

Utah Watershed Coordinator Handbook



Developed by
The Utah Division of Water Quality
Watershed Protection Section
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Table of Contents

REGARDING ACRONYMS.....	1
INTRODUCTION.....	1
CLEAN WATER ACT.....	1
MAJOR PROGRAMS OF THE CWA.....	2
THE GENERAL ROLES AND RESPONSIBILITIES OF LOCAL WATERSHED COORDINATORS.....	18
TRACKING YOUR BUDGET.....	19
ANNUAL WATERSHED COORDINATOR REPORTS.....	20
RELEVANT MEETINGS.....	20
TRAINING OPPORTUNITIES.....	22
WATERSHED GROUPS.....	22
ESTABLISHMENT.....	23
WATERSHED PLANNING.....	23
PROJECT PLANNING AND DESIGN.....	23
CONSERVATION PLANNING.....	23
GRANT WRITING.....	37
EPA SECTION 319 PROJECT PROPOSALS.....	38
PROJECT TRACKING.....	39
TRACKING PROJECT FUNDS.....	39
MATCH.....	40
PROCESSING PAYMENTS.....	40
MONITORING.....	41
COMMON BMPs BASED ON POLLUTANT.....	41
BMP EFFECTIVENESS.....	41
BMP MAINTENANCE.....	42
MODELS.....	42
REPORTING.....	43
ANNUAL PROJECT REPORTS.....	44
INTERIM FINAL REPORTS.....	44
FINAL REPORTS.....	44
ADDITIONAL INFORMATION.....	44
LIST OF FORMS.....	46
LIST OF APPENDICES.....	47
APPENDIX 1. ACRONYM LIST.....	48
APPENDIX 2. UTAH DIVISION OF WATER QUALITY BASIN COORDINATORS.....	51
APPENDIX 3. FUNDING CYCLE.....	53
APPENDIX 4. LIST OF STATEWIDE STAKEHOLDER GROUPS.....	51
APPENDIX 5. WATERSHED PLANNING FLOWCHART.....	54
APPENDIX 6. SOURCES OF FUNDING FOR WATERSHED INITIATIVES.....	57
APPENDIX 7. A BEGINNERS GUIDE TO SUCCESSFUL PROPOSAL WRITING.....	59
APPENDIX 8. UDWQ NON-POINT SOURCE MONITORING.....	62

APPENDIX 9. STEPL FACT SHEET	63
APPENDIX 10. CONTACT LISTS	66

List of Figures

FIGURE 1. OVERVIEW OF CWA REQUIREMENTS FOR UTAH.	3
FIGURE 2. THE THREE ELEMENTS OF A WATER QUALITY STANDARD.	4
FIGURE 3. EXAMPLE OF 305(B) REPORT OVERVIEW.	8
FIGURE 4. POTENTIAL SOURCES OF POLLUTION CONSIDERED IN TMDL DEVELOPMENT.	9
FIGURE 5. CWA'S TOOLS FOR TMDL IMPLEMENTATION.	11
FIGURE 6. STATE NPS PROGRAM FRAMEWORK.	15
FIGURE 7. CWA SECTION 319 GRANT OVERVIEW.	17

List of Tables

TABLE 1. POTENTIAL BENEFICIAL USES FOR SURFACE WATERS.	5
TABLE 2. UDWQ'S PROBABILISTIC AND TARGETED MONITORING STRATEGY ROTATING SCHEDULE.	6

Regarding acronyms

As a watershed coordinator you will encounter (and soon be using) many, many acronyms and abbreviations. Appendix 1 provides a comprehensive list of acronyms and scientific abbreviations that you will frequently need. In case we missed any, additional resources are available here:

<http://www.deq.utah.gov/acronyms/acronyms.htm>.

Introduction

As watershed coordinators and scientists, we are obligated by the Clean Water Act (CWA) to restore, maintain, and protect the biological, chemical, and physical integrity of Utah's waters. By protecting water quality, we are able to enhance the uses of that water, whether it may be for culinary, recreational, aquatic life, or agricultural purposes. Conserving this finite resource will allow for both adequate aquatic habitat and sustainable economic growth. Using the programs developed under the CWA, we can educate the public to be more socially responsible when it comes to protecting this resource.

Clean Water Act

The Utah Division of Water Quality (UDWQ) is delegated to implement the Clean Water Act (CWA). The CWA is the core statute of surface water quality protection in the United States. It utilizes both regulatory tools and incentives to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the main goal of the CWA which is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" so they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water."

The CWA was passed in 1972 and focused initially on the control of toxic chemicals as its primary short-term goal. Early implementation efforts of the Act focused on regulating discharges from point source municipal and industrial facilities. In the late 1980s, efforts to address polluted runoff, (referred to as non-point sources [NPS]) increased significantly by using voluntary programs, including financial grants to landowners to cost-share on water quality projects. During the past decade, more attention has been given to the physical and biological integrity goals of the CWA. The evolution of the CWA has thus moved from a source-by-source or pollutant-by-pollutant approach to a more holistic watershed-based approach, and includes enlisting stakeholder groups in the development of watershed plans to protect healthy waters and restore impaired ones.

Major Programs of the Clean Water Act

The CWA requires delegated States to implement the following programs:

1. Develop water quality standards
2. Monitor waterbodies
3. Report on assessments of waters ([Section 305\(b\)](#), [Section 303 \(d\)](#))
4. Develop Total Maximum Daily Loads (TMDLs)
5. Regulatory
 - A. National Pollutant Discharge Elimination System (NPDES) permit program for point sources
 - B. Manage [Section 404](#) to regulate filling of wetlands
 - C. Manage [Section 401](#) to protect wetlands
6. Voluntary - Manage [Section 319](#) to address NPS
7. Funding
 - A. [State Revolving Loan Fund \(SRF\)](#)
 - B. Section 319
 - C. [Section 106](#)

Figure 1 illustrates the CWA requirements for Utah.



Figure 1. Overview of CWA requirements for Utah
<http://www.epa.gov/owow/watershed/wacademy/acad2000/cwa/cwa1.htm>.

Water Quality Standards

Utah state policy is directed towards achieving the highest water quality consistent with maximum benefit to Utah citizens. Water quality standards (WQS) are aimed at translating the broad goals of the CWA into waterbody specific objectives. WQS applies to waters of the state only: rivers, wetlands, and lakes. Standards of Quality for Waters of the State are contained in the Utah Administrative Code (UAC) [R317-2-7](#). WQS contain three elements: designated uses, water quality criteria, and antidegradation provisions (Figure 2).

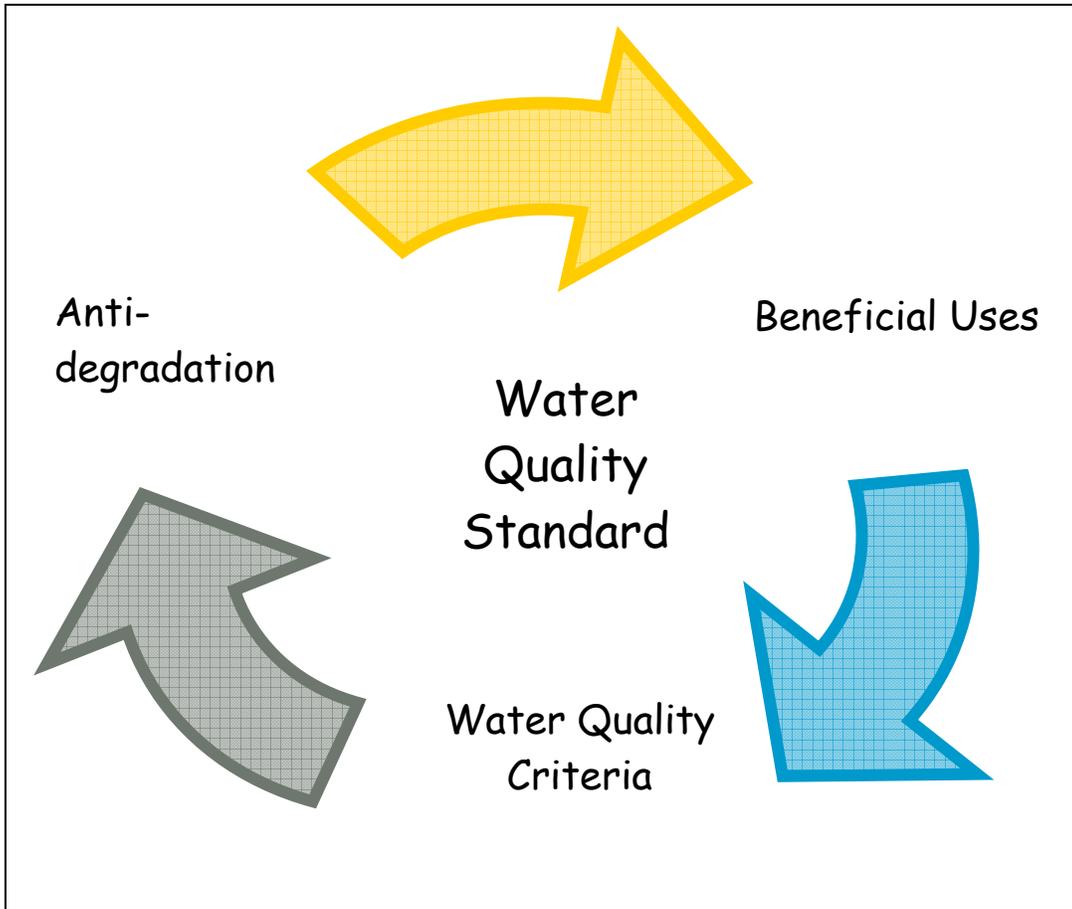


Figure 2. The three elements of a water quality standard.

All waters are assigned beneficial uses that define the resources, services, and qualities of aquatic systems, which are the ultimate goals for protecting and achieving high water quality. The established beneficial uses for a particular waterbody are the water quality goals set for that waterbody. UAC [R317-2-6](#) groups waters of the state into classes to protect against controllable pollution. United States Environmental Protection Agency (EPA) regulations prohibit the removal of an existing use from a particular waterbody, but UDWQ can downgrade a beneficial use, e.g. cold water fishery to warm water fishery, through a process called use attainability analysis (UAA) that is subject to EPA's approval.

Surface waters have at least one, and typically three or four, of the beneficial uses described in Table 1.

Table 1. Potential beneficial uses for surface waters.

Class	Beneficial Use
Class 1C	Domestic purposes with prior treatment (drinking water)
Class 2A	Frequent primary contact recreation
Class 2B	Infrequent primary contact recreation
Class 3A	Cold water fisheries
Class 3B	Warm water fisheries
Class 3C	Non-game fish
Class 3D	Waterfowl, shore birds
Class 3E	Severely habitat-limited waters
Class 4	Agricultural uses (irrigation, stock watering)
Class 5	Great Salt Lake

Once the beneficial uses are established for waters, criteria that are protective of the beneficial uses are set. Water quality criteria (WQC) are levels of individual pollutants, water quality characteristics, or descriptions of conditions of a waterbody that, if met, will protect the beneficial use of the water. These can be expressed either as narrative statements, such as no oil or scum, or as numeric criteria, such as 1,200 mg/l total dissolved solids. Numeric criteria for all parameters can be found in the [UAC R317-2-14](#). Criteria can also be categorized according to what portion of the aquatic system they can be applied to the water itself (water column), bottom sediments, or fish tissue. The duration of time to which they are

applied is another way of dividing WQC, short-term (acute) versus long-term (chronic) exposure. Lastly, WQC are distinguished according to the types of organisms they are designed to protect, aquatic life, human, or livestock.

The intent of the antidegradation component of the water quality standard is to protect existing uses and to maintain high quality waters. This policy protects water quality where the quality is already better than the WQS. This policy is found in [UAC R317-2-3](#). It does not prohibit degradation of water quality unless the Water Quality Board has previously considered the water to be of exceptional recreational or ecological significance (Category 1 or 2). It creates a series of rules that ensure that when degradation of water quality is necessary for social or economic development, every feasible option to minimize degradation is explored. It also requires that alternative management options and the environmental and socioeconomic benefits of proposed projects are made available to concerned stakeholders.

