STATE OF IDAHO

**DEPARTMENT OF ENVIRONMENTAL QUALITY**

1410 North Hilton, Boise, ID 83706-1255, (208) 373-0502

Dirk Kempthorne, Governor
C. Stephen Allred, Director

March 25, 2004

Michelle Pirzadeh, Director
US EPA, Region 10
Office of Ecosystem and Communities
1200 Sixth Avenue, ECO-087
Seattle, Washington 98101

**RE: Official Submittal Idaho 2003 Nonpoint Source Management Program Annual Report**

Dear Ms Pirzadeh:

The Department of Environmental Quality, Water Quality Division is pleased to submit the *2003 annual report* on behalf of the Nonpoint Source Management Program. The *2003 report to congress* is forthcoming.

The Clean Water Act §319(h) requires EPA to make an annual determination of the adequacy of the State's progress in meeting the schedule included in the approved state Nonpoint Source (NPS) Management Plan prior to the state award of grant funds for 2004. The annual report is the primary mechanism for enabling the EPA to determine whether satisfactory progress has been made by the State in meeting the milestones of the Idaho NPS Management Program.

The State of Idaho has been operating under an *Enhanced Benefit Status* since June 2000. The 2003 annual report marks the third full-year of implementation under the enhanced status. The NPS Management Plan represents a multifaceted effort to address and enhance water quality statewide.

If you should have any questions, please contact Todd Maguire, NPS Program Manager.

Sincerely,

Toni Hardesty, Administrator
State Water Quality Division

TH:TM:bmm

Enclosures: 2003 Annual Report (3 copies)

c: Rick Seaborne
Todd Maguire (file)

# *Taking Plans-to-Action*

## State of Idaho
## Nonpoint Source Management Program

## *2003 Annual Report*

January 1 thru December 31, 2003

Department of Environmental Quality
1410 North Hilton
Boise, ID 83706

# Introduction

The Clean Water Act §319(h) requires EPA to make an annual determination of the adequacy of the State's progress in meeting the schedule included in approved state Nonpoint Source (NPS) Management Plans prior to the state award of grant funds. The annual report is the primary mechanism for enabling the EPA to determine whether satisfactory progress has been made by the State in meeting the milestones of the Idaho NPS Management Program.

Idaho's nonpoint source management program has spent most of 2003 working toward improving interfaces between itself and other Clean Water and Safe Drinking Water Act programs. The primary is focus of working and collaborating within a watershed framework for protection and implementation activities across the state. The Program discovered that there are opportunities for collaboration and integration among programs upon which the watershed framework can be used for implementation of nonpoint source management activities.

The State of Idaho *Nonpoint Source Management Plan* represents commitment toward multifaceted efforts to address and enhance water quality statewide. The Plan incorporates many processes and partnerships driven by water quality law, which were developed to:

- Enhance targeting of §303(d) listed waters and Category I watersheds identified through the States' Unified Watershed Assessment;
- Pursuit of integrated watershed activities for the entire resource;
- Protect and maintain drinking water protection;
- Improve and enhance partnerships among local, state, and federal agencies; and
- Increase coordination and integration of integrative funding efforts among primary land management agency partners and cooperating ancillary agencies.

## Organization of Report

The annual report is broken into three primary sections:

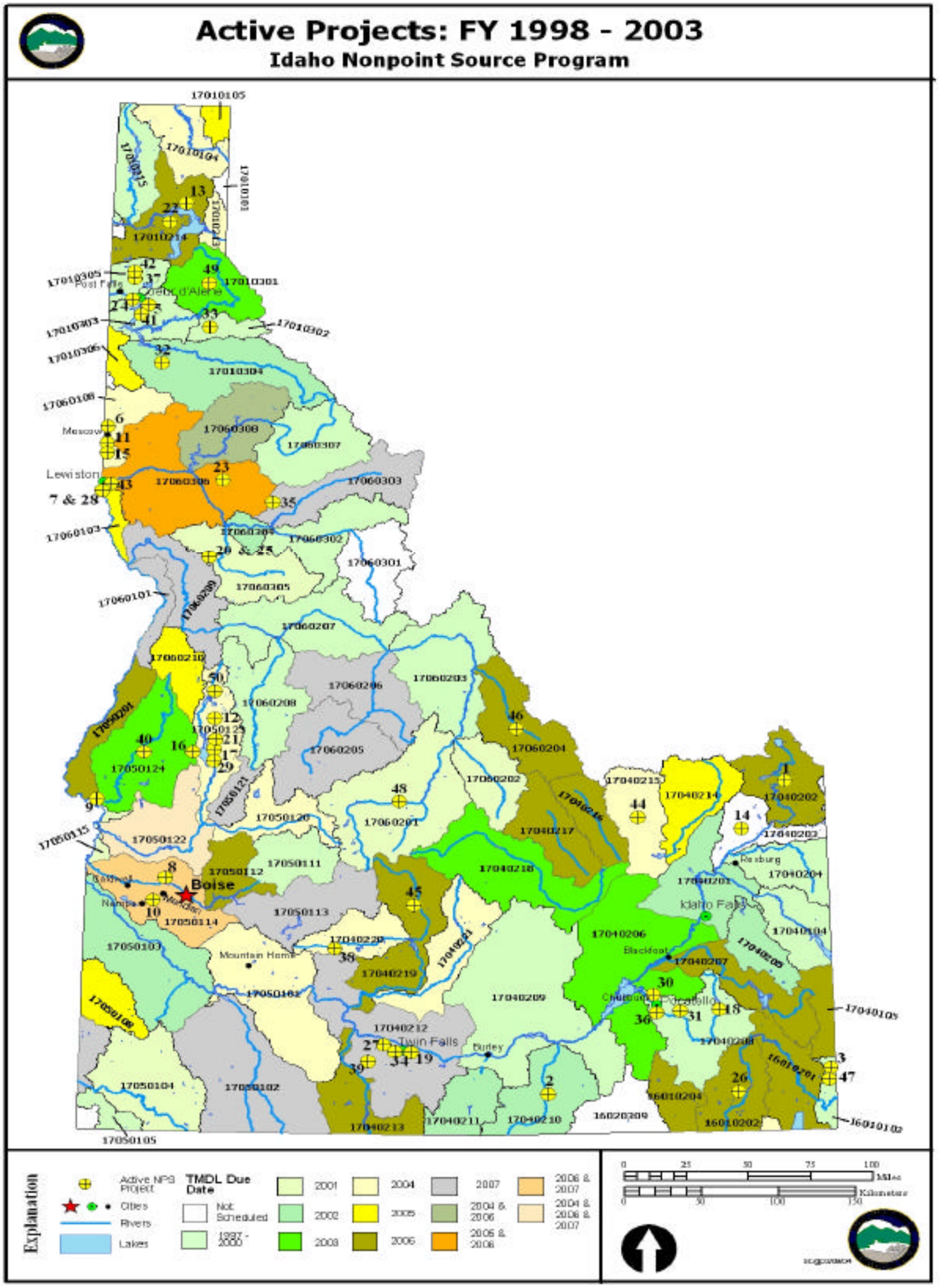
- Progress toward meeting program goals including statewide and sector descriptions,
- Report on watershed integration activities as they relate to implementation tracking, and
- Grant management.

Several documents are contained in the appendices include the Project Maps by Region for 1998 to 2003 projects, Agricultural TMDL—2003 Action Plan, and TMDL Implementation Activity Tracking by Region.

# Overview—Idaho Nonpoint Source Management Program

The Idaho Nonpoint Source Management Program is a voluntary incentive-based program that is directed predominantly at TMDL implementation activities and activities that encompass TMDLs and drinking water protection concurrently through watershed prioritization approaches. A total of 25 projects were completed and essentially closed out in 2003. Another 6 projects are also pending closeout due to administrative reasons (e.g., lack of award acceptance, lack of match). A request is forthcoming to redirect almost $562,000 from the 1997, 1998, and 1999 grants to new ground projects in 2004. Case study narratives in the form of summarized closeout reports are provided in the *2003 Idaho Report to Congress*. What remains active for 2004 are 50 projects with $8,114,871 budget allocation (Map 1—Active Projects FY1998-2004).

The overwhelming trend of pass through funds to the local level continued in 2003. For example, the remaining 2003 federal allocation of the state award went to 7 new projects for about $1,100,000, predominantly used for TMDL implementation activities. Sixteen (16) additional projects were also funded late in 2003 totaling almost $2,518,000 for 2004. Fourteen (14) of the projects, accounting for over 80% of the total spent, went to pass through for local projects consisting predominantly of TMDL implementation activities. The remaining 15% of the allocation largely funded both administration and implementation of the NPS Management Program over two-years with the second multi-year work plan for 2004-05, as opposed to one, and covered regional office support of the Program with two FTEs spread over the state for the second time.


Active Projects: FY 1998 - 2003
Idaho Nonpoint Source Program
Boise
Lewiston
Moscow
Coeur d'Alene
Post Falls
Twin Falls
Burley
Mountain Home
Idaho Falls
Rexburg
Blackfoot
Pocatello
Chubbuck
Nampa
Caldwell
Meridian
7 & 28
20 & 25
Explanation
Active NPS Project
Cities
Rivers
Lakes
TMDL Due Date
Not Scheduled
1997 - 2000
2001
2002
2003
2004
2005
2006
2007
2004 & 2006
2005 & 2006
2006 & 2007
2004 & 2006 & 2007
Miles
Kilometers

