservation Districts**
Provides technical assistance to landowners for resource management plans and develop area-wide conservation plans. No regulatory authority to enforce resource plans. NRCD can assist the CAP Water Protection Fund in prioritizing areas of funding.
- SQ2.25 **Statewide Comprehensive Outdoor Recreation Plan**
Report provides recommendations to protect and enhance Arizona's natural resources, including riparian areas.

Federal

- SQ2.26 **Clinton Administration Policy on Wetlands**
Does not address riparian areas.
- SQ2.27 **Emergency Wetlands Resources Act**
Does not address riparian areas.
- SQ2.28 **EPA Wetlands Program State Development Grants**
EPA provides funds to State agencies to develop management tools to protect wetland and riparian resources.
- SQ2.29 **Executive Order 11988**
Floodplain development activities are to be avoided.
- SQ2.30 **Executive Order 11990**
Does not include riparian areas.
- SQ2.31 **Food Security Act of 1985**
Applies to wetlands on agricultural land. Through a MOU, SCS does wetland delineation on these lands. Limited applicability in Arizona.
- SQ2.32 **Land and Water Conservation Fund**
Funds available to acquire areas by U.S. Fish and Wildlife Service for Wildlife Refuge System. Activities may be restricted, however, compatible uses are allowable.

SQ2.33 Partners for Wildlife

Provides technical assistance and funds to restore habitat through voluntary partnerships, while leaving the land in private ownership.

SQ2.34 SCS Riparian Policy

Involved with grazing and agricultural activities. Technical assistance can be provided to private landowners and land managers to conserve natural resources and improve management practices in riparian areas.

SQ3 Water Supply and Quality

REGULATORY

State

- SQ3.1 ADEQ - Clean Water Act Section 401**
Projects that require Section 404 permit will also need Section 401 State certification. Projects are reviewed for potential impacts to surface water quality and may be certified, conditionally certified, or denied.
- SQ3.2 ADEQ - Nonpoint Source Management Program**
Pollution Prevention Program for Concentrated Animal Feeding Operations and application of nitrogen fertilizer have BMPs in rule. BMPs for are designed to minimize pollution and not exceed water quality standards.
- SQ3.3 State Surface Water Quality Standards**
Standards for various parameters for "Waters of the United States" are in rule. Permits (e.g. NPDES) set discharge limits for various pollutants.
- SQ3.4 Arizona Native Plant Law**
Removal of riparian vegetation, except mesquite trees, does not require notification to Arizona Department of Agriculture. Removal of vegetation can cause soil disturbance effecting water quality.
- SQ3.5 Executive Order 91-6**
ADEQ directed to consider riparian areas regarding water quality certifications under Section 401 of Federal Clean Water Act, other applicable rules and approved state and regional water quality planning and management programs.
ADWR directed to develop rules regarding instream flow water rights applications, and to coordinate with other state agencies to develop legislation to protect instream flows, and to develop or modify rules to facilitate the protection of riparian water usage.
- SQ3.6 Groundwater Management Act**
The general goal of existing AMAs is to maintain "safe Yield" of groundwater. The principal goal of the newly established Santa Cruz AMA will be to maintain and protect riparian areas along the Santa Cruz River sustained by effluent flows from Mexico.
- SQ3.7 Groundwater Transportation (Basin Transfer)**
Except for existing interbasin transfer activities, interbasin groundwater transfers are no longer allowed.
- SQ3.8 Surface Water Rights**
Do not recognize riparian habitat or vegetation as beneficial use. Beneficial use for instream uses limited to fish, wildlife, and recreation.
- SQ3.9 Instream Flow**
Surface water right specific to instream uses that can provide protection from future water exchanges and transfers. Due to the priority dates associated with these rights, they are generally junior to other surface water rights.

- SQ3.10** **Adjudicated Water Rights**
Legal and technical process whereby individual water rights are assessed and determined on a watershed basis. May result in a reduction of some current diversions. An acceptable system may be developed that can be used to determine and to properly adjudicate and administer subflow withdrawals.
- SQ3.11** **Water Right Sever and Transfer**
Provides opportunity to obtain senior water rights with early priority dates for instream uses. Currently, availability limited to state and its political subdivisions and affected irrigation districts. Water users associations can veto these actions.
- SQ3.12** **Recharge Program**
Permits available for managed, underground storage facilities that would add value to a National Park or Monument, or State Park. Applicant must maintain minimum baseflow and annual discharge to the stream serving as the distribution system. Permits are also available for other managed, passive recharge projects that support riparian ecosystems, primarily those associated with existing effluent discharge projects.
- Federal**
- SQ3.13** **Clean Water Act Section 402 National Pollutant Discharge Elimination System (NPDES)**
Discharges from point sources (typically from the end of a pipe) are regulated through permit requirements and must meet water quality standards.
- SQ3.14** **Clean Water Act Section 404**
Section 404 permits do not directly control water rights or water use. However, future activities e.g., sand and gravel mining, may be precluded from some areas by Section 404 requirements. Proposed projects are reviewed for water quality, purpose (e.g., if water-dependent), for the least damaging practicable alternative, and NEPA requirements.
- SQ3.15** **Endangered Species Act**
Provides protection for endangered riparian species and critical habitat. Withdrawals of groundwater or diversions of surface water may affect the habitat of endangered species residing in or near intermittent or perennial stream reach, which may restrict some water right activities.
- SQ3.16** **National Forest Management Act**
Agency policy to restore and maintain riparian areas. Federal agencies abide by state laws relating to the control, appropriation, use or distribution of water. As an example, USFS has 18 Instream Flow permits either permitted or in process.
- SQ3.17** **BLM Management Plans**
Agency policy to protect and improve riparian areas. Federal agencies abide by state laws relating to the control, appropriation, use or distribution of water. As an example, BLM has 27 Instream Flow permits either permitted or in process and one (1) certified.
- SQ3.18** **Wild & Scenic Rivers Act**
Major dams, diversions and impoundments would be prohibited within a designated area. Minor structures could be permitted if they were unobtrusive and did not have a

significant or adverse affect on the natural character of the river. These designations may have the ability to prohibit new appropriations or changes in existing points of diversion from downstream to upstream of a designated area. Upstream senior and all downstream appropriators would not be affected. Upstream junior appropriators would have to maintain flows sufficient to satisfy instream flow rights.