Monitoring Waterbodies

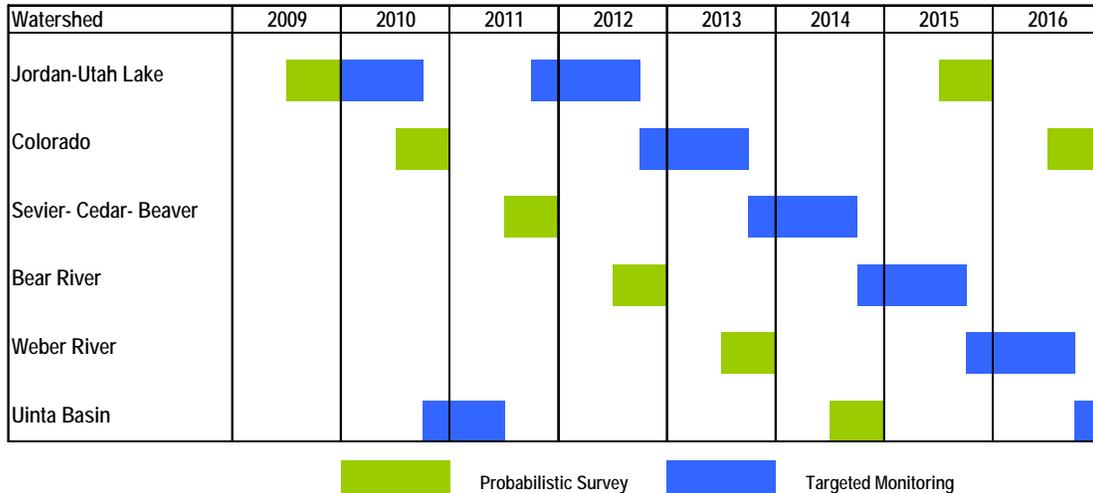
After WQS have been established, the next step is to monitor waters to determine if the WQS are being met. Water quality data are also used to establish water quality goals for implementation projects to restore or protect water quality; Utah Pollution Discharge Elimination System (UPDES) permit compliance, NPS project effectiveness, and TMDL analysis. The responsibility of monitoring falls primarily on UDWQ and funds required for conducting ambient monitoring are lacking; thus, decisions about what, where, and when to monitor are important elements to consider and are dependent upon the purpose of the monitoring program.

In Utah, there are several different monitoring programs. A description about each one can be found in the latest Monitoring Strategy: (<http://www.waterquality.utah.gov/Monitoring/index.htm>).

Ambient stream monitoring follows a rotating basin schedule revolving every six years (.

Table 2). These ambient sites will be monitored monthly at the start of each water year: October 1 through September 30. Lake monitoring also follows the rotating basin schedule, but lakes will only be sampled once during the water year. Data collection for NPS projects and TMDL development is dependent upon the particular impaired waterbody and will be addressed in a separate monitoring plan. During the past few years, UDWQ has increased biological collections following both targeted basin and random site selection (probabilistic) approaches.

Table 2. UDWQ's Probabilistic and Targeted Monitoring Strategy Rotating Schedule.



Report on assessments of waters

States and tribes are required to provide the results of their monitoring in a publicly available report to EPA for approval. This is the Integrated Report (IR) and comprises the 305(b) and the 303(d) reports. These reports are each named after the section of the CWA that calls upon states to create them and are normally submitted on April 1 of even-numbered years.

The 305(b) Report portion of the IR includes all information known about a state or tribe's waters – healthy, threatened, and impaired. It also includes information on which pollutants and other stressors are the most common causes of impairment to waterbodies. EPA consolidates all the 305(b) Reports and provides an overview to Congress (Figure 3 is an example of an overview 305(b) report).

The second part of the report is the 303(d) List and includes only waters that are threatened or impaired. If monitoring and assessment show that a waterbody or segment of river is not meeting its WQS, then that water is considered impaired. Threatened waterbodies are attaining the WQS but non-attainment is predicted by the time of the next IR.

For Utah's current Integrated Report click here:

<http://www.waterquality.utah.gov/WQAssess/currentIR.htm>

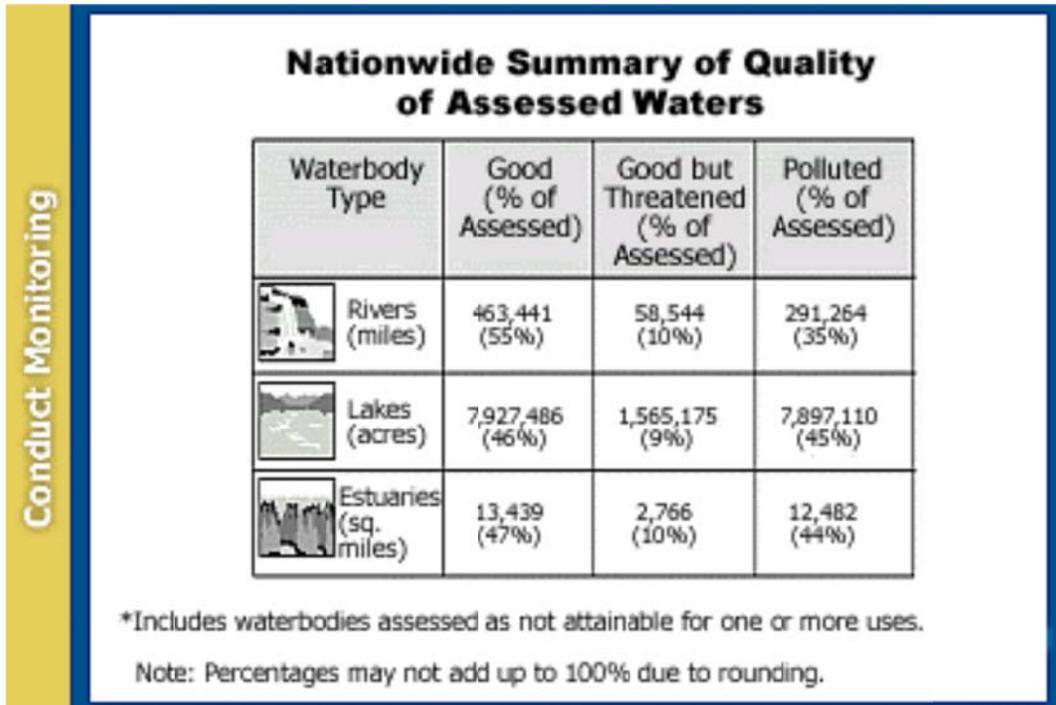


Figure 3. Example of a 305(b) report overview (<http://www.epa.gov/owow/watershed/wacademy/acad2000/cwa/>).

Total Maximum Daily Loads

Section 303(d) of the CWA and EPA’s Water Quality Planning and Management Regulations ([40 CFR 130](http://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-130)) require states to develop TMDLs for waterbodies that are not meeting applicable WQS/guidelines or designated uses under technology-based controls. TMDLs are required for pollutants, but not for pollution (e.g. flow alterations, habitat modifications). TMDLs must be submitted to EPA for review and approval. For a list of approved TMDLs for Utah, click here: <http://www.waterquality.utah.gov/TMDL/index.htm#approved>

The TMDL is the total amount of a pollutant that can be present within a receiving waterbody while still achieving water quality standards. TMDLs are developed by identifying the pollutant inputs that include point sources, NPS, and natural background sources (Figure 4). The current water quality is characterized and models are developed to determine how much total pollutant load can be assimilated by the water body. Based on this calculation, TMDLs allocate pollutant loads to point sources (waste load allocation [WLA]), NPS and background (load allocation [LA]), and a margin of safety (MOS). The TMDL must include an implicit or explicit MOS that accounts for the uncertainty in the relationship between

pollutant loads and the quality of the receiving waterbody. Conceptually, this definition is denoted by the equation:

$$\text{TMDL} = \Sigma \text{WLAs} + \Sigma \text{LAs} + \text{MOS}$$

Achieving the pollutant loads allocated in the TMDL typically requires load reductions. These are allocated among the significant sources and provide a scientific basis for restoring surface water quality. In this way, the TMDL process links the development and implementation of control actions to the attainment and maintenance of water quality standards and designated uses.

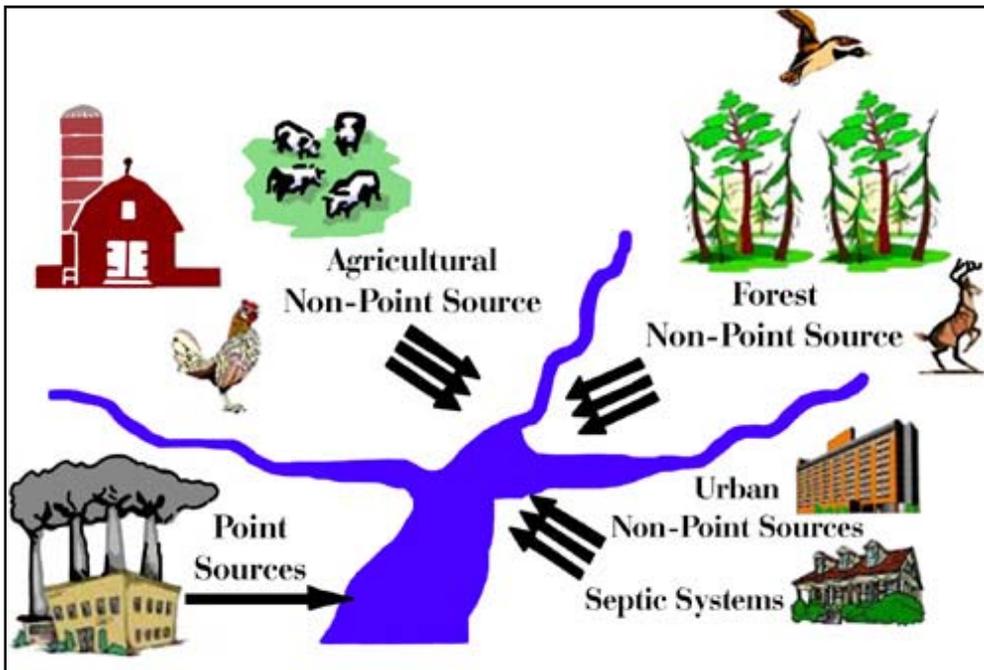


Figure 4. Potential sources of pollution considered in TMDL development (http://www.caes.uga.edu/publications/pubDetail.cfm?pk_id=7173).

UDWQ watershed coordinators are responsible for developing TMDLs (a list of UDWQ watershed coordinators is in Appendix 2). The CWA requires public involvement in developing TMDLs; however, the level of citizen involvement may vary by watershed, depending on the level of local interest. UDWQ values the public involvement process since local citizens can provide information on their watersheds that is important to TMDL development. The stakeholders often offer insights about their community that ensure the success of one pollutant reduction strategy over another.

Typically, UDWQ assembles a stakeholder group, briefs them on the TMDL process and available data, and asks for input on additional data needed to develop the

TMDL. When the draft TMDL is complete, it is circulated to the public and the stakeholder group for 30 – 60 days for comment. Stakeholder meetings are also held to review the TMDL and its implications. The stakeholder group will not only approve the TMDL before it is sent to EPA, but will help steer its implementation.

TMDLs are not self-implementing. UDWQ watershed coordinators, in conjunction with local watershed coordinators, are responsible for implementing these strategies to achieve WQS. Certain tools are defined in the CWA to address this:

- Point Sources
 - Permit limits consistent with the WLA are enforceable under the CWA through National Pollutant Discharge Elimination System (NPDES) requirements
 - Issued by EPA or states w/ delegated authority
- NPS
 - No federal regulatory enforcement program
 - Primarily implemented through state/local NPS management programs (few w/ regulatory enforcement)

Section 303(d) of the CWA does not specifically require implementation plans for TMDLs; however, it requires that WLAs be implemented through the NPDES permit program. After a TMDL has been developed, water quality-based discharge limits in NPDES permits authorized under CWA section 402 must be consistent with the assumptions and requirements of the WLA. Additional information on NPDES permits is available on [EPA's NPDES website](#).

NPS load reductions/LAs are implemented through a wide variety of state, local, and federal programs (which may be regulatory, non-regulatory, or incentive-based, depending on the program), as well as voluntary action by citizens. For example, CWA section 319 establishes EPA's NPS management program. As part of this program, states receive grant money and pass the funding along to counties and other local groups to support a wide variety of activities for controlling NPS. Additional information on NPS and 319 funding is available on EPA's NPS website (www.epa.gov/owow/nps). Information on Utah's state-specific NPS management activities may be obtained through the UDWQ website: (www.waterquality.utah.gov/NPS).

Although section 303(d) does not require states to develop TMDL implementation plans, many states include implementation plans with the TMDL or develop them as a separate document. TMDL implementation plans provide additional information on what point and NPS contribute to water quality impairment, how those sources are being controlled, and/or how those sources should be controlled

in the future. Figure 5 outlines some of the strategies available to implement TMDLs.



Figure 5. CWA's tools for TMDL implementation (<http://www.epa.gov/owow/watershed/wacademy/acad2000/cwa/cwa36a.htm>).

Regulatory: Section 402 National Pollutant Discharge Elimination System permits

The CWA makes it illegal to discharge pollutants from a point source to the waters of the United States. Section 402 of the Act creates the National Pollutant Discharge Elimination System (NPDES) regulatory program. Point sources must obtain a discharge permit from the delegated authority (e.g. State of Utah). Though the CWA does have a long-range goal of zero discharges of pollutants, these permits do not simply prohibit discharge as the name of this program might suggest. Rather, they set limits on the amount of various pollutants that a source can discharge in a given time.

In most cases, the NPDES permitting program applies only to direct discharges to surface waters. Some cases in which discharges to ground water are directly connected to surface water have been incorporated into the NPDES program. NPDES permits cover industrial and municipal discharges, discharges from storm sewer systems in cities, storm water associated with numerous kinds of industrial

activity, runoff from construction sites disturbing more than one acre, mining operations, and animal feedlots and aquaculture facilities above a certain threshold size.

Special exemptions to NPDES:

- Abandoned mines on nonfederal lands (state, local, private)
- Sewage (no other types of discharges) from ships covered by EPA's Vessel Sewage Discharge Program
- Return flows from irrigated agriculture
- Most small feedlots and aquaculture facilities

Regulatory: Section 404 Wetlands

Although most commonly associated with activities that involve filling of wetlands, Section 404 actually deals with one broad type of pollution -- placement of dredged or fill material into "waters of the United States." Wetlands are one component of "waters of the United States;" however, there are numerous other types -- intermittent streams, small perennial streams, rivers, lakes, bays, estuaries, and portions of the oceans.

