



AN ACTION PLAN TO PROTECT MISSOURI'S DRINKING WATER SOURCES

Final Report
Enabling Source Water Protection Project
Prepared in Cooperation with the Missouri Department of Natural Resources
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The Project Team

The *Enabling Drinking Water Source Protection* initiative, funded by the U.S. Environmental Protection Agency (EPA), is a partnership between The Trust for Public Land (TPL), The Smart Growth Leadership Institute (SGLI), River Network, and the Association of State Drinking Water Administrators (ASDWA). Mission statements from the organizations are included below. The project assesses state programs to recommend the best opportunities for program alignment that will support local communities in their drinking water source protection efforts. The project team wishes to thank Jane Davis of the Missouri Department of Natural Resources (MDNR) for her dedication and assistance to make this project possible.

Mission Statements

The Trust for Public Land conserves land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come. TPL's research shows that watershed protection is a cost-saver and that strategic land conservation can help communities spend less on water treatment and flood control. To this end, TPL's experts in planning, transactions, and finance help conservation leaders across the country identify and acquire high-priority watershed lands.

SGLI, a project of Smart Growth America, is dedicated to helping state and local elected, civic, and business leaders design and implement effective smart growth strategies. SGLI's coalition includes many of the best-known national organizations advocating on behalf of historic preservation, the environment, farmland and open space preservation, and neighborhood revitalization.

River Network is leading a nationwide movement to preserve and restore clean and healthy waters. While rivers are the focal point, River Network works to protect the quality of all fresh waters and the health of all people and ecosystems dependent upon them.

ASDWA is the professional association serving state drinking water programs. Formed in 1984 to address a growing need for state administrators to have national representation, ASDWA has become a respected voice for states with Congress, EPA, and other professional organizations.

EPA leads the nation's environmental science, research, education, and assessment efforts. The mission of the Environmental Protection Agency is to protect human health and the environment. Since 1970, EPA has been working for a cleaner, healthier environment for the American people.

MDNR's mission is to protect, preserve, and enhance Missouri's natural, cultural, and energy resources. The department serves all the state's citizens through its involvement in energy policy; development of mineral resources in an environmentally safe manner; protection of Missouri's air, land, and water resources; and preservation of the state's historic and natural heritage through state parks and state historic sites.

Executive Summary

A primary goal of the multi-year, national project sponsored by the United States Environmental Protection Agency (EPA) called *Enabling Source Water Protection* is achieving better coordination among state land and water programs to support local communities in their source water protection activities. The project draws upon the expertise of a “national team” with members from The Trust for Public Land, the Smart Growth Leadership Institute, River Network, and the Association of State Drinking Water Administrators.

In 2010, the project partners selected Missouri as one of eight demonstration states. Two goals were identified for the project in Missouri: 1) Develop a guidance document for communities, local governments, and citizen groups to use in organizing development of source water protection plans; and 2) Recommend funding program revisions to support source water protection.

The national team focused on ways that the Missouri Department of Natural Resources (MDNR) could strategically use and streamline existing programs to improve source water protection planning and implementation. The national team members looked to best practices from other states, consulted with MDNR staff, and interviewed several people outside of the government who are involved in watershed protection activities. During a meeting in early 2012, the national team presented draft recommendations to the MDNR management team and invited staff to discuss opportunities for and barriers to implementation. They also brainstormed next steps.

The resulting *Action Plan to Protect Missouri’s Drinking Water Sources* contains recommendations to help MDNR assist local leaders and officials as they initiate and implement source water protection activities. In addition, the plan identifies ways that the Department can become a national leader by incorporating actions to prevent future water quality degradation into their plans as they align programs on a watershed basis. The Action Plan recommendations are as follows:

1. Create a “Water Resources Protection Fund” linked to *Our Missouri Waters* that helps local entities, both nonprofit and governmental, to better access financial resources to protect water quality from future degradation.
2. Increase the potential that plans created under the Missouri Source Water Protection Planning Guidelines will qualify for nonpoint source program funding for implementation.
 - a. Utilize base funds from the Clean Water Act Section 319 Program to support source water protection planning and implementation, even where the waters are not impaired.
 - b. Utilize incremental 319 funds to support implementation of approved source water protection plans (developed under the Missouri Source Water Protection Plan Guidelines (MOSWPP)) by designating source water protection a “uniquely high-priority State need.”

- c. Create source water protection planning guidelines that will assist watershed groups in developing combined plans that meet source water requirements and also qualify as Watershed-Based Plans under 319, known as the MOSWPP-Alternate approach.
3. Refine source water protection planning and implementation grants under the Drinking Water State Revolving Loan Fund.
4. Expand the use of the Clean Water State Revolving Loan Fund to protect watersheds through land conservation.
5. Encourage the use of Supplemental Environmental Projects stemming from enforcement actions to support watershed protection activities.
6. Target portions of the Soil and Water Conservation Cost Share Program toward preventing water quality degradation.

AN ACTION PLAN TO PROTECT MISSOURI'S DRINKING WATER SOURCES

Background

Missourians interested in protecting drinking water sources face considerable challenges. Here are a few examples. Due to the karst topography in some areas of the state, pollutants from the land not only wash into surface waters, but also seep into groundwater. Several large lakes provide abundant recreational opportunities and consequently have attracted development along their shorelines for many years. Unfortunately, failing on-site (waste) systems associated with the older developments around these lakes can contaminate source waters. Conversion of forested riparian areas to agricultural use can also introduce contaminants such as atrazine. The Missouri Department of Natural Resources (MDNR) works with a variety of partners to encourage protection of drinking water sources, predominantly through the development and implementation of voluntary planning and implementation.

Endeavoring to improve support for source water protection, MDNR competed with several other states to participate in the *Enabling Source Water Protection* initiative, which is funded by EPA and comprised of a partnership between The Trust for Public Land (TPL), The Smart Growth Leadership Institute, River Network, and the Association of State Drinking Water Administrators. Through the initiative, experts from each organization assess state programs and policies to recommend the best opportunities for program alignment that will support local communities in their source water protection efforts.

In their application for the *Enabling Source Water Protection* project, MDNR stressed the importance of tangible products for use by citizen groups and local governments to protect their drinking water sources. A main objective of the proposal was to assist local organizations in developing cohesive plans and implementation strategies. More specifically, MDNR hoped that the *Enabling Source Water Protection* project would help stakeholders reduce duplication of efforts and “achieve large scale conservation and restoration initiatives.”

Over the ensuing year, the national project team conducted research and evaluated potential strategies for implementation. The team interviewed several people involved in watershed protection activities in the state to gather feedback on potential actions that the state of Missouri might take to encourage the drafting of watershed management and source water protection plans, and to facilitate the use of funds to implement such plans.

During a meeting in early 2012, the national team presented draft recommendations to MDNR managers. In light of the fact that MDNR is moving towards implementing its programs on a watershed basis, they discussed opportunities for and barriers to implementation and brainstormed next steps. It was apparent that the current pilot projects in three watersheds, called *Our Missouri Waters*, could provide excellent testing grounds for the actions described in the draft recommendations. Additionally, some of the actions may be incorporated as the Department revises its financial management structure for the General Assembly this year.

The resulting final recommendations identify ways that MDNR can become a national leader by incorporating actions to prevent future water quality degradation into their plans as they align

their programs on a watershed basis. Each recommendation contains a brief rationale, suggestions for implementation, and, where appropriate, examples from other states and supporting appendices. These recommendations are now being submitted to MDNR for review and implementation.

Recommendations

Recommendation 1: Create a “Water Resources Protection Fund” linked to *Our Missouri Waters* that helps local entities, both nonprofit and governmental, to better access financial resources to protect water quality from future degradation.

Rationale

It is well recognized that nonpoint source pollution is the leading cause of water quality impairment in the United States today. It is also well understood that as land is developed, water quality often declines. Numerous studies have shown an inverse relationship between impervious surfaces and watershed health.¹

Current nonpoint source control programs are typically focused on reducing nonpoint source pollution in waters that already fail to meet water quality standards. As a result, higher quality waterbodies remain unprotected and potentially subject to future degradation. This is especially troublesome with regard to drinking water protection because source waters are typically high quality and a reduction of quality due to contamination or sedimentation can be costly to consumers. Already, reservoirs have been abandoned prematurely due to sedimentation and additional treatments to remove pesticides have been put in place by public water systems. Even ground water dependent water systems have been affected by contaminants from surface water transported through the underground karst structures.

The Water Resources Protection Fund could support a variety of activities that protect against degradation, such as better land management practices and land conservation. Consider the latter example. Well-targeted land conservation can prevent nonpoint source pollution associated with land conversion by maintaining natural cover. Naturally forested riparian areas can slow runoff, absorb floodwaters, prevent siltation, reduce erosion, capture sediment-borne nutrients, and take up nitrogen. In addition, they provide food and cover for wildlife and aquatic organisms, and, by shading the waterbody, lower water temperatures.

¹ For example, in Puget Sound, Booth found that “Land development that eliminates hydrologically mature forest cover and undisturbed soil can result in significant changes to urban stream hydrology and, in turn, to the physical stability of stream channels.” (Derek Booth, *Forest Cover, Impervious Surface Area and the Mitigation of Urbanization in King County, Washington*, 2000). Also, the Center for Watershed Protection cites that “In a Montgomery County, Maryland study, Goetz and others (2003) found that, in order for streams to have a health rating of Excellent required at least 65% of the stream network in the watershed to be forested. At least 45% streamside forest cover was required for streams to have a health rating of Good.”

For these reasons and more, MDNR should consider establishing a Water Resources Protection Fund (Fund) that targets resources towards projects that will prevent water quality degradation, particularly in areas of existing high water quality or high vulnerability. Strategically sited land conservation projects supported by the Fund could preserve high-quality drinking water sources, provide recreational and wildlife benefits, and even increase nearby real estate values.²

Implementation Considerations

While establishing the Fund, Missouri DNR may want to consider the following:

Determine which programs will support the Fund and align priorities appropriately.

The Water Resources Protection Fund could be structured to help local communities take advantage of a variety of funding sources to protect their water quality. For example, depending on the goals and designs of the projects, the communities might be able to access funding through nonpoint source grants (see Recommendation 2), Drinking Water State Revolving Loan Fund (DWSRF) source water protection grants and loans (see Recommendation 3), the Clean Water State Revolving Loan Fund (CWSRF) (see Recommendation 4), Supplemental Environmental Projects (SEPs) under the enforcement program (see Recommendation 5), and the Soil and Water Conservation Cost Share Program (see Recommendation 6).

Once MDNR has set departmental priorities to include prevention of future water quality degradation, as well as remediation of impaired waters, the new priorities can be assigned and tested first under the *Our Missouri Waters* program. This can be accomplished by ensuring that requests for proposals issued under *Our Missouri Waters* contain appropriate project criteria. As MDNR moves to a watershed approach statewide, the project criteria can be amended depending upon the outcomes of the test cases. It will be important to keep the Clean Water Commission and Soil and Water Districts Commission fully informed of MDNR's interest in directing some funds towards the prevention of future water quality degradation in order to gain their support.