| ID | GRANT YEAR | CONTRACT | PROJECT |
|---|---|---|---|
| 1 | 1998 | Q444 | Sheridan Creek Restoration |
| 2 | 1998 | Q508 | Raft River Riparian and Watershed Demonstration |
| 3 | 2003 | S070 | Upper Thomas Fork Bank Protection |
| 4 | 2003 | S071 | Cumulative Watershed Effects Analysis (State-Wide) |
| 5 | 2003 | S073 | Blue Creek Bay Water Quality Improvement |
| 6 | 1999 | Q562 | Paradise Creek TMDL Implementation #1 |
| 7 | 2003 | S072 | Tammany Creek Watershed Imp. |
| 8 | 2003 | S098S | Lower Payette River TMDL Implementation |
| 9 | 2003 | S074 | Weiser Water Quality Project |
| 10 | 1999 | S031 | Integrating Urban Design, Ecology & Water Quality Objectives |
| 11 | 2000 | S069 | Paradise Creek TMDL Implementation #2 |
| 12 | 2000 | Q606 | Boulder/Willow Subwatershed BMP Implementation |
| 13 | 2003 | S075 | Pack River Watershed Sediment Reduction |
| 14 | 2000 | Q608 | Ashton Groundwater Protection |
| 15 | 2003 | S076 | South Fork Palouse River Restoration |
| 16 | 2003 | S077 | Mud Creek BMP Implementation |
| 17 | 2003 | S078 | Lakeshore Drive Road Improvement |
| 18 | 2000 | S008 | Twentyfour-mile Creek TMDL implementation |
| 19 | 2003 | S079 | Perrine Coulee Wetland |
| 20 | 2003 | S099S | Cottonwood Creek TMDL Implementation |
| 21 | 2003 | S080 | Gold Fork Watershed |
| 22 | 2001 | S014 | Trestle Creek Watershed Conservation |
| 23 | 2003 | S015 | Jim Fork Creek Watershed Enhancement |
| 24 | 2001 | S081 | Panhandle Health District Biorentention Basin |
| 25 | 2001 | S017/S099S | South Fork of Cottonwood Creek TMDL Implementation, Phase I & II |
| 26 | 2003 | S018 | Porter Riparian Restoration Cub River |
| 27 | 2001 | S089 | Balanced Rock Cedar Draw Coulee |
| 28 | 2003 | S100S | Tammany Creek Restoration |
| 29 | 2001 | S021 | Boulder/Willow Subwatershed Urban/Suburban stormwater Management Implementation |
| 30 | 2001 | S022 | North City Park Wetland Pocatello |
| 31 | 2001 | S023 | Upper Rapid Creek Subwatershed Riparian |
| 32 | 2001 | S032/S095S | Santa Creek Streambank Protection & Stability |
| 33 | 2001 | S025 | Success Mill Site |
| 34 | 2003 | S049 | Augar Falls Nutrient Removal |
| 35 | 2001 | S039 | North-Central AFO Relocation Phase II |
| 36 | 2003 | S093 | Edson Fichter Nature Area |
| 37 | 2001 | S042 | CDA Nettleton Gulch Demonstration |
| 38 | 2003 | S094S | Camas Prairie Groundwater Nitrate |
| 39 | 2001 | S041 | Kinsey Corral Relocation |
| 40 | 2002 | BRO | Scott Creek; Mann Creek BMPs for Groundwater |
| 41 | 2002 | S091 | Sediment Retention Ponds Placement Implementing the Kid and Mica Creeks Sediment TMDLs |
| 42 | 2002 | | Aluminum Sulfate Treatment of Hauser Lake |
| 43 | 2003 | S097S | Lewiston Urban Livestock BMPs |
| 44 | 2002 | S051 | Medicine Lodge Creek TMDL Implementation |
| 45 | 2002 | S055 | Hailey Big Wood River Improvement |
| 46 | 2002 | S054 | Lemhi Watershed TMDL Implementation |
| 47 | 2002 | S053 | Thomas Fork Stream Bank Protection |
| 48 | 2002 | S056 | Implementation of Nonpoint Source Controls (BMPs) to Achieve Riprarian Restoration on the East Fork of the Salmon River Watershed |
| 49 | 2002 | CDA | Monarch Mill Site Tailing Removal |
| 50 | 2002 | | Valley County Roads #2 |

The total since 2000 or for the last four years used for on-ground implementation activities was almost $8,758,000. The pass through to local implementation projects resulted in further leveraging over $5,000,000 in local matching contributions.

The issue of TMDL implementation has continued to grow, demanding greater statewide coordination, while drinking water protection has began to demand attention for the first time. Statewide coordination has been necessary to ensure effective prioritization of limited funding through the administration of nonpoint source subgrants. It also allows for opportunities to leverage limited-sources of funding with other mechanisms available through a number of programs administered by the Department of Environmental Quality, Idaho Soil Conservation Commission, the Idaho Office of Species Conservation, the Bonneville Power Administration, Army Corps of Engineers, among others.

The nonpoint source feedback loop is especially important for demonstrating that management measures being implemented are being assessed, and whether changes are necessary as a result of BMP effectiveness monitoring. Ongoing monitoring and analysis of data through TMDL development, Beneficial Use Reconnaissance Project (BURP), and Regional Groundwater Monitoring efforts ensure water quality standards are being met or maintained. Continued analysis of the overall successes and failures of past §319 funded projects across the state will also provide insight into the factors necessary to ensure that new implementation projects incorporate elements of the upgraded nonpoint source management plan.

# Progress Toward Meeting Program Goals

## Statewide Overview

In 2003, the DEQ continued to emphasize the four keys to achieving clean water as goals of the NPS Management Program. The four keys encouraged for both surface water and ground water quality are (1) the watershed approach, (2) consistently applied federal and state standards, (3) natural resource stewardship, and (4) informed citizens and officials.

The Idaho water programs focuses on nonpoint source pollution using a watershed approach. Public participation is a major element of this program approach and is incorporated through community-based Basin Advisory Groups and Watershed Advisory Groups as required in the Idaho water quality statute, Idaho Code §39-3601 *et seq*. The identification and support of designated management agencies are also essential for ensuring the development and implementation of TMDLs consistent with the TMDL schedule and priorities established in concert with all state and federal agencies, and the public process.

An integrative dialogue and collaborative effort is the primary framework used to build upon implementation of nonpoint source management activities, which are necessary to meet requirements of approved TMDLs, watershed management plans, TMDL implementation plans, as well as drinking water protection and groundwater protection plans.

> **Goal:** To provide technical support to cooperating agencies in implementing the nonpoint source management program; continued supervision and coordination through state office interaction to other designated agencies and related projects.
>
> **Objectives:**
>
> - Statewide lead agency program in facilitating and coordinating the implementation of the Nonpoint Source Management Plan.
> - Coordinate consistent NPS activities related to ALL SEVEN SECTORS to ensure consistency with the *Idaho Nonpoint Source Management Plan.*
> - Encourage the enhancement of natural resource partnerships and interagency collaboration through educational opportunities and information/knowledge transfer.

- Enhance program implementation by way of revising MOUs that support the *Idaho Nonpoint Source Management Plan.*
- Ensure statewide consistency of base-level activities related to preparing TMDL Implementation Plans by working directly with the TMDL Development Program Manager.
- Assist in the preparation of the "working" TMDL implementation plan guidance and related policies that are consistent with the *Idaho NPS Management Plan* and TMDL Development Program.
- Provide technical support, education, and information transfer on TMDL implementation and drinking water protection activities to ensure consistency with the *Idaho NPS Management Plan.*

## Program Implementation

### Task 1: State office management of the nonpoint source program.

**Output:** Coordinated the development and funding of twenty-three (23) new projects with base and incremental funding (Appendix 1). Encompassed within these new projects were two (2) statewide initiative projects. DEQ has improved the tracking of projects using Excel to enter on-going project balances and semi-annual reporting on a quarterly basis. Also, on-ground BMP installation was reviewed for over 50% of the on-going projects around the state (see section on Field Evaluation Progress). All funding expenditures have been in compliance with §319 program requirements and guidelines. Upon completion of this task, additional or remaining funding will be targeted to enhancement of the resource needs identified through the project review outlined in task 5. The program has maintained additional staff assistance from the Technical Services Division of DEQ to aid in contract maintenance and reporting to ensure better project tracking, reporting and a more timely delivery of requested products.

**Task 2: Develop policies and guidance materials necessary to implement the states nonpoint source management program.**

**Output:** The NPS Program co-sponsored a set of workshops around the state with the Idaho Soil Conservation Commission in September. The workshops focused on what makes a good project, presenting a draft proposed guidance and conceptual framework on ways of preparing them. The workshops were held in four locations: Pocatello, Twin Falls, Lewiston, and Coeur d'Alene. Well over 50 representatives from the agricultural sector attended. Additionally, the workshops were used to provide program updates and announce the 2005 funding cycle. The first step of pre-application was really emphasized during the workshops. Discussion was quite productive and did assist in revising the guidance, which is summarized in this document.

**Output:** The NPS Program revised, updated, and greatly expanded its website on the DEQ home page. The Program website is fully functional and comprehensive not only providing fully accessible portal, but also serves as an educational tool. The website can be viewed at http://www.deq.state.id.us/water/nps/nps_home.htm.

**Output:** The NPS Program finalized the drafting of the new formal application guidance entitled, "Project Application Reference Guide: Grants for Watershed and Aquifer Implementation Activities." It can be viewed at http://www.deq.state.id.us/water/nps/nps_application_refguide_05.pdf and http://www.deq.state.id.us/water/nps/nps_application_template_05.doc. The Reference Guide provides a description and process for preparing and submitting project applications for grants to conduct watershed and aquifer implementation activities. Project applications can either be focused on mitigation or prevention activities.

Project applications generally focused on mitigation activities are related to impaired water bodies. Proposals can be based on water quality limited water bodies from the State of Idaho approved §303(d) list or "Integrated Water Quality Report," approved TMDLs, from public water systems with certified drinking water protection plans, or other recognized water quality priority lists.

The other type of project application supported by the funding strategy is prevention oriented. These types of project applications will generally focus on waters of special concern (e.g., threatened and/or endangered species, sole source aquifer, etc.), promote anti-degradation, or waters where beneficial uses are fully supported, but where documented nonpoint source pollution threatens future use.

The “Project Checklist” is the primary framework for both organizing and evaluating project applications. The Checklist is comprised of four areas: Introduction, Method, Results, and Discussion. Each of these areas encompasses criteria both as prerequisites and credits that need to be covered in a project application. The criteria is stated as an “intent,” “requirements,” “submittals,” and “resources” that are necessary to achieve each prerequisite and credit.

The framework of the Checklist serves as the organizational framework for preparing the application. In turn, the Checklist will serve as the basis for evaluation of all project applications. The 1999 Idaho Nonpoint Source Management Plan provides further background, explanations, and resources. An initial screening is conducted on each project application evaluating the four prerequisites. All "prerequisites," which are program administrative in nature must be achieved in order to qualify for the next step in technical evaluation.

In turn, project applications qualify for “technical merit” by meeting or exceeding each credit’s requirements. All ten "credit" requirements must be met, which are elements of implementation in order to proceed to the third step of evaluation that is conducted by a respective basin advisory group. The process, use the "Requirements" under each "Credit" of the Project Checklist of the Reference Guide to answer yes or no. If any Credit cannot be answered in the affirmative, then the application is technically disqualified.

**Output:**
Idaho DEQ issued the announcement of the pre-application for FY2005 CWA, §319 funding in August to over 300 agencies and groups, with a deadline of submitting applications of October 1, 2003. DEQ received 48 pre-applications plus other inquiries for informal review and comment. This again is a remarkable number of pre-proposals. Those pre-applications were reviewed and feedback with specifically tailored response to each within a sixty-day time frame. Formal funding application submittals were either invited for a February 1, 2004 deadline or rejected due to lacking sufficient technical qualifications. Overall, about 5% of the pre-applications were rejected and the majority

of the comments to each pre-applicant were intended to greatly improve the quality of formal application.

The formal application proposals will undergo a stringent review process to ensure that they meet federal and state guidelines, ensure consistency with the State NPS Management Plan, and also meet statewide/regional needs for the restoration of beneficial uses. An additional month has been made available to ensure that watershed and basin advisory groups have sufficient time to review and comment on all regional projects. The step now included in step 2 and 3 after the pre-application step ensures that all designated agencies and public advisory groups are participants with the local DEQ offices in the ranking and selection process.

**Task 3: Continue the revision of existing NPS MOUs**.

**Output:** The *Agricultural Pollution Abatement Plan* was completed and made available to the public in early 2003. The plan includes an MOU for implementation and is awaiting signature of the Governor, and in turn, signatories to the NPS sector MOU for agriculture.

**Output:** DEQ held a meeting and had several correspondences with the Idaho Transportation Department in late 2003. The ITD drafted a policy MOU for review and comment. DEQ provided review comments to ITD. This dialogue will continue in 2004.

**Task 4: Program Implementation**

**Output:** A program announcement and request for pre-application was sent out to over 300 agencies, entities and individuals. Included with the pre-application announcement was a full schedule and project expectation for prospective applicants. It was also made available on the DEQ website at: http://www.deq.state.id.us/water/nps/nps_preapplication_05.doc.

