Nevada's Continuing Planning Process

Nevada Division of Environmental Protection
Bureau of Water Quality Planning

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List of Acronyms

BOD - Biochemical Oxygen Demand
BUS - Beneficial Use Standard
CFR - Code of Federal Regulations
CPP - Continuing Planning Process
CWA - Clean Water Act
DOA - Nevada Department of Agriculture
EPA - Environmental Protection Agency
IUP - Intended Use Plan
LA - Load Allocation
LCB - Legislative Council Bureau
MCL - Maximum Contaminant Level
MGD - Million Gallons per Day
NAC - Nevada Administrative Code
NDEP - Nevada Division of Environmental Protection
NDOW - Nevada Division of Wildlife
NO_3 - Nitrate
NPDES - National Pollutant Discharge Elimination System
NPS - Nonpoint Source
NRS - Nevada Revised Statute
NTU - Nephalmetric Turbidity Unit
PCU - Platinum Cobalt Unit
POTW - Publicly Owned Treatment Works
RCRA - Resource Conservation & Recovery Act
RMHQ - Requirement to Maintain Higher Quality
SEC - State Environmental Commission
SRF - State Revolving Fund
TDS - Total Dissolved Solids
TIE - Toxicity Identification Evaluation
TMDL - Total Maximum Daily Load
TN - Total Nitrogen
TP - Total Phosphorus
TRE - Toxicity Reduction Evaluation
TSS - Total Suspended Solids
UAA - Use Attainability Analysis
UIC - Underground Injection Control
USEPA - U.S. Environmental Protection Agency
USFWS - U.S. Fish & Wildlife Service
UST/LUST - Underground Storage Tanks/Leaking Underground Storage Tanks
WET - Whole Effluent Toxicity
WLA - Waste Load Allocation
WQM - Water Quality Management
WQS - Water Quality Standards

Chapter 1
INTRODUCTION

Nevada Revised Statute (NRS) 445A.580 of the Nevada Water Pollution Control Law requires that the Department of Conservation and Natural Resources establish a Continuing Planning Process (CPP) consistent with all applicable State and Federal regulations. The Continuing Planning Process directs the development and implementation of a water quality management program and serves as an informational document for the state, local and regional governments, the public, and the U.S. Environmental Protection Agency (USEPA). The CPP for Water Quality Management is a compendium of procedures for planning and implementing water quality management programs. It is a guidance document for matters of process related to the protection of the physical, chemical and biological integrity of the waters of the state.

The State of Nevada adopted a CPP in March 1973, and revised it in May 1976, July 1977, July 1984, and November 1985. This 2002 document is the current revision. The primary focus of the CPP is the implementation of CWA Section 208 planning, water quality standards, total maximum daily loads and discharge permits which are described in Chapters 2 through 5, respectively. Chapter 6 discusses residual waste and Chapter 7 describes the State Revolving Fund which provides low interest loans to municipalities for construction of wastewater treatment facilities. This chapter (Chapter 1) describes legal authority, CPP goals and planning coordination.

The CPP is a “living” document and will be updated as needed in response to changes in water quality management program procedures. Revisions to the CPP will be made available for public comment prior to incorporating them into the CPP.

LEGAL AUTHORITY AND LEAD STATE AGENCY DESIGNATION

The Nevada Water Pollution Control Law is contained in NRS 445A.300 through 445A.730, and legislation for the protection of Lake Tahoe and its watershed is contained in NRS 445A.170 through 445A.190. Information on funding for the construction of treatment works and the implementation of pollution control projects are contained in NRS 445A.060 through 445A.160.

Nevada's Water Pollution Control Law is the enabling legislation for Nevada's Water Quality Management Program. It is the declared policy and purpose of the Water Pollution Control Law to:

> "1) Maintain the quality of the waters of the state consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life, the operation of existing industries, the pursuit of agriculture, and the economic development of the state; and,
>
> 2) Encourage and promote the use of methods of waste collection and pollution control for all significant sources of water pollution (including point and diffuse sources)."
> The Water Pollution Control Law designated the Nevada Department of Conservation and

Natural Resources as the State Water Pollution Control Agency for all purposes of the Federal water pollution control legislation (NRS 445A.440). Furthermore, the statute authorizes the director to take all action necessary and appropriate to secure all the benefits of, and to assume the responsibilities delegated by, that Federal legislation. More specifically NRS 445A.445, subsection 3, gives the following powers and duties to the director: "To develop comprehensive plans and programs for reducing or eliminating pollution, with due regard to the improvements which are necessary to conserve such waters for the protection and propagation of fish and aquatic life, wildlife, recreational purposes, public water supply, agricultural, industrial, and other purposes."

NRS 445A.450, subsection 9, gives the Director of the Department of Conservation and Natural Resources the power to delegate to the Nevada Division of Environmental Protection (NDEP) any function or authority granted to him. The functions and authorities described in this CPP have been delegated to NDEP.

The State Environmental Commission is the rule making body for the Division of Environmental Protection. The Commission votes on adoption of regulations at public hearings. The Commission consists of six designated agency administrators and five members appointed by the Governor. The administrators of the Division of Water Resources (State Engineer), Division of Minerals, Department of Agriculture, State Board of Health, Division of Forestry, and Division of Wildlife serve on the Commission. The Nevada Administrative Code (NAC) sections 445A.070 through 445A.348 contain the water pollution control regulations including water quality standards, permit procedures, and design requirements adopted by the Commission.

CONTINUING PLANNING PROCESS GOALS

The ultimate goal of the CPP is that all water quality management programs be integrated into a comprehensive and efficient statewide water resource management system. Consistent with Federal Regulations (40 CFR Part 130.5), NRS 445A.580 sets forth the following specific objectives of a CPP:

1. Adequate effluent limitations and schedules of compliance;

2. The incorporation of all elements of any applicable areawide plans for management of waste and plans for basins under NRS 445A.300 to 445.730, inclusive;

3. Total maximum daily load for pollutants and contaminants;

4. Procedures for revision of the plans;

5. Adequate authority for intergovernmental cooperation;

6. Adequate implementation, including schedules of compliance, for revised or new standards of water quality;

7. Controls over the disposition of all residual waste from any treatment of water;

8. An inventory and ranking, in order of priority, of needs for construction of treatment works; and

9. Controls over the injection of fluids through a well to prevent the degradation of underground water.

To assure that these objectives are met, the Continuing Planning Process shall be the tool by which NDEP, in cooperation with designated areawide planning agencies, makes water quality management decisions.

PLANNING COORDINATION

Coordination of water quality planning with other programs is needed to prevent duplication, to ensure compatibility of growth projections and land use data, to develop compatible policy and program recommendations, and to prevent conflicts in program implementation.

Nevada Department of Conservation and Natural Resources

Division of Environmental Protection (NDEP)

Within the Nevada State governmental framework, the mission of the NDEP is protect and enhance the environment. NDEP consists of the following bureaus:

Bureau of Water Quality Planning - This Bureau establishes, reviews and revises water quality standards for surface water, develops TMDLs/WLAs/LAs, manages the Non-Point Source Programs, issues CWA Section 401 water quality certifications and conducts statewide monitoring of surface waters.

Due to limited resources, water quality problems in all priority watersheds cannot be addressed at the same time. In order to focus funding and staff, the Bureau of Water Quality Planning has begun an integrated approach to addressing water quality problems within one priority watershed. This effort involves the Bureau as a whole, including the Nonpoint Source, Water Quality Standards/TMDLs and monitoring branches. Throughout the next ten to fifteen year period, the Bureau will cycle through each priority watershed on a two to three year schedule. Major factors considered in choosing the focus basin include CWA Section 303(d) list priority ranking, level of local support for addressing water quality problems, level of previous and current NPS Program activities within the basin, CWA Section 208 Plan status, and water quality standards review/revision status.

During the focus period, data needed for the NPS assessment and TMDL development will be generated, compiled and analyzed. A key effort will be the identification of sources of nonpoint pollution to facilitate TMDL NPS load allocations. Once the process is underway, data gaps for the next priority watershed will be identified and monitoring to fill in the gaps will be initiated.

Bureau of Water Pollution Control - This Bureau is responsible for issuing National Pollutant Discharge Elimination System (NPDES) Permits for discharge to surface waters, ground water permits for discharges that may impact subsurface waters, Underground Injection Control (UIC) permits for injection through wells, and Stormwater permits. The Bureau of Water Pollution Control also manages the Wellhead Protection (WHP) Program, Comprehensive State Ground Water Protection Program. The UIC and WHP programs, while administered by the Bureau of Water Pollution Control, receive substantial funding from the Safe Drinking Water Act's (SDWA) Drinking Water State Revolving Fund (DWSRF) set-aside programs administered by the Nevada State Health Division, Bureau of Health Protection Services.

Additionally, the Bureau of Water Pollution Control performs engineering reviews of the designs of permitted facilities, inspects permitted facilities and investigates violations of water pollution statutes and regulations. The Bureau also reviews proposed subdivisions for adequacy of wastewater treatment disposal. The Bureau administers the State Revolving Loan Fund Program, which provides loans to publicly-owned treatment works (POTWs) for construction activities.

Bureau of Mining Regulation and Reclamation - The regulation branch of the Bureau is responsible for protecting waters of the state through permitting and inspection of active mines and closure at the cessation of operations to ensure that all components are left environmentally stable. The reclamation branch issues permits to reclaim the disturbance created by exploration and mining operations to a safe and stable condition to ensure a productive post-mining land use.

Bureau of Federal Facilities - This Bureau oversees permitting and remediation activities on lands owned by the Department of Energy and the Department of Defense.

