

## PREFACE

This report is written to comply with Subsection 319(h)(11) of the Clean Water Act (CWA), which requires each state to report to the United States Environmental Protection Agency (EPA) on an annual basis regarding (A) its progress in meeting milestones listed in the 2015-2019 Nevada Nonpoint Source State Management Plan; and (B) to the extent appropriate information is available, reductions in nonpoint source (NPS) pollution loading, and improvements in water quality resulting from implementation of the management program.

The report documents the activities and accomplishments of the Nevada Division of Environmental Protection (NDEP), Nonpoint Source Pollution Management Program (NPS Program) and other state, federal, and local agencies in addressing NPS issues in Nevada. The reporting period for these activities, **July 1, 2014 through June 30, 2015**, coincides with the State Fiscal Year (SFY) 2015. During this time the NPS Program operated under the Federal Fiscal Year (FFY) 2013 work plan and funding (Grant C9-979081-14). Activities referenced, including the preparation of this report, were funded through Subsection 319(h) of the Clean Water Act (CWA) via the EPA. All tasks delineated in this quarterly report support the EPA's Strategic Goal 2: Protecting America's Waters and EPA's Objective 2.2: Protect and Restore Watersheds and Aquatic Ecosystems.



## Nonpoint Source Pollution in Nevada

Nonpoint source (NPS) pollution is the leading cause of water quality impairments in Nevada. Unlike point source pollution from industrial pipes or sewage treatment plants, NPS pollution comes from many diffuse sources as water from rain, snowmelt, or irrigation flows over the landscape. The water picks up natural and man-made pollutants from lawns, roads, parking lots and fields and deposits them into rivers, streams, lakes, wetlands and groundwater. Typical NPS pollutants include sediment, fertilizers, salts, bacteria, metals, petroleum products and organic materials.

Addressing NPS pollution in Nevada is challenging due to legacy problems of hydrologic modification, riparian habitat destruction, and flow alteration; as well as contemporary issues related to urban runoff and other land uses. As the lead agency for addressing nonpoint source pollution in Nevada, NDEP coordinates, collaborates, builds and maintains key partnerships with a wide variety of local, state and federal agencies, tribes, environmental organizations, educational institutions and private landowners to effectively address these impacts.

The 2015-2019 Nevada Nonpoint Source Management Plan (2015-2019 Plan) establishes how NDEP will work with partners to address NPS pollution over the next five years. The 2015-2019 Plan formalizes Nevada's approach for protecting and improving water quality and describes the goals, short and long term objectives, milestones and timeframes to guide activities, and measures for tracking success. Reductions in NPS pollution will be accomplished with partners through a combination of technical and financial assistance, training, education, planning and implementation of water quality improvement projects.

The 2015-2019 Plan continues successful strategies introduced in previous plans, such as focusing resources on priority watersheds and environmental education, and provides for enhanced coordination to identify the most effective methods to address NPS pollution. The Plan incorporates the "Key Components of an Effective State Nonpoint Source Management Program" as identified in the *Nonpoint Source Program and Grants Guidelines for States and Territories* issued by EPA on April 12, 2013. This report discusses activities performed under the newly adopted Plan through June 30, 2015.

### Overarching Principles

The NPS Program operates under several overarching principles to achieve its goals.

- ◆ Managing Nevada's water resources for the benefit of people, agriculture and other industries, aquatic life and wildlife requires the collective effort of local, state and federal agencies, environmental organizations, businesses and private citizens.
- ◆ The NPS Management Program in Nevada is non-regulatory. Voluntary participation on the part of public agencies and private landowners is key to program implementation for the control of NPS pollution and water quality improvement.

- ◆ Successful nonpoint source control projects are locally led. This bottom-up approach is paramount to addressing NPS related water quality problems.
- ◆ A variety of tools are available to address NPS related problems including total maximum daily loads (TMDLs), TMDL implementation plans, watershed based plans and straight to implementation projects. The appropriate action will be determined on a site-specific basis depending on the nature of the problem and the extent of local commitment for addressing the problem.
- ◆ NPS-related water quality impairments are complex and difficult to address over the short term. Therefore, the newly adopted Plan focuses on incremental improvements as measured by pollutant load reductions, feet of riverbank stabilized or acres of riparian areas planted. Incremental progress leads to improved watershed conditions.
- ◆ Water quality improvements cannot be achieved without support and participation of an educated and motivated public. Providing NPS education to stakeholders in a watershed is necessary to establish a foundation whereby policies and projects that improve and sustain the State's limited water resources are implemented.

### **State Management Plan Update**

The 2015-2019 Plan was updated and submitted to EPA for review and approval on November 21, 2014. On February 5, 2015, NDEP received EPA approval for the updated 2015-2019 Plan.

### **National Water Quality Initiative (NWQI)**

The Natural Resources Conservation Service (NRCS) identified priority watersheds through discussion and coordination with NDEP. NRCS is focusing their efforts on three HUC watersheds in the Carson River basin; including Sheckler Reservoir, the South Branch of the Carson River and Stillwater Marsh. While NDEP feels that the proposed NWQI project has merit based on the types of land uses being addressed, circumstances are not aligned to assess the effects of conservation practices in these HUCs and surface water quality monitoring is not an appropriate NDEP activity for the following reasons:

The

- Surface flows in this region are highly manipulated as part of the U.S. Bureau of Reclamation Newlands Project for the irrigation of about 55,000 acres and the maintenance of significant wetland resources. The main surface flows enter the area via the Carson River from the west, but are then conveyed throughout the region with a complex network of man-made canals, drains, lakes and reservoirs in addition to the natural waterbodies. As a result, there is great uncertainty as to where a particular parcel of water will ultimately drain, and too many possible flow paths exist to allow for efficient monitoring.
- There is insufficient baseline data to evaluate the relevant parameters and getting baseline data would be very difficult considering the system complexity. NDEP does not currently monitor any sites in the area, except directly below Lahontan Dam.

- Due to confidentiality concerns, the location of any new conservation practices will not be disclosed to NDEP. Given the complex hydrology in this region, it is not feasible to design an effective monitoring strategy to assess the effects of a project where the location is unknown.
- It appears that the projects/conservation practices will not be proposed in any targeted fashion. NRCS can only implement projects where there are willing landowners or producers, which may not lead to a directed approach that can be effectively monitored.
- The Proposed Monitoring Selection Criteria recommend that the watersheds selected ideally would have a TMDL or watershed plan in place which is not the case in this area. The Criteria also suggest that significant conservation practice implementation is expected. Based on the information provided by NRCS significant practices are not going to be implemented.
- There are no existing monitoring partnerships with NRCS or other agencies in place in the selected HUCs. The Nevada State NRCS office and NDEP do not intend to enter into a conservation memorandum of agreement.

