WASHOE TRIBE OF NEVADA AND CALIFORNIA NONPOINT SOURCE ASSESSMENT AND MANAGEMENT PROGRAM

2016 Update – DRAFT FOR PUBLIC COMMENT

SUBMITTED TO:

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SECTION 1.0
OVERVIEW

REVISION NUMBER 1

This NPS Assessment Report and Management Program Plan has been revised to update the BMPs presented in the original version of the NPS Management Program Plan based on current economic, social, and environmental conditions.

1.1 PURPOSE AND NEED

The Washoe Tribe and Nevada and California (the "Washoe Tribe") is a federally recognized Indian Tribe with four reservation communities in Nevada (three) and California (one) (**Figure 1**). The Washoe Tribe has occupied the ancestral lands they currently possess in Nevada and California since time immemorial. Developments on Tribal trust and fee land include the Tribal Administrative Headquarters in south Gardnerville, Nevada; the Wa She Shu Casino and Travel Plaza in Gardnerville; the Carson Smoke Shop; a Chevron Station in Carson City; the Washoe and Stewart Ranches; health clinic; single- family homes; Head Start; and ancillary facilities. Land uses on Tribal properties include open space, rural residential, grazing, agriculture, commercial, recreational, and governmental.

The primary purpose of the Washoe Tribe's Nonpoint Source Assessment Report and Management Program Plan (NPS Plan) is to identify, control, reduce and abate NPS pollution on the quality of the Tribe's surface and ground water resources. This goal will provide for beneficial uses of surface and groundwater resources. Water quality, riparian corridors and watershed conditions must progress toward their natural state in order for the Tribe to exercise beneficial and traditional uses. Surface and groundwater quality are also influenced by adjacent parcels and lands within multiple watersheds and sub-watersheds. However, the assessment and the Management Program (MP) portion of this NPS Plan focuses on Tribal lands only. With this in mind, the MP is only one part of the solution to the water quality issues facing the Tribal properties. The Tribe will work with appropriate federal and state agencies to remediate and improve Tribal surface and groundwater resources from NPS sources outside Tribe's jurisdictional authority.

This NPS Plan was prepared, and subsequently revised, to support the Tribal environmental program in assessing the effects of NPS pollution on water quality of Tribal waters. This NPS Plan and each subsequent revision is part of a larger effort to unify Tribal environmental protocol and procedures in order to address existing environmental conditions and prevent future degradation of the Tribe's natural environment while meeting Tribal economic development goals. Submittal of this NPS Plan ensures

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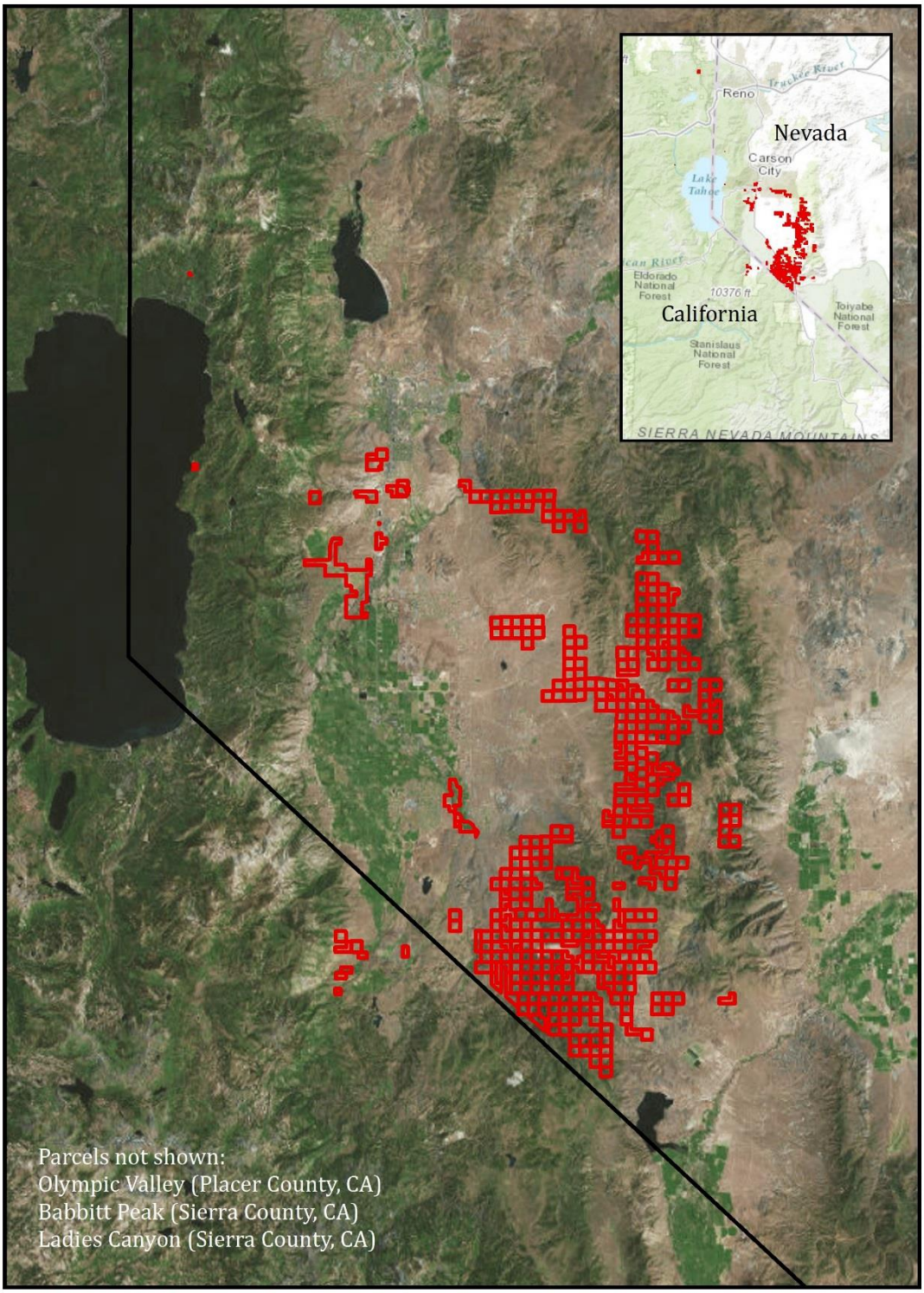
FIGURE 1
REGIONAL MAP OF TRIBAL LANDS



Tribal Boundaries

Washoe Tribe of NV and CA
Environmental Protection Department

0 3.75 7.5 15 Miles

N

This data has been compiled on a geographic information system for the use of the Washoe Environmental Protection Department.
The data does not represent survey delineation and should not be construed as a replacement for the authoritative source.
The Washoe Tribe assumes no liability as to the sufficiency or accuracy of this data.

the Tribe continues to meet the eligibility requirements for funding under Section 319 of the Clean Water Act. Section 319 funding is used to implement NPS pollution prevention programs and implement specific NPS BMPs and remediation projects to improve Tribal water quality, providing a benefit to the watershed as a whole.

1.2 SUMMARY OF ANALYSIS

The Tribe in efforts to protect the quality and quantity of the groundwater resources has had a Wellhead Protection Program (WHPP) in place since 1997 which was updated in 2005. The WHPP was developed for the public water-supply wells serving the Tribal communities and is implemented through the Washoe Utility Management Authority (WUMA) and the Washoe Environmental Protection Department (WEPD), for the coordinated protection of the Tribe's drinking water supply sources. The public drinking water systems are monitored by WUMA in accordance to the requirements under the Safe Drinking Water Act. Results from these analyses were obtained from WUMA who reports also to EPA/IHS and are reviewed by the WEPD. A Supervisory Control and Data Acquisition System (SCADA) remotely monitor wells located in each Washoe communities. The Tribe received Treatment as a State (TAS) approval from the EPA in 1999 for program authorization under the Clean Water Acts (CWA) under Section 106. The Tribe's Sampling and Analysis Plan and Quality Assurance Program Plan (SAP/QAPP) for the Water Quality Monitoring Program was approved by EPA in 2000. The SAP and QAPP were updated and approved by EPA in 2015.

Accordingly, where data is available a quantitative assessment correlating Tribal water quality impairment to NPS pollution sources was conducted. To supplement the water quality data, Tribal waters were visually assessed for potential impairment from NPS pollution based on location and distance to NPS sources. There are no activities on the Tribal waters that result in point source pollution discharges into Tribal waters and therefore NPS pollution is the highest threat to Tribal water quality and is directly linked to the goals of the Tribe's water quality monitoring program funded under CWA Section 106. Tribal lands consist of both developed and undeveloped land, and are therefore subject to different sources of NPS pollution including runoff from residential properties, commercial enterprises, agriculture, grazing, and landscape modification.

For the purposes of the NPS pollution source assessment, Tribal lands are assessed as the four distinct Tribal communities with lands held in Trust by the Department of the Interior, Bureau of Indian Affairs: Carson Colony, Stewart Community, Dresslerville Community, and the Woodfords Community. The Carson Colony is centrally located west of Highway 395 and the Stewart Community is east of Highway 395. The Tribe owns tracts of land in the southern part of Carson City (northern Douglas County, Nevada) as well as a working ranch and two other businesses in this area. The Dresslerville Community is in Douglas County, south of Gardnerville, Nevada (30 minute drive from Carson City). Washoe Tribal Headquarters and other program and administrative facilities are located within 5 minutes of this community. The Washoe Health Clinic and Housing Authority are located in the Dresslerville Community which is the oldest and largest of the communities. The Dresslerville Community is partially surrounded by ranch lands worked and owned by the Tribe, which are collectively known as the Washoe

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Ranch. The Tribe owns a business adjacent to the Tribal services complex on Highway 395 south of Gardnerville. The Dresslerville Community is in a quasi-rural area of Nevada. The Woodfords Community is located at the top of a hill in Alpine County, California. This Tribal community is quite isolated and the closest town is Woodfords, California. The four Tribal communities are within 40 minutes driving distance from each other and from Tribal Headquarters.