NONREGULATORY

State

- SQ3.19 **ADEQ Nonpoint Source Management Program - BMPs**
BMPs are being developed for sand and gravel mining, rangeland activities, and urban runoff. Proactive program so activities will minimize pollution to surface waters and improve water quality.
- SQ3.20 **ADEQ Nonpoint Source Zone Management Plan**
Water quality issues are identified within a watershed through cooperative efforts with stakeholders. Objective is to assist stakeholders to improve water quality and watershed condition. ADEQ has initiated work on two watersheds or zones, the Verde and the Safford/Duncan.
- SQ3.21 **AGFD Heritage Data Management**
Information on threatened and endangered species and species of special concern to the state is available to agencies.
- SQ3.22 **AGFD IIPAM - Heritage Funds**
Areas acquired by AGFD that have existing water rights could sever and transfer from consumptive uses to an Instream Flow Right.
- SQ3.23 **AGFD Policy & Procedure for Wildlife and Wildlife Compensation**
Avoid or minimize habitat losses from federally funded and state administered land and water projects by requiring 100% compensation. Not a statutory regulation.
- SQ3.24 **Arizona Natural Areas Program**
Areas acquired by ASPB that have existing water rights could sever and transfer from consumptive uses to an Instream Flow Right.
- SQ3.25 **CAP Water Protection Fund**
Funds for acquisition of areas for the purpose of protecting and restoring rivers and streams and associated riparian habitats. Activities may be restricted on acquired areas, thereby limiting water quality problems. Acquired areas must apply for instream flow water rights.
- SQ3.26 **Natural Resource Conservation Districts**
Technical assistance may be provided from the SCS through the NRCDs to develop management plans for natural resources.

SQ3.27 **Statewide Comprehensive Outdoor Recreation Plan (SCORP)**
Described strategies for enhancement or recreation use and conservation of Arizona's streams and wetlands. A conceptual plan for statewide streams and wetlands management program was a major part of the study.

Federal

SQ3.28 **Clinton Administration Policy on Wetlands**
Regulatory reforms and nonregulatory policy approaches. Field guidance issued that addressed less vigorous permit review for small projects with minor environmental impacts.

SQ3.29 **EPA Wetlands Program State Development Grants**
Funds can be used by the State and other entities to assist in wetland and riparian area programs. Funds have been provided to ADEQ regarding the water quality functions that riparian vegetation perform.

SQ3.30 **Land and Water Conservation Fund**
Limited funds. Not used much in Arizona.

SQ3.31 **Section 404 Advance Identification**
Suitability of sites for potential Section 404 activities are evaluated for impacts to the chemical, biological and physical integrity. Results from an ADID should be used only as a guide by landowners and project proponents in the planning of future activities. The results of the ADID are strictly informational and advisory. The ADID will indicate to potential applicants the relative difficulty of obtaining a permit and will serve to encourage applicants to seek alternative solutions that will avoid impacts to important aquatic sites. CWA jurisdiction often does not include the entire riparian corridor. The ADID, as part of the 404 program, only directly addresses impacts to waters from fill activities.

SQ4 Effluent and Point Sources

REGULATORY

State

- SQ4.1** Clean Water Act Section 401
National Pollution Discharge Elimination System (NPDES) permits are required for effluent discharges from wastewater treatment facilities into waters of the United States. NPDES permits are also required to control discharges of pollutants from storm water runoff. Permits include municipal storm water permits, individual industrial storm water permits, and general storm water permits. Specific control measures and best management practices involving the preservation of natural vegetation of the establishment of buffer zones and filter strips can be designated to enhance riparian areas.
- SQ4.2** State Surface Water Quality Standards
Permits (e.g. NPDES) set discharge limits for various pollutants. Effluent discharges must meet NPDES limits.
- SQ4.3** Effluent ownership
This type of water is not comprehensively regulated under either the Surface Water Code or the Groundwater Code. Management and use of this type of water are greatly impacted by water quality laws.

Federal

- SQ4.4** Clean Water Act Section 402 (NPDES)
Many facilities will have to provide higher levels of treatment in order to comply with the applicable water quality standards, including the standards for toxics. Higher treatment costs associated with inappropriate beneficial use designations, their associated water quality criteria, and little or no dilution for the treated waste water may encourage dischargers to remove effluent from waters that currently support effluent-dependent aquatic and riparian ecosystems, with the consequent loss of those ecosystems. EPA Region 9 has developed Interim Final "Guidance for Modifying Water Quality Standards and Protecting Effluent-Dependent Ecosystems" (EPA 1992). This guidance clarifies the existing flexibility in the CWA and federal regulations that allows for the modification of designated uses and the water quality criteria and effluent limits associated with them. A possible problem is that the CWA cannot require the discharge of waste water to maintain riparian habitat.

NONREGULATORY

State

- SQ4.5** AGFD Heritage Data Management
Information on threatened and endangered species and species of special concern to the state is available to agencies. Some species may be dependent on effluent dominated streams.
- SQ4.6** CAP Water Protection Fund
Areas may be acquired for the purpose of protecting and restoring rivers and streams and associated riparian habitats. These may occur along effluent dominated streams.