Over time, MDNR may want to consider expanding funding opportunities available through the Fund. For example, MDNR might work on agreements with other state and federal agencies, nonprofit organizations, and foundations to provide information on how to best utilize funding from their programs to support activities to protect water quality from future degradation. Programs that focus on economic development and agriculture might be of particular interest. For example, Natural Resources Conservation Service programs often support water quality protection and improvement. Consequently, the State Conservationist may be amenable to targeting resources towards nutrient reduction associated with source

² There are also economic advantages to preserving forests. Relating to the protection of drinking water supplies, a recent study of the impacts of declining forest cover on drinking water treatment costs determined that there is a significant relationship among source water quality, percent forest cover, and drinking water treatment costs. An increase in agriculture and urban runoff was correlated with increased turbidity at the treatment plant, which resulted in higher water treatment costs. Increased forest land cover, however, was significantly correlated with decreased turbidity. *Statistical Analysis of Drinking Water Treatment Plant Costs, Source Water Quality, and Land Cover Characteristics*, White Paper, The Trust for Public Land, 2008.

water protection. Also, several land conservation grant programs might provide additional points for projects that capture multiple benefits. Although source water protection is not always the primary purpose of these funding programs, projects that meet the program requirements may also benefit source water protection. Non-water programs may recognize the value that citizens place on drinking water protection³ and see advantages in linking their projects with drinking water protection. Appendix 1 contains fact sheets on programs that might be considered.

Design effective means of communicating with watershed and drinking water protection advocates.

There are several ways that MDNR could provide information about funds available to prevent future degradation to watershed associations, local governments, and other eligible parties. First, a web-based repository of information might be developed. Second, regional watershed coordinators working on the ground could provide the information. Soil and Water Conservation District Supervisors might also serve as important contacts for information on these resources. Whether through a website or personal contacts or both, it will be important to explain what funding opportunities exist and how these could be used in an integrated way to address multiple issues locally.

One concern might be whether there will be sufficient demand for water resources protection projects. MDNR could work with Ozark Regional Land Trust, The Trust for Public Land, and The Nature Conservancy to assess demand (and involve other local land trusts or other organizations in that assessment). In some cases, land conservation planning has already taken place and water quality protection projects are waiting for funding, such as in the Lower Meramec River watershed. To reach even more candidates, MDNR may need to develop a brochure that explains the purpose of the funding and solicit projects from communities and regional councils completing watershed and source water protection plans.

Consider how to optimize management responsibilities.

Importantly, though end users would benefit from information on a variety of opportunities from a single web-site or personal contact, each contributing program could maintain responsibilities for the management of the funds contributed by their program. For example, grants under the DWSRF could still be managed by the Public Water Section and Cost-Share projects could still be managed by the Soil and Water Conservation Districts.

It may also be appropriate to designate one organization to manage the Fund. The Missouri Environmental Improvement and Energy Resources Authority may be a good candidate given its expertise in managing the CWSRF. A contract with an outside organization might also be considered (see further suggestions on outside organizations under Recommendation 5 on SEPs).

Determine what accountability measures should be implemented.

³ Drinking water protection can be an important driver for water quality protection and land conservation. As a result of dozens of polls across the nation, The Trust for Public Land has found that the number one reason that voters support open space measures is to protect water resources, and typically they are most interested in protecting their drinking water supply.

It will be important to establish measures of success to gain support for the program. Potential quantitative measures could include the number of grants made, number of acres preserved, and water quality levels in the adjoining waterways. The latter will be especially important to EPA because the Agency strives to ensure that their programs provide environmental benefits.

An advisory committee comprised of concerned citizens and activists may also help provide guidance and evaluate success. MDNR already formed an advisory committee for *Our Missouri Waters*. This group could be extremely helpful in shaping the new Fund and monitoring results. As a first step, MDNR may want to highlight the Department's interest in reducing impairments and protecting high quality water from future degradation to the advisory committee. Over time, it may be possible to expand the role of the *Our Missouri Waters* advisory group from pilot projects to statewide implementation of the watershed approach, ensuring that their charge includes source water protection among other benefits of protecting water quality.

Recommendation 2: Increase the potential that plans created under the Missouri Source Water Protection Planning Guidelines will qualify for nonpoint source (Clean Water Act Section 319) funding for implementation.

Rationale

Entities undertaking source water planning are required to meet the standards detailed in the current Missouri Guidelines for Source Water Protection Plan (hereafter called "MOSWPP Guidelines"). Those creating a plan meeting the Guidelines are in compliance with state requirements, and should have a robust source water protection plan (SWPP) as a result. See Appendix 2 for background information on source water protection planning and the 319 program.

However, creating a SWPP that complies with the MOSWPP Guidelines may not allow communities to qualify for funding programs that have their own planning requirements. These programs – most commonly the state's 319 nonpoint source protection program, but others as well – often have overlapping but not identical planning requirements. This can result in frustration and duplicate work for entities that complete a SWPP, but then want to apply for grant funds to implement projects identified in their SWPP.

Three possible approaches might be considered for better connecting the MOSWPP Guidelines and the 319 nonpoint source protection program.

- A. Utilize base funds from 319 to support source water protection planning and implementation even where the waters are not impaired.
- B. Utilize incremental 319 funds to support implementation of approved source water protection plans (developed under the MOSWPP) by designating source water protection a "uniquely high-priority State need."
- C. Create source water protection planning guidelines that would assist watershed groups in developing combined plans that meet source water requirements and also

qualify as Watershed-Based Plans under 319, later referred to as the MOSWPP-Alternate approach.

Speaking very generally, the first two approaches will be more useful in watersheds or areas that are not currently listed as impaired for Clean Water Act purposes. The third approach may be better suited to places with Clean Water Act impairments. For more detail on the possible applicability of each approach, see Appendix 3. Also, specific recommendations on the components of MOSWPP-Alternate plans are contained in Appendix 4. Each approach requires some policy action by the state agencies in order to be fully implemented.

Implementation Considerations

The three possible approaches described above can be implemented singly or as a group. When pondering implementation, the agency will want to consider the following issues:

For any of the three approaches, the agency will likely need to update their Nonpoint Source Management Plan to ensure it addresses source water protection activities adequately.

Although the current plan does mention source water protection, making source water activities explicitly eligible for 319 support will help make the connection clearer both to EPA and to those considering applying for funds. According to staff an update of the plan is currently in the works, so this is a good time to roll source water into the plan.

For any of the three approaches, the agency will need to reach out to EPA Region 7 (and perhaps EPA headquarters) to urge greater investment in watershed protection (in addition to restoration) activities under the 319 program.

Conversations with headquarters staff suggest this is a good time to raise the possibility of flexibility in using 319 funds – even incremental funds – for source water protection. Headquarters has begun the process to write new guidance for the 319 program, and issues such as using the funds for protection activities (including source water protection) are under consideration.⁴ Draft guidance is hoped for by September 2012, with a final guidance by November 2012, making this an opportune time for Missouri to engage in the national discussions and consider adjusting their own approach.

If the agency is interested in approaches A or B, internal discussions about the prioritization of 319 funds may be in order.

Expanding the use of 319 funding to include a larger focus on water quality protection (and specifically source water protection) clearly does not mean expanding the amount of the 319 nonpoint source program's funding. The agency should convene key staff in the 319 program, the Total Maximum Daily Load program, and the drinking water program to discuss priorities for 319 funding and decide if approaches A and B are feasible given the static (and perhaps shrinking) 319 funds. Staff could discuss a range of ideas that give source water a greater or lesser weight in the 319 grant program, such as: making source water protection activities more clearly eligible for 319 funding but not prioritizing those

⁴ Hall, Lynda. Chief of the U.S. Environmental Protection Agency's Nonpoint Source Control Program. Phone conversation with the author, 2/10/2012.

proposals during review; assigning additional points or weight for proposals that include source water protection activities; or setting aside a certain percentage of the annual 319 grant pool for source water protection activities.

If the agency pursues approach B, several actions must be taken to establish source water protection a “uniquely high-priority State need.”

MDNR would need to designate protection of source waters (specific waters or generically all of them) “a uniquely high-priority State need” in the next 305(b) report (now more commonly known as the Integrated Report). The agency would also need to build a case with the EPA Region 7 staff to allow them to designate source water as a “uniquely high-priority State need.”

If the agency pursues approach B, it may want to identify specific waters as “a uniquely high-priority State need” as opposed to all source waters.

In our meeting with the state staff, it was noted that this approach might work better if targeted to specific waterways, such as the river systems and/or reservoirs that serve a large percentage of the population. If the staff wants to pursue this approach, next steps would include developing criteria for waters that would qualify for the special designation and identifying areas or regions that would benefit from the designation. One specific idea that surfaced in discussions was to apply the designation to the *Our Missouri Waters* pilot project areas.

If the agency is interested in approach C, new guidelines for developing a plan that meets both 319 and MOSWPP Guideline requirements are needed.

The state agency would need to draft a set of guidelines similar to the existing MOSWPP Guidelines for those who want to combine the MOSWPP and 319 requirements. Appendix 4 contains an outline of the likely requirements for a joint planning approach. We highly recommend the state agency bring EPA Region 7 staff into the guideline development process as soon as possible to make sure expectations for the scale and detail of joint plans are well-understood. Later, a joint plan approval team (i.e., people from the SWPP and the 319 programs) might need to be created to review and approve plans as they are submitted.

Recommendation 3: Refine source water protection planning and implementation grants and/or loans under the Drinking Water State Revolving Loan Fund (DWSRF).

Rationale

Whether drawn from ground water or surface water, source waters are susceptible to various forms of contamination. Missouri’s *Source Water Inventory Project* describes a number of potential threats to source water, such as microbial contaminants from septic systems and livestock operations, inorganic and organic compounds from industrial and urban runoff, and pesticides and fertilizers from agricultural and residential runoff (list not all inclusive).

Source water protection activities that prevent contaminants from entering the water can reduce the need for additional drinking water treatment regimes and, consequently, save

communities considerable funds. As mentioned under the first recommendation (see footnote two), in a recent study of the impacts of declining forest cover on drinking water treatment costs, it was determined that there is a significant relationship among source water quality, percent forest cover, and drinking water treatment costs. In Missouri, this finding is of particular significance in areas where expanding crop production threatens forested riparian buffers along streams and reservoirs. Also of importance in Missouri, source water protection may obviate the need for new treatment regimes or upgrades to meet Safe Drinking Water Act requirements in areas where atrazine contamination and/or nutrient loadings threaten water quality.

Implementation Considerations

Evaluate how best to refine use of the DWSRF set aside mechanisms to promote source water protection activities.

Under federal law, each state is permitted to set aside portions of their capitalization grant as follows:

- Program Management--up to 10% of the capitalization grant can be used for drinking water program management.
- Local Assistance--up to 15% for local assistance, including source water protection, well-head protection, and capacity development.
- DWSRF Administration--up to 4%
- Technical Assistance for Small Systems--up to 2%.

A considerable amount of funding could be available through Missouri's DWSRF set asides. For example, in FY2010, MDNR could have set aside close to \$4 Million for local assistance.

Although MDNR already provides grants for source water protection under the DWSRF local assistance set aside, if the set aside amounts available for this purpose were fully utilized, more public water systems might be interested in undertaking source water protection planning and implementation for both surface water and ground water supplies. MDNR could opt to use up to 2/3 of the set aside for loans to water systems to acquire land or conservation easements from willing sellers, or up to 2/3 of the set aside for grants to implement voluntary, incentive based mechanisms for source water protection purposes.

