



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

STATE OF NEVADA
Department of Conservation & Natural Resources

Steve Sisolak, Governor
Bradley Crowell, Director
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September 22, 2020

Tomas Torres, Director, WTR-1
Water Management Division
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Subject: Requested approval of the Nevada Division of Environmental Protection's 2020-2024
Nonpoint Source State Management Plan

Dear Mr. Torres:

The Nevada Division of Environmental Protection is submitting the updated 2020-2024 Nonpoint Source State Management Plan to the U.S. Environmental Protection Agency (USEPA) for approval. The revised plan was developed to incorporate new measures to implement the Nonpoint Source Program in Nevada for the next five years, as required by USEPA. The plan was submitted for three draft review periods to EPA staff, and comments were addressed and integrated. Additionally, USEPA sent the draft plan to Nevada Tribal environmental staff and Tribal put the plan out for a formal 30-day Tribal Consultation process. Comments received were incorporated.

Should you have any questions, please contact me at (775) 687-9455.

Sincerely,

Paul Comba
Chief, Bureau of Water Quality Planning

cc: Jennifer Carr, P.E., NDEP Deputy Administrator
Birgit Widegren, NDEP Nonpoint Source Branch Supervisor
Jacques Landy, EPA Region 9



Recreationists on the Truckee River through downtown Reno, picture by One Truckee River

Nevada Division of Environmental Protection

2020-2024 Nonpoint Source State Management Plan



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CHAPTER 1: INTRODUCTION

1.1 Purpose of Document

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, the Nevada Division of Environmental Protection (NDEP) coordinates, collaborates and builds 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 2020-2024 Nevada Nonpoint Source Management Plan (hereafter referred to as the “Plan”) establishes how NDEP will work with partners to address NPS pollution over the next five years. The 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 2020-2024 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 the U.S. Environmental Protection Agency (EPA) on April 12, 2013.

Controlling
nonpoint source
pollution and
improving water
quality is the
responsibility of
all stakeholders
in a watershed.

1.2 Document Organization

NDEP takes an integrated approach to nonpoint source pollution management utilizing both internal and external programs to achieve NPS Program goals. These efforts require local involvement, effective environmental education and outreach and active participation of local, state, tribal, and federal agencies and private landowners. This plan describes how these programs will work together over the next five years to identify, prioritize and address NPS issues. Annual NDEP work plans for CWA Section 106, 604(b) and 319 grants will provide more in-depth details for specific tasks.

The document is organized into four chapters:

1. Introduction;
2. Conditions of Nevada;
3. An Overview of water quality and other related environmental management programs, with emphasis on the Nevada NPS Program which identifies partnerships and tools used to address nonpoint source pollution;
4. NDEP's NPS Management Program; and
5. NPS Program goals, objectives, strategies and milestones to be met over the next five years.

1.3 Legal Basis and Authorities

Congress established the federal Nonpoint Source Program with the 1987 Section 319 amendments to the Clean Water Act. Section 319 provides federal authority for implementation of the State NPS Management Program and specifies requirements that must be met to qualify for federal financial assistance.

Nevada's Water Pollution Control Law (Nevada Revised Statutes 445A – Water Controls) comprises the legislation for Nevada's Water Quality Management Program. It is the policy of the State of Nevada and the purpose of the law to:

1. Maintain the quality of the waters of the state consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life, the operation of existing industries, the pursuit of agriculture, and the economic development of the State; and
2. Encourage and promote the use of methods of waste collection and pollution control for all significant sources of water pollution (including point and diffuse sources).

Water quality regulations including surface water quality standards and permitting programs are contained in the Nevada Administrative Code 445A – Water Controls.

1.4 NPS Program Vision, Mission and Goal Statements

The vision, mission and goal statements provide the fundamental basis for implementation of Nevada’s NPS Management Program.

VISION

“All waters in the State support their beneficial uses and higher quality waters are maintained. The program will result in the best possible water quality protection and management decisions, in coordination with others in their watersheds.”

MISSION

“To prevent, control and abate the impacts of nonpoint source pollution on the quality of the state’s surface water through public outreach, source reduction, improved watershed planning and management and the implementation of best management practices.”

GOALS

Goal #1: Reduce nonpoint source pollution in impaired waters through support of activities that reduce pollutant loads, including the approval and implementation of watershed plans.

Goal #2: Educate and inform the public about nonpoint source pollution, watershed stewardship, and water quality protection to increase awareness and promote behavior change.

Goal #3: Coordinate with State, Federal, local agencies and Tribes to implement nonpoint source protection activities (BMPs or other NPS control measures), as they relate to each agency’s mandates.

Chapter 4 describes objectives, actions and milestones necessary to achieve these goals.

Overarching Principles of Nevada's NPS State Management Plan

***Collaboration, Coordination,
Cooperation***

Locally Led Efforts

Numerous Paths to Implementation

Incremental Progress

Informed Public

1.5 Overarching Principles

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

- ◆ Managing Nevada's water resources for the benefit of people, agriculture, 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. 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 developing total maximum daily loads (TMDLs), TMDL implementation

plans, watershed-based plans, alternative restoration approaches 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, this 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 Nevada's limited water resources are implemented.

1.6 Plan Priorities

The Plan contains a balance between continuation of effective planning, implementation and environmental education efforts and development of new strategies and partnerships to achieve load reductions and water quality improvements. More specific information and details on these activities are provided in Chapters 3 and 4.

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 will strengthen 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;
- ◆ One Truckee River, Cities of Reno, Sparks, Washoe County and other stakeholders for the implementation of the One Truckee River Management Plan and the Source Water/Watershed Based Plan for the Truckee River;
- ◆ Walker River for supporting ecological restoration and determining if there is support with new partners to develop an alternative restoration plan or 9 element watershed based plan.
- ◆ Virgin River Coalition for the implementation of the Virgin River Watershed Plan; 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.

Priority 2: Establish New Partnerships

NDEP will continue to identify new opportunities to coordinate with local, state and federal agencies, environmental organizations and other groups to build new effective relationships, identify or develop shared water quality protection priorities, capitalize on existing programs and leverage funding. NDEP will seek opportunities to attend established meetings and participate at

a meaningful level with potential partners including NDEP's Integrated Source Water Protection Program, U.S. Bureau of Land Management, U.S. Forest Service, Natural Resources Conservation Service, The Nature Conservancy, the Nevada Association of Conservation Districts, Tribes and others.

Priority 3: Plan, Implement and Assess NPS Pollution Control Measures

The NPS Program will continue to support implementation of watershed based plans, alternative restoration approaches and individual project NPS pollution control measures to achieve load reductions and incremental progress toward watershed improvement. NDEP will coordinate with partners to identify the most appropriate action to address site-specific water quality impairments. Projects will be prioritized based on local support, available resources and potential load reductions. Plans, approaches and projects will have specific metrics to determine and report success.

Priority 4: Implement and Assess 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. NDEP will continue to work with established partners and will seek new opportunities to expand the program throughout Nevada. Environmental education program success will be assessed and reported utilizing the most up-to-date metrics.

CHAPTER 2. CONDITIONS IN NEVADA

2.1 Population Distribution and Land Ownership

Nevada is the seventh largest state encompassing approximately 110,572 square miles. Approximately 3.09 million people reside in the State. Seventy-three percent of residents live in the Las Vegas metropolitan area within the Las Vegas Wash/Colorado River watershed. About twenty-one percent live along the Sierra Nevada mountain front in the cities and towns of Reno, Sparks, Carson City, Minden and Gardnerville within the Truckee and Carson River Basins. The remainder of the population mostly resides in small towns along major highways or road corridors in the Walker and Humboldt River Basins. Four of the watersheds that were prioritized based on environmental factors (Las Vegas Wash, Carson River Basin, Lake Tahoe Basin and Truckee River Basin) correlate with 94% of the population base. These watersheds have various amounts of urban development and governmental and local grass roots interest in addressing water quality issues. Historically, 319(h) projects have been concentrated in these watersheds, which include numerous 303(d) listed waterbodies. These watersheds and the Walker River Basin remain the priority for the 2020-2024 SMP.

Approximately 85% of land in the State is owned or managed by the Federal government, including the U.S. Bureau of Land Management (BLM), U.S. Forest Service (USFS), the Department of Defense (DOD) and the Department of Energy (DOE). Each agency has their own method of addressing water quality issues on federal lands, which must comply with provisions of the Clean Water Act and Nevada water quality statutes and regulations. The NPS Program has had varying levels of coordination with BLM and the USFS over the years, and has collaborated on a few projects when shared goals, resources and timelines allowed.

Nevada is home to 23 Native American bands and tribes, each of which in conjunction with EPA Region 9 may develop and implement its own water quality protection programs. Nevada's water quality statutes and regulations do not apply in sovereign native nations. The NPS Program has varying levels of coordination with several tribes. Over the next five years, NDEP will continue to investigate ways to expand coordination and collaboration with tribes throughout Nevada.

2.2 Topography and Hydrogeography

Nevada is characterized by long, narrow, roughly parallel mountain ranges and broad, intervening, valleys and basins, known as the Basin and Range Province. For water planning and management purposes, the U.S. Geological Survey (USGS) and the Nevada Department of Conservation and Natural Resources (DCNR) have divided the state into fourteen major hydrographic regions and basins (see Figure 2.1).

About 93,000 of the total 110,572 square miles of the state lie within the Great Basin, wherein drainage flows to endoreic basins rather than to the sea. The exceptions are the Snake River drainage which

flows to the Pacific Ocean via the Columbia River, and the Colorado River drainage which flows to the Gulf of California (when flows are adequate). The central region, which is the largest basin in the state, is characterized by a dearth of surface waters (see Figure 2.2) and lack of population.

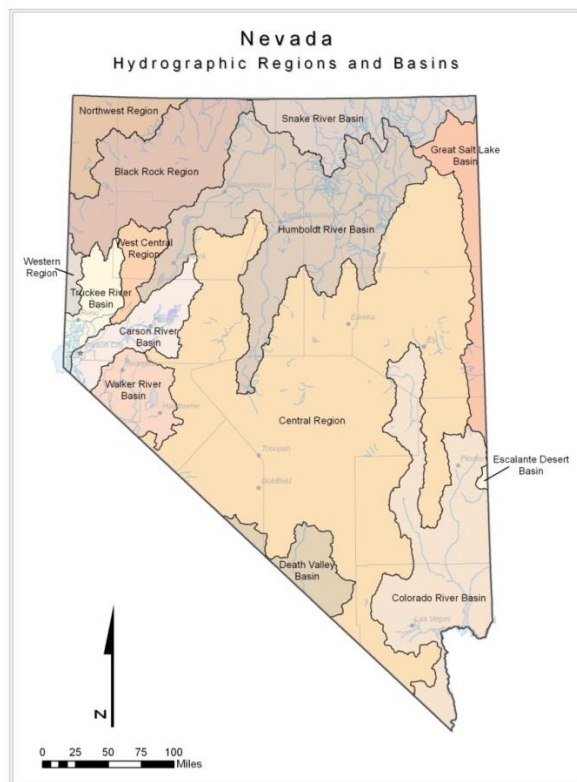


Figure 2.1 Nevada Hydrographic Regions and Basins

2.3 Climate and Precipitation

The climate of Nevada ranges from desert, semi-arid steppe to alpine zones. Precipitation and temperature vary widely based on elevation and latitude. Nevada is the most arid state with total precipitation averaging approximately 9 inches per year. However, localized precipitation can range from three inches in the desert areas to over 40 inches in the alpine zones. Approximately 10 percent of annual precipitation accounts for stream runoff and groundwater recharge. The remaining 90 percent is lost through evaporation and transpiration. Temperatures can range from 0°F during winter months to over 100 °F during summer months depending on location.

Nevada's climate variations add complexity to the management of NPS pollution. Low flow conditions can concentrate pollutant loadings in surface waters and make it difficult to restore riparian habitat. Sporadic high flow conditions can flush accumulated pollutants from urban areas into surface waters

while causing channel scour. This range of environmental conditions creates challenges for NPS planning and implementation.

2.4 Surface Water Distribution

Surface water is a limited and precious resource in Nevada, providing about 60 percent of the total water supply used in the state. Approximately 10% (about 15,500 miles) of the rivers and streams in Nevada are perennial and carry the majority of the surface water flow. The other 90% (126,257 miles) are considered intermittent or ephemeral. Additionally, 1,782 miles of human-created ditches and canals exist throughout the state. Nevada has approximately 1,070 lakes, reservoirs, and ponds.



Figure 2.2: Distribution of Nevada's Surface Waters

2.5 Major Drainage Basins

The Colorado River region encompasses 12,376 square miles of Nevada. The Colorado River provides for hydroelectric power, recreation at Lake Mead and Lake Mohave and water for agricultural, industrial and municipal use. The large municipal areas of Clark County, Las Vegas, North Las Vegas and Henderson are located here. The Las Vegas Wash is the natural drainage system for the Las Vegas

Valley into Lake Mead. The Colorado flows generally south, along the Arizona and California border and eventually drains into the Sea of Cortez, in northwest Mexico.

The Snake River region covers 5,230 square miles in Northern Nevada and includes the watersheds of the Bruneau, Owyhee and Jarbidge Rivers, and Salmon Falls and Shoshone Creeks. These drainages join the Snake River in southern Idaho which eventually flows into the Columbia River and to the Pacific Ocean. This area is characterized mainly by agricultural land use (grazing) and small rural communities.