Federal
SQ4.7

EPA Wetlands Program State Development Grants

Funds have been provided to ADEQ regarding the water quality functions that riparian vegetation perform.

SQ5 Restoration/enhancement & Exotic Species

REGULATORY

Local

SQ5.1 Flood Plain Ordinances
Statutes deal with delineated floodplains and regulate structures which may divert, retard, or obstruct floodwater. Potential conflict with revegetation projects.

State

SQ5.2 State Surface Water Quality Standards
Projects to restore or enhance riparian areas or eliminate exotic species need to adhere to water quality standards. Some projects may need permits such as Section 404 and Floodplain Use.

SQ5.3 ADEQ Nonpoint Source Management Program
Funds available from EPA under Section 319 of Clean Water Act for watershed improvement projects.

SQ5.4 Natural Resource Conservation Districts
Pima/San Pedro Demonstration Project where a NRCD can purchase a commercial development right lease on private property and establish a cooperative natural resource management plan to conserve and protect the resources.

SQ5.5 ASL Riparian Ecosystem Strategic Plan 1989
Conservation and preservation of riparian resources on State lands may be in conflict with revenue generation for State Trust.

SQ5.6 Executive Order 91-6
Determined the policy of the State shall be "...to actively encourage and develop management practices that will result in maintenance of existing riparian areas and restoration/enhancement of degraded riparian areas.[excerpt]"

Federal

SQ5.7 Clean Water Act Section 404
Projects within ordinary high water mark or jurisdictional wetlands require 404 permit. U.S. Army Corps Phoenix District office has defined mitigation guidelines for riparian habitats.

SQ5.8 Endangered Species Act
Areas can be defined as "Critical Habitat" on which are found physical or biological features essential to the conservation of the species and which may require special management consideration or protection. Under Section 7(a) agencies have the responsibilities to conserve habitat and utilize resources for conservation of species which can mean restoration. Funding may be limited

SQ5.9 National Environmental Policy Act (NEPA)
One component of mitigation defined in NEPA is rectifying the impact by repairing, rehabilitating, or restoring the effected environment.

- SQ5.10 National Forest Management Act
Agency policy to restore and maintain riparian areas.
- SQ5.11 BLM Management Plan and BLM Riparian Initiative
Agency policy to protect and improve riparian areas. Agency goal to have 75% of riparian areas meeting management objectives by 1997.

NONREGULATORY

State

- SQ5.12 AGFD Game, Nongame, Fish & Endangered Species Fund
Funds available for protecting and researching endangered species.
- SQ5.13 AGFD Heritage Data Management
Information on threatened and endangered species and species of special concern to the state is available to agencies.
- SQ5.14 AGFD IIPAM - Heritage Funds
Areas acquired are managed for riparian resources.
- SQ5.15 AGFD Policy & Procedure for Wildlife and Wildlife Compensation
100% compensation is required for federally funded and state administered land and water projects. Not a statutory regulation.
- SQ5.16 ASP Natural Areas Program - Heritage Funds
Riparian areas can be acquired and managed for riparian resources.
- SQ5.17 CAP Water Protection Fund
Provides \$5 million per year for projects that will best restore, maintain, or enhance riparian ecosystem resources. Funds to be administered by the Water Protection Fund Commission.
- SQ5.18 State Lake Improvement Fund
Funding for projects designed to increase or enhance boating opportunities. Could apply to boatable streams. Program has limited funds and has not been used recently. Public entities eligible to participate are Arizona State Parks Board, Arizona Game and Fish Commission, Board of Supervisors of any County, and Governing Body of a city or town.
- SQ5.19 Statewide Comprehensive Outdoor Recreation Plan
Preliminary list of candidate critical streams and wetlands for Arizona was identified in this report.

Federal

SQ5.20 Clinton Administration Policy on Wetlands

Restoring some former wetlands that have been drained and previously or otherwise destroyed to functioning wetlands is key to achieving the Administration's interim goal of no overall net loss of the Nation's remaining wetlands, and its long term goal to increase the quality and quantity of the Nation's wetlands. In support of a broad-based effort to restore a portion of the Nation's historic wetlands base that has been destroyed or degraded in the past, the Administration proposes to develop the Wetlands Reserve Program, promote wetlands restoration through voluntary, cooperative programs and outreach activities, and revise the Executive Order on Wetlands. Wetlands restoration through a voluntary approach."

SQ5.21 Land and Water Conservation Fund

Recreation Coordination and Development ACT (ammended) 16 USC 4601-4601-11 Congressional Policy. Nothing directed specifically for restoration (off-shore oil monies, motor boat fuel tax) land acquisition and recreation, habitat for endangered species and plants. State can do projects but federal agencies can not specifically do restoration. It is considered management Operation and Maintenance not usable for federal agencies restoration projects.

SQ5.22 Partners for Wildlife

Partnership program between USFWS and private landowners and non-federal government agencies. Technical assistance is provided for riparian habitat restoration.

Fiscal, Economic, and Environmental Impact Analysis

Introduction

The purpose for the impact analysis of the four alternative strategies and the status quo alternative was to provide a review and discussion of the different strategies which would help RAAC in developing its own preferred alternative. This analysis was not intended to be comprehensive or quantitative, but rather to provide additional insight for the RAAC to consider. Because of time and budget constraints, the impact analysis was limited to the perceptions and information resources of the RAAC membership.

The components to be considered by RAAC in its impact analysis were reviewed at the March 1994 meeting and consisted of:

Environmental Impacts

What would be impacted and how?

Biological resources (flora, fauna, special status species)

Cultural resources (historic and prehistoric)

Water Quality

Water Resources (groundwater and surface water)

Geology and Soils

Air Quality

Land Use

Utilities

Energy Consumption

Public Health and Safety

Recreation and Wilderness Resources

Visual Resources

Social Factors

What would be the extent of impacts: Local? or Statewide?