**Output:** The grant application guide, "Project Application Reference Guide: Grants for Watershed and Aquifer Implementation Activities" was made available through announcement and solicitation in August. View it at http://www.deq.state.id.us/water/nps/nps_application_refguide_05.pdf and http://www.deq.state.id.us/water/nps/nps_application_template_05.doc. The guide also serves as the technical evaluation or standard.

**Output:** Funding was made available to ensure continuance of Idaho Nonpoint Source Monitoring Workshop on an annual basis. The 14th annual workshop was held at Boise State University during the first week

of January 2004. The 15th Annual Workshop is set for January 4-6, 2005 at Boise State University.

**Output:** The Program prepared a white paper and initiated a joint funding strategy to leverage funding and collaborative opportunities (see box on pages 11-12). One example in 2003 where the leveraging payed off was with identifying $42,000 for funding a previously approved 319 project through the Governor's Office of Species Conservation.

**Task 5: Facilitate discussion on TMDL implementation activities for urban watersheds; provide contractor to coordinate dialogue in Pacific Northwest and sponsor statewide conference.**

**Output:** A PowerPoint presentation on Low Impact Development was given to the Middle Snake River Watershed Advisory Group in April.

**Output:** A conference is still being delayed until 2005. The conference has been tentatively rescheduled for Fall 2005 and tentatively entitled, "Western States Symposium: Finding a Place for Low-Impact Development." It will still focus on water quality practitioners, design professionals, and municipal and county officials, among others. The symposium is already intended to be co-sponsored by EPA, the NPS programs of the western U.S. states, the University of Idaho Architecture Department through the Idaho Urban Research Design Center, and the American Society of Landscape Architects—Idaho-Montana Chapter.

**Task 6: On-ground review of existing nonpoint source projects for 50% of the regional projects.**

**Output:** Twenty-seven of 50 projects were evaluated in the field during the summer and fall of 2003. The "2003 Field Evaluation Progress Report" was completed and made available to the public through the DEQ website: http://www.deq.state.id.us/water/nps/FieldEvalReport_2003.pdf.

**Task 7: Development of rules for the integration of NPS activities into the State Revolving Fund Program.**

**Output:** Five loans under the integrative priority system affecting nonpoint source pollution were approved and implemented in 2002 with the assistance of the NPS Program. Each of the projects were funded through the Idaho Soil Conservation Commission in five geographic locations throughout the state. Of the five projects, only the Franklin Soil

and Water Conservation District has spent out the majority of their loan, approximately $1,192,000. The other four locations are not finding prospective loan applicants. The sluggish economy and the reality that loans are highly competitive to lower interest rates compound some of this. Other possible reasons relate to an overall lack of a coordinated marketing approach to “sell” the idea by the Soil Conservation Commission.

I met with the Soil Conservation Commission administrator and two key state office staff regarding this issue in early December. The discussion went well and concluded with a deliberate intent on the part of our two agencies to work closely and collaborate toward a “comprehensive loan and grant package.” This essentially means using small percentage of 319 grants to help minimize risk and make loans more attractive and competitive for activities not ordinarily covered by grants (e.g., sprinkler irrigation systems for tier 2 and 3 classified lands, piping and other infrastructure capital, etc.). The dialogue with the Commission will continue into early 2004 to determine feasibility of proceeding and tying into the 2005 funding cycle.

# Integrated Approaches to Clean Water and Source Water Management

Presenter: Todd Maguire, Department of Environmental Quality, Nonpoint Source Management Program, State of Idaho, 1410 North Hilton, Boise, ID 83706.

In support of Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) integration objectives, the Department of Environmental Quality is piloting an "integrated watershed management" funding strategy. This effort support the U.S. EPA approved 1999 Nonpoint Source Management Plan that provides one of the first visions in the country aimed toward watershed integration of formal planning requirements and on-ground implementation activities. It also supports implementation of approved Total Maximum Daily Loads and certified drinking water protection plans.

Three traditionally separate programs of Total Maximum Daily Loads (TMDLs), Source Water Assessment and Protection, and CWA Section 319/State Nonpoint Source Grants have a critical overlap of objectives when considered in light of the watershed framework. The watershed is the appropriate scale of consideration for assessing water quality impacts and prioritizing suitable management measures that meet the multiple-objectives of these three programs. The combination of working at the watershed scale fosters local involvement and empowers those most affected to seek incentive funding to voluntarily pursue protection activities. In turn, projects derive from consensus, placed-based watershed implementation plans that are looking at both surface water and ground water to document measurable benefit for beneficial uses.

The vision of achieving watershed integration takes advantage of the inherent overlap between the three programs to provide multiple leveraging opportunities. Private and public partnerships, private investment, and hard and soft in-kind match bring a 40% local match to the table in the majority of projects implemented on the ground. Other programs like the U.S.D.A. "Environmental Quality Incentives Program," administered by the Natural Resource Conservation Service, are also attractive as part of leveraging a diverse set of dollars for implementation, creating a patchwork of integrated funding sources watershed by watershed.

Successful on-the-ground projects for controlling polluted runoff aim at making connections in three primary ways. Those primary ways are the (1) scales of protection, (2) ecological context, and (3) adaptive design strategies. The scales of protection are habitat, the watershed, and ecoregion. Each of these scales are nested within each other, where the

*Continued on page 16.*

cumulative actions of every habitat are going to determine whether a watershed remains hydrologically functional, set within the constraints of the ecoregion. This in turn sets the stage for using an ecological paradigm and the context of beneficial uses as the pretense for both understanding the problems and resolving them systemically with multiple objective solutions. An adaptive management paradigm driven by the feedback loop models should be the underlying strategy for design of programs and implementation projects.

An "integrated watershed management" approach should strive to create settings for collaboration and innovation by facilitating dialogue among local stakeholders. The over-riding charge under the piloting of this approach is fostering a framework for dialogue among stakeholders for problem solving examining interdisciplinary solutions that are inherently multi-objective. That is, solutions able to address more than one problem simultaneously while addressing the entire resource based on local circumstances.

The Integrated Watershed Management Program proposes a framework for fostering interdisciplinary on-ground implementation activities. Interdisciplinary takes on a meaning of multiple dimensions and scales. In one instance vertical dimensions: encompassing both surface water and ground water quality at the watershed scale. In the other instance, the lateral dimension considering the varied land uses and land covers associated with agriculture, silviculture, mining, and hydrologic/habitat modification activities, as well as those associated with urbanization (e.g., land development, transportation, recreation, etc.). These land uses and activities give rise to varying degrees of nonpoint source pollution or polluted runoff, which is the major contributor to impaired waters.

Further, the Integrated Watershed Management Program views capacity building and outreach at the watershed scale as an important, on-going task. Capacity building creates opportunities for exploring ways of bringing stakeholders with common interests together within a watershed to look at potentially common, multi-objective solutions. These efforts will be characterized as a "placed-based area" focus, able to document on-ground implementation activities annually. Documentation of on-ground implementation activities shown to complement each other are also crucial to maintaining existing funding levels through federal and state grants and loans due to the higher standard for tracking and reporting requirements (e.g., Grants Reporting and Tracking System).

A short paper on this subject presented October 29-30, 2003 at "Getting It Done: The Role of TMDL Implementation in Watershed Restoration," Stevenson, WA, can be viewed at: http://www.swwrc.wsu.edu/conference2003/pdf/Proceedings/Proceedings/Session%201A/PAPER_Maguire.pdf

**Task 8: Statewide technical support, education, and information transfer on TMDL implementation activities with an emphasis on urban watersheds.**

**Output:** The Program was invited to speak on two occasions during the year on a national stage. One occasion in June was at the National Source Water Protection Conference in Washington D.C. in collaboration with the DEQ Drinking Water Program and Idaho Rural Water Association. Another occasion was in October at the "Getting it Done TMDL Implementation" Conference in Stevenson, Washington. In both cases, the PowerPoint presentation focused on integrated watershed management and adaptive management approaches for integrating clean water and source water. On a third occasion in April, the Program was invited to speak about the Caldwell-Karcher Project at the 18th Annual Symposium of the International Association of Landscape Ecology, U.S. Chapter in Alberta, Canada.

**Output:** An essay entitled, "Building Site Ecology: An Introductory Framework and Solutions" was drafted as white paper for the Sustainable Communities for Idaho: Caldwell-Karcher Project. It is available upon request.

**Output:** Three PowerPoint presentations were given through the year to support drinking water protection and nonpoint source management. The three different occasions were (1) the Source Water Assessment and Protection Annual Planning Meeting in March, (2) the Drinking Water Program: Orientation and Training in August, and (3) the Statewide Drinking Water Meeting in September.

**Output:** The Program co-sponsored along with EPA 60% of the cost for holding training to support the DEQ Drinking Water Protection Program. The training held in Ketchum in October was entitled, "Source Water Protection through Best Management Practices." The one-day training led to a second day spent with Blaine County stakeholders in a roundtable discussing funding options for nonpoint source pollution control and prevention.

**Output:** The *Compendium of Best Management Practices to Control Polluted Runoff* was made available on compact disk and through the DEQ website at http://www.deq.state.id.us/water/nps/BMPs.htm. The handbook is written for a laymen audience to encourage the selection of suitable and appropriate measures for managing nonpoint source pollution. It covers

all seven sectors within the *Idaho Nonpoint Source Management Plan* and additionally, marinas and boating recreational activities.

**Output:** The Compendium was incorporated and served to support the *Safe Drinking Water Leadership, Accountability, Action* handbook completed in autumn 2003 from the Association of Idaho Cities and Idaho Association of Counties.

**Output:** The NPS Program is supporting the effort to develop and implement a national standard and rating system for green buildings and sustainable development practices. The Program is supporting as a trial a two-year membership to the U.S. Green Building Council and the Leadership in Energy and Environmental Design (LEED). The main interest and focus of the NPS Program in this trial support of membership, education and information transfer, and soliciting demonstration projects revolves around the currently proposed development of neighborhood development standards that are performance based. These standards are due to be developed in 2004 and piloted nationally in 2005. The standards will be Smart Growth based with a legitimate incorporation of watershed and ecological standards for land development and transportation linkage at the community level. The first demonstration project supported by the NPS Program is planned to initiate in early 2004 demonstrating living roof (green or eco-roof) technologies.

**Task 9: Submit FY2002 Report to Congress to EPA.**

**Output:** Was completed in early 2003 and can be viewed at http://www.deq.state.id.us/water/nps/Report_Congress_2002_Full.pdf.

**Task 10: Coordinate, review, and distribute completed annual report for NPS Program.**

**Output:** 2003 Annual Report submitted to Region 10, NPS Program Coordinator.

## Sector Overviews

Chapter 1 of the *Idaho NPS Management Plan* outlines the vision of the Program: All long-term goals and short-term objectives listed in tables 1.2 through 1.9 be implemented in a manner to protect or restore the beneficial uses of the State's surface and ground waters. These serve as the focus for prospective projects each year. The long-term goals in table 1.2 are driving factors for the Idaho NPS Program, as well as every sector. The goals and objectives of chapter 1 essentially serve as the qualifying criteria for projects each year. These are a primary focus for implementation by the NPS Program. It is anticipated that these goals and objectives will be updated in 2003.

In order to realize the goals outlined throughout the tables in Chapter 1, DEQ has focused efforts on further information and education to those participants listed in the tables as responsible agencies. Additionally DEQ continues to provide enhanced training opportunities to many of the listed agencies to ensure that the NPS Plan listed goals and objectives are incorporated into their planning and implementation processes. As a result of these efforts DEQ is invited to participate in strategic planning sessions for NRCS and ISCC and has also provided program presentations to many groups for their planning processes. The DEQ participated with both of these agencies in quarterly interagency roundtable meetings.