The entire Humboldt River Basin is contained within the state, and the Humboldt River is the longest river in Nevada. Its headwaters are located in the Ruby, East Humboldt, Independence and Jarbidge mountains; and it flows in a westward direction across northern Nevada and terminates in the Humboldt Sink. Industry in the region is predominantly agriculture and mining, with many small rural communities located along a major transportation corridor which parallels the entire length of the Humboldt River.

The Truckee River flows from Lake Tahoe and drains a portion of the eastern slope of the Sierra Nevada. It flows east through the cities of Reno and Sparks and terminates in Pyramid Lake on the Pyramid Lake Paiute Indian Reservation. Along its course, the river provides water for municipal, industrial and agricultural uses, for hydroelectric power generation, recreation and fisheries including the support of endangered species of fish.

The Carson River drains the eastern slopes of the Sierra Nevada immediately south of Lake Tahoe, flows through the towns of Minden, Gardnerville, Carson City and Dayton and terminates in the Carson Sink. Along its course, water is utilized for agricultural supply, recreation, wildlife and fisheries.

The Walker River originates in California and drains the eastern slopes of the Sierra Nevada to the south of the Carson River. It flows through mostly agricultural lands in the Smith and Mason Valleys and through the Walker River Indian Reservation, before terminating in Walker Lake.

Of the major drainage basins in Nevada, the NPS program has and will continue to focus on the Truckee, Lake Tahoe, Carson, Walker, and Las Vegas Wash watersheds.

2.6 NPS Categories and Pollutants of Concern

The following NPS categories of pollution contribute to nonpoint source related water quality impairments in Nevada.

- ◆ Agricultural Land Uses
- ◆ Urban Land Use and Development
- ◆ Floodplain Loss
- ◆ Hydrologic Modification
- ◆ Wildland Fire
- ◆ Noxious Weeds/Invasive Species

- ◆ Mining and Resource Extraction
- ◆ Land Disposal
- ◆ Emerging Issues

2.6.1. Agricultural Land Uses

Most of the agriculture conducted in Nevada is cattle grazing on public and private lands, irrigated crop production, and some animal feedlot operations. In 2017, six million acres of land were actively farmed and grazed (Nevada Department of Agriculture, 2019). Nevada's agricultural sector is dominated by beef and hay production, with more than half of the ranches in the state producing either sheep or cattle. More than 82% of the state's land area is covered with rangelands. Nevada's desert and high steppe climate, while not conducive to some kinds of agricultural production, is ideal for the production of high quality alfalfa hay. Hay comprises more than half of the total crop value for the state, and it is largely sold to neighboring California to provide feedstock for dairies, or else shipped around the world. Beyond beef and hay, Nevada's top agricultural commodities include onions, garlic, potatoes, and seeds, the last of which Nevada ranks sixth nationally in production. By annual cash receipts tracked by the United States Department of Agriculture in 2017, 47% were from meat animals, 20% dairy products, 16% feed crops (hay), and the remainder other animal products and crops.

Under certain conditions, livestock grazing can directly and/or indirectly degrade water quality by increasing erosion and sedimentation, nutrients such as nitrogen and phosphorus, enteric pathogens and water temperature. Pasture and rangeland generally become a source of sediment when livestock remove a large percentage of the vegetative cover for an extended period of time. The bare soil surface is subject to the erosive actions of water and wind. In-stream trampling and loss of bank stability from soil compaction can accelerate streambank erosion and sedimentation, and presence of livestock can directly add nutrients and pathogens.

Irrigated croplands can also impact water quality. In arid Nevada, croplands are irrigated by flood irrigation, overhead or spray irrigation with hand and wheel lines, and center pivot systems (Nevada Agriculture in the Classroom). The major pollutants associated with irrigated agricultural practices include sediment, nutrients, pesticides, salinity, pathogens and temperature.

Animal feedlot operations can also create nonpoint source pollutants. Feedlots meeting specific concentrations of animals are permitted through the National Pollutant Discharge Elimination System (NPDES) under Concentrated Animal Feeding Operation (CAFO) regulations of the Clean Water Act. Smaller operations can still be a source of nutrients and pathogens to nearby waterbodies.

Strategies to address NPS pollution related to agricultural practices include:

- ◆ Establish, support and assist in implementation of watershed plans to restore water quality in impaired waters and to protect waters threatened by point source and nonpoint source pollution resulting from agriculture.
- ◆ Coordinate with federal, state and local natural resource agencies and private land owners to implement grazing management practices such as offsite watering facilities, armored stream crossings, rotational grazing practices, and projects that restore and/or protect riparian buffer areas.
- ◆ Implement BLM Grazing Allotment Permits and reauthorizations to control nonpoint source pollution impacts associated with livestock grazing.
- ◆ Coordinate with agencies who work with producers of irrigated cropland to encourage development and implementation of nutrient management plans that may include conservation tillage, conservation buffers, and irrigation water management.
- ◆ Coordinate with agencies who work with producers with animal feeding operations to encourage development and implementation of nutrient management plans with appropriate animal waste and mortality disposal practices.
- ◆ Provide environmental education to inform the public about nonpoint source pollution, water quality protection and watershed health.

Implementation of these strategies is ongoing and will continue over the next five years. NDEP will also build more effective working relationships with BLM and the USFS to address nonpoint source pollution related to agriculture and grazing on public lands. NDEP will coordinate with the Natural Resources Conservation Service and the Nevada Department of Agriculture to address NPS issues related to irrigated cropland and non-CAFO animal operations.

2.6.2 Urban Land Use and Development

Urban landscapes impact local hydrology in myriad ways by changing the nature and timing of runoff, introducing new pollutants, altering rates of erosion and increasing peak flows and flooding potential. Changing conditions from a vegetated, undisturbed state to an urban setting dominated by impervious surfaces decreases evapotranspiration and interception rates and increases erosion while introducing new pollutants to runoff. Other impacts from developed urban land include decreased infiltration rates and increased storm flows. The increase in impervious surfaces reduces the time of concentration of storm flows and creates higher peak discharges in shorter amounts of time. Larger instream flows erode and incise channels and disconnect streams and rivers from their floodplains. Flood potential increases substantially. As a result, the hydrology of an urban watershed is substantially altered from the natural state and increased management of these impacts is necessary.

Rainfall and dry-overland flows from irrigation that are intercepted by urban development run quickly and directly into streams, dramatically increasing their volume and peak flows. This runoff

may contain high concentrations of heavy metals, lawn and garden chemicals, bacteria, silt, petroleum products, and nutrients.

Strategies to address NPS pollution related to urban land use include:

- ◆ Establish, support and assist in implementation of watershed plans to restore water quality in impaired waters and to protect waters threatened by point source and nonpoint source pollution resulting from urban land use and development.
- ◆ Provide environmental education and outreach programs that inform the public and raise awareness about urban nonpoint source issues.
- ◆ Educate decision-makers and developers on proper land use planning and development.
- ◆ Implement best management practices that minimize or prevent urban nonpoint source pollution.

Implementation of these strategies is ongoing and will continue over the next five years. NDEP will continue to work with partner agencies including Carson Water Subconservancy District, Southern Nevada Water Authority, Reno, Sparks, Washoe County and other urban jurisdictions (cities and counties) to address urban NPS pollution in the major population centers and Lake Tahoe Basin.



Figure 2.3: Urban pollutants, including oil and grease, enter a local waterbody via a storm drain.

2.6.3 Floodplain Loss

Floodplains store water during high flow events, allowing it to be slowly released back into the river system while recharging groundwater supply, and giving time for pollutants such as sediment and nutrients to settle out. Floodplains support important wildlife habitat and forage. Floodplains also support certain types of recreation, and provide open space that is often considered visually appealing.

Urban development can encroach on floodplains, replacing them with impervious surfaces. This development may result in confined waterways that can have detrimental impacts. Flows not allowed access to the floodplain can increase channel incision, erosion, and the amount of water and pollutants delivered downstream. Channel incision due to erosion also reduces floodplain filtration and assimilation of pollutants during flooding.

Strategies to address NPS pollution caused by floodplain loss include:

- ◆ Establish, support and assist in implementation of watershed plans to restore water quality in impaired waters and to protect waters threatened by point source and nonpoint source pollution resulting from floodplain loss.
- ◆ Land acquisition and/or the placement of easements that limit development of the land to less intense land uses.
- ◆ Floodplain and riparian habitat restoration projects.
- ◆ Environmental Education to inform the public about nonpoint source pollution, water quality protection and watershed health.

Implementation of these strategies is ongoing and will continue over the next five years. NDEP will continue to work with partners including Carson Water Subconservancy District, One Truckee River, Las Vegas Wash Coordination Committee and other stakeholders to protect and restore floodplains.

2.6.4 Hydrologic Modification

Hydrologic modification is a major source of waterbody impairment in Nevada. Throughout the past 150 years, rivers and streams throughout the state have been dammed, dredged,

Floodplain Benefits:

Storage of floodwaters

Deposition of pollutants

Habitat and forage

Groundwater recharge

Recreation

Open Space

straightened, diverted and used for timber transportation and mining processes. Hydrologic modification alters the natural structure and function of a waterbody. Flow regimes are changed, erosion is increased, riparian habitat is lost, temperatures rise and water quality is diminished. Many of these impacts are related. For example, straightening a stream channel can increase stream velocities and destroy downstream pool and riffle habitats. As a result of less structure in the stream to retard velocities, downstream velocities may continue to increase and lead to more frequent and severe erosion.



Figure 2.4: Hydrologic modification to Roberts Creek, Washoe County, NV

Strategies to address NPS pollution caused by hydrologic modifications include:

- ◆ Establish, support and assist in implementation of watershed plans to restore water quality in impaired waters and to protect waters threatened by point source and nonpoint source pollution resulting from hydrologic modification.
- ◆ Bank stabilization and riparian habitat restoration.
- ◆ Channel restoration projects that increase sinuosity and create natural geomorphologic conditions.
- ◆ Consider mercury impacts in major river systems historically utilized for mining.
- ◆ Environmental education to inform the public about nonpoint source pollution, water quality protection and watershed health.

The NPS Program has and will continue to work with local, state and federal agencies, conservation districts, private landowners and environmental organizations to implement these types of projects.

2.6.5 Wildland Fire

Wildfires can be devastating to water quality, grazing operations, wildlife, habitats and local economies. Due to widespread and systematic wildfire suppression over the past 100 years, the typical wildfire today burns faster and hotter than a historical, natural wildfire did. The immediate and long-term impacts can be severe including: total loss of vegetation leading to denuded areas susceptible to increased erosion; soils burned at a temperature that has rendered them hydrophobic, sterile of seed bank and therefore unlikely to reestablish native vegetation; and loss of riparian vegetation and habitat. Additionally, fires mobilize nutrients that are flushed into aquatic systems during subsequent storms. Following a fire, often there is an influx of noxious weeds that replace the burned native vegetation resulting in monocultures of cheat grass and other weeds. Hundreds of thousands of acres can burn annually in Nevada.

Strategies to address NPS pollution caused by wildland fires:

- ◆ Establish, support and assist in implementation of watershed plans to restore water quality in impaired waters and to protect waters threatened by point source and nonpoint source pollution resulting from wildland fires.
- ◆ Prevention through biomass reduction and prescribed burns.
- ◆ Noxious weed control and reseeding areas with native vegetation.
- ◆ Bank stabilization and riparian habitat restoration.

Coordination with USFS and BLM are key for planning, prevention and then response after a major wildland fire, since they manage much of the land that burns. The NPS Program has and will continue to work with local, state and federal agencies, conservation districts, private landowners and environmental organizations to implement these types of projects.

2.6.6 Noxious Weeds/Invasive Species

Noxious weeds and invasive species are non-native introduced species that out-compete native plants and animals and create massive monocultures that have little ecological or economic value. They spread extremely quickly by various vectors and are difficult to control. Noxious weeds/invasive species can be terrestrial or aquatic. Noxious weeds can have deleterious effects on water quality in several ways. Many noxious weeds are annuals, and therefore do not have the ability to hold soil and prevent erosion like native species, both on uplands and in riparian areas. Some noxious weeds, like cheat grass, increase fire hazard and therefore can threaten riparian areas. Other invasive species include aquatic plants and animals, such as the New Zealand mud snail, Quagga mussels, and Eurasian water milfoil, which wreak havoc on surface waters.

Strategies to address NPS pollution caused by noxious weeds and other invasive species include:

- ◆ Establish, support and assist in implementation of watershed plans to restore water quality in impaired waters and to protect waters threatened by point source and nonpoint source pollution resulting from noxious weeds and invasive species.
- ◆ Prevent the spread through environmental education to raise awareness.
- ◆ Noxious weed control and reseeding areas with native vegetation.
- ◆ Bank stabilization and riparian habitat restoration.
- ◆ Grazing management including offsite watering and herding.