The 404-permit program is administered jointly by EPA and the US Army Corps of Engineers (COE). The COE handles the actual issuance of permits (both individual and general); it also determines whether a particular plot of land is a wetland or water of the United States. The Corps has primary responsibility for ensuring compliance with permit conditions, although EPA also plays a role in compliance and enforcement.

The fundamental purpose of the program is that no discharge of dredged or fill material should be permitted if there is a practicable alternative that would be less damaging to our aquatic resources or if significant degradation would occur to the nation's waters. Permit review and issuance follows a sequential process that encourages avoidance of impacts, followed by minimizing impacts and, finally, requiring mitigation for unavoidable impacts to the aquatic environment.

Any work done that might alter a waterbody (below high water mark) will require a Stream Alteration Permit, which is managed by the Utah Division of Water Rights. Typically, a Stream Alteration permit is issued jointly with a 404 permit from the COE.

Regulatory: Section 401 Protecting Wetlands

Section 401(a) of the CWA requires that before issuing a license or permit that may result in any discharge to waters of the United States, a federal agency must obtain a certification from the state in which the proposed project is located that the

discharge is consistent with the CWA, including attainment of applicable state ambient water quality standards. The CWA also provides a mechanism whereby downstream states whose water quality may be affected by a federally permitted or licensed project can engage in the 401 process. CWA provisions to which Section 401 certification applies include 404 permits from the Corps of Engineers and EPA-issued NPDES permits.

Section 401 certification has been a key issue in the relicensing of private hydropower dams by the Federal Energy Regulatory Commission (FERC). In a number of cases, states have convinced FERC to include conditions in the new licenses for dams, requiring changes in dam management designed to prevent impairment of designated uses for affected waters.

Voluntary: Section 319 Non-point Source Program

NPS pollution is the most significant source of pollution overall in the country. According to states' 305(b) and 303(d) reports, more miles of rivers and acres of lakes are impaired by NPS than are impaired by point sources. The most recent set of 303(d) reports indicated that more than 40 percent of all impaired waters were affected solely by NPS, while only 10 percent of impairments were caused by point source discharges alone.

The CWA does not provide a detailed definition of NPS. Rather, they are defined by exclusion as anything that is not considered a point source according to the Act and EPA regulations. All NPS of pollution are caused by runoff of precipitation (rain and/or snow) over or through the ground. However, as noted previously, numerous types of precipitation-induced runoff are treated as point sources rather than as NPS under the CWA – including stormwater associated with industrial activity, construction-related runoff, and discharges from municipal separate storm sewer systems (MS4s).

UDWQ manages the 319 NPS Program (Figure 6). States and tribes must identify waters that are impaired or threatened by NPS of pollution, develop short- and long-term goals for cleaning them up, and identify the best management practices (BMPs) that will be used. The state and tribal NPS Programs must also have a monitoring and evaluation plan, which is usually tied into the state 305(b) assessment and reporting program. The BMP section of the plan requires identification of the most common types of stressors, the categories of sources of those stressors, and the types of BMPs that will be both effective and affordable in addressing the identified stressors and sources in general. NPS management plans also identify strategies for working with other agencies and private entities. For example, the Natural Resources Conservation Service (NRCS) of the U.S.

Department of Agriculture is an extremely valuable partner in farm country, since NRCS has access to technical staff and significant cost-share funding under the Conservation Reserve Program and the Environmental Quality Incentives Program and other programs authorized in the 2002 Farm Bill. Management plans also include the identification of federal lands and activities, which must be administered in a manner consistent with program objectives of the 319-management plan.

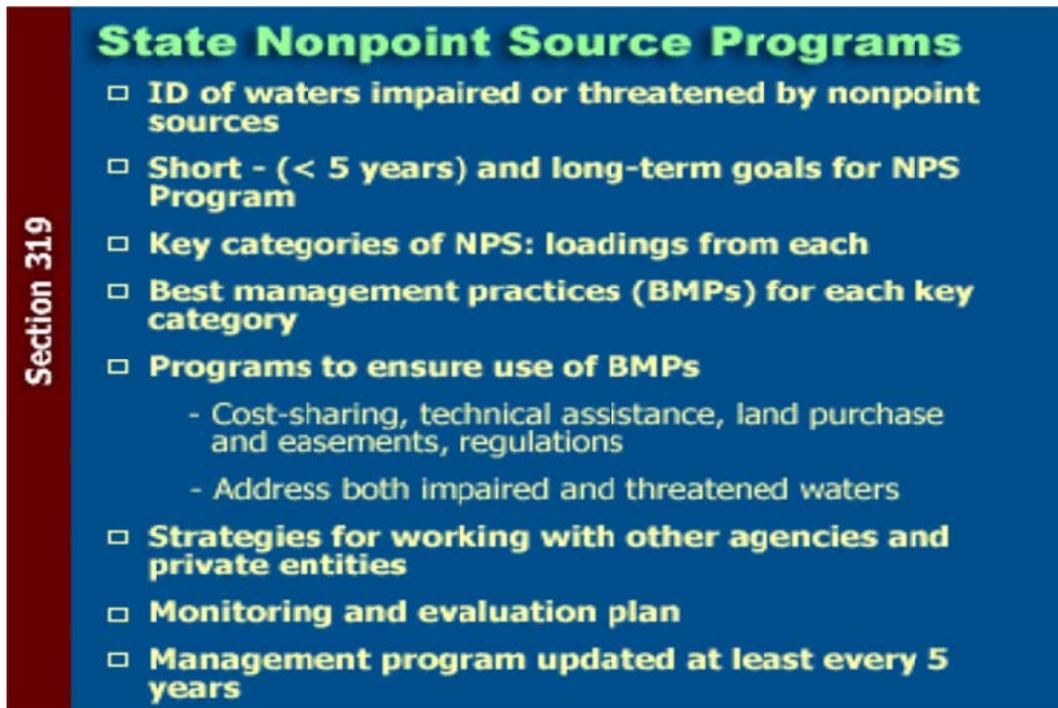


Figure 6. State NPS Program framework (<http://www.epa.gov/owow/watershed/wacademy/acad2000/cwa/cwa54.htm>).

Funding: State Revolving Loan Fund

Under the State Revolving Loan Fund (SRF), EPA provides annual capitalization grants to states, which in turn provide low interest loans for a wide variety of water quality projects. States must match the federal funds with \$1 for every \$5 received (20 percent match). Including federal capitalization grants, state match, loan repayments, and leverage bonds, the total amount of assets in all the SRFs approaches \$40 billion. Between \$3 and \$4 billion is loaned annually from SRFs nationwide.

Some funds are also provided to territories and tribes to be used as grants for municipal wastewater treatment projects. Territories must match the federal funds

with a 20 percent match, while the tribes are not required to provide a match. Loans are usually made at low (sometimes even zero) interest rates. Although most loans have gone to local governments, they can also go to businesses or nonprofit organizations. Payback periods for loans extend to 20 years. Most of the SRF dollars loaned to date have gone for construction, expansion, repair, or upgrading of municipal sewage collection and treatment systems. However, SRF loans can also be made for NPS control projects consistent with a state, territorial, or tribal Section 319 program.

Funding: 319 Non-point Source

Under the CWA Section 319, states, territories, and delegated tribes are required to develop NPS pollution management programs in order to receive 319 funds. Once EPA has approved a state's NPS program, it provides grants to these entities to implement NPS management programs under Section 319(h) (Figure 7). Section 319 is a significant source of funding for implementing NPS management programs, but there are other federal, state, local, and private programs used for funding.

Initially, only \$38 million a year was appropriated, but funding has increased significantly since then. In FY 2002, Congress appropriated \$237 million for Section 319 grants. Recipients of these federal monies must provide a 40% match, in either dollars or in-kind services. States and territories pass on a substantial fraction of the 319 funds they receive from EPA to support local NPS pollution management efforts. Depending on the state or territory, a local match may be required.

Section 319

Federal "319" Grants

- **To states, territories, and tribes**
 - \$237 million in FY 02 (40% match required)
 - EPA allocation formula
 - Population, farmland, water quality problems, etc.
- **Allowed uses of funds**
 - Development and implementation of statewide NPS program plans
 - Grants for on-the-ground controls (BMPs, etc.)
 - Development and implementation of TMDLs and holistic watershed plans
 - Development of state regulatory programs

Figure 7. CWA Section 319 grant overview
<http://www.epa.gov/owow/watershed/wacademy/acad2000/cwa/cwa53.htm>.

Funding: Section 106

Section 106 of the CWA authorizes federal grants to assist states in administering programs for the prevention, reduction, and elimination of water pollution. UDWQ annually files an application with EPA for a continuing annual grant under CWA Section 106 and develops work plans to support NPDES Program and TMDL work.

Ref: EPA's Watershed Academy Web <http://www.epa.gov/watertrain> (CWA)

Utah Division of Water Quality funding cycle

UDWQ uses a targeted basin funding approach to prioritize and allocate NPS funding. Every year a major river basin, referred to as a watershed management unit, is targeted to receive the majority of the 319 and NPS funding (see Appendix 3 for a funding chart). It will take 6 years to cycle through all of the basins. For example, the Jordan River basin will be targeted for funding in 2014 and will be targeted again in 2020. The goal of targeting NPS funding within priority watersheds on a rotating schedule is to facilitate the collection of data prior to project implementation, followed by another round of monitoring 3 years after the beginning of implementation efforts. Three years is expected to be a sufficient

length of time to fully implement all planned practices and begin to realize and measure their environmental benefits.

It is anticipated that a lower level of ongoing funding in non-targeted watersheds will be needed to maintain the momentum behind existing planning and implementation efforts. The proportion of funds dedicated to a targeted basin is not fixed but will be based on need and other factors defined by criteria such as the number of impaired waters, TMDLs, and watershed plans. The proportion of NPS funds dedicated to targeted watersheds should increase over time as the focused approach gains momentum. The goal of the targeted approach is to improve the efficiency and effectiveness of state and local watershed coordinators by providing a definite period in which to plan, implement, and report on water quality improvement projects.

The General Roles and Responsibilities of Local Watershed Coordinators

Local watershed coordinators are essential to improving water quality across the state. While local watershed coordinators have various responsibilities, their most important responsibility is to implement projects that reduce NPS pollution. These projects usually include the installation of BMPs but could also include the development of educational campaigns that teach the public what they can do to improve water quality on their own. Watershed Coordinators are also tasked with developing local watershed groups and facilitating the group's meetings as they discuss, plan, prioritize, and address water quality issues in their watershed.

Currently there are ten watershed coordinators in the state. Each position is unique in that they all work in different environments with their own unique suite of water quality issues and concerns. Some watershed coordinator contracts are run through the local conservation districts (CDs), while others are run through Utah State University, county offices, or the Utah Association of Conservation Districts (UACD). Due to the unique nature of these positions, local watershed coordinators should always be in direct contact with their counterpart at the UDWQ to help clarify their roles and responsibilities as a watershed coordinator.

The essential objectives/tasks for watershed coordinators include the following:

1. Assist in perpetuating locally led planning efforts and coordinate with essential agencies to plan, develop, and implement approved TMDLs.
2. Assist in developing proposals to acquire funding to implement BMPs to abate all significant NPS of pollutants identified in approved TMDLs.

3. Provide essential information and education on available funding, the procurement of funding, and the development of effective BMPs to rectify unacceptable conditions that contribute to water quality impairments.
4. Provide required reporting related to all NPS projects for input into the GRTS tracking system and provide mid-year and annual reports for NPS projects.
5. Gather and report information on all projects implemented within the watershed that support the reduction of pollutants identified in TMDLs.
6. Facilitate the implementation of goals and objectives identified in TMDLs to assure the attainment of identified endpoints.
7. Assist as needed in providing technical assistance to design, plan or implement projects to improve water quality.
8. Provide technical and administrative support to local watershed committees in development and implementation of watershed based management plans to implement approved TMDLs.
9. Coordinate and assist all water quality monitoring activities directed toward demonstrating the achievement of TMDL endpoints, water quality standards, and other environmental indicators of watershed health.

Tracking your budget

UDWQ provides annual funding for each local watershed coordinator position using 319 grants from the Environmental Protection Agency. These grants include funding for travel, supplies, and salary. While the overall expenditures of these funds will be tracked by the UDWQ, it is the responsibility of the local watershed coordinator to keep a detailed budget of how these funds are spent, especially the funds they spend on travel and supplies. As mentioned previously, the amount of money allocated for travel and supplies may differ depending on the agency that holds the contract and whether the position is full or part-time.

Travel

As a watershed coordinator, you will have the opportunity to travel throughout your assigned watershed and attend meetings throughout the state. This requires watershed coordinators to keep a careful watch on their travel budgets. Items that should be billed to the travel budget include, but are not limited to:

- Business Related Travel
- Reimbursement of mileage when using your private vehicle
- Car rentals
- Plane tickets or other forms of transportation

- Per diem for meal reimbursements (rates differ between agencies)
- Conference registration
- Hotels (stay at hotels that offer a state rate)

By tracking their travel budgets, coordinators will be able to prioritize meetings and appointments and plan accordingly.