Bureau of Waste Management - This Bureau is responsible for permitting and inspecting hazardous waste generators and disposal, transfer, storage and recycling facilities. The Bureau also administers the Chemical Accident Prevention Program and solid waste management programs, develops hazardous waste management plans and develops inventories of regulated facilities.

Bureau of Corrective Actions - This Bureau regulates underground storage tanks and provides regulatory oversight on remediation of leaking underground storage tanks (UST/LUST programs), provides oversight for RCRA corrective action cases, provides certification of remediation consultants and UST personnel, and administers the Superfund program.

Bureau of Air Quality - The Bureau has responsibility for the issuance of and ensuring compliance with air quality operating permits. Any activity that has the potential to emit a regulated pollutant must apply for a permit. The Bureau duties also include implementing an alternative fuels program for public agency fleets with more than ten vehicles; conducting investigations and technical studies; and monitoring air quality.

Division of Water Resources

The Division of Water Resources has two primary mandates: to adjudicate and appropriate all waters of the state for beneficial use (NRS 533) and to regulate and permit water wells (NRS 534). Other responsibilities include the adjudication of claims of vested water rights; distribution of water in accordance with court decrees; review of water availability for new subdivisions and condominiums; review of the construction and operation of dams; appropriation of geothermal resources; licensing of well drillers and water right surveyors; review of flood control projects; maintenance of water resource data and records; and providing technical assistance to government boards, offices and agencies.

Division of Wildlife

The mission of the Division of Wildlife is to protect, preserve, manage and restore wildlife and its habitat for their aesthetic, scientific, educational, recreational and economic benefits to the citizens of Nevada and the United States, and to promote the safety of persons using vessels on waters. The Fisheries Bureau is responsible for the protection, restoration, transplanting, introduction, and management of the fisheries resources. The Habitat Bureau is responsible for maintenance, protection, and enhancement of Nevada's fish and wildlife resources and habitats.

Division of State Lands

The Division of State Lands holds title to lands underlying certain water bodies in Nevada. The Division authorizes all uses of state-owned lands, including the beds of navigable bodies of water, with the exception of land held by the University System, the Department of Transportation and the Legislature. Activities that require authorization from the Division include bank stabilization, construction or modification of bridges, dams, floating structures, out-fall structures, water intake and discharge pipelines, dredging, sand and gravel bar removal, and utility crossings.

Department of Agriculture

The Nevada Department of Agriculture (DOA) has primacy to administer the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in the state. The primary responsibility is to regulate the registration, use, storage and transportation of pesticides, and the disposal of canceled and suspended pesticides. The Nevada Pesticides Act (NRS 586.401) requires that all pesticides used in the state be registered with the Department of Agriculture (DOA). The DOA continuously evaluates all registered and pending registration pesticides in carrying out this responsibility and publishes a yearly list of all pesticides registered, by their USEPA Registration Number. The DOA is required to eliminate from use any pesticides that endanger the agricultural or nonagricultural environment. Less hazardous pesticides, but ones that still require careful use so as to avoid injury to man or the environment, are classified by the DOA as restricted-use pesticides. These pesticides are regulated by the Department and must be applied by a licensed applicator. The applicator must pass a test prior to licensing.

Department of Human Resources, Division of Health

The Division of Health through its Bureau of Health Protection Services (BHPS) is the primacy agency for administering and enforcing the provisions of the Safe Drinking Act including the Public Water System Supervision Program and the Drinking Water State Revolving Fund. The BHPS is responsible for monitoring and regulating public water systems throughout the state, including those systems in Washoe and Clark counties, and is also responsible for implementing the Source Water Assessment Program (SWAP). Through interlocal contracts, Washoe and Clark counties, through their respective District Health Departments, cooperate with the BHPS to administer certain aspects of the public water system supervision program within those counties.

The information maintained by BHPS and by NDEP related to drinking water, groundwater and surface water sources is shared by both agencies. Information from the SWAP and from the records maintained by BHPS is used by NDEP in the WHPP to develop wellhead protection areas. Information may also be provided by NDEP to BHPS on the UIC program in evaluating potential contaminant sources for drinking water supplies.

The responsibility for permitting of individual sewage disposal systems (ISDS) or septic systems, which have less than 5,000 gallons capacity varies. In several counties, BHPS reviews and permits all ISDS; in some counties, the county reviews and permits only residential ISDS and BHPS reviews and permits commercial and engineered ISDS; and in some counties, the county reviews and permits all ISDS. The requirement for alternative ISDS is dependent upon NDEP's septic density policy and on a determination by NDEP of the groundwater quality in the area in which the ISDS is to be installed.

Commission on Mineral Resources, Division of Minerals

The Division of Minerals regulates exploration for and production of oil, gas, and geothermal energy. In issuing permits for geothermal production and exploration wells, the Division of Minerals is required to consult with and adhere to the policies and regulations administered by the Division of Environmental Protection and the Division of Water Resources, and the Division of Wildlife.

The Division of Minerals oil and gas regulations mandate that surface and subsurface formations of fresh water will be protected from pollution as a result of drilling or plugging a well or as the result of the escape, release, or injection of oil, gas, or brine from any well. Wells used to inject gas, air, water, or other fluids into a producing formation must be cased in such a way that leaks or damage to oil, gas, or fresh water are prevented.

Interagency Coordination

Interagency coordination and collaboration occur in several watersheds throughout the state. For example, in the Lake Tahoe Basin, the Tahoe Regional Planning Agency and the Division of State Lands oversee interagency efforts to implement the Environmental Improvement Plan; in southern Nevada, the Las Vegas Wash Coordination Committee, led by Clark County and the Southern Nevada Water Authority, oversees efforts to implement the Clark County Wetlands Park Master

Plan; the Carson River Coalition, led by the Carson Water Subconservancy District, implements the Integrated Watershed Planning Process for the Carson River Basin; the Northeast Nevada Stewardship Alliance is a grass roots community group which addresses public land/natural resource planning issues; Lower Truckee River restoration efforts are coordinated through the Washoe County Regional Flood Control Plan; and the Steamboat Creek Steering Committee oversees implementation of the Steamboat Creek Restoration Plan. Nonpoint Source Program staff participate in each of these interagency groups which have developed specific selection criteria and a prioritization process for selecting projects. Collaboration and coordination with these groups provides a mechanism for identifying and prioritizing projects, maximizes implementation of priority projects, allows for leveraging of NPS funds, and minimizes duplication of effort.

Memorandums of understanding (MOUs) are used to formalize cooperation between NDEP and other state and federal agencies. Existing agreements include: 1) an MOU with the US Forest Service, signed in 1981, to establish and develop a coordinated nonpoint source water pollution control effort within the state; 2) an MOU with the US Forest Service and the Bureau of Land Management (BLM), signed in 1990, pertaining to the reclamation of lands disturbed by exploration projects and mining operations for locatable minerals on private, state and USFS and BLM administered lands in the State of Nevada; 3) an MOU with the BLM, signed in 1992, to identify the responsibilities and activities to be performed by each agency in carrying out the State Water Quality Section CWA 208 Management Plan and NPS Management Program as related to activities on BLM lands; and 4) an MOU with the USEPA Region IX, Natural Resources Conservation Service (NRCS), the Nevada State Conservation Commission and the Nevada Association of Conservation Districts, signed in 1994, to address water quality improvement and the implementation of nonpoint source pollution control projects.

A high priority for the Bureau of Water Quality Planning and the NPS Management Program during State Fiscal Year 2003 is to reaffirm existing, or establish new agreements with the US Forest Service, BLM, NRCS, U.S. Fish and Wildlife Service, Tribal governments and other state, federal and/or local agencies as appropriate, for data and information exchange and for better coordination of nonpoint source related issues.

Chapter 2
AREAWIDE 208 PLANS AND STATE NONPOINT SOURCE MANAGEMENT PLAN

LEGAL AUTHORITY

Federal requirements for area wide waste treatment plans are contained in sections 208 and 209 of the Clean Water Act (CWA) and 40 CFR 130.6. Federal requirements for the State Nonpoint Source Management Plan are contained in section 319 of the Clean Water Act.

208 PROCESS

Section 208 of the Clean Water Act was promulgated for the purpose of encouraging and facilitating the development and implementation of areawide waste treatment management plans. In accordance with Section 208, if an area(s) within the state is identified as having substantial water quality control problems, as a result of urban-industrial concentrations or other factors, the governor may designate the boundaries of each such area. In addition, the governor appoints a single representative organization which is responsible for developing areawide waste treatment management plans.

There are four areas within the State of Nevada which have been assigned "Designated Area" status. The designated areas and the agencies responsible for the 208 planning effort are as follows:

- Carson River Basin -- Nevada Division of Environmental Protection
- Clark County -- Clark County Comprehensive Planning Agency;
- Lake Tahoe Basin (bi-state) -- Tahoe Regional Planning Agency; and,
- Washoe County except for the Pyramid Lake Paiute Reservation -- Truckee Meadows Regional Planning Agency.

As required by the Clean Water Act, the Division of Environmental Protection passes through $40,000 a year to either Clark County Comprehensive Planning, Tahoe Regional Planning Agency or Truckee Meadow Regional Planning Agency. Pass-through allocations are rotated among these three 208 planning agencies so that each receives $40,000 every third year.