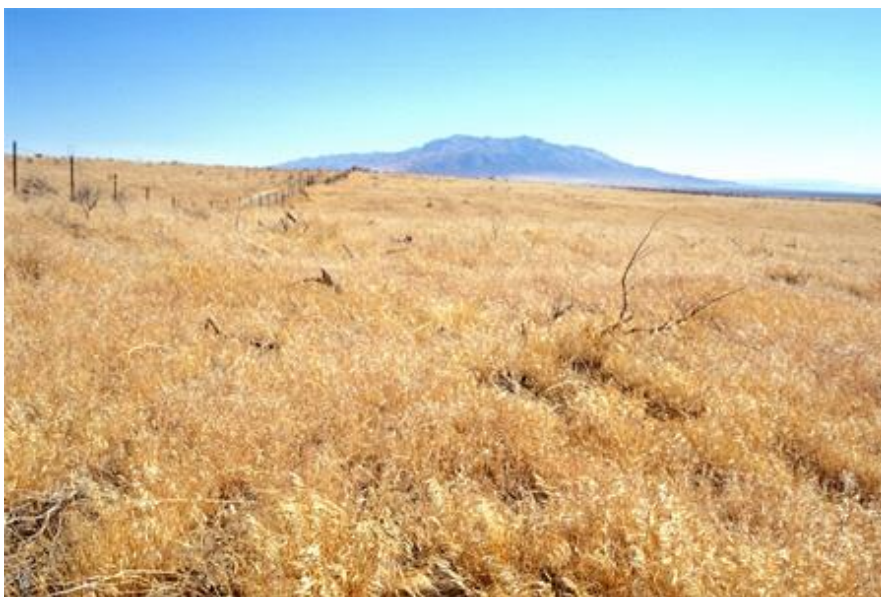


Figure 2.5: Cheat grass monoculture Source: Gonzaga University

The NPS Program has and will continue to work with local, state and federal agencies, conservation districts, private landowners and environmental organizations to implement these types of projects.

2.6.7 Mining, Resource Extraction, Exploration, and Development

Mining has been and continues to be an integral part of Nevada's history and economy. Currently, there are twenty-four metal mines, twenty-four industrial mineral mines, six oil fields and twelve geothermal power plants in Nevada. Some of the minerals and metals mined include gold, copper, lithium, molybdenum, diatomaceous earth, gypsum, and lime. Nevada regulates, as point sources and through the Bureau of Mining Regulation and Reclamation, many mining activities traditionally considered nonpoint sources. In addition, Nevada's Mined Lands Reclamation Bill requires reclamation of lands disturbed by mining activities. The scope of these provisions delegates regulatory and enforcement authorities to specific programs within the state and significantly reduces the numbers and types of mining related activities that are considered nonpoint sources. For example, runoff from waste rock dumps is regulated primarily under State Water Pollution Control permits and also falls under the NPDES Storm water program. Other

mining related activities such as road construction and hydrologic modifications are covered under appropriate NPS categories. Additionally, BCA oversees the Abandoned Mine Lands Program to address discharges and impairments related to past mining activities.

2.6.8 Land Disposal

The Land Disposal source category includes sludge, wastewater, landfills, on-site wastewater systems and hazardous waste subcategories. Sludge and wastewater are regulated by NDEP's Bureau of Water Pollution Control, through Nevada's Water Pollution Control Law, Water Pollution Control Regulations, and Solid Waste Regulations and Management Plan. Hazardous waste is regulated by NDEP's Bureau of Waste Management through the State's Hazardous Waste Regulations and Management Plan.

2.6.9 Emerging Issues

Contaminants of Emerging Concern

EPA has noted that chemicals previously not detected in surface waters are beginning to be present. Some of these contaminants include pharmaceuticals, endocrine disrupting compounds and personal care products. EPA continues to determine how to approach evaluation of these contaminants and their impacts. NDEP will determine how to address these compounds once EPA has developed recommended criteria.

Harmful Algal Blooms

Harmful algal blooms (HABs) occur when there is a rapid growth of certain types of algae, typically cyanobacteria (blue-green algae) in fresh water, that can produce toxins that are harmful to animals and humans. These blooms can be exacerbated by warm surface waters with excess nutrients. In recent years, several HABs have occurred in Nevada reservoirs. NDEP has coordinated with Nevada Department of Health and Human Services, Nevada Department of Wildlife and Department of Agriculture to institute appropriate measures to warn the public about potential health effects associated with the HABs. Reduction of nutrient loading and temperature would help reduce the occurrence of HABs in the future.

Microplastics

Worldwide, over 300 million tons of plastic are produced annually. It has been known for many years that plastics are polluting marine environments. More recently, it was discovered that plastics are ubiquitous in surface waters as well, especially in the form of microplastics. Microplastics are defined as very small pieces of plastic under 5 millimeters. A recent study by University of California, Davis Tahoe Environmental Research Center (TERC) found microplastics in every sample of beach sand and in Lake Tahoe itself. Because Lake Tahoe does not receive wastewater discharges, the source is currently thought to be from plastic trash degrading over

time. Studies are continuing to determine the extent of the problem and to identify solutions. NDEP is funding TERC to evaluate the amount, distribution and types of microplastic pollution in Lake Tahoe. This research will help to determine the source materials of microplastics, the locations and depths at which the microplastics are concentrating, and will give agencies and policymakers direction on next steps. NDEP is also funding a pilot project with Incline Village General Improvement District and the Tahoe Water Suppliers to educate and encourage residents and visitors at Lake Tahoe to reduce their use of single use plastics.

2.7 Nonpoint Source Impaired Surface Waters

In accordance with the requirements of Sections 303(d)/305(b)/314 of the Clean Water Act, NDEP routinely conducts a comprehensive analysis of water quality data associated with Nevada's surface waters to determine whether state surface water quality standards are being met and designated uses are being supported. The 2016-2018 Integrated Report has been approved by EPA and can be found at <https://ndep.nv.gov/water/rivers-streams-lakes/water-quality-standards/303d-305b-water-quality-integrated-report>. The report evaluates water quality data collected from October 1, 2009 through September 30, 2016.

The primary nonpoint source pollutants causing impairments are phosphorus, iron, temperature, mercury in fish tissue, turbidity, E. coli, total dissolved solids and total suspended solids (Table 2.1). Sources of these pollutants include channel and in-stream erosion, lack of riparian vegetation, flow alteration, grazing practices, urban runoff, historic mining practices, air deposition and natural conditions. With the exception of mercury in fish tissue, activities described in this Plan focus on addressing these major pollutants through implementation of bank stabilization, channel and riparian habitat restoration, grazing management and urban runoff control projects, as well as environmental education to promote awareness and prevention of nonpoint source pollution and affect behavior change for long term protection of Nevada's water resources.

Addressing mercury in fish tissue is beyond the scope of the NPS Program; however, other programs and agencies are working to minimize the impacts. For example, the NDEP Bureau of Air Pollution Control issues permits to limit mercury emissions, and the NDEP Bureau of Corrective Actions (BCA) and the U.S. EPA are managing the Carson River Superfund Site.

Table 2.1. 2016-2018 Integrated Report Parameters Causing Impairments

Parameter Name in Database	Analyte	Impairments by Parameter	% of Total Impairments
Phosphorus, Total mg/L	Phosphorus, Total	144	21.1%
Analysis Temperature	Temperature	86	12.6%
Iron ug/L	Iron	46	6.7%
Mercury In Tissue ug/kg	Hg in fish	40	5.8%
<i>Escherichia Coli</i>	<i>E. coli</i>	37	5.4%
Analysis Total Dissolved Solids	TDS	36	5.3%
Turbidity measured in the laboratory NTU	Turbidity	27	3.9%
Selenium ug/L	Selenium, total	25	3.7%
pH	pH	24	3.5%
Beryllium ug/L	Beryllium	22	3.2%
Total Suspended Solids mg/L	TSS	21	3.1%
Boron ug/L	Boron	17	2.5%
Cadmium, Dissolved ug/L	Cadmium, dissolved	17	2.5%
Analysis Dissolved Oxygen	DO	17	2.5%
Sulfate mg/L	Sulfate	14	2.0%
Arsenic ug/L	Arsenic, total	13	1.9%
Mercury ug/L	Mercury in sediment	13	1.9%
Fluoride ug/L	Fluoride	12	1.8%
Manganese ug/L	Manganese	12	1.8%
Arsenic, Dissolved ug/L	Arsenic, dissolved	11	1.6%
Zinc, Dissolved ug/L	Zinc, dissolved	9	1.3%
Copper, Dissolved ug/L	Copper, dissolved	7	1.0%
Nickel ug/L	Nickel, total	4	0.6%
Nitrogen, Total mg/L	Nitrogen, total	4	0.6%
Ortho Phosphorus mg/L	Orthophosphorus	4	0.6%
Silver, Dissolved ug/L	Silver, dissolved	4	0.6%
Alkalinity as CaCO3 mg/L	Alkalinity	3	0.4%
Chloride mg/L	Chloride	3	0.4%
Analysis Nitrate Nitrite	Nitrate	2	0.3%
Fecal Coliform	Fecal coliform	2	0.3%
Lead, Dissolved ug/L	Lead, dissolved	2	0.3%
Cadmium ug/L	Cadmium, total	1	0.1%
Analysis Sodium Absorption Ratio	SAR	1	0.1%
Barium ug/L	Barium	1	0.1%
Color PCU	Color	1	0.1%
Mercury	Mercury MDS	1	0.1%
Nickel, Dissolved ug/L	Nickel, dissolved	1	0.1%

CHAPTER 3. OVERVIEW OF NEVADA’S WATER QUALITY MANAGEMENT PROGRAMS

Accomplishing the goals and objectives established in the Plan requires effective integration of all water quality related programs throughout BWQP, NDEP and other local, state federal agencies and environmental organizations.

3.1 Integration of Water Quality Protection within NDEP

Bureaus and programs across NDEP contribute to water quality protection and assist in achieving the NPS Program goals. The general framework of program integration is shown in Figure 3.1 and described in detail below.

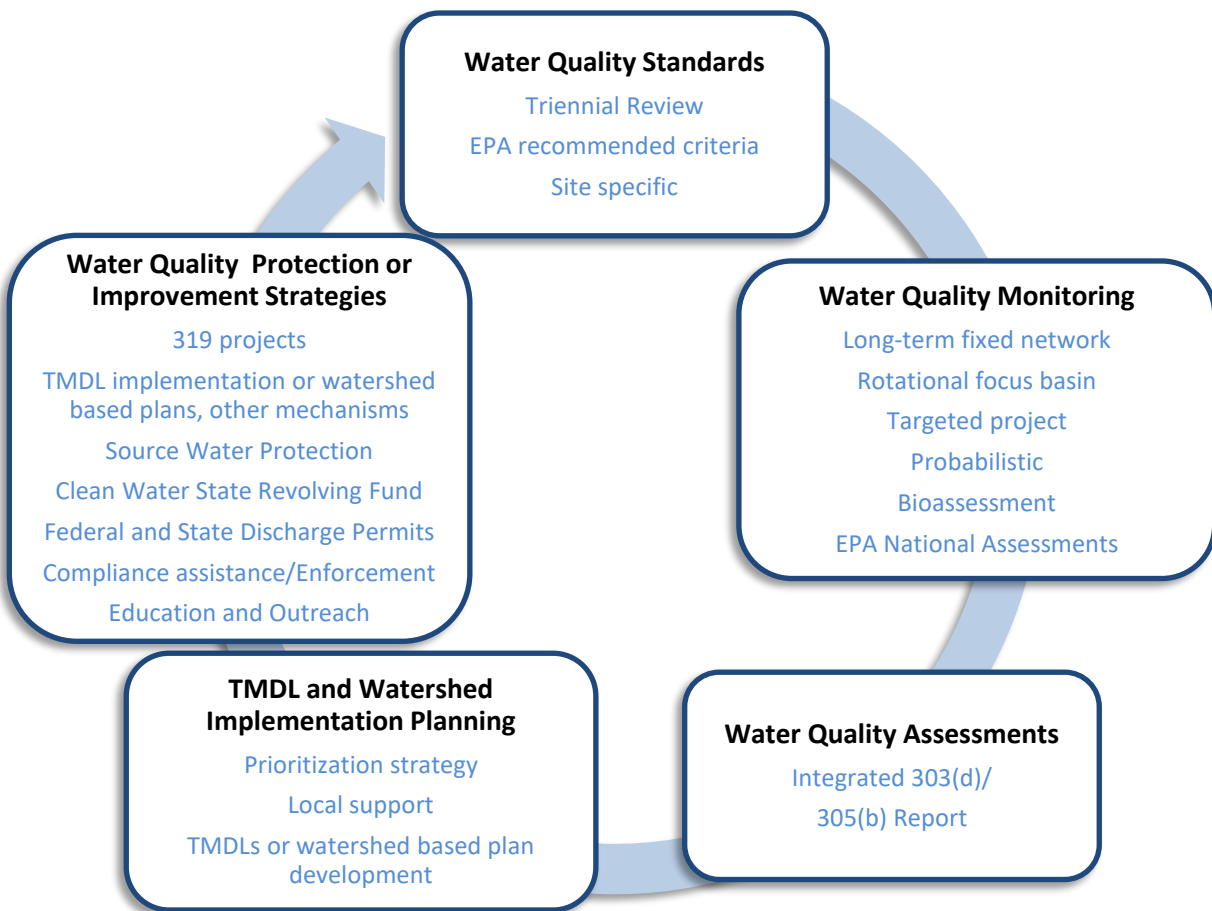


Figure 3.1. NDEP’s Water Quality Planning and Management Framework

3.1.1 Bureau of Water Quality Planning (BWQP)

BWQP is responsible for surface water planning and management activities in Nevada. The Bureau develops and revises surface water quality standards (WQS); monitors the chemical, physical and biological quality of surface waters; assesses surface water quality through the Integrated 303(d)/305(b) report and other mechanisms; develops TMDLs when appropriate and supported by local, grass roots efforts; implements the Nonpoint Source Management Program; and issues 401 certifications. BWQP interacts both internally and externally to ensure coordination with relevant programs.