**Successes in meeting these goals are demonstrated by**:

- Development and implementation of a watershed-based joint funding strategy with a target of integration: focusing on the highest priorities in a watershed that fulfill as many programmatic objectives as possible while leveraging local human capital and generally grant dollars among funding programs.
- Increased number of requests for NPS Plan presentations and education for NPS implementation and funding opportunities for new groups to the NPS planning process such as the U.S. Forest Service, Idaho Transportation Department, Idaho Department of Water Resources, Bureau of Land Management, and U.S. Army Corps of Engineers.
- Technical and programmatic support for drinking water protection activities working in cooperation with the DEQ Drinking Water Program, regional offices, and local governmental or public water systems.
- Continuing efforts to submit TMDL implementation plans reflecting integrated funding from other listed agencies and entities. For example, the NRCS with the Environmental Quality Incentives Program and Idaho Soil Conservation Commission with the Water Quality Program for Agriculture.

- The application of new guidance for using wastewater State Revolving (loan) Funds for NPS pollution prevention/control measures, exemplified by the five projects with the Idaho Soil Conservation Commission.
- The continued tendency to incorporate ground water BMPs into TMDL implementation plans. Ground water is a major focus for 2003 with the recent reorganization of the DEQ Water Quality Division.

## Agriculture/Silviculture/Hydrologic & Habitat Modification Sectors

Many of Idaho's current NPS projects focus on the restoration of riparian areas due to agriculture, grazing, and silvicultural practices. Significant gains to these impacted areas have been made from increased cooperation and collaboration with the Idaho Soil Conservation Commission, Idaho Association of Soil Conservation Districts, the U.S. Forest Service, and the U.S. Army Corps of Engineers.

Successes in meeting the goals as outlined in the NPS Plan tables 1.3 through 1.5 are evidenced by the following, listed in Table order:

- Awarded §319 grant to Idaho SCC to provide funding for updating the State *Agricultural Pollution Abatement Plan* and supporting MOU and ensuring consistency with the *Idaho NPS Management Plan*. View the *Agricultural Pollution Abatement Plan* at http://www.scc.state.id.us/PDF/AgPlan.pdf
- Development of tracking software for implementing agriculture management measures for water quality among integrated funding sources. The tracking software which runs in Access is fully functional and being used by all soil conservation districts and managed centrally by the Idaho Soil Conservation Commission state office.
- Continued support in 2003 was provided by the DEQ to the various entities working to complete and implement the Idaho One Plan process, which is now up and running in late 2003.
- State support and meetings for further refining and implementation of the FS/BLM Protocol for 303(d) Listed Waters.
- Completion of agricultural components of TMDL implementation plan and statewide tracking for 2002 (see Appendix 3).
- A 319 subgrant was provided to the Soil Conservation Commission to prepare and implement a field guide for evaluating agricultural BMP effectiveness. The field guide entitled *Idaho Agricultural Best Management Practices* can be viewed at http://www.scc.state.id.us/PDF/BMP%20Effectivenss%20Guidance%20Document.pdf.

The Idaho Soil Conservation Commission has prepared 2003 agricultural TMDL action plan. The goal: Develop and implement agricultural portions of TMDL watershed plans in an equitable manner proportional to the problem, in order to achieve water quality standards and enhance beneficial uses. The objectives are listed below including specific watersheds that will be focused on in 2004. The full action plan is in appendix 3. To date, the Soil Conservation Commission has completed 23 agricultural component—TMDL watershed implementation plans, 13 additional are greater than 50% completed, and 15 additional are initiated but less than 50% completed (see table on pages 16-17). A map shows this spatial relationship of status among the 88 fourth-field hydrologic unit codes in the state, view this on-line at http://www.scc.state.id.us/images/TMDL%20Progress.gif.

Objective 1: Develop, refine and implement agricultural TMDL process.

Objective 2: Accelerate TMDL training and outreach.

Objective 3: Facilitate TMDL development and implementation through enhanced inter-agency coordination and communication efforts.

Objective 4: Ensure Effective TMDL implementation.

Objective 5: Intensify focus on riparian issues involved with TMDL implementation.

Objective 6: Agricultural pollutant source/transport and ground water monitoring.

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- Implementation of State Water Quality Program for Agriculture (WQPA), view a fact sheet at http://www.scc.state.id.us/Docs/wqpafs.doc and the rules at http://www.scc.state.id.us/PDF/WQPA%20Rules%20and%20Regs.pdf. Funding of the WQPA program was at $1,214,700, 40% less from the previous year. The trend of funding is projected to continue dropping slightly in 2004 to $1.1 million.
- Integrated state, federal and private funding of eleven (11) TMDL implementation plans.
- Fully funded implementation of Idaho One Plan with §319 funds and multiple state sources. View the One Plan at http://www.oneplan.org/. Additionally, funding was made available in 2003 to ensure completion of the conservation-planning module with trial use of the modules in Fifteenmile Creek.

- Incorporation of Nutrient Management and CNMP into on-ground project implementation as appropriate (required for all federally funded projects – and extending into state funding).
- BMP effectiveness monitoring program between Idaho Soil Conservation Commission, Idaho Association of Soil Conservation Districts, and the Idaho State Department of Agriculture for all agricultural implementation projects (as per Agriculture TMDL Action Plan).
- Co-sponsored the two-day 2003 erosion control workshop to educate and encourage use of bio-remediation and bio-filtration techniques.
- General discussion on the NPS MOU and FS/BLM sector MOU for silviculture.

Table 1. Agricultural component TMDL implementation plan status.

| TMDL | Implementation Plan Status | HUC |
|---|---|---|
| *Cascade Reservoir* | *Complete* | *17050123* |
| *Middle Snake-Rock (Phosphorus)* | *Complete* | *17040212* |
| *Paradise Creek* | *Complete* | *17060108* |
| *Jim Ford Creek* | *Complete* | *17060306* |
| *Winchester Lake* | *Complete* | *17060306* |
| *Cottonwood Creek* | *Complete* | *17060305* |
| *Lower Boise River* | *Complete* | *17050114* |
| *Lower Payette River* | *Complete* | *17050122* |
| *Upper Snake-Rock (Sediment)* | *Complete* | *17040212* |
| *Lake Walcott* | *Complete* | *17040209* |
| Pahsimeroi River | In Progress (75%) | 17060202 |
| *Lemhi River* | *Complete* | *17060204* |
| Blackfoot River | In Progress (95%) | 17040207 |
| *Portneuf River* | *Complete* | *17040208* |
| Middle Bear River | In Progress (40%) | 16010202 |
| Central Bear River | In Progress (85%) | 16010102 |
| Bear Lake | In Progress (40%) | 16010201 |
| *Weiser Flats* | *Complete* | *17050201* |
| Big Wood River | In Progress (75%) | 17040219 |
| Weiser River | In Progress (25%) | 17050124 |
| *North Fork Owyhee River* | *Complete* | *17050107* |
| *Middle Fork Owyhee River* | *Complete* | *17050107* |
| Upper Owyhee River | In Progress (50%) | 17050104 |
| Brownlee Reservoir | In Progress (30%) | 17050201 |
| *Palisades* | *Complete* | *17040104* |
| *Bruneau River* | *Complete* | *17050102* |
| *Coeur d'Alene Lake & Tributaries* | *Complete* | *17010303* |
| *St. Joe River - St. Maries River* | *Complete* | *17010304* |
| *Little Lost River* | *Complete* | *17040217* |
| Willow Creek | In Progress (50%) | 17040205 |
| *Medicine Lodge Creek* | *Complete* | *17040215* |

| | | |
|---|---|---|
| Middle Snake – Succor | In Progress (50%) | 17050103 |
| Teton | In Progress (90%) | 17040204 |
| South Fork Clearwater River | In Progress (40%) | 17060305 |
| Lower North Fork Clearwater River | In Progress (95%) | 17060308 |
| Pend Orielle | In Progress ( 5%) | 17010214 |
| *Middle Fork Payette* | *Complete* | *17050121* |
| North Fork Payette | In Progress (10%) | 17050123 |
| Raft River | In Progress (80%) | 17040210 |
| Goose Creek | In Progress (50%) | 17040211 |
| Camas Creek | In Progress (25%) | 17040220 |
| Potlatch River | In Progress (10%) | 17060108 |
| *Tammany Creek* | *Complete* | *17060103* |
| Palouse River | In Progress (10%) | 17060108 |
| Cow Creek | In Progress ( 5%) | 17060108 |
| Little Wood | In Progress (50%) | 17040221 |
| Kootenai River | In Progress (50%) | 17010104 |
| Moyie River | In Progress (10%) | 17010105 |
| North Fork of the Coeur d'Alene | In Progress ( 5%) | 17010301 |
| Little Salmon | In Progress ( 5%) | 17060210 |
| Salmon Falls | In Progress ( 5%) | 17040213 |

## The “Magic Valley” Times-News

December 1, 2003

TOPSTORY…Coulee cleanup ... Canal company project should help TF water use, officials say.

By Jennifer Sandmann, Times-News writer

TWIN FALLS -- A clearer Perrine Coulee should flow through Twin Falls thanks to a water quality pond under construction south of town. The Twin Falls Canal Co. said the $102,000 project paid for in part by a grant offers a number of benefits for its delivery system and water use within the city.

"We're building it to take the sediment out before it gets to town," said Brian Olmstead, field supervisor for the Twin Falls Canal Co. The pond will double as a seven-acre wetland for wildlife and as a regulating pool for the canal company to help better distribute and conserve water.

A series of channels and pools will slow down water, giving time for sediment and mud to settle out of the Perrine Coulee where it passes near the sugar plant south of Orchard Drive. Planting native vegetation such as willows will help filter the water and offer habitat for birds and wildlife. The canal/coulee is fed by irrigation water from the Lowline Canal, and it collects runoff from about 20,000 acres, Olmstead said.

Once it reaches town, the main Perrine Coulee runs through the east side of Twin Falls, channels under Blue Lakes Boulevard and passes through the College of Southern Idaho's campus. It empties into the Snake River between Canyon Springs Golf Course and Centennial Park. Along its city route, the coulee supplies irrigation water to new residential developments, schools, city parks and the CSI campus.

**WATER QUALITY**

A bulldozer pushes dirt onto what will be an island for wildlife and vegetation in a water quality control pond on the Perrine Coulee south of Twin Falls. The pond will be used to get rid of sediment before the water reaches town.

When the Perrine Coulee is running during irrigation season, sediment loads are averaging more than 100 milligrams per liter as the water approaches the outskirts of town, Olmstead said. Sediment loads must be half of that to meet federal water quality standards at the point the coulee drains into the Snake River.

Usually the coulee meets the 52 milligrams-per-liter standard by the time it reaches the river, but much of the mud and silt collects in water delivery laterals throughout town. The city must use settling ponds to filter out silt before it can pump the water.

The canal company estimates it can capture most of the coulee's sediment load in the new pond, Olmstead said. That will reduce the need to dredge laterals in town where it is difficult to maneuver large equipment. And it will aid city efforts to conserve drinking water by using the canals for landscape irrigation.

Because of the benefits to the city, the City Council agreed to contribute $1,400 a year to help maintain the pond. Twin Falls' movement toward citywide pressurized irrigation has helped cope with growth and an increasing demand for drinkable water. "We had reached a point where we did not have adequate drinking water in the spring to meet demand," City Manager Tom Courtney said.