The non-designated area of Nevada consists of all other areas not covered by the designated areas and is the responsibility of the Nevada Division of Environmental Protection (NDEP). State and/or areawide agency 208 plans are updated as needed to reflect changing water quality conditions, population growth, new facilities plans, results of implementation actions, new requirements or to remove conditions in prior conditional or partial plan approvals. 208 Plans clearly identify the designated management agency and area of jurisdiction including a clear definition of wastewater treatment plant service areas, facilities (including collection lines), present and projected capacity,

and responsible entities.

208 PLAN ELEMENTS

Section 208 of the Clean Water Act (CWA) requires that all activities associated with water pollution problems be planned and managed through an integrated area-wide water quality management program. CWA section 208(b)(2) states that any plan prepared under the 208 process shall include, but not be limited to the following:

A. The identification of treatment works necessary to meet the anticipated municipal and industrial waste treatment needs of the area over a twenty-year period, annually updated (including an analysis of alternative waste treatment systems), including:
   - any requirements for the acquisition of land for treatment purposes;
   - the necessary waste water collection and urban storm water runoff systems;
   - a program to provide the necessary financial arrangements for the development of such treatment works;
   - identification of open space and recreation opportunities that can be expected to result from improved water quality, including consideration of potential use of lands associated with treatment works and increased access to water-based recreation;

B. The establishment of construction priorities for such treatment works and time schedules for the initiation and completion of all treatment works;

C. The establishment of a regulatory program to:
   - implement the waste treatment management requirements of section 201(c);
   - regulate the location, modification, and construction of any facilities within such area which may result in any discharge to such area, and
   - assure that any industrial or commercial waste discharged into any treatment works in such area meet applicable pretreatment requirements;

D. The identification of those agencies necessary to construct, operate, and maintain all facilities required by the plan and otherwise to carry out the plan;

E. The identification of the measures necessary to carry out the plan (including financing), the period of time necessary to carry out the plan, the costs of carrying out the plan within such time, and the economic, social, and environmental impact of carrying out the plan within such time;

F. A process to (i) identify, if appropriate, agriculturally and silviculturally related nonpoint sources of pollution, including return flows from irrigated agriculture, and their cumulative effects, runoff from manure disposal areas, and from land used for livestock and crop production, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources;

G. A process to (i) identify, if appropriate, mine-related sources of pollution including new,

current, and abandoned surface and underground mine runoff, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources;

H. A process to (i) identify construction activity related sources of pollution, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources;

I. A process to (i) identify, if appropriate, salt water intrusion into rivers, lakes and estuaries resulting from reduction of fresh water flow from any cause including irrigation, obstruction, ground water extraction, and diversion, and (ii) set forth procedures and methods to control such intrusion to the extent feasible where such procedures and methods are otherwise a part of the waste treatment management plan;

J. A process to control the disposition of all residual waste generated in such area which could affect water quality; and

K. A process to control the disposal of pollutants on land or in subsurface excavations within such area to protect ground and surface water quality.

In addition to the elements above which are required by Clean Water Act, Nevada also includes total maximum daily loads or TMDLs in the 208 Plan.

For the designated areas, NDEP ensures that the 208 plans include all necessary plan elements and that plans are consistent with one another. If the plan is acceptable, it is certified by NDEP and submitted to USEPA for approval. NDEP is the lead agency responsible for 208 planning for the non-designated areas. After public review and comment, NDEP submits the non-designated areas plan to USEPA for approval.

State Revolving Fund and permit decisions must be made in accordance with certified and approved 208 plans. Proposed activities which are inconsistent with the 208 plan cannot be implemented until a plan amendment is approved by the administrator, or until the activity is modified to be consistent with the existing plans.

208 PLAN REVISIONS

There are no specific update requirements for the 208 Plan. For planning areas of Clark County, Washoe County and Lake Tahoe, the designated planning agency determines when revisions are needed. The designated planning agency prepares the revision, conducts public participation and submits the revision to NDEP for certification. A plan revision is usually necessary to address changes in population, significant changes in wastewater treatment facility planning including flow projections and disposal methods, or changes in projected sewer service boundaries.

Revisions to the Carson River Basin and Non-Designated Area Plans are made by NDEP. The need for revisions will be based on the 303(d) List priorities and resources. NDEP will prepare plan revisions in consultation with appropriate stakeholders. Public comment will be solicited on draft revisions. After comments have been addressed, NDEP will finalize the revision and submit it to EPA for approval.

STATE NONPOINT SOURCE MANAGEMENT PLAN

As required by section 319 of the Clean Water Act, states must prepare and submit for EPA approval, a management program for controlling nonpoint source (NPS) pollution and improving water quality in waters affected by such pollution. The Nonpoint Source Program and Grants Guidance for Fiscal Year 1997 and Future Years and subsequent guidance outlines the key elements that must be addressed in the NPS state management plan (SMP) including 1) explicit short and long term goals, objectives and strategies to protect surface and ground water; 2) strong working partnerships and collaboration with appropriate State, interstate, Tribal, regional, and local entities (including conservation districts), private sector groups, citizen groups and Federal agencies; 3) a balanced approach that emphasizes both State-wide nonpoint source programs and on-the-ground management of individual watersheds where waters are impaired or threatened; 4) mechanisms for abatement of known water quality impairments resulting from nonpoint source pollution and prevention of significant threats to water quality from present and future activities; 5) identification of waters and watersheds impaired or threatened by nonpoint source pollution and a process to progressively address these waters; 6) flexible, targeted, iterative approaches for achieving and maintaining beneficial uses of water as expeditiously as practicable; 7) identification of Federal lands and objectives which are not managed consistently with State program objectives; 8) efficient and effective management and implementation of the NPS Program, including necessary financial management; and 9) periodic review and evaluation of the NPS Program using environmental and functional measures of success and revision of the nonpoint source assessment and management program at least every five years.

The revised SMP was approved by EPA in October, 1999, and contains goals, objectives and annual milestones for implementing the Nevada NPS Program over the next five year period (federal fiscal years 2000 through 2004). The revision process will be initiated in the fourth year of plan implementation (2003 for this current five year cycle). Unless future EPA guidance provides other direction, this sequence will be followed in subsequent years. Input during development of the draft SMP revision will be solicited from other state, federal and local agencies and private sector groups. A final draft will be distributed for comment.

The SMP is implemented through annual workplans which contain specific tasks to meet the goals, objectives and annual milestones listed in the SMP. Section 319 resources are prioritized to address 303(d) listed water impairments attributed to NPS activities. The 1998 303(d) list priority ranking for TMDL development was incorporated into the goals, action items and annual milestones in the revised SMP. The listed waters were also a key factor in the Unified Watershed Assessment process for prioritizing watersheds throughout the state. Therefore, all coordinated resource management plans (CRMPs) and watershed restoration action strategies (WRASs) developed to date are for 303(d) listed waters.

The main mechanism for implementing nonpoint source controls is through funding support for watershed coordinators and implementation/public education projects. Rather than distributing an annual request for proposals (RFP) on a statewide basis, NPS funding opportunities are identified and projects are selected through two main processes: 1) coordination with and participation in major environmental planning/restoration efforts overseen by other agencies; and 2) identification and prioritization through watershed coordinators and CRMPs and/or WRASs.

Interagency coordination and collaboration occur in several watersheds throughout the state including the Tahoe Basin, Las Vegas Wash, and Truckee, Carson, and Humboldt river basins. NPS Program staff participate in interagency groups which have developed specific selection criteria and a prioritization process for selecting projects. Collaboration and coordination with these groups provides a mechanism for identifying and prioritizing projects, maximizes implementation of priority projects, allows for leveraging of NPS funds, and minimizes duplication of effort.

The second main mechanism for selecting projects is through the watershed coordinators implementing CRMPs and WRASs. NPS funds currently support watershed coordinators in the Upper, Middle and Lower Carson River Basin, Walker River Basin, Steamboat Creek Watershed and Las Vegas area. Given the voluntary nature of the program, coordinators are the main link to land owners and are key to initiating nonpoint source implementation projects on private lands. NPS staff work closely with the watershed coordinators to ensure that only worthy and viable projects are implemented.

Chapter 3
WATER QUALITY STANDARDS

LEGAL AUTHORITY

Federal requirements for water quality standards and antidegradation are contained in Section 303 of the Clean Water Act (CWA) and in 40 CFR 131. In Nevada Statute, a definition of "water quality standard" is contained in NRS 445A.420; NRS 445A.425 states the powers and duties of the commission, including the adoption of water quality standards.

NRS 445A.520 outlines the Standards of Water Quality as follows:

"1. The commission shall establish water quality standards at a level designated to protect and ensure a continuation of the designated beneficial use or uses which the commission has determined to be applicable to each stream segment or other body of surface water in the state.

2. The commission shall base its water quality standards on water quality criteria which numerically or descriptively define the conditions necessary to maintain the designated beneficial use or uses of the water. The water quality standards must reflect water quality criteria which define the conditions necessary to support, protect and allow the propagation of fish, shellfish and other wildlife and to provide for recreation in and on the water if these objectives are reasonably attainable.

3. The commission may establish water quality standards for individual segments of streams or for other bodies of surface water which vary from standards based on recognized criteria if such variations are justified by the circumstances pertaining to particular places, as determined by biological monitoring or other appropriate studies."

BACKGROUND

A water quality standard defines the water quality goals for a water body, or portion thereof, by designating the use or uses to be made of the water, by setting criteria necessary to protect the uses, and by protecting water quality through antidegradation provisions. The State of Nevada has established both narrative and numeric criteria. Statewide narrative criteria are applicable to all waters. In addition to statewide narrative criteria, water quality standards for the categories listed below are explained in the following sections:

Class Waters	NAC 445A.123 through 445A.127, inclusive
Designated Waters	NAC 445A.145 through 445A.225, inclusive
Toxic materials	NAC 445A.144

Narrative Criteria

Narrative criteria (contained in NAC 445A.121) are applicable to all surface waters of the state and consist mostly of statements requiring waters to be "free from" various pollutants including those that are toxic.