◆ **Water Quality Standards**

WQS are the scientific and regulatory foundation of water quality protection programs under the Clean Water Act and state statutes and regulations. Appropriate standards are needed to ensure that subsequent actions such as water quality assessments, TMDLs, watershed plans, alternative restoration approaches, NPS implementation projects, and discharge permits are adequate to protect and restore water quality.

A WQS defines the water quality goals for a waterbody by designating beneficial uses of the water and setting narrative or numeric criteria to protect the uses. Additional protection is provided through the establishment of requirements to maintain existing higher quality and other antidegradation provisions.

As described in NAC 445A.122, beneficial uses include watering of livestock, irrigation, aquatic life, contact and noncontact recreation, municipal and domestic supply, industrial supply, wildlife, water of extraordinary ecological or aesthetic value and enhancement of water quality. In addition to narrative standards applicable to all waters, NDEP has established standards for more than 300 individual reaches of rivers, streams, lakes, and reservoirs. Many waterbodies not specifically identified in the NAC are protected by the “Tributary Rule” (NAC 445A.1239). Nevada’s WQS are contained in NAC 445A.11704 – 445A.2234 (available at <http://leg.state.nv.us>).

Specific information and procedures for the development of WQS are described in Nevada’s Continuing Planning Process and the BWQP Long Range Plan.

◆ **Surface Water Monitoring**

Water quality monitoring is conducted to collect biological, chemical, and physical data and information to determine ambient water quality and water quality trends, establish WQS, evaluate if WQS are being met, and develop TMDLs.

Monitoring activities are generally characterized in the following categories: long term fixed network, rotational focus basin, targeted or special projects, bioassessment, State

probabilistic and U.S. Environmental Protection Agency's (EPA) National Aquatic Resource Surveys.

More detailed information about the surface water monitoring program is provided in the BWQP Water Quality Monitoring Strategy and Nevada Quality Assurance Program Plan for Surface Water Sampling and the current 106 Program workplan.

◆ **Waterbody Assessments**

The 303(d)/305(b) Integrated Report is the primary waterbody assessment prepared by the BWQP. The 305(b) portion evaluates the water quality and beneficial attainment of all surface waters of the state for which data is readily available. The 303(d) portion is a list of waters that are not meeting WQS and are classified as impaired. TMDLs are required to be developed for waters on the 303(d) List. To develop the Integrated Report, water quality data are compared to the WQS according to an established methodology.

◆ **Lake Tahoe Total Maximum Daily Loads (TMDLs) Program**

Lake Tahoe's extraordinarily deep water clarity is attributed to its uncommonly clean water which allows sunlight to reach much greater depths than possible in most other water bodies. Between 1968 through 1971, annual clarity levels averaged about 97.5 feet. By the year 2000, however, approximately one-third of Lake Tahoe's unique clarity was lost. To address this issue, the Lahontan Regional Water Quality Control Board (Lahontan Water Board) and NDEP collaborated to develop the Lake Tahoe Total Maximum Daily Load (TMDL), a science-based plan initiated to better understand the causes of clarity loss, determine how much pollution needs to be reduced to reinstate historic clarity levels, and develop a workable, cost-effective implementation strategy. Upon approval by EPA in 2011, the Lake Tahoe TMDL Program is now in the implementation and tracking phase, with controls being implemented to reduce pollutant loading to Lake Tahoe. NDEP works closely with the the Lahontan Water Board and TMDL implementing partners to track progress, report accomplishments, measure effectiveness and adaptively manage implementation efforts. Results and additional program information are available on the online [Lake Clarity Tracker \(https://clarity.laketahoeinfo.org\)](https://clarity.laketahoeinfo.org) on Lake Tahoe Info.

◆ **Total Maximum Daily Loads (TMDLs) and Watershed Implementation Planning**

A TMDL is an assessment of the amount of pollutants a waterbody can receive and still meet WQS. TMDLs provide a means to integrate the management of both point and nonpoint sources of pollution through the establishment of waste load allocations for point source discharges and load allocations for nonpoint sources. CWA Section 303(d) requires that states develop TMDLs for waters included on the 303(d) list of impaired waters. Specific information

and procedures for the development of TMDLs are described in Nevada's Continuing Planning Process and the BWQP Long Range Plan.

TMDL development is a time intensive and costly undertaking. NDEP seeks local stakeholders willing to participate prior to the development of a TMDL. With the exception of the Lake Tahoe TMDL, there have been no new TMDLs, or TMDL implementation in recent years. However, a watershed based plan is near completion for the Truckee River and a plan was developed for the Virgin River. New efforts are being focused on the Walker River.

With this plan, NDEP is committing to continue to support new and existing willing partners to address impaired waters through TMDLs, 9 element watershed based plans and alternative restoration approaches.

National Long-Term 303(d) Vision

In December 2013, EPA announced a new collaborative framework for implementing the CWA 303(d) Program with States-- A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (303(d) Vision). The goals of the 303(d) Vision include:

"Prioritization" For the 2016 integrated reporting cycle and beyond, States review, systematically prioritize, and report priority watersheds or waters for restoration and protection in their biennial integrated reports to facilitate State strategic planning for achieving water quality goals. Nevada created a prioritization system and reported it. Dixie Creek watershed(s) in Eastern Nevada were chosen as a priority; unfortunately, NDEP was unable to gain traction with the property owners and a main implementer with the Bureau of Land Management (BLM) retired. The prioritization system is being revisited in 2020 in the draft "Prioritization Framework for TMDLS or Alternatives and Its Application," and new waters are being prioritized. Reaches of the Walker and Carson Rivers have both been identified as priority waters.

"Assessment" By 2020, States identify the extent of healthy and CWA Section 303(d) impaired waters in each State's priority watersheds or waters through site-specific assessments. Nevada chooses a focus basin every few years to assess and continues to do so. Currently, the Central Basin of Nevada is being assessed.

"Protection" For the 2016 reporting cycle and beyond, in addition to the traditional TMDL development priorities and schedules for waters in need of restoration, States identify protection planning priorities and approaches along with schedules to help prevent impairments in healthy waters, in a manner consistent with each State's systematic prioritization. Nevada continues to assess waters for impairments and is in the initial phases of a formal rule-making process to adopt statewide antidegradation protection

procedures for protecting healthy waters. These protection procedures would be implemented during development of discharge permits to ensure waters of high-quality are maintained and not degraded.

“Alternatives” By 2018, States use alternative approaches, in addition to TMDLs, that incorporate adaptive management and are tailored to specific circumstances where such approaches are better suited to implement priority watershed or water actions that achieve the water quality goals of each state, including identifying and reducing nonpoint sources of pollution. Nevada is working on an alternative approach in coordination with multiple stakeholders in the Walker River watershed.

“Engagement” By 2014, EPA and the States actively engage the public and other stakeholders to improve and protect water quality, as demonstrated by documented, inclusive, transparent, and consistent communication; requesting and sharing feedback on proposed approaches; and enhanced understanding of program objectives. Nevada has been engaging with multiple stakeholders in both the Truckee River watershed and the Virgin River watershed to develop watershed plans. NDEP will begin to engage with stakeholders in the Walker River watershed to determine if there is adequate support for an alternative restoration approach planning effort or nine element watershed based plan.

“Integration” By 2016, EPA and the States identify and coordinate implementation of key point source and nonpoint source control actions that foster effective integration across CWA programs, other statutory programs (e.g., CERCLA, RCRA, SDWA, CAA), and the water quality efforts of other Federal departments and agencies (e.g., Agriculture, Interior, Commerce) to achieve the water quality goals of each state. Nevada has been integrating programs, including source water protection, in efforts to more effectively plan and implement water quality protection and restoration efforts.

The Long-Term 303(d) Vision enhances overall efficiency of the CWA 303(d) Program, focuses attention on priority waters and provides states flexibility in using available tools beyond TMDLs to attain water quality restoration and protection. With this recognition that there is not a “one size fits all” approach to restoring and protecting water resources, states can develop tailored strategies to implement their CWA 303(d) Program responsibilities in the context of their water quality goals. Nevada is addressing these options through several integrated planning efforts delineated above.

TMDL Implementation and Watershed Based Plans

TMDL implementation and watershed-based plans characterize the impairment problem, identify pollutant sources and identify projects needed to reduce pollutant loads so that

water quality standards can be met. These plans are used to prioritize watershed activities and support use of CWA Section 319 funding to implement watershed projects. The EPA 2013 Nonpoint Source Program and Grants Guidelines for States and Territories require that 50% of a state's 319 funding allocation must be used for the implementation of EPA approved watershed plans. These watershed plans must contain the nine elements identified in Appendix C of the Guidelines. NDEP will work with partners to identify waters for which TMDL implementation and watershed based plans will be the most effective way to achieve water quality benefits. In those cases where development of the plans is warranted, NDEP will ensure the plans meet the nine elements. NDEP is coordinating with multiple stakeholders in the Truckee River and Virgin River watersheds to create such plans.

Investigating Alternative Strategies for Improving Water Quality

EPA recognized in both the updated NPS Guidelines and long term vision for the 303(d) program that in some cases, approaches other than watershed plans may prove more effective for achieving water quality goals. Like watershed plans, alternative restoration approaches have the ultimate goal of attaining water quality standards. However, they can provide a quicker path to implementation in cases where the issues are relatively clearly defined and there are stakeholders that are interested in taking action to address the problem. One alternative approach is known as straight-to-implementation, which may be appropriate in situations where large-scale watershed planning is not necessary to target implementation activities. For example, this would be an appropriate approach in a watershed where there is a single-source causing the impairment that can be addressed through the implementation action.

Alternative restoration approaches may get water quality improvements on the ground faster

NDEP and partner agencies may utilize this approach when implementation needs are already known; for example bank stabilization and riparian planting to restore stream functionality after a wildland fire. Additionally, NDEP may use alternative restoration plan to enable the use of NPS funding for implementation projects. These alternative plans must be reviewed and approved by EPA Region 9 to ensure that planning elements are adequately addressed to justify use of NPS funding. NDEP has identified the Walker River as potential candidate for an alternative restoration approach.

Alternative plans must:

- ◆ Identify causes or sources of NPS impairment, water quality problem, or threat to unimpaired/high quality waters;

- ◆ Include watershed project goals and an explanation of how the proposed projects will achieve or make advancements toward achieving water quality goals;
- ◆ Include a schedule and milestones to guide project implementation;
- ◆ Propose specific management measures and explain how they will address the impairment/water quality concern; and
- ◆ Include a water quality monitoring component.

EPA may approve the use of certain NPS funds to implement alternative plans containing the above elements in the following circumstances:

- ◆ When the impairment is not specific to a pollutant (i.e. flow regime);
- ◆ When responding to a NPS pollution emergency or urgent public health risk;
- ◆ When protecting an assessed unimpaired/high quality water; and
- ◆ When addressing an isolated, small-scale water quality problem resulting from one or few sources of pollution.

This flexibility will allow NDEP and watershed partners to respond to pollutant concerns as efficiently as possible when more focused plans are sufficient.

NDEP will work with agencies and local stakeholders to identify the most appropriate and effective means to restore or protect a particular waterbodywatershed based plans, or alternative strategies.

◆ **Nonpoint Source Pollution Management**

The NPS Pollution Management Program administers the CWA Section 319 program in Nevada. More detailed program information is provided in Chapter 4.

◆ **401 Certifications**

Section 401 of the CWA requires that activities that may result in a discharge into waters of the United States that need a federal permit must first obtain a state Section 401 water quality certification. This certification ensures that state water quality standards and other state regulations will be met and provides opportunity for states to have input into federally-approved projects that may affect surface waters of the state. NDEP will deny certifications for activities that cannot provide reasonable assurance that state water quality standards will be achieved. The Army Corps of Engineers has issued a new rule called the Navigable Water Protection Rule (NWPR). NDEP is determining how the changes to protections will affect Nevada's waterways and is responding accordingly.

3.1.2 Bureau of Water Pollution Control (BWPC)

BWPC issues National Pollutant Discharge Elimination System (NPDES) permits for point discharges to surface waters, state ground water permits for discharges that may impact subsurface waters, Underground Injection Control permits for injection through wells, MS4 stormwater permits and Working in Waterways permits that are complimentary to the 401 Certification Program. BWPC performs engineering design reviews for permitted facilities, inspects permitted facilities, investigates violations of water pollution statutes and regulations and reviews proposed subdivisions for adequacy of wastewater treatment disposal.

3.1.3 Bureau of Safe Drinking Water (BSDW)

BSDW ensures that public water systems provide safe and reliable drinking water. BSDW works with communities to protect drinking water supplies at the source by managing land uses and minimizing human-caused sources of contamination.

BSDW also administers the Integrated Source Water Protection Program (ISWPP) that assists public water systems throughout Nevada to develop Community and/or Individual Source Water Protection Plans. These plans identify ground water "capture zones" around each public water supply well (called a source water or wellhead protection area), potential contamination sources, and protective measures to protect the water supply. Many counties (White Pine, Douglas, Nye, Lyon, Carson City, Churchill and Humboldt) have completed this planning effort. Protective measures typically include:

- ◆ Education/outreach to businesses, and the general public about where their community drinking water comes from and how to protect it;
- ◆ Coordinated land use planning;
- ◆ Physical protection (i.e. fencing) around wellheads and well houses;
- ◆ Inventory and plugging of unused wells which can act as conduits between surface pollution and groundwater; and
- ◆ Implementation of best management practices to manage potential and existing sources of contamination.