Representative stretches of the Carson River's East Fork and tributary Indian Creek (Dresslerville Community), representative stretches of the main steam of the Carson River (Stewart Ranch), and approximately two-thirds of a mile of Clear Creek (Stewart Community) were assessed in the NPS pollution source assessment. In addition, wells on each of the four Tribal communities were assessed for potential contamination from NPS pollutions sources. Based on the results of the assessment, the land uses predominantly affecting water quality in the study area are agriculture, water diversions for agriculture, cattle grazing, onsite wastewater disposal, urban runoff, and upstream sources outside of Tribal borders. Overall, the water quality on Tribal lands is moderately impaired from NPS sources within and adjacent to Tribal properties. Through review of water quality data collected from Tribal waters and visual assessment of drainage patterns from NPS pollution sources, the Tribe determined the percentage of Tribal waters being impaired by each NPS pollution category:

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TABLE 1-1
NONPOINT SOURCE POLLUTION CAUSES AND SOURCES

Community	Water body	Cause	Source (subcategory)	Degree of Impact
Dresslerville Community	**East Fork Carson River**	Nutrients, Metals, Siltation, Agricultural Chemicals, Acid Mine Drainage	Sources outside of Tribal borders, including the Leviathan Mine [(1)];	High
		Siltation	Habitat modification (bank modification /destabilization)	Slight
	Indian Creek	Organic Enrichment and Coliform; Agricultural Chemicals	Sources outside of Tribal borders [(1)];	High
		Organic Enrichment and Coliform	Grazing-related Sources (Pasture Grazing -- Riparian);	High
Stewart Ranch	**Carson River**	Nutrients, Metals, Siltation, Agricultural Chemicals	Sources outside of Tribal borders; [(1)]	High
		Organic Enrichment Feed Lots	Intensive and/or Confined Animal Feeding Operations	Moderate
		Siltation	Habitat modification (bank modification /destabilization)	Slight
		Phosphates	Natural Sources; Sources outside of Tribal borders [(1)]	Moderate
		Temperature	Habitat modification (removal of riparian vegetation)	High
Stewart Community	**Clear Creek**	Organic Enrichment, Coliform, Siltation;	Sources outside of Tribal borders [(1)]	High
		Erosion and Siltation	Urban Runoff/Storm Sewers (Highway Maintenance and Runoff); Sources outside of Tribal borders [(1)]	High
All Four Communities	**Groundwater**	Organic Enrichment and Coliform; Agricultural Chemicals	Grazing-Related Sources (Pasture grazing--riparian and / or upland); Land Disposal (Onsite Wastewater Systems) Sources outside of Tribal borders [(1)]	Slight
		Arsenic; Coliform	Natural Sources; Sources outside Tribal borders [(1)]	High
		Nitrate	Sources outside Tribal borders [(1)]	Unknown

[(1)] "Sources outside of Tribal borders" represent a wide variety of sources including, but not limited to, irrigation, mining and roadway runoff.

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SECTION 2.0
INTRODUCTION

This NPS Plan identifies possible sources of NPS pollution, describes the processes and programs needed for the Tribe to address NPS pollution, and presents programs and practices for the Tribe to implement and reduce NPS pollution on the reservation and Tribal properties. Once submitted, the Tribe will apply for CWA Section 319(h) funding to establish and fund these programs and practices.

2.1 OBJECTIVES AND GOALS OF THE REPORT

This NPS Assessment Report and Management Program Plan includes an assessment of current and past water quality issues to determine the need for continued monitoring of water resources and implementation of BMPs to reduce NPS pollutant loads to Tribal waters. Objectives of this NPS Assessment Report and Management Program Plan are as follows:

Objective 1:

Assess the quality of the Tribal waters, including groundwater, to link land use practices on Tribal lands to water quality.

Goal: Develop and implement Tribal policies and ordinances to reduce the water quality impacts of NPS pollution from land uses to Tribal surface and groundwater.

Objective 2:

Develop strategies and activities to increase the health of Tribal surface and groundwater.

Goal: Encourage and promote community awareness of the effects and importance of activities such as creek cleanups, habitat restoration, erosion control, and other programs to restore the health of Tribal surface and groundwater for all beneficial uses.

Objective 3:

Determine the most effective BMPs to protect water quality in the future.

Goal: Revise existing BMPs that have been found inoperable or unable to be implemented and, select and implement BMPs that have a high chance for success for integration into the NPS Management Program Plan.

2.2 WASHOE TRIBE OF NEVADA AND CALIFORNIA

The present day Washoe Tribe of Nevada and California "Tribe" has deep roots in regional lands of western Nevada. Mountains formed the eastern and western boundaries of the Washoe territory: to the east, the boundaries followed the Pine Nut and Virginia Ranges; to the west, along the western slope of

the Sierra Nevada Mountains. The area stretched from Honey Lake on the north to Sonora Pass near Mono Lake in the south. *Wa She Shu E Deh* (Washoe lands) surrounded and radiated from *Da-ow* now called Lake Tahoe. The territory included the upper valleys of the Walker, Carson, and Truckee Rivers. The Tribe used the surface waters for drinking, cooking, fishing, plant harvesting, and ceremonial purposes. This aboriginal area was positioned directly in the path of explorers, immigrants, and gold-seekers bound for California during the westward expansion. The Comstock Lode was discovered and boomed in the mid 1800's in Virginia City, Nevada. The valleys and mountains of the Sierra, Pine Nut and Virginia City regions that were used by the Washoe were exploited by the exploding mining industry and agriculture.

The first reservation was established for the Washoe People in the 1880's. Lands were allotted to individual Tribal members by the U.S. Federal Government. Land was acquired by the Tribe through purchases and donations at the start of the 20th century and continues into the present time. Tribal lands for the purposes of this document will mean current Washoe Tribal Trust lands and Fee Status Lands. The Tribe is governed by the Washoe Tribal Council. The Tribal Council is comprised of three elected officials; the Chairperson, Vice-Chairperson and Secretary-Treasurer; and two representatives from each of the four community councils and two representatives elected by off-reservation members and one representative of the Reno/Sparks Indian Colony Washoe Membership. The members of the Tribal Council are elected to four (4) year terms or until a successor has been elected or seated.

TRIBAL AUTHORITIES, ORDINANCES, AND CERTIFICATION OF LEGAL AUTHORITY

The Tribal Council, pursuant to Article VI of the Constitution and Bylaws of the Washoe Tribe of Nevada and California (Constitution), is expressly authorized to exercise several enumerated powers, including, but not limited to:

- Negotiate with the Federal, State, and local governments, and to execute contracts and agreements with these and other associations, corporations, or individuals [Constitution, Article 6§1(a)];
- Manage all economic affairs and enterprises of the Washoe Tribe [Constitution, Article 6§1(e)];
- Create and regulate subordinate organizations for economic and public purposes and to delegate to such originations, or to any other subordinate boards, officials of the Tribe, or to the community councils, any of the foregoing powers, reserving the right to review any action taken by virtue of such delegated power. [Constitution, Article 6§1(g)]; and
- Adopt resolutions not inconsistent with this constitution and bylaws, regulating the procedures of the Washoe Tribal Council itself and of other Tribal agencies, Tribal officers, or Tribal organizations of the Washoe Tribe of Indians, and exercising such duties as are conferred upon the Washoe Tribal Council by the attached bylaws. [Constitution, Article 6§1(h)].

The Tribal Council is authorized to regulate and to protect natural resources, including but not limited to water, within Indian country. Likewise, the Constitution provides that the Tribal Council may take all actions necessary and proper for the exercise of the enumerated powers. In addition, Constitution Article

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VII§1provides that the community councils established at Woodfords, the Dresslerville Colony, the Carson Colony, and Stewart shall make every effort to improve the welfare and protect the interests of the residents to their respective communities.

As discussed above, the Tribe's current water quality monitoring program officially began after receiving TAS approval from the EPA for program authorization under the Clean Water Acts (CWA) under Section 106. Accordingly, under the Tribe's 106 CWA program, the Tribe conducts water quality sampling of the Tribal waters under an approved QAPP to establish baseline conditions. In addition, the original NPS Plan (approved by EPA in 2000) was developed in accordance with Section 319 of the CWA and associated future funding under Section 319, to provide additional data concerning water quality impacts from Tribal operations and land uses. Therefore, the Tribe has inherent sovereign authority and has delegated federal authority to monitor, manage, and protect water resources on Tribal lands in accordance with the CWA Sections 106 and 319.

2.3 TRIBAL WATERS

Water is central to the Washoe existence and represents life to the Washoe people. Tribal waters include those that are located within the boundaries of or greatly influence Washoe communities. The water rights of the Tribe include both surface and groundwater.

SURFACE WATERS

Carson Community

There are no surface water resources of significance (outside of intermittent drainages) in the Carson Community that qualify for inclusion within this NPS Assessment. However, stormwater runoff from the surrounding steep hillsides, especially following wildfire events, could cause significant NPS concerns for the Carson Community, with all runoff eventually draining into the Carson River.

Dresslerville Community

The Carson River's East Fork is a major hydrologic feature of the Dresslerville Community. A three-mile stretch of the river initially forms the Parcel's boundary before becoming wholly enclosed within the community. Accordingly, the Dresslerville Community has Alpine Decreed rights to receive water from the Carson River. This three-mile segment is monitored by the WEPD quarterly and continually fails to meet State of Nevada water quality standards for various constituents.

Indian Creek enters the Carson River's East Fork in the southern portion of the community. The Creek enters Tribal lands through an ancient spillway from alpine strata. The Tribe's Sampling and Analysis Plan includes the lower 3,000 feet of Indian Creek. The Creek's water quality and quantity are persistently impaired. Indian Creek exceeds all surface water quality standards that exist under the CWA 106 Program.

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Stewart Ranch

Surface water resources on the Stewart Ranch includes the Carson River, Jacks Valley Creek, hot springs, ponds, and a slough that branches off from the Carson River. The Carson River runs through the southern portion of the Stewart Ranch. Erosion on both banks is evident and the river is constantly changing course. There are three ponds near the channel of Jacks Valley Creek covering approximately 14 acres of surface area. The ponds were developed to capture flow from the Creek and the hot springs. Hobo Hot Springs is located entirely within the Stewart Ranch and is a product of the large, north/south fault that parallels the east face of the Carson Range. At Hobo Hot Springs, the groundwater discharged on the surface is at a temperature of 115 degrees. The Slough is an abandoned channel of the Carson River. The water level in the Slough matches the static water level in the active channel of the Carson River, which is located about 2,000 feet to the southeast.

Stewart Community

The community has approximately two thirds of a mile of Clear Creek running from west to east through the community's boundaries. The creek channel is highly incised with head cutting and is biologically non-functional. The Lower Clear Creek Restoration Project at Stewart Community was designed to rehabilitate a portion of the channel and improve floodplain function. A retention pond was constructed by the WEPD to manage flood events and protect creek water quality. Surface water quality-quantity impacts are as severe as existing and potential ground water issues.

Woodfords Community

There are no surface water resources of significant (outside of intermittent drainages) in the Woodfords Community that qualify for inclusion within this NPS Assessment. However, stormwater runoff from the surrounding hillslopes, especially following wildfire events, could cause NPS concerns for the Woodfords Community, with all runoff eventually draining into the Indian Creek and the West Fork of the Carson River.

GROUNDWATER

Carson Community

The Carson Community is located on the southern edge of the Eagle Valley groundwater basin and is a part of the larger Voltaire Canyon watershed. This hydrographic basin is 71 square miles in size and is the smallest in the Carson River watershed. The underlying aquifer is accessible within a few feet of the surface in many areas and may be hydraulically connected to water bearing formations consisting of glacial outwash and poorly sorted sand and gravels. The Carson Community depends on two domestic drinking wells, which produce approximately 300 gpm.

Dresslerville Community

The Dresslerville Community located in the Carson Valley ground water hydrographic basin, which consists of 420 square miles. The community is served by two public water supply wells. Both wells

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Are approximately 300 feet deep. These two wells are generally alternated at a pumping rate of 150 gallons per minute. All of the water sampling panels taken by WUMA for the public water supply systems are clear and meet applicable water standards.