As described, it is not possible for NDEP to develop or implement an effective monitoring program to characterize the water quality impacts of NWQI projects in Nevada; therefore in-stream monitoring was determined to be infeasible for the project. Nevada NPS staff met several times with NRCS staff to coordinate regarding the National Water Quality Initiative. Staff met with NRCS to discuss monitoring techniques and parameters that would be assessed to determine success of the effort.

### **Prioritization Framework for 303(d) Listed Waters**

NDEP staff evaluated waters listed in the 2012 Integrated Report to determine a framework to prioritize restoration efforts. This evaluation was in accordance with EPA's December 2013 document called A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (303(d) Vision). One of the goals of the vision addresses the prioritization of impaired watersheds or waterbodies for the development of TMDLs or alternative plans (watershed-based plans, etc.) to address these impairments. NDEP evaluated the numerous listings and determined that prioritization based upon a selected set of pollutants would best serve the water quality management programs in Nevada. For the 2016-2022 Vision Prioritization, NDEP will focus on impairments due to: nutrients (nitrogen and phosphorus), temperature, sediment (turbidity and total suspended solids), and bacteria (E coli and fecal coliform). All other impairments will be assigned a low priority. It is believed that many of these selected impairments will be easier to address than with other impairments, such as toxics.

The approach, applied to NDEP's 2012 303(d) list, led to a ranked list of 89 waterbodies (124 waterbody-pollutant combinations.) It is expected that the 2016-2022 Vision priority waters will be one or two waters selected from the ranked list. However, just because waterbody-pollutant impairment ranks high doesn't mean it would be the best place to focus efforts. Public interest to implement projects is necessary to lead to real environmental improvements. NDEP staff is working to identify any interested parties and

associated TMDL/Alternatives. The Prioritization list is being shared with key stakeholders to select small watersheds to focus integrated restoration activities. One potential stakeholder group is the Nevada Sagebrush Ecosystem Program (NSEP), established to protect and enhance the sagebrush landscape for use by the potentially threatened and endangered listed Greater Sage Grouse. For discussions with this group, NDEP staff put together a map showing the Ranked Waters against NSEP's management categories. The Humboldt Basin Watershed has several 2016-2022 Vision priority waters that are being discussed as possible foci for efforts. Several of the listed waters fall within their core management areas that may prove critical for collaboration. This activity met Water Quality Objective B: Prioritized impaired waters for restoration activities and resources in the State Management Plan.

### **Reporting Environmental Progress**

NDEP is committed to reporting environmental improvements that result from nonpoint source projects. It is important for incremental progress to be described and reported adequately to tell the story of Nevada's nonpoint source program. A list of environmental indicators was created by NDEP staff to adequately demonstrate changes. These indicators include integrating pre- and post-site conditions through data gathering such as establishing photo points, making a detailed site assessment and evaluating success of project post-implementation. For education programs, success will be evaluated through implementation of a logic model, pre- and post-knowledge statistics, attendance and self-evaluation of likelihood of environmental behavior change, and other metrics as they are determined.

All new projects will have specific indicators written into their project contracts and scopes of work to ensure that all 319(h) projects will have adequate reporting of environmental improvements. A workgroup will be developed to further assess how identified environmental indicators will be measured to best determine short and long term results of each project. Indicators and measurement methodology will be based on type of project and checklists will be created to assist NPS staff and contractors in the proper collection and reporting of this data. The workgroup will develop recommendations for the appropriate indicators, measurement methodology and reporting mechanisms to best demonstrate environmental improvements in incremental success stories reported to EPA on an annual basis. Success will be determined by a project's ability to demonstrate progress through measurement of the appropriate indicators.

### **Fiscal Summary**

Grant C9-97908110 (FFY 2009) terminated in September, 2014. All funds were expended. FFY 2014 funds were obligated through the SFY 2014 Request for Proposal process (in the fall of 2014). Eighteen projects were funded in the amount of \$1,074,071.

A Request for Proposals (RFP) was announced in July and closed in September 2014. The awardees were as follows:

**Table 1: 2014 319(h) Awardees**

### Implementation Projects

Applicant	Project Title	319 Funding
Eureka Conservation District	Simpson Creek Ranch off Stream Watering Facilities	\$8,550
Tahoe Regional Planning Agency	Lake Tahoe TMDL BMP Installation and Maintenance	\$190,000
Kingsbury General Improvement District	Kingsbury GID Bulk Abrasive Spreader and Brine Maker	\$144,000
Carson Water Subconservancy District	Carson River Coalition Watershed Coordination Program	\$140,936
Dayton Valley Conservation District	Middle Carson River Streambank Stabilization Projects	\$175,000
Nevada State Parks/Nevada Division of Forestry	Big Bend State Park Tamarisk Removal and Revegetation	\$12,966
Carson City Open Space	Ash Canyon Erosion and Sediment Control 2014-2015	\$10,000

### Public Education Projects

Applicant	Project Title	319 Funding
Carson Water Subconservancy District	Carson River Watershed Environmental Education Program	\$111,965
Great Basin Outdoor School	Tahoe Water Quality Education and Action	\$63,690
Clark County Water Reclamation District	Clark County NPS Pollution Outreach and Education Program	\$54,294
Sierra Nevada Journeys	Sierra Nevada Journey's Watershed Initiative	\$70,219
Southern Nevada Water Authority	Initiatives to Reduce NPS Pollution in So. NV 2015-2016	\$92,450

## Nonpoint Source Program Accomplishments

### Priority 1: Support/Grow Existing Local Watershed Efforts

The NPS Program has established effective long-term relationships with agencies, organizations and the private sector. NDEP strengthened these partnerships for continued implementation of water quality improvement and environmental education projects including:

- ◆ Carson Water Subconservancy District for implementation of the Carson River Adaptive Stewardship Plan;
- ◆ Douglas County, Washoe County and Nevada Department of Transportation for implementation of the Lake Tahoe TMDL;
- ◆ Southern Nevada Water Authority and Las Vegas Wash Coordination Committee for implementation of the Las Vegas Wash Comprehensive Adaptive Management Plan;
- ◆ Humboldt Watershed Cooperative Weed Management Area Watershed Coordinator; and
- ◆ Conservation Districts including Carson Valley, Dayton Valley, Smith Valley and Mason Valley for implementation of bank stabilization, riparian habitat restoration and environmental education projects.

The NPS Program continued to build relationships as outlined in the 2015-2019 Plan. Specific information regarding activities is reported below under each watershed, and more detailed information is attached in the funded project updates.