What would be the level of Impacts: Minimal? Medium? High?

What would be the time frame of the impact:

Short-term (less than a year)?

Intermediate (up to five years)?

Long-term (longer than five years)?

What would be the cumulative impacts?

Economic impacts

Who and what would be impacted and how?

Individuals

Businesses

Economic Sector

Government

What would be the extent of impacts: Local? or Statewide?

What would be the level of Impacts: Minimal? Medium? High?

What would be the time frame of the impact:

Short-term (less than a year)?

Intermediate (up to five years)?

Long-term (longer than five years)?

Fiscal impacts

Who and what will be impacted and how?

Local Government

State Government

Federal Government

Businesses

Individuals

What would be the extent of impacts: Local? or Statewide?

What would be the level of Impacts: Minimal? Medium? High?

What would be the time frame of the impact:

Short-term (less than a year)?

Intermediate (up to five years)?

Long-term (longer than five years)?

Impact Analysis Process

At its April 1994 meeting, the RAAC membership broke into small groups and discussed the environmental, economic, and fiscal impacts of the four action strategies and the no change alternative. Each RAAC member was preassigned before the meeting to two small groups discussing two of the five strategies. Each group met for 1.5 hours to discuss the strategy, using a trained facilitator. The impact analyses that were developed consisted of comments made at the meeting or subsequently submitted in writing. The results were distributed at the RAAC meeting in May, and comments following that review were incorporated into the final analysis.

Initially, "fiscal impacts" were defined as the effects of an action or policy on government expenditures and revenues and on taxes. "Economic impact" was defined as the effect of an action or policy on the management of the income and expenditures of a household, business, community, or government. "Environmental Impact" was defined as the effect of an action or policy on the quality of natural or human influenced (built) surroundings.

In practice, these definitions were not used. Instead, "fiscal impact" was used to describe the cost incurred by government to pay for a proposed measure; "economic impact" was used to describe financial costs or benefits to the private sector or private property owners; and "environmental impact" was used to describe the anticipated effects on the quantity and diversity of riparian vegetation and the natural functions which such vegetation supports. In rare cases, environmental impacts also included other nonfinancial impacts of a proposed measure.

During the course of the impact analysis, it became obvious that the three types of impacts were related in some ways. The greater the positive environmental impact, the greater the positive impacts on local economies from recreation and tourism. The more negative the environmental impact, the greater the loss of recreation and tourism and the more negative the economic impacts. In cases where major fiscal impacts were caused by the creation of labor intensive programs, it was noted that new jobs were being created in the public sector, which has positive economic impacts.

The analysis of the impacts was perceived by RAAC as being a very rough and cursory effort. There are three major reasons for this:

- There was no funding provided in the legislation establishing RAAC to do a thorough analysis.
- There was a limited time frame in which to undertake the impact analyses.
- The extent of the impacts in any of the three categories would depend upon the specific structure of the law or program and the level and source of funding provided by the Legislature for the law or program.

Once a preferred option has been identified and expanded with some detail, a more comprehensive analysis will be attempted.

Impacts of Continuing the Status Quo

Although there are many State and Federal Laws that could directly or indirectly impact riparian areas, few provide any specific protection for riparian areas or the water supplies upon which they depend. Without an identifiable State or Federal Law dealing directly with riparian protection, other programs are being used in an attempt to fill this void. This may produce negative environmental impacts and may be fiscally inefficient. Land management agencies often do not have the funds to obtain sufficient support to fully evaluate all riparian and upland resources for each management area, to develop thorough management plans, and most importantly to adequately monitor these resources once plans are developed and implemented to ensure continued compliance with plan goals and objectives.

State programs are piecemeal in their approach to riparian area protection. State agencies have different missions; ADEQ regulates water quality, ADWR regulates water quantity, AGFD regulates wildlife and habitat, Flood Control Districts regulate conveyance of flood flows. A consistent theme was found for many of the Federal programs which take either ecosystem or watershed approaches. This integrated approach is fairly new and the outcomes cannot be determined at the present time. However, a more comprehensive way of managing riparian and upland resources can be achieved by focusing on all or most of the resources. A focused riparian protection approach could have added environmental and economic benefits and less negative fiscal impacts than current system in which there is duplication of efforts and not as much achieved.

Of the State programs, only 401 certification, state water quality standards, the Arizona Natural Areas program, and instream flow permits have any applicability to riparian area protection. Of the Federal programs, four (4) have had some impact on riparian area activities that are carried out in riparian areas, but is not designed to protect these areas. The Endangered Species Act is becoming a useful tool for protecting riparian areas. So many riparian areas have been lost that more and more animal species are becoming endangered, and they and their habitat fall under the law. However, this law is not intended to protect riparian areas for uses other than as endangered species habitat. Wilderness designations can also be useful in maintaining riparian areas, but these apply only on Federal Lands, and riparian protection is incidental, not the intended result. Wild and Scenic Rivers Act also provides protection by restricting development along river corridors.

As riparian areas continue to be impacted there are negative economic impacts related to the tourism, recreation and second-home industries.

Impacts of Alternative Action Strategies

The analysis of the impacts were assumed and estimated based on the best judgement of the RAAC, and in many cases were based upon anecdotal evidence, gut reaction, or personal experience rather than statistical substantiation.

Discussions of the impacts of the four action strategies also included unsolicited and often illuminating remarks concerning the viability of various measures. While these comments rarely addressed specific fiscal, economic, or environmental impacts, they are included to the extent possible because of the valuable feedback they provide RAAC in evaluating the strategies and in developing a preferred alternative.