Stewart Ranch

Stewart Ranch is also located in the Carson Valley groundwater basin. The river bottom lands on Stewart Ranch are at the lowest elevation in Carson Valley groundwater basin. Accordingly, groundwater from the surrounding areas flow to this low point. Use of the aquifer here is very desirable because of the constant replenishment of the water resource from higher elevations. There are three small artesian wells located on Stewart Ranch. Excluding the artesian wells, there are several other wells on the lower Stewart Ranch including a 280-foot deep irrigation well. The upper Stewart Ranch lands to the north of the parcel are located in Jacks Valley. These lands can access an aquifer created by an alluvial fan extending from the Carson Range and two wells were developed to use this resource.

Stewart Community

The Stewart Community is located on the southern edge of the Eagle Valley groundwater basin. According to well logs, there are 119 wells drilled in the Eagle Valley area. Groundwater use by the State of Nevada, Carson City utilities, and Douglas County as well as numerous homeowners in this older area of Carson City impacts the aquifer in both quality and quantity of water supply. With the addition of a recently drilled new back up well, Stewart Community now has two public water supply wells. The groundwater is treated for high manganese and iron levels. Stewart Community hosts one community well in operation and a backup well.

Woodfords Community

Two new wells were drilled in August of 2002 and are the current water supply for the Woodfords Community. These wells were developed to replace the three existing wells that were unreliable due to the fairly shallow aquifer predominantly consisting of fractured volcanic rock. The new wells are more productive with a development rate of 150 gpm. However, one of the wells is contaminated by arsenic, but arsenic levels in the community water is reduced to acceptable levels by mixing the water from the two wells.

2.4 PUBLIC INPUT AND COMMENTS

NPS pollution is a community-wide issue and successful implementation of a Tribal management program will rely upon relationships between Tribal and non-Tribal community members. Therefore, the Tribe is seeking public input on this NPS Management Plan. Accordingly, the Tribe, in coordination with the EPA, is releasing this NPS Management Plan to community members within and adjacent to the boundaries of the Tribe's four communities for a 30-day review and comment period. The Tribe will then review the comments received and update this NPS Management Plan, if warranted.

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SECTION 3.0
METHODOLOGY

3.1 DATA SOURCES

SURFACE WATER

The Tribe in 1998 received Treatment as a State (TAS) approval from the EPA for program authorization under the Clean Water Acts (CWA) under Section 106. The Tribe's Sampling and Analysis Plan (SAP/QAPP) for the Water Quality Monitoring Program was approved by EPA in 2000; and updated and approved by EPA in 2015. The Tribe has employed a Watershed Protection Approach (WPA) as the framework for meeting the Washoe Tribe's water resources challenges. The WPA coordinates any point source, nonpoint source, wetland area, surface water, groundwater, storm water, and drinking water programs in support of the watershed approach. This approach combines the three approaches outlined in the EPA's Final Guidance on Awards of Grants to Indian Tribes under Section 106 of the Clean Water Act (EPA 832-R-06-003).

Seasonal sampling, with annual fall sampling for pesticides, is implemented to account for variations in stream discharge and land use. As data are collected, they are compared with available historical water quality data to estimate baseline conditions and the relative change in these conditions over time. Concurrently, as data are compiled, a comparison between the observed water quality characteristics reflecting the Carson Valley Hydrologic Area (CVHA) system is evaluated against existing surface water quality standards and criteria to identify possible water quality discrepancies. As these discrepancies are identified they are incorporated into the water quality management planning processes. The water quality monitoring program is modified to either increase or decrease the number of parameters monitored depending on the implications and conclusions generated from the analytical results and subsequent informational requirements.

Surface water samples are collected currently at seventeen sampling locations within the Carson Watershed and analyzed for primary cat ion and anion parameters (Washoe Tribe, 2015). The major ionic parameters in the samples (major ions that compose most natural waters) are quantified and correlated between different reaches of the Carson River system to the extent possible. These comparisons are made to assess differences in the chemical composition of surface water at different reaches (upstream and downstream) and between different watersheds and are reported in the Tribe's Water Quality Assessment Report (WQAR) submitted annually to EPA in December. It is important to make these comparisons between the upstream and downstream reaches on Tribal lands to determine the chemical composition of the water as it enters Tribal land and before it exits. This sampling strategy can help to establish the effects of Tribal activities on the water quality of each watershed as well as the effects of non-Tribal

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upstream activities. The surface water samples obtained annually (March through November) are reviewed along with the Tribe's annual WQAR.

The NDEP Bureau of Water Quality Planning currently collects water quality data at several sites along the Carson River up to six times per year at some sites. Three of these sites are near Tribal lands. The site locations and water quality standards that are in excess of the State of Nevada Water Quality Regulations (NAC 445a) are described in the biennial reports titled "Nevada Water Quality Assessment 305(b) Report". Portions of the monitoring network have been in place since 1967 and can provide information on past water quality near Tribal land. The monitoring network is used to assess compliance with water quality standards, conduct trend analyses, validate water quality models, and set total maximum daily loads. The data are also used to conduct non-point source assessments, compile the 303(d) list, and 208 Plan amendments. The Tribe reviews NDEP's data on an annual basis.

The U.S. Geological Survey (USGS) monitors the discharge of the Carson River at several locations near Tribal land as well as Clear Creek and Indian Creek. Real-time daily discharge values are available on the internet for all of their gauged stations. Maximum daily discharge values are compiled into annual reports. These data are reviewed on an annual basis.

Data from NDEP are obtained from the STORET database and reviewed in conjunction with the 305(b) report. The 305(b) report contains the State 303(d) list that lists total suspended solids and turbidity as potential problems for the East Fork of the Carson River through the Dresslerville Community. Total phosphorous and turbidity are potential problems for the Carson River.

GROUNDWATER

The Tribe recognizes that groundwater is a vital life-sustaining resource. Drinking water resources, in both the urban and rural communities, are increasingly susceptible to contamination from point and nonpoint source pollution. Releases from underground storage including septic systems, spills of hazardous chemicals, and runoff from urban and agricultural lands are a few of the potential contaminant sources of pollutants that may infiltrate into the groundwater and render drinking water resources unusable. The Tribe is also aware that not all wells have been identified within the communities and more investigations are necessary to determine the number of wells that require either closure or refurbishment.

The public drinking water systems are monitored by WUMA in accordance to the requirements under the Safe Drinking Water Act. **Table 3-1** contains the frequency of required groundwater quality analysis required for public drinking water systems. Results from these analyses were obtained from WUMA who reports also to EPA/IHS and are reviewed by the WEPD. A Supervisory Control and Data Acquisition System (SCADA) remotely monitor wells located in each Washoe community. Transducers located in each of the community wells measure the water level in each well and transmit via the SCADA system. WUMA is able to monitor fluctuations in certain physical parameters through these systems; and ensure either a continuation of power and or immediate back up power in the event of outages. Power outages can lead to extreme chemical and physical conditions. Annual Consumer Confidence Reports that

summarize the annual testing results are provided to users of each system and are also provided to WEPD, EPA and IHS. Groundwater monitoring for non-drinking water systems is conducted by WEPD.

TABLE 3-1

GROUNDWATER QUALITY FREQUENCY AND ANALYSES

	Community Systems		Non-Community Systems	
Contaminants	**Surface Source Sampling**	**Ground Source Sampling**	**Surface Source Sampling**	**Ground Source Sampling**
Microbiological (coliform)	NA	Monthly	NA	Monthly
Physical (turbidity)	NA	Not Required	NA	Not Required
Inorganic Chemical	NA	Every 3 years	NA	Every 3 Years
Organic Chemical	NA	Every 3 Years	NA	Every 3 Years
Volatile Organic Chemicals	NA	Every 5 Years	NA	Not Required
Radiological	NA	Every 4 Years	NA	Not Required

Community Systems: Pertinent year-round system with 15 connections or population of 25.
Non-Community Systems: Intermittent use for 60 days/year and 15 connections or 25 users.
Note: NA is a designation for Not Applicable: The Washoe Tribe has no surface water connections used for distribution: Carson Community has a spring, which is shut down due to the high arsenic levels. Testing and variations in monitoring may vary according to detrimental health issues. Testing may occur in each individual well within in each community.

3.2 DATA MANAGEMENT

Under the Tribe's CWA Section 106 Water Quality Monitoring Program, sampling data records and reports will continue to be maintained by the Tribe's Environmental Department.

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SECTION 4.0
LAND USE

4.1 INTRODUCTION

The Sierra Nevada is known throughout the world for its rugged beauty, rich biodiversity, year-round recreational opportunities, rural and historic communities, and plentiful timber and water resources. The northern Sierra Nevada, which extends from south of Lake Tahoe up to Lassen Volcanic National Park, is home to many of the region's most important natural assets, found in the mountain valleys, river corridors, and northern conifer forests. These ecosystems provide services imperative to the future of California and Nevada residents and communities: the region's extraordinary water resources furnish water to 65 percent of California's population and to northern Nevada cities. The northern Sierra forests are a globally important store of carbon. Sierra Valley wetlands are home to the greatest diversity and abundance of bird life in the Sierra Nevada. The central Sierra Mountains on the west and the Pine Nut Mountains to the east form an almost continuous rim around the area. For detailed environmental information related to the area, (geography, geology, topography, climate, and weather), refer to the Washoe Tribe's Integrated Resource Management Plan (Washoe Tribe, 2008).

4.2 CARSON COMMUNITY

The majority of the 160-acre parcel was purchased in 1917. This acquisition was the result of authorization from Congress to the Bureau of Indian Affairs to make land purchases for the "landless" Nevada Indians including the Washoe. The Carson Community was developed in 1936 by the BIA. The remainder of the community was acquired in 1968. Approximately 34 acres have been subdivided and developed into residential housing. The site includes a Smoke Shop and an artesian well. Eighty-three acres are available for development. The remaining acreage (43 acres) has an extremely steep gradient and occupies the east front of the Carson Range and are undevelopable. Past mining activity has occurred on the western boundary. Wildfires occur at regular intervals on the hillsides above the community, such as the 2004 Waterfall Fire, and the Shooting Fire in August 2016. The Carson Community is served by the Carson City Sewer System. WUMA supplies water to the community. Carson Community depends on two domestic drinking wells, which produce 300 gpm. The wells have had frequently high nitrate levels (as high as 10 and 15 mg/l). The community's water distribution system was designed to extract Nitrate from drinking water. IHS funded this project, which is one a few systems in the region.

4.3 DRESSLERVILLE COMMUNITY

The majority of this 793-acre parcel, which covers the Washoe Ranch, was acquired by the Tribe between 1936 and 1940. This parcel hosts Washoe Tribal Headquarters, the Washoe Health Clinic, Washoe Police

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Department, Washoe Court Complex, WEPD, Washoe Truck Stop and Travel Center , an old campground facility, community buildings, approximately 150 residences, Washoe Travel Plaza and Casino, and the Washoe Ranch. Agricultural and range use occupy most of the parcel. The Gardnerville Ranchos General Improvement District provides sewer service. WUMA administers the water system that includes two wells and an associated water treatment/pump house. There are several additional public water systems wells located in the community which support administrative buildings.

4.4 STEWART RANCH

The Trust land in Jacks Valley and northern Carson Valley known as the Stewart Ranch was formerly operated by the Bureau of Indian Affairs as part of the Stewart Indian School. A majority of the land is well-suited for agriculture, as 60 percent of the Ranch is within the Carson River's 100-year flood-plain, and already includes intensive agricultural development. Immediately to the north and west of the Ranch is Forest Service land while private landowners border the remainder of the boundaries.