Through a collaborative effort between EPA and a workgroup formed with clean water and drinking water programs, the document named *"Opportunities to Protect Drinking Water and Advance Watershed Goals Through the Clean Water Act: A Toolkit for State, Interstate, Tribal and Federal Water Program Managers"* was developed. The document outlines a toolkit to increase coordination between CWA and SDWA programs. The NPS Program worked diligently with the ISWPP Program to find opportunities to integrate source water protection plans with watershed based plans. The result was the development of a collaborative source water/watershed based plan for the Truckee River watershed in Washoe County, which is expected to be completed by

July, 2020. The collaboration of these programs will continue in the next five years in other watersheds.

3.1.4 Bureau of Mining Regulation and Reclamation (BMRR)

BMRR, in cooperation with other state, federal, and local agencies, regulates mining activities under state regulations adopted in 1989 that ensure Nevada's waters are not degraded by mining operations. The regulation branch of BMRR is responsible for protecting waters of the state through permitting and inspection of active mines and closure at the cessation of operations to ensure that all components are left environmentally stable. The reclamation branch issues permits to reclaim the disturbance created by exploration and mining operations to a safe and stable condition that ensures a productive post-mining land use.

3.1.5 Bureau of Sustainable Materials Management (BSMM)

The Bureau of Sustainable Materials Management operates permitting and compliance programs to ensure the safe management of solid and hazardous waste. In addition, waste reduction, reuse, and recycling are promoted. Solid Materials Management includes hazardous and solid waste programs as well as the agency's recycling program.

3.1.6 Bureau of Corrective Actions (BCA)

The Bureau of Corrective Actions (BCA) regulates underground storage tanks and provides oversight on remediation of leaking underground storage tanks (UST/LUST programs), provides oversight for Resource Conservation and Recovery Act corrective action cases and provides certification of remediation consultants and UST personnel. BCA implements the Superfund Program and works with the U.S. EPA to manage the Carson River Superfund Site. BCA also oversees the Abandoned Mine Lands Program to address environmental problems at historic mine sites. Any NPS projects that are related to Superfund sites and/or have been identified as having mercury contamination issues are coordinated with BCA staff. BCA staff is also often consulted during 401 Certification review if historic mining and/or mercury contamination is known or suspected.

3.1.7 Bureaus of Air Quality Planning and Air Pollution Control

These bureaus issue and ensure compliance with air quality operating permits. The Bureaus oversee the Nevada Mercury Control Program; implement an alternative fuels program for public agency fleets with more than ten vehicles; conduct investigations and technical studies; issue air emission reports; and monitor air quality. Air quality control permits minimize the air deposition of NPS

pollutants including fine particulate matter and mercury.

3.2 Federal, State, Local, Tribal and Other Partnerships

Addressing nonpoint source pollution within Nevada requires the efforts of many federal, state and local agencies, Tribes, and other stakeholders. A priority of the NPS Program is to maintain and improve existing partnerships and develop new partnerships with those who seek to reduce nonpoint source pollution and improve water quality. NDEP will use a variety of mechanisms to form and sustain partnerships including:

- ◆ identify willing stakeholders interested in collaborating toward development of watershed-based plans and/or alternative restoration approaches;
- ◆ identify opportunities for water quality improvement projects with partnering stakeholders;
- ◆ attending and participating in established meetings of partner agencies;
- ◆ recommitting to or updating existing memorandums of agreement, and seeking to establish new agreements as opportunities arise;
- ◆ reviewing and commenting on resource planning documents to ensure nonpoint source pollution is considered and addressed;
- ◆ establishing contact information for notification of the release of Grant Funding Opportunities for Section 319(h) grants;
- ◆ requesting information on projects related to nonpoint source reduction conducted during the previous year for inclusion in the NPS annual program report;
- ◆ Providing the opportunity to participate in triennial review of state water quality standards, review of the Integrated Report, and review of other plans and documents as appropriate.

3.2.1 Federal Agencies

Numerous federal agencies have responsibility for water quality protection programs throughout Nevada; including the Army Corps of Engineers, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, Forest Service, Park Service, Geological Survey and Natural Resources Conservation Service.

- ◆ **Army Corps of Engineers (Corps)**

The Corps regulates the discharge of dredged or fill material into the waters of the United States under Section 404 of the CWA. Typical activities requiring a permit include linear transportation and utility line projects, bank stabilization, aquatic habitat enhancement, pier or buoy placement or replacement, site development for agriculture, residential or industrial development, mining, and construction of dams and levees. A state issued 401 certification must be obtained prior to issuance of the Corps 404 permit. NDEP staff coordinates with the Corps to ensure water quality standards will be met.

◆ **Bureau of Land Management (BLM)**

BLM is the major land management agency in Nevada with jurisdiction of about 67% of the total land surface area. BLM is required to comply with provisions of the CWA and is required to meet the water quality standards and other state rules and regulations established by NDEP. All BLM policies and procedures must be consistent with the Federal Land Policy and Management Act of 1976 and all other laws which regulate use of public lands including the National Environmental Policy Act requirements. BLM administers permits and leases held by ranchers who graze livestock on BLM allotments. Permits and leases generally cover a 10-year period and are renewable if the BLM determines that the terms and conditions of the expiring permit or lease are being met. NDEP and BLM staff meet regularly to discuss resource concerns and potential water quality improvements. NDEP is noticed on BLM actions through the State Clearinghouse, and comments when appropriate.

◆ **Bureau of Reclamation (BOR)**

BOR is responsible for several water storage and irrigation projects in Nevada in the Truckee, Carson, Humboldt and Colorado River Basins. BOR works under the Government Performance and Results Act to manage water quantity and quality related to these projects and can provide financial and technical assistance to state and federal agencies for water quality investigations, monitoring and planning, and local irrigation project operation and management improvements. NDEP will work with BOR as necessary to address NPS concerns.

◆ **Fish and Wildlife Service (FWS)**

FWS administers the Endangered Species Act (ESA) for plant and animal species. The ESA requires that recommendations for conserving fish and wildlife resources be given full consideration in the decision-making process and allows FWS to address any aspect of a proposed project, including protection of water quality to maintain fish or wildlife resources. The Fish and Wildlife Coordination Act (FWCA) mandates that federal agencies consult with them prior to initiating an action that may have an adverse effect on fish and wildlife resources. FWS also administers a variety of natural resource assistance grants to governmental, public and private organizations, groups and individuals. NDEP coordinates with FWS on projects where mutual water quality and habitat improvement goals exist.

◆ **Forest Service (FS)**

FS manages approximately 10% of the total land surface area in Nevada. The headwaters of many of Nevada's surface waterbodies are located on FS lands. FS is required to comply with provisions of the CWA and is required to meet the water quality standards and other state

rules and regulations established by NDEP. FS identified priority watersheds for protection or restoration under the 2011 Watershed Condition Framework and implements several programs to address NPS pollution, which include:

- ◆ Burned Area Emergency Response Program to help stabilize soil and protect water quality following a wildfire on FS lands;
- ◆ Healthy Forests and Rangelands–Hazardous Fuels Reduction and Landscape Restoration Program to treat the excessive accumulation of hazardous or unusually flammable fuels;
- ◆ Watershed Restoration Program to improve watershed conditions using upland and in-stream treatments;
- ◆ Road Maintenance Program to improve travel-ability and reduce resource damage; and
- ◆ Legacy Road and Trail Remediation Initiative for road decommissioning and road and trail repair in environmentally sensitive areas with water quality issues.

In 2009, NDEP entered into a Memorandum of Agreement with the FS Intermountain Region to increase coordination and collaboration between NDEP and the Forest Service to prevent, mitigate and control nonpoint source pollution and protect water quality on National Forest System lands in the State of Nevada. Annual coordination meetings are held between USFS and NDEP staff.

◆ **Geological Survey (GS)**

GS provides water quality and flow data used by NDEP to determine water quality trends, identify emerging water quality issues, develop the 303(d)/305(b) Integrated Report and TMDLs, and develop permits. NDEP currently provides funding to maintain the Fort Churchill gage on the Carson River. NDEP also works with the GS on water quality assessments.

◆ **Natural Resources Conservation Service (NRCS)**

NRCS assists land owners in the planning and application of conservation practices to protect soil and water resources. To do so, NRCS provides technical, educational, and financial assistance through a variety of Farm Bill programs including the Environmental Quality Incentive Program (EQIP), Regional Conservation Partnership Program (RCPP), and Agricultural Conservation Easement Program.

EPA and NRCS initiated the National Water Quality Initiative (NWQI) in 2012. The NWQI encourages coordination between 319(h) and Farm Bill programs to address NPS pollution. NDEP has coordinated with NRCS to select subwatersheds to focus efforts. The watersheds

have been changed several times due in large part to a lack of producers that participated. The last effort was focused toward two watersheds in the Northeastern part of Nevada (Beaver Creek tributaries to the North Fork Humboldt River). Again, due to lack of producer interest in participation, NRCS chose to stop focusing effort in these watersheds. NDEP will continue to coordinate with NRCS to identify project opportunities through other NRCS Farm Bill programs and participate in Nevada State Technical Advisory Committee meetings.

3.2.2 Tribal Governments

Twenty-three Native American Tribes, Bands and Colonies live within the boundaries of the State of Nevada. These are sovereign entities, many of which implement in-house programs to manage tribal natural resources, including water quality. In 2003, with funding from EPA, NDEP and the Inter-Tribal Council of Nevada established the Tribal Liaison Program to facilitate coordination and cooperation between the State and Tribes in Nevada to address environmental issues. NDEP will work with EPA, Inter-Tribal Council Liaison and Tribes requesting assistance to address water issues and nonpoint source pollution management on an as-needed basis, and will develop an action plan if feasible. NDEP has successfully partnered with Tribes on several projects; including helping to fund the development of a watershed based plan with the Pyramid Lake Paiute Tribe on the lower Truckee River, partnering with the Washoe Tribe for in-channel restoration projects on the Carson River, coordinating with the Reno-Sparks Indian Colony in the One Truckee River effort, presenting at Earth Day Events held by the Fallon Paiute Shoshone Tribe, and recently attending a field tour of the Walker River and performing a needs assessment with the Walker River Paiute Tribe and the Corps.

3.2.3 State Agencies

◆ Division of State Lands (DSL)

The Division of State Lands provides land and land use planning services to the state, its agencies and its people. DSL administers the Tahoe Bond Acts of 1986 and 1996 which authorized the sale of more than \$50 million in bonds for the acquisition of sensitive lands and funding erosion control and stream restoration projects in the Lake Tahoe basin.

Special vehicle license plates to benefit Lake Tahoe are available through the Department of Motor Vehicles. These fees go into a dedicated Lake Tahoe fund, which is administered by State Lands for projects and programs that will preserve or restore the natural environment of Lake Tahoe. These funds are available as grants.

NDEP participates in technical review of proposed water quality improvement projects seeking funding from DSL grant programs to ensure consistency with NPS goals.

◆ **Division of Forestry (NDF)**

The Division of Forestry (NDF) is charged with protecting 8.7 million acres of non-federal land from fire and serious environmental degradation. NDF provides technical assistance to landowners on forest management, and administers a nursery program from which trees are supplied for greenbelts, environmental restoration and other conservation projects. NDF, through the Department of Prisons Conservation Camp Program, supplies crews for a variety of activities including resource conservation and restoration projects. NDEP coordinates with NDF on water quality improvement and habitat restoration projects.

◆ **Division of State Parks (NSP)**

The Division of State Parks (NSP) manages, protects, operates and maintains 27 parks within the Nevada State Park System. NDEP staff approached NSP administration to identify state park lands that may benefit from water quality restoration that would result in NPS pollution reduction. The newly acquired Walker State Recreation Area lands that feed drainage off of historic, irrigated ranch lands to Walker Lake were identified as an opportunity to collaborate. Walker River State Recreation Area spans 12,000 acres of rangeland along 28 miles of the East Walker River. 319(h) funds were awarded to NSP during the 2019 Grant Funding Opportunity for ecological restoration of part of these lands located on the Pitchfork Ranch Unit.

◆ **Conservation District Program (CDP)**

CDP, housed in the Department of Conservation and Natural Resources, provides administrative support to the State Conservation Commission (SCC) and assist the State's 28 local conservation districts in the development and implementation of programs to conserve Nevada's natural resources. The emphasis of conservation district programs is on voluntary compliance and individual technical assistance. Some districts have taken an active role in riparian area management. NDEP actively engages with local Conservation Districts and many are active in channel restoration projects partially funded with NPS funds.

◆ **Department of Agriculture (NDA)**

NDA oversees agriculture and related industries in Nevada. NDA also has authority to regulate pesticide use in Nevada through the mandates of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Nevada Pesticides Act. NDA monitors select groundwater and surface water sites for impacts related to agricultural pesticide and nutrient application. NDEP and NDA met several times in 2019 to discuss coordination of water quality monitoring, specifically on the Walker River. Followup will occur in 2020.

◆ **Department of Transportation (NDOT)**

NDOT is charged with assuring an efficient transportation system of roads that provides mobility the public. NDOT is required to implement best management practices designed to control runoff from their road network that minimizes the release of pollutants to surface water and groundwater under an NPDES permit from NDEP. NDOT's environmental section ensures that projects comply with state, federal and local environmental regulations. NDOT is active in major wetland creation and enhancement projects to mitigate the effects of highway construction on wetland areas of the state, and is a key implementer of the Lake Tahoe TMDL. NDEP coordinates with NDOT on projects related to the control of NPS pollutants from their road systems, especially in the Lake Tahoe Basin.