Miscellaneous or Supply Budget

Some watershed coordinators are given a small budget to help buy supplies or other items used for daily operations. These funds should be used sparingly, and large expenditures should be approved by the UDWQ watershed coordinators.

Annual Watershed Coordinator Reports

Every watershed coordinator will have to submit an annual watershed coordinator report. This report gives you an opportunity to “toot your own horn.” This report includes a summary of the projects that you implemented that year as well as the projects you began. It also gives you an opportunity to highlight information and education (I&E) projects you have developed; the committees you serve on; and what you are doing to improve water quality in your watershed.

Another important aspect of the annual watershed coordinator reports are the load reduction estimates from the projects you are implementing or have completed that year. These reductions will be used in the State NPS Program Annual Report and further support your effectiveness as a watershed coordinator.

As mentioned previously, UDWQ receives the money used to fund watershed coordinator positions annually from EPA. To obtain this funding UDWQ must submit a proposal to EPA each year requesting continued funding for the watershed coordinator positions based on specific goals, objectives, and tasks. Therefore, a final report is required every year to show what was accomplished with the funds used to support the local watershed coordinators. The annual watershed coordinator reporting form that you submit will allow you to describe what you did to help fulfill each of these goals. In a way, by completing this form you are justifying your own position. Watershed coordinator reports will then be used in the statewide annual NPS report. These reports must be submitted to the UDWQ by the end of July every year.

Relevant meetings

As a watershed coordinator, you will attend several meetings. While you will be required to attend some meetings, there may be additional meetings that you may

voluntarily choose to attend. It is strongly recommended that local watershed coordinators attend the following:

Utah Watershed Coordinating Council

Utah Watershed Coordinating Council (UWCC) meetings allow local watershed coordinators to interact with the state and other local watershed coordinators in addition to representatives from watershed groups around the state. A list of statewide watershed groups is presented in Appendix 4. UWCC meetings usually consist of training sessions that help watershed coordinators better understand and fulfill their responsibilities. At the meetings UWCC often awards mini-grants (<\$5,000) to local watershed groups to assist them with any capacity building and outreach projects that they may have.

Utah Monitoring Council

These meetings consist of representatives from various governmental agencies. The meetings allow governmental agencies to discuss their monitoring needs and their strategies for maintaining a uniform approach when monitoring water quality.

Utah Non-point Source Program Coordination Meeting

This meeting occurs annually and allows representatives from different government agencies (such as the U.S. Forest Service, the Bureau of Land Management, and NRCS) to discuss any programs that they have developed to help reduce NPS pollution. This is a good networking opportunity and a chance to learn about projects they are implementing in your area.

Local Watershed Group Meetings

As a local watershed coordinator, you are required to facilitate meetings of local watershed groups. It is very possible that you will take the lead in drafting the agenda and take minutes for these meetings. These groups can be used to help create and implement watershed plans and assist TMDL studies with their input.

Local Conservation District Meetings

In many watersheds, the [local CDs](#) serve as the core watershed group. They are also used in the planning process to help approve projects for funding and provide a great opportunity to get involved with the agricultural community.

Watershed coordinators may also choose to attend various conferences that include:

- The Utah Water Quality Conference
- The Utah Water User's Conference
- UACD Annual Convention

Training Opportunities

There are many opportunities to receive training which will assist you in becoming a more effective local watershed coordinator. Watershed coordinators are encouraged to work towards receiving their Natural Resource Conservation Planner Certification. This program is available through the NRCS. It can take 2-3 years to receive this certification, but it is very beneficial to understand the planning process more thoroughly. The watershed coordinators will need to sit down with their local NRCS District Conservationist to plan a course of study.

In addition to certified planner trainings, there are other opportunities to progress as a watershed coordinator. Every year the UWCC receives funds to send coordinators to trainings throughout the United States. These trainings can include technical conferences, grant writing workshops, I&E seminars, and modeling workshops. Many of these training opportunities are contingent on the travel budget of each coordinator. Ultimately, all trainings should be approved by the coordinator's UDWQ project manager.

Watershed Groups

Community collaborations take many forms. Some are the product of citizens' efforts, while others are initiated by government agencies, businesses, non-profits, or a combination of organizations. Some aim to resolve specific disputes while others are designed to advance a common vision or goal. Some end in general policy recommendations while others lead to specific plans for action. Collaborative endeavors thus go by many names: community forums, joint ventures, social partnerships, advisory councils, search conferences, policy dialogues, mini-trials, task forces, community networks, civic coalitions, and futures commissions, to name a few.

There are a number of examples of these types of collaborations from across the country, culled from a rather small but growing body of literature and resource material on the subject, as well as the experience and testimony of several practitioners in the field. The intent of this section is to have the Coordinator explore how to put a workgroup together and understand the nature of collaboration -- its dynamics, prerequisites, and potential obstacles.

Establishment

Chapter 3 of the "Handbook for Developing Watershed Plans to Restore and Protect Our Waters" has some good ideas about forming Local Collaborative Groups. Use the following link http://water.epa.gov/polwaste/nps/handbook_index.cfm to access the handbook.

Form 1 provides a matrix that can help you identify stakeholders and ensure an equitable distribution of voting group members. To use the matrix, list stakeholder groups across the top (landowners, environmental interests, federal management agencies, agriculture producers, irrigation companies, etc.). Be inclusive! Down the left side list people that can fill one or more of the stakeholder groups. Place a check mark in each of the roles that the person fills. Once completed the matrix will visually show where additions or deletions should occur.

As a watershed coordinator, you will be involved in facilitating watershed group meetings and, in some cases, developing new watershed groups to support TMDL development or watershed planning efforts.

Watershed planning

A watershed-planning flowchart is available in Appendix 5. Additional resources for watershed planning are presented in Appendix 6.

Project Planning and Design

Conservation Planning

One of the major responsibilities of a watershed coordinator is to put NPS projects on the ground. In order to do this all projects should be planned and implemented in accordance with NRCS standards and specifications. Conservation planning can be intimidating for planners for various reasons. Many are concerned about the liabilities that exist in conservation planning. Project designs, cultural resources, endangered species, water rights, and land ownership are just a few of the issues that could hold up a project if not addressed correctly. We also want to insure that the landowners and agencies we are working with are receiving the best service we can provide for them while installing projects that are both economically feasible and environmentally beneficial. If any of these things are overlooked, it can become a nightmare for all involved. However, if the proper steps are taken and we thoroughly follow all the steps required of us, conservation planning can be a very fulfilling experience.

Understand Your Funding

As a watershed coordinator, you will have the opportunity work with several funding sources. These funding sources come from various agencies that have their own expectations as to what needs to be done during the planning process. By understanding what funding is available for NPS projects, and understanding what is required by each agency, you will be able to implement more projects and make what money you do have stretch further. While this manual focuses mainly on 319 and NPS funding, we expect that the local watershed coordinators will become familiar with the planning requirements of all funding sources they work with.

Contracting

Each entity or private landowner receiving 319 funds will be required to have five things before a payment can be processed. These include:

- Conservation Plan
- Schedule of Operation
- 319 contract
- Approval from local CD or watershed groups
- A signed Project Monitoring Plan

Conservation Plan

All NRCS and 319 funded projects are required to have a conservation plan. These conservation plans are typically created using Toolkit (an NRCS software program). These documents show what conservation practices will need to be installed on certain tracks of land to help cooperators meet their conservation resource objectives. It also has a tentative date that each practice will be implemented. If you do not have access to Toolkit, you may create a conservation plan in another program. However, the document must follow the same format as NRCS approved conservation plans (see [Form 2](#)). These plans must then be signed by the landowner and the Conservation District or local watershed group.

Schedule of Operation

The schedule of operation is a document that breaks down the project into practices. Each practice then has a projected implementation date and cost associated with it. This document can also be generated in Toolkit. Similar documents created in other programs must also follow the standard NRCS format (see [Form 3](#)). These documents must then be signed by the local CD or watershed group and the landowner.

319 Contracts

Every entity and private cooperator that wishes to receive 319 funds must fill out a contract with the sponsoring agency. All contracts that are managed through UACD must use the NPS contract form (see Form 4). All other funds routed through other agencies must use a similar contract. These contracts must contain the amount the cooperator will be receiving; the contract period; and signatures from the local CD or watershed group, the cooperator, the local watershed coordinator, and a representative from the sponsoring agency.

Approval from local watershed group or Conservation District

All 319 projects must be approved by the local watershed group or CD before the contract can be finalized. Ideally, the cooperator will have to present their project plan to the board at their local meetings. The board should then make a motion to accept the plan. This should be documented in meeting minutes. Local CDs may also desire that the cooperator enter into a cooperative agreement. For an example of a cooperative agreement see Form 5).

Project Monitoring Plan

When using 319 funds, it is very important to document the benefits each project has on water quality. While a Quality Assurance Project Plan (QAPP) is submitted for each PIP approved by EPA, it has become necessary to require that each individual complete a Project Monitoring Plan (PMP).

The format of a PMP is very similar to that of a QAPP. This form will require a planner to determine what will be done on a project-by-project basis to document the water quality benefits achieved through implementation of the project. Monitoring methods could include photo points, grab samples, modeling, riparian assessments, etc. By filling out this document before project implementation has occurred, the planner will have a better idea of what pre-implementation monitoring should be done to help produce this information. PMPs must be signed by both the local and state watershed coordinators. A sample PMP can be found in the form folder (see [Form 6](#)).

Permits

Cultural Resource Assessment

The State Historical Preservation Office (SHPO) provides the following guidance for conducting cultural resource assessments

http://history.utah.gov/state_historic_preservation_office/federal%20Laws/index.html). Section 106 of the National Historic Preservation Act of 1966 requires every state and federal agency to take into account how its projects and expenditures will affect historic properties, which includes prehistoric and historic sites.

Projects include, but are not limited to construction, rehabilitation, demolition, licenses, permits, loan guarantees, and transfer of federal property. State and local governments and others using federal funds are also required to comply with Section 106. To receive approval from the SHPO, a planner must follow the following four steps:

STEP ONE: The agency determines whether its proposed action is an undertaking. An undertaking is defined as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a federal permit, license, or approval.

STEP TWO: The agency makes determinations of eligibility and effect for the undertaking:

ELIGIBILITY: Is the site eligible for listing on the National Register of Historic Places?

Properties already listed on the National Register are, of course, eligible. Properties not yet listed are considered eligible if they meet the following criteria:

- Age - 50 years old or older
- Research potential - Sites can yield important information about prehistory or history.

If the site is 50 years old or older and has integrity (defined at this website: http://www.nps.gov/nr/publications/bulletins/nrb16a/nrb16a_II.htm under the heading "Defining Historical Integrity") the determination would be "Eligible Historic Property."

If there are no historic properties in the project area, if the site is less than 50 years old, or if the site lacks integrity, the determination would be "No Historic Properties."

EFFECT: What impact will the work will have on the site? Effect needs to be determined only for eligible properties. There are three possible effects:

- No Effect - Only minor changes are being proposed, e.g., planning or minor construction.
- No Adverse Effect - Changes that are more substantial are proposed, but they meet [Secretary of the Interior Standards](#).
- Adverse Effect - Work is proposed that will damage or diminish the historic integrity of the property or its research potential.

In most cases, archaeological sites receive a No Adverse Effect if the site's value lies solely in its research potential, and the information can be preserved through appropriate research.

STEP THREE: The agency consults with SHPO on its determinations.

STEP FOUR: SHPO either concurs with the determinations or does not concur.

If SHPO concurs:

- No Historic Property, No Effect, or No Adverse Effect: You are finished with the Section 106 Review consultation process.
- Adverse Effect: The agency enters into a Memorandum of Agreement (MOA) to mitigate the adverse effect or submits a research design to mitigate adverse effects through proper recovery. The MOA is signed by the agency and SHPO. The agency submits the MOA to the Advisory Council, along with a description of the project and the alternatives that were considered to mitigate the adverse effect. The Advisory Council has 30 days to review the project and decide if it is willing to sign the MOA. Once the MOA is signed, the documentation should be completed and accepted by designated repositories before the project begins.

For more information on cultural resource assessments go to

http://history.utah.gov/state_historic_preservation_office/federal%20Laws/index.html

All projects that are funded with 319 and State NPS funds will need to have a Cultural Resource Assessment completed and approved by SHPO. The NRCS has agreements in place with SHPO that allow them to train planners to conduct these assessments themselves. It is highly recommended that planners take this training if they have not already done so. This training will teach you what to look for and make the planning process easier for all involved.

If the project is not funded with NRCS funds, then the cultural resource assessment will need to be done by a certified archeologist. Currently, UDWQ has a contract with Brigham Young University – Office of Public Archaeology to assist with the NPS cultural resource assessments throughout the state. If you need an

assessment completed, call the state UDWQ to have an assessment completed on a project location.

Once the consulting agency has completed the inventory and submitted a report, the planner will need to submit the report and a detailed project description to UDWQ. You will also need to submit a general map showing the location of the project and a detailed map showing where practices will be installed. This process could take several weeks, so do not put this off until the last minute. No ground can be disturbed until this inventory has been completed and the letter of approval has been received from SHPO.