In addition, MDNR can use up to 10% of their capitalization grant to undertake capacity development activities for water systems. These could include education and promotion programs for water utilities to foster understanding of the importance of source water protection and the steps needed for planning and implementation.

Investigate if public water suppliers would be interested.

This is an important step given the magnitude of concerns that public water supplies have to deal with to maintain compliance with the Safe Drinking Water Act. Those concerned with particular threats to their source water areas, however, may find source water protection activities to be both environmentally and financially beneficial (see rationale, above). In fact, some public water suppliers are already active in source water protection activities in

Missouri. For example, the Sedalia Water Department was a leader in the development of the Spring Fork Lake Watershed Management Plan and Wellhead Protection Plan. Also, the Higginsville City Water Department is a key player in the Higginsville City Lake Watershed Management Plan, and Missouri American Water was involved in developing plans for the Lower Meramec River Watershed. The key to water system involvement is their interest in addressing threats to their water sources.

MDNR may want to promote the use of the set aside grants and/or loans through the *Our Missouri Waters* projects or in other watersheds where contamination of source waters is considered to be high.

Determine how to extend eligibility for the grants and/or loans to others besides public water systems.

Public water systems are already eligible; however MDNR may want to provide funds to other organizations that collaborate with water systems to carry out source water protection activities. Some states have allowed other state and local government agencies, special districts (such as soil conservation districts), associations, nonprofit organizations, and educational institutions to receive the funds (see Idaho and New Hampshire examples, below). While these states have no restrictions on providing funds to entities other than public water systems, other states with more restrictive statutes have done this through a variety of mechanisms including pass-through grants from the public water systems, direct eligibility through changes in state law, and hiring contractors to provide support, as some rural water associations have done. MDNR would need to consult with its state attorneys and EPA regional authorities to determine who could be eligible for source water protection loans and grants and then include a description and work plan for the loans and grants program in their Intended Use Plan.

Determine how MDNR will provide oversight for the loans and grants.

States use a variety of funding mechanisms to manage source water protection activities. Some use a portion of the DWSRF 10% Program Management or 15% Local Assistance set asides to pay for staff to do the work (note: the program management set aside requires a 50/50 match from the state). Others contract with organizations that specialize in providing support to local water suppliers. MDNR may also want to consider the management of these loans as a watershed coordinator responsibility.

Evaluate success.

See discussion on accountability under Recommendation 1, above.

Examples from Other States

Idaho

Idaho provides grants to public water systems, state and local government agencies, special districts (such as soil conservation districts), associations, nonprofit organizations, and educational institutions for the purpose of protecting public water supplies. In their grant guidelines, the Idaho Department of Environmental Quality specifies that projects may:

- *Implement source water protection items included in a drinking water, wellhead, or watershed protection plan.*
- *Prevent polluted runoff with established practices from impacting source waters.*
- *Restore and/or conserve the ecological and landscape function of source water protection areas.*
- *Contribute to the security of a drinking water source through the use of features such as fencing, alarms, signage, etc.*
- *[Provide for] proper closure of abandoned or unused wells.*
- *Conduct public education and raise awareness about source water protection using workshops, signs, brochures, etc.*

For more information, see

<http://www.deq.idaho.gov/water-quality/grants-loans/source-water-protection-grants.aspx> or <http://www.deq.idaho.gov/water/gwga2012/grantGuidelines.aspx>.

Maine

As stated in their DWSRF loan application form, Maine’s Center for Disease Control and Prevention believes that “a water system’s ownership or legal control of the land around its source(s) is the most effective means of protecting its source(s).” For that reason, they provide loans to community water systems for the purchase of land and/or conservation easements in high priority areas. For more information, see https://www.maine.gov/dhhs/eng/water/forms/2011_Land_Acq_Loan_application_form.pdf.

New Hampshire

Since 1997, the New Hampshire Department of Environmental Services has made small grants to water suppliers, municipalities, and other local organizations for protecting drinking water sources. Supported activities include the refinement of well-head protection areas for ground water supplies and watershed areas for surface water supplies, source water protection assessments and planning, and implementation of source water protection measures. For more information, see http://des.nh.gov/organization/divisions/water/dwgb/dwspp/lswp_grants.htm.

Texas

The Texas Water Development Board provides loans to Public Water Systems dependent on ground water and/or surface water for implementing source water protection best management practices. Priority for financial support is based on vulnerability of the source water and ability and authority to implement best management practices. For more information, see http://www.twdb.state.tx.us/financial/programs/doc/dwsrf/SFY12_DWSRF_IUP.pdf.

Recommendation 4: Expand the use of the Clean Water State Revolving Loan Fund (CWSRF) to protect watersheds through land conservation.

Rationale

The CWSRF serves an extremely important role in protecting water quality in Missouri. Grants and loans to communities across Missouri support the building and revitalization of clean water infrastructure including wastewater systems, storm water controls, and, more recently, nonpoint source controls. As stated in the 2010 Missouri CWSRF report, “The innovative financing provided by the SRF allows communities to save a considerable percentage of the interest cost of conventional loans. To date, Missouri’s Clean Water SRF program has saved communities an estimated \$633,491,650 in interest compared to the higher rates of conventional financing.”

There are two ways that MDNR can support land conservation to prevent future water quality degradation under the CWSRF. First, as explained below, land conservation is an eligible activity under the Green Project Reserve. Second, MDNR could develop a sponsorship program whereby sewer districts receive reduced interest rate loans if they support watershed protection activities.

Green Project Reserve

Under federal appropriation law for Fiscal Year 2011, each state was required to use 20% or more of their CWSRF capitalization grant funds for projects that address “green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities.” This set aside is called the Green Project Reserve. In Missouri’s Fiscal Year 2012 Intended Use Plan (IUP) for the CWSRF, the state indicates that they intend to use \$11.3 million for projects under the Green Project Reserve. Typically, Missouri supports energy efficiency and nonpoint source pollution prevention activities under this set aside. It is expected that the Green Project Reserve will remain a part of CWSRF federal requirements in the future.

MDNR should consider supporting land conservation projects under the Green Project Reserve to cost-effectively protect and/or improve water quality. EPA guidance states that land conservation is eligible under the CWSRF Green Project Reserve. Specifically, “Fee simple purchase of land or easements on land that has a direct benefit to water quality, such as riparian and wetland protection or restoration” is considered a categorically eligible project.

There are many environmentally sound reasons for increasing support of land conservation under the CWSRF:

- Maintaining land in natural cover reduces runoff thus preventing water quality degradation associated with land disturbance, especially siltation.
- Riparian buffers capture sediment-borne nutrients. Preventing potential nutrient loads may help downstream communities meet nutrient criteria without installing additional costly upgrades.

- Riparian buffers absorb and slow floodwater, reducing streambank erosion.
- Riparian woodlands provide food and cover for wildlife and aquatic organisms, and, by shading the waterbody, lower water temperatures.

Besides protecting water quality, land conservation can achieve other community benefits. Riparian buffers can include trails for hiking, access for boating or fishing, and stations for bird watching.

Missouri is well positioned to support land conservation to protect water quality under the CWSRF Green Project Reserve. The Missouri CWSRF is legally able to loan to nonprofits, which provides flexibility in the way that funds can be loaned in support of land conservation. For example, the state could continue to work through public agencies (e.g., sewer districts) to provide this support, or they could engage directly with nonprofit organizations, such as land trusts, to fund land conservation. Also, under the Green Project Reserve, the state can issue grants or loans with principal forgiveness in order to make the funds more appealing to land conservation organizations.

Given the magnitude of funds available (e.g., \$11.3 million in 2011), Missouri could attract high value land conservation projects to protect water quality in order to fulfill Green Project Reserve requirements. As most of the funds utilized under the CWSRF go to highly developed areas and are focused on reducing impairments, the Green Project Reserve offers an opportunity for the state to focus on preserving healthy watersheds and protecting water quality from future degradation.

Sponsorship Program

MDNR could offer lowered interest rates to water utilities that sponsor watershed planning and protection activities. Similar programs in other states have provided millions of dollars to support projects that acquired wetlands, riparian lands, and conservation easements, restored habitat, and modified dams. See examples, below.

Implementation Considerations

As MDNR expands use of the CWSRF the following issues may need to be considered:

Raising awareness will be key.

Promoting the value of green projects as a means of nutrient load prevention and/or reduction may provide an incentive, particularly as new nutrient criteria are adopted. Education campaigns on the nutrient load prevention benefits of land conservation should be directed towards local elected officials, wastewater and stormwater managers, and watershed and source water protection activists.

Although traditional CWSRF borrowers that have a steady revenue stream (such as a utility with user fees or a municipality with a history of using tax revenue for conservation) may have the most interest and success in using the CWSRF, land trusts and watershed organizations are also potential beneficiaries. Therefore, marketing opportunities under the CWSRF to nontraditional borrowers will also be important. TPL is currently conducting a

separate research project examining the states where land conservation projects have been funded in part with CWSRF dollars. Through this research TPL identified some of the common attributes of successful programs. Among them is making potential applicants aware that CWSRF program dollars may be available. This is especially important when trying to attract nontraditional partners, such as land trusts and watershed organizations.

Program flexibility is also important for success.

Additional findings from TPL's recent study of states that support land conservation under the CWSRF relate to program flexibility. For example, TPL found that a program should provide separate opportunities for land conservation loans. In other words, try to avoid setting up a program such that conservation applicants compete against the full pool of project applicants. Setting aside a portion of the Green Project Reserve or main loan program for conservation loans under the Water Resources Protection Fund would provide just the kind of separation needed.

Also, it is important to create a simple and expedient application process with attractive loan terms and flexible repayment options. Further, it may be necessary to accept unusual sources of repayment. For example, land conservation project loans might be repaid by revenue from working forests. Loan administrators should be willing to accept these types of revenue streams as equally viable (as appropriate) relative to traditional loan repayment sources. It may also be necessary to offer loans with principal forgiveness or focus on the reduced interest sponsorship concept described above.

Evaluate success.

See discussion on accountability under Recommendation 1, above.

Examples from Other States

Georgia

The Georgia Land Conservation Program (GLCP) offers grants and loans to local governments and non-governmental organizations for land conservation projects. The land conservation fund was capitalized with \$55 million from state's Clean Water State Revolving Fund. The program, administered by the Georgia Environmental Finance Authority (GEFA), awarded ten loans to local municipalities for land conservation projects representing a total of \$10.6 million between 2006 and 2011. In 2012 GEFA reduced loan interest loans to as low as two percent. By having a dedicated land conservation funding source, land conservation project applications do not have to compete against an entire pool of traditional wastewater infrastructure projects for loans.

Iowa

The Iowa CWSRF created a streamlined process for conservation loans under the CWSRF. They received 16 applications and funded all of them. The average loan was approximately \$500,000, but some have been much larger (two exceeded \$4 million, and another two loans were made for just over \$1 million each). Most of these loans went to projects that acquired and restored prairie pothole wetlands. The streamlined process helped increased the pace of

conservation in the state by providing borrowers quick and easy access to funds, giving them time to secure permanent funding.