Numeric Criteria

Numeric criteria for conventional pollutants are established for two types of surface waters: class and designated waters.

Class Waters

Standards for the class waters are contained in NAC 445A.123 through NAC 445A.127, inclusive. Class waters are waters (usually small streams and reservoirs) which are grouped together on the basis of the degree to which human impacts effect the beneficial uses of the waterbody. Four classes, A to D, are recognized. Class A waters, the least impacted by human activities, are of the highest quality; Class D waters, being the most impacted by human activities, are of the lowest quality. Beneficial uses and criteria for various pollutants to protect the beneficial uses are specified for each class. Within each class, waters are listed by the county in which they are located.

Designated Waters

Standards for the designated waters are contained in NAC 445A.145 through 445A.225, inclusive. Designated waters are major waterbodies for which specific standards are established. Usually these waterbodies are divided into segments or reaches defined by control points. Beneficial uses and the criteria to protect the uses are established for each reach. Numeric and narrative antidegradation criteria are also included where applicable. The major designated waterbodies for which specific standards have been established include:

- Carson River
- Humboldt River
- Snake River Basin
- Truckee River
- Walker River Basin
- Colorado River Basin including Las Vegas Wash and Lake Mead
- Virgin River
- Muddy River
- Lake Tahoe and Tributaries to Lake Tahoe

Toxic Materials

Toxic material is defined in NAC 445A.110 as "...any pollutant or combination of pollutants which will on the basis of information available to the administrator, cause an organism or its offspring to die or to suffer any: disease, behavioral abnormality, cancer, genetic mutation, physiological malfunction, including a malfunction in reproduction, or physical deformation, if that pollutant or combination of pollutants is discharged and exposed to or assimilated by the organism, whether directly from the environment or indirectly through food chains."

NAC 445A.121(4) contains statewide narrative criteria requiring waters be free from toxics. NAC 445A.121(5) specifies that if toxic materials are known or suspected, toxicity testing may be required to determine compliance. Numeric criteria for toxic materials which apply to class and designated waters (and may apply to other waters as provided by the tributary rule (NAC 445A.145)) are contained in NAC 445A.144 and 40CFR 131.36. Numeric criteria in NAC 445A.144 are specified for four beneficial uses. For the beneficial uses of protection of aquatic life, irrigation and watering of livestock, numeric standards are based on ambient water quality criteria published by USEPA. Historically, numeric criteria contained in 445A.144 for the protection of municipal and domestic water supply were based on maximum contaminant levels (MCLs) which have been adopted by the Nevada Board of Health as standards for drinking water.

The practice of adopting MCLs for the protection of municipal and domestic water supply warrants further discussion. NAC 445A.122 section (f) which describes criteria applicable to the beneficial use of municipal or domestic supply states "The waters must be capable of being treated by conventional methods of water treatment in order to comply with Nevada's drinking water standards." In other words, a toxics standard could potentially be set at some level above the MCL as long as conventional treatment could reduce toxics levels down to the MCL. However, it becomes very difficult to determine appropriate statewide toxics standards at some level other than the MCLs. NAC 445A.079 states that conventional treatment means "...processes such as coagulation, sedimentation, filtration and disinfection. The term does not include desalting techniques." These types of treatment systems depend on fairly high quality source water and are designed to treat basic surface water quality problems such as those associated with particulate and microbiological content, color, taste and odor. Particulate suspensions commonly removed with the coagulation process include clay and silt based turbidity, natural organic matter, microbes, toxic metals, synthetic organic chemicals, iron and manganese; however, the degree to which each is removed depends on a number of factors including but not limited to the general chemical makeup of the water, the initial concentration of a particular contaminant, pH and the total dissolved solids concentration. The ability of conventional treatment (as defined in NAC 445A.079) to remove toxics can be highly dependent upon the overall chemistry of the water and will vary from waterbody to waterbody, making it very difficult to determine appropriate statewide toxics standards. In addition to questions about treatment abilities, conventional treatment processes could produce hazardous sludge or filtrate material that the drinking water purveyor would have to manage. For these reasons, MCLs have been used to set the water quality standards for municipal and domestic water supply uses.

Since many of the Bureaus within NDEP are charged with protecting waters of the state, the issue of new or revised MCLs can be challenging. There is a potential for a facility to quickly find itself out

of compliance with an impending MCL change. To address the problem, NDEP adopted a new policy in 1998 for accommodating new drinking water MCLs. According to the policy:

- NDEP and the Nevada Division of Health are to meet each January to discern if there have been any additions, revisions or modifications of an MCL, promulgated by the Nevada Board of Health, which conflict with NAC 445A.144. This timetable does not preclude NDEP from pursuing regulation changes during the remainder of the year.

- If conflicts exist between NAC 445A.144 and MCLs, NDEP will prepare an appropriate regulation revision petition.

- If the State Environmental Commission makes changes to NAC 445A.144, or any other relevant regulation, all affected Bureaus will work cooperatively with a permit holder to incorporate any changes stemming from the Commission actions into any and all relevant permit(s). Schedules of compliance are an appropriate way to handle this action.

- Permit limitations will be based upon NAC 445A.144, and MCLs shall not be incorporated into permits unless they have been added to NAC 445A.144.

- Bureau of Water Quality Planning will update NAC 445A.121.7 as soon as practicable. (Note: NAC 445A.121.7 is part of the narrative standards and states that the limits for chemical constituents in discharges must provide water quality consistent with the mandatory requirements of the 1962 Public Health Service Drinking Water Standards.)

As part of the Triennial Review, NDEP is currently reviewing the existing toxics standards and the drinking water MCLs, and identifying potential regulation changes. A number of the drinking water MCLs have been revised since NAC 445A.144 was last reviewed and revised. NDEP will be examining these MCL changes and possibilities for setting numeric criteria at levels other than the MCLs.

BENEFICIAL USE DESIGNATION

In developing water quality standards, the first step is to determine beneficial uses for each water body. Beneficial uses in Nevada are identified in NAC 445A.122 and include:

- Watering of livestock;
- Irrigation;
- Aquatic life;
- Recreation involving contact with the water;
- Recreation not involving contact with the water;
- Municipal or domestic supply;
- Industrial supply;
- Propagation of wildlife;
- Waters of extraordinary ecological or aesthetic value;
- Enhancement of water quality.

Factors considered in the development and designation of beneficial uses are as follows, but not necessarily in order of priority:

- what the public wants;
- historical use of the water;
- existing uses in the basin;
- desired potential or future uses as dictated by existing quality of the river, and
- antidegradation requirements.

40 CFR 131.10(g) recognizes two categories of uses, existing and designated. An existing use is one which has been achieved on a waterbody on or after November 28, 1975. A designated use is one which is specified in water quality standards, whether or not it is being attained. It is important to understand the distinction because an existing use which has been attained cannot be modified or changed unless uses are added which require more stringent criteria. Designated uses, on the other hand, may be changed based upon the findings of a "Use Attainability Analysis".

In reviewing existing water quality standards, the beneficial uses are reviewed for each stream or stream reach to determine if designated uses are appropriate. An existing use must be designated (40 CFR131.10(g)). The state consults with resource agencies, such as the Nevada Division of Wildlife (NDOW), U.S. Fish & Wildlife Service (USFWS) and 208 Planning agencies to confirm beneficial uses. NDOW and USFWS identify the species of fish to be protected in each reach and recommend temperatures and other requirements necessary to protect these species. The state confers with the USFWS to ensure that the water quality standards are adequate to protect threatened and endangered species. In addition to consulting with resource agencies, the state solicits feedback on the designated beneficial uses with the public at public workshops.

Use Attainability Analysis

A Use Attainability Analysis (UAA) is a multi-step scientific assessment of the physical, chemical, biological and economic factors affecting the attainment of a use. In preparing a UAA, a water body survey and assessment is conducted to examine the physical, chemical and biological characteristics of the water body. This assessment identifies and defines the existing uses of that water body, determines whether the designated uses are impaired, and the reasons for the impairment.

A UAA is required when:

- Designated uses do not include fishable and swimmable (CWA section 101(a)(2)): or
- A state wishes to remove a designated use; or
- It is proposed to adopt subcategories of uses requiring less stringent criteria.

A UAA can not remove a beneficial use which is existing. Also, a UAA can not delete a use which would be obtained through implementation of effluent limitations and best management practices required by Sections 301(b) and 306 of the Clean Water Act (CWA), for point and nonpoint sources, respectively. A UAA is a methodology for determining the suitability of a water body for attaining a given use and is designed to answer the following three questions:

- What are the uses currently being achieved in the water body?
- What are the potential uses that can be attained based on the physical, chemical and biological characteristics of the water body?; and
- What are the causes of any impairment of the uses?

A UAA is used to either remove a designated use that is not an existing use or to sub-divide use categories. A UAA is not needed to support the addition of designated uses. To remove a designated use, it must be demonstrated that attaining such use is not feasible because of the reasons identified in 40 CFR131.10(g) as listed below:

- Naturally occurring pollutant concentrations prevent the attainment of the use; or
- Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or

- Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

- Dams, diversions or other types of hydrologic modification preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

- Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

- Controls more stringent than the effluent limitations (CWA section 301(b)) and National Standards of Performance (CWA section 306) would result in substantial and widespread economic and social impact.