General comments of this nature include:

- Successful measures and strategies will recognize that riparian areas can and eventually will occur at almost any given point along a perennial or intermittent stream. To build a regulatory or incentive "fence" around a particular acre of cottonwoods is meaningless or actively deceptive.
- No proposed statutory provision should hinder a community from adopting standards and/or regulations that may be more restrictive than those provided by any new state legislation.
- Restoration activities should be tied to floodplain ordinances to minimize conflicts.

Each of the four action strategies had certain measures in common. These are discussed here to prevent repetition in the individual discussions of impacts.

- Each calls for the inclusion of a state riparian protection policy and for riparian restoration goals and policy, although the purpose and use of the policies and goals differs somewhat for each of the strategies. The impacts of unspecified policies and goals were difficult to assess. RAAC should develop specific wording for policies and goals for protection and restoration in its development of a preferred alternative.
- Each includes riparian standards, riparian best management practices (in some form), and best management practices for major land uses on the watershed. However, these measures are used differently in the four action strategies; these range from being tied to the receipt of incentives in the nonregulatory strategy, to being a requirement for obtaining a permit for the regulatory strategy.
- Each uses a hierarchy system to identify riparian areas for different levels of protection and/or eligibility for incentives. This was included for each because it helps to focus resources where they are most needed, and thus would have a beneficial fiscal impact. However, the nonregulatory strategy used a ranking system based upon nomination by local governments, special districts, federal agencies, tribal governments, and non-profit organizations, while the other three strategies used a process that incorporated scientific principles as well as public comment.

The use of a hierarchy was troubling to one RAAC member, who felt that because riparian ecosystems are dynamic, their locations and compositions change in a relatively rapid fashion.

Delineation only of existing vegetation stands is a failure to acknowledge riparian dynamics. To have even a faint hope of success, delineation must either pro-actively account for all future riparian potential, or be an ongoing process (e.g. like real property assessment).

A hierarchy is based on the assumption that there are clear and meaningful differences between riparian "types," which have consistently predictable relative merit according to some system of values. While this may be politically and administratively expedient, it has no basis in riparian ecology. There is no objective way to prioritize according to "ecological importance"-- if there is such a thing.

What would happen if, due to natural causes, a "high priority riparian area" for which the landowner has obtained some benefits from an incentive program no longer meets the necessary criteria. Must a person manage a high priority riparian area to keep it from naturally changing in order to maintain the incentive? If the incentive is taken away, the landowner may not be interested in maintaining a hands-off development or management scheme that would someday, as stream conditions dictate, result in establishment of a "new" riparian area. Can an upstream property owner's economic development options be limited in order to protect the downstream neighbor's cottonwood stand (and incentive)?

- Each addresses all the land and water in the state, including that which is outside of the state's jurisdiction, on federal and tribal lands. Federal land management is said to be responsive to influence by statutory state policies, so the presences of delineated policies in the four action strategies would help to assure that federal lands were managed consistently with state lands. Indian nations are independent sovereignties and are under no obligation to consider state policies or laws. Each strategy has measures which seek ways to work cooperatively with the tribes, including using intergovernmental agreements, providing financial incentives to the tribes as well as to others for protection of high priority riparian areas, providing technical assistance, including affected tribes in decision making within a watershed. Since a large number of the total miles of perennial streams in Arizona are on tribal lands, the state would be wise to work closely with the tribal governments on riparian protection issues.
- Each addresses measures to control the loss of riparian habitat due to floodplain modifications. Some believe the proposed measures would have the potential to cause negative environmental impacts because there are cases where channelization has actually increased the width of flooding, reduced velocities and increased recharge rates to the benefit of riparian or xeroriparian vegetation. Others feel that restricting channelization would have almost entirely positive environmental impacts, such as saving vegetation, decreasing flow rates, and improving water quality and recharge.
- Each has similar measures related to water resource management, including making riparian vegetation a beneficial use of water, allowing for the ability to sever and transfer a surface water right from the land upon which the water has been applied; and allowing for certain groups to hold instream flow permits without owning the adjacent lands. All of these measures are intended to make the existing system more flexible, so that riparian protection can be facilitated.

- Each addresses changing reservoir releases to benefit riparian areas. In order for this to happen, there should be year-around minimal flows and an occasional major flow for recruitment, which would simulate the natural flows of a stream that would support riparian areas. The key for analyzing the environmental and economic impacts of these measures was perceived to be knowing exactly which reservoirs would be affected, and how. If the size of the major flows needed for recruitment would require changes to outlet structures, the cost would be extreme. Fiscal impacts would be felt by the government or private entity responsible for managing reservoir releases, not by the regulating agency.
- Each shares similar recommendations concerning the redefining of effluent, the development of effluent water quality standards, changing AMA requirements which discourage the use of effluent for riparian areas, and the use of constructed wetlands for tertiary treatment of effluent.

It is unclear what changing the definition of effluent would accomplish, and what impact it would have on riparian areas. A RAAC member who is most familiar with the issues believes that effluent ownership after discharge is not a major factor in determining whether the effluent is used to sustain riparian vegetation.

The development of effluent water quality standards is believed to have positive impacts on riparian areas, since current water quality standards in some cases make discharge of effluent into a stream cost-prohibitive. Thus, current standards provide an economic incentive to let effluent evaporate, rather than support riparian vegetation. It is possible that this might be combined with the development of water quality standards for riparian areas.

Encouraging or mandating the use of constructed wetlands for tertiary treatment could have positive environmental impacts because new riparian or wetland areas would be formed. However, in cases of flooding or other natural occurrences, it would be difficult to assure that the wastewater would continue to be treated effectively.