Stream Alteration Permits

When doing any type of project that alters the bed or banks of a natural stream, you will need to acquire a stream alteration permit. The types of activities covered under this permit are those that the State Engineer has determined to have minimal impact, individually and cumulatively, on the aquatic environment. These activities include, but are not limited to culvert installation and replacement, bridges, low water crossings, utility crossings, bank stabilization, linear transportation projects, maintenance of previously permitted activities, diversion structures, outfall structures, boat ramps, docks, commercial and residential construction, and flood control facilities. This permit does not cover any activities in waters of the U.S. undertaken on tribal lands or activities conducted in emergencies.

A 404 general permit 40 is valid for no more than 300 linear feet along perennial and intermittent waters. If the activity involves the use of a bioengineering method, no more than 500 linear feet may be impacted.

For activities in ephemeral waters that are under the purview of the State of Utah, no more than 500 linear feet may be impacted. If the activity involves the use of a bioengineering method, no more than 750 feet may be impacted.

Applying

To obtain a stream alteration permit for a project less than 300 linear feet, the landowner will have to fill out an application and submit it to the State Engineer in the Division of Natural Resources. These applications can be obtained on line from the DNR website <http://www.waterrights.utah.gov/strmalt/InterimJointPermit.pdf>.

In addition to the application, you will also be required to submit:

1. A clear site location map with enough detail to easily find the site, a recent aerial/satellite image of the site, and a USGS topographic map (7.5 minute quadrangle map is recommended).
2. Plan view and cross-sectional drawings showing all work requiring a permit, including fills, structures, borrow sites, staging areas, and storage areas. The drawings must clearly demarcate the ordinary high water mark of the affected waterbody. Professional drawings are not required; however, drawings must be scaled or indicate dimensions of the work to be completed.
3. A restoration plan for any areas temporarily disturbed during work, including re-contouring, revegetation with appropriate native plants, and maintenance and monitoring to ensure success for the restored area.
4. Ground photographs taken from various locations of the proposed disturbance area.
5. If the activity involves bank stabilization or protection you must submit:
 - A. A description of the need for the work, including the cause of the erosion and the threat posed to structures, infrastructure, and/or public safety.
 - B. A narrative demonstrating that the proposed activity incorporates the least damaging bank protection methods. These methods include, but are not limited to, the use of bioengineering, biotechnical design, root wads, large woody debris, native plantings, and beach nourishment in certain circumstances. If rock must be used due to site erosion conditions, explain how the bank stabilization structure incorporates elements beneficial to aquatic organisms.
 - C. A description of current and expected post-activity sediment movement and deposition patterns in and near the activity area.
 - D. A description of current and expected post-activity habitat conditions, including the presence of fish, wildlife and plant species in the activity area.
 - E. An assessment of the likely impact the work would have on upstream, downstream and cross-stream properties (at a minimum the area assessed should extend from the nearest upstream bend to the nearest downstream bend of the watercourse). Specifically, discuss how the project will impact the following:
 1. Will the activity accelerate deposition or erosion?
 2. Will impacts to sensitive species or habitats result from a change in suspended sediment load or turbidity?

3. Will the activity affect the diversity of the channel by eliminating in-stream habitat, meanders, or gravel bars?
 4. Will the activity result in a shift in the main flow patterns?
- F. A planting plan that includes native riparian plants, unless the applicant demonstrates it is not appropriate or not practicable.

All projects larger than the dimensions indicated above will need a nationwide permit from the Army Corps of Engineers (COE).

Wetlands

When the early settlers began developing land in the United States, it became common practice to drain wetlands to improve agricultural and rural development. It was not until the 1970's, after well over a million acres of wetlands had been lost, that the United States realized that losing wetlands was a bad thing. In 1989, the Federal Government came out with a "no net loss" policy on wetlands. This policy states that if wetlands are impacted or drained, then an equal amount of wetland will need to be created somewhere else. Another term for this is mitigation. Ultimately, the COE is the regulatory agency when it comes to wetlands, and they must approve any modifications that occur to local wetlands.

Is it a Wetland?

When embarking on the conservation planning process, planners need to be aware of any wetlands that may be present in the planning area. Oftentimes debate can occur on whether the area is actually considered a wetland. To help clarify any confusion, it would be beneficial to have the area delineated.

The delineation process begins at the USDA Service Center. There the landowner will fill out a form requesting that the delineation take place. Once the paperwork has been submitted, a certified individual, usually from the NRCS, will come out and document the soils, hydrology, and plants present in the area. They will then send the planner and the landowner a report of their findings. The landowner will then have 90 days to contest the findings. If the landowner does not contest the delineation, then the wetland delineation will become final.

If wetlands are indeed found in the planning area, or if any of the adjacent wetlands will be disturbed, then the landowner will need to fill out a Nationwide Pre-Construction Permit Notification form (see the nationwide permit section for more information). Once the permit has been approved by the COE, the landowner may proceed with project planning.

One thing that you should be aware of is that if more than 0.1 acres of wetland are going to be impacted, then mitigation will need to take place. The COE will determine what projects should take place to mitigate for the acres being lost. If the affected area is less than 0.1 acre, then no mitigation will need to occur. However, even if the delineated area is less than 0.1 acre you should still notify the COE that a project is taking place.

Nation Wide Preconstruction Permits

All projects that include more than 300 linear feet of stream bank, or deal with the possible loss of wetlands will require a Nation Wide Preconstruction Permit from the COE. This can be an intimidating form, so it would be beneficial to sit down and fill this out with the producer (see [Form 7](#) and Form 8).

One of the requirements to obtain a Nation Wide Permit is to have a National Environmental Policy Act (NEPA) Assessment completed. Since the CPA-52 ([Form 9](#)) document is the NEPA document used by the NRCS, it may be beneficial to send this in with the Pre-Construction Permit. Even if the project does not include Farm Bill funding, you can still complete a CPA-52 and have your local District Conservationist sign it as long as the appropriate boxes are checked. You will also be required to send in a location map, a project map using aerial photographs showing exactly what areas the project will affect, your cultural resource clearance, your design, and a wetland delineation.

There are a few things that you can do to help this process go more quickly. First, take lots of pictures. The COE will want to have a good feel for exactly what is going on, and pictures will help them understand what the area of impact looks like. It may also help to contact the COE directly by phone or in person. This way you can let them know exactly what will take place, and they will be able to determine if mitigation is required or if the project will result in a high amount of dredge material entering into local waterbodies. In many instances, it is beneficial to have the COE conduct a site visit to gain further understanding of what the goals of the project are.

Utah Department of Transportation

If restoration work is performed near Utah Department of Transportation (UDOT) highways, a UDOT project permit is required for access and egress through UDOT right-of-ways. The first step is to go to <https://www.udot.utah.gov/public/olp/f?p=201:1> and register a company. A Watershed Coordinator can use not-for-profits (such as CDs or UACD Zones) or a government agency as the company (with entity approval). Once the account has

been created, write down your login and password for future use. When you login to your newly created account, you will be asked for the application or permit type. This is generally "encroachment."

Required information includes:

- subcontractor contact information
- landowner contact information
- project physical address
- project purpose
- estimated start date
- city
- route (highway number)
- latitude and longitude
- mile markers at the project location

There is no cost for these permits as long as you are filing as either a not-for-profit or a government agency. Once the application is completed, you will be asked to upload several documents.

1. Detailed Plan of Work: The information concerning the project must be described in detail. Include why there is a need for the project, the ramifications, and duration. In addition, if UDOT fences must be cut in order to gain access to the property, the cut section can be used for the duration of the project as a temporary gate. The temporary gate must be installed and immediately secured prior to any access or egress. Following project completion, the fence must be repaired. Any information concerning access points must be included in the detailed plan of work.
2. Traffic Plan: Anything affecting the normal flow of traffic must be included here. For example, at a riparian planting project along the Price River near Highway 6, access to the site could only be attained from the off ramp. It had to be clearly written into the traffic plan that entry would only occur from the off ramp and not from the street. No 'wrong way' access was permitted.
3. Landowner Approval: Proof of landowner approval for the project, a district/landowner cooperative agreement from your project folder can be used here.
4. Proof of Insurance: This is generally uploaded when using a subcontractor.
5. Other Forms: Various other forms may be required depending on project location, duration, and type.

Once the application is completed and all required documents are uploaded, you will receive an email notification that the application has been received for UDOT review. If UDOT has all the required information, the permit will be sent to your email address within 2-5 business days. Print the permit for your records and have several copies onsite for the duration of the project. Be sure to contact the UDOT representative listed on your permit 24 hours before work begins at the project site. Most encroachment permits will last for one month. Extensions can be obtained by following the directions on the permit.

If you feel overwhelmed by the permitting process or have any questions regarding the documents to upload, contact the local right-of-way control coordinator for your area. Permit contact information for each area can be found at <http://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:672>.

Water Rights

When doing a project that involves the utilization of any water, it becomes necessary to verify that the landowner has the proper water rights to use that water. Some classic examples would be the installation of water troughs when excluding animals from the stream, spring developments on range projects, and irrigation projects.

When installing sprinkler systems, we as planners need to verify that there are sufficient water rights to be able to run the system efficiently. We also need to check and see where the point of diversion is for that water right. If the project calls for water to be diverted from a different location, then the point of diversion will need to be changed.

In many instances, irrigation systems will increase irrigation efficiency, thus reducing the amount of water that is actually being used. The landowner needs to understand that water rights are established with a "use it or lose it" policy. If the landowner does not put his or her water rights to "beneficial use" for a prolonged period of time, those water rights are subject to forfeiture. In some instances, conservation organizations can buy those water rights, thus keeping those shares in the river for increased flows during the summer months. This may be another source of funding for the landowner if he is interested. However, the landowner cannot use the water being saved to irrigate additional acres unless the water rights indicate that this is approved.

During fencing projects, installation of off-site watering facilities is often required. That includes watering troughs, frost-free nose pumps, or river access points. First, the planner needs to verify that the landowner has a livestock watering right. If so,

then you can install river access points and spring developments without further approval, depending where the point of diversion is. However, if the plans include installing watering facilities that will draw from ground water or other areas, the landowner will need to file for a change in point of diversion from the State Division of Water Rights. This is true even if the landowner has livestock watering rights from the river. The change application is simple and can be completed at the local Division of Water Rights office.

Verifying a landowner's water rights is simple and can be done online. To receive water right information you can go to the following website:

<http://www.waterrights.utah.gov/cgi-bin/wrindex.exe?Startup>. From this point, you will be able to search water rights by landowner name. It will also tell you where the point of diversion is and what the allocation is. Once you have this information, be sure to print it off and put it in the cooperator folder.

Project Design

Who will do it?

There has been quite a bit of debate about who should develop project designs, and whether an engineer-certified design is required for NPS funding. The answer to this is simple: it depends. While planners could do simple designs themselves, some things would require the approval of a licensed engineer. In many cases, as long as the design meets NRCS Specs and Standards, the planner can create the design. However, producing the design yourself generates a certain amount of liability. By giving the landowner a design to follow, you are assuming responsibility for anything that could possibly go wrong with that project. This can be especially scary when doing stream bank projects where there is a high rate of project failure and a good possibility of affecting the landowners downstream.

When projects are done using NRCS funds, the designs will be done by NRCS engineers. This can be beneficial for different reasons. When the NRCS does the design, they pay for all the technical assistance involved. The design is also approved by a licensed engineer, thus helping you avoid any liability issues that may arise.

If there is no NRCS funding involved on the project, the NRCS is unable to offer technical assistance. If this is the case, there are still options but they are not free. As such, it is highly recommended that you have technical assistance funding allocated in your PIP.

- 1) UACD currently has a licensed engineer who is working throughout the State of Utah. UACD supervisors have agreed to let us use their engineer when available.
- 2) Another option is to hire a consultant to create the design for you. These designs tend to be well written and can be completed quickly. Unfortunately, they can also be more expensive. You would have to check and see what the rates are for local consulting agencies in your area.

National Environmental Policy Act Documentation

CWA section 511(c)(1) states that the only EPA actions under the CWA subject to the NEPA requirements are new source permits and grants for the construction of publicly owned treatment works. Section 319 grants do not fit within either category and are therefore not subject to NEPA requirements. However, in order to receive other permits from various agencies a NEPA review may be required.

The CPA-52 form can be used as a NEPA document when doing any kind of conservation planning. Even if completing this document is not required, it is highly recommended because doing so will help avoid unexpected bumps in the road when implementing your project. This document allows you to verify that you have addressed any complications that may arise such as endangered species, wetlands, cultural resources, or prime and unique farmlands.

National Resources Conservation Service Specifications and Standards

One of the requirements of the State NPS Program is that all projects meet NRCS specifications and standards. These standards have been developed as a type of quality assurance for BMPs. In some instances, specification sheets are documents that planners will need to fill out or create themselves. Often, practices that involve re-vegetative practices and seeding will require that the planner specify what type of seed mix or vegetation should be planted. It also helps to identify what methods should be used for these plantings. Fencing is another example where specific standards should be outlined by the planner. Since there are so many different types of fencing materials and techniques that can be used, it is helpful to specify what the requirements are in each scenario. These specification sheets should be given to the cooperator and the engineers creating the designs before the project is designed. This will help eliminate any confusion as to what is expected.