Ohio

Ohio's Environmental Protection Agency and Water Development Authority established the Water Resource Restoration Sponsor Program (WRRSP) to "counter the loss of ecological function and biological diversity that jeopardizes the health of Ohio's water resources." They recognized that significant advances had been made in wastewater treatment, but that nonpoint source pollution, habitat degradation, and manmade alterations were preventing their attainment of water quality goals. Ohio WRRSP offers communities an interest rate reduction on their CWSRF loan if they agree to sponsor projects that protect or restore habitat. As of 2005, WRRSP loans have promoted over \$67 million worth of projects that acquired wetlands, riparian lands and conservation easements; restored habitat; and modified dams. Considerable information on how the WRRSP works is available on the website: <http://www.epa.ohio.gov/defa/09wrrsp.aspx>.

Utah

Utah's CWSRF also allows funding of nonpoint source pollution reduction activities, such as those that might be useful in source water protection activities. This approach has been used when larger projects are proposed for funding through the CWSRF. These projects are offered a lower interest rate which frees up an increment of funding that the project proponent makes available as grant funding for on-the-ground protection or restoration activities in the watershed. This arrangement results in the same bottom-line for the project proponent, but creates funding for targeted nonpoint source activities. The state also sets aside \$1 million from their CWSRF annually for nonpoint source project grants.

Recommendation 5: Encourage the use of Supplemental Environmental Projects (SEPs) stemming from enforcement actions to support watershed protection activities.

Rationale

SEPs are "environmentally beneficial projects that a violator is not otherwise legally required to perform but agrees to undertake in settlement of an enforcement action."⁵ SEPs can result from federal or state enforcement actions. In any case, SEPs must provide significant environmental or public health benefits and benefit the community affected by the violation.

Activities that protect water quality are permissible as SEPs. For example, EPA guidance supports land conservation as an eligible activity. Additionally, Missouri policy states that projects "involving pollution prevention processes are preferred over other types of reduction or control strategies" and that "pollution prevention also includes any project which protects

⁵ EPA Policy Memorandum, *Expanding the Use of Supplemental Environmental Projects*, June 11, 2003. Additional information in this section is derived from a variety of sources including an interview with Beth Cavalier, Special Litigation and Projects Division, US Environmental Protection Agency, the Public Law Research Institute (PLRI) 2007 report entitled *SEPs: A Fifty State Survey with Model Practices*, and information on Missouri SEP Policy found at www.dnr.mo.gov/compliancemanual/.../10supenviroprojects.pdf.

natural resources through conservation.”⁶ SEPs also must “be related to or have a “nexus” to the underlying violation,” however, addressing impacts within the same watershed is permissible.

A recent land acquisition project in Georgia illustrates how a SEP can be used to protect a drinking water source and create multiple benefits for the local community. In the Chattahoochee watershed, a 647.7-acre heavily forested and scenic property located along Snake Creek contributes to the source of drinking water for Carroll County. The property is situated 50 miles southwest of Atlanta, in an area with considerable biological diversity, old mill ruins from the 1800s, Creek Indian trails, and Civil War landmarks. It is also the documented birthplace of the pine pulp and paper industry in the U.S. Using a combination of SEP funds earmarked for watershed protection in the Chattahoochee River basin and local fundraised dollars, TPL purchased a conservation easement on the 647.7 acres and subsequently sold the easement to the City of Atlanta, who will hold and monitor the easement in perpetuity. Besides protect the drinking water source by buffering over 2,800 feet of Snake Creek, the acquisition will help anchor and spur creation of the Snake Creek Heritage Preserve, a potential 1,000-acre assemblage that will afford opportunities for recreation, education, research, and heritage tourism.

Significant funds have been raised through SEPs. Nationally, EPA enforcement actions from Fiscal Years 2006-2009 resulted in commitments to undertake \$188 million in SEPs. According to the publically available ECHO database that lists recent settlements (www.epa.gov/echo), a few green infrastructure SEP projects have taken place in Missouri. Ranging from \$20 thousand to \$5 million, most of these are engineered solutions, however some have provided for the establishment of buffers and easements along waterways.

SEPs could be a considerable source of funding for prevention of water quality degradation made available under the Water Resources Protection Fund (see Recommendation 1, above).

Implementation Considerations

Consider establishing a SEP Project Library.

MDNR could establish a “Project Library” to support land conservation for water quality protection through SEPs and funds stemming from natural resources damage assessments. The Project Library would be a collection of proposed projects that could be discussed with violators as potential SEPs when negotiating enforcement actions. A potential coordination mechanism is already in place. Existing Missouri SEP policy references an Enforcement Coordination Committee and stipulates that environmental quality programs should provide information on desired SEPs to the Committee.

Initially MDNR might want to focus on identifying high-priority source water protection projects and projects stemming from *Our Missouri Waters* for inclusion in the Project Library. As MDNR expands the watershed approach statewide, projects could be solicited from watershed coordinators.

⁶ www.dnr.mo.gov/compliancemanual/chapters/10supenviroprojects.pdf.

Develop a cross-agency team to guide actions.

Missouri DNR should work closely with the Missouri Attorney General's office and the Region 7 USEPA staff (both in the water program and in the Regional Counsel's Office) to establish a Project Library and determine how best to manage it.

Issues for the cross-agency team to explore might include:

- Should the Project Library support SEPs stemming from other programs beside water enforcement, e.g., hazardous waste or clean air enforcement?
- Can the Project Library support development of SEPs from both state and federal enforcement actions?
- How can the state and federal agencies work with nonprofit organizations to develop project lists? Implement projects?
- Should a third party be engaged to manage the SEP Project Library?
- Can funds from different SEPs be aggregated to support projects?
- Could state and federal SEP funds both contribute to one project?
- Can Missouri accept cash donations from SEPs (this is not permitted for SEPs resulting from federal enforcement actions)?
- Are there other funds, such as natural resource damage assessment funds, that could be applied to projects in the Project Library (see example from Delaware, below)?

Evaluate success.

See discussion on accountability under Recommendation 1, above.

Examples from other States:

- The Delaware Department of Natural Resources and Environmental Control established an environmental penalty fund under which 25 percent of all civil and administrative penalties collected by the agency are dedicated to a Community Environmental Project Fund (CEPF). They also established a Community Involvement Advisory Committee that reviews applications for use of the funds. Communities are increasingly seeing the CEPF as a source of funding for different types of environmental projects, although the funding available to communities can be variable from year to year, making it difficult to plan long-term, strategic projects. See <http://www.dnrec.delaware.gov/CIAC/Pages/CIAC.aspx>.
- Between 2001 and 2008, the Colorado Department of Health and the Environment (DPHE) contracted with a third party foundation called the Strategic Environmental Project Pipeline Foundation (StEPP Foundation) to develop a project pipeline and manage some of the state's SEPs, typically when the violator did not have a project idea. Third party administration by the StEPP Foundation had some benefits, including specialized expertise in community engagement and pipeline development. However, with the creation of a SEP coordinator position in the DPHE in 2006, the agency shifted toward a more centralized approach and transitioned away from third party administration. Several factors led to the

decision to manage all SEPs internally. For one, the new SEP coordinator position allowed for more capacity to coordinate projects internally. Additionally, DPHE wanted more oversight of projects than afforded under the arrangement with the StEPP Foundation. Contracting with a third party to manage SEPs may provide some benefits, although these benefits should be carefully evaluated in the context of costs and internal capacity. Learning from Colorado's experience, it is also important for states agencies to retain a significant level of oversight over any third parties brought on board to manage SEPs.

Recommendation 6: Target portions of the Soil and Water Conservation Cost Share Program toward preventing water quality degradation.

Rationale

The Cost Share Program is funded by an annual appropriation of approximately \$24 Million, drawn from sales tax revenue⁷ and managed by the Soil and Water Districts Commission and MDNR's Soil and Water Conservation Program. The program is locally administered by Soil and Water Conservation Districts located in each county of the state. Typically projects are selected on a first come first served basis.

Activities within the following categories are considered for funding under the Cost Share Program:

- Sheet and Rill/Gully Erosion
- Grazing Management
- Irrigation Management
- Animal Waste Management
- Nutrient and Pest Management
- Sensitive Areas
- Woodland Erosion

Several of these categories of cost share-funded activities are of particular interest regarding their capability to prevent water quality degradation.

Implementation Considerations

Identify and promote the benefits of cost share funded activities for water quality protection.

MDNR should identify the specific benefits that each cost-share practice generates and publicize those benefits. Pertinent examples of benefits include the following:

- Sheet and rill erosion is defined as unwanted removal of layers of soil from the land surface by the action of rainfall and runoff. Preventing such erosion not only protects the land but also water quality of receiving streams and reservoirs. Furthermore, controlling soil erosion can prevent siltation and, thus, extend the life of surface water impoundments.
- Under the "sensitive areas" category, buffer creation activities can increase forest cover. Increased forest land cover is significantly related to decreased turbidity and thus potentially lower cost for drinking water treatment (see TPL study cited in footnote two).
- Excluding livestock from woodland areas, a recommended practice under the "Woodland Erosion" category, may prevent sheet and rill erosion and thereby protect water quality.

⁷ From 50% of the 1/10th of one percent Parks, Soils and Water Sales Tax.

- Nutrient management plans may help communities meet forthcoming nutrient criteria and thus prevent the need for increased wastewater treatment.

MDNR is already taking steps to highlight to Soil and Water Conservation District Supervisors how the *Our Missouri Waters* pilots provide an excellent opportunity to prioritize Cost Share projects on a watershed basis to address specific water quality issues.

As the watershed approach is adopted statewide, MDNR should continue to encourage Soil and Water Conservation District Supervisors to use watershed plans (see Recommendation 2 regarding source water protection plans and watershed plans) to prioritize cost share projects.

Evaluate success.

See discussion on accountability under Recommendation 1, above.

Appendix 1: Fact Sheets on Related Funding Programs

State Programs

St. Louis Community Stewardship Grant Program

State-Implemented USDA Programs

Stream Stewardship Trust Fund

Environmental Quality Incentives Program

Wetland Reserve Program

Wildlife Habitat Incentives Program

Conservation Stewardship Program

US Department of the Interior Programs

Land and Water Conservation Fund—stateside

State Wildlife Grants

Cooperative Endangered Species Conservation Fund--Recovery Land Acquisition Grants

Wildlife and Sport Fish Restoration Program

The North American Wetlands Conservation Act

US Forest Service Program

Forest Legacy Program

US Department of Transportation Programs

Transportation, Community and System Preservation Program

Transportation Enhancements

ST. LOUIS COMMUNITY STEWARDSHIP GRANT PROGRAM

Brief Description	Provides financial support to organizations that work to improve the environment in urban areas or safeguard existing conservation areas. Helps groups complete such projects as trail restorations, habitat improvement and exotic species control.
Administrator	Missouri Department of Conservation (MDC)
Website	http://mdc.mo.gov/landwater-care/communities/grants/community-stewardship-grant-program
Contact Info	Erin Shank Urban Wildlife Biologist Missouri Department of Conservation Powder Valley Conservation Nature Center 11715 Cragwold Road St. Louis, MO 63122 314-301-1506 ext. 2239 Erin.Shank@mdc.mo.gov
Application Deadline	In 2011 the application deadline was August 26. Money is distributed mid-spring. It is preferred that projects begin in May or June.
Eligible Recipients	Government entities (e.g. municipal and county parks departments, public schools) and non-profit 501(c)(3) corporations. Must be located within the St. Louis metropolitan area (St. Louis City, St. Louis County, St. Charles County, and northern Jefferson County).
Requirements	<p>Preference will be given to projects that utilize match or in-kind contributions.</p> <ul style="list-style-type: none"> • The maximum request for grant awards is \$10,000. • Funding for equipment purchases must not exceed \$1,000.
Source Water Protection	While source water protection is not an explicit goal of the program, multiple projects have involved source water benefits.