### Priority 2: Establish New Partnerships

Since the 2015-2019 Plan was approved in February 2015, the NPS Program has met with a multitude of agencies including the NDEP Integrated Source Water Protection Program (ISWPP), U.S. Bureau of Land Management (BLM), U.S. Forest Service (USFS), NRCS, Trout Unlimited (TU), The Nature Conservancy (TNC), Nevada Sagebrush Ecosystem Program (SEP), and Nevada Association of Conservation Districts and Tribes and many private land owners. These meetings are focused on creating strategies to coordinate between programs and leverage funding.

Many of these meetings are held in rural Nevada and were convened for various reasons, including the potential listing of the Greater Sage Grouse on the Federal Endangered Species list. NPS staff has developed relationships with various members of different agencies and have been added to mailing lists and invite lists for these important meetings. There is a strong nexus between managing for the Greater Sage Grouse and nonpoint source goals. It was determined that the grouse are highly dependent on riparian areas for cover and forage during the brooding stage. Therefore, NPS staff has been communicating with various resource agencies involved with management of the grouse and private land owners to determine riparian

areas to manage in ways that meet the needs for all involved. These agencies include BLM, SEP, the Nevada Conservation District Program, the Stewardship Alliance of Northeast Elko (SANE), Nevada Department of Wildlife (NDOW), US Fish and Wildlife Service (USFWS) and others. More information about the development and trajectory of these efforts is listed under various subheadings below. These relationships are poised to result in on-the-ground projects.

Outcomes from these meetings include development of partner lists and follow-up meetings, and a growing contact list to distribute NDEP's 319(h) annual Request for Proposals (RFP). The ultimate outcome will result in partnering on projects that further aligned program goals.

### **NDEP Integrated Source Water Protection Program (ISWPP)**

NPS staff met with ISWPP on three separate occasions and attended the Ground Water Protection Task Force meeting. Focus of the meetings was to outline areas where shared goals could be realized through leveraging programs. The ISWPP aligns with the NPS Program in that the main interest is prevention of water quality pollution of groundwater. Because of the nexus between surface and groundwater, it is important that these NDEP programs communicate and cooperate to ensure that both program goals are met. It was discussed that contracts for both programs would incorporate components ensuring identification of opportunities to meet both program goals. One example of this is identifying if a nonpoint source implementation project overlaps with a wellhead protection area or is in a community developing their Source Water Protection Plan. Conversely, nonpoint source issues can be identified through community planning efforts for Source Water Protection Plans; for example, if there is potential for groundwater contamination identified in the Plan resulting from nonpoint sources, a project may be identified for 319(h) funding. Communication continues between the two programs' staff and opportunities will be identified through an action plan. The action plan shall be developed and completed December 31, 2015. Next steps will include implementation of the action plan, including identifying both education and implementation projects that address both surface and ground water goals.

### **BLM/UNCE/PFC Coordination**

NPS staff has engaged BLM staff through many various meetings. Through these meetings, including meetings for SANE, Proper Functioning Condition (PFC) trainings and field exercises and other resource agency events, NPS staff has coordinated with BLM staff to identify common goals between various programs. There are several clear alignments between the agencies. These include management of riparian areas on BLM-owned allotments, management of the Greater Sage Grouse on BLM lands which incorporates riparian land management, and coordination with private producers that graze on BLM and private lands. During these meetings, staff met and discussed opportunities to fund in cooperation with BLM. Relationships are being built and opportunities such as 319(h) funded off-riparian watering sources, riparian riders, riparian restoration and PFC implementation are being pursued. Specific areas of focus include subwatersheds within the Humboldt Basin watershed such as Susie Creek and Maggie Creek. An exhaustive field trip of BLM projects and projects on privately held land was attended by multiple agency representatives including BLM, USFWS, NDOW, and private land owners. New relationships were forged during this two day event and ideas for opportunities to align were discussed, including determining where private land owner, BLM, USFWS and NDEP goals are in the same subwatersheds prioritized through the recently completed 2016-2022 Vision priority waters.



Additionally, NPS staff reviewed BLM's Carson District Management Plan and provided input through coordination with Carson Water Subconservancy District (CWSD) staff. Staff coordinated with BLM and University of Nevada Cooperative Extension (UNCE) to share PFC data and determine where NPS staff can cooperate in surveys. Staff attended PFC training. Outcomes include better coordination and future identification of projects. Staff attended the annual PFC meeting and provided planning input for the year's PFC activities. Staff attended PFC training for the new protocol designed for resource professionals. Staff strategized with agency folks about the PFC field season and coordinated to share data that will be utilized for watershed planning in conjunction with grouse projects. The data will be utilized to focus on subwatersheds to find willing partners and implement projects. NDEP staff coordinated with UNCE staff to obtain the results of all field season parameters gathered. UNCE staff is focusing on various subwatersheds of the Humboldt Basin watershed, which aligns with the TMDL visioning and the reprioritized waters list.

## USFS

NPS staff held a "summit" with USFS staff from Region 5 and the Humboldt Toiyabe National Forest (HT) as well as the USFS/NDEP Coordinator. Agency staff discussed our goals and compared programs and priorities to determine areas to coordinate. NPS staff followed up with the regional and the HT hydrologist to coordinate a field meeting in fall 2015. NPS staff held a conference call with HT staff throughout Nevada to discuss the upcoming RFP and how the USFS could apply for the grant program. NPS and USFS program goals align due to the USFS managing most of the headwaters of Nevada's surface waters. According to the USFS's website, "water is one of the most important natural resources flowing from forests. The Forest Service manages the largest single source of water in the U.S. with about one-fifth originating from 193 million acres of land which provides drinking water to 180 million people every day." Additionally, EPA and the USFS signed a Memorandum of Understanding (MOU) nationwide several years ago to encourage the USFS to work with State water quality protection agencies to improve water quality on USFS lands and work to implement projects that will delist waters. After the summit, NDEP staff reviewed USFS map of prioritized waters and compared them to the 2016-2022 priority waters list to identify shared target areas. Outcomes include determining waters to focus on restoration by both programs.

## NRCS

Through Department of Conservation and Natural Resources Conservation District manager, NPS staff is coordinating on several large NRCS grants applications. So far, coordination hasn't been with NRCS directly. Several of the partners identified in these grant applications include Nevada Association of Conservation Districts (NvACD), BLM, NDOW, Nevada Cattlemen's Association (NCA), USFS, and many others. If either of the grant applications is funded by NRCS, the NPS Program has great opportunity to increase coordination with these groups in conservation programs throughout rural Nevada. More information regarding this coordination is described under the section titled **Nevada Association of Conservation Districts/Conservation District Program**.

NPS Staff met with NRCS to determine if there were areas to assist with the NWQI. Unfortunately, despite efforts, opportunities to partner have not been realized with NRCS. More detailed information is located under the previous section titled **National Water Quality Initiative (NQWI)**.