Specification sheets are available for each practice in the NRCS Electronic Field Office Tech Guide (EFOTG). No login information is needed to access this guide. The guide can be found on the internet at

http://efotg.sc.egov.usda.gov/efotg_locator.aspx?map=UT. There are five sections in EFOTG. The Specification sheets are found in section four, under Utah (U) and National (N) Conservation Practice Standards and Related Documents. If no specification sheet is listed for a specific practice, then the landowner will need to follow the design created by the engineer.

Project Implementation

When landowners begin the implementation process, the planner should spend ample time on the project site. This can help eliminate much of the confusion that can arise during the construction process. Sometimes when a planner waits until the project has been completely installed to visit the site, he finds that the project was not installed according to the designs or NRCS standards. This is an unfortunate situation since we are not able to pay on those projects. If this happens, the landowner will have to re-do the project or cover the entire cost. Be sure that landowners understand that they should call the planner when they are ready to begin project implementation.

Project certification

When a project is completed, the local watershed coordinator will need to certify that the project was installed correctly and that it meets specifications and standards. To do this, it may be beneficial to use a certification worksheet (see Form 10). When certifying a project, be sure to take a measuring device to verify that all measurements on the BMPs comply with NRCS standards. You will also need to take pictures of the BMPs installed. In instances where spacing or measurements are specified in the standards it may be beneficial to take pictures with the measuring tape in the picture showing that the standards have truly been met. Finally, the engineer or the local watershed coordinator will need to acknowledge that the BMP was properly installed by signing the specification.

The exception to this is that for projects designed and/or paid by NRCS, the NRCS conservation planner or engineer is responsible to certify that the project meets the standards and specifications requirements of the NRCS FOTG.

Project Folders

Keeping your cooperator folders updated with the correct forms is very important. Organized folders will help when reporting on project effectiveness. It will also reduce any confusion that may occur if there is a change in watershed coordinators.

Oftentimes 319 inspections are conducted. During these inspections, employees from DWQ will go through the records of present and past contracts. These inspections help prepare for potential audits, and help the coordinators understand what is expected of them. By having all the required elements in contract folders these inspections will go more smoothly for both the watershed coordinators and the people doing the inspections.

For a full list of items that should be included in a cooperator's NPS funding folder see Form 11.

Grant Writing

Grant writing will be an important element of your responsibilities as a watershed coordinator. Watershed coordinators will work largely with EPA Section 319 and State NPS funding, but there are also opportunities to apply for funding from other entities such as the U.S. Fish and Wildlife Service, NRCS, and other state, local, and federal sources. Appendix 6 provides a list of some websites you can use to identify these types of funding sources.

Once you have established where you will be applying for funding, you will need to develop your grant proposal. Nancy Mesner and Ray Loveless have developed a guidance document for developing grant proposals – see Appendix 7.

Because EPA Section 319 is a major funding source, some 319-specific guidance from EPA on assembling proposals is presented below.

EPA Section 319 Project Proposals

319 Project Categories

Projects can be submitted under any one of four categories: Watershed, Assessment/Planning Projects, Groundwater, or I&E. Pollution prevention activities in all types of projects may be considered.

Watershed Projects

Watershed Projects should be comprehensive and address major sources of NPS pollution in the watershed. The project sponsors should consider the Nine Key Elements in the [Handbook for Developing Watershed Plans to Restore and Protect Our Waters \(EPA, 2008\)](#). The primary project objective should be to reduce the pollutant load entering either surface or groundwater from NPS so beneficial uses are restored or protected. The EPA encourages watershed projects that demonstrate new or innovative technical and institutional approaches that produce information that can be transferred to other areas.

EPA encourages projects that involve testing newly developed and/or innovative BMPs that they have not yet approved. These projects are designed to examine newly developed and innovative techniques and can be funded as watershed, I&E, or demonstration projects. Some additional Quality Assurance Project Plan requirements will be involved if 319 funds are to be used to collect environmental data. Check with the State NPS coordinator when in doubt.

If a Watershed Restoration Action Strategy (WRAS) is required, a watershed Project Implementation Plan (PIP) may suffice as the WRAS. To be adequate, it must meet the criteria outlined in the [Final Framework for Unified Watershed Assessments, Restoration Priorities, and Restoration Action Strategies](#) dated June 9, 1998.

Assessment/Planning Projects

Section 319 funds are to be used for implementation of the State NPS Management Program. However, limited 319 funding for implementation targeting, program and plan development, or associated assessments may be appropriate. These must

focus to assist in the implementation of WRASes. Examples of such activities could include the development of TMDLs, watershed assessment and targeting, and watershed proposal development to help implement a WRAS.

Groundwater Projects

Groundwater Projects should focus on protecting those groundwater resources that, if contaminated, would pose human health and/or ecological risks.

Groundwater project priorities need to be identified in the NPS Management Plan or an equivalent State Groundwater Management Plan.

Information and Education

I&E projects generally involve one of two classifications of activities:

1) The development and distribution of information, e.g., publications, videos, establishment of internet websites, or the development and presentation of various training activities. Project priorities need to be developed in concert with the state NPS I&E strategy and/or the State I&E Coordinator as defined in the NPS Management Plan.

2) The development of new BMPs or the demonstration of approved BMPs. EPA Region VIII prefers that demonstration projects be located within existing or proposed watershed projects. Need for the demonstration project should be specified in the State NPS Management Plan.

I&E activities in high priority areas are eligible for incremental funding, especially as they may relate to capacity building for project implementation in a watershed.

Project Tracking

Project tracking is a very important part of the 319 planning process. Throughout the project there are various things that a planner needs to account for, such as the amount of funding remaining in a cooperators contract, the amount of match acquired, and the monitoring that should be taking place throughout the project implementation. By keeping good records, the reporting process will be simplified and you will be able to stand up to any audit that may come your way.

Tracking Project Funds

While UACD or other agencies may track the amount of funding available for each of your cooperators, it is very helpful to keep your own separate records. To help simplify this process, it may be beneficial to use the Cooperator Tracking

Spreadsheet (see [Form 12](#)). This spreadsheet allows planners to track all expenditures made by the producers. It also helps verify that sufficient match has been acquired for each project. Each invoice recorded on the tracking sheet must be accompanied with copies of the receipts used by the landowner to receive payment. It is also important to have documentation of the match that was accrued during the project.

Match

All 319 funding is allocated on a 60/40 cost share rate. This means that 40% of a given project needs to consist of match. This match can come in a monetary form or it can be in-kind match. No matter what type of match is used to pay for the project the match needs to be properly documented.

In-kind match can come in many different forms. Some examples are listed below:

- Meeting attendance (do not count attendance by UDWQ watershed coordinators or federal employees)
- Use of personal equipment (tractors, backhoes, etc.)
- Funds from other State/local programs or agencies
- Time given by volunteers
- Wages of producers/ farmhands for time spent on the project
- Any items purchased or provided by the cooperator (rock, fencing supplies, willow cuttings, etc.)

Even when the items in the list above are not related directly to a project, the match should be recorded so that it may be used later. This match can often times be used in conjunction with the technical assistance, tracking, or I&E funds.

When a landowner uses in-kind match to satisfy the balance of his contract a detailed budget table must be submitted showing what the producer did to accumulate this match. This budget should be signed and dated by the producer verifying that the information provided is true and accurate.

Processing Payments

Once a practice in the schedule of operations has been completed and certified, the planner can then begin processing a payment for the producer. In order to process a payment you will need itemized receipts showing all expenditures. If the landowner plans to use in-kind match, you must also have a detailed table showing what was used to accumulate that match. The match table will need to be signed by the producer to verify that everything in that document is true and accurate.

Once all the necessary forms have been received, the planner will then complete an Application for Payment Cost-Share form (see Form 13) and a 319 Program Payment Worksheet (see Form 14). These forms will then need to be sent to the agency managing your 319 funds. It is important that the information is accurate, complete, and includes supporting documentation. Incomplete information or information not easily tied to the requested payment may cause delay. Once the forms are submitted, the cooperator should receive a payment within 3-5 weeks. Payments can be submitted for each individual practice identified in the schedule of operation as they are completed.

The planner should keep copies of the receipts, match, and payment forms submitted for payment in the cooperator's folder. All expenditures should also be tracked on the Cooperator Tracking Spreadsheet (see Form 12).

Monitoring

Common Best Management Practices based on pollutant

A detailed list of commonly used BMPs with specifications and photographs is available as an appendix to the Virgin River TMDL:

http://www.waterquality.utah.gov/TMDL/Virgin_River_Watershed_Implementation_Appendix.pdf

Best Management Practice Effectiveness

As a watershed coordinator, you will need to document the effectiveness of any practices you install. Considering goals and objectives for practices you are installing, and how you will monitor to demonstrate that those goals and objectives have been met is an integral part of the planning process. Nancy Mesner (Utah State University) and Ginger Paige (University of Wyoming) have developed a guidance document ([Best Management Practices Monitoring Guidance Document for Stream Systems](#)) for establishing a monitoring program to evaluate the effectiveness of BMPs designed and installed to reduce NPS pollution in streams. The guidebook is not intended to dictate specific techniques, but to guide project managers through a thought process for effective project monitoring beginning at the project planning stage.

UDWQ is able to conduct project effectiveness monitoring on a limited basis. UDWQ's monitoring approach for the NPS program is described in Appendix 8.

Best Management Practice Maintenance

Contracts with landowners may or may not specify a required period of time for which installed practices must be maintained. However, the general expectation is that practices will be monitored and maintained throughout their life expectancies. Life expectancy of specific practices is specified in the practice specifications.

Models

Utah Animal Feedlot Runoff Risk Index

“The Utah Animal Feedlot Runoff Risk Index (UAFRRI) is a model for predicting reduction in polluted runoff from animal feeding operations (AFOs) once their manure management plans have been put into place and implemented. UAFRRI takes into account the number of animals, type of animals, the average precipitation for the area, distance from the feedlot or corral to the water, vegetation between the corral and the water, and the slope. ” (Ray Loveless, [Utah Watershed Review \(v. 14, Issue 1, 2006\)](#)). Monitoring is completed and pollutant loading is calculated prior to project implementation. Once the BMPs are installed, the model is run again to determine pollutant load reductions.

Spreadsheet Tool for Estimating Pollutant Load

The Spreadsheet Tool for Estimating Pollutant Load (STEPL) was developed specifically for the EPA’s Grants Reporting and Tracking System (GRTS). STEPL employs simple algorithms to calculate nutrient and sediment loads from different land uses and the load reductions that would result from the implementation of various BMPs. STEPL provides a user-friendly Visual Basic interface to create a customized spreadsheet-based model in Microsoft Excel. It computes watershed surface runoff; nutrient loads, including nitrogen, phosphorus, and 5-day biological oxygen demand (BOD₅); and sediment delivery based on various land uses and management practices. For each watershed, the annual nutrient loading is calculated based on the runoff volume and the pollutant concentrations in the runoff water as influenced by factors such as the land use distribution and management practices. The annual sediment load (sheet and rill erosion only) is calculated based on the Universal Soil Loss Equation (USLE) and the sediment delivery ratio. The sediment and pollutant load reductions that result from the implementation of BMPs are computed using known BMP efficiencies. Additional information on STEPL is presented in Appendix 8.

Best Management Practice Efficiency Calculator

STEPL users often come across situations in which they need to find the efficiency of non-structural BMPs that are not readily available. The BMP Calculator is designed to estimate the efficiency in reducing runoff and pollutants such as sediment, nitrogen, and phosphorous due to changes in land use (ground cover) and support practices. The tool can be used to estimate the efficiency of an implemented BMP to produce a change in ground cover practices and/or support practice. The calculated BMP efficiency can be then incorporated into STEPL to estimate the pollutant reduction within any watershed.

Environmental Protection Agency Region 5 Model

The Region 5 Model is an Excel workbook that provides a gross estimate of sediment and nutrient load reductions from the implementation of agricultural and urban BMPs. The algorithms for non-urban BMPs are based on the "[Pollutants controlled: Calculation and documentation for Section 319 watersheds training manual](#)" (Michigan Department of Environmental Quality, June 1999). The algorithms for urban BMPs are based on the data and calculations developed by Illinois EPA. The Region 5 Model does not estimate pollutant load reductions for dissolved constituents.

For more information go to the following webpage:

[http://it.tetrattech-ffx.com/steplweb/models\\$docs.htm](http://it.tetrattech-ffx.com/steplweb/models$docs.htm)

Reporting

While writing grants and reporting may not be one of the most exciting activities performed by a watershed coordinator, they are two of the most important responsibilities watershed coordinators have. The reports you submit to the State of Utah, and ultimately EPA, justify the funds that are being spent to support your position. They also help verify that project funds are being spent in accordance with the proposals that were submitted.

Watershed coordinators are responsible for several different types of reports. These include:

- Annual Watershed Coordinator Reports (see [Annual Watershed Coordinator Reports](#) on page 20)
- Annual Project Reports
- Interim Final Reports
- Final Reports

Annual Project Reports

An annual project report must be submitted for all watersheds that have active 319 implementation contracts. Even if there was activity during the fiscal year, coordinators are still required to submit an annual project report stating that no expenditures occurred during the past year. These are short 4-5 page reports that are submitted to the UDWQ to assist with quantifying load reductions every year. In many instances, it is difficult to estimate the load reductions achieved through implemented BMPs. However, by using an appropriate model and the correct inputs you should be able to get a rough estimate of the reductions that were achieved. It may be beneficial to work with your UDWQ watershed coordinators to generate these numbers.