STREAM STEWARDSHIP TRUST FUND (SSTF)

Brief Description	SSTF is an in lieu fee compensatory mitigation program approved by the U.S. Army Corps of Engineers and administered in partnership with the Missouri Department of Conservation (MDC). SSTF is designated for the restoration, enhancement, and/or protection of priority stream systems and associated riparian habitats in all of Missouri's major watersheds.
Administrator	Missouri Conservation Heritage Foundation
Website	www.MissouriConservationHeritageFoundation.org
Contact Info	Missouri Conservation Heritage Foundation P.O. Box 366 Jefferson City, Missouri 65102-0366 573-634-2080 or 800-227-1488 mchf@mochf.org
Eligible Recipients	MDC staff and conservation partners.
Requirements	Project applications funded by the Foundation must be submitted and endorsed by the MDC. Award grantees must comply with reporting protocol. Projects with the greatest likelihood of receiving funding: <ul style="list-style-type: none"> • Have financial support from several other partners, and • Address targeted conservation needs within Conservation Opportunity Areas, priority streams, areas with high outdoor recreational potential, or serve Missourians with limited opportunities to learn about and enjoy the fish, forest or wildlife resources of the state.
Source Water Protection	All projects funded with SSTF have a beneficial effect on stream water quality.

ENVIRONMENTAL QUALITY INCENTIVES PROGRAM (EQIP)

Brief Description	EQIP funds provide financial assistance to help farmers and ranchers enhance agricultural and forested lands. The program offers assistance as cost-share payments. These payments defray the cost of implementing certain forest and wildlife habitat management and structural conservation practices.
Administrator	Natural Resources Conservation Services (NRCS)
Website	http://www.mo.nrcs.usda.gov/programs/eqip/eqip.html
Contact Info	R Darlene Johnson Resource Conservationist (Programs) Missouri NRCS State Office 601 Business Loop 70 West Parkade Center, Suite 250 Columbia, Missouri 65203-2546 Phone (573) 876-0900 FAX 573-876-0914 darlene.johnson@mo.usda.gov
Application Deadline	Interested parties may apply for EQIP at their local NRCS office located in the USDA Service Center. EQIP applications are accepted year round, however, NRCS establishes application "cut-off" dates for evaluation and ranking of eligible applications. The cut-off date in 2012 was February 3.
Eligible Recipients	Eligibility extends to owners of land in agricultural production or persons who are engaged in livestock or agricultural production on eligible land. Recipients must control the land for the duration of the contract.
Match Requirements	EQIP may provide payments up to 75 percent of estimated incurred costs and income foregone of certain conservation practices and conservation activity plans. Historically underserved producers (limited resource farmers/ranchers, beginning farmers/ranchers, socially disadvantaged producers, Tribes) may be eligible for payments up to 90 percent.
Source Water Protection	Practices that support natural resource protection are included in the program, including riparian forest buffers, filter strips and others that may protect source water quality.

WETLAND RESERVE PROGRAM (WRP)	
Brief Description	The WRP is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property.
Administrator	Natural Resources Conservation Services
Website	www.mo.nrcs.usda.gov/programs/wrp/wrp.html
Contact Info	Harold Deckerd Assistant State Conservationist USDA NRCS State Office Parkade Center, Suite 250 601 Business Loop 70 West Columbia, MO 65203 573-876-0912 harold.deckerd@mo.usda.gov
Application Deadline	Applications are encouraged anytime.
Eligible Recipients	Eligible acres are limited to private and Tribal lands. Land must be restorable and be suitable for wildlife benefits. For more specifics on land eligibility, see: www.mo.nrcs.usda.gov/programs/wrp/wrp_eligibility.html
Enrollment Options	The program offers three enrollment options: <ul style="list-style-type: none"> • <i>Permanent Easement</i> is a conservation easement in perpetuity. USDA pays 100 percent of the easement value and up to 100 percent of the restoration costs. • <i>30-Year Easement</i> is an easement that expires after 30 years. USDA pays up to 75 percent of the easement value and up to 75 percent of the restoration costs. For both easements, USDA pays all costs associated with recording the easement in the local land records office, including recording fees, charges for abstracts, survey and appraisal fees, and title insurance. <ul style="list-style-type: none"> • <i>Restoration Cost-Share Agreement</i> is an agreement to restore or enhance the wetland functions and values without placing an easement on the enrolled acres. USDA pays up to 75 percent of the restoration costs.
Source Water Protection	At this time, no special priority is given to projects that would protect source waters. However, individual projects may have source water benefits in addition to wildlife benefits.

WILDLIFE HABITAT INCENTIVES PROGRAM (WHIP)

Brief Description	WHIP is a voluntary program for private landowners to develop fish and wildlife habitat on private agricultural land, nonindustrial private forestland, and tribal land by implementing conservation practices that establish, improve, protect, enhance or restore conditions for fish and wildlife.
Administrator	Natural Resources Conservation Services
Website	www.mo.nrcs.usda.gov/programs/whip/whip.html
Contact Info	R Darlene Johnson Program Coordinator Missouri NRCS State Office 601 Business Loop 70 West Parkade Center, Suite 250 Columbia, Missouri 65203-2546 Phone (573) 876-0900 FAX 573-876-0914 darlene.johnson@mo.usda.gov
Application Deadline	Applications are encouraged anytime.
Eligible Recipients	Generally, any person or entity engaged in livestock or crop or forestry production on eligible land may apply for WHIP. Eligible land includes privately owned cropland, grassland, pastureland, and non-industrial private forestland suitable for fish and wildlife habitat development. Federal, State, county and local governments are not eligible for WHIP, nor is the land they own.
Match Requirements	Cost share rate is approximately 75%. See fact sheet on website (http://www.nrcs.usda.gov/programs/whip/) for more information, including exceptions for certain user groups.
Source Water Protection	Although there is no specific priority for water quality or source water protection, habitat protection often has source water benefits.

CONSERVATION STEWARDSHIP PROGRAM (CSP)

Brief Description	CSP is a voluntary program that provides financial and technical assistance to eligible producers to conserve and enhance soil, water, air, and related natural resources on their land.
Administrator	Natural Resources Conservation Services
Website	www.mo.nrcs.usda.gov/programs/CSP/stewardship/csp_general.html
Contact Info	Marilyn Gann Program Coordinator USDA NRCS State Office Parkade Center, Suite 250 601 Business Loop 70 West Columbia, MO 65203 573-876-9398 marilyn.gann@mo.usda.gov
Application Deadline	Continuous application process with announced cut-off application dates for ranking periods
Eligible Recipients	Eligible lands include cropland, grassland, prairie land, improved pastureland, rangeland, non-industrial private forestlands, agricultural land under the jurisdiction of an Indian tribe, and other private agricultural land on which resource concerns related to agricultural production could be addressed.
Qualification	Payments are based on a Conservation Measurement Tool score, with points awarded for current stewardship and future agreed to items to be carried out. Applicants are given opportunity to accept a contract based on the amount of funding awarded to their own CMT score: the higher the operational performance, the higher their payment.
Source Water Protection	CSP seeks to conserve and enhance soil, water, air, and related natural resources on eligible lands. Priority concerns for the program include both water quality and water quantity.

LAND AND WATER CONSERVATION FUND (LWCF) – STATESIDE

Brief Description	LWCF program provides federal grants to assist with park and recreation needs. Land developed with these funds is protected in perpetuity by the National Park Service and must be used for outdoor recreation.
Administrator	Department of Natural Resources' Division of State Parks
Website	www.mostateparks.com/page/55065/outdoor-recreation-grants
Contact Info	Bill Bryan Director Department of Natural Resources P.O. Box 176 Jefferson City, MO 65102-0176 573-751-4732 moparks@dnr.mo.gov
Application Deadline	Varies year to year depending Congressional appropriation. For FY2012, applications are due by June 11, 2012.
Eligible Recipients	Cities, counties and school districts local governments. Grant requests up to \$75,000.00 are eligible.
Match Requirements	Projects require a 55% funding match. All approved state LWCF projects must meet criteria set forth by that state's overall recreation plan – and local recreation master plans – to ensure that coordinated planning is occurring among state, regional and local recreation departments.
Source Water Protection	To the extent that the funds are used for outdoor recreational purposes, source water protection could be incorporated in the purpose of the project.

STATE WILDLIFE GRANTS (SWG)

Brief Description	The SWG Program is a matching grant program that supports cost-effective, on-the-ground conservation efforts aimed at restoring or maintaining populations of native species before listing under the Endangered Species Act is required. Eligible projects include the development and implementation of programs benefiting wildlife and their habitats, including species not hunted or fished. Priority is placed on species of greatest conservation concern
Administrator	U.S. Fish & Wildlife Service
Website	http://wsfrprograms.fws.gov/Subpages/GrantPrograms/SWG/SWG.htm
Contact Info	Wildlife and Sport Fish Restoration Programs Region 3: U.S. Fish and Wildlife Service Julie Morin Grants Administrator julie_morin@fws.gov 612-713-5156
Application Deadline	No specified deadline.
Eligible Recipients	All State and Territory fish and wildlife agencies.
Match Requirements	Grants funds are disbursed to States for approved grants on a 75% reimbursement rate for planning grants and a 50% reimbursement rate for implementation grants.
Source Water Protection	SWGs promote source water protection to the extent that projects address conservation needs identified within a State's Comprehensive Wildlife Conservation Plan or Strategy, see http://www.fws.gov/midwest/FederalAid/state_plans.html .

COOPERATIVE ENDANGERED SPECIES FUND – RECOVERY LAND ACQUISITION GRANTS

Brief Description	<p>The Cooperative Endangered Species Conservation Fund (Section 6 of the Endangered Species Act) provides funding to States for species and habitat conservation actions on non-Federal lands.</p> <p>Four grant programs are available: Traditional Conservation Grants and Nontraditional Grants - Habitat Conservation Plan Land Acquisition, Habitat Conservation Planning Assistance, and Recovery Land Acquisition Grants.</p>
Administrator	U.S. Fish & Wildlife Service
Website	www.fws.gov/midwest/endangered/grants/S6_grants.html
Contact Info	<p>Pete Fasbender US Fish & Wildlife Service, Midwest Region Regional Coordinator for permits and grants falling under sections 10 and 6 of the Endangered Species Act 612-713-5343 Peter_Fasbender@fws.gov</p> <p><i>Recommended contact in Missouri:</i> Peggy Horner Missouri Department of Conservation Endangered Species Specialist 573-522-4115, ext 3151 peggy.horner@mdc.mo.gov</p>
Application Deadline	Varies year to year. Normally, requests for proposal are released in October or November.
Eligible Recipients	States, which can then award funds to private landowners and groups for conservation projects.
Match Requirements	States and Territories must contribute a minimum non-Federal match of 25% for the estimated program costs of approved projects, or 10% when two or more States or Territories implement a joint project. A State or Territory must currently have, or enter into a cooperative agreement with the US FWS to receive grant funds.
Source Water Protection	To the extent that source water protection relates to the protection of threatened and endangered species habitat. Funds have been awarded to projects with aquatic species, including for buffer lands.