BENEFICIAL USE STANDARDS

Beneficial use standards (BUS) are numeric or narrative requirements which are based on either: (1) USEPA water quality criteria, (2) site-specific criteria derived from national criteria that is modified to reflect site-specific conditions or, (3) site-specific criteria developed solely for unique waters. For waters with multiple use designations, the criteria must protect the most sensitive use.

ANTIDEGRADATION

Nevada Revised Statutes (NRS) 445A.565 contain the State's antidegradation requirements. NRS 445A.565 states:

> "Any surface waters of the state whose quality is higher than the applicable standards of water quality as of the date when those standards became effective must be maintained in their higher quality. No discharges of waste may be made which will result in lowering the quality of these waters unless it has been demonstrated to the commission that the lower quality is justifiable because of economic or social considerations."

NRS 445A.565 is implemented through the establishment of requirements to maintain existing higher quality.

A requirement to maintain existing higher quality or RMHQ is established when the monitoring data show that existing water quality for individual parameters is significantly better than the standard necessary to protect the beneficial uses. If adequate monitoring data exist, requirements to maintain existing higher quality (RMHQs) are established at levels which reflect existing conditions. This system of directly linking antidegradation to numeric objectives provides a manageable means for implementing antidegradation through the permit program and other programs.

To data, RMHQs have been set for routine parameters such as temperature, pH, phosphorus, nitrogen, chlorides, sulfates, total suspended solids, total dissolved solids, fecal coliform, etc. No RMHQs have yet to be set for the toxics identified in NAC 445A.144 such as arsenic, boron, cadmium, copper, lead, etc., but this need will be reviewed in the future.

Methodology for Establishing and Revising RMHQs

RMHQs are generally established at the 95th percentile of data, which is defined as the 95th ranked value of a sample population distributed into one hundred equal parts. At this time, RMHQs are only proposed or revised if there is greater than five years of data for single value RMHQs, or greater than 10 years of data for annual average RMHQs, with a minimum of two samples per year. In cases where two or more monitoring sites exist for one reach, only the data from the most downstream site is considered. Additional research is planned to better determine minimum sampling requirements for statistically valid RMHQ development. It is likely that more than two samples per year are needed to estimate the 95th percentile for most pollutants.

During the RMHQ review process, staff may identify the need to either relax or tighten the existing RMHQs. Before RMHQs can be relaxed, certain conditions must be met as discussed in the following section. Tightening of RMHQs may be appropriate if there has been significant changes on the system, such as the removal of a major point source discharge, construction of a dam, etc. In general, if the percent improvement between the 95th percentile and the existing RMHQ is greater than 25%, the RMHQ is revised. If the improvement is less than 25%, no changes to the existing RMHQ are proposed. For parameters which have relatively high beneficial use standard (BUS) concentrations such as total dissolved solids, chloride and sulfate, RMHQs are usually not established at values less than 10% of the BUS. For example, the sulfate BUS is 250 mg/l; therefore, the lowest RMHQ that will be established is 25 mg/l. (Note: in the past, RMHQs were established at 95th percentile values regardless of how small those values were. The Division is not proposing to revise existing RMHQs that may be lower than 10% of the BUS). In summary:

- RMHQs generally established at 95th percentile of data;

- RMHQs once established are not revised; unless, there is greater than 25% improvement in water quality; and
- A RMHQ is not established at values less than 10% of BUS.

Relaxing RMHQs

Nevada's antidegradation statutes allow degradation of existing water quality only after the State Environmental Commission (SEC) finds that such degradation is justified to accommodate important economic or social development. In allowing such degradation, the SEC will assure that water quality is adequate to protect existing uses. Specifically, an RMHQ can be relaxed, but a beneficial use standard can not be relaxed to accommodate economic or social development. This provision is intended to provide relief only in extraordinary circumstances where the economic and social need for the activity clearly outweighs the benefit of maintaining the existing high water quality above that required to protect the beneficial use. The burden of proof that degradation is necessary for economic or social development falls on the person/entity proposing to degrade the higher quality water. This proof should include, but not limited to, the following:

- Assess existing water quality:
  - Document the degree in which the higher quality water is superior to the BUS.
  - Determine which parameters will be impacted.
  - Determine which beneficial uses will be impacted.

- Quantify amount water quality will be lowered.

- Analyze the current state of economic and social development, including:
  - Population
  - Area employment;
  - Area income;
  - Manufacturing profile: types, value, employment, trends;

- Describe the area's use or dependence upon the water resource affected by the proposed action.

- Provide evidence that economic and/or social development will occur. Demonstrate the extent to which the sought-for decreased level of water quality would create an incremental increase in the rate of economic or social development and why the change in water quality is necessary to achieve such development. Include:
  - Expected plant expansion;
  - Employment growth;
  - Direct and indirect income effects;
  - Increases in the community tax base

- Demonstrate why such economic and social development requires the lower water quality. Show that best available wastewater treatment and best management practices are or will be implemented. Identify other alternatives or other mitigation measures which would prevent degradation of water quality.

- Include an assessment of the overall environmental benefits.

The State will assure that the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control are implemented. Where a water constitutes an outstanding national resource, higher water quality will be maintained and protected.

FLOW ADJUSTED ANALYSIS

The close relationship between flow and water quality must be borne in mind when considering water quality standards. NAC 445A.121(8) states, "The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow .....". Excluding data associated with extreme high and low flow conditions in the data analysis is a means of characterizing the existing water quality during normal flow conditions. A flow adjusted analysis discards water quality measurements made at either high or low flows from the data analysis. High and low flows are typically defined as those above the high 7Q10 (7 day high flow with a 10 year recurrence) or below the low 7Q10 (7 day low flow with a 10 year recurrence). There may be circumstances where a 7Q10 analysis is not appropriate such as when the flow is highly regulated by reservoir releases. In such cases, best professional judgement will be utilized to identify an alternative method for defining high and low flow.

NATURALLY OCCURRING CONSTITUENTS

In some locations, the naturally occurring background concentration may be above the criteria to protect beneficial uses. Natural adaptive processes have enabled a viable, balanced aquatic community to exist in waters where natural background levels of a constituent exceed the water quality criterion. If the background concentrations are the result of natural phenomenon, a site specific standard can be developed. Before establishing a site specific standard for a particular constituent, adequate data and information must be obtained on the water quality, sources of constituent in the waterbody and health of the beneficial uses.

TRIBUTARY RULE

NAC 445A.145 describes the prescription and applicability of numerical standards for water quality through delineating control points. Control points are locations where water quality criteria are specified. Criteria apply to all surface waters in the watershed upstream from the control point or to the next upstream control point or the next class water named in the class waters (NAC 445A.123-127). Likewise, if there are no control points downstream from a particular control point, the criteria for that control point also apply to all surface waters in the watershed downstream of the control point or the next class waters. Section 445A.145 is commonly referred to as the tributary rule. The applicability of water quality standards to tributaries in a watershed is assumed to apply to waters

that maintain a surface hydrologic connection for some period of time during the year not just in response to infrequent storm events. The hydrologic connection must be for a long enough period that there is a commingling of water and an exchange of beneficial uses, in particular aquatic life, is possible. Further discussion of the applicability of the tributary rule is contained in the Water Pollution Control Permits chapter.

TRIENNIAL REVIEW SCHEDULE

The CWA Section 303(c) states that NDEP "…shall from time to time (but at least once each three year period beginning with October 18, 1972) hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards." This review process is commonly referred to as the Triennial Review. To meet this requirement, an annual review and public hearing is held for at least one of the following categories of established water quality standards:

- Class Waters
- Designated waters
- Toxic materials

Staff will perform, at a minimum, a cursory review of the standards which will include a literature search for changes in beneficial use criteria. Public workshops may be conducted at one or more locations within the State to ensure adequate public participation. The workshops will be public noticed at least 30 days in advance. If the staff review or public participation determine standards revisions are necessary, the standards adoption process is followed.

STANDARDS ADOPTION PROCESS

State Environmental Commission

The State Environmental Commission (SEC) is charged with adopting and amending regulations to carry out the provisions of the Water Pollution Control Law, including water quality standards. NDEP reviews the literature, water quality data and existing standards and prepares proposals for water quality standards revisions after adequate public participation. Water quality standards revisions are proposed before the SEC at a public hearing. The SEC must then consider the proposal and act to adopt, reject, or remand it to NDEP for additional consideration.

Public Participation

Prior to the SEC hearing, NDEP will conduct at least one workshop to solicit comments from interested persons. At least 30 days in advance of the workshop, public notice will be published in a newspaper of local circulation, mailed to the mailing list and posted at appropriate public locations. The purpose of the workshop is to get input from persons interested in the water quality standards; therefore, the proposed regulatory changes should be only in draft form before the workshop.

State and federal regulations require that at least two separate public notices be posted for any State Environmental Commission (SEC) hearing involving water quality standards or beneficial uses. Federal regulation s (40 CFR Part 25.5) require that a notice of each hearing be well publicized. In order to meet the federal regulations, the first hearing notice is distributed to an appropriate mailing list at least 45 days prior to the SEC hearing. To meet state regulations, a second notice is published at least 30 days in advance of the SEC hearing and posted in at least 3 places, 3 days prior to the hearing. The second public notice is also mailed to an extensive mailing list. All data analysis, rationales etc. are available to the public no later than at the time of the 30 day notice.

Legislative Council Bureau

The Legislative Council Bureau reviews proposed regulations to determine if the language is clear, concise and suitable for incorporation into the Nevada Administrative Code. The Legislative Council Bureau (LCB) is sent a package at least 60 days prior to the State Environmental Commission (SEC) hearing including the existing regulations and proposed regulations.