On the Stewart Ranch, approximately 155 acres were planted with alfalfa in 2008. The remainder is used for agricultural facilities, animal-assisted therapy, and horse boarding. The Jacks Valley Ranch House on Jacks Valley Road currently houses Washoe Utility Management Agency (WUMA), and other Tribal departments on an intermittent basis. A mini-storage business called Carson Valley Self-Storage exists on the triangular 10.1- acre Silverado parcel on the west side of Highway 395. The facility was later expanded into the northeast corner of the Stewart Ranch property. Heal Therapy of Nevada and the Tribe board approximately 20 horses on the Stewart Ranch. Heal Therapy is using the ranch building as their headquarters. The program uses horses combined with counseling and mental health services to help children and young adults develop confidence. The majority of the Stewart Ranch will continue to be used for agriculture, conservation and pasture/range.

4.5 STEWART COMMUNITY

Stewart Community is a 292-acre parcel that was part of the old Stewart Indian School. This parcel was transferred to the Washoe Tribe in 1982 by the U.S. Congress. The parcel is divided by different ownerships. The State of Nevada owns the eastern portion and the western portion is Washoe Tribal Trust Land, which includes property on both sides of Lower Clear Creek and Stewart Community residential area. There have been issues concerning control and ownership between the State of Nevada and the Washoe Tribe over certain Stewart Indian School buildings. The Tribe may be able to use and access other buildings on the former Stewart Indian School campus based on negotiations with the State of Nevada.

The community has been impacted or has the potential to be impacted by several sources of NPS. WEPD staff has been monitoring illegally dumped waste on Washoe lands along Clear Creek. The majority of debris sites have been removed. A state-owned sewer line crosses Stewart Community and terminates at the Carson City wastewater facility. This sewer line has had major leaks in the past decade and has caused significant spills containing sewage waste that impacted Lower Clear Creek. The developed segment of

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the parcel is primarily residential. Areas are zoned for community use, public parks and recreation. Community residences are served by a public sewage and waste treatment system operated by Carson City

4.6 WOODFORDS COMMUNITY

Woodfords Community is in one of the most remote and rugged areas of the Eastern Sierra Nevada Range. The Tribe acquired the 80-acre parcel in 1970, which became the Woodfords Community. Development began on the parcel in 1972. Approximately 40 acres have been developed, with the majority being residential. A community center, fire station and park have been constructed. The community sewer system has facilities with filtration equipment and evaporation ponds. Indian Health Service (IHS) funded the wastewater facilities. These ponds are located on BLM land northeast of the Community, on the old road to Gardnerville. The water system consists of two fenced wellhead, with associated treatment facilities operated by WUMA.

4.7 SOCIOECONOMICS

There are currently 1600 enrolled members of the Washoe Tribe. Approximately half of the members live in the four Tribal reservation communities and the other half of the members live off-reservation in communities throughout the United States and in other countries. The 2006-2010 American Community Survey provides the following information.

TABLE 4-1

TRIBAL POPULATIONS

Community	Number of Tribal Households*
Carson Colony	139
Dresslerville Community	343
Stewart Community	256
Woodfords Community	142

*2006-2010 American Community Survey

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SECTION 5.0
SURFACE AND GROUNDWATER QUALITY SUMMARY

5.1 HYDROLOGIC SETTING

A majority of the Tribal lands are located within the Carson River Watershed. This watershed is 3,965 square miles. The length of the River channel is 184 miles and flows from California to Nevada. The Clear Creek Watershed is a sub-watershed within the Carson River Watershed. Tribal staff contributed to the Carson River Watershed Adaptive Stewardship Plan (2007). This is a dynamic and guiding reference and resource for this Tribal stewardship plan. A few Tribal lands are located in other watersheds in California and Nevada. Waters located on Tribal trust lands are subject to the jurisdiction of the U.S. Environmental Protection Agency (EPA) Region 9 and the Washoe Tribe.

5.2 CARSON COMMUNITY

The Carson Community is served by the Carson City Sewer System. WUMA supplies water to the community. The community's water distribution system was designed to extract nitrate from drinking water. IHS funded this project, which is one a few systems in the region. Carson Community depends on two domestic drinking wells, which produce 300 gpm. The wells have had frequently high nitrate levels (as high as 10 and 15 mg/l). Additional abandoned wells in the Carson Community may need to be surveyed and closed properly.

5.3 DRESSLERVILLE COMMUNITY

The Carson River's East Fork is a major hydrologic feature of the Dresslerville Community. Indian Creek enters the Carson River's East Fork in the southern portion of the parcel. The East Fork is monitored by the WEPD quarterly. This segment has failed to meet State of Nevada water quality standards for temperature, pH, total nitrogen, total phosphates, fecal coliform and turbidity. A new sample site may be proposed at the confluence of Indian Creek and the Carson River.

The Tribe's Sampling and Analysis Plan (SAP) includes the lower 3,000 feet of Indian Creek. The sampling area is under review by the EPA. Indian Creek exceeds all surface water quality standards that exist under the CWA 106 Program. Indian Creek's water quality and quantity are persistently impaired. The Creek enters Tribal lands through an ancient spillway from alpine strata.

The Dresslerville Community is served by two public water supply wells, pumped alternately at a rate of 150 gallons per minute. Several additional wells serve administration buildings, while the Casino and Travel Plaza are connected to the Douglas County municipal water and sewer system. Additional abandoned wells in the Dresslerville Community or on the Washoe Ranch may need to be surveyed and closed properly. All water sampling panels taken by WUMA for the public water supply system are clear and meet applicable water standards.

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5.4 STEWART COMMUNITY

Stewart Community hosts one community well in operation and a backup well. Community ground water is impacted by Carson City wells near the parcel. The parcels soils consist of decomposed granite, which is highly porous, therefore making the Community water system more vulnerable to contaminate infiltration. The community has approximately two thirds of a mile of Clear Creek running through the parcel between the community and Topsy Lane. The creek channel is highly incised with head cutting and is biologically non-functional. The Lower Clear Creek Restoration Project at Stewart Community was designed to rehabilitate a portion of the channel and improve floodplain function. A retention pond was constructed by the WEPD to manage flood events and protect creek water quality. The creek appears to be re-adjusting to severe 1997 flood impacts and handled the 2006 event. The middle Clear Creek Parcel receives excessive sandy sediments transported by runoff from U.S. Highway 50 and Old Clear Creek Road. The excessive input of silt and sand sediments during rainfall events likely impairs aquatic life habitat. The Tribe, State, county and federal agencies conduct monitoring activities on the Clear Creek middle watershed.

5.5 WOODFORDS COMMUNITY

The Woodfords Community has two community wells, with an average depth of 280 feet, which service the public water system. The wells each produce more than 200 gpm, which exceeds current and future community water needs. One of the wells is high in arsenic, which is reduced to acceptable levels by the mixing of the two well waters. Three older wells exist and need to be sealed or used. Locks are present on the well lids. A permanent solution is needed to secure the older wells.

5.6 INTEGRATED WATERSHED MANAGEMENT APPROACH

A watershed is defined as an area of land that drains water, sediment and dissolved materials to a common outlet at some point along a stream channel (Dunne and Leopold, 1978). The land that the water flows or percolates through on its way down the watershed to the stream outlet is part of the watershed. A watershed-based management approach considers everything that has or is happening within that watershed.

Consideration for all NPS assessments and implementation of management activities must be given to the watershed and its condition. Land use and history within a watershed is a significant factor. Soil, geology, vegetation and fauna data and human use are all integral parts. The inclusion of these components results in a better understanding of water quality and quantity problems. The watershed-based approach assists with better defining action priorities by considering cumulative impacts on aquatic systems.

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TABLE 5-1

SUMMARY OF EXISTING WATER QUALITY CONDITIONS BY PARCEL

COMMUNITY/PARCEL	WATERBODY	EXISTING WATER QUALITY
Upper Clear Creek	Clear Creek	Surface water quality of Clear Creek are at risk due to the encroachment of urbanization, road construction, and agricultural practices on private lands upstream. Frequent sharp increases in bacteriological and turbidity have been recorded
	2 Capped Well	Secured
	Springs in north meadows	Unknown
Lower Clear Creek	Clear Creek	Water quality declines downstream from Fuji Park and is well below the water quality standards for the EPA CWA 106 surface water quality standards
	Meadow near Bucks Way; Clear Creek	Water quality frequently exceeds the bacteriological limits and turbidity standards set by the U.S. EPA's CWA 106 regulations for surface waters of the U.S.
Stewart Community	Community Well	High in manganese and iron; possible corrosive issues. Extensive distribution system, which is chlorine treated. Water quality and quantity have declined in recent years
	Back-up Community Well	Currently unknown
Carson Community	Community Well N (PWS 3200161)	High nitrates, pumped to nitrate treatment plant prior to delivery
	Community Well S (PWS 3200161)	High nitrates, pumped to nitrate treatment plant prior to delivery
	Spring	Exceeds the 2001 EPA Arsenic Rule published in the Federal Register in 2001
Dresslerville Community/Washoe Ranch and Tribal Administration	East Fork of Carson River	Variable good to moderate quality, which depends on quantity
	Indian Creek	Very poor quality and quantity, influenced by flows from Alpine County and associated effluent releases into the creek
	Campground Well	Moderate bacteriological issues
	Community Well (PWS 3200162)	Good/moderate with some pressure issues and quantity issues. Quantity impacts from urban encroachment
	ROP Lower Ranch (PWS 3200370)	Very good quality and quantity
	Old Clinic Smoke Shop Well (PWS 3200365)	Good
	HQ Well (PWS 3200363)	High bacteria, abandoned 2009
	New HQ Well (PWS 3200363)	Installed in 2009, good quality and quantity

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COMMUNITY/PARCEL	WATERBODY	EXISTING WATER QUALITY
Woodfords Community	3 Community Wells	Quality is good, have high calcium and hardness. Wells have quantity issues and should be closed
	Community Well (PWS 0600362)	Good, but have high arsenic. Mixed with other community well to dilute arsenic to acceptable levels
	Community Well (PWS 0600362)	Good

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SECTION 6.0
RESULTS

6.1 NPS POLLUTION SOURCES

NPS pollution source categories are land use and land cover driven and have been identified by the EPA as being the major contributors to NPS pollution in the U.S. NPS pollution categories were reviewed by WEPD staff and prioritized. WEPD staff ranked the NPS categories from high to low using matrix tables based on:

1. The vulnerability of Tribal lands to the particular NPS category (vulnerability was based on a combination of sensitivity and resiliency to impacts), and
2. The risks of exposure of Tribal lands to the particular NPS category (risk was based on a combination of probability and the level of consequences).

Categories and subcategories of NPS pollution believed to be causing impaired water uses are summarized below.

High Priority – Hydromodification and Habitat Alteration. Both the vulnerability of Tribal lands and the risks associated with habitat modification were ranked as high, due to increase and impacts of spread of noxious weeds, potential impacts of climate change, and difficultly restoring altered landscapes. Because healthy, intact habitats can create resiliency against the damaging consequences of NPS pollution, habitat modifications would increase the vulnerability of Tribal lands to all other forms of NPS, therefore was given the highest priority.