WILDLIFE AND SPORT FISH RESTORATION PROGRAM (WSFR)

Brief Description	WSFR works with states, insular areas and DC to conserve, protect, and enhance fish, wildlife, their habitats, and the hunting, sport fishing and recreational boating opportunities they provide.
Administrator	U.S. Fish and Wildlife Service
Website	http://federalasst.fws.gov/
Contact Info	Wildlife and Sport Fish Restoration Programs Region 3: U.S. Fish and Wildlife Service Julie Morin Grants Administrator julie_morin@fws.gov 612-713-5156
Eligible Recipients	States
Match Requirements	The program is a cost-reimbursement program in which the state applies for repayment of up to 75 percent of approved project expenses. The state must provide at least 25 percent of the project costs from non-federal sources.
Source Water Protection	To the extent that source water protection protects habitat and restores sport fish.

THE NORTH AMERICAN WETLANDS CONSERVATION ACT (NAWCA)

Brief Description	NAWCA provides matching grants for the acquisition, restoration, and enhancement of wetland ecosystems for the benefit of waterfowl and other wetland dependent migratory species.
Administrator	U.S. Fish & Wildlife Service
Website	http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm
Contact Info	<p><u>Upper Mississippi River/Great Lakes Joint Venture</u> States: Eastern MN, KS, and NE, central IA, northern MO and IL, western OH, all of MI, IN, OH, WI Barbara Pardo, Joint Venture Coordinator barbara_pardo@fws.gov U.S. Fish and Wildlife Service One Federal Drive Fort Snelling, MN 55111-4056</p> <p><u>Lower Mississippi Valley Joint Venture</u> States: Western KY, TN, and MS, eastern OK, northeastern TX, northern LA, southern MO, and AR Joint Venture Coordinator U.S. Fish and Wildlife Service 2524 South Frontage Road, Suite C Vicksburg, MS 39180-5269</p>
Cycle	<p>Standard grants: Two cycles each year.</p> <ul style="list-style-type: none"> - Proposals are reviewed and ranked by the North American Wetlands Conservation Council before being sent to the Migratory Bird Conservation Commission for approval. - www.fws.gov/birdhabitat/Grants/NAWCA/Standard/US/index.shtm <p>Small grants: One cycle/ year.</p> <ul style="list-style-type: none"> - www.fws.gov/birdhabitat/Grants/NAWCA/Small/index.shtm
Application Deadline	See website, varies according to type of grant.
Eligible Recipients	Grants are available to nonprofit organizations, state and local agencies, tribes, and private individuals in the U.S., Canada, and Mexico.
Match Requirements	Two types of grants are awarded; small grants for up to \$75,000 and standard grants for up to \$1 million. There is a 1:1 non-federal match requirement for each grant although the average match of successful proposals is over 2:1.

**Source Water
Protection**

NAWCA supports projects aimed at long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats for the benefit of wetlands-associated migratory birds and other wildlife.

FOREST LEGACY PROGRAM (FLP)

Brief Description	FLP is a voluntary Federal program that supports State efforts to protect environmentally sensitive forestlands. The program focuses on the acquisition of partial interests in privately owned forestlands.
Administrator	US Forest Service in cooperation with the State
Website	http://www.fs.fed.us/spf/coop/programs/loa/aboutflp.shtml
Contact Info	Forest Legacy Program State Contact Steve Westin Department of Conservation Forestry Division P.O. Box 180 2901 W. Truman Blvd. Jefferson City, MO 65102 573-522-4115 x3626 FAX 573-526-6670 steve.westin@mdc.mo.gov
Cycle	Annual call for proposals to be funded two years later
Application Deadline	The timeframe for submitting applications varies by State. The State Forester accepts applications and works with the State lead agency and the State Forest Stewardship Committee on deciding which projects to submit for funding.
Eligible Recipients	Private landowners who wish to sell the right to develop their forestland to the state government as a conservation easement.
Match Requirements	The federal government may fund up to 75 percent of project costs, with at least 25 percent coming from private, state, or local sources
Source Water Protection	Although the program focuses on preserving working forests, source water protection benefits may also be accrued.

TRANSPORTATION, COMMUNITY AND SYSTEM PRESERVATION PROGRAM (TCSP)

Brief Description	TCSP provides funding for a comprehensive initiative including planning grants, implementation grants, and research to investigate and address the relationships between transportation, community, and system preservation and to identify private sector-based initiatives.
Administrator	Federal Highway Administration
Website	http://www.fhwa.dot.gov/tcsp/pi_tcsp.htm
Contact Info	Brian Nevins FHWA TCSP Field Coordinator – Missouri (573) 638-2624 brian.nevins@dot.gov
Application Deadline	Typically, a member of the congressional delegation requests a project during the congressional appropriations process.
Eligible Recipients	States, metropolitan planning organizations, local governments, and tribal governments. Nongovernmental organizations are encouraged to partner with a government agency.
Match Requirements	20% match required.
Source Water Protection	Source water protection coincides with TCSP's stated goal of reducing the impacts of transportation on the environment.

TRANSPORTATION ENHANCEMENT (TE) PROGRAM

Brief Description	The TE program requires each state to reserve 10 percent of its Federal Surface Transportation Program funds annually for designated TE activities such as: constructing sidewalks and bike lanes, converting abandoned railroad rights of way to trails, and revitalizing local regional economies by restoring historic buildings, renovating streetscapes or providing transportation museums and visitor centers.	
Administrator	US Department of Transportation	
Website	www.enhancements.org	
Guide	http://www.modot.mo.gov/business/manuals/documents/Final Enhancement Guide.pdf	
Contact Info	<p>District 1 MoDOT Northwest District Darby Logan 3602 North Belt Highway PO Box 287 St. Joseph, MO 64502 (816) 387-2596</p> <p>District 3 MoDOT Northeast District Bob Manzke Highway 61 South, PO Box 1067 Hannibal, MO 63401 (573) 248-2634</p> <p>District 5 MoDOT Central Missouri District Dion Knipp 1511 Missouri Blvd., PO Box 718 Jefferson City, MO 65102 (573) 751-7399</p> <p>District 7 MoDOT Southwest District Eric Kellstadt 3901 East 32nd Street, PO Box 1445 Joplin, MO 64802 (417) 621-6551</p> <p>District 9 MoDOT South Central District</p>	<p>District 2 MoDOT North Central District Ron Watts 902 N. Missouri St., PO Box 8 Macon, MO 63552 (660) 385-8618</p> <p>District 4 MoDOT Kansas City District Jeff Cremer (816) 622-6513 Helen Madison (816) 622-0454 600 Northeast Colburn Road Lee's Summit, MO 64086</p> <p>District 6 MoDOT St. Louis District Gregg Wilhelm 1590 Woodlake Drive Chesterfield, MO 63017 (314) 453-1832</p> <p>District 8 MoDOT Springfield Area District Dawne Gardner 3025 East Kearney, PO Box 868 Springfield, MO 65801 (417) 895-7662</p> <p>District 10 MoDOT Southeast District</p>

	Richard Pilcher 910 Springfield Road, PO Box 220 Willow Springs, MO 65793 (417) 469-6269	Jay Lancaster 2675 North Main Street, PO Box 160 Sikeston, MO 63801 (573) 472-5264
Application Deadline	Typically, a member of the congressional delegation requests a project during the congressional appropriations process. The project selection cycle occurs every two years.	
Eligibility	Municipality, County, or State agency. (For state-sponsored projects, there must be local support.) Meet at least one of the 12 TE activities, including, amongst others: <ul style="list-style-type: none"> • Having a direct relationship to an intermodal transportation system in terms of function, proximity or impact, • Involving activities that are over and above normal transportation practice, or • Providing public access for at least 25 years. 	
Match Requirements	The federal government provides 80 percent of the funds and the municipalities need to contribute a 20 percent match.	
Source Water Protection	To the extent that source water protection coincides with improving the efficiency of transportation systems, reducing transportation's environmental impacts, reducing the need for costly future public infrastructure investments, and development planning.	

Appendix 2: Background on Source Water Protection Programs and the 319 Nonpoint Source Management Programs

In this appendix we provide a very basic overview of the Safe Drinking Water Act's program for source water protection assessment and planning, and of the Clean Water Act's program for addressing nonpoint source pollution. We provide this basic information to assist staffers who may work on one or the other program areas, but are not particularly familiar with the other topic.

The fundamental issue here is that we regulate the quality and safety of our drinking water through one law – the Safe Drinking Water Act – and the quality and safety (for swimming, etc.) of our surface waters through another law – the Clean Water Act. Although the two statutes are both striving for clean, safe water supplies and can often work in harmony, they are often not well coordinated and can in fact be challenging to manage together. The issue addressed in this memo of funding crossover under the two statutes is one example of the challenges that can arise.

Background: Source Water Protection Planning

The 1996 amendments to the Safe Drinking Water Act included requirements that states develop Source Water Assessment Programs to analyze existing and potential threats to drinking water supplies in the states. Through these state-based programs, Source Water Assessments were created for nearly every public water system in the country. The Assessments are site-specific and include detailed information about the status of a water supply, threats and risks.

Once a Source Water Assessment is created it is a logical next step to create a plan (a Source Water Protection Plan or SWPP) to turn the Assessment information into an action plan to protect – and where necessary restore – the drinking water source. However, due to funding limitations and other resource concerns, SWPPs have not been as widely adopted as the Assessments. Even where SWPPs have been created, implementation of the protection and restoration measures identified in the plans has been limited.⁸ A federal review of source water protection efforts identified four main factors holding back both the Assessment and the SWPP processes: lack of financial resources; lack of human resources; no direct EPA legal authority for source water protection; and lack of authority of States to require protection.⁹

Background: 319 Nonpoint Source Management Program

The 1987 amendments to the Clean Water Act established the Section 319 Nonpoint Source Management Program. In a nutshell, the federal 319 program required the states to assess their nonpoint source problems and establish a program to address those problems. Nothing in the federal 319 program established any sort of regulatory control over nonpoint sources of pollution (states are free to do so themselves if they so choose). In addition, the federal 319 program established an on-going funding stream. Each year, Congress appropriates funds for the federal

⁸ In many states, wellhead protection efforts have been more widespread than surface water protection planning implementation. See generally U.S. EPA Office of the Inspector General, Source Water Assessment and Protection Programs Show Initial Promise, But Obstacles Remain. Report No. 2005-P-00013. March 28, 2005

⁹ U.S. EPA Office of the Inspector General, Source Water Assessment and Protection Programs Show Initial Promise, But Obstacles Remain. Report No. 2005-P-00013. March 28, 2005. pg. 10.

319 program for U.S. EPA. U.S. EPA distributes those funds to each of the states based on a distribution formula. The states then use the funds to address their nonpoint source problems, usually both by using the funds for state agency needs (e.g., program staffing, research, etc.) and by redistributing the funds through a grant program for on-the-ground nonpoint source pollution control projects.