Interim Final Reports

Sometimes projects receive funding from consecutive funding years. If this is the case, the project manager will have to submit an interim final report when the first year of funding has been spent. The interim final report will have to follow the same format that is required when writing final reports. However, when the next year's funding is spent you may simply update the first report with the accomplishments of the following year's funding. This usually involves updating tables and highlighting additional projects. Once the accomplishments of all funding years have been included in the report, it may then be submitted as the final report.

Final Reports

Once all the funds have been expended from a 319 contract, or the contract has expired, the local watershed coordinator has 90 days to compile a final report and submit it to the UDWQ. These reports need to be very in-depth; highlighting what was accomplished with the funds that were received by the project coordinator. A basic format must be followed when writing your final report. Guidance on this format is available at the following website: <http://www.epa.gov/owow/NPS/sec-319.pdf>. Since the report must be reviewed by the State NPS Program Coordinator and a regional EPA representative before it is accepted, it may be beneficial to begin writing the reports immediately after the contract is completed.

Additional Information

Local watershed coordinators may encounter questions from the public and stakeholders on water quality issues outside their purview, such as stormwater or Animal Feeding Operations (AFO)/Concentrated Animal Feeding Operations

(CAFO). Appendix 10 provides a list of additional contacts for more information not already covered in this manual.

List of Forms

- Form 1. Stakeholder Matrix
- Form 2. NRCS Conservation Plan
- Form 3. Schedule of Operations
- Form 4. NPS/319 Contract Form
- Form 5. Cooperative Agreement
- Form 6. Sample Project Monitoring Plan
- Form 7. Army Corps of Engineers Nationwide Pre-construction Permit
- Form 8. Nationwide Permit Summary
- Form 9. NRCS Form CPA-52
- Form 10. Certification Worksheet
- Form 11. Cooperator Folder Checklist
- Form 12. Cooperator Tracking Spreadsheet
- Form 13. Application for Payment Cost Share
- Form 14. 319 Program Payment Worksheet

List of Appendices

APPENDIX 1.	ACRONYM LIST	48
APPENDIX 2.	UDWQ BASIN COORDINATORS.....	51
APPENDIX 3.	FUNDING CYCLE	53
APPENDIX 4.	LIST OF STATEWIDE STAKEHOLDER GROUPS.....	51
APPENDIX 5.	WATERSHED PLANNING FLOWCHART	54
APPENDIX 6.	SOURCES OF FUNDING FOR WATERSHED INITIATIVES.....	57
APPENDIX 7.	A BEGINNERS GUIDE TO SUCCESSFUL PROPOSAL WRITING.....	59
APPENDIX 8.	UDWQ NON-POINT SOURCE MONITORING	62
APPENDIX 9.	STEPL FACT SHEET	63
APPENDIX 10.	CONTACT LISTS	66

Appendix 1. Acronym List

Agencies

BLM	(United States) Bureau of Land Management
BOR	(United States) Bureau of Reclamation
COE	(United States) Army Corps of Engineers
DEQ	(Utah) Department of Environmental Quality
DNR	(Utah) Department of Natural Resources
DWQ	(Utah) Division of Water Quality
DWaR	(Utah) Division of Water Resources
DWR	(Utah) Division of Wildlife Resources
DWRi	(Utah) Division of Water Rights
EPA	(United States) Environmental Protection Agency
FFSL	(Utah Division of) Forestry, Fire, and State Lands
FWS	(United States) Fish and Wildlife Service
NRCS	(United States) Natural Resources Conservation Service
SHPO	State Historical Preservation Office
UACD	Utah Association of Conservation Districts
UDAF	Utah Department of Agriculture and Food
UDWQ	Utah Division of Water Quality
UGS	Utah Geological Survey
USDA	United States Department of Agriculture
USFS	United States Forest Service
USGS	United States Geological Survey
UWCC	Utah Watershed Coordinating Council
WRCC	Western Regional Climate Center

General

AFO	animal feeding operation
BMP	best management practice
CAFO	concentrated animal feeding operation
I&E	information and education
MOA	memorandum of agreement
NPS	non-point source
POTW	publicly owned treatment works
WWTP	wastewater treatment plant

Legislative/Rules

§303(d)	a list of impaired waterbodies required by Section 303, subsection (d) of the Clean Water Act
ARRA	American Recovery and Reinvestment Act

CWA	Clean Water Act
ESA	Endangered Species Act
NEPA	National Environmental Policy Act
UAC	Utah Administrative Code

Programs

EQIP	Environmental Quality Incentives Program (NRCS)
SRF	State Revolving Loan Fund
WHIP	Wildlife Habitat Incentive Program (NRCS)

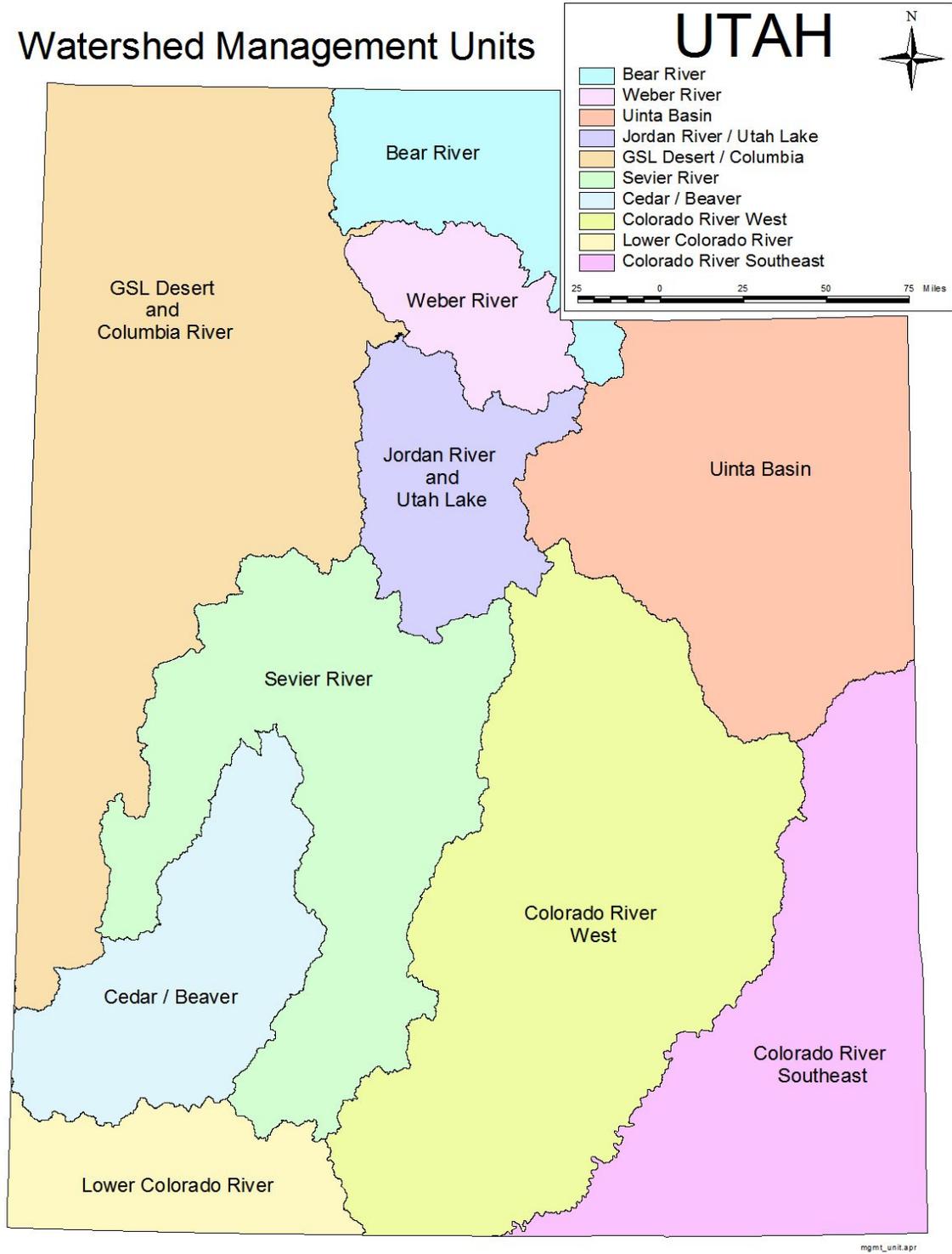
Technical

ac	acre
BMP	best management practice
BOD ₅	five-day biological oxygen demand
cfs	cubic feet per second
cm	centimeters
DO	dissolved oxygen
EFOTG	Electronic Field Office Technical Guide (NRCS)
GIS	Geographic Information System
GRTS	Grants Reporting and Tracking System
HUC	hydrologic unit code
kg	kilogram
km	kilometer
km ²	square kilometer
L	liter
LA	load allocation (for NPS discharges)
m	meter
m ³	cubic meter
mg	milligram
mg/L	milligrams per liter
MGD	million gallons per day
mL	milliliter
mm	millimeter
NPDES	National Pollutant Discharge Elimination System
NPS	non-point source
°C	degrees Celsius
°F	degrees Fahrenheit
P	phosphorus
pH	a measure of acidity (pH 1–6 = acidic, pH 7 = neutral, pH 8–14 = basic)
ppm	part(s) per million
SNOTEL	snow telemetry
STEPL	Spreadsheet Tool for Estimating Pollutant Load

STORET	EPA water quality (storage and retrieval) database
T&E	threatened and/or endangered species
t/y	tons per year
TMDL	Total Maximum Daily Load
TP	total phosphorus
TSI	trophic state index
TSS	total suspended solids
UAFRRI	Utah Animal Feedlot Runoff Risk Index
UCASE	Utah Comprehensive Assessment of Stream Ecosystems
UPDES	Utah Pollutant Discharge Elimination System
USLE	Universal Soil Loss Equation
WLA	wasteload allocation (for point source dischargers)
WQS	water quality standard

Appendix 2. UDWQ Basin Coordinators

Watershed Management Units



Uinta Basin

Sandy Wingert
(801) 536-4338
swingert@utah.gov

Sevier River Basin & Cedar/Beaver River Basin

Scott Daly
(801) 536-4333
sdaly@utah.gov

Jordan River Basin & GSL Desert/Columbia

Hilary Arens
(801) 536-4332
hilaryarens@utah.gov

Utah Lake

Dave Wham
(801) 536-4337
dwham@utah.gov

Weber River Basin

Kari Lundeen
(801) 536-4335
klundeen@utah.gov

Lower Colorado River Watershed, West Colorado River Watershed

Amy Dickey
(801) 536-4334
adickey@utah.gov

Bear River Basin & Southeast Colorado River Basin

Mike Allred
(801) 536-4331
mdallred@utah.gov

Appendix 3. Funding cycle

(See appendices folder)

Appendix 4. List of Statewide Stakeholder Groups

Government

- US Forest Service
- US Bureau of Land Management
- Environmental Protection Agency
- Natural Resources Conservation Service
- Bureau of Reclamation
- US Fish & Wildlife Service
- Army Corps of Engineers
- Local Health Departments
- Conservation Districts
- City and County Planning Departments

Statewide

- Utah Partners of Conservation and Development
- Utah Watershed Coordinating Council
- NPS Taskforce
- Utah Association of Conservation Districts
- Utah Rivers Council
- Utah Statewide Mercury Workgroup
- Utah Statewide E coli Workgroup
- Utah Monitoring Council

Regional/Local Watershed Organizations

Bear River

- Bear River Water Quality Commission (of Bear River Commission)
- Tri-State Bear River Water Quality Task Force
- Lower Bear River Watershed
- Middle Bear/ Cutler Reservoir Watershed
- Upper Bear River Watershed
- Cub River Watershed (inactive)
- Newton Creek Watershed (inactive)

Cedar/Beaver River

- Beaver River Watershed Steering Committee

Great Salt Lake

- Great Salt Lake Advisory Council
- Friends of Great Salt Lake
- Great Salt Lake Alliance

Jordan River

Little Cottonwood Canyon Watershed
Jordan River Watershed Council
Emigration Creek Improvement District
Blueprint Jordan River Steering Committee
Jordan River Commission
Salt Lake City Open Space
Salt Lake County Stormwater Coalition
Jordan River/Farmington Bay Water Quality Council
Jordan Valley Water Conservation District

Lower Colorado River

North Fork Virgin River Watershed
Virgin River Watershed
ACOE Tri-State Virgin River Workgroup

Sevier River

Upper Sevier Watershed
San Pitch Watershed
Lower Sevier River Watershed (inactive)

Southeast Colorado River

Lake Powell Stakeholder Group
Moab Area Watershed Council
Onion Creek Watershed (inactive)
Recapture Reservoir (inactive)

Uinta Basin

Uintah Basin Watershed Council
Friends of Strawberry Valley
Pariette Draw Watershed
Nine Mile Coalition
Stewart Lake Council
Uinta River Watershed (inactive)
Lower Ashley River (inactive)

Utah Lake

Utah Lake Commission
Provo River Watershed Council
Spanish Fork Watershed (inactive)

Weber River

East Canyon Watershed Committee
Upper Weber Watershed Technical Advisory Committee
Silver Creek Watershed Stakeholder Group
Weber River Technical Advisory Committee
Echo Creek Watershed (inactive)
Pineview Reservoir Watershed (inactive)

Western Colorado River

Price River Watershed
Fremont River Watershed
Escalante River Watershed Partnership
Scofield Watershed

Appendix 5. Watershed Planning Flowchart

(See appendices folder)

Appendix 6. Sources of Funding for Watershed Initiatives

This list covers possible sources of funding for watershed initiatives. The list includes federal and national grants and provides links for further research. This list is not comprehensive and does not represent all of the funding options available.