- Each has a measure relating to the maintenance of riparian vegetation stock for restoration activities. It was strongly felt that this vegetation stock should be developed and maintained by local nurseries and not by the public sector.
- Each would provide some protection to riparian areas, which would trigger a complex array of secondary economic, fiscal and environmental impacts. For example, a major riparian area like Oak Creek draws visitors and brings in tourism dollars, which can be interpreted as a positive economic and fiscal impact. However, it also costs a lot for the local government to provide services (wastewater treatment, landfills, police, etc.). It is unclear whether the costs or the revenues would be greater. Too many visitors and second homes can also destroy the area that attracted them, leading to long term negative impacts on the environment as well as the economy. Also, tourism generates many seasonal, low wage jobs, which can stress the community's fiscal resources in the "off-season." Seasonal fluctuations in population size creates problems in sizing and financing some facilities and services (such as wastewater treatment and water supply) to meet peak demands.

In addition, all of the strategies except the regulatory strategy emphasize the role of local governments in developing and carrying out riparian area planning, assistance and regulatory

programs. Various measures enable local governments to take a strong protective stand without requiring them to do so. One concern that was expressed is that local riparian conservation plans and programs may reflect local economic conditions rather than the ecological significance or non-monetary values of local riparian areas.

Nonregulatory Strategy

Generally, the nonregulatory strategy had the most positive economic impact, and the least positive environmental impact. The environmental impacts were less positive because so many of the measures were voluntary in nature, and concern was expressed whether there would be much participation in voluntary programs. Economic impacts were positive because private property owners had the option to participate in those programs which were economically beneficial to them. However, economic benefits resulting from increases in tourism and recreation because of increases in riparian areas were expected to be minimal. Major fiscal impacts were anticipated as a result of the numerous incentive programs. Many of the incentive programs (especially those dealing with property tax classifications) could have major local fiscal impacts, particularly in rural areas. These incentives were believed to have significant positive environmental impacts in urban areas.

Tax reduction measures proposed for riparian protection (such as NR1.9, NR1.10) were believed by some to have potential for significant fiscal impacts on local government income particularly in rural areas. (These measures are also included in the mostly nonregulatory and mostly regulatory strategies.) However, others perceived these impacts to be minimal, since original classification for the protected riparian area would often be grazing, which has the lowest property taxes rates in the state.

Mostly Nonregulatory Strategy

Generally, the mostly nonregulatory strategy had more positive environmental impacts than the nonregulatory strategy, but also more uncertainty about its environmental and economic impacts. Major fiscal impacts were associated with the incentive programs and the authorization of RPEDs and the establishment of AWEB (MN2.2, MN2.3).

It was believed that RPED and AWEB would not cause much positive environmental impact because their activities are, for the most part, limited to planning. It is unclear what the economic implications of this planning would be. However, financing of RPEDs was seen as a major concern, with potentially significant local fiscal impacts, particularly in rural areas.

This strategy provides restrictions for activities impacting riparian areas on state lands and encourages (but cannot require) the same on federal lands. This could adversely affect the state's revenues from state land leases, because it makes state land less desirable to use for some purposes than federal, private, or tribal lands.

Mostly Regulatory Strategy

The mostly regulatory strategy has a mixture of positive, negative, and uncertain economic and environmental impacts, which parallel the impacts of similar programs in the mostly nonregulatory strategy and the regulatory strategy.

The RPMED (MR2.2) was believed to be more effective than the RPED, and as a result, had greater positive environmental impacts. However, it was unclear what the economic impacts would be. Financing of the RPMED was seen as a major concern, with potentially significant local fiscal impacts, particularly in rural areas.

This strategy shares the mostly nonregulatory provisions which put state land leases at an economic disadvantage with other land managers in the state as described in the Mostly Nonregulatory Strategy above.

This strategy provides for state agencies and the RPMED to implement state statutes and programs to the extent possible to achieve conjunctive management of water resources (MR3.1). This would have positive environmental and economic impacts by maximizing the flexibility of the existing system. However, it is unclear how much flexibility the existing system has and therefore how much could be achieved with this approach.

It also would protect surface water flows by requiring a ground water withdrawal permit for new withdrawals (MR3.2). This would have a positive but limited impact on riparian areas, since current levels of withdrawals are already jeopardizing many areas. There would be some negative economic impacts and potentially major fiscal impacts incurred in implementing the program.

Regulatory Strategy

In general, the regulatory strategy was perceived as having the greatest positive impact on the environment, the most negative impact economically, and the greatest impact fiscally. Concern was expressed that some nonregulatory measures (such as incentives, technical assistance) should be mixed in with the regulatory measures in order that the strategy does not appear to be a "police state" approach.

Generally, it was felt that the regulatory strategy would positively impact riparian areas, by restricting the activities that adversely impact them. These positive environmental impacts would be seen on federal lands (to the extent that federal activities are influenced by state riparian protection policies), on state lands, and on private lands.

This strategy would have the greatest negative impact on the private sector because of the new requirements that would be imposed, without the addition of funds to assist with cost sharing or provide incentives. This would be offset to some extent by the creation of new jobs in the public sector in order to carry out the proposed programs, particularly in the areas of permit processing, monitoring, and enforcement. In addition, there could be additional jobs and revenues created as more persons visit riparian attractions. Since all land in the state other than Indian reservations would be subject to the regulatory requirements, the impacts would be statewide, and there would be no economic incentive to use private lands rather than state or federal lands, as with some of the earlier strategies.

The requirement that all new and existing ground water withdrawals would be subject to a groundwater withdrawal permit (R3.2) was perceived as having a major negative economic impact. However, this would also have major potential for protecting some riparian areas.

Generally, it was felt that the regulatory strategy would be very expensive to implement effectively. The establishment of new permit programs (such as the riparian protection permit [R1.3], aquifer protection program [R2.1], and groundwater withdrawal permits [R3.2]) and developing and using new standards would be costly, and would not be effective if not well staffed with processing, monitoring, and enforcement personnel. While fees were not specifically addressed in the strategy, they were suggested by some RAAC members as consistent with the requirements of many permit programs.