That was during the 1990s. Today the city has developed new wells and begun using the canal system for irrigation to reduce demands on the drinkable water supply. The $102,000 pond project includes $61,000 in grant money available through federal Clean Water Act programs administered by the Idaho Department of Environmental Quality. The Snake River Soil and Water Conservation District and the Twin Falls Canal Co. together are contributing $42,000. Fifteen acres of land were purchased.

Times-News writer Jennifer Sandmann can be reached at 733-0931, Ext. 237, or jsandmann@magicvalley.com.

## Mining Sector

Much of the NPS efforts related to mining are remedial efforts tied to historic mining districts. The Mining Advisory Committee remains the mechanism by which statewide NPS coordination and implementation goals and objectives are achieved. DEQ also works with the designated agency for mining operations, the Idaho Department of Lands (IDL), to prioritize annual abandoned mine reclamation sites and interagency remediation efforts. The Waste Division of the DEQ is working to remediate several key mining areas by pursuing grants in 2004 and 2005.

The Monarch Mill Site Tailings Removal is the latest project being sponsored by the DEQ Coeur d'Alene Regional Office. Another is the Pine Creek Watershed, Denver Creek Restoration Project. Two new projects in the vicinity of New Meadows and McCall, Idaho were approved for implementation in 2004. Those two projects that will apparently pursue multiple-year funded subgrants are the Meadow Creek Restoration and the Glory Hole Fish Passage and Habitat. Continued dialogue in 2004 will foster more attention toward the need of site mining reclamation.

## Urban, Transportation, and Groundwater Sectors

The Program again devoted much effort to these three sectors under tables 1.7 thru 1.9 of the Idaho NPS Plan. The purpose of so much attention revolves around the fact that Idaho's population is growing and projected to continue at one of the highest rates nationally over the next decade. With growth comes opportunity for incorporating innovation into new land development projects. One such opportunity that the Program has spent some time on this last year is green building.

The dialogue between cultural expression and environmental conditions in architecture and construction has changed considerably in recent years. High performance building practices incorporate energy efficiency, water conservation, waste minimization, pollution prevention, resource-efficient materials, and improved indoor air quality to help conserve natural resources, improve environmental quality, and increase the long-term value of a project. Used interchangeably with sustainable, green, or healthy building, high performance buildings refer to design, construction, and operations that conserve resources and improve the performance of buildings and users.

Systemic solutions for air, land, and water impacts related to nonpoint source pollution are designing buildings and dwellings of all types within the context of their ecology. Buildings within urban and suburban areas could literally be

another nonpoint source sector covered in the *Idaho Nonpoint Source Management Plan.* For now, work with demonstrating and supporting green building falls under the scope of the Urban Sector of the NPS Plan. Common features of high performance buildings that directly benefit the Urban NPS Sector include:

- Team collaboration during site selection, design, construction, and operation.
- Consideration of a project's true costs such as community and environmental impact, and long term maintenance and performance.
- Efficient and conservative use of natural resources.
- Water conservation and on-site stormwater management.
- Minimal site disturbance, including a modest building footprint.
- Native landscaping.
- Integration of reused or recycled materials during both construction and deconstruction.

High performance building practices represent a conscious effort to alter and use a modified set of assumptions for designing and constructing buildings. What are the environmental, economic and social benefits of high performance buildings to a business or organization? There are multiple benefits afforded by high performance buildings (see Appendix 2 on pages 50-55). More importantly is looking beyond the individual building envelope to neighborhood development scales that are on par with watersheds. The cumulative effect of neighborhood development when done under a sustainable development paradigm holds great promise for improving water quality and in particular nonpoint source pollution.

Categories encompassing a possible LEED—Neighborhood Development Rating System is exploring five main areas. The Rating System for neighborhood development is due out for piloting in 2005. Those five categories that may encompass the rating system include (1) location and linkage, (2) neighborhood pattern, (3) sustainable sites, (4) green buildings, and (5) innovation and design process. In particular, the first three areas will focus on ways of making location and linkages among sustainable siting and patterns on several scales encompassing the site, neighborhood, and community.

Ground water is addressed as a consideration in every project application. The Program does not make differentiation between surface water and ground water.

The transportation sector has been moving in a direction of collaboration. In all instances, the transportation sector is being addressed comprehensively in

every watershed implementation project application. Some of the examples started in 2003 and anticipated to start in early 2004 include these watersheds: lower North Fork Clearwater and Cascade Reservoir Lake Shore Drive Road Improvement. The Program is supporting a statewide educational demonstration project in 2004 with the Idaho Highway Technical Advisory Council and the University of Idaho Technology Transfer Center. The purpose of the project is to develop, publish, and provide statewide training on BMPs to county government and highway districts.

## Leadership in Energy and Environmental Design (LEED ™) Statewide Demonstration Project

**PROJECT DESCRIPTION:**
The living roof project offers a demonstration of high performance building technology for preventing urban nonpoint source pollution through design integration. The project proposes to research, test, design and construct a "green roof" or "living roof" for a single commercial building or a series of smaller residential buildings with a roof area of about 5,000 square feet. The living roof(s) will be integrated into the building either through initial design as new development or through retrofit of a redeveloped site. The objective is to approach nonpoint source pollution "upstream" at the source taking a highly cost effective approach, considered a "site level solution."

**PROJECT GOALS:**

- Research and test living roof systems, soils and plants for applicability on roofs in Idaho.
- Build a demonstration living roof on an actual building for monitoring, education, and promotion of living roofs.
- Engage students in design, engineering, construction, and environmental professions in the application of this technology.
- Build consumer demand for living roofs.
- Demonstrate the value of integrated design and high performance building practices.
- Obtain LEED certification for the demonstration living roof to promote integrated design.

**PROJECT PURPOSE:**
Rooftops, the last urban frontier… an unexplored area that arguably has the greatest potential of all urban spaces for preventing the effects of nonpoint source pollution and creating a higher quality of life for residents and the environment.

Living roofs provide an opportunity to mitigate the displacement of the natural environment, which occurs when a building is built on the land, by replicating the natural functions on the rooftops. On-site stormwater retention and runoff control from expansive roof surface areas of buildings can be accomplished through living roofs. Living roof systems reduce the volume of stormwater flowing into streams and drainage channels, resulting in the control of sediment transport and overall soil erosion. Depending on rain intensity and living roof soil depths, between 15 to 90 % of the precipitation can be absorbed in soils and plantings, thereby considerably reducing runoff and potential pollutants from traditional impervious roofing surfaces. Plants intercept and delay rainfall runoff and the peak flow rate, and eventually return water to the surrounding atmosphere by evaporation and transpiration. Average runoff absorption rates are between 50 to 60%.

A living roof is a best management practice ideal for the urban setting, addressing specifically urban environmental and economic ills. In areas of commercial high-density, where pervious surface and open ground make up 10% or less of total surface area capable of absorbing or diverting storm water runoff, living roofs provide significant environmental and financial benefits, including:

*Continued on page 29.*

- Storm water management
- Moderation of the Urban Heat Island Effect
- Filtration of Airborne Particulate
- Provide Ecological Benefits

Living roofs are an important component of high performance building practices, which have recently emerged to address energy and environmental issues. Today, building development is driven almost exclusively by first-cost economics that do not factor in long-term energy, environmental, social, and occupant impacts. The net result of this approach to development has helped speed ecosystem degradation, both at the site and in remote places where energy is generated and where raw materials are extracted. It doesn't end once the building is built—today, occupants are exposed to increasing levels of toxins, lack of daylight, and poor indoor air quality (U.S. Green Building Council at http://www.usgbc.org). The global impacts of conventional building practices are staggering:

- 40 percent of the world's total energy use,
- 30 percent of raw materials consumption,
- 25 percent of timber harvest,
- 35 percent of the worlds CO2 emissions -- the chief pollutant blamed for climate change,
- 16 percent of fresh water withdrawal,
- 40 percent of municipal solid waste destined for local landfills, and,
- 50 percent of ozone-depleting CFCs still in use.

The dialogue between cultural expression and environmental conditions in architecture and construction has changed considerably in recent years. High performance building practices incorporate energy efficiency, water conservation, waste minimization, pollution prevention, resource-efficient materials, and improved indoor air quality to help conserve natural resources, improve environmental quality, and increase the long-term value of a project. Used interchangeably with sustainable, green, or healthy building, high performance buildings refer to design, construction, and operations that conserve resources and improve the performance of buildings and users.

Common features of high performance buildings include:
- Team collaboration during site selection, design, construction, and operation.
- Consideration of a project's true costs such as community and environmental impact, and long term maintenance and performance.
- System integration that results in greater mechanical systems efficiencies and human performance.
- Transit, pedestrian, and bicycle-friendly features and siting.
- Efficient and conservative use of natural resources.
- Native landscaping, water conservation, and on-site storm water management.
- Minimal site disturbance, including a modest building footprint.
- Climate-appropriate siting for maximum heating and cooling efficiency.
- Integration of reused or recycled materials during both construction and deconstruction.
- Adaptability for future flexibility, expansion, and building demolition.
- Energy efficient systems.
- Optimal indoor air quality and ventilation.
- Daytime reliance on natural lighting.

## Case Study: Compendium of Best Management Practices for Controlling Polluted Runoff

The control of polluted runoff can be a complex process. Polluted runoff may originate from more than one type of land use and from many sources, and may include a variety of contaminants, transported by different delivery mechanisms. Each of these variables complicates the search for a set of practices that will provide a cost-effective solution. The effectiveness of many management practices is determined by a variety of factors such as land use, site conditions, cost, and maintenance requirements. The strategic choice and placement of the appropriate practices or systems of practices in the watershed are critical to their success in reducing the input of individual pollutants and improving water quality.

There are many sources of information for the wide variety of management practices that can be used to protect, maintain, or enhance water quality. Much of the information in this document has been adapted from information developed by the U.S. Environmental Protection Agency. While much information is available, finding the best set of management practices for a particular problem can be a time-consuming and confusing process. Knowing how to select the most appropriate practices from among the many options available further complicates the process.

The Compendium is designed to provide the reader with an introduction to the process of characterizing a water quality problem an overview of the types of practices that can be used for water quality protection or remediation, and a discussion of the factors that should be considered when selecting practices. The remaining sections of this document provide information about the following land and water use sectors:

- Section 2. Agricultural Activities
- Section 3. Silviculture Activities
- Section 4. Hydrologic and Habitat Modification Activities
- Section 5. Mining Activities
- Section 6. Urban Activities/Storm Water Runoff
- Section 7. Transportation Activities
- Section 8. Marinas and Recreational Boating Activities

Included in each of these sections is an overview of the activities that can be sources of polluted runoff and the pollutants that they can potentially generate. The pollutants can potentially affect surface water and ground water. Both potential pathways must be considered in selecting the best approach to control pollution. Each section includes a discussion of the types of practices available to prevent or remediate pollution from the activities within that sector.

For each of the seven land and water use sectors, a list of pollutant control practices is provided in a table at the end of the section. These practices are organized by the category of activities to which they apply. For instance, biotechnical stabilization, a practice used to control sediment is located under the subheading of Active Mining in the table for Mining Activities. The list of practices is not all-inclusive and does not preclude the use of other technically sound practices.