Through a series of guidance documents over the years, U.S. EPA has directed priorities for the use of 319 funds. The most recent detailed guidance was issued in 2003. This guidance solidified an evolutionary direction of the program – focusing a significant portion of the funds on the restoration of waters identified as “impaired” under the Clean Water Act’s 303(d) program. (See “Base vs. Incremental Funds in the 319 Program” below for more information.) When re-granting funds themselves for nonpoint source projects, the states have embraced and even increased this focus on impaired waters.

To learn more about the federal 319 program, please visit:

<http://www.epa.gov/owow/keep/NPS/cwact.html>.

Base vs. Incremental Funds in the 319 Program

The U.S. EPA divides the 319 program’s funds into two categories: base funds and incremental funds. Base funds (i.e., all funds other than the “incremental funds”) can be used by state agencies (and hence any entity the agency grants the funds to) “for the full range of activities address in...approved nonpoint source management programs.”¹⁰ Incremental funds are explicitly targeted to address water quality impairment issues (i.e., situations where the water quality standards are not achieved in a waterbody) as defined under the Clean Water Act and related state programs. The 319 program guidance reads: “except as noted in the next paragraph, States must use \$100 million of Section 319 funds (referred to as “incremental funds”) to develop and implement watershed-based plans that address nonpoint source impairments in watersheds that contain Section 303(d)-listed waters.”¹¹ As a practical matter, many states target the majority of both their base and incremental funds to work in impaired watersheds.

¹⁰ Federal Register, Vol. 68, No. 205/Thursday, October 23, 2003. pg. 60656.

¹¹ Federal Register, Vol. 68, No. 205/Thursday, October 23, 2003. pg. 60657.

Appendix 3: Three Approaches for Enhancing Source Water Protection under the 319 Program

Approach A: Utilize Base Funds from the 319 Program

Funding source water protection activities using the 319 base funds is the simplest, most straightforward way for the state to direct 319 funds to worthy source water protection activities identified in SWPPs. The 2003 319 Guidance states:

“States may use the “base funds” (i.e., all Section 319 funds other than the “incremental funds” described below) for the full range of activities addressed in their approved nonpoint source management programs. Thus these funds may be used both for the protection of unimpaired waters and for restoration of impaired waters. For example, States may use these funds to protect sources of drinking water, critical high-quality waters, and threatened waters from current and future threats.” (emphasis added)¹²

Importantly, activities funded with base funds do NOT require the existence of an official Watershed-Based Plan (i.e., the nine elements approach) and so Missouri could simply require that applicants have a good, approved SWPP in place in order to be eligible for funds. This removes the dual-planning (i.e., SWPP and 319’s Watershed-Based Plan) requirement altogether.

In addition, if a situation arises where the state sees a benefit from having an applicant produce both a SWPP and a Watershed-Based Plan (or develop a SWPP-Alternate under Approach 3 below), the state may allocate up to 20 percent of their base funds for planning activities, including cases where there is a need to: “...develop watershed-based plans that focus on the protection of threatened waters, source water, or other high-priority unimpaired waters.”¹³ See Approach 3 below for what the dual plan might need to include.

State agency action required: We suggest the state make it explicit in their 319 request for proposals that source water protection activities tied to an approved SWPP are eligible for 319 base funds; the state may also need to update their Nonpoint Source Management Plan to ensure it addresses source water protection activities adequately.

Pros: Within the state’s authority to do currently; easier than the full 319 Watershed-Based Planning process for applicants (i.e. their SWPP would meet the requirement with no need for the modeling, etc. required by the 319 planning process); no official Watershed-Based Plan required; funds for Watershed-Based Planning available if needed.

Cons: Base funds are likely already stretched thing with existing activities; may require some updating of the state’s Nonpoint Source Management Plan to incorporate all possible source water needs.

Approach B: Utilize Incremental Funds from 319 by Designating Source Water Protection a “Uniquely High-Priority State Need.”

¹² Federal Register, Vol. 68, No. 205/Thursday, October 23, 2003. pg. 60657.

¹³ Ibid.

This approach would allow Missouri to use a portion of the 319 incremental funds for source water protection. It appears that this approach would avoid the requirement for a Watershed-Based Plan and could instead be based on the existence of a SWPP – avoiding the dual plan dilemma. The 2003 319 Guidance states:

“Regions may authorize States to use a portion of incremental funds to address watersheds that do not include impaired waters in special circumstances where it is necessary to address a uniquely high-priority State need to protect waters that currently are not impaired by nonpoint source pollution to assure that they remain unimpaired.”¹⁴

The Guidance goes on to state that the resources and the threats to them should be documented in the State’s 305(b) report and that the Region must find that the state is making good progress on developing and implementing Total Maximum Daily Loads before authorizing such a shift in incremental funds. No fixed dollar amount or percentage is established to define “a portion of incremental funds.”

Reality check! According to one staff person in the 319 program at EPA headquarters, exactly one state has ever invoked this provision of the 319 program.¹⁵ The same staff person felt it was unlikely that EPA would approve an attempt by Missouri to invoke the provision, given the ever-increasing focus on restoring impaired waters.¹⁶ However, conversations with other headquarters staff suggest this is a good time to raise the possibility of flexibility in using 319 funds – even incremental funds – for source water protection. Headquarters has begun the process to write new guidance for the 319 program, and issues like using the funds for protection activities (such as source water protection) are on the table.¹⁷ (Draft guidance is hoped for by September 2012, with a final guidance by November 2012, making this a great time for Missouri to engage in the national discussions and consider adjusting their own approach.)

State agency action required: The state agency would need to designate protection of source waters (specific waters or generically all of them) “a uniquely high-priority State need” in the next 305(b) report (now more commonly known as the Integrated Report). The agency would also need to build a case with the Regional Office of EPA to allow them to designate source water as a “uniquely high-priority State need.”

Pros: easy for applicants (i.e. their SWPP would meet the requirement); no official Watershed-Based Plan required.

Cons: requires the Regional EPA approval (which at least from the national perspective sounds unlikely); requires good progress on TMDL development; competes with TMDL development and implementation for limited incremental funds.

¹⁴ Federal Register, Vol. 68, No. 205/Thursday, October 23, 2003. pg. 60657.

¹⁵ Maine invoked this provision for several years. The state argued effectively that they had relatively few impaired waters so some of the incremental funds would be better prioritized for protecting high quality waters.

¹⁶ Weitman, Dov. Chief (retired as of the end of 2011) of the U.S. Environmental Protection Agency's Nonpoint Source Control Program. Phone conversation with the author, 11/29/2011.

¹⁷ Hall, Lynda. Chief of the U.S. Environmental Protection Agency's Nonpoint Source Control Program. Phone conversation with the author, 2/10/2012.

Approach C: Create a Source Water Protection Plan Which Also Qualifies as a Watershed Restoration Plan – aka the MOSWPP-Alternate Planning Track.

In cases where the source water protection area includes a 303(d) listed impaired water, it may actually make sense to combine the source water and 319 nonpoint source planning requirements. This would not remove the dual-planning dilemma, but would rather combine the two into one. For details on what the MOSWPP-Alternate plan would need to require, see section below.

State agency action required: The state agency would need to draft a set of guidelines similar to the existing MOSWPP Guidelines for the Alternate track. A joint plan approval team (i.e., people from the SWPP world and the 319 world within the state agency team) would likely need to be created. See Appendix 4 for suggested components of a MOSWPP-Alternate Plan.

Pros: holistic approach both geographically and parameter-wise; qualifies for all 319 funding types without reservation; may save time and resources when compared with conducting multiple planning (i.e., SWPP and TMDL, etc.) processes.

Cons: requires more time, effort and resources than a traditional MOSWPP; may be challenging for a drinking water provider or community to tackle alone; will likely require more technical expertise (modeling, monitoring etc.) than a straight-forward MOSWPP; may not be a good fit for protection scenarios (i.e., in unimpaired watersheds).

A Note on Scale and Expectations:

An important component of making the MOSWPP-Alternate approach work would be scaling the expectations for plan elements (particularly the 319 elements) to the scale of problem and of the funding request. For example, the modeling of load reductions might be quite simple in a small watershed with one parameter of concern while a large watershed with multiple problems might require quite sophisticated modeling. Similarly, monitoring plan detail and scope expectations should be adjusted to fit the plan's scope and needs. Initial conversations with Region 7 EPA staff suggest they are open to this concept of scale and apply it currently when they review plans. Missouri agency staff should work closely with those developing MOSWPP-Alternate plans and the regional EPA office to ensure the details of plans match expectations.

Who Might Want to Undertake the MOSWPP-Alternate Approach?

The MOSWPP-Alternate approach will likely be most attractive to those working with surface water drinking water sources and particularly in source water protection areas with existing impairments (i.e., where restoration is needed as opposed to more of a protection approach). The impairments within a watershed do not necessarily need to be the issues of gravest concern for the source water protection plan in order to make the MOSWPP-Alternate approach attractive. The 2003 guidance states:

“...States must use the \$100 million [incremental funds]...to develop and implement watershed-based plans that address nonpoint source impairments in a watersheds that contain Section 303(d)-listed waters. (However, these plans may also include activities

that address waterbodies within the watershed that are not currently impaired where appropriate to prevent future impairments within the watershed.)”¹⁸

So as long as the source water area is within an impaired watershed it could be drawn into the 303(d)-related Watershed-Based Planning process for that watershed, even if it is unimpaired. However, the impaired waters connection is most likely to be helpful to the joint planning approach if the impairment(s) is/are in some way related to the issues of concern in source water planning. Let’s examine a few scenarios:

1.) TMDL in place for some or all of the pollutants of concern.

This is the scenario most likely to find the Alternate approach palatable. In this scenario, much of the data, analysis and detailed planning needed for the Alternate SWPP should already be available in the TMDL. That information may be incorporated by reference and/or quoted/paraphrased in the Alternate SWPP. While additional work is required to find and incorporate the information, the additional funding benefits may make this well worth the time.

2.) TMDL in place for related pollutants.

This scenario is quite similar to scenario #1. If the TMDL addresses problems and solutions quite related to the parameters of concern for source water protection in the area, much of the information generated by the TMDL process can be of use in meeting the requirements of an Alternate SWPP approach. The final plan should explicitly link the TMDL and its Watershed-Based Plan solutions to the source water concerns and solutions.

3.) TMDL not in place, but water is listed as impaired.

In this scenario it may or may not be worth the effort to pursue an Alternate SWPP. Combining the planning efforts may reduce redundancy, save time, and save money – if a TMDL is going to be developed some day, it may pay to get the Watershed-Based Plan in place now. On the other hand, the combined planning effort may incorporate issues and geography that the SWPP entity is not involved with and may slow down the planning process significantly. Again, the connection between pollutants of concern for source water planning and for impairment listing may impact how useful the overlap will be.

On the plus side, remember that the state can make 319 incremental funds available to help with associated planning costs: “Where a NPS TMDL has not yet been developed and approved or is not yet being developed for the waters, the State may use Section 319 funds to develop a watershed-based plan in the absence of the TMDL.”¹⁹

¹⁸ Federal Register, Vol. 68, No. 205/Thursday, October 23, 2003. pg. 60657.

¹⁹ Federal Register, Vol. 68, No. 205/Thursday, October 23, 2003. pg. 60659.