## **Trout Unlimited**

NPS staff met with a local representative of Trout Unlimited (TU). TU is a conservation advocacy nonprofit group whose mission is to “conserve, protect and restore North America’s trout and salmon fisheries and their watersheds.” TU is acutely interested in restoring the headwaters of Nevada streams to allow for reintroduction/repopulation of Lahontan cutthroat trout (LCT). The representative contacted is the Lahontan Cutthroat Trout Biologist/Coordinator for the Western Region of TU. NPS staff and TU identified several priority watersheds including the Susie Creek watershed to determine partnering opportunities. Susie Creek aligns with NDEP’s 2016-2022 Vision priority waters. NPS staff followed up with TU on several occasions to further determine how to further engage to realize leveraging of the two programs. Several opportunities to partner were identified and are being pursued. Next steps include field meetings and interaction with BLM and private ranchers to further refine project areas in the Susie Creek watershed. This partnership seems to have great potential for traction in 303(d) listed waterways that have potential for LCT.

## **Nevada Sagebrush Ecosystem Technical Team/Nevada Sagebrush Ecosystem Program**

NPS staff met with the Nevada Sagebrush Ecosystem Technical Team (SETT) and compared programs. SEP is a collaborative, multi-disciplinary program established to protect and enhance the sagebrush landscape. The ecosystem program is focused on providing solutions and actions to the myriad of threats challenging the condition of the ecosystem and the plants, animals and people dependent upon the health and resiliency of the sagebrush landscape. The 2014 Nevada Greater Sage Grouse Conservation Plan designates riparian areas and meadows as being critical for cover, food and security during the brood-rearing summer months. Therefore, it is a focus of the SEP to protect and restore this habitat. That is in alignment with NPS Program goals and the 2016-2022 Vision priority waters.

There will be a lot of opportunity to partner in the future; however, SETT is just ramping up their program and are not ready to implement projects as of yet. SETT has received \$1M each year for SFY16 and 17 to fund projects improving Greater Sage Grouse habitat. As previously mentioned, management of the grouse habitat aligns well with nonpoint source management goals, especially for Nevada’s riparian areas. Coordination will continue as the program is built and starts running. At that point, it is expected that our program goals align closely enough to implement leveraged projects. Future meetings are being coordinated and staffers have indicated that there is great potential for coordination between programs.

## **NDOW**

NPS staff met regularly with NDOW staff to coordinate efforts and determine where grouse and riparian improvement projects intersect. NDOW is the state agency responsible for the restoration and management of fish and wildlife resources. The outcome from coordination between NDEP and NDOW is commitment from NDOW to identify riparian projects in the Greater Sage Grouse plans that have willing landowners and connect them with NDEP. One main contact at NDOW is the representative who oversees the Private Landowner Incentive Program. NPS staff is regularly meeting with NDOW representatives to determine overlap and specifically to identify where 2016-2022 Vision priority waters have private landowners with interest. The outcomes are leveraging state and federal funds and greatly increased

coordination of resource protection programs. NPS staff and NDOW staff are scheduled to meet in the fall to determine a timeline to identify projects and identify further outcomes.

### **Nevada Association of Conservation Districts/Conservation District Program**

NPS staff met on several occasions with members of various Conservation Districts (CDs) throughout the state at different planning meetings, including several SANE meetings. SANE is a collaborative team consisting of landowners, agencies and stakeholders that intend to sustain a healthy ecosystem for sage grouse and other wildlife and allow for multiple uses on public land. SANE's technical advisory committee includes representatives from BLM, USFS, NRCS, NDOW, Nevada Division of Forestry (NDF), Pheasants Forever, Nevada Conservation District Program and the UNCE. NPS staff discussed all the opportunities and met in person with key members of CDs to encourage participation in the NPS program. Next steps include further interaction with key members of SANE to select projects from SANE's plan to coordinate. This will be done mainly through NDOW as the main project proponent within SANE. NDEP staff is scheduled to meet with NDOW in fall of 2015.

NPS staff met with the Program Manager for the Conservation Districts Program at the Department of Conservation and Natural Resources on multiple occasions to coordinate on large grant applications to NRCS for funding throughout Nevada to develop Coordinated Resource Management Plans (CRMPs) for all twenty-eight CDs in the state of Nevada. The Program Manager is committed to include the NPS program in the end result. The manager will know in September if the grant from NRCS is awarded; and the money would be distributed in January 2016. If the grant is awarded, the NPS Program has a great opportunity to get the nine elements of watershed-based plans included in the development of the CRMPs. Upon approval of the grant, NPS staff will coordinate closely with the Conservation District Program to ensure that the CRMPs will incorporate as many of the nine elements of a watershed-based plan as possible. Additionally, NDEP will identify 2016-2022 Vision priority waters in the development of the CRMPs to ensure that they are addressed. The next step and outcome will be to identify projects to implement restoration projects.

### **Priority 3: Plan and Implement NPS Pollution Control Measures**

The NPS Program supported implementation of NPS pollution control measures to achieve load reductions and incremental progress toward watershed improvement. NDEP coordinated with partners to identify the most appropriate action to address site-specific water quality impairments. Projects were prioritized based on local support, available resources and potential load reductions. Project updates describing this work is presented by watershed later in this report.

In order to support the proper planning and implementation of NPS pollution control measures, NPS staff is creating an online "BMP Toolbox" with statewide BMP resources. BMP resource information in addition to the State BMP Handbook was posted on the NPS Program Webpage during completion of 2015-2019 Plan. Staff met to discuss what resources would be included in the online toolbox. A list of current resources was developed with related webpage links for incorporation into new NPS Program webpage. This foundational effort is to be built upon to create the BMP Toolbox envisioned in the current SMP.

**Priority 4: Implement Robust Environmental Education Program**

The NPS Program has implemented an effective environmental education program to create an informed and motivated public that supports and participates in NPS pollution prevention activities. Water quality improvements cannot be achieved without support and participation of an educated and motivated public. Providing NPS education to stakeholders in a watershed is necessary to establish a foundation whereby policies and projects that improve and sustain the State's limited water resources are implemented.

Environmental education is accomplished through 319(h) contracted projects implemented by a network of local, state, federal and private partners who deliver watershed-specific programs to a diverse audience of stakeholders. This network includes CWSD, several conservation districts, City of Reno, UNCE, Clark County, Southern Nevada Water Authority (SNWA), TNC, Sierra Nevada Journeys, Nevada Outdoor School and Great Basin Outdoor School. Detailed information regarding contracted projects is included in the Project Summaries document attached.

All environmental education efforts funded or led by the NPS Program are intended to affect long term behavior of the recipients. In order to ensure that these efforts are focused and effective, NDEP utilizes Logic Models for each program or project, whether in-house or contracted, and requires measurable statistics that show knowledge gained through the program and potential for behavior change.