◆ **Department of Wildlife (NDOW)**

NDOW was established to preserve, protect, manage and restore the wildlife resources of Nevada. The goals of NDOW are to: 1) maintain all species of the State's wildlife and their habitats for their intrinsic and ecological values as well as their direct and indirect benefits to man, 2) provide for the diversified recreational use of the State's wildlife resource, 3) provide for an economic contribution from the wildlife resources in the best interests of the people consistent with the long-term welfare of these resources, and 4) provide for scientific, educational and aesthetic uses of the State's wildlife resources. NDOW can offer technical, financial, legal and educational assistance in NPS pollution management programs and projects. NDEP coordinates with NDOW where shared mutual goals of water quality improvement and habitat restoration coincide.

3.2.4 Regional

The NPS Program also coordinates with regional entities including the Tahoe Regional Planning Agency, Carson Water Subconservancy District, Cities of Reno and Sparks, Washoe County, Clark County, Lyon County, Elko County, School Districts, Conservation Districts and many others. NDEP will identify potential stakeholders where prioritized NPS issues exist and work with these entities to leverage resources where feasible.

3.2.5 Other Partnerships

The NPS Program also partners with other entities where shared goals are identified; including nonprofits such as the Nature Conservancy, Great Basin Institute, Sierra Nevada Journeys, the Great Basin Outdoor School and the Nevada Outdoor School. Many of these nonprofit entities focus efforts on education, and therefore partnering with them increases the breadth of the NPS message significantly. The NPS Program also reaches out to other interest groups as needed.

CHAPTER 4. NDEP NONPOINT SOURCE MANAGEMENT PROGRAM

In order to effectively address NPS pollution throughout the state, NDEP coordinates with the efforts of local, state and federal agencies, environmental organizations and private landowners to reduce NPS pollution and improve water quality. The main priorities of the NDEP NPS Program include:

4.1 Support/Grow Existing Local Watershed Efforts

The NPS Program has established strong long-term relationships with agencies, organizations and the private sector. A main priority of this Plan is to continue and strengthen these existing successful partnerships for the implementation of water quality improvement and targeted environmental education projects. In Nevada, locally-led watershed efforts with these stakeholders are the key to successful implementation of these projects. Where there is local interest, BWQP encourages the development of watershed based plans or alternative restoration strategies to improve water quality. During the last five years, watershed based planning efforts for both the Truckee and the Virgin River watersheds have been supported both directly and indirectly by the NPS Program.

Where local support and resources allow, watershed coordinators facilitate watershed-wide planning and implementation of projects. Currently, NDEP supports these positions to the extent possible, including the Carson Water Subconservancy District Carson River Coalition coordinator, One Truckee River Watershed Coordinator, and the Carson Valley and Dayton Valley Conservation District Coordinators.

Through grant funding, NDEP provides support to many existing partners to implement local water quality improvement projects. NDEP will continue to build these relationships to accelerate watershed improvements.

4.2 Establish New Partnerships

The second priority is to identify potential partners that are interested in developing programs to manage NPS pollution. A desired outcome of identifying new partners and developing relationships with them is to implement NPS prevention activities. Another is to build rapport in order to create a foundation in the watershed by which a watershed based plan or alternative strategy may be developed. It is understood by the NPS Program that the development of a watershed based plan takes a grass-root effort that needs community support from the base up. Therefore, the NPS Program identifies champions in the watershed first, determines mutual goals and allows the local community to shape the direction of end results.

To achieve this goal, NDEP identifies potential partners to share information about NDEP water quality programs, identify shared priorities, strategize on potential projects through development of action

plans, and determine how to leverage funding. Additionally, NDEP will provide technical assistance to help partners develop project proposals, and will contact all eligible partners when NDEP's annual Grant Funding Opportunity is released. NDEP will also provide opportunities for partners to participate in the Triennial Review of the state water quality standards, and will request information from partners on NPS projects to report annually. Potential partners include: BLM, USFS, NRCS, ISWPP, Nevada Association of Conservation Districts, and Tribes throughout Nevada.

4.3 Plan, Implement and Assess NPS Pollution Control Measures

The third priority is to continue to support implementation of NPS pollution control measures identified in watershed plans, alternative restoration approaches or individual projects to achieve load reductions and reportable incremental progress to restore impaired waters or protect high-quality waters. The widespread implementation of projects identified, including implementation of Best Management Practices (BMPs), is a key component of NPS pollution control. Where there is local support, NDEP will assist in the development of watershed plans and/or alternative restoration approaches. Each plan, approach and individual project will have specific metrics based on environmental indicators to monitor and assess the success of the project. The metrics will be clearly identified in subaward scopes of works, with subawardees required to submit data annually at a minimum. Requirements to continue to assess the project's success after its conclusion will be included when appropriate. These metrics will be reported to EPA yearly in NPS Annual Reports. To assist implementers, NDEP will maintain an online BMP Toolbox which will include links to regional BMP guidelines to assist users in the identification and implementation of appropriate practices.

NPS-related water quality impairments are complex, and quantifiable water quality improvements are unlikely over the span of this Plan. Therefore, incremental improvements will be assessed by metrics discussed above. Load reduction estimates determined by models may be used to report incremental progress. Additionally, NDEP is funding a pilot study utilizing drones on the Carson River to increase monitoring of longterm success or failure of restoration projects. The drone technology and software allow for monitoring of channel structure and mass balances of sediment. It is intended that this pilot study will greatly enhance the ability to measure success of various watershed improvements. Where significant watershed improvements have occurred, NDEP will create and report a NPS incremental success story.

4.4 Implement and Assess Environmental Education Program

An informed public that understands the role it plays in protecting and improving water quality is inherent to the long-term success of efforts to control nonpoint source pollution. The non-regulatory nature of the NPS Program makes it vitally important that people who live in a watershed and use its water resources are willing to take voluntary actions to reduce NPS pollution and improve ecosystem health.

Therefore, implementation of an effective environmental education program is a cornerstone of the Plan. NDEP's goal is to educate and inform the public about nonpoint source pollution, water quality protection and watershed health to increase awareness and promote long-term behavior change. NDEP's environmental education program supports projects that develop broad science-based knowledge of water chemistry, biology, physical processes, conservation practices and local watershed issues; and encourages environmental stewardship and actions to reduce NPS pollution.

NDEP has allocated significant resources to environmental education in the past and will continue to do so in this Plan including support of one full time environmental education staff person who implements both statewide and watershed specific programs. Some of these programs include Project Water Education for Teachers (WET), River Snapshot and workdays, environmental awareness events such as Earth Day, publication of the quarterly newsletter, and development of the NDEP environmental education website. To guide the program over the next five years, NDEP will revise the NPS environmental education strategy that will describe goals and objectives, organizational structure, partner relationships and funding opportunities.

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 Carson Water Subconservancy District, several Conservation Districts, City of Reno, Clark County, Southern Nevada Water Authority, The Nature Conservancy, Sierra Nevada Journeys, and Great Basin Outdoor School. NDEP will continue to work with these established partners and will seek opportunities to expand education programs, including with new partners.

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 will require measurable statistics that show knowledge gained through the program and potential for behavior change. As new metrics arise to determine impacts of environmental education on various audiences arise, NDEP will evaluate and incorporate those metrics to determine impacts.

4.5 Program Administration

The BWQP will manage and implement the NPS Program efficiently and effectively, including necessary financial management.

4.5.1 Program Funding

The State of Nevada provides no direct funding to NDEP to address nonpoint source related water quality problems. NDEP's NPS Program is supported entirely by federal Clean Water Act Section 106 and 319(h) grant funds. The required non-federal match for the 319 grant must be provided by 319 NPS project implementers which include other state and local agencies, environmental organizations and individuals through a combination of cash and in-kind contributions.

Federal 319 funding allocated to Nevada gradually increased from 1988 through 1998, with a sharp increase in 1999 with additional Clean Water Action Plan funds. Funding continued to increase to a high of \$1.98 million in 2003. Over the past sixteen years funding has been reduced to \$1.34 million in 2019.

◆ **State Revolving Fund**

The Clean Water State Revolving Loan Fund (CWSRF) was created by Congress in CWA amendments of 1987 to replace the Construction Grant Program. The program provides loans at or below market rate and other forms of financial assistance to municipalities to assist them in financing the construction of wastewater treatment works and projects to control non-point sources of water pollution. These funds are not sufficient to satisfy all of the State's wastewater treatment needs and are currently only utilized for infrastructure projects. NPS staff has met with SRF staff on several occasions to discuss the possibility of utilizing SRF funds for NPS projects. SRF setasides are utilized by NDEP's Integrated Source Water Protection Program, which has been coordinating closely with the NPS Program on joint SW/Watershed planning efforts. The Truckee SW/WS Plan will be completed by July 2020. The budget for SRF in 2020 is requiring at least 10% setaside for green infrastructure, which may provide opportunity to utilize these funds for NPS projects.

◆ **Lake Tahoe Environmental Improvement Program (EIP)**

The EIP is a long-term program initiated in 1997 that to date has expended over \$2.3B on projects and programs needed to improve the environment at Lake Tahoe. The cost of implementing the EIP has been apportioned between the Federal Government, the States of Nevada and California, local governments, and private property owners. Nevada's contributions to date equal \$184 million.

◆ **Other Lake Tahoe Specific Funding**

The Division of State Lands administers two Tahoe bond acts, the Lake Tahoe license plate program, and the excess coverage mitigation program. The Tahoe bond acts approved by the voters in 1986 and 1996 authorized the sale of more than \$50 million in bonds for the acquisition of sensitive lands and funding erosion control and stream restoration projects in the Tahoe basin. The License Plate Grant Program is administered through an annual request for proposals process and usually has about \$300,000 to disburse.

The Tahoe excess coverage mitigation program is funded by excess coverage mitigation fees forwarded from the Tahoe Regional Planning Agency. The objective of this program is to improve the water quality of Lake Tahoe through the retirement of land coverage and restoration of disturbed lands. This program acquires land and land coverage.

NDEP will continue to work with local, state and federal partner agencies to implement water quality improvement and erosion control projects through these funding sources.

4.5.2 Subawards

The primary way the NPS Program supports the implementation of successful projects and programs with partners is through the 319 grant subaward program. About \$1 million in 319 funding was available for projects in 2019. To disburse 319 funds NDEP conducts an annual Grant Funding Opportunity (GFO) process. Proposals are evaluated and ranked according to established criteria by a technical review panel that consists of NDEP NPS Program staff and the U.S. EPA Region 9 Nevada Project Officer. Subawards must identify a 50% match. Criteria used to evaluate implementation projects include:

- ◆ Potential for NPS pollutant load reductions;
- ◆ Extent of other agency collaboration and partnering;
- ◆ Extent of treatment of urban runoff or riparian habitat improvement;
- ◆ Anticipated amount of local match; and
- ◆ Commitment to maintenance of best management practices.

Other appropriate criteria are used to evaluate environmental education projects including extent of anticipated impact and reportable metrics to show successful delivery of the program.

The NPS Program implements appropriate financial and legal management of 319 grants and subawards. A structured, tiered network of financial review is strictly adhered to for all funded projects. Contract invoices requesting payment through the 319(h) grant subawards are initially reviewed by project Contract Coordinators, and upon their approval are forwarded to the BWQP Contract Manager for secondary review and approval. The payment request is then advanced to NDEP's Office of Finance and Personnel Management (OFPM) for final review and payment. NDEP implements strict internal controls according to the Division administrative manual and complies with all state and federal grant reporting requirements and reports to EPA as required in appropriate financial reports.

4.5.3 Grants Reporting and Tracking System (GRTS)

EPA requires the NPS Program to track 319(h) grant subawards through their Grants Reporting and Tracking System (GRTS). The Grants Reporting and Tracking System is the primary tool for management and oversight of the EPA's Nonpoint Source (NPS) Pollution Control Program. The NPS Program reports progress in meeting milestones, including reductions of NPS pollutant loadings and improvements to water quality achieved by implementing NPS pollution control practices.

4.5.4 Other EPA-Required Reporting

NDEP reports to EPA quarterly to document incremental progress toward achieving annual grant milestones. Additionally, NDEP reports to EPA annually to document progress in achieving Plan and grant milestones including information submitted by outside agencies. NDEP will additionally begin evaluating the Plan for update needs based on new water quality assessment information and

partnerships built with stakeholders. NDEP will submit a draft review Plan to EPA for review and discussion during the fifth year of Plan implementation. Once EPA comments and NDEP revises the document, NDEP will submit the final updated Plan for the subsequent five-year implementation period (2025-2029).

4.6 Watershed Activities

In 1999, a Nonpoint Source Interagency Workgroup prioritized Nevada's watersheds utilizing a Unified Watershed Assessment Process at the Hydrologic Unit Code eight-digit (HUC-8) level. The watersheds were ranked, with Category 1 watersheds being impaired and nonfunctioning, and designated as priority watersheds. The watersheds were also ranked based on water quality concerns and concentrated into HUC-6 level basins which include the Truckee, Carson, Humboldt and Walker River Basins, Lake Tahoe Basin and the Las Vegas Wash. These areas have been the focus of the NPS program over the past twenty years with the establishment of long-term partners in each watershed and implementation of bank stabilization, riparian habitat restoration, BMP installation and environmental education projects. Each of these priority watersheds are currently at a different stage of watershed planning and/or implementation based on local support and efforts as detailed throughout this document. NDEP recognizes the need for a re-evaluation of priority watersheds to target for further work and the importance of developing TMDLs, TMDL implementation plans, and watershed or alternative restoration plans. For this plan, the Humboldt River Watershed has been removed as a priority, and NDEP will be focusing more effort on the Truckee, Walker, Carson and Virgin River Watersheds. Efforts in the Lake Tahoe Basin and the Las Vegas Wash will remain at similar levels.