Federal Grants

Federal Emergency Management Association (FEMA)

Programs for pre-flooding mitigation, including stream stabilization and riparian corridor activities. www.fema.gov

Federal Highway Administration (FHWA)

TEA-21 Program: Wetland protection and stream restoration, in conjunction with roadway construction. <http://www.fhwa.dot.gov/tea21/funding.htm>

Housing Urban Development (HUD)

Funds Available

http://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/grants/fundsavail

Natural Resources Conservation Service (NRCS)

Environmental Quality Incentives Program (EQIP) for Utah

<http://www.ut.nrcs.usda.gov/programs/EQIP/index.html>

Wildlife Habitat Incentive Programs (WHIP) for Utah: Voluntary program for people who want to develop and improve wildlife habitat primarily on private land.

<http://www.ut.nrcs.usda.gov/programs/whip/index.html>

Environmental Protection Agency (EPA)

Catalogue of Federal Funding Sources for Watershed Protection

<http://cfpub.epa.gov/fedfund/>

Funding and Grants http://www.epa.gov/water/funding.html#twpc_rfc

Wetland Grant Information

<http://www.epa.gov/owow/wetlands/initiative/grantinfo.html>

Army Corps of Engineers (COE)

<http://www.usace.army.mil/>

National Park Service (NPS)

Provides a list of funding sources for restoration projects.

<http://www.nps.gov/plants/restore/funding.htm>

U.S. Fish and Wildlife Service (USFWS)

Partners for Fish and Wildlife Program <http://www.fws.gov/partners/>

U.S. Geological Survey (USGS)

State Water Resources Research Institute Program: From the Water Resources Research Act of 1984, as amended, "plan, conduct, or otherwise arrange for competent research that fosters (A) the entry of new research scientists into the water resources fields, (B) the training and education of future water scientists, engineers, and technicians, (C) the preliminary exploration of new ideas that address water problems or expand understanding of water and water related phenomena, and (D) the dissemination of research results to water managers and the public." <http://water.usgs.gov/wrri/>

U.S. Department of Agriculture

Wetlands Reserve Program <http://www.nrcs.usda.gov/programs/wrp/>

Conservation Reserve Program <http://www.nrcs.usda.gov/programs/crp>

River Network

Watershed Assistance Grants <http://www.rivernetwork.org/>

Conservation Fund Awards Programs

<http://www.conservationfund.org/?article=1006>

Grants.gov

Grants.gov allows organizations to electronically find and apply for more than \$400 billion in Federal grants. <http://www.grants.gov/search/basic.do>

Appendix 7. A beginners guide to successful proposal writing

By Nancy Mesner and Ray Loveless

For Utah Watershed Coordination Council, June 14, 2006

Not all grants have the same requirements and some grant programs are more relaxed about the proposal being submitted. The following tips, however, are a good starting point for any grant.

Do some initial investigation about the grant

- Read the request for proposals (RFP) carefully. Check out the website. Contact the program officer.
- Who has received these grants in the past?
- What has been the average amount funded?
- Are there upper limits to the funding?
- Are there threshold requirements that must be met by all applicants? If you do not meet these, it is probably not worth the effort to apply.
- Are there areas of emphasis identified in the RFP? You will stand a better chance of being funded if your proposal fits one or more of these areas of emphasis. These may be:
 - Geographic (e.g. Money directed toward a specific watershed or state);
 - They may be by topic (e.g. Funding for energy related projects only);
 - They may be focused toward certain types of organizations (e.g. Non-profits, educational institutions, etc.).
- Try to find out if the money is already dedicated to a project. This is a little tricky to determine, but sometimes certain applicants have a much higher probability of receiving funding than you do. It is good to know this ahead of time.

Develop a good idea that matches the Request for Proposals

- Do not just recycle a grant you have already submitted or written for another program. Restructure your ideas and the proposal to fit the RFP requirements and areas of emphasis.
- Is there an identified need for your project? State this clearly.
- What are your project goals? Goals are broad statements that describe what you are trying to achieve. They should be linked to the identified need for your project.
- What objectives will allow you to achieve these goals? Objectives provide more detail in how you will meet your goal. They are measurable and should have specific tasks associated with them.

- Each objective should have identified outputs and outcomes. Outputs are what you produced with your grant money (fact sheets, miles of restored riverbank). Outcomes are the long-term impacts of those actions (changes in behavior that lead to improved water quality, or reduced phosphorus loading to a river that result in achieving a TMDL). Make sure that the outputs and outcomes related to the project goal and the statement of need.
- What is your time frame? Can your proposal actually be accomplished in the time you have? Are there external factors that may slow things down, such as permits, etc.? If so, how will you deal with those?
- How will you show that your project was successful? Simply spending the money is not sufficient anymore. Think clearly about how you will demonstrate that the project was successful.
- Make sure that this work is not already being done. Be clear in the proposal about other similar efforts in your area and determine what makes your project either unique or necessary. Demonstrate that you are coordinating efforts with other partners and that this project will ADD VALUE to the other work in the area.
- Develop a realistic budget. “Low-balling” a project sometimes works in the short term, but it is not a good long-term strategy. On the other hand, just asking for a lot of money without much detail raises a lot of flags as well. Good reviewers will know whether a project budget makes sense. Be as detailed as you can about how the requested money will be spent. Even if a cost/benefit ratio is not part of the identified criteria for a project, you should think about how the money can be used most efficiently to achieve your goals and objectives.

Follow the RFP when you write the grant - think like a reviewer

- If you are applying for continuation funding or have received money from this source before, include a project summary that describes what has already been accomplished. Reviewers do not get to see your project reports so this will help them understand that you can demonstrate good results from previously received money.
- Reviewers have to read many proposals on their own time, and as a result, they tend to look for a quick way to reject a proposal. Their thinking can be, “Why go through all the effort of carefully reading this proposal if the person who wrote the proposal couldn’t be bothered to follow the required format, or identify how the proposal meets the minimum requirements?”
- Make sure all elements of the proposal are included.
- Do not include a lot of other stuff that the RFP did not request.
- Do not make the reviewer search for information...lay out the information clearly and concisely.

- Do not assume that the reviewer knows anything about your project area. Include a clean and easy-to-follow map if that is appropriate. A junky map is of very limited value. Use a well-labeled and easy-to-follow graph or table to demonstrate previous results if that will help explain the need for your project.
- Make sure you have clear references for any citations or quotes in your proposal.
- If your proposal depends on work by other partners (e.g. Monitoring efforts or match), demonstrate that they are on-board and willing to do the work. Letters of support are really useful here. Make sure they are as specific to your project as possible.
- Proofread the proposal. Better yet, have someone who does not know much about the proposal read it over for you.
- Make sure your grammar is correct. Do not trust a spell checker to catch all the errors.
- If your proposal will be submitted electronically, make sure you do not have elements of the proposal that e-mail or other computers will choke on. Use standard word processing programs, convert maps and figures to *.jpg formats whenever possible.
- Write a good project abstract! This is often the last thing that gets done and therefore tends to be a rush job. Some review panels just look at the abstract. You want this abstract to state your case, especially because it may be all that some reviewers read.

Finally

- Get the proposal submitted on time and confirm that it arrived. There are many sad tales about proposals that got lost in the mail, caught up in train strikes, chewed up by faulty e-mail, etc.

Appendix 8. UDWQ Non-point Source Monitoring

(See Appendices folder)

Appendix 9. STEPL Fact Sheet

Spreadsheet Tool for Estimating Pollutant Load

Overview

STEPL was developed specifically for the EPA's Grants Reporting and Tracking System (GRTS) and employs simple algorithms to calculate nutrient and sediment loads from different land uses and the load reductions that would result from the implementation of various BMPs. STEPL provides a user-friendly Visual Basic (VB) interface to create a customized spreadsheet-based model in Microsoft (MS) Excel. It computes watershed surface runoff; nutrient loads, including nitrogen, phosphorus, and 5-day biological oxygen demand (BOD₅); and sediment delivery based on various land uses and management practices. For each watershed, the annual nutrient loading is calculated based on the runoff volume and the pollutant concentrations in the runoff water as influenced by factors such as the land use distribution and management practices. The annual sediment load (sheet and rill erosion only) is calculated based on the Universal Soil Loss Equation (USLE) and the sediment delivery ratio. The sediment and pollutant load reductions that result from the implementation of BMPs are computed using the known BMP efficiencies.

The STEPL model installation package, user's manual, the STEPL Model Input Data Server, and FAQ's are located at <http://it.tetrattech-ffx.com/stepl/default.htm>. Additional documents providing specific STEPL examples and applicable BMPs can be found under the "Models and Documentation" link. Specific documents include the Slideshows and Tutorials for STEPL and Region 5 Models and the BMP Descriptions for STEPL and Region 5 Models.

Although the inputs required for STEPL can be accessed from the STEPL Model Input Data Server on the county and HUC level, these values are empirically based and it is highly recommended that the user provide detailed project-specific data inputs in order to account for watershed conditions accurately. STEPL allows the user to enter project-specific data for all input parameters as well as ability to add user define BMPs, edit BMP efficiencies for any default BMP, and the ability to account for the effects of multiple BMPs constructed in series and parallel formations. The resulting load reduction from BMP implementation is calculated on an annual basis for nitrogen, phosphorus, BOD₅, and sediment and is presented as total load reduction (lbs/year) and as a percentage of total load (%/year).

Install STEPL

STEPL can be downloaded as a zipped file (<http://it.tetrattech-ffx.com/stepl>). Unzip it to a temporary directory and then run the *setup.exe* program. It is recommended that you install STEPL in the default STEPL folder on the target drive (e.g. C:\STEPL). Reboot your computer (not required but recommended).

Run STEPL

The following provides a quick guide to setting up and running the STEPL model:

Step 1: After the installation, run the STEPL program by selecting its menu shortcut from the Start >Programs menu bar or double-clicking the STEPL.exe file in the STEPL folder.

Step 2: Once the STEPL Excel sheet is created, named, and saved, begin to enter the necessary parameter values (displayed in red) in the STEPL input sheet.

The *STEPL input sheet* is composed of ten input tables. The first four tables require that you change the initial values. The next six tables (initially hidden) contain default values that you may choose to change.

Step 3: Check the first checkbox (in row 10, column F) if you want to treat all subwatersheds as parts of a single watershed (the sediment delivery ratio will be calculated using the total watershed area).

Check the second checkbox (in row 10, column J) if you want to include groundwater load calculation.

Select the state and county where your watersheds are located. Select a nearby weather station. This will automatically specify values for rainfall parameters in Table 1 and USLE parameters in Table 4.

Step 4: Enter land use areas in acres in Table 1.

Enter total number of agricultural animals by type and number of months per year that manure is applied to croplands in Table 2.

Enter values for septic system parameters in Table 3.

If desired, modify USLE parameters associated with the selected county in Table 4.

Step 5: You may stop here and proceed to Step 7. If you have more detailed information on your watersheds, click **yes** in row 10 to display optional input tables.

Step 6: Specify optional parameter values for tables 5, 6a, 7, 8, and 9:

Specify the representative Soil Hydrologic Group (SHG) and soil nutrient concentrations in Table 5.

Modify the curve number table in Table 6 and Table 6a.

Modify the nutrient concentrations (mg/L) in runoff in Table 7.

Specify the detailed land use distribution in the urban area in Table 8.

Specify cropland irrigation information in Table 9.

Step 7: Navigate to the BMP sheet by clicking on the BMP tab at the bottom of the spreadsheet. From the pull-down list, select the best management practices (BMPs) for different *non-urban* land uses in each subwatershed. For *urban* land uses, click the **Urban BMP Tool** button on the top-right corner of the worksheet to specify urban BMPs. For gully and stream bank erosion, click the **Gully and Streambank Erosion** button to specify the dimensions for each gully formation and impaired streambank.

Step 8: View the estimates of loads and load reductions in the Total Load and Graphs sheets.

For more information regarding the application of the STEPL model in Utah watersheds, please contact:

UDWQ Technical Support

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Appendix 10. Contact Lists

Stormwater

For questions about stormwater, please use the contact information below.

Local County

See the Utah Association of Local Health Departments website:

<http://www.ualhd.org>

A list of local health departments and contact information can be found by clicking "Departments." Water quality issues are typically found under the category "Environmental Health."

UDWQ

Municipal

Rhonda Thiele (801) 536-4396

Industrial

Mike George (801) 536-4393

Construction

Harry Campbell (801) 536-4391

AFO/CAFO

AFO/CAFO regulatory enforcement is conducted by the UDWQ (contact information below). Other questions regarding AFO/CAFO can also be directed to UDAF. Their guidance document is available at

<http://ag.utah.gov/divisions/conservation/cafo.html>

UDWQ

Don Hall (801) 536-4492