U.S. Environmental Protection Agency

USEPA has the authority to approve or disapprove state water quality standards actions. The State Attorney General certifies to USEPA that the standards were adopted in accordance with State and Federal laws. This certification, the adopted standards, rationale and antidegradation policy are sent to USEPA for approval or disapproval. If USEPA disapproves, the State has an opportunity to resolve the issue or USEPA can promulgate standards for the State. Recent changes to federal regulations require that State water quality standards must be approved by USEPA before they can be implemented by the State for Clean Water Act purposes.

WATER QUALITY STANDARDS IMPLEMENTATION

There are several instances in the regulations where the water quality criteria are defined as a certain level above or below the "natural conditions[1]" (Table 1). Application of these standards to the 303(d) listing process is difficult due to problems in quantifying natural conditions. In order to quantify natural conditions, data representing pre-human development conditions are needed. However, most of the available water quality data are based upon samples collected during the later part of the 20th century after human activities have occurred.

In the future, NDEP plans to revise these natural condition-based standards to numeric criteria that are measurable. Until the standards are revised, NDEP will continue using best professional judgment in estimating natural condition levels, where appropriate, and applying these standards to NPDES permit discharge limitations.

[1] "Natural conditions" are considered to be the water quality characteristics that would exist in a waterbody without the impacts of modern human development. The Nevada Administrative Code does not define "natural conditions", but does provide the following definition of "natural waters" – "…waters which have not been degraded or enhanced by actions attributable to man."

Table 1. Summary of Natural Condition-Based Water Quality Standards

Parameter	Applicable Water Class	Standard
Alkalinity	various designated waters	"less than 25% change from ***natural conditions"***
Color	various designated waters	"Increase in color must not be more than 10 PCU above ***natural conditions***."
Fecal coliform	Class C only	The more stringent of the following apply: "1. The fecal coliform concentration must not exceed a geometric mean of 1000 per 100 milliliters nor may more than 20 percent of total samples exceed 2400 per 100 milliliters." "2. The annual geometric mean of fecal coliform concentration must not exceed that characteristic of ***natural conditions*** by more than 200 per 100 milliliter nor may the number of fecal coliform in a single sample exceed that characteristic of ***natural conditions*** by more than 400 per 100 milliliter." (italics added) "3. The fecal coliform concentration, based on a minimum of 5 samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, nor may more than 10 percent of total samples during any 30-day period exceed 400 per 100 milliliters. This is applicable only to those waters used for primary contact recreation."
Total Dissolved Solids	Class A, B and C waters	"must not exceed 500 mg/l or one-third above that characteristic of ***natural conditions*** (whichever is less)."
Turbidity	various designated waters	"Increase in turbidity must not be more than 10 NTU above ***natural conditions***."

Chapter 4
TOTAL MAXIMUM DAILY LOADS, WASTE LOAD ALLOCATIONS, AND LOAD ALLOCATIONS (TMDLs/WLAs/LAs)

LEGAL AUTHORITY

Section 303(d) of the Clean Water Act requires states to identify waters that do not or are not expected to meet applicable water quality standards with technology-based controls alone. For the waters identified, states are to develop total maximum daily loads (TMDLs) at a level necessary to achieve the applicable water quality standards (40 CFR 130.7). TMDLs are defined in 40 CFR Part 130 as the sum of the individual Waste Load Allocations (WLA) for point sources and Load Allocations (LA) for nonpoint sources, including a margin of safety and natural background conditions.

BACKGROUND

Water quality standards are intended to provide protection of designated beneficial uses. If the water quality standards in a waterway cannot be attained even after the application of technology based controls (required by Sections 301(b)(1)(A), 301(b)(1)(B) and 306 of the CWA), the State is required to develop total maximum daily loads (TMDLs) for the affected parameters. A TMDL is a tool for implementing State water quality standards and is based on the relationship between pollutant sources and in-stream water quality conditions. TMDLs express the total assimilative capacity of a water for a particular pollutant. A TMDL quantifies pollutant sources and allocates allowable loads to the contributing point and nonpoint sources so that the water quality standards are attained.

IDENTIFYING AND PRIORITIZING WATERS REQUIRING TMDLs

Section 303(d) of the Clean Water Act (CWA) requires that States develop a list of waterbodies needing additional work beyond existing controls to achieve or maintain water quality standards. This list, referred to as the Section 303(d) List, provides a comprehensive inventory of waterbodies impaired by all sources, including point sources, nonpoint sources, or a combination of both. The 303(d) List is the basis for targeting waterbodies for watershed-based solutions, and TMDLs are required for those waterbodies listed as impaired.

In general, a waterbody was included on the 2002 303(d) List (latest version) when there was adequate documentation that beneficial uses were not being supported and/or beneficial use standards (NAC 445A.119 through 445A.225, including narrative and numeric standards) were not being met during the five-year period 1997 through 2001. In evaluating a given waterbody, NDEP considered “all existing and readily available water quality related data and information” such as chemical/physical properties of water column, sediment and fish tissue; biological information;

toxicity testing results; narrative and qualitative information. Also, a waterbody was included on the 303(d) List if:

- A fishing, drinking, or swimming advisory had been in effect for the waterbody during the listing period.
- The waterbody was listed on a prior 303(d) List and insufficient information exists to delist the waterbody.

For most waterbodies, the most comprehensive readily available water quality related data/information are physical and chemical water column monitoring data, and widely distributed scientifically defensible special studies (including chemical and biological information). Other types of data (sediment, fish tissue, narrative information, etc.) are generally not as common for Nevada waterbodies. While NDEP examined all types of readily available data, a majority of the listing decisions were based upon numeric data primarily because these types of data are most common. For these listing decisions, a waterbody was included on the 2002 303(d) List if any of its numeric beneficial use standards were exceeded more than 10 percent of the time during the five-year listing period (January 1, 1997 to December 2001). The reader is referred to *Nevada's 2002 303(d) Impaired Waters List* (October 2002) for additional details on the listing methodology.

In generating the 303(d) List, the State is also required to prioritize the waterbodies on the list and propose a schedule for developing TMDLs. Prioritizing water bodies enables the state to make efficient use of available resources to meet the objectives of the Clean Water Act. For the 2002 303(d) List, the priority ranking was developed taking into consideration the following (not in order of priority):

- Risk to human and aquatic life
- Degree of public interest and support
- Recreational, economic, and aesthetic importance of a particular waterbody
- Vulnerability or fragility of a particular waterbody as an aquatic habitat
- Immediate programmatic needs such as:
    - waste load allocations
    - permits to be issued
    - new or expanding discharges
    - load allocations for needed Best Management Practices (BMPs)
- Severity of the impairment and the designated water uses
- Data availability
- Potential changes to water quality standards
- Appropriateness of standard
- TMDL complexity
- Staffing and other resources

Please refer to *Nevada's 2002 303(d) Impaired Waters List* (October 2002) for details on the current TMDL priority rankings.

As required by section 303(d), NDEP submits to USEPA the list of waters targeted for TMDL development including priority rankings for approval. Prior to submitting the list to USEPA, NDEP provides the public with an opportunity to comment on the list.

TMDL DEVELOPMENT PROCESS

The TMDL process takes a holistic view of water quality problems from the perspective of instream conditions. This process is a rational method for weighing the competing pollution concerns and developing an integrated pollution reduction strategy for point and nonpoint sources. As such, the TMDL is the sum of the loads from all sources, point and nonpoint, that a water can receive without violating the water quality standards. In addition, the TMDL should include an allocation for background, or natural pollutants and a margin of safety. The margin of safety should be based on the rigor of the available data and modeling. Determination of TMDLs take into account critical conditions for stream flow, loading, and water quality parameters.

Target Analysis

The purpose of this TMDL component is to identify a numeric or measurable target that is needed to support the beneficial use. Nevada's water quality standards contain extensive numeric criteria. To date, the targets used in Nevada's TMDLs have been based upon the numeric criteria in the regulations. There may be cases in the future where TMDLs must be developed for pollutants that do not have numeric water quality standards. In those instances, numeric or measurable targets would need to be developed.

Source Analysis

An understanding of pollutant loading sources, amounts, location and timing is vital to the development of effective TMDLs. The amounts of pollutants entering the receiving water can be measured directly or calculated from water quality and flow data or estimated using mathematical models. The source analysis begins with an inventory of all known factors in the watershed which influence water quality including permitted discharges, grazing, irrigated agriculture, instream erosion, stormwater, construction activities and natural background. Source analysis provides the basis for determining the levels of pollutant reductions needed to meet water quality standards and is an important part of the TMDL development.

Loading Capacity

The loading capacity (or allowable load) is the quantitative link between the applicable water quality standards and the TMDL. The loading capacity reflects the maximum amount of a pollutant that may enter the waterbody while maintaining water quality standards. Because loadings affect each waterbody differently, detailed analyses are necessary to understand system response to the loadings. The methods for performing these analyses can range from simple dilution calculation to the more detailed predictive water quality models.

Conservative pollutants (such as total dissolved solids) are those pollutants that remain at a relatively constant concentration in a given parcel of water moving downstream (assuming no additional load is entering the stream from point and nonpoint sources). The TMDL for a conservative pollutant varies directly with volume of flow of dischargers and the receiving water quality. In some instances, a conservative pollutant TMDL can be calculated using simple dilution calculations.