4.6.1 Carson River

The Carson River originates in Alpine County, California and flows into Nevada as two separate tributaries. The East Fork begins in the Carson Iceberg Wilderness and the West Fork near Lost Lakes. The West Fork becomes Brockliss Slough in Nevada and meets the East Fork near Genoa in Carson Valley. The main stem of the river continues through Carson City into Dayton Valley and after being diverted primarily for agriculture, remaining flow is stored in Lahontan Reservoir. The Lower Carson River is released from the reservoir, providing water for farms, ranches and the Stillwater Wildlife Refuge before terminating in the Carson Sink. The river, from headwaters to terminus, is approximately 184 miles in length. Like many rivers and waterways in Nevada, the Carson River ends in a terminal playa lake, meaning that it does not flow to the ocean. The watershed has been impacted by mining, logging, agriculture, urban development, hydrologic modification, floodplain loss and flooding.

As a result of the 1997 100-year flood event, the Carson River Coalition (CRC) was created to integrate watershed management efforts throughout the basin. In May 2007, the *Carson River Adaptive Stewardship Plan (CRASP)* was completed by the CRC and CWSD in cooperation with the NPS Program and EPA Region 9. The CRASP 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. During the 2015-2019 Plan, the CRASP was updated and approved by EPA.

In 2008 the CWSD and stakeholders developed the Regional Floodplain Management Plan (RFMP) to address the impacts of flooding. The RFMP (which is currently being updated) incorporates principles of managing development without sacrificing floodplain and river form and function; ensuring public safety; protecting property rights while conserving natural resources; protecting and improving wildlife habitat and water quality; providing river continuity and connectivity; and promoting land conservation in the river corridor.

Priorities in this Plan include working with active partners to implement the revised CRASP to reduce nutrients and sediment and improve riparian habitat and water quality (including in-channel restoration); promote the implementation of the Regional Flood Management Plan; and support and deliver a high quality environmental education program. NDEP prioritized several reaches of the Carson River to focus on assessing it geomorphologically and determining where restoration was most needed. NDEP, with CWSD, will be creating a stakeholder task force to coordinate implementation of the CRASP at a more consistent level. Part of this effort includes adding drones as a tool to monitor and assess the Carson River and track successs and/or failure of in-channel restoration projects. Additionally, NDEP will coordinate with the Alpine Watershed Group, the Lahontan Regional Board and the California State Water Quality Control Board as they develop a Vision project on the West Fork of the Carson River in California, expected to be approved by EPA as California's first 9 element watershed based plan. NDEP will encourage these partners to continue the work on the East Fork of the Carson River, so that a fully comprehensive watershed based plan for the Carson River Watershed that is consistent over statelines will be the result.

4.6.2 Colorado River/Las Vegas Wash

The Las Vegas Wash (Wash) is the natural drainage system for the Las Vegas Valley hydrographic Basin, carrying intercepted shallow groundwater, stormwater, urban runoff and reclaimed water from four large wastewater treatment plants to the Las Vegas Bay of Lake Mead. The largest regular component is treated wastewater. Normally, nonpoint sources account for approximately 10 percent of flow in the Wash. Storm events can deliver massive volumes of runoff to the Wash causing erosion, headcutting and loss of habitat and infrastructure.

The Las Vegas Wash Comprehensive Adaptive Management Plan (LVWCAMP), which was approved by the Las Vegas Wash Coordination Committee on December 28, 1999, tackles the tough issues surrounding the Las Vegas Wash such as erosion, habitat loss and water quality. The LVWCAMP has been determined to meet the nine elements of a watershed based plan. The main recommendations of the CAMP are to define the structure for local oversight of the plan; install erosion control structures; identify water resources needs to maintain Clark County Wetlands Park; participate in Alternate Discharge Study; establish off-stream wetlands and evaluate storm water detention/retention basins;

conduct sediment transport modeling; develop long-term monitoring programs; develop a central database for shallow ground water information; support the development and implementation of an environmental review process among planning entities; investigate potential funding source; and continue implementation of the Public Outreach Program. More information can be found at <https://www.lvwash.org/html/>.

NDEP is focusing 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 relatively minor and focused on supporting the extensive efforts being implemented by the local stakeholders, including Clark County and SNWA. This includes funding priority projects consistent with the CAMP to reduce sediment and other NPS pollutants, and conducting environmental education programs.

4.6.3 Lake Tahoe Basin

The Lake Tahoe Basin is a destination for approximately 15 million visitors annually and is home to roughly 55,000 year-round residents. As the largest alpine lake and third deepest in North America, Lake Tahoe is famous for its remarkable clarity and striking blue color. It is designated an Outstanding National Resource Water (ONRW) by the state of California and a "water of extraordinary ecological or aesthetic value" by the state of Nevada.

However, approximately one-third of Lake Tahoe's unique clarity was lost between 1968 and 2000. To address the beneficial use impairment, the California Regional Water Quality Control Board, Lahontan Region (Lahontan Water Board) and NDEP collaborated to develop the Lake Tahoe TMDL. Approved by EPA in August 2011, the Lake Tahoe TMDL quantifies the relative contributions of fine sediment particles (FSP), phosphorus, and nitrogen inputs to Lake Tahoe from major pollutant sources; quantifies load reductions needed to achieve the TMDL numeric and interim (Clarity Challenge) annual average secchi depth targets of 29.7 and 24 meters respectively; and outlines a workable, cost-effective implementation strategy to meet these goals. The Lake Tahoe TMDL together with its supporting documents serves as the watershed-based plan for the Lake Tahoe Basin which meets the nine EPA-required elements.

NDEP is committed to collaborating with the Lahontan Water Board to effectively administer the Lake Tahoe TMDL Program. The TMDL Management System is a coordinated set of procedures that enable effective and transparent adaptive management of Lake Tahoe TMDL implementation. These procedures enable program adjustment in response to new relevant scientific or technical findings, challenges identified by implementing partners, or altered future condition resulting from climatic change, geologic or wildfire events, or changing political or economic circumstances.

Stakeholder engagement and interaction is critical for the success of the TMDL Management System. Stakeholders, including funders, implementers and scientists all play an important role in providing

input and feedback to improve program operations, and thereby ensuring clarity restoration proceeds in an efficient manner and expenditures of public funding on water quality improvements are justified.

Lake Tahoe TMDL research identifies FSP less than 16 microns in diameter as the greatest contributor to lake clarity decline and stormwater runoff from the urban uplands as the primary source of FSP pollution. Urban stormwater runoff was found to contribute 72 percent of the total FSP load entering Lake Tahoe. NDEP entered into Interlocal Agreements (ILAs) with the Nevada urban jurisdictions: Douglas County, Washoe County, and the Nevada Department of Transportation. 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. The ILAs specify the following actions that each urban jurisdiction will take to implement the Lake Tahoe TMDL:

- (1) Develop and implement stormwater load reduction plans to achieve established milestones;
- (2) Participate in the Lake Clarity Crediting Program (Crediting Program);
- (3) Implement stormwater and pollutant control condition assessment monitoring; and
- (4) Report accomplishments on an annual basis.

To support prioritization and implementation of the most effective controls to reduce FSP loading from urban stormwater runoff, the Lahontan Water Board and NDEP developed the Crediting Program. The Crediting Program uses standardized tools and protocols that urban jurisdictions apply to consistently and transparently estimate FSP load reductions achieved through implementing water quality improvement actions. Urban jurisdictions use the Pollutant Load Reduction Model (PLRM), a continuous simulation water quality model developed as part of the Crediting Program, to estimate pollutant load reduction potential associated with implemented pollutant controls. Once registered in the online [Lake Tahoe Info Stormwater Tools](#), urban implementers garner lake clarity credits for these pollutant controls if established condition assessment protocols verify that actual on-the-ground conditions are representative of modeled condition.

Changes in nearshore conditions at Lake Tahoe have become evident to visitors, residents and resource managers. Of particular concern are the changes in nearshore clarity, increasing periphyton growth, spread of invasive species, and a decline of native species in the nearshore biological communities. NDEP participates as a member of the Nearshore Agency Workgroup with Lahontan, TRPA and EPA to implement the [Nearshore Resource Allocation Program \(NRAP\)](#). NRAP directs nearshore science and monitoring investment through a systematic framework to better understand nearshore conditions and processes, and reduce uncertainty about management actions. The NRAP is structured around a series of environmental focus areas, each with unique conditions and challenges. Online documentation on each focus area page provides a brief state-of-the-knowledge summary, descriptions of recent research findings, and links to applicable monitoring programs.

NDEP is focusing efforts toward achieving the Clarity Challenge goal of 24 meters annual average Secchi disk depth by 2026. This will be done by coordinating with the urban and non-urban partners to

implement the TMDL and by educating the public about nonpoint source issues in the Lake Tahoe Basin. Additional information regarding the Lake Tahoe TMDL Program is available on the [Lake Clarity Tracker](#) on Lake Tahoe Info.

4.6.4 Truckee River Watershed

The Truckee River begins at the singular outflow from Lake Tahoe in Tahoe City, California. The river flows through Truckee and down through mountains along the Interstate 80 corridor to the Nevada state line. It then continues through the cities of Reno, Sparks, and Fernley, through the Pyramid Lake Paiute Reservation, ultimately terminating in Pyramid Lake. The Truckee River is approximately 105 miles long and the drainage basin is approximately 3,060 square miles, about 2,300 of which are in Nevada. About 25% of the basin is in California, and the remainder is in Nevada.

Keep Truckee Meadows Beautiful and Nevada Land Trust spearheaded the One Truckee River (OTR) planning effort, inviting a Core Planning Team to participate in 2015. NPS staff was invited to participate as the co-chair of the water quality component of the planning process. NPS staff helped to create the OTR plan, ensuring that Truckee River water quality issues were addressed. One of the action items that ended up in the OTR plan was development of a watershed based plan for the Truckee River. NPS staff coordinated with ISWPP staff to figure out how to create a coordinated Source Water/Watershed based plan for the Truckee River. Currently, the Source Water/Watershed based plan is being developed and is expected to be completed in August 2020. A component of this plan is the Truckee Meadows Stormwater Permit Coordinating Committee's tributary plan.

NPS staff will work with partners in the Truckee River watershed to complete the Source Water/Watershed based plan, get local and EPA approval of the plan, and will then assist in the implementation of the activities delineated in that plan. The plan will meet the nine elements of a watershed based plan. NPS staff will continue to participate in the One Truckee River process as a voting member of the Advancement Committee, charged with continuing to move all of the elements of the OTR plan forward. Also, NDEP staff will conduct environmental education programs to increase awareness of NPS issues and solutions.

4.6.5 Virgin River Watershed

The Virgin River is a tributary to the Colorado River that flows into Nevada from Southwestern Utah and continues to Lake Mead, the main drinking water source for Las Vegas. The river and its adjacent lands provide habitat for many federally listed species, including the Virgin River chub and the Southwestern willow flycatcher.

NDEP was invited to engage with the Virgin River Coalition (VRC) watershed planning process in 2017, and participated in the development of a watershed plan for the Nevada portion of the Virgin River corridor. The Coalition developed the plan, which currently does not meet all 9 elements of an EPA watershed based plan. NDEP is focusing on continuing to participate in the VRC and helping to focus

resources on water quality improving implementation projects. NDEP is also focusing on having the VRC further develop the plan into a nine-element watershed based plan.

4.6.6 Walker River Watershed

The East and West Forks of the Walker River drain out of the Sierra Nevada north of Mono Lake in California, connecting to form the main stem upstream of Yerington, Nevada. The river continues adjacent to the Mason Valley Wildlife Refuge and flows through Walker River Paiute Tribe's land where it terminates Walker Lake in Mineral County. The watershed area covers approximately 4,050 square miles and the primary land use is agriculture. Approximately 25% of the basin lies in California; the remainder is in Nevada.

NDEP currently works with the Smith and Mason Valley Conservation Districts to implement small scale public education activities and bank stabilization projects. These efforts will continue if the CDs engage.

NDEP is establishing a working relationship and collaborative effort with Nevada Division of State Parks to implement ecological restoration projects on the recently acquired 12,000 acres of the Walker River State Conservation Area. This collaboration is expected to incrementally implement restoration projects along 28 miles of the East Fork of the Walker River to reduce NPS pollutants to that tributary, and ultimately, to Walker Lake. NDEP will approach NSP to determine if they are interested in developing an alternative restoration plan or a nine element watershed based plan as a main proponent of the effort. If this main stakeholder joins the effort, other stakeholders in the watershed will be invited to participate; including the CDs, the Walker River Conservancy, the Walker River Paiute Tribe, the City of Yerington and others as identified.

NDEP is focusing 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.

Components of Nevada's FY20-24 NPS Management Plan

Goal #1: Prevent and reduce nonpoint source pollution in impaired waters and improve watershed health.

GENERAL

Objective A. Implement NPS Projects in Priority Watersheds and Document Successes.