NDEP continued to work with established partners, and continued to expand the program throughout Nevada. Information regarding the program is outlined in the funded project updates with more information about NPS staff program implementation below.

Main accomplishments from the milestones included:

- Developing a timeline for the Environmental Education Strategic Plan;
- Conducting myriad Project WET workshops for teachers and community educators;
- Participating in environmental education events including Earth Day, Truckee and Carson River snapshot days and greenups on the Las Vegas Wash;
- Publishing Enviro-News newsletter quarterly and distributing it to hundreds of educators state-wide;
- Providing quality environmental education materials to school and community educators; and
- Supporting local and regional environmental education projects.

A few highlights of the program include multiple Project WET and other workshops and events including:

DATE	LOCATION	PARTICIPANTS
August 2014	Great Basin Outdoor School	8
August 2014	Lake Mead Natural Recreation Area	14
September 2014	Clark County	30
November 2014	Incline Village	24
December 2014	Washoe County	17
December 2014	Clark County	21
February 2015	Lincoln County	11
May 2015	Truckee River Snapshot Day	239 students, 22 facilitators
May 2015	Washoe County	30
May 2015	Tahoe	14
June 2015	Washoe County- Waters of the Western Great Basin	46
June 2015	Bishop	24

All of the workshops and events had pre and post questionnaires and evaluations. Results from the statistics were encouraging. The question "...what is your confidence level in teaching water educations through inquiry" garnered an average of 55% responding yes in the pre-questionnaire with an increase to 84% in the post-questionnaire. Participant's self-reported knowledge of polluted runoff issues rose from 3 out of 5 in pre-questionnaires to 5 out of 5 in post-questionnaires. The post evaluations indicated that participants ranked the quality and content of the workshops quite high: the average answer was 4.5 out of 5 for "the workshop improved my understanding," and the average answer for "workshop was a good use of my time" was 4.8 out of 5.

## Implementation: Watershed Activities

### Carson River

NDEP focused efforts on continuing successful partnerships that implement water quality improvement projects throughout the Carson River Watershed. The *Carson River Adaptive Stewardship Plan (CRASP)*, which provides an overview of the watershed, identifies potential sources of pollution, discusses short and long term strategies to mitigate pollution, provides a mechanism to track projects and addresses EPA's nine required key elements of a watershed based plan, has been updated to incorporate completed projects and identify new issues and concerns. Staff coordinated weekly with CWSD to assist with the review and to track progress toward completion of the updates.

NPS staff continued to promote the update and implementation of the Regional Flood Management Plan and to support and deliver a high quality environmental education program. The Floodplain Model was completed for Lyon County and Carson City. The consultant, HDR, is currently working on a 2D model for Carson Valley.

NPS staff continued to support Carson Valley Conservation District (CVCD) to restore the middle sections of the Carson River. NPS staff continued to support the Dayton Valley Conservation District to restore lower sections of the Carson River.

NPS staff also supported watershed wide education efforts. The Watershed Literacy Action Plan (WLAP) was adopted by the CWSD board on April 15, 2015. Watershed Survey questions were developed by the Education Working Group, with guidance from Responsive Management. Questions were finalized in June and the telephone survey was conducted the last two weeks in June. A CWSD intern conducted an ethnographic research project that will offer in-depth information relating the Hispanic/Latino population in the watershed. The Carson River Watershed Map final proof was approved June 30 and 10,000 copies will be printed in July.

### **Colorado River/Las Vegas Wash**

NDEP focused efforts on supporting the active stakeholders who are implementing water quality improvements in the Las Vegas Wash. The main water quality issue addressed is reducing sediment in the Wash and educating residents in how to reduce nonpoint source pollution. The NPS Program's efforts are focused on supporting the extensive efforts being implemented by the local stakeholders. This includes funding priority projects consistent with the Comprehensive Adaptive Management Plan (CAMP) to reduce sediment and other NPS pollutants, and conducting environmental education programs. Projects that were completed under the CAMP by the Las Vegas Wash Coordination Committee included (from the 2014 Year-End Report):

#### Stabilization:

- Completed reconstruction of the Historic Lateral Weir, which was damaged in the 2012 floods
- Achieved 70 percent construction completion milestone for the Three Kids Weir
- Started and completed construction of the Silver Bowl and Archery weirs
- Added 6,700 linear feet of new bank protection
- Completed geotechnical investigations for the D-14 Extension and Tropicana Outfall weirs
- Completed design and contract documents for the Historic Lateral Weir Expansion and Sunrise Mountain Weir project and improvements to the Bostick and Rainbow Gardens weirs
- Completed design of the Tropicana Outfall Weir

#### Water Quality:

- Conducted monitoring programs in the Wash and tributaries
- Sampled three new shallow groundwater wells
- Presented draft groundwater monitoring plan to the REM Study Team
- Detected impacts to water quality from construction in the Wash and tributaries
- Presented real-time water quality data at the Lake Mead Science Symposium
- Uploaded data to the Lower Colorado River Water Quality Database
- Continued to monitor conditions in Lake Mead

#### Wetlands Demonstration Projects:

- Removed fivehook bassia and tall whitetop
- Seeded alkali sacaton and seeded and planted plugs of desert saltgrass during World Wetlands Day event
- Conducted vegetation monitoring at the Mitigation Ponds
- Worked to correct erosion and flow management issues at pond 7
- Contracted with University of Santa Barbara, California for common reed study
- Monitored water quality in accordance with Clark County Parks and Recreation's National Pollutant Discharge Elimination System permit

Vegetation Enhancement and Management:

- Revegetated 21 acres with native plants
- Conducted vegetation monitoring at revegetation sites along the Wash
- Summarized 2013 vegetation monitoring data in report
- Documented first occurrence of Las Vegas bearpoppy on a Wash revegetation site
- Closed Corps permit for Lower Narrows and Homestead weirs
- Removed more than 30 acres of tamarisk

Education and Outreach:

- Continued implementing the outreach plan
- Continued partnership with Mabel Hoggard Math and Science Magnet School
- Hosted fourth annual World Wetlands Day event
- Partnered with the Wetlands Park and other agencies to host an International Migratory Bird Day celebration
- Held two Green-Ups, including the 25th event which included a special community fair
- Designed new bannerstands to better convey Wash messages
- Hosted or participated in a total of 20 outreach events, reaching approximately 3,000 people

Coordination with Southern Nevada Water Authority (SNWA) and Clark County Water Reclamation District (CCWRD) continued with respect to execution of the latest contracts that support priority project tasks consistent with the CAMP. Technical assistance and project oversight was provided with respect to existing open contracts with SNWA and CCWRD. Associated project load reductions were reported in late January/early February. Ongoing contracts with SNWA and CCWRD were managed as new contracts were being developed. Staff assisted with the public outreach elements of SNWA and CCWRD projects, including development of Project Scopes of Work for their latest contracts whose execution is imminent. Staff is working closely on CCWRD's Trash Boom project that previously failed, and is back in redesign.