Appendix 4: Recommended Components of MOSWPP-Alternate Plans that combine Source Water Protection Plan and 319 Watershed-Based Plan Requirements

1. Introduction and goal(s)

Essential components:

- a. Introduction/purpose
- b. Goals and/or plan objectives
- c. Background
- d. Definitions

What would be required in this section to comply with MOSWPP requirements?

The MOSWPP Guidelines require a plan to include an “introduction/purpose,” “plan objectives,” and definitions. In addition the Guidelines require answers to the following background questions: Is the source new or existing? Is the source type surface or ground water? Is the plan original or is this an update? What funding sources were used for plan development? The MOSWPP Guidelines also require information on the source’s Emergency Operations Plan (see Section 3 of the Guidelines).

What would be required in this section to comply with 319 planning requirements? From Element A of the U.S. EPA’s Nine Elements: “...set goals that will include (at a minimum) meeting the appropriate water quality standards for pollutants that threaten or impair the physical, chemical or biological integrity of the watershed covered in the plan.”²⁰ If the watershed has a Total Maximum Daily Load in place, the Alternate Plan may just reference the relevant TMDL documents and incorporate the TMDL’s goal(s). If the watershed does not have a TMDL in place, the Alternate Plan must document the designated uses of the watershed and identify any existing impairments. If there are impairments (but no TMDL in place), the Alternate Plan must make solving those impairments a goal of the plan. If there are no impairments, protecting the existing water quality and designated uses should be included as a goal.

2. Source water characterization

- a. Delineation of source water area
 - i. Include description of geology; method of delineation; maps; total acreage; listing of ponds, lakes, rivers, streams, wells, etc; confirmation that Geological Survey Resource Assessment Division contacted
- b. Water quality and water quantity data summary
 - i. Include information on background sources, evaluation of raw water quality, history of current raw water source, description of treatment process, assessment of current finished water and an analysis of sufficiency of current removal treatment requirements.

²⁰U.S. EPA, Handbook for Developing Watershed Plans to Restore and Protect Our Waters. EPA 841-B-08-002. Page 2-15.

- c. Compliance
 - i. Identify if supply is currently in compliance with Public Drinking Water Program regulations, or striving to be
- d. Security and emergency information
 - i. Identification of security issues needing addressing
 - ii. Emergency preparedness and response
- e. Stakeholder and other contact identification/contact information
 - i. Stakeholder identification, including Source Water Protection Committee members
 - ii. Contact information for the water supply including: name and address; public water supply ID number; responsible party's name, address and phone; and county.

What would be required in this section to comply with MOSWPP requirements?

All of the essential components of this section stem from the MOSWPP requirements.

What would be required in this section to comply with 319 planning requirements?

Nothing. This section is directly tied to source water planning needs.

- 3. Identification of potential and actual source of contamination
 - a. Describe land use and other relevant issues (point source dischargers, agricultural practices, etc.) in area
 - b. Identify potential and current causes of pollution
 - c. Identify potential and current sources of pollution
 - d. Select critical areas for protection and/or restoration
 - e. Identify risks and impacts of sources; estimate necessary pollutant reductions (if impaired)
 - i. Identify difference between water quality criteria in the source water area (if applicable – surface water sources) and current pollutant levels; calculate load reductions necessary:
 - ii. Describe associated risk and potential impact of each listed contaminant in the source water area

What would be required in this section to comply with MOSWPP requirements? The MOSWPP Guidelines specifically require a more detailed breakout of the following types of potential and actual sources of contamination: description of land uses and acreage amounts in source water area, identification of current agricultural practices within source water area, and identification of wastewater discharges and sludge application. In addition, the MOSWPP Guidelines specifically require a contaminate list (to include the number and type of contaminates) for both potential or actual contaminate sites and their category (e.g. agriculture).

What would be required in this section to comply with 319 planning requirements? From Element A of the Nine Elements: identify the causes of impairment (if applicable), the sources that need to be controlled, and natural background levels of pollutants. Again, if a TMDL exists this information can be summarized from the TMDL or incorporated by reference. If a TMDL does not exist, EPA’s guidance states methods may include: “...mapping, modeling, monitoring and filed assessments...”

From Element B of the Nine Elements: “...an estimate of the load reductions expected from management measures...”²¹ This estimate: “...should account for reductions in pollutant loads....necessary to attain applicable water quality standards.”²²

4. Action plan
 - a. Identify specific actions (e.g. BMPs, etc.) needed
 - b. Protection
 - i. Describe existing or planned Source Water Protection Ordinance(s). If planned, identify opportunities and obstacles for implementation. (MOSWPP, NOT required but strongly recommended)
 - ii. Description of current management measures for contaminant sources (MOSWPP)
 - iii. Describe planned management measures for protection
 - c. Restoration
 - i. Describe critical areas for restoration (identified in 3c) and describe the nonpoint source management measures to be implemented.
 - ii. Identification of planned management of contaminant sources and “very specific” information on best management practices to be installed.
 - d. Estimate necessary financial assistance
 - e. Estimate necessary technical assistance
 - f. Develop outreach plan, aka education and information to support work

What would be required in this section to comply with MOSWPP requirements?
Section 6 of the MOSWPP Guidelines spell out several specific topics that need to be addressed relating to implementation. These include: management of contaminant sources, implementation strategies (include “very specific” information about the plan of action); provisions to be implemented to reduce Total Organic Carbon, disinfection byproducts, trihalomethanes and taste and odor; incorporation of the plan in the annual Consumer Confidence report; and future management approaches. The MOSWPP Guidelines contain several questions to be addressed under each of these topics.

What would be required in this section to comply with 319 planning requirements?
The action items for the MOSWPP Alternate Plan would address requirements under Element C (A description of the nonpoint source management measures that will need to be implemented to achieve load reductions in paragraph 2, and a description of the critical areas in which those measures will be needed to implement this plan.”), Element D (“Estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources

²¹ U.S. EPA, Handbook for Developing Watershed Plans to Restore and Protect Our Waters. Pg. 2-15

²² U.S. EPA, Handbook for Developing Watershed Plans to Restore and Protect Our Waters. Pg. 2-16.

and authorities that will be relied upon to implement this plan.”) and Element E (“An information and education component used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.”)

This section is one where the additional expectations from 319 will be much more intense than the expectations for a MOSWPP. In their handbook on watershed plan development, U.S. EPA summarizes their expectations for implementation plan components as follows:

- “An information/education (I/E) component to support public participation and build management capacity related to adopted management measures
- A schedule for implementing management measures
- Interim milestones to determine whether management measures are being implemented
- Criteria by which to measure progress toward reducing pollutant loads and meeting watershed goals
- A monitoring component to evaluate the effectiveness of implementation efforts
- An estimate of the technical and financial resources and authorities needed to implement the plan
- An evaluation framework”²³

For the purposes of the Alternate Plan, several of these pieces – Milestones, Timeline, and Monitoring – have been broken out into their own sections here. The remaining items should be addressed in this section of the Alternate Plan. U.S. EPA’s expectations for these components are too detailed to provide in their entirety here, but Chapter 12 of the *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* provides detailed advice about plan development.

5. Milestones: Identify specific, measurable outcomes

These milestones should be established to measure progress in implementing the management measures described in your action plan. You should establish one or more milestones for each critical action item identified in your action plan, including outreach and education activities.

For example, if the action plan recommended the implementation of a particular BMP on 1,000 feet of stream, milestones might include signing agreements with landowners to enroll the 1,000 feet of stream in a BMP program in year one, the establishment of the BMP on the first 500 feet in year two, and the establishment of the BMP on the remaining 500 feet in year three.

Milestones are about measuring progress on implementing actions. Measuring water quality improvements directly is addressed in section 7.

²³ U.S. EPA, *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. Pg. 12-2.

What would be required in this section to comply with MOSWPP requirements?

In section 6, the MOSWPP Guidelines require the development of milestones under the “implementation strategies” bullet. The Guidelines stress this information should be “very specific.”

What would be required in this section to comply with 319 planning requirements?

Element G of the 319 planning process requires: “A description of interim measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented.”²⁴ The U.S. EPA suggests watershed plans should include short-term (1 to 2 years), mid-term (2 to 5 years) and long-term (5 to 10 years or longer) milestones. For more on the expectations on milestones and Element G, see page 12-7 in the *Handbook for Developing Watershed Plans to Restore and Protect Our Water*.

6. Timeline

- a. Identify factors affecting timing, such as seasonal limitations, funding cycles, permit timing, etc.
- b. Develop schedule for all actions, monitoring, and revisions.

What would be required in this section to comply with MOSWPP requirements?

MOSWPP Guidelines require “Timeline for each contaminant management approach: A chronological listing or mention of when implementation of management practices will be utilized.”²⁵

What would be required in this section to comply with 319 planning requirements?

Element F of the 319 planning requirements requires “a schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.”²⁶

7. Monitoring

- a. Identify suite of measurable indicators tied to milestones and goals.
- b. Develop specific action plan for monitoring
 - i. Analysis and procedures
 - ii. Baseline information
 - iii. Approved labs and other QAQC
 - iv. Information/education data
 - v. Monitoring plan
 - vi. Implementation schedule/timeline

What would be required in this section to comply with MOSWPP requirements?

Section 6 of the MOSWPP Guidelines addresses monitoring in a bullet on “future surveillance and frequency.” The Guidelines ask: “What method of surveillance will be used to document changes in the Source Water Protection area, and how frequently will these

²⁴ U.S. EPA, *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. Pg. 2-17.

²⁵ Missouri Department of Natural Resources, *Guidelines for Developing a Source Water Protection Plan*. Section 6.

²⁶ U.S. EPA, *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. Pg. 2-16.

be completed?” The focus here is on monitoring changes on the landscape that may impact source water.

What would be required in this section to comply with 319 planning requirements?

Element I of the 319 Nine Elements addresses monitoring requirements. The focus of the monitoring requirements is on water quality, although it is not necessarily limited to that. Element I reads: “A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.”²⁷ These requirements can be a – real or perceived – obstacle for those developing a MOSWPP Alternate plan. This is an area where early and extensive consultation between those developing the plan, the state agency, and the regional EPA office would be wise in order to understand and appropriately scale monitoring expectations.

8. Procedures for reviewing and revising plan
 - a. Identify criteria for measuring progress
 - b. Establish procedures for evaluating source water plan/adaptive management process.

What would be required in this section to comply with MOSWPP requirements?

The MOSWPP Guidelines require plan developers indicate how often and by what method the plan will be reviewed and updated.²⁸ The Guidelines also require the plan address how the public will be involved in future reviews and revisions.²⁹

What would be required in this section to comply with 319 planning requirements?

Element H of the 319 Nine Elements requires plans to include: “A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards.” Sections 12.9 and 12.10 of the in the *Handbook for Developing Watershed Plans to Restore and Protect Our Water* describe the expectations for evaluation of plans based on the established criteria.

9. Summary/wrap up

This section should be a brief wrap up of the plan, including any next steps envisioned. This section must also include the signatures of those who will implement the plan, along with their contact information.

What would be required in this section to comply with MOSWPP requirements?

This section should include requirements to incorporate:

What would be required in this section to comply with 319 planning requirements?

None. These pieces are required by the MOSWPP Guidelines.

²⁷ U.S. EPA, *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. Pg. 12-10.

²⁸ Missouri Department of Natural Resources, *Guidelines for Developing a Source Water Protection Plan*. Section 6.

²⁹ *Ibid*.