Strategy I. Build and maintain strong partnerships to implement a successful NPS Program statewide.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Coordinate with stakeholders in priority watersheds to develop watershed based plans, alternative restoration plans, and to prioritize and/or identify projects to implement.	✓	✓	✓	✓	✓
2. Manage and oversee subgrants in priority watersheds.	✓	✓	✓	✓	✓

Strategy II. Document and report progressive achievement or success toward environment improvement.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Incorporate measurable metrics into scope of works for subgrants.	✓	✓	✓	✓	✓
2. Report metrics annually in reports to EPA.	✓	✓	✓	✓	✓
3. Develop and publicize at least one success story per year.	✓	✓	✓	✓	✓
4. Evaluate progress of implementation of watershed based plans and/or alternative restoration plans.		✓		✓	

Strategy III. Provide efficient and effective administration of NPS Program.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Invest in water quality improvement and environmental education projects that are likely to provide long-term load reductions and changes in behavior to achieve watershed wide improvement in water quality.					
a. Release annual Grant Funding Opportunity that clearly specifies program priorities and requirements; review applications; select projects for funding based on established prioritization criteria.	✓	✓	✓	✓	✓
b. Ensure selected proponents have sufficient resources, technical skills and commitments to implement and maintain the project for the design life of the project.	✓	✓	✓	✓	✓
2. Enter and maintain grant and project information in EPA Grants Reporting and Tracking System within required timeline.	✓	✓	✓	✓	✓
3. Report to EPA quarterly to document incremental progress toward achieving annual grant milestones.	✓	✓	✓	✓	✓
4. Report to EPA annually to document progress in achieving SMP and grant milestones including information submitted by outside agencies.	✓	✓	✓	✓	✓

5. Submit to EPA all required financial reports within required timeline.	✓	✓	✓	✓	✓
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Strategy IV. Provide Best Management Practice Resources.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Maintain BMP Toolbox with statewide BMP resources available online.	✓	✓	✓	✓	✓
2. Provide technical BMP assistance to contractors, local agencies, or property owners as requested.	✓	✓	✓	✓	✓

Strategy V. Continue Collaboration with Integrated Source Water Protection Program.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Complete Source Water/Watershed Management (SW/WS) Planning process for the Truckee River Watershed in Washoe County.	✓				
2. Assist stakeholders in Washoe County to implement components of the SW/WS Management Plan.	✓	✓	✓	✓	✓
3. Identify potential other watersheds/counties to coordinate SW/WS Planning Processes.		✓	✓	✓	✓
4. Attend SW or NPS conferences, working group meetings, webinars, etc. to discuss coordinating SW and NPS Programs.	✓	✓	✓	✓	✓
5. Attend Ground Water Protection Task Force meetings and Western States Source Water conferences to further coordinate SW/NPS Programs.	✓	✓	✓	✓	✓

Strategy VI. 401 Certification Program.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Issue 401 certifications for all federally permitted projects to ensure water quality standards are met and NPS issues are addressed.	✓	✓	✓	✓	✓

Strategy VII. Update NPS State Management Plan

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Evaluate SMP for update needs based on Integrated Report and discussions with watershed stakeholders.				✓	✓
2. Submit draft revised plan to EPA for review and discussion.					✓
3. Submit final plan to EPA for approval.					✓

CARSON RIVER BASIN

Strategy I. Implement Carson River Adaptive Stewardship Plan

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Restore 1,250 feet of Carson River channel (250 feet per year) to reduce sediment by 50 tons/year and phosphorus by 50 lbs/year.	✓	✓	✓	✓	✓
2. Conduct environmental education programs to increase awareness of water quality issues and promote actions to reduce NPS pollution.	✓	✓	✓	✓	✓
3. Implement the CRASP and increase efforts on NDEP's prioritized river segments. Perform geomorphology study on prioritized segments to prioritize restoration projects. Develop a more cohesive strategy for implementation of river restoration projects in coordination with CWSD, DVCD, CVCD, AWG and TNC and develop phased approach.	✓	✓			
4. Utilize new technology (drones, etc.) to more effectively plan and monitor results of restoration on the Carson River.	✓	✓	✓	✓	✓
5. Coordinate with AWG on their development and implementation of Vision plan for the West Fork of the Carson River segments in CA, and encourage development of a plan for the East Fork of the Carson River.	✓	✓	✓		
6. Work with stakeholders to identify and implement additional projects for 319 or other agency funds.	✓	✓	✓	✓	✓

Strategy II. Implement Carson River Floodplain Management Plan

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Assist in implementation of outreach and education plan to support the CRFMP and increase understanding of the importance of floodplains in maintaining water quality.	✓	✓	✓	✓	✓
2. Support the Living River approach with stakeholders through implementation of projects that release the Carson River to the floodplain.	✓	✓	✓	✓	✓

LAS VEGAS WASH

Strategy I. Implement Las Vegas Wash Comprehensive Adaptive Management Plan

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Fund priority projects consistent with CAMP to reduce sediment and other nonpoint source pollutants to the Las Vegas Wash and Lake Mead.	✓	✓	✓	✓	✓
2. Conduct environmental education programs to increase awareness of water quality issues and promote actions to reduce NPS pollution.	✓	✓	✓	✓	✓

3. Conduct site visits to funded projects and to further coordinate efforts with identified stakeholders.	✓	✓	✓	✓	✓
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LAKE TAHOE BASIN

Strategy I. Manage the Lake Tahoe Total Maximum Daily Load Program to meet the Clarity Challenge of 24 meters by 2026.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Work with Urban Implementing Partners to identify projects and actions to meet load reduction targets and milestones contained in Interlocal Agreements.	✓	✓	✓	✓	✓
2. Provide funding and staff support for water quality improvement project implementation and program operations improvement.	✓	✓	✓	✓	✓
3. Collaborate with Lahontan Water Board to execute the annual TMDL Management System cycle; including updating, maintaining and reporting implementation progress for urban and non-urban sources through the Lake Clarity Tracker.	✓	✓	✓	✓	✓
4. Renew Interlocal Agreements including updated commitments and schedule of load reduction and associated credit targets.		✓			
5. Participate in Tahoe Science Advisory Council meetings to provide TMDL Management Agencies' perspective on key questions, information needs, and workplan development and prioritization.	✓	✓	✓	✓	✓

Strategy II. Coordinate with partner organizations to protect water quality, watershed health, and ensure the effective use of public funding.

1. Participate on the Stormwater Quality Improvement Committee to coordinate stormwater planning and design activities and to fulfill LTRA project prioritization and reporting requirements.	✓	✓	✓	✓	✓
2. Coordinate with the Tahoe Regional Planning Agency to advance Regional Plan goals and Threshold attainment.	✓	✓	✓	✓	✓
3. Participate on grant committees and technical advisory committees as needed.	✓	✓	✓	✓	✓

Strategy III. Coordinate with agency partners to address nearshore water quality.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Coordinate with Nearshore Agency Workgroup agencies to implement the Nearshore Resource Allocation Program.	✓	✓	✓	✓	✓
2. Coordinate TMDL and nearshore program activities and look for opportunities to prioritize implementation actions where multi-benefit objectives may be achieved.	✓	✓	✓	✓	✓

TRUCKEE RIVER BASIN**Strategy I. Develop Source Water/Watershed Management Plan and get local and EPA Approval.**

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Work with local jurisdictions and stakeholders to integrate and complete the SW/WS plan, including the Tributary Plan developed by the TMSWPCC.	✓				
2. Present final plan to local boards and commissions for approval. Submit to EPA as a 9-element plan and a Source Water Protection Plan.	✓	✓			

Strategy II. Implement Approved Plan.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Implement projects and steps delineated in the plan. Fund competitive projects through annual GFO consistent with the plan.	✓	✓	✓	✓	✓

Strategy III. Coordinate with One Truckee River and OTR Stakeholders to continue implementation of OTR Plan.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Participate on OTR Board.	✓	✓	✓	✓	✓
2. Participate in OTR Partnership meetings and events.	✓	✓	✓	✓	✓
3. Support water quality components of the OTR Plan.	✓	✓	✓	✓	✓

Strategy IV: Continue and/or build new partnerships to implement NPS related projects.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Work with current and new partners to identify additional implementation or education projects.	✓	✓	✓	✓	✓
2. Conduct environmental education programs to increase awareness of water quality issues and promote actions to reduce NPS pollution.	✓	✓	✓	✓	✓

VIRGIN RIVER BASIN**Strategy I. Collaborate with existing and emerging natural resource related local working groups and support efforts that may maintain or improve water quality.**

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Attend local working group meetings when deemed appropriate, including with the Virgin River Coalition.	✓	✓	✓	✓	✓
2. Provide technical assistance and grant funding to support local working groups.	✓	✓	✓	✓	✓
3. Identify other resources to facilitate implementation of water quality projects.	✓	✓	✓	✓	✓
4. Encourage local efforts to adapt watershed plan to cover the 9 required EPA elements.	✓	✓	✓	✓	✓

WALKER RIVER BASIN**Strategy I. Work with local, state, federal and private resources to address nonpoint source pollution in the Walker River Basin.**

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Restore 500 feet of Walker River channel (100 feet per year) to reduce sediment by 20 tons/year and phosphorus by 20 lbs/year.	✓	✓	✓	✓	✓
2. Conduct environmental education programs to increase awareness of water quality issues and promote actions to reduce NPS pollution.	✓	✓	✓	✓	✓

Strategy II. Coordinate with Walker River State Park to improve water quality in Walker River watershed.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Work with Nevada Division of State Parks and the Walker River Conservancy to implement ecological restoration projects at a park-scale (14,000 acres) at Walker River State Park.	✓	✓	✓	✓	✓
2. NDEP will approach State Parks regarding being a main stakeholder in the development of an alternative restoration plan or watershed based plan. Other stakeholders (Federal, State, Local, Nonprofit, Private and Tribal) will be invited if they are.	✓	✓	✓	✓	✓

Goal #2. Educate and inform the public about nonpoint source pollution, watershed stewardship and water quality protection to increase awareness, promote behavior change and empower effective water quality protection actions.**Objective A. Implement high quality, effective NPS Environmental Education Program.****Strategy I. Implement Environmental Education Strategic Plan.**

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Develop next five year Environmental Education Strategic Plan.	✓				
2. Conduct Project WET Workshops for teachers and other community educators.	✓	✓	✓	✓	✓
3. Conduct and/or assist with environmental education events including Earth Day, river snapshot monitoring, green-ups, school environmental science classes, etc.	✓	✓	✓	✓	✓
4. Publish Watershed Ed newsletter.	✓	✓	✓	✓	✓
5. Maintain and regularly update Environmental Education web site.	✓	✓	✓	✓	✓
6. Provide education and training opportunities on water quality topics of concern to watershed partners, stakeholder organizations, and education institutions upon request.	✓	✓	✓	✓	✓
7. Provide high quality EE materials to school and community educators and the public including Project WET curriculum guides, activity booklets, fact sheets, maps and other resources.	✓	✓	✓	✓	✓

Strategy II. Support local or regional environmental education projects.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Invest in environmental education projects that encourage behavior change and citizen involvement in water quality improvement efforts.	✓	✓	✓	✓	✓
2. Continue education and training on environmental program effectiveness measurements and standards.	✓	✓	✓	✓	✓
3. Require appropriate program measurement metrics to determine efficacy of funded education projects.	✓	✓	✓	✓	✓
4. Participate with watershed partner programs to support and evaluate.	✓	✓	✓	✓	✓

Goal #3 Coordinate with State, Federal, local agencies and Tribes to prevent and reduce nonpoint source pollution impacts to surface and groundwater.**Objective A. Maintain and improve existing partnerships and build new partnerships with other agencies, nonprofit organizations, local watershed groups and private landowners.****Strategy I. Provide opportunities for local, State and Federal agencies, Tribes, environmental organizations, etc. to coordinate and collaborate on NPS related issues.**

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Identify and contact appropriate agencies and stakeholders including BLM, USFS, NRCS, Tribes, NDOW, Nevada Association of Conservation Districts, The Nature Conservancy and others regarding collaboration opportunities.		✓	✓	✓	✓
2. Provide technical assistance, education and training to stakeholders on water quality related topics and how to develop project proposals.	✓	✓	✓	✓	✓
3. Maintain and update contact information to notify agencies of the release of Grand Funding Opportunity for 319 funds.	✓	✓	✓	✓	✓
4. Provide opportunity for agencies to participate in triennial review of State water quality standards.	✓	✓	✓	✓	✓

Strategy II. Coordinate with NRCS to implement National Water Quality Initiative and other Farm Bill Programs.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Participate in Nevada NRCS State Technical Committee meetings to encourage the use of Farm Bill funding towards water quality improvement.	✓	✓	✓	✓	✓
2. Meet with NRCS to discuss Farm Bill programs, develop shared watershed priorities and water quality restoration goals and identify project or education opportunities.	✓	✓	✓	✓	✓

3. Partner with NRCS to transfer lessons learned from the NWQI to inform future water quality restoration via Farm Bill/EQIP funding.	✓	✓	✓	✓	✓
4. Engage NRCS in dialogue about state water quality priorities and watersheds; share maps and other information.	✓	✓	✓	✓	✓

Objective B. Ensure consistency among local, state, federal programs and NDEP Nonpoint Source Pollution Management Plan.

Strategy I. Ensure consistency between federal and state programs.

Milestones:	FY20	FY21	FY22	FY23	FY24
1. Review and comment as determined appropriate on EAs, EISs, Resource Area Management Plans and grazing allotment plans to ensure water quality concerns are addressed.	✓	✓	✓	✓	✓