**Humboldt River**

NPS staff continued to strengthen its working relationships with stakeholders throughout the watershed. NDEP has implemented several 319(h) projects in this watershed, working with Conservation Districts, NRCS, BLM, USFS, cities, counties, and several local ranchers. The 319(h) projects have addressed riparian zone restoration, erosion control, grazing management, increase in vegetation cover, eradication of invasive weeds, and uplands restoration. NDEP also worked with the Humboldt Watershed Cooperative Weed Management Area (HWCWMA) coordinator to identify projects, possible tributaries for watershed based planning, and deliver a pilot education program in the watershed. NPS staff met with the HWCWMA Coordinator, Board of Directors and other stakeholders to review and coordinate work plan elements and discuss development of a watershed plan on a tributary to the Humboldt River. It was determined that the HWCWMA is not well positioned to lead a watershed plan effort, but is an important stakeholder that would benefit from development of said plan. Identification of a Watershed Plan Champion through coordination with the WMA and meeting with related stakeholders is ongoing. NPS staff met with the HWCWMA Coordinator during attendance at an Annual Invasive Weed Conference: Current project activities and continued watershed planning efforts were discussed. The HWCWMA is in the process of exploring a shift from a WMA to a Weed District.

Funding and support of public education related tasks included in the HWCWMA Coordinator's work plan continues, including administration of this contract. HWCWMA work has allowed the NPS team to be more involved with private landowners in the Humboldt watershed and has helped make inroads possible. The outcome has been relationships leading to increased riparian restoration projects and coordination.

NPS staff attended a two-day field trip in the Maggie and Susie Creek watersheds to see the substantial environmental results from several decades of private rancher and BLM coordination. The field trip included members of the USFWS and many BLM representatives. The tour highlighted positive results from landowner/rancher and agency coordination to find projects that would increase forage for the rancher while restoring riparian areas, corridors and meadows. The projects were clearly very successful and were determined to be positive results by both private and public representatives. NPS staff utilized this opportunity to coordinate with private ranchers/land owners and agency representatives to build relationships to coordinate further such projects with the 319(h) program.

The NPS Program focused on reducing nutrient and sediment loading in the Humboldt River. The NPS Program is doing this by continuing to build partnerships with landowners and active agencies to develop and implement one watershed-based plan or alternative strategy in a tributary of the Basin. This strategy also incorporates utilizing of Proper Functioning Condition (PFC) as a tool to measure and document progress toward water quality improvement. Also, NDEP focused on education of residents of the watershed to reduce nonpoint source pollution.

### **Lake Tahoe Basin**

NDEP collaborated with partners to implement the Lake Tahoe TMDL Program with the water quality goal of meeting the Clarity Challenge of 24 meters by 2026. NDEP worked with the Nevada Urban Implementers (Douglas County, Washoe County, and the Nevada Department of Transportation) to fulfill obligations contained in Interlocal Agreements (ILAs). A more flexible regulatory approach than that which is permit-based, the agreement process is intended to span the timeframe needed to achieve clarity goals. In 2015, the Stormwater Load Reduction Plans, Annual Stormwater Reports and the Implementers Monitoring Plan Monitoring Report were submitted by each Nevada Urban Implementer and approved by NDEP. Furthermore, NDEP worked in coordination with Urban Implementers and the California Water Quality Control Board – Lahontan Region (Lahontan Water Board) toward refining the Lake Clarity Crediting Program (Crediting Program) protocols and tools. The Crediting Program is the standardized accounting system for urban stormwater accomplishments.

NDEP and the Lahontan Water Board also developed and launched the TMDL Management System, containing a coordinated set of annual procedures that support transparent adaptive management of the TMDL Program. Formalized operational procedures enable the TMDL Management Agencies to consistently report program accomplishments, identify and better respond to challenges and act on relevant research findings or technical information that warrant programmatic adjustments. A key component of the TMDL Management System is the Lake Tahoe TMDL Online Interface; which provides a venue to engage and interact with stakeholders by reporting TMDL Program progress, sharing important documents and circulating information and gathering input from stakeholders.

The Lahontan Water Board and NDEP are currently engaged with, and support pilot implementation of, the nearshore quality monitoring program. Funding for pilot implementation of all indicators and metrics as recommended in the Nearshore Evaluation and Monitoring Framework Report has been secured through a variety of funding sources and monitoring efforts have been initiated. However, a portion of the funding for the pilot effort is one-time funding and full funding necessary for operation of a Nearshore Quality



Monitoring Program is outstanding. NDEP will continue to support and broadcast nearshore status and trend monitoring efforts and the relationship of nearshore quality to TMDL implementation.

### Truckee River Watershed

The NPS Program focused on continuing to have a presence in the Truckee River watershed while the stakeholders determine outcomes of the TMDL revision that is currently being reviewed. NDEP worked with stakeholders to assist in the review and any subsequent water quality standards issues. The water quality outcome is to reduce nutrients and sediment in the Truckee River and its tributaries. NDEP staff worked with partners in the Truckee River watershed, to identify priority subwatershed for assessment, watershed-based plan development or straight to implementation projects to reduce NPS pollution. Also, NDEP staff conducted environmental education programs to increase awareness of NPS issues and solutions. Staff attended Truckee River Flood Management Agency (TRFMA) Working Group and Technical Advisory Committee meetings in May. Staff became a core member of the All River coordination team to develop a river corridor management plan. In this core group, staff will ensure that water quality considerations are fully considered and incorporated into the planning effort. The outcome will be a plan with water quality and nonpoint source issues addressed.