- Sensitivity – High
- Resiliency – Low
    - *Vulnerability = High*
- Consequences – High
- Probability – High
    - *Risk = High*

Medium-High Priority – Urban Areas (Urban Runoff/Storm Sewers). As the urban, suburban, and transportation infrastructure development around the Tribal communities continues to increase (and overall development in the valley), the probability associated with urban runoff NPS pollution have increased, creating a medium-high risk. Because urban runoff is untreated, typically high is sediment and pollutants, and drains directly into waterways (although existing riparian vegetation can create some resiliency to urban runoff impacts), vulnerability is medium-high, resulting in an overall medium-high priority ranking for urban runoff NPS category.

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- Sensitivity – High
- Resiliency – Medium
    - *Vulnerability = Medium-High*
- Consequences – Medium
- Probability – High
    - *Risk = Medium-High*

Medium-High – Resource Extraction. The vulnerabilities and the consequences to downstream vegetation, aquatic and terrestrial animals, and human health from resource extraction related NPS pollution were both high. However, the probability of exposure is low, as regulations and EPA involvement in upstream legacy resource extraction sites have been successful in preventing major discharges of AMD and other heavy metals, resulting in an overall medium-high priority ranking for the resource extraction NPS category.

- Sensitivity – High
- Resiliency – Medium
    - *Vulnerability = Medium-High*
- Consequences – Medium
- Probability – High
    - *Risk = Medium-High*

Medium-High – Urban Areas (Wastewater and Solid Waste Disposal). Sensitivity to NPS pollution from wastewater disposal via land application was defined as medium, due to varying soil types, depths, and vegetative cover, while resiliency is low, as virtually nothing can be done about these systems, resulting in a medium-high vulnerability. The probability of impacts was defined as medium, because the probability varies across the community and in some areas is unknown. Consequences of impacts, should they actually occur, was defined as high, as pollutant leaching into ground water sources could devastate the community drinking water systems and be almost impossible to remedy, creating a medium-high risk. This led to an overall priority ranking of medium-high.

- Sensitivity – Medium
- Resiliency – Low
    - *Vulnerability = Medium-High*
- Consequences – High
- Probability – Medium
    - *Risk = Medium-High*

Medium – Forestry. The biggest concern related to forestry NPS pollution are impacts from wildland fires, although sedimentation and organic debris from forestry/rangeland management and road systems can also impact Tribal waters. The vulnerability of impacts to Tribal waters was defined as medium-low, because the sensitivity and resiliency varies across Tribal lands and adjacent areas, and fires are more likely to be in headwater areas, where riparian vegetation is healthier and more resilient to NPS impacts. The risks of forestry NPS impacts were defined as medium-high, because both the probability vary

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spatially and temporally between high and low, although the consequences would be high – resulting in an overall medium priority.

- Sensitivity – Medium
- Resiliency – High
    - *Vulnerability = Medium-Low*
- Consequences – High
- Probability – Medium
    - *Risk = Medium-High*

Medium-Low – Urban Areas (Construction). The Tribe's parcels varied in the priority ranking of this category, with some parcels having a low vulnerability and risk (Woodford's community – due to rural, isolated nature), and some were high vulnerability and risk (Stewart Community, due to the proximity of highway and residential construction). Active construction impacts tends to be limited in scope and duration, while the lasting impacts of increased development and infrastructure after the active construction phase is over (urban runoff NPS category), tend to have more lasting effects on the health of Tribal lands and waterways.

- Sensitivity – Medium
- Resiliency – Medium
    - *Vulnerability = Medium*
- Consequences – Medium
- Probability – Low
    - *Risk = Medium-Low*

Medium-Low – Agriculture (Including Livestock). Although the probability of exposure to agricultural and grazing NPS pollution is high, due to the extensiveness of agriculture in the Carson Valley, the consequences were considered low, in comparison to the consequences of other NPS pollutants. The sensitivity of Tribal water to impacts of agriculture and livestock NPS pollution were considered medium, while the resiliency was considered high, due to existing riparian vegetation on Tribal lands and the effectiveness of BMPs that may mitigate negative consequences of agriculture related NPS pollutions. This led to a priority ranking of medium-low.

- Sensitivity – Medium
- Resiliency – High
    - *Vulnerability = Medium-Low*
- Consequences – Low
- Probability – High
    - *Risk = Medium*

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6.2 STATUS OF RESERVATION/TRIBAL WATERS

Tables 6-1 and **6-2** below detail major types of water quality pollutants and the water bodies affected by each pollutant. The purpose of these tables is to focus on activities occurring within Tribal lands. These data were also analyzed according to NPS category and subcategory.

TABLE 6-1

SURFACE WATER NONPOINT SOURCE POLLUTION

Parcel	Water Body	Suspected Pollutant*	Suspected Sources	Severity
Dresslerville	**East Fork Carson River**	TSS, Turbidity, Temperature, Bacteriological	Sources outside of Tribal borders; (1); Bank modification / destabilization;	Variable: Potentially High
Stewart Ranch	**Carson River**	TP, OP, Bacteriological, Nitrates, Turbidity, Temperature	Sources outside of Tribal borders(1); Bank modification / Destabilization**; Natural sources	High
Dresslerville	**Indian Creek**	TSS, TP, Turbidity, Temperature Bacteriological	Sources outside of Tribal borders(1); Pasture grazing-Riparian; irrigated crop production	High
Upper and Lower Clear Creek and the Stewart Community	**Clear Creek**	TSS, TP, Turbidity, Temperature, Bacteriological	Sources outside of Tribal borders(1); highway maintenance and runoff	High

* Includes suspected constituents and contaminants identified by NPDES permits.
**Bank modification related to the January 1997 and 2006 flood events and restoration activities.
(1) "Sources outside of Tribal borders" represents a wide variety of sources including, but not limited to, irrigation, mining and roadway runoff.

TOTAL PHOSPHORUS

A number of Nevada water-bodies exceed the State TP standard of 0.1 mg/l. Great Basin soil types and topography account for some of these variations. The 2006 State of Nevada 303(d) List identifies Total Phosphorus (TP) as a main parameter of concern for the Carson River.

TOTAL SUSPENDED SOLIDS AND TURBIDITY

TSS and turbidity exceedances are new to NDEP's 303(d) List. Record flooding occurred in January, 1997 throughout the Carson River Watershed. Riparian vegetation, stream channel stability and flood plain development are still recovering from this event.

TEMPERATURE

Temperature is on the NDEP 303(d) List, although the State has assigned a low priority to this. Temperature is at times exceeded especially during low flow periods. Woody riparian communities have been extensively removed along the stream channel and bank buffer areas. Riparian woody and shrub vegetation has been removed along much of the Upper and Middle Carson River Watershed. Channel temperatures could be lowered along courses by allowing woody vegetation to re-establish. Habitat

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improvement BMPs could create increased in-stream cover. For example, cabled in trees or cover structures would provide more shaded cooler water and improved fisheries habitat.

TABLE 6-2

GROUNDWATER NONPOINT SOURCE POLLUTION

Parcel	Well Location and (Number or Description)	Suspected Pollutant	Suspected Sources	Severity
Carson Community	T15N R20E S30 (PWS 3200161)	Nitrate	Onsite wastewater systems; Sources outside Tribal borders [(1)]	High (as high as 10 and 15 mg/l)
	T15N R20E S30 (Spring Pumphouse)	Exceeds State of Nevada Arsenic standard levels	Natural Sources; Sources outside of Tribal borders [(1)]	Low
Dresslerville Community	T12N R20E S26 (Campground)	Total Coliform present	Pasture grazing--riparian and / or upland; Onsite wastewater systems; Sources outside of Tribal borders [(1)]	High
Stewart Community	T15N R20E S32	High Manganese and Iron corrosive	Urban runoff, agriculture	Moderate
Woodfords Community	T 11N R20E S29 (PWS 060032)	High Arsenic	Natural Sources; Sources outside of Tribal borders [(1)]	Moderate

[(1)] "Sources outside of Tribal borders" represent a wide variety of sources including, but not limited to, irrigation, mining and roadway runoff.

TOTAL COLIFORM

The Tribe conducts monthly Presence/Absence Tests for Coliform (Total Coliform and E. Coli.) for all community groundwater systems. NPS contamination within the Dresslerville Community includes former septic systems associated with residential areas. Cattle grazing on sections adjacent to Indian Creek and the East Fork of the Carson River are also potential contaminant sources.

NITRATE

The Tribe conducts nitrate tests for all community groundwater systems. NPS contamination within Carson Community include, but are not limited to, former septic systems associated with residential areas, septic runoff, roadway erosion, sewer lines, home developments, new road development, fences and off-road vehicles.

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SECTION 7.0
DISCUSSION

7.1 WATER QUALITY IMPAIRMENT FROM NONPOINT SOURCE POLLUTION

CATEGORIES OF NONPOINT SOURCE POLLUTION

The Carson River, the Carson River's East Fork and several community wells are impaired by NPS pollution. These water bodies have persistently failed to meet State of Nevada and Federal water quality criteria. Clear Creek and Indian Creek frequently fail to meet State of Nevada or Federal water quality standards.

The highest priority NPS category was Hydromodification and habitat alteration and associated nutrient release from sources outside of Tribal borders to Tribal waters. In addition, resource extraction has led to the classification of the headwaters of the Carson River Watershed as a Federal Superfund clean-up site. The Leviathan Mine is an acid drainage site that possesses heavy metals that seasonally leach into creek systems. Interim treatment at the mine is conducted for only several months of the year. **Table 7-2** below is a summary of the NPS pollution categories and prioritization.

TABLE 7-1

WASHOE TRIBE COMMUNITY NONPOINT SOURCE POLLUTION

Water Body	Cause	Source (subcategory)	Degree of Impact
East Fork Carson River	Nutrients, Metals, Siltation, Agricultural Chemicals	Sources outside of Tribal borders (1)	High
	Siltation	Habitat modification (Bank modification / destabilization)*	Slight
Carson River	Nutrients, Metals, Siltation, Agricultural Chemicals	Sources outside of Tribal borders (1)	High
	Organic Enrichments, Feed Lots	Intensive Animal Feeding Operations (Confined Animal Feeding Operations)	Moderate
	Siltation	Habitat modification (bank modification /destabilization)*	Slight
	Phosphates	Natural Sources; Sources outside of Tribal borders (1)	Moderate
	Temperature	Habitat modification (removal of riparian vegetation)	High
Indian Creek	Organic Enrichment and Coliform; Agricultural Chemicals	Sources outside of Tribal borders (1);	High
	Organic Enrichment and Coliform	Grazing-related Sources (Pasture Grazing - Riparian)	High
Clear Creek	Organic Enrichment, Coliform, Siltation; Agricultural Chemicals	Sources outside of Tribal borders (1)	High

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Water Body	Cause	Source (subcategory)	Degree of Impact
	Erosion and Siltation	Urban Runoff/Storm Sewers (Highway Maintenance and Runoff); Sources outside of Borders [1]	High
Groundwater	Arsenic Organic Enrichment and Coliform; Agricultural Chemicals	Natural Sources; Grazing-related sources (Pasture grazing--riparian and/or upland); Sources outside of Tribal borders [1]	High
	Organic Enrichment and Coliform	Land Disposal (Onsite Wastewater Systems)	High

[1] "Sources outside of Tribal borders" represent a wide variety of sources including, but not limited to, irrigation, mining and roadway runoff.