Nonconservative pollutants (such as bioavailable nutrients) decay or are removed over time by natural processes. This decrease in concentration may be due to a number of factors including biological uptake, chemical breakdown and biodegradation. TMDLs for nonconservative pollutants are driven by the characteristics of the receiving water. Nonconservative TMDLs can only be calculated with fairly sophisticated techniques such as modeling, by which various instream processes are mathematically predicted.

It is acknowledged that the dividing line between conservative and nonconservative pollutants in not well defined and the classification of a given pollutant may vary according to the site specific situation. Furthermore, as TMDL calculations are made on a case-by-case basis, judgment is used in classifying the pollutant and selecting the appropriate approach for determining loading capacity.

Load Allocation

The allowable loads (or loading capacity) are distributed or "allocated" among the significant sources of the pollutant. Wasteload allocations (WLAs) are assigned to existing and future point sources, while load allocations (LAs) are assigned to existing and future nonpoint sources along with natural background levels.

Margin of Safety

A margin of safety is required in the TMDL to account for uncertainty in the understanding of the relationship between pollutant discharges and water quality impacts. An explicit margin of safety can be provided by reserving (not allocating) a portion of the TMDL. It is also acceptable to provide an implicit margin of safety by making and documenting conservative assumptions in the TMDL analysis.

Seasonal Variation and Critical Conditions

TMDLs are required to demonstrate how seasonal variations and critical conditions were accounted for in the analysis to ensure that water quality standards are attained throughout the year. Seasonal variations in loadings, flows, pollutant fate and transport, pollutant effects, ecological conditions should be considered in developing TMDLs. In addition to seasonal variation, critical conditions should be used as the basis for calculating TMDLs. Critical conditions include receiving water flow (e.g. low flow), receiving water conditions, beneficial use impacts (e.g., key aquatic life stages), pollutant loadings (e.g. high flow nonpoint source runoff), and other environmental factors which affect the relationship between pollutant loading and water quality impacts.

Phased Approach

A phased approach is used in situations where data and information needed to determine the TMDL and associated allocations are limited. This phased approach enables the adoption and implementation of a TMDL while collecting additional information (EPA 1991 guidance "Guidance for Water Quality Based Decisions - the TMDL Process"). Monitoring requirements and a schedule for re-assessing TMDL allocations to ensure attainment of water quality standards are included in the phased TMDL. USEPA regulations provide that load allocations for nonpoint sources and/or natural background "are best estimates of the loading which may range from reasonable accurate estimates to gross allotments..." The phased approach is often necessary where non-point sources are involved.

Public Participation/USEPA Approval

During the development of TMDLs, NDEP consults with interested parties to allow input to decisions regarding necessary monitoring, modeling, analysis and methods. NDEP solicits comment on the draft TMDL, at a minimum, through public notice. In cases where the TMDL is complicated and/or controversial, NDEP will hold stakeholder outreach meetings. In addition to publication in a newspaper in the geographic area of the TMDL, the public notice is sent to a mailing list. If WLAs are developed in conjunction with TMDLs, the TMDLs and WLAs can be publicly noticed either simultaneously with the draft permit(s) or separately.

As required by 40 CFR Part 130.7, USEPA must approve or disapprove water quality standard based TMDLs within 30 days after the date of submission. Where a TMDL is approved, USEPA transmits a letter of such approval. If USEPA disapproves the state's submitted TMDL and the state and USEPA can not agree to correct the problems, then USEPA shall, within 30 days of the disapproval date, establish TMDLs necessary to meet the water quality standards.

RELATIONSHIP OF TMDL/WLA TO NPDES PERMIT PROCESS

Wasteload allocations (WLAs) establish the level of effluent quality from point source discharges necessary to protect water quality in the receiving water and ensure attainment of water quality standards. A WLA should address variability in effluent quality. Allocations for nutrients may be expressed as average effluent quality, rather than instantaneous limits, because it is the total loading of these pollutants that is of concern. An allocation for toxic pollutants should be expressed as a shorter-term requirement because the concentration of these pollutants is typically of more concern than the total loading. Once waste load allocations have been developed for specific pollution sources, these allocations are incorporated into NPDES permits. The TMDL/WLA is an enforceable part of the permit.

There are instances where existing TMDLs may not result in load limits for a discharge. For example, TMDLs were developed for the Humboldt and Walker Rivers as part the "208 Plan for Undesignated Areas" (NDEP, 1994), however no WLAs were made. Included in this 208 Plan is the following language:

> *"Any discharge which improves the existing water quality and has permitted discharge limits as strict or stricter than the water quality standards can be considered in compliance with an established TMDLs."*

All NPDES discharges to the Humboldt River comply with this requirement. Future revisions of the TMDL/208 Plan will address the need to establish WLAs for the major NPDES discharges.

DeMinimus Exemption

The intent of establishing TMDLs is to improve water quality by identifying and implementing new or altered management measures. It is the policy of NDEP that staff time should be used efficiently to accomplish the mission of the agency. Revising existing TMDLs and WLAs each time a small NPDES permit is issued is a large workload burden with minimal or no environmental benefit. To utilize limited resources most effectively, the concept of "deminimus load" exemption has been developed. Deminimus load exemptions must be included in the individual TMDLs and WLAs including a quantitative rationale of how the deminimus load was determined. If water quality standards are exceeded, exemptions will not be issued and strategies to achieve load reductions will be implemented.

LIST OF WATERBODIES WHICH HAVE TMDLs ESTABLISHED

Table 2 lists Nevada TMDLs that have been established and approved. The third column list the references where the TMDLs can be found.

Table 2. Summary of Established TMDLs

Basin	Parameters & Location	Reference
Truckee River	TN, TP, TDS at Vista	"Truckee River Final TMDLs and WLAs" NDEP, 1994
Humboldt River	TP, TSS at Palisade TP, TSS at Battle Mountain TP, TSS, TDS at Comus TP, TSS, TDS at Imlay	"208 Plan for Non-Designated Areas" NDEP, 1993
Carson River	BOD, NO_3, PO_4, TDS specified at: 13 individual reaches which includes entire west fork, east fork, river to Lahontan Reservoir using both average and extreme low flows and varying degrees of treatment to municipal sources.	"208 Plan for the Carson River Basin" NDEP, 1982
Walker River	TSS east fork, south of Yerington TSS upstream of Weber Reservoir	"208 Plan for Non-Designated Areas" NDEP, 1993
Las Vegas Wash	TP, ammonia at North Shore Road	"Rationale and Calculations for TMDLs and WLAs for Las Vegas Bay", 1988, NDEP

TN = Total Nitrogen
TP = Total Phosphorus
TDS = Total Dissolved Solids
TSS = Total Suspended Solids
BOD = Biochemical Oxygen Demand
NO_3 = Nitrate
PO_4 = Phosphate

Chapter 5
WATER POLLUTION CONTROL PERMITS

LEGAL AUTHORITY

NDEP administers the National Pollutant Discharge Elimination System (NPDES) program. Federal requirements are contained in sections 301, 302, and 306 of the Clean Water Act; and 40 CFR sections 122 through 129, 400 through 471 and 503. State requirements, including those for public notice and participation, are contained in NRS 445A.300 through 445A.730, NAC 445A.228 through 445A.263, the program delegation document entitled NPDES Program, and the CPP. NAC 445A.243 and 445A.244 require effluent limitations and schedules of compliance meet federal requirements, at a minimum, or be stricter as necessary to comply with water quality standards, water quality management plans, and the antidegradation provisions of NRS 445A.565. Use of treated effluent for irrigation is regulated by NAC 445A.275 through 445A.280. Regulations for the design and construction of treatment works including package plants are contained in NAC 445A.283 through 445A.292. Zones of mixing requirements are contained in NAC 445A.295 through 445A.302.

TYPES OF PERMITS

All permits are issued a permit number which begin with either prefix NV or NEV. A NV prefix designates a facility authorized to discharge to the surface waters of the state (NPDES permit). The prefix NEV indicates a facility authorized to discharge to the groundwaters of the state or to a treatment works (zero discharge).

Facilities are classified in terms of their treatment capacity and to where the effluent is discharged. The categories of permits are as follows:

> NPDES - MAJOR. Issued to facilities designed to treat over one million gallons per day (MGD) flow and discharge effluent to surface waters. However, the Administrator may designate a facility as a major that treats less than one million gallons per day if he deems it appropriate based on their potential to adversely affect water quality.
>
> NPDES - MINOR. Issued to facilities designed to treat less than one MGD flow and discharge effluent to the surface waters.
>
> NEV - (GROUNDWATERS OF THE STATE). Issued to any size treatment facility that discharges to groundwater (infiltration basins, land application of effluent, septic tank leach fields).
>
> NEV - (ZERO DISCHARGE). Issued to facilities that do not discharge effluent to either surface waters or groundwater. Effluent is generally contained in lined ponds for total containment (heap leaching, lined evaporation ponds).

UNEV - INJECTION WELLS (UIC). Issued to facilities (generally geothermal plants, oil and gas production and remediation) that inject spent water back into the underground water.

TNEV. Issued for temporary (less than 180 days) activities, primarily construction.

STORMWATER. Both NPDES and general permits are issued to protect water quality from stormwater discharges. Stormwater permits are primarily based on the application of best management practices.

NPDES PROGRAM

Section 402 of the Clean Water Act (CWA) created a National Pollutant Discharge Elimination System (NPDES) under which the Administrator of the U.S. Environmental Protection Agency (USEPA) may issue permits for the point source discharge of any pollutant or combination of pollutants. The permitted discharge must meet all applicable requirements of the Clean Water Act relating to effluent limitations, water quality standards and implementing plans, new source performance standards, toxic and pretreatment effluent standards, and inspection, monitoring and entry provisions.