Amending state statutes to provide for conjunctive management of ground and surface water resources (R3.1) was perceived as having a strong positive environmental impact. Some RAAC members believe it could create social and institutional problems because international treaties, interstate compacts, adjudicated water rights decision, and water management are all based on separate laws for groundwater and surface water. As a result, there could be negative economic and fiscal impacts in the short term, although in the long term, these costs could be replaced with savings, as the system becomes more flexible.

SUMMARY OF OPEN HOUSE MEETINGS RIPARIAN AREA ADVISORY COMMITTEE MAY 31-JUNE 8, 1994

As directed by the Riparian Area Advisory Committee, Kris Randall of the Arizona Department of Environmental Quality and John Folk-Williams, facilitator for the RAAC, conducted a series of six open house meetings around the state for the purpose of obtaining public input relating to potential riparian protection recommendations. Randall and Folk-Williams were joined by several members of the Department of Water Resources and the Game and Fish Department as well as by host RAAC members at each meeting.

The schedule of meetings and the estimated turnout at each one are as follows:

May 31 - Safford - 15 (host Jim Slingsluff)
June 1 - Sierra Vista - 75 (host Judy Gignac)
June 2 - Tucson - 60 (co-hosts Dave Smutzer and Barbara Tellman)
June 6 - Showlow - 25 (host Lewis Tenney)
June 7 - Sedona - 15 (host Anita MacFarlane)
June 8 - Phoenix - 20 (host Bruce Taubert)

The program for each meeting consisted of an introduction (summarizing the RAAC purpose, authorizing legislation, membership and timeline), a brief summary of the three agency reports required by the legislation, a review of the five key issue areas identified by the RAAC as central to riparian protection, and comments from the public. Wall notes were taken of all comments, and participants were urged to use pre-printed forms to record additional ideas. At the beginning of each meeting, the facilitators emphasized the informality of the sessions, the fact that the RAAC had not yet reached any conclusions, and that public input would have continuing importance for the RAAC process.

The facilitators did not rigidly follow their printed agenda but abbreviated some presentations in the interest of allowing as much time as possible for public comments and discussion. Each meeting lasted two hours, and between 32 and 65 comments were recorded during each session. Approximately 30 written comments were received, some in the form of lengthy letters with multiple ideas. In short, hundreds of questions, concerns and ideas were expressed by the public.

Participation at every meeting was strong and lively. Riparian issues are clearly ones that evoke deep concern on the part of the public. What follows is a summary of some of the leading concerns expressed during this process. A complete listing of oral and written comments is also available as a separate document.

GENERAL COMMENTS

Many of the people making comments presented deeply held views of a philosophical nature about riparian issues and government regulation. The tone of each meeting was often set by a dominant point of view, indicating strong representation by an important segment of the local population. Minority viewpoints at such meetings tended to be expressed through written comments. Agricultural and ranching communities opposing government regulation of any kind were strongly represented at Showlow and Safford. Environmental and conservation groups tended to be more

heavily represented in Phoenix and Sierra Vista. Sedona and Tucson had more diversity in the views presented.

One shared assumption stood out among these many points of view. As one woman put it during the Showlow meeting, "Everyone wants to see healthy riparian areas - we can all agree on that." There were many deeply felt statements about the importance of these areas. Some felt they were in excellent shape in the rural areas and pointed to success stories of riparian management by ranchers. Others felt they were in critical condition and urgently needed government controls to protect them for the future. Others had more qualified views, recognizing certain problems but hoping they could be solved without putting all the burden of improvement on one segment of the population.

There was a dramatic contrast of views between some urban advocates of new regulation and some rural residents concerned about property rights and sustaining their way of life. (Obviously, there were many urban and rural residents with differing views, but these two views were articulated with particular fervor.) Many rural residents expressed the most profound suspicion and anger about the role of government regulation in general. They felt they had been "lied to", "stabbed in the back", "made out to be criminals", were in danger of "being put out of business", and were worried that new legislation will expand "to control our lives". They felt protection of private property was the central concern and that state government, responding mostly to urban interests, was threatening them with regulation in a new area. The people in the cities should fill in their lakes, turn off their fountains and restore their riparian areas before requiring anything of people in the rural regions, they said. They were critical of the studies that could only talk about what was wrong and say nothing about the positive side of riparian management carried out by private landowners. Citing the lack of representation of private riparian owners on the RAAC, they feared the committee would aim new controls at the 20% or so of riparian acreage in private hands and limit their rights to enjoy and improve their property. They opposed any form of new governmental regulation, unless it were completely controlled by local residents of affected areas.

In contrast, some of the advocates for new regulation felt that grazing and groundwater pumping were rampant problems that needed controls on an emergency basis to preserve riparian areas. They pointed to figures in the studies showing that only a tiny percentage of riparian acreage still supported the most important forms of native vegetation and suggested a goal of restoring acreage to the much higher percentages that prevailed in earlier times. Some decried the impact on riparian areas of "stupid old white men" who wanted golf courses and other water wasting amenities in a desert environment or who continued to plant water intensive crops instead of exploring drought tolerant crops. They were angry about spending time and money on more studies; something needed to be done right away. Some felt the state should have complete control over future regulation rather than local residents since every person enjoyed the right to go anywhere in the state and local communities should not have the power of a state. Following this line of thought, some were critical of those who demanded the right to do anything they wanted with their property; that was unfair, they felt, since those actions on private land can affect everyone. One private property owner felt there was no protection under present law for a riparian area harmed by upstream diversions of water. Some felt that nature should get a share of water and that there should be a constitutional amendment to preserve a portion of water for the stream.