### Walker River Watershed

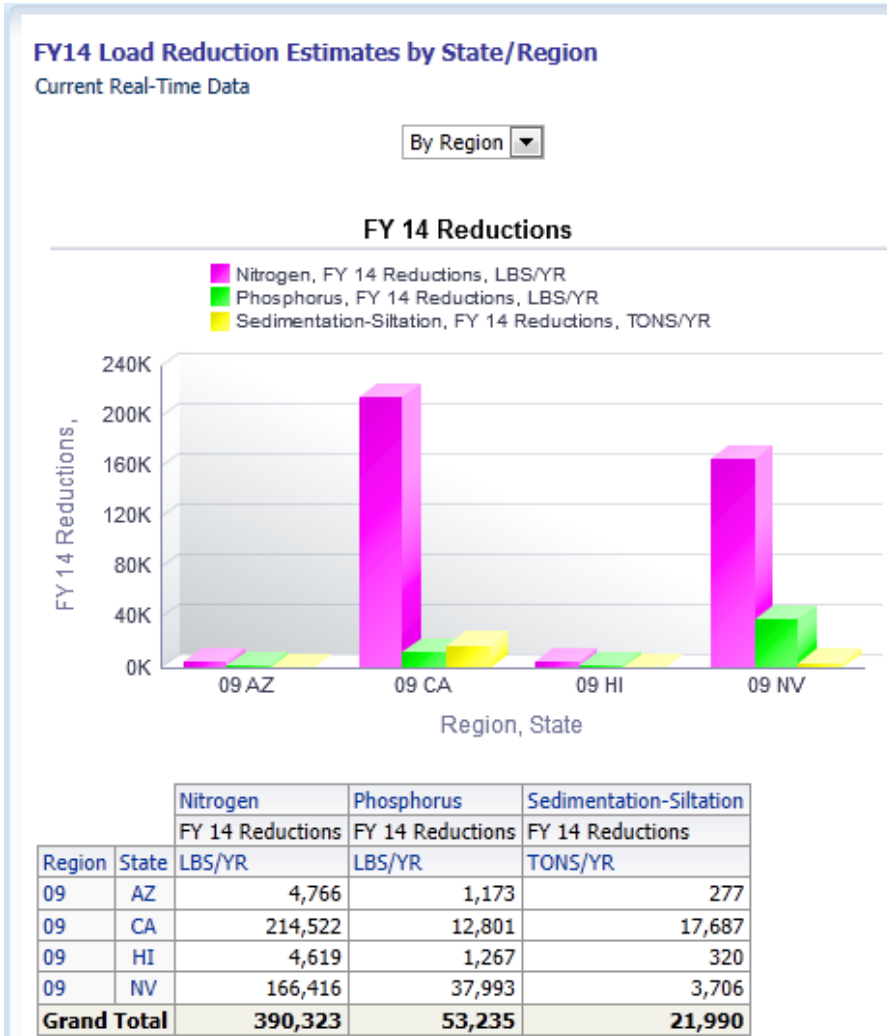
NDEP worked with the Smith and Mason Valley Conservation Districts to implement small scale public education activities and bank stabilization projects. The Districts also completed a monitoring and cataloging project to document river rehabilitation going back ten years. Efforts to develop a watershed plan, even with assistance from the Districts, are not viewed as feasible at this time. A stakeholder group must consist of more than just federal or state agencies. Watershed plan development and implementation can only be successful if local public officials and the community willingly support the endeavor.

NDEP focused on reducing nutrients and sediment in the Walker River through implementation of water quality improvements and channel restoration through coordination with our partners that are active in the watershed. This includes addressing effects of hydromodification through river rehabilitation and stabilization. NDEP is also focusing on educating the public on nonpoint source pollution prevention.

## Load Reductions

Load reductions were reported and entered into EPA's Grants Reporting and Tracking System (GRTS) on February 15, 2015. The load reductions numbers reported (for the 2014 calendar year, half of which falls into SFY15) were:

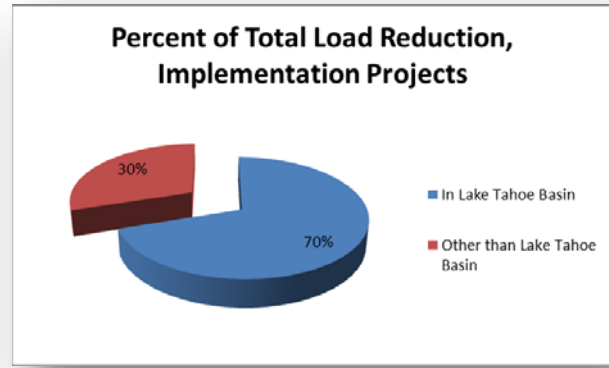
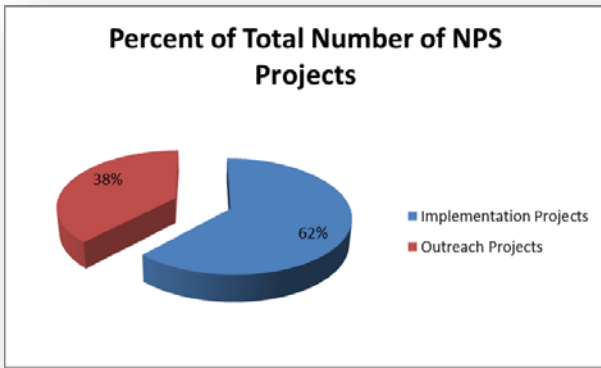
<b>Nitrogen, LBS/YR</b>	<b>166,416</b>
<b>Phosphorus, LBS/YR</b>	<b>37,993</b>
<b>Sedimentation-Siltation, TONS/YR</b>	<b>3,706</b>



**Nevada Current Project Inventory**

Nevada’s current active 319(h) project inventory contains 38 percent public outreach and education projects (A 22% reduction from last year), and 62 percent BMP Implementation projects. Of the load reductions realized as a result of BMP implementation, BMPs installed in the Lake Tahoe Basin comprised approximately 70 percent of the reductions\*\* realized during calendar year 2014. This is a reduction from last year’s 95 percent.

\*\*66% based on N, 73% based on P, 69% based on Sediment.