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SECTION 8.0
SELECTION OF MANAGEMENT PRACTICES

8.1 CORE PARTICIPANTS

Nonpoint source pollution prevention is the responsibility of all those who live and work in the watershed. As such, cooperation between the entities such as the Tribal Communities, developers, and non-Tribal residents, as well as government agencies is vital to the health of the watershed. A great many nearby activities can influence water quality. Stakeholders are few, but each plays an important role.

TABLE 8-1
CORE PARTICIPANTS IN WATERSHED PLANNING

Participant	Role
Washoe Tribal Council	Provides regulatory policy guidance for resources on Washoe Tribal trust land.
Washoe Environmental Protection Department	Implementation of NPS projects on trust land. Provides comments regarding the clean-up and recovery of the Leviathan Mine Superfund site.
Washoe Tribe Legal Department	Involved with the clean up, recovery, and litigation regarding the Leviathan Mine Superfund site.
US Environmental Protection Agency	Provides regulatory and technical assistance as well as grant funding for Tribal environmental projects. The Tribe has obtained Section 319 grant funding from EPA. Oversees the clean up and recovery of the Leviathan Mine Superfund site.
City of Gardnerville, Douglas County (Nevada), and Alpine County (California)	Provides regulatory policy guidance and monitoring and assessment capability for implementation of BMPs for resources outside of the Tribe's trust lands.
Nevada Division of Environmental Protection	Lead agency for implementing the Nonpoint Source Program in Nevada
Lahontan Regional Water Quality Control Board	In the region of California that Tribal lands are located, provides technical oversight and education for projects located off trust lands in California, and is involved with the clean up and recovery of the Leviathan Mine Superfund site.
Local and Regional Environmental Non-Profits and Agencies	Provides education to the public and Tribal members regarding NPS pollution within local watersheds.

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8.2 PUBLIC PARTICIPATION

There are many opportunities for public participation by Tribal members and non-Tribal members. First, the Tribal Council is accountable to all members of the Tribe, and robust intra-government relations between the various Tribal departments are a critical step towards preventing NPS pollution and restoring Washoe Tribal waters. In addition, significant public outreach opportunities exist between the WEPD and the residents of the Tribal communities, especially in volunteer activities and awareness. For large-scale NPS pollution control programs that affect watershed water quality, the Tribal Council will provide opportunities for public comment and review and may or may not grant approval as warranted. Where other governments are involved, appropriate government to government protocols will be adhered to, including outside agency requirements for public involvement, and will be an integral part of the process. Smaller proposals, such as low impact, inexpensive, site specific projects, or relatively minor publicity efforts that could be accomplished within our base funding level will typically undergo an internal review.

8.3 EXISTING BMPS

The WEPD has the technical background and knowledge to identify and recommend BMPs to reduce NPS impacts on Tribal lands. Washoe Tribal Council procedure provides a forum for public participation and public comment regarding the selection of projects. A Tribal resolution authorizes submittal of proposals. This assessment plan enables funding opportunities from federal agencies like the EPA. Section 319 of the Clean Water Act requires each Tribe to describe Tribal and local programs for controlling pollution from nonpoint sources. There are numerous programs, administered by a variety of agencies, which aim to control NPS pollution within Tribal lands. Technical assistance, education, demonstration projects, and financial assistance are used to implement BMPs.

EXISTING BMPS

The Washoe Tribe currently implements BMPs to control NPS pollution. A summary of BMP's used is provided in **Table 8-2** below.

TABLE 8-2

CURRENT TRIBAL BEST MANAGEMENT PRACTICES

BMPs	Nonpoint Source Category (subcategory)
Stream Protection and Stabilization	Hydromodification and Habitat Alteration (Bank Modification / Destabilization)
Fencing Physical Protection Weed Management Habitat Protection Alternative Water Sources Grazing Management Plan Fencing	Agriculture (Grazing-Related Sources)
Locate feed lots away from surface water resources with vegetative buffer between feedlot and river. Live Stock Management	Agriculture (Intensive Animal Feeding Operations)
Crops located with setback from river	Agriculture (Crop-Related Sources)

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BMPs	Nonpoint Source Category (subcategory)
Crop Management	
Stream Protection and Stabilization Sedimentation Controls Source Water Protection Program Household Hazardous Waste Management Storm Water Monitoring Program Multi Hazard Mitigation Plan Surface Water Monitoring Program	Urban Areas (Highway Maintenance and Runoff)
Wellhead Protection Program Household Hazardous Waste Management Storm Water Monitoring Program Multi Hazard Mitigation Plan Surface Water Monitoring Program Integrated Solid Waste Management Plan	Urban Areas (Wastewater and Solid Waste Disposal)
Forestry Management Road and Trail Rehabilitation and Decommission Fuel Reduction and Fire Control	Forestry (Forest and Woodland management activities and road/trail runoff)
National Pollutant Discharge Elimination System BMP Site monitoring Building Standards	Urban Areas (Construction)
Wellhead Protection Program Nonpoint Source Pollution Program Surface Water Monitoring Program Groundwater Monitoring Wetland Protection Program Storm Water Monitoring Program	Sources outside of Tribal Borders

8.4 POLLUTION REDUCTION

The strategy for selecting appropriate BMPs is to involve interested stakeholders as soon as possible during the scoping of Tribal projects. Stakeholders include Tribal members, the Tribal Council, and off-reservation interests such as residents, regulatory agencies (such as the Nevada Division of Environmental Protection), environmental quality non-governmental agencies (such as non-profits), and developers. For example, residential development on Tribal trust lands can involve the future residents, the Planning Department, Washoe Roads Division, Washoe Housing Authority, Washoe Utility Management Authority, IHS, WEPD, construction contractors, and City or County officials if the development is on fee lands. Meetings between these parties face to face is the most effective strategy for determining BMP selection; and often experienced contractors and regulators have a great many ideas to share regarding new and effective BMPs. The expert advice of consultants, contractors, and government agency staff (such as water quality experts from the EPA and US. Army Corps of Engineers) should be taken advantage of. In addition, the WEPD should make every effort to secure volunteers within the community to serve a variety of functions that will improve water quality. NPS watchdogs can be appointed to periodically observe waterways in the course of regular pedestrian activities to ensure water quality problems are detected early. Teams of stewards can meet periodically to engage in education of other residents, and conduct cleanup and restoration efforts.

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The Washoe Tribe takes an active role in the Carson River Watershed and other watersheds found within the Tribe's lands through participation in agency meetings and stakeholder groups. The Tribe will continue to improve land use practices to reduce NPS pollution, as additional funds are available. The comprehensive guidelines provided in the State of Nevada's Best Management Practices Handbook (Handbook, Nevada State Conservation Commission and State Environmental Commission, 1994) will serve as a guideline for BMP's to be implemented throughout the Tribal lands, as is applicable and practical. The Tribe will work to develop additional BMPs, including the use of traditional and customary stewardship practices.

The methodology for selection of BMPs most suitable to address each category and subcategory of nonpoint source pollution identified in this NPS assessment is as follows:

1. Identify all BMPs that are appropriate to each type of NPS pollution through research and consultation.
2. Determine which of the BMPs identified during Step 1 are suitable for the Tribe in terms of scale, environment, cost, and existing infrastructure.
3. Determine likely effectiveness of locally appropriate BMPs in reducing NPS loading through research, modeling, and consultation. These will be ranked based upon likely performance.
4. Consult with other relevant agencies and jurisdictions to determine which of the BMPs may best be used in coordination with local off-reservation efforts.
5. Determine which BMPs will have the most favorable results per unit cost.
6. Present options to public meeting of Tribal Council to allow Tribal leadership, Tribal members and non-Tribal public an opportunity to consider options, provide comment, and shape the implementation of the proposal.
7. Implement BMPs with adequate resources to perform necessary maintenance and monitor performance.
8. Monitor and provide regular updates on BMP status and effectiveness for Tribal Council and other relevant agencies.

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SECTION 9.0
CONCLUSIONS

As described in this NPS assessment, Washoe Tribal waters are potentially impaired from various NPS pollution sources. The NPS pollution categories (subcategories, where applicable) in ranking of greatest concern are:

- Hydromodification and Habitat Alteration
- Urban Areas (Urban Runoff/Storm Sewers)
- Resource Extraction
- Urban Areas (Wastewater and Solid Waste Disposal)
- Forestry
- Urban Areas (Construction)
- Agriculture (including Livestock)

These NPS pollution categories result in water quality impairments related to bacteria loading, oils and greases and commercial contaminants, erosion and sedimentation from drainages and surface waters, and nutrient enrichment. The results indicate surface waters are impacted in relation to total phosphorous, total suspended solids and turbidity and temperature. NPS pollution sources have led to increased loading rates of total coliform and nitrates to groundwater resources in Washoe communities. Sources and causes of these problems vary from cattle grazing near Washoe Tribal waters to surface mining activities including stockpiling of excavated materials and contamination from parking facilities and commercial/Tribal governmental operations. Groundwater contaminant loading rates have increased due to grazing patterns and increase land disposal from wastewater systems. Each issue will be addressed through implementation of the CWA Section 319 Nonpoint Source Management Program Plan (refer to Section 10.0), which outlines short-term and long-term BMPs that would be funded by various sources including, but not limited to, CWA Section 319(h) funding. Implementation of a Nonpoint Source Management Program Plan will provide the framework for selection and implementation of BMP's to reduce NPS pollution.

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SECTION 10.0
NONPOINT SOURCE MANAGEMENT PROGRAM PLAN

This section will list all significant sources of NPS categories and subcategories of pollution, and the BMP's that will be used to control specific NPS pollution sources. Certification of legal authority that the Tribe has the authority to implement a management plan has been addressed in Section 2.1. A list of funding sources from federal and any other sources not including the Section 319 program will be discussed. A schedule of the program's annual milestones and plan implementation will be addressed and finally, the Section 319 NPS program will review activities of federal agencies to determine if their programs are in compliance with the Tribal NPS Program.

10.1 MANAGEMENT PROGRAM SUMMARY

The Washoe Tribal Council oversees all programs and activities involving Tribal lands. The Council will exercise its authority to ensure BMP's are utilized whenever practical and applicable. This authority embraces working relationships with federal and state entities to reduce NPS impacts from non-Tribal lands. The WEPD is responsible for administration of the Tribe's NPS Management Plan including procuring NPS abatement funding, planning, project development, monitoring NPS issues and BMP effectiveness, implementing where possible traditional stewardship practices and report issues to the Tribal Council.

This NPS Management Plan has two components:

- The General Management Program includes administration and monitoring.
- The Specific Management Programs for NPS pollution categories of concern on the Tribe's lands identify BMP's, prioritize impaired streams, and propose demonstration projects to implement BMP's. Milestones have been established for each management program, which describe project accomplishments, which should be achieved by specified target date.