Several members of the public were concerned about a lack of general goals for RAAC. One person suggested "no net loss" of riparian areas. Another suggested "0% negative growth", meaning

no further losses from this point on. Others suggested defining a specific restoration goal and felt that there was enough historical record available to establish what habitats specific riparian areas had once supported. Some felt that it was impossible to establish such goals because there were no adequate studies detailing the scope of particular problems; until that was done, they said, it was premature to talk of any new form of regulation or statewide goal for habitat restoration.

There were several comments about the RAAC process. One person had the misimpression that RAAC recommendations might simply go into effect as law without further action by the legislature. Another felt that the RAAC membership was a "stacked deck" pre-determining the outcome. One person criticized the idea of trying to reach consensus, saying that this simply leads to meaningless measures that offend no one and that define the "lowest common denominator". Some felt the process did not include sufficient study of natural or economic factors. Others felt that study should not be a part of the process because sufficient information already existed and urged RAAC to tap into such sources as studies done for the Navigability Commission. RAAC needed to have a clear process for reaching its final recommendations, one person said, or it will not achieve its goal. Another person expressed sweeping cynicism about the efforts of all government agencies, and thus the utility of RAAC recommendations, by asserting that elected or appointed "politicians" are "interested only in power, influence and money."

Important questions were raised about the studies RAAC is using and about the general question of what types of information were trustworthy. One woman summarized her skepticism about government reports done without input by private landowners by saying, "If they [i.e. government] say it, it's science; if we [i.e. private landowners] say it, it's opinion." Others sharing this point of view felt that government agencies purporting to use scientific data often either were wrong or deliberately distorted data. Some felt that the use of only technical data left out the human element and that social and economic data were just as important but not reflected in the studies done under the RAAC legislation. Others felt that some of the data used reflected only the experience of humid regions and was not appropriate for the desert southwest. One person criticized some of the agency reports as not having been prepared by the appropriate experts. Another person felt that some of the data in the riparian debate were manufactured by activist groups and represented what he termed "psycho-facts". Another emphasized that alternative strategies must be based on "peer reviewed science not personal opinions."

There were many concrete suggestions for what to do about riparian issues. They are highlighted below under some of the leading categories.

SPECIFIC ISSUES/PROPOSALS

Incentives for Landowners: One rancher cited the need to change local property tax laws which required minimal livestock numbers to qualify land for the agricultural tax status. This created an incentive for landowners to exceed the land's capacity in some cases. Several others spoke favorably of tax breaks to encourage landowners to invest in riparian protection. Some, however, resented the idea of tax incentives or changes in such situations, feeling either that it was wrong to reward someone for doing the "right thing" or that such subsidies only distorted economic reality and had bad consequences over the long-run.

Local Governmental Role: A proposal called for creation of local land use committees, consisting of local residents, who would exercise planning functions for riparian protection; county governments should take the leading role.

Cooperation with Mexico: Several persons emphasized the need to work jointly with Mexico to protect riparian areas supported by transboundary waters.

Suggested Goals: As noted above, suggestions included: 1) no net loss; 2) no further loss from this point onward; 3) restoration to conditions existing in earlier times, as established through archival information; 4) quantified goals, such as expansion of riparian acreage by a fixed amount, thus allowing progress to be measured; 5) protection of private property rights of riparian landowners and water rights holders.

Water Conservation: Some people suggested tax incentives for water conservation. Other suggested crop substitution, limits on development in areas where groundwater pumping was affecting riparian areas, and elimination of developments with artificial lakes as ways of achieving long-term protection for flowing streams.

Control of Grazing: One proposal called for rigid enforcement of existing land management laws and goals; if such goals could not be met, then cattle should be fenced out of riparian areas.

Water Law Changes: Legal changes requiring conjunctive management of groundwater and hydrologically connected surface water were proposed, together with new laws allowing holders of surface irrigation rights to change to instream use without losing seniority.

Control of Recreation: Those who felt that people, not cattle, caused the greatest amount of riparian destruction advocated stringent measures to limit access to riparian areas under state control. They wanted private property off-limits to such controls.

Watershed Management: Some called for riparian management in the context of watershed management, asserting that this was the only significant way to approach the problems, in a more holistic way. They referred to the experience of other states, in particular, North Carolina, as encouraging in this regard.

Riparian Area Definitions: There was concern about multiple definitions used by various agencies, and the proposal was made to get agreement on one definition to be used by all agencies.

Role of Education: Education was emphasized by persons with sharply differing perspectives. Some felt it was essential to educate people in a rapidly expanding population about water conservation and the impact of various activities on riparian areas. Informing people about specific things they could do to change things for the better would be as important as any form of regulation, in this view. Others felt that education was needed to inform people about the positive things that were done right now in riparian management through the efforts of private landowners. Greater awareness of the techniques they used could make it unnecessary to resort to increased government regulation. But both perspectives emphasize the need to disseminate information about methods and strategies that help riparian areas.

Benchmark Areas: Federal or state land management agencies, perhaps working with private landowners, could set aside riparian areas with certain characteristics for careful management intended to show what such areas were capable of achieving in terms of functionality under given conditions. Such areas could provide benchmarks useful in planning or later regulation. One person modified this proposal by saying that an entire watershed would have to become the benchmark area, since it would be impossible to manage a narrow strip of riparian area without attention to the watershed above it.

Phased Approach: RAAC should consider a phased approach in setting its goals and objectives, perhaps starting with the most adverse activities. This suggestion requires answering the question, "What can we change now that would have the most effect," thus giving priority to activities.

Land Use Regulation: One person suggested specific tax incentives based on voluntary reductions in development density on lands within a certain distance from riparian areas. Owners could escape the agreement only by repaying the amount of the tax reduction.

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