**Nevada Load Reduction Trends**

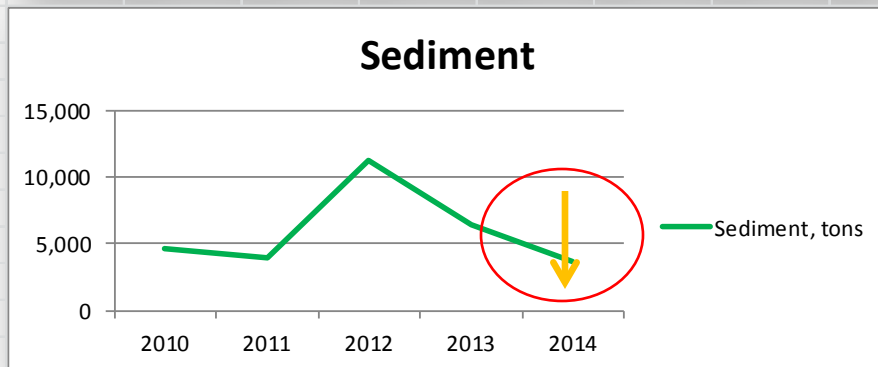
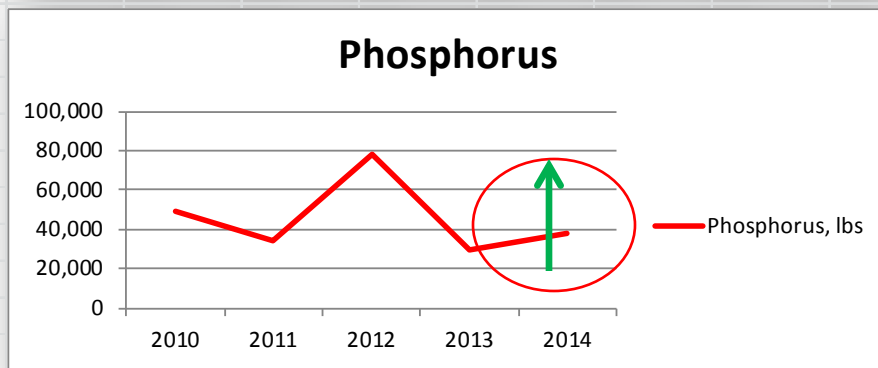
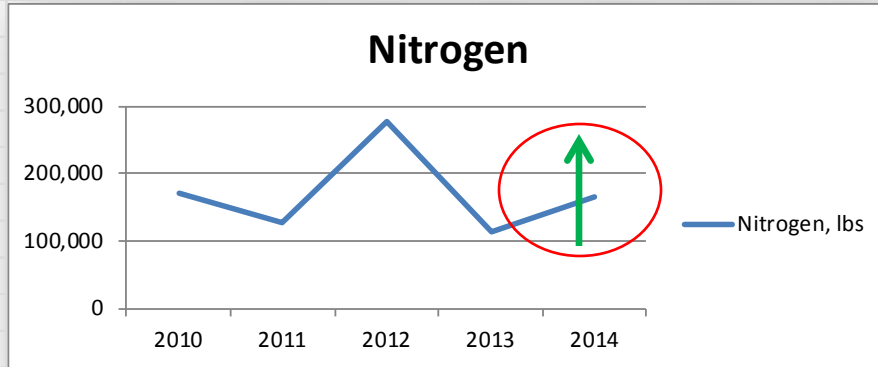
Compared to years 2010 through 2013, Nevada’s 2014 GRTS OBI outputs show a recovery in load reductions for N and P, but reductions remained flat for sediment. Reductions in pounds and tons are shown below:

	2010	2011	2012	2013	2014
Nitrogen, lbs	171,151	126,642	276,559	112,200	166,416
Phosphorus, lbs	48,877	34,005	78,361	29,883	37,993
Sediment, tons	4,598	3,883	11,179	6,407	3,706

Load reductions attributed to BMP installations and retrofits on the Nevada side of the Lake Tahoe Basin continue to comprise the bulk of the state’s total load reductions. Why reductions in sediments decreased, while load reductions of N and P moved upward is not specifically understood. How can increases in N and P removal occur while removing less sediment? The Lake Tahoe pollutant load reduction model includes separate load reduction formulas for different land uses (i.e. Commercial vs Multifamily). Presumably the ratio of land uses retrofitted with BMPs substantially changed in 2014 (more BMPs may have been implemented on commercial properties), thereby causing the sediment reduction trend line to diverge from nutrient trend lines.

Nevada’s load reduction trend due to implementation of NPS Grant Program projects is graphically depicted below:

### Nevada 319(h) 5 Year Load Reduction Trend



#### Calculation of Load Reductions

Load reduction numbers for calendar year 2014 were generated using EPA STEPL and Region 5 load reduction models, and in the case of reductions reported for Lake Tahoe BMP implementation, using the BMP Performance Paper method described by Eric Strecker. Load reductions realized by Washoe County's new street sweeper were calculated using direct measurement of sweeper loads. Sediment only was

accounted for. Measurements of nutrient reductions attributed to high efficiency sweepers have not yet been attempted.

On average (over the last 5 years), implementation of Nevada's NPS Program prevented 170,594 pounds of nitrogen from entering state waterways each year. How significant is this number? The Truckee River Total Maximum Daily Load (TMDL) for Total Nitrogen is 1000 pounds. Nonpoint source projects theoretically prevented 467 pounds per day of total nitrogen from entering all of the state's waters. Approximately 66 percent of this reduction occurred in the Lake Tahoe Basin on the Nevada side. If these projects were not implemented, up to 308 pounds of total nitrogen per day would potentially be discharged to Lake Tahoe Basin waters. Presumably a portion of this load is transported to the Lake's outlet and to the lower Truckee River.

The above potential loading to the lower Truckee River, including the associated phosphorus and sediment load, could be significant as development potential in the Truckee Meadows is capped by the TMDL load allocations. Nutrient and sediment reductions due to NPS projects in both California and Nevada presumably create space for growth in the Truckee Meadows with respect to TMDL discharge limits.

### **GRTS Mandated Elements**

GRTS project data entry was completed including BMP implementation information and Nevada total annual Load Reductions by project for the 2014 calendar year. New project entries were completed as project contracts were executed. Project data entry includes a description of watershed plan status: Under Development or Being Implemented.

New project entries were completed as project contracts were executed, and existing project entries updated where required to eliminate database Mandatory Errors. Project data entries include the type of BMPs to be employed, project descriptions, and a description of the applicable watershed plan status. Load reductions are entered annually in late January/early February prior to the 2/15 deadline.

Nevada currently has *two* Mandatory Element Errors reported for project years 2002 through 2014, and zero Load Reduction errors.

### Mandated Elements Error Report

Lists the number of projects with mandated elements errors by state and fiscal year. Click on the state to drill down and see the actual errors.

State▲▼	Appropriation▲▼	Number of Projects w/ Errors
NV	2002.00	0
NV	2003.00	0
NV	2004.00	0
NV	2005.00	0
NV	2006.00	0
NV	2007.00	0
NV	2008.00	0
NV	2009.00	0
NV	2010.00	0
NV	2011.00	0
NV	2012.00	0
NV	2013.00	0
NV	2014.00	2
<b>NV Total</b>		<b>2</b>

### Projects with Missing Load Reductions

These projects will have pollutant load data but no load reductions have been entered and the BMP implementation date has passed or has not been entered.

State	Appropriation	Number of Projects
09	AZ 2011.00	06
09	AZ 2013.00	01
09	CA 2012.00	13
09	CA 2013.00	10
09	HI 2011.00	01
09	HI 2013.00	02
09	HI 2013.00	02

## CONCLUSION

After just months of implementing the new State Management Plan, much success has been realized. NPS staff is actively engaging our partners and making new partnerships to continue past success and create new ones. The NPS Program will continue to implement the workplan activities outlined in the newly approved State Management Plan. The NPS Program will focus efforts on the priorities of supporting and growing existing local watershed efforts, establishing new partnerships, planning and implementing NPS pollution control measures and implementing a robust environmental education program.