ADMINISTRATION

Administration includes coordinating the overall General Management Program, the Specific Management Programs for NPS pollution categories of concern on the Tribe's lands; providing interagency coordination; periodically updating the overall plan; and obtaining the necessary funding for programs. The NPS Pollution Coordinator will be responsible for these activities, assisted by the NPS Task Force and the Tribal Council.

MONITORING

Knowledge of NPS pollution problems within Washoe communities and Tribal lands will continue to be expanded through a combination of evaluation studies and professional judgment. Much of the

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information will be gathered under the Tribes Water Quality Monitoring Program funded under CWA Section 106. Sampling will be conducted after approval of the Tribe's QAPP. These data will be utilized to determine appropriate source-specific BMPs for NPS pollution.

TABLE 10-1
MANAGEMENT PROGRAM MILESTONES

ACTIVITIES	OUTPUT	END/YEAR
Submit final NPS Management/Assessment Plans to EPA.	Final Assessment	Fall 2016
Incorporate priorities into work plan for NPS program and submit to Leadership and funding agencies (Tribe, NRCS, USGS, BIA, EPA).	Updated work plans	Ongoing, beginning Fall 2016
Request 319 Grant from EPA for implementation of Management Plan.	Grant application	Fall/Winter 2016/2017
Appoint a new NPS Task Force and review program plans and milestones. Consider hiring additional staff if necessary.	Meetings	Winter 2017
Submit Progress Reports to EPA.	Progress report	Quarterly
Convene NPS Task Force to review projects and program and set priorities for next fiscal year. Include tasks in annual updated ETEP.	Annual meeting	Annually, ongoing
Submit Annual Report to EPA.	Annual Report	Annually, ongoing
Update Management Plan as needed review with NPS Coordinator, Task Force, and Tribal Council.	Updated Management Plan	Ongoing

10.2 BMPS IDENTIFIED TO CONTROL SPECIFIC NONPOINT SOURCES

Utilization of BMPs as they apply to the Tribal NPS Pollution Control (319) Program is voluntary and success of the program will depend upon cooperation between NPS project coordinators and operators such as ranchers, residents, or any other groups or individuals whose NPS activities contribute to the degradation of Tribal waters. Cost share programs may be available to help pay for the cost of applying BMPs but other Tribal stakeholders may be unable to provide matching funds. The CWA 319 programs offer incentives to operators to implement BMPs and in cases of need; Tribal sources may be used to augment the implementation of BMPs. The management program addresses NPS categories identified as priorities in the Assessment Report portion of this document. BMP's are described in the State of Nevada's Handbook of Best Management Practices and are only referenced here by title. The Handbook will be used to as a guide to control and abate erosion and sediment issues. The WEPD will be the lead in either implementing the BMP or assisting other Tribal agencies (such as the Roads Division) in implementing BMPs in accordance with this plan.

10.3 FUNDING SOURCES

A summary of federal, state, and local assistance and funding are listed below. The program descriptions of cooperating agencies and how they relate to the abatement and control of NPS pollution on the Reservation/Tribal properties is as follows:

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U.S. EPA Region 9
NPS and Water Resources grant funding under Tribal Programs, EPA 106, EPA 319h, etc.

USDA, Natural Resources Conservation Service
The NRCS is the technical agency responsible for providing technical, financial, and educational assistance to land owners in planning and application of soil and water conservation measures. The NRCS works under memoranda of understanding with the soil and water conservation districts.

U.S. Department of the Interior, Bureau of Indian Affairs
The Bureau of Indian Affairs (BIA) is the government agency that has responsibility for land held in trust by the U.S. Government for Indian Tribes. These responsibilities are set forth in 25 CFR Part 150-250. The BIA will provide technical assistance and resources when possible. When BIA funds are available, the Tribal NPS program can match funds. This allows greater flexibility when trying to fund projects that are expensive to implement because Tribal NPS funding is limited.

Indian Health Service
The Indian Health Service (IHS) has the responsibility of providing health services to federally recognized Indian Tribes. IHS provides technical expertise and funding resources (when available) to insure sound public and environmental health services.

Tribal Departments
In all, the Tribal Departments, with assistance from WEPD, can assist the NPS program with their staff and expertise in assisting with implementing Tribal projects

10.4 BMPs

In order to implement an effective, comprehensive NPS management program, all sources of pollution must be addressed in a manner, which provides alternatives and flexibility. This document is designed to present a proposed strategy with flexibility in management and implementation. The goal and tasks outlined can be utilized, altered, and prioritized to protect and restore water quality.

CATEGORIES OF NONPOINT SOURCE POLLUTION

Within the NPS Assessment Report, the Tribe identified categories of NPS pollution on Tribal lands that are likely impacting water quality, as shown below. The Tribe then ranked the identified categories of NPS pollution based on the percentage of Tribal waters potentially impaired from each category as follows:

- Hydromodification and Habitat Alteration, Impairment Ranking = 65% of Washoe Tribal waters impaired.
- Urban Areas (Urban Runoff/Storm Sewers), Impairment Ranking = 65% of Washoe Tribal waters impaired.
- Resource Extraction, Impairment Ranking = 75% of Washoe Tribal waters impaired.

- Urban Areas (Wastewater and Solid Waste Disposal), Impairment Ranking = 50% of Washoe Tribal waters impaired.
- Forestry, Impairment Ranking = 25% of Washoe Tribal waters impaired.
- Urban Areas (Construction), Impairment Ranking = 25% of Washoe Tribal waters impaired.
- Agriculture (Including Livestock), Impairment Ranking = 75% of Washoe Tribal waters impaired

1. HYDROMODIFICATION AND HABITAT ALTERATION = 65% OF TRIBAL WATERS IMPAIRED

Habitat modification has occurred throughout the Carson River Watershed. Modifications will accelerate as long as development continues within the Carson River and tributary flood plains. Watershed development increases flood flows, decreases flood attenuation and facilitates riparian vegetation clearing. The decreased vegetation communities lessen channel shading and increase mean water temperatures. The Tribe must continue to implement stream bank stabilization measures where corridors have excessive bank incision, with accompanying sloughing and erosion; and repair existing stream bank projects e.g. Mallard Bend, Stewart Ranch. The Tribe will continue to coordinate with the watershed stakeholders when modifications and remediation to the river occur. The Tribes long-term goal is to attain a natural river corridor. Development within the rivers' flood plain is highly discouraged by the Tribe. Tribal policies encourage enhancement and protection of riparian vegetation.

Goal: Reduce Contaminant Transport

Short-Term Task HHA-1: Noxious Weeds and Invasive Species.

The NPS Task Force will initiate an assessment of noxious weeds and invasive species within Washoe Tribal waters that may be inhibiting corresponding hydrologic and filtering capacities. The assessment shall include recommendations for not only removal of such noxious weeds and invasive species, but also a vegetative restoration plan to ensure establishment of native species or species that facilitate water flow and filtering to improve surface water quality. This short term task should be repeated for every five-year revision cycle of the NPS Management Program Plan.

Implement BMP's:

Implement the BMP's listed under *Urban Areas, Goal: Reduce Excessive Sediment Transport*, below.

Goal: Reduce Water Temperatures

Implement BMP's:

Riparian Vegetation Management: This BMP is not listed under the Handbook. The BMP involves protection-enhancement of woody riparian vegetation to provide surface water shading fire prevention, noxious weed management, conservation, and restoration.

Cooperating agencies: NRCS, EPA, BIA, USFWS, NDOW, CRC, CWSD, CVCD

Water bodies of focus: E. F. Carson River, Carson River, Indian Creek, Clear Creek

2. URBAN AREAS (URBAN RUNOFF/STORM SEWERS) = 65% OF TRIBAL WATERS IMPAIRED

Urban runoff and storm water sewers adversely affect Stewart Community, Dresslerville, and Carson Communities. Excessive sediments are transported to the Upper and Lower Clear Creek Parcels by concentrated runoff from U.S. Highway 50 and Old Clear Creek Road. These sediments impair aquatic life and degrade stream characteristics. Stewart Community has experienced increased erosion and sediment deposition across the parcel. Road systems that go through the Dresslerville and Carson Communities experience sediments and potential chemical contaminants that can be transported to nearby surface water resources.

The Tribe will collaborate with Tribal Planning Department, Nevada Department of Transportation (NDOT), BIA, USFS and the Federal Highway Administration since water sources are from concentrated roadway flows. Select BMP's contained in the Handbook will be implemented. BMP's may include erosion and sediment controls, slope stabilization practices, infiltration systems and watershed management. BMP's will be implemented pending procurement of funding and coordination with the cooperators. WEPD will also review NPDES permit applications which may impact Tribal water resources.

The Washoe Tribe will implement the following assessment action to determine if additional BMPs will be warranted in the next update to this NPSMP:

Goal: Reduce impacts from runoff at urbanized centers.

Short-Term Task UA-1: Assess Unpaved Tribal Roadways and Pathways.
The assistance of the Tribal Roads Department, the NPS Task Force shall continue to update the inventory of unpaved roadways and pathways, documenting existing conditions related to runoff conditions and existing NPS pollution controls. The NPS Task Force shall assess each inventoried Tribal unpaved roadway and pathway to establish baseline conditions for the implementation of stabilization BMPs to reduce erosion and high-sediment runoff. Each assessed roadway shall be delegated a priority rating, a rating of 1 being the most urgent, for the implementation of stabilization BMPs.

Short-Term Task UA-2: Parking Runoff Management.
The NPS Task Force will continue to work Tribal staff to assess the installation of water quality improvement features at drainages that receive runoff from commercial and public parking areas within the Washoe Communities. These could include the maintenance/development of vegetated strips to treat runoff from parking lots.

Goal: Reduce Excessive Sediment Transport

Implement BMPs:

1. Road and Construction Site Practices (BMP's 1-1 to 1-5)
2. Erosion and Sediment Controls (BMP's 2-1 to 2-14)
3. Slope Stabilization (BMP's 4-1 to 4-3)

4. Soil Stabilization Practices (BMP's 3-1 to 3-8)
5. Road and Construction Site Practices (BMP;s 1-1 to 1-5)

Cooperating agencies: NDOT, NRCS, EPA, BIA, FHA, NDEP, Douglas and Carson City
Water bodies of focus: E. F. Carson River, Carson River, Indian Creek, Clear Creek, Skunk Harbor Parcel at Lake Tahoe

3. RESOURCE EXTRACTION = 75% OF TRIBAL WATERS IMPAIRED

Several activities associated with mining operations including extraction projects, access and haul routes, waste rock dumps or tailings, ore stockpiles, landfills, and product storage areas have the potential to be sources of nonpoint pollutants such as sediment, salts, metals and organic compounds. Currently, there are no active mines on Tribal lands though impacts from active and legacy mining outside of the Tribal boundaries include sedimentation, heavy metals, acid drainage, nitrate, phosphate increases risk of human health problems and adversely impacts aquatic life.

The Tribe's Superfund and Natural Resources Damages Assessment Programs coordinate with several other agencies for the Leviathan Superfund site. The Tribe's CWA Section 106 monitors surface waters on Tribal lands downstream of Leviathan Mine. EPA, LWQCB, and NDEP monitor surface water at and near the Leviathan Mine.

Goal: Increase Transparency of Remediation Efforts.