# Case Study: The Caldwell-Karcher Design Charrette

Landscape design by the "Green" Team for the Caldwell-Karcher project area relies on and incorporates the existing irrigation canal and drain conveyance system throughout the site. The Green Team explored and examined ways of preserving the drains and canals—using them as a starting point—for expanding "green" infrastructure for streets, parks, schools, and residential neighborhood layout. Landscape design that is ecologically sensitive in the context of developing livable communities can be influenced by the historic rural heritage of the area.

The present land mosaic of the Caldwell-Karcher site is predominantly irrigated cropland and secondarily rural development. Suburbanization is encroaching from the north and large blocks of suburban development are scattered mostly on the northwest side of the project area. The landscape is hydrologically functional maintaining a shallow aquifer due to the irrigation canal and drain system. The conversion of this land mosaic that is predominantly rural to one more urban must consider the existing hydrogically functioning landscape otherwise, there is a real possibility of its loss altogether.

Land mosaics are comprised of patches, corridors, and a background matrix. Patches and corridors were integrated throughout the scale of both community and site. A patch is a relatively homogeneous nonlinear area that differs from its surroundings possessing several vital, potential functions including conversion, conduit, filter, assimilation, storage, and networking (1). Corridors are similar but contrast in being a linear feature. At the scale of the individual site, a patch and corridor function as solutions for natural drainage design (2). Some common examples are bioretention basins, bioswales, green streets, and green alleys.

The urban design challenge for the Green Team was to provide natural areas, open spaces, and green infrastructure systems which both increase ecological function as well as real estate and community value. Green Team design incorporated an interconnected system of neighborhood and parcel scale natural drainage design solutions including patches and corridors and wove them throughout the site. There are a number of suitable site natural drainage features for stormwater runoff management, differing from conventional best management practices in that they are adaptive, pre-tailored to inherent site functions. Special emphasis was made connecting corridors to patches in the form of schools, parks, small patches of community gardens, and urban agricultural sites to form an interconnected web of functional nodes.

## Continued... Case Study: Caldwell-Karcher Design Charrette

Small and large patches of land were preserved throughout the project area to encourage community gardens and urban agriculture. Not only are gardens and small-scale farming practices consistent for the site, but important in retaining a connection with cultural heritage and identity of the community. The benefits are many encouraging ease of access for residents, local sources of organic production in an urban area, and close proximity for ensuring fresh produce.

The general southeast-northwest trending irrigation system bifurcates the landscape corresponding to the natural topography and subsurface flow of the shallow aquifer in the area. Likewise, the urban development trends from most to least density, southwest to northeast, roughly corresponding to both the highest slope conditions and depth to ground water to the most gentle gradients and shallow water table column.

The Green Team focused on ways of preserving and restoring the natural hydrologic cycle of the project area. This was accomplished through design in a variety of ways throughout the proposed development. A diversity of stormwater infiltration facilities were used, designed so that they perform multiple functions by providing storm water infiltration treatment and serving as community landscape amenities.

For purposes of presentation, a survey of design solutions were grouped into the following five categories:

1) Using the site ecology
2) Creating functional landscapes
3) Minimizing impervious surfaces
4) Configurations fitting the landscape
5) Rainwater reuse

The integrative nature of a number of the solutions means that they fit into more than one of these categories.

The project for Boise River implementation is a collaborative effort with the University of Idaho Urban Research and Design Center (IURDC) in partnership with Idaho Department of Environmental Quality, Idaho Smart Growth, U.S. Environmental Protection Agency Region 10, and the interagency Northwest Regional Watershed Coordination Team.

# Field Evaluation Progress

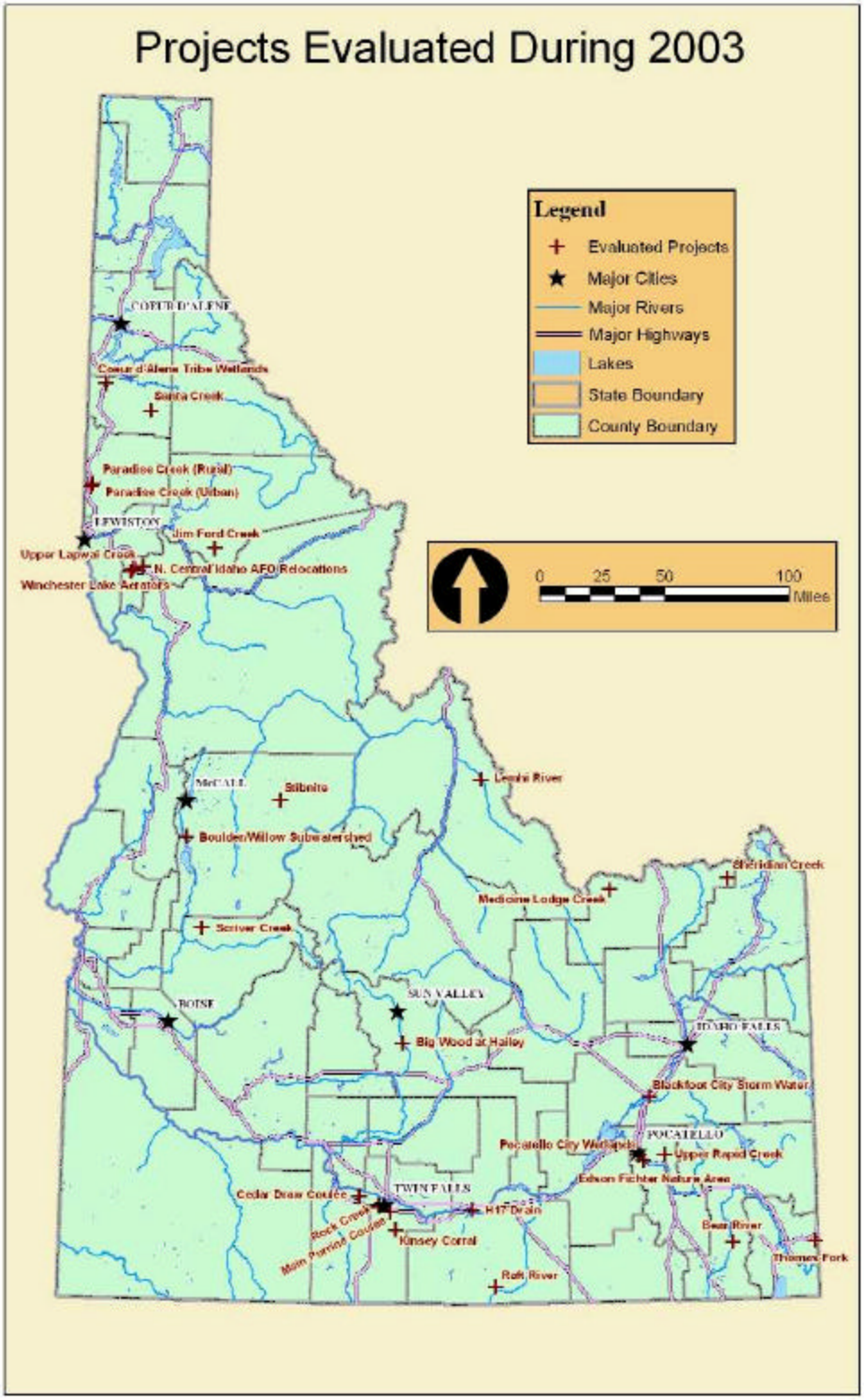
During summer and fall of 2003 staff from the DEQ State Office, Technical Services Division traveled to 25 geographical areas of Idaho to evaluate fieldwork related to 32 Non-point source (NPS) water quality enhancement contracts. These evaluations resulted in 28 individual reports with four projects including two contracts each. The project evaluations covered a variety of best management practices (BMPs) related to recognized NPS categories including agriculture, hydrologic habitat modification, transportation, and urban storm water runoff.

Four project areas -- the Jim Ford Creek Watershed Enhancement Project, the Thomas Fork Stream Bank Protection Project, the Medicine Lodge Creek Total Maximum Daily Load (TMDL) Implementation Project, and the Paradise Creek TMDL Implementation Project -- are highlighted in this year's annual report because they exemplify outstanding coordination, design and implementation. The 28 evaluation reports are summarized in Table 1. The 2003 Field Evaluation Progress Report can be viewed electronically on DEQ's website at http://www.deq.state.id.us/water/nps/FieldEvalReport_2003.pdf.

## Introduction

DEQ currently oversees approximately 50 NPS regional projects in Idaho. To assist in tracking, each project is assigned a contract number. If projects are extended to several years with additional tasks and funding, additional contract numbers may be assigned to a project area (see Table 1). To assure that the projects are completed in a timely manner and achieve their overarching goal of cleaning up and preventing NPS water pollution, all projects are subject to field evaluations by DEQ. The Nonpoint Source Program is mandated to field evaluate and establish the progress of at least half of all current projects annually. Therefore, over a two-year period all of the on-going projects will receive a field evaluation. During the summer and fall of 2003 staff from the DEQ State Office Technical Services division exceeded that goal by evaluating 32 of 50 on-going NPS contracted projects.

A map of locations shows the distribution of projects evaluated over the 2003 field evaluation season. Table 1 lists summary details of all 32 of the NPS contracted projects that were field evaluated during the summer and fall of 2003. These 32 projects (contracts) occurred at 28 sites around Idaho.


Projects Evaluated During 2003
Legend
Evaluated Projects
Major Cities
Major Rivers
Major Highways
Lakes
State Boundary
County Boundary
0 25 50 100
Miles
COEUR D'ALENE
Coeur d'Alene Tribe Wetlands
Santa Creek
Paradise Creek (Rural)
Paradise Creek (Urban)
LEWISTON
Jim Ford Creek
Upper Lapwai Creek
N. Central Idaho AFO Relocations
Winchester Lake Aerators
McCALL
Stibnite
Lemhi River
Boulder/Willow Subwatershed
Sheridan Creek
Medicine Lodge Creek
Scriver Creek
BOISE
SUN VALLEY
Big Wood at Hailey
IDAHO FALLS
Blackfoot City Storm Water
POCATELLO
Pocatello City Wetlands
Upper Rapid Creek
Edson Fichter Nature Area
TWIN FALLS
Cedar Draw Coulee
H17 Drain
Rock Creek
Main Purina Coulee
Kinsey Corral
Bear River
Thomas Fork
Raft River

## Creation of the Field Evaluation Process

DEQ used its list of NPS field project requirements to generate a detailed evaluation form for staff to use for field evaluations. For all projects the DEQ evaluator visiting the site carefully reviewed the project's subgrant agreement and made notes prior to going to the field. The evaluator routinely contacted the project manager to make arrangements to accompany the project manager, DEQ regional staff, and any other stakeholders to the field. In all cases the evaluation form was used as a guide to assure that all NPS requirements were being met in the field. A copy of the evaluation form is available upon request.

## Results of the 2002 Field Evaluation

DEQ evaluators traveled to 25 geographical areas of Idaho and evaluated 32 contracted projects during the summer and fall of 2003. Of the 32 contracts evaluated, 28 appear to be fully meeting their contractual obligations by demonstrating substantial progress toward completion of their designated tasks to reduce, eliminate or prevent NPS water pollution. Three contracts appear to be proceeding unsatisfactorily, and work on one contract has been delayed until next year.

### Unsatisfactory Projects

Two of the projects where unsatisfactory work is occurring include storm water BMPs at the City of Blackfoot and storm water BMPs at the City of Pocatello. During our evaluation of the Blackfoot projects (Contract Number S020) we learned that the Blackfoot Tribe which owns adjacent land, has elected to not let the City of Blackfoot use Indian land at the outflow end of both retention ponds involved in this project. This denial of land use will cause the storm water capacity of the one pond to be reduced considerably and will cause the other pond to not function as a flow-through facility as originally designed. No further 319 funds should be spent on either pond until this problem can be solved.