Short-Term Task RE-1: Consultation with involved agencies.

The NPS Task Force shall continue to monitor the Leviathan Superfund site. The Tribe shall be active in regards to noticing, legal involvement, commenting on associated projects and permits, communication and consultation with stakeholders and regulatory agencies, increasing technical understanding of the remedial efforts at the mine site.

4. URBAN AREAS (WASTEWATER AND SOLID WASTE DISPOSAL) = 50% OF TRIBAL WATERS IMPAIRED

Land disposal issues including sludge disposal, wastewater, leaching from unlined landfills, industrial land treatments and hazardous waste spills are potential sources of pollutants such as nutrients, salts, metals and organic compounds to both surface and ground water. Decadent or old septic systems are suspected sources of NPS issues at Stewart, Dresslerville and Carson Communities and Stewart Ranch. Old septic systems are suspected sources of nitrates and coliform in groundwater wells serving these communities. Pollutant quantification is difficult without costly subsurface investigations. Remediation of this problem is virtually impossible.

Goal: Educate Tribal communities on household hazardous waste, illegal dumping, non-hoarding.

Short-Term Task UA-3: Establish Solid Waste Education Task Force

The NPS Task Force shall establish a Solid Waste Education (SWE) Task Force. The SWE Task Force will develop educational materials to educate the public on the hazards of household hazardous waste,

illegal dumping, and hording. Readily available materials from the EPA will be utilized as templates. The SWE Task Force will also hold special events where the public can drop off household hazardous waste and solid waste to minimize illegal dumping.

Implement BMPs:

1. Landscaping (BMP 10-6)
2. Wellhead Protection (BMP 10-12)

Cooperating agencies: EPA, BIA, USBR
Water bodies of focus: Carson River, Indian Creek, Clear Creek, Groundwater resources

5. FORESTRY = 25% OF TRIBAL WATERS IMPAIRED.

Forestry operations, larger scale fires, road systems and invasive species control can impair aquatic life and degrade water quality. Sediment concentrations can increase due to accelerated erosion from roadways/trails/skid trails/landings. Slash and other organic debris can accumulate in surface water systems, depleting dissolved oxygen. Organic and inorganic chemical concentrations can increase due to harvesting and vegetation controls. Natural fires are encouraged as part of stewardship practices though due to the lack of fire prescribed burning should be utilized to mimic natural fires. The WEPD implements majority of silviculture projects on Tribal lands and coordinates with other departments or agencies as necessary.

Goal: Reduce sedimentation transport, reduce spread of noxious weed seeds, maintain existing plant communities, and maintain healthy plant communities.

Implement BMPs:

1. Standard Forest Practices Rule (BMP 8-1)
2. Wildland/Urban Interface Management (BMP 8-2)
3. Fuels Management (BMP 8-3)

Cooperating Agencies: EPA, BIA, Bureau of Land Management, US. Forest Service
Water bodies of Focus: Carson River, Indian Creek, Clear Creek, Groundwater resources

6. URBAN AREAS (CONSTRUCTION) = 25% OF TRIBAL WATERS IMPAIRED.

Sediment is the primary pollutant generated at construction sites. Runoff from construction and industrial activities can lead to sedimentation impairments to surface water resources. The Tribe has a Development Planning System that sets guidelines for construction projects. WEPD requires SWPP and NPDES permitting through the EPA for Tribal construction activities.

The Washoe Tribe will implement the following assessment action to determine if additional BMP's will be warranted in the next update to this NPSMP:

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Goal: Protect Tribal waterways from sedimentation.

Short-Term Task UA-4: Survey of Sediment Sources.

The NPS Task Force will initiate a comprehensive survey, which will include mapping the sources of sediment, which are impacting Tribal waters. The survey will focus primarily on identifying erosion problems from pasture lands, natural sources such as erosion, and Tribal development. This task will include a prioritized listing for targeting problem areas within the study areas.

Long-Term Task UA-5: Development of Storm Water Control Requirements at Tribal Development Sites.

The NPS Task Force, in coordination with the Tribal Council, will develop a Storm Water Pollution Prevention and BMP Ordinance (SWPP Ordinance). The SWPP Ordinance will require storm water pollution controls, such as low impact development systems and practices, requirement to ensure equipment and vehicles does not transport contaminants and sediment, the installation of perimeter sediment barriers such as berms, dikes, fiber rolls, silt fences, sandbags, gravel bags, or straw bale barriers, for Tribal development projects that are not required to implement such controls in accordance with the CWA (for example development projects disturbing less than one acre of land). The SWPP Ordinance will provide exemptions for maintenance activities and small development projects that would not likely result in NPS pollution.

Long-Term Task UA-6: Implementation of Storm Water Controls at Tribal Development Sites.

The NPS Task Force, in coordination with the party responsible for each development project on Tribal property, will ensure NPS pollution controls are installed and maintained in accordance with development plans and storm water plans such as a Storm Water Pollution Prevention Plans for development in accordance with a NPDES permit for construction. Projects that do not require a Storm Water Pollution Prevention Plan but require Tribal Council approval and disturb greater than 100 square feet of soil, appropriate erosion control measures will be utilized to minimize erosion and prevent sediment from entering watercourses. Erosion control measures to be utilized will include, but not be limited to:

a. Road surfacing
b. Dispersing runoff into stable vegetated filter areas
c. Armoring with rock rip-rap
d. End hauling waste material to stable locations
e. Construction of rolling dips, critical dips, and water bars, and
f. Mulching and re-vegetation of disturbed surfaces as soon as practicable.

Where construction activities are conducted in close proximity to watercourses, additional erosion control protection measures will be utilized to trap sediment and minimize its entry into a watercourse. As required, slash filter windrows, silt fences, mulching and/or straw bale check dams will be used to control runoff over fill slopes and along concentrated runoff flow paths. Residential projects not requiring Tribal Council approval would be exempt from these requirements.

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Goal: Reduce Excessive Sediment Transport

Implement BMPs:

Implement the BMP's listed under *Urban Areas, Goal: Reduce Excessive Sediment Transport*, above.

7. AGRICULTURE (INCLUDING LIVESTOCK) = 75% OF TRIBAL WATERS IMPAIRED

Agriculture and in particular grazing operations, result in the introduction of biological contaminants (such as E.coli) and nutrient loading into local waterways (erosion from cattle trails). In addition, agricultural chemicals (soil amendments, fertilizers, and pesticides) also enter Tribal water ways from active agricultural lands.

Goal: Reduce contamination of Tribal waters by microorganisms from pasture lands.

Goal: Reduce nutrient contamination

The farming and livestock BMP's cover irrigated cropland management, pasture and hay land management, soil amendments, range improvements and livestock facilities. These components may be implemented on a site-specific basis for each agricultural activity. BMP use will be coordinated with Washoe Development Group's Ranch Management and NRCS. The Tribe manages a relatively minor portion of properties impacting surface-ground water in the Carson Valley. Landowners, in cooperation with the Tribe, need to co-implement BMPs to control NPS pollution.

Implement BMPs:

1. Irrigated Water Management (BMP 7-1)
2. Irrigated Cropland Management (BMP 7-2)
3. Pasture and Hay Land Management (BMP 7-4)
4. Range Improvements (BMP 7-10)
5. Livestock Facilities (BMP 7-11)

Cooperating Agencies: NRCS, EPA, BIA, WDG
Water bodies of focus: E. F. Carson River, Carson River, Indian Creek, Clear Creek

Goal: Reduce Pesticide, Herbicide, and Insecticide Contamination

Implement BMPs:

1. Soil Amendment, Fertilizer and Pesticide Management (BMP 7-7)
2. Fertilizer Management (BMP 10-7)
3. Pesticide/Herbicide Management (BMP 10-8)

Cooperating Agencies: NRCS, EPA, BIA, USFWS, NDEP, and NDA
Water bodies of Focus: E. F. Carson River, Carson River, Indian Creek

Goal: Reduce Bacterial Contamination

Implement BMPs:

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1. Planned Grazing System (BMP 7-8)
2. Proper Grazing Use (BMP 7-9)
3. Range Improvements (BMP 7-10)
4. Livestock Facilities (BMP 7-11)
5. Wellhead Protection (BMP 10-12)

Cooperating Agencies: NRCS, EPA, BIA, USFWS, NDEP
Water bodies of Focus: E. F. Carson River, Carson River, Indian Creek, Clear Creek

10.5 IMPLEMENTATION SCHEDULE

The implementation of the following schedule (**Table 10-2**) depends on the approval by the EPA and also that funding is available pursuant to Section 319 of the CWA. The NPS Task Force and Tribal Council reserves the right to alter or modify this schedule based on immediate needs and resources available.

TABLE 10-2
NPS IMPLEMENTATION SCHEDULE (FISCAL YEAR)

Task	Year 1	Year 2	Year 3	Year 4	Year 5
Hydromodification and Habitat Alteration					
Short-Term Task HHA-1: Noxious Weeds and Invasive Species	X		X		X
BMPs					
Riparian Vegetation Management	X		X		X
Urban Areas (Urban Runoff/Storm Sewers)					
Short-Term Task UA-1: Assess unpaved Tribal roads and pathways.	X				
Short-Term Task UA-2: Parking Runoff Management.		X			
BMPs					
Road and Construction Site Practices (BMP 1-1 to 1-5)*		X			X
Erosion and Sediment Controls (BMP 2-1 to 2-14)*		X			X
Slope Stabilization (BMPs 4-1 to 4-3)*	X				
Soil Stabilization Practices (BMP 3-1 to 3-8)*	X				
Road and Construction Site Practices (BMPs 1-1 to 1-5)*		X			X
Resource Extraction					
Short-Term Task RE-1: Consultation with involved agencies.	X	X	X		
Urban Areas (Wastewater and Solid Waste Disposal)					
Short-Term Task UA-3: Assess unpaved Tribal roads and pathways.	X	X	X		

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BMPs					
Landscaping (BMP 10-6)		X		X	
Wellhead Protection (BMP 10-12)*			X		
Forestry					
BMPs					
Standard Forest Practices Rule (BMP 8-1)		X			X
Wildland/Urban Interface Management (BMP 8-2)		X			X
Fuels Management (BMP 8-3)	X		X		X
Urban Areas (Construction)					
Short-Term Task UA-4: Survey of sediment sources.		X			
Long-Term Task UA-5: Development of Storm Water Control Requirements at Tribal Development Sites.			X		
Long-Term Task UA-6: Implementation of Storm Water Controls at Tribal Development Sites.				X	
Agriculture (Including Livestock)					
BMPs					
Irrigated Water Management (BMP 7-1)		X			X
Irrigated Cropland Management (BMP 7-2)		X			X
Pasture and Hay land Management (BMP 7-4)		X			X
Range Improvements (BMP 7-10)*			X		
Livestock Facilities (BMP 7-11)*		X			X
Soil Amendment, Fertilizer and Pesticide Management (BMP 7-7)			X	X	
Fertilizer Management (BMP 10-7)		X			
Pesticide/Herbicide Management (BMP 10-8)	X		X		
Planned Grazing System (BMP 7-8)	X				X
Proper Grazing Use (BMP 7-9)	X				X

*This BMP applies to more than one category of non-point source pollution, or more than one goal, as described in the text of the document.

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