During our evaluation of the City of Pocatello's North City Park Wetland project we discovered that there appears to be problems with the proposed location of the bioinfiltration/wetland facility. It appears that the area selected for the wetland and bioinfiltration basin will not be maintainable without the installation of a costly irrigation system. An irrigation system would be required because the bottom of the proposed wetland would be situated too far above the water table for the wetland to be self-sustainable. It is also unclear whether the conveyance pipeline and outlet that has already been installed will work properly in a storm event. After discussing the project with DEQ engineers and

the city engineer it is suggested that no additional 319 funds be spent on this project until these issues have been resolved.

### Satisfactory Projects

The great majority of projects evaluated last summer and fall are proceeding satisfactorily. The project evaluations covered a variety of best management practices (BMPs) related to recognized NPS categories including agriculture, hydrologic habitat modification, transportation, mining, and urban storm water runoff.

Projects evaluated include irrigation water cleanup, wetland creation, and settling ponds in south-central and southeast Idaho. We evaluated Animal Feeding Operations (AFO's) relocations, stream bank restoration, and livestock exclusion in north-central Idaho. We evaluated abandoned mine dump restoration near yellow Pine Idaho. We evaluated pollution preventative measures in the watershed above Winchester Reservoir including low-till and no-till farming techniques, and lake water cleanup techniques in Winchester Reservoir including lake water aeration.

**Table 1. ACTIVE NONPOINT SOURCE PROJECTS THAT WERE FIELD EVALUATED DURING SUMMER/FALL 2003**

| Grant Year | Contract Number* | Project Name | Hydrologic Unit Number | Tasks or BMPs Evaluated | DEQ Region |
|---|---|---|---|---|---|
| 2000 | Q609 | Bear River Fencing and Riparian Enhancement | 16010202 | Stream bank stabilization, fencing, grazing plans, weed control | Pocatello |
| 2000, 2001 | Q607 and S020 | Blackfoot, City of, Engineered Wetland and Urban Runoff | | Two storm water retention ponds. | |
| 1998, 1999 | Q529 and Q366 | Coeur d' Alene Tribe Wetland Creation and Restoration/Lake Creek – Plummer | 1701030423 | Sediment control BMPs for dirt roads | Coeur d' Alene |
| 2003 | | Cedar Draw Coulee Wetland | | A series of three serpentine shaped ponds that will be interconnected with riparian wetland areas | Twin Falls |
| 2003 | S093 | Edson Fichter Nature Area | | Revetments, seeding along stream bank, restoration of 700 feet of meandering stream channel, installation of 300 feet of pipe to convey water to a settling pond, installation of a small settling pond | Pocatello |
| 1999 | S029 | H 17 Drain TMDL Implementation Plan | | 200 feet long and 50 feet wide Sediment basin installed at the bottom end of a six-mile long irrigation canal. Captures sediment from return irrigation water prior to discharge to Goose Creek and Snake River. | Twin Falls |

| Grant Year | Contract Number* | Project Name | Hydrologic Unit Number | Tasks or BMPs Evaluated | DEQ Region |
|---|---|---|---|---|---|
| 2002 | S055 | Hailey Big Wood River Improvement | 17040219 | Stream bank stabilization – 1300 feet, Rock drop structures – 4<br>Removed highway maintenance material that was adjacent to river,<br>Planted woody and grass vegetation along bank and filter strip<br>Removed illegal land fill including asbestos, Installed ½ acre settling pond/wetland used for normal river flow and for storm water runoff | |
| 2001 | S015 | Jim Ford Creek Watershed Enhancement | 17060306 | Road rocking and culvert installation,<br>6 miles of exclusion fencing, 9200 willow cuttings planted, 3300 lodgepole pine seedlings planted, 1100 dogwood seedlings planted,<br>2500 hawthorne seedlings planted,<br>100 alders, 100 cottonwoods, 200 spirea planted. One quarter mile of stream rehabilitation and re-alignment completed. | Lewiston |
| | | Kinsey Corral relocation Note: This project has been delayed and will be completed next year. | | We visited the current location of Kinsey corral and discussed the relocation and reclamation of the old site. We observed where 3,500 feet of exclusionary fencing will go to keep livestock out of McMullen Creek. We visited the site where the new corral will be built. | |
| 2002 | S054 | Lemhi Watershed TMDL Implementation | | Fencing, diversion berms, pipe line, water troughs, well | Twin Falls |
| 2003 | S079 | Maine Perrine Coulee Wetland | | Future site for a concrete diversion structure, a large (8 acre) settling pond and several wetlands. These features will treat 80 to 90% of all the water coming through Main Perrine Coulee. | Twin Falls |
| 2002 | S051 | Medicine Lodge CreekTMDL Implementation | 17040215<br>050100 | Willow Clumps, Willow pole plantings<br>Toe rock rip rap, Vertical bundles of willows, V-Notch weirs used for drop structures, Grass , Fencing. | Idaho Falls |

| Grant Year | Contract Number* | Project Name | Hydrologic Unit Number | Tasks or BMPs Evaluated | DEQ Region |
|---|---|---|---|---|---|
| 2001 | S039 & S??? | North-central AFO Relocation | | Project involves relocation of numerous AFOs belonging to 27 operators over five conservation districts. BMPs include corral relocations, hardened crossings, fencing, culverts and water troughs. | Lewiston |
| 1999 | Q562 | Paradise Creek (Urban) TMDL Implementation | 17060108 | Wetlands, stream channel restoration, extensive plantings, fencing, woody plant riparian buffers, wildlife habitat structures<br>stream bank stabilization, noxious weed control, flood plain restoration. | Lewiston |
| 2000 | Q605 | Paradise Creek (Rural) TMDL Implementation | 17060108 | Wetlands – 5 projects totaling 522,700 square feet within 11 wetlands, gully plugs, fencing – 16,000 feet, woody vegetation – 10,547 plants, herbaceous vegetation – 168,680 plants<br>stream bank restoration – 18,750 feet, noxious weed control, storm water bioinfiltration ponds, vegetated buffer – 685,364 square feet.. (Note: all figures are proposed amounts upon project completion) | Lewiston |
| 1997 | | Pocatello First Street Wetland | 17040208 | 3 acre combined wetland and retention/evaporation basin | Pocatello |
| 2001 | S022 | Pocatello North City Park Wetland | 17040208 | One small catchment basin has been constructed, conveyance pipeline and infiltration sump have been installed, a large bioinfiltration wetland basin could be constructed in an oxbow to the Portneuf River | Pocatello |
| 1999 | Q508 | Raft River Riparian and Watershed Demonstration | | Rock crossings, 20-rock drop structures, stream bank stabilization revetments, 12 diversion structures, 12 weirs, 12 concrete irrigation return flow structures, plantings including willows and grass, grazing management | Twin Falls |
| 2001 | S023 | Rapid Creek Riparian Project | | Water well and pump, corral modification, pipeline, water troughs, 1,500 feet of fencing, stream bank restoration, grass and woody plantings | Pocatello |

| Grant Year | Contract Number* | Project Name | Hydrologic Unit Number | Tasks or BMPs Evaluated | DEQ Region |
|---|---|---|---|---|---|
| 2001 | S026 | Rock Creek Restoration | 17010304 | Two storm water detention ponds, stream bank sloping and stabilization geo-matting, seeding, trees, shrubs, sprinkler system, installation of 5000 yards of topsoil, removal of old concrete from a two acre area, installation of two pedestrian bridges across rock Creek | Twin Falls |
| 2001 | S024 | Santa Creek Stream Bank Restoration | 17010304 | Electric fencing, hard crossings , re-vegetation along stream bank including wild rose, willow, aspen, thin leaf alder, syringa, wild apple, white pine, ponderosa pine, Douglas fir, and larch | Coeur d' Alene |
| 1999, 2000 | Q564 and S009 | Scriver Creek Watershed Roads and Forested Lands | 17050112 | Sediment control BMPs for dirt roads including culverts, gravel road base, road sloping, ditches, two sediment collection/measuring boxes | Boise |
| 1996 | Q444 | Sheridan Creek Restoration | 17040202 | Nine large diversions have been completed, (one remains to be completed), 14 miles of fencing, 10 rock check dams, six culverts<br>numerous rock drop structures, 0.5 mile of riparian plantings along stream banks, one water well | Idaho Falls |
| 2003 | | Stibnite Mine Meadow Creek Restoration | | Two sub-project areas include the Glory Hole project and Meadow Creek area. Glory Hole BMPs include relocation and stabilization of mine tailings, adj. To Meadow Creek. Meadow Creek BMPs include construction of a large composting operation, application of compost to reclaimed mine waste piles, additional reclamation of mine waste piles, installation of stream bank plantings. | Boise |
| 2001, 2002 | S016, and S053 | Thomas Fork Stream Bank Protection | 16010102 | Numerous rock barbs, 13,267 feet of stream bank sloping and rip-rapping, 13,267 feet of stream bank plantings including grass and woody vegetation, 10,000 of fencing, drop fencing for variable flows, one 18 foot wide and 66 foot long bridge across Thomas Fork River, one manure separator, one wetland complex | Pocatello |

| Grant Year | Contract Number* | Project Name | Hydrologic Unit Number | Tasks or BMPs Evaluated | DEQ Region |
|---|---|---|---|---|---|
| 2000 | Q606 | Willow /Boulder Creeks BMP Implementation | 17050123 | Fencing, Hardened crossings, trees and scrubs, stream bank restoration and stabilization, cattle exclusion, pest management | Boise |
| 2002 | S043 | Winchester Lake In-Lake Phosphorous Reduction | 17060306 | Five electric powered aerators installed on Winchester Lake, one fish cleaning station | Lewiston |
| 1999 | S011 | Winchester Lake Upper Lapwai Creek Watersheds | 17060306 | Nine fish friendly culverts, filter strips between cultivated fields and dirt roads, no-till farming techniques applied to 30% of all cultivated fields, reduced till farming techniques applied to 60% of all cultivated fields, grass planted in intermittent waterways | Lewiston |

* More than one contract number for a project indicates that additional funding was later granted for additional tasks

# Implementation Status and Tracking

The TMDL schedule has increasingly become the source of deriving state water quality priorities and targeting watershed restoration activities. Integration of efforts and coordination of technical and financial assistance to public watershed groups and landowners has been a primary focus of these efforts and for the NPS Program. There have been increasing other drivers coming into play for implementation activities. In particular, ground water and drinking water protection activities.

The Source Water Assessment Program is gearing down from several years of effort and a transition has begun toward source water and drinking water protection. The Drinking Water Protection Program is looking to transition toward on-ground implementation activities that best puts the State Revolving Fund set-aside toward drinking water protection activities. The challenge is to be able to both fund full-time protection work in each of the regional offices at least a full-time equivalent, but also provide pass through grant dollars to on-ground implementation activities associated with public water systems. Limitations with set-aside dollars prohibit protection activities on surface water public drinking water systems.

Implementation plans are expected to reflect unique circumstances of a watershed. A genuine effort is expected to fully account for waterbody impairment or speak toward preventing those impairments. The implementation plan should provide a foundation for demonstrating that state water quality standards will be attained, maintained, or prevented through management measures and activities. The guidance revolves around the premise of fully accounting for a combination of sources: both point sources and non-permitted nonpoint sources, in the implementation plan. The state is hence moving to encourage adaptive management approaches for implementation activities.

### Elements of the Implementation Plan

A comprehensive implementation plan should contain specific information, some of which may have been developed for a TMDL or concurrently with the TMDL. It is completely appropriate that the implementation plan rely on information from the TMDL or a source water assessment, given that the implementation plan essentially describes how the pollution reduction targets are to be achieved.

The implementation plan may use an adaptive management approach. Although adaptive management has many meanings, it usually includes an

understanding that nothing is certain. That is, uncertainty is inherent in all systems and should be built in at the bottom level as a foundation of the implementation plan. The flexibility recognized through an adaptive management approach should be shared through a good faith effort on the part of all involved stakeholders.

The overall expectation is to strive for integrating elements on multiple levels by tying them together through feedback mechanisms. An adaptive management approach allows flexibility to constantly evaluate and make iterative changes to key load reduction activities, which are tied to specific milestones throughout the implementation schedule set within context of stated watershed priorities and goals.

For impaired waterbodies that are affected by nonpoint sources, those sources not subject to permit, DEQ expects that the implementation plan will rely predominantly on the 1999 *Idaho Nonpoint Source Management Plan* and the updated "Memorandum of Understanding for Implementing the Nonpoint Source Water Quality Program in the State of Idaho" for reasonable assurance. Nonpoint source implementation actions that are part of the TMDL load allocation rely on approved management measures. The seven sectors expected to be covered in an implementation plan as appropriate include (1) agriculture, (2) silviculture, (3) mining, (4) urban runoff, (5) transportation, (6) hydrologic and habitat modification, and (7) ground water.

Tracking and reporting tools which allow monitoring of progress in TMDL implementation plan activities may be useful for documenting accomplishments and providing a comparison with projections of water quality improvement. The basic components of the implementation plan to be managed are the BMPs and pollution reduction projects that are the essential ingredients of the plan. Tracking individual projects, target dates for construction, costs, sources of funding, expected pollutant removal performance, actual pollutant removal performance, and so on, may provide useful information for sustained management and administration of the TMDL implementation plan.

For impaired waterbodies that are affected by a combination of both point sources and nonpoint sources implementation plans should include all elements. Implementation plans with both types of sources should specify the extent to which each will achieve the expected load allocation reduction. This accounting of source types can document tradeoffs between wasteload and load allocations that are expected during implementation. Flexibility is encouraged to promote local strategies to accommodate the combination of factors. The implementation plan will be approvable as long as the wasteload and load allocations together will ultimately achieve the TMDL.

Further, an implementation plan should describe, at a level of detail appropriate to the unique circumstances of the watershed, necessary key load reduction activities. Implementation plans provide a foundation for demonstrating that state water quality standards will be attained and maintained through pollution controls tailored to the local circumstances of the watershed. An effective implementation plan is not limited to, but should always include these core elements:

(1) Clearly stated watershed **priorities** and goals for implementation,
(2) A description of key load reduction **activities** (e.g., best management practices and performance measures) and expected level of load reductions,
(3) An estimate of the amounts of technical and **accountable** financial assistance, associated costs, and sources of existing **authorities** that will be relied upon for implementation,
(4) Tracking and reporting tools of choice: **monitoring for results** and effectiveness toward TMDL load reduction targets.
(5) Associated **costs and benefits** for key load reduction activities that serves as a prioritization of measurable milestones,
(6) A description of interim, **measurable milestones** (to provide checkpoints for assessing implementation effectiveness) **and schedule** for implementation with anticipated start and finish dates of individual measurable milestones,
(7) **Levels of participation** and responsible parties for individual measurable milestones (designated agencies and specific sources, where possible),
(8) **Feedback loop provision** showing how a given project fits into the larger-picture watershed framework,
(9) Approximate time required to reach water quality objectives or the **beneficial use attainment**,
(10) An **information and education** component that involves and engages the public on multiple levels throughout the process (preferably tied into schedule as interim measurable milestones),

**Tracking Implementation Activities**

Implementation plans address pollution problems systematically by identifying those problems, ideally linking them to watershed priorities and management practices, and establishing measurable objectives for water quality improvement within a designated schedule. A two-pronged approach is thus preferred: place the TMDL allocation *reductions* into practice on the ground and also consider ways concurrently to *prevent* future water body impairment as practicable. The same approach applied for drinking water protection with reducing and preventing high-risk contaminant sources. In preventing future impacts, the opportunity for accounting for future growth and the potential for

resultant reductions should be fully explored and incorporated into an overall implementation plan.

Activities for TMDL implementation are being tracked statewide by the Nonpoint Source Management Program (Appendix 4).

# Grant Management

## FY2003 §319 Projects

**Project 1.** Core Program - NPS Program Implementation and Urban NPS
**Sponsor:** Idaho DEQ
**§319:** $226,920
**State:** $151,280

**Description:** A multiyear work plan providing funding for watershed NPS management and TMDL implementation activity coordination, local project grant management and administration, statewide program and grants information, education, and training, program guidance and development.

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**Project 2.** Core Program—Regional Office Support for Implementing the NPS Program
**Sponsor:** Idaho DEQ
**§319:** $165,000
**State:** $110,000

**Description:** The DEQ is spreading two (2) full-time equivalents among the six regions to implement the NPS Program and provide incentive to encourage and improve regional project delivery.

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**Project 3.** North Idaho AFO Relocation Phase 2 (S069)
**Sponsor:** Lewiston Regional Office
**§319:** $144,149
**Local:** $
**Status:** 50% completion

**Description:** Relocating animal feeding operations throughout a five county area encompassing the Clearwater River basin.

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**Project 4.** Upper Thomas Fork Stream Restoration (S070)
**Sponsor:** Bear Lake Regional Commission
**§319:** $68,580
**Status:** 15% Completion.

**Description:** Continued support to restore additional channel along Thomas Fork.

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**Project 5.** Cumulative Watershed Effects Analysis (S071)
**Sponsor:** Idaho Dept. of Lands
**§319:** $118,412
**Status:** 75% Completion

**Description:** Collection and monitoring of data in Northern Idaho in forested watersheds to assist TMDL development.

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**Project 6.** Tammany Creek Watershed Implementation (S072)
**Sponsor:** Nez Perce Soil and Water Conservation District
**§319:** $100,800
**Status:** 5% Completion.

**Description:** Implementation of the approved Tammany Creek TMDL.

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**Project 7.** Blue Creek Bay Water Quality Improvement (S073)
**Sponsor:** East Side Highway District
**§319:** $43,650
**Status:** 5% Completion.

**Description:** Relocation of the Sunny Side Road adjacent to Lake Coeur d'Alene, which provides a significant amount of sedimentation and nutrients.

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**Project 8.** Weiser Water Quality Protection (S074)
**Sponsor:** Weiser Soil and Water Conservation District
**§319:** $280,000
**Status:** 60% Completion, anticipated completion this summer.

**Description:** Developing management plan for area driven by local stakeholder committee involving the Boise Regional Office.

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**Project 9.** Pack River Watershed Sediment Reduction (S075)
**Sponsor:** Bonner Soil and Water Conservation District
**§319:** $9,910

**Status:** 5% Completion.

**Description:** Replacing a culvert causing major sedimentation downstream.

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**Project 10.** S. Fork Palouse River Restoration Phase 1 (S076)
**Sponsor:** Palouse Clearwater Environmental Institute
**§319:** $255,767
**Status:** 80% Completion.

**Description:** River restoration on property adjacent and within the Moscow city limits.

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**Project 11.** Mud Creek BMP Implementation (S077)
**Sponsor:** Tamarack Resort on Lake Cascade and Valley S&WCD.
**§319:** $77,849
**Status:** 10% Completion, anticipated completion this summer.

**Description:** Implement BMP activity in the Mud Creek Subwatershed of the Cascade Reservoir TMDL.

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**Project 12.** Lakeshore Drive Sediment Reduction (S078)
**Sponsor:** City of Cascade
**§319:** $57,025
**Status:** 5% Completion.

**Description:** Improve 0.8 miles of road adjacent to Cascade Reservoir.

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**Project 13.** Perrine Coulee Wetland Management (S079)
**Sponsor:** Snake River Soil and Water Conservation District
**§319:** $44,600 (addendum $16,000)
**Status:** 90% Completion.

**Description:** Design and construct pretreatment and primary treatment facilities for the Perrine Coulee prior to discharging to the Snake River.

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**Project 14.** Goldfork Subwatershed BMP Phase I (S080)
**Sponsor:** Valley Soil and Water Conservation District

**§319:** $114,835
**Status:** 80% Completion.

**Description:** Implement BMP activity in the Goldfork Subwatershed of the Cascade Reservoir TMDL.

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**Project 15.** Panhandle Bioretention Basin Demo (S081)
**Sponsor:** Panhandle Health District
**§319:** $102,227 (addendum $23,000)
**Status:** 95% Completion.

**Description:** Demonstration of bioretention technology in Northern Idaho.

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**Project 16.** Cedar Draw/F Coulee Treatment Wetland (S089)
**Sponsor:** Balanced Rock Soil & Water Conservation District
**§319:** $25,000
**Status:** Project just initiated in fall 2003.
**Description:** To construct primary and secondary treatment of canal irrigation water from the Cedar Draw and F Coulee prior to its ultimate discharge to the mid Snake River.

**Project 17.** Edson Fichter Nature Area Treatment Wetland (S093)
**Sponsor:** Idaho Fish and Game Department
**§319:** $111,240
**Status:** 75% Completion.

**Description:** To reconstruct the stream channel along the Portneuf River in Pocatello and provide adjacent wetland storage and treatment as part of a state park amenity and education center for the public.

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**Project 18.** Camas Prairie Groundwater Nitrate Reduction (S094S)
**Sponsor:** Lewis Soil and Water Conservation District
**§319:** $81,997
**Status:** 5% Completion.

**Description:** No-till direct seed applications and monitoring to determine field effectiveness.

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**Project 19.** Santa Creek TMDL Implementation (S095S)
**Sponsor:** Benewah Soil & Water Conservation District
**§319:** $87,058

**Status:** Project just initiated in fall 2003.
**Description:**

**Project 20.** Urban Livestock BMPs
**Sponsor:** City of Lewiston and Lewiston 4-H Club
**§319:** $15,500
**Status:** Project just initiated in fall 2003.

**Description:**

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**Project 21.** Lower Payette River TMDL Implementation (S098S)
**Sponsor:** Gem Soil & Water Conservation District
**§319:** $211,320
**Status:** 15% Completion.

**Description:** Implement the Lower Payette River TMDL.

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**Project 22.** Cottonwood Creek TMDL Implementation (S099S)
**Sponsor:** Idaho County Soil & Water Conservation District
**§319:** $247,974
**Status:** Project just initiated in fall 2003.

**Description:** Implement the Cottonwood Creek TMDL.

**Project 23.** Tammany Creek Restoration (S100S)
**Sponsor:** Nez Perce Soil & Water Conservation District
**§319:** $78,419
**Status:** Project just initiated in fall 2003.

**Description:** Implement the Tammany Creek TMDL.

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**Project 24.** Meadow Creek Restoration Phase 1
**Sponsor:** Internally administered through DEQ Waste Office Division
**§319:** $350,000
**Status:** 25% Completion.

**Description:** Mining reclamation and stream channel restoration work in the upper Salmon involving multiple state and federal partners.