CWA section 402 also provides that USEPA may delegate the authority to administer the permit program to a state. Pursuant to the regulations promulgated under the CWA, the State of Nevada was delegated the responsibility to administer the NPDES permit program within the State in 1975. The program detailed in Chapter 445 of NRS, is designed around the CWA and continuing interpretation made by the U.S. Environmental Protection Agency. Nevada Division of Environmental Protection (NDEP), with technical assistance from and review by U.S. Environmental Protection Agency has the responsibility for issuance of all NPDES permits within the state, including point source discharges from federal facilities.

NPDES Effluent Limitations

NPDES permits contain specific and legally enforceable effluent limitations. NAC 445A.243 contains the conditions for establishing effluent limitations. As stated in NAC 445A.243, consideration must be given to, but not limited by, the following:

1. The effect of the discharge on the receiving waters and its beneficial uses.

2. The need for standards that specify by chemical, physical, biological or other characteristics the extent to which pollution by various substances will not be tolerated.

3. Any requirements for establishing standards for water quality promulgated from time to time by USEPA, including the following:
   a) Effluent limitations established under CWA sections 301, 302.
   b) Standards of performance for new sources under CWA section 306.

c) Effluent standards, effluent prohibitions, pretreatment standards under CWA section 307.
d) Any more stringent limitations, including those:
   1) Necessary to meet standards for water quality and treatment or schedules of compliance, established pursuant to any state law or regulation;
   2) Necessary to meet any other federal law or regulation; or
   3) Required to carry out any applicable standards for water quality.
e) Any more stringent legally applicable requirements necessary to comply with a plan approved pursuant to CWA section 208(b).

Effluent limitations also must include any legally applicable requirements necessary to carry out total maximum daily loads (TMDLs) established pursuant to CWA section 303(d).

In addition to effluent limitations, NPDES permits contain self-monitoring requirements for flow measurement and water quality sampling. The sampling frequency, the sample type, the parameters to be monitored, the parameter limitations, the analytical methods, and the reporting frequency are determined by NDEP. Self-monitoring requirements must enable reasonable assessment of the discharger's performance relative to permit effluent limitations and the potential impact on the environment.

In determining the terms and conditions of the permit, primary consideration is given to the quality of the receiving surface or ground waters. Effluent limitations are established which will protect the water quality of the receiving water if there is a reasonable potential (40CFR 122.44) water quality standards could be violated. Accordingly, effluent limits are based on the requirements to maintain higher quality (RMHQs) where applicable or beneficial use standards where there are no RMHQs. For new sources, effluent limitations contained in the permit require that the discharge meet the existing surface water quality standards at the commencement of the discharge. For existing sources, the discharger is allowed a reasonable time to upgrade the facility with a schedule specified in the permit[2]. Permits which include compliance schedules also contain interim limits which must be met until facility upgrades are complete.

NPDES Permit Process

Any entity who wishes to discharge pollutants into waters of the state must first obtain a discharge permit from the NDEP. If the discharge is to a surface water, then a NPDES permit application is required. The law specifically prohibits permits which would authorize the discharge of any nuclear, biological, or chemical warfare agent or any high-level radioactive waste. Any proposed disposal which contradicts areawide 208 Plan or the rules and regulations of the State Environmental Commission or the Clean Water Act also may not be authorized by permit.

When NDEP receives an application for a permit to discharge to surface waters of the State, the following process takes place:

(1) The application is reviewed to determine if it is complete. An application is deemed complete if sufficient information is supplied for NDEP to determine the quantity and quality

[2] NAC 445A.244 allows for the issuance of a compliance schedule (within a permit) for bringing an existing point source into compliance with a discharge limitation (based upon a water quality standard).

of the effluent; the receiving water and point of discharge; that the discharge will not cause a violation of any water quality standard (WQS) or other regulation adopted by the State Environmental Commission (SEC); and the discharge will be in compliance with the Clean Water Act and regulations and guidelines adopted thereunder.

(2) The applicable 208 Plan is reviewed to determine if the applied for discharge is consistent with that plan.

(3) Discharge effluent limits are derived, and incorporated into the draft permit. If the facility cannot meet the limits, a compliance schedule (only applies to an existing permitted discharge) must be proposed in the permit which allows the permittee a reasonable time to make whatever modifications are necessary to enable the facility to meet the effluent limits. During this time frame, interim limits must be met.

(4) The draft permit is submitted to the applicant and the USEPA for their review. They are given 30 days to submit their comments on the proposed draft permit prior to it being submitted for public comment.

(5) At the end of the 30 day review period, any changes NDEP feels are warranted, based on the applicant's and USEPA's comments, are made. The proposed permit is public noticed (NAC 445A.234) in a newspaper of local circulation and sent to interested persons on the mailing list. A period of not less than 30 days following the publication of the public notice is provided to receive comments on the proposed permit or requests for a hearing.

(6) At the end of the public comment period, NDEP reviews the comments received and makes revisions where warranted. If a request for a public hearing was not received during the 30 day comment period and any changes made were not significant, the permit is then issued and transmitted to the permittee and the USEPA.

(7) If requests for a public hearing are received, the Administrator determines whether to hold a public hearing. The determination is based on the degree of public interest expressed for holding a hearing. If the Administrator determines that a public hearing shall be held, that hearing must be noticed at least 30 days prior to the hearing date.

(8) After the public hearing is held, the Administrator determines whether to issue the permit as proposed, with modifications, or not to issue the permit at all.

The duration of the issued permit is fixed and cannot exceed 5 years. The expiration date of the permit is recorded on each permit. If the entity wishes to continue to discharge, an application for permit renewal must be filed 180 days before expiration. The process outlined above also applies to permit renewals. The fees charged to each applicant are placed in a water pollution control permit fund which is used to administer the permit program. Once the permit is issued, the permit holder must request changes in the discharge by submitting a new permit application. Any permit may be revoked or suspended if the terms of the permit are violated or if the permit was obtained under false pretenses. If the activity for which permit was issued becomes unauthorized due to changes in the Law, the permit will either be revoked or modified.

Certain permits may contain a reopener clause allowing the permit conditions to be revisited during the 5-year permit period. Conditions under which a reopening clause may be provided in the permit vary and are site specific. For instance, a permit may be issued with certain discharge limitations however it is recognized that additional studies are being performed which could support a revision of some of the limitations. In this case, the permit could include a reopener clause allowing for possible permit revisions upon conclusion of the study.

Permits on Tributaries

A discharge to surface water requires a NPDES permit. If a discharge is to a tributary of a surface water identified in NAC 445A.122 through 215 and the tributary has a hydrologic connection to the surface water identified in the NACs at some time during the year, other than in response to infrequent storm events, then a NPDES permit is required. In addition, if a discharge adds sufficient flow to a tributary which results in the flow of the tributary reaching a surface water identified in NAC 445A.122 through 215, then a NPDES permit is required. As stated in the chapter on Water Quality Standards, the hydrologic connection must be for a long enough period that a commingling of water and an exchange of beneficial uses (aquatic life) is possible. In cases where there is no hydrologic connection to a water identified in NAC 445A.122 through 215, NDEP may issue an NPDES with effluent limits based upon current technology capabilities or a state groundwater permit with effluent limits designed to protect groundwater quality. It is recognized that there are difficulties in determining where or not a tributary has a hydrologic connection to another waterbody, and that no two situations are exactly the same. A certain amount of professional judgment is needed to determine whether a NPDES or a groundwater permit should be issued. For certain parameters, the groundwater permit may actually have more stringent discharge limitations than the NPDES permit. Enforcement actions can be taken if any discharges violate the permit conditions or impact other waterbodies.

Establishing effluent limits for a discharge into a water body which is tributary to a receiving water and both water bodies have standards specified in NAC 445A.122 through 215 needs further explanation. In the case where the water quality standards for a tributary are not as restrictive as the standards for the downstream receiving water (e.g. Class D Steamboat Creek flows into the Truckee River), the effluent limits for a discharge into a tributary shall be set based on a demonstration that the discharge will not cause an exceedance of downstream water quality standards. In the case where the water quality standards for a tributary are more restrictive than the standards for the downstream receiving water (e.g. Class B North Fork Humboldt flows into the Humboldt River) , the effluent limits for a discharge into a tributary can be based on the downstream receiving water standards if the distance from the point of discharge to the downstream receiving water is relatively short, and a demonstration that the discharge will not cause an impairment to the beneficial uses. The use of the downstream standards would be implemented through site specific discharge requirements, permitted mixing zone, or a variance.

MIXING ZONES

A zone of mixing for the assimilation of municipal, agricultural and industrial discharges from point sources which have received the best degree of treatment or control practicable under existing

technology is recognized as necessary. Mixing zones are developed in accordance with NAC 445A.295 through 445A.302.

To obtain a zone of mixing, a request for a mixing zone must be submitted to NDEP. The mixing zone request, submitted along with an application for discharge, must include a detailed description of the present conditions of the receiving waters and the proposed zone of mixing. The mixing zone application must demonstrate that no harm to beneficial uses will result from the proposed zone of mixing. Stream-mixing zones in which the water quality standards may be exceeded must be designed to ensure that a zone of passage is maintained (NAC 445A.299). A zone of passage is a continuous water route of necessary volume, cross-sectional area and quality to allow passage of free swimming and drifting organisms without any significant effect (NAC 445A.116). The use of a mixing zone inherently assumes that fish will avoid the effluent. In some cases, such as with temperature, the effluent may attract fish. When fish are attracted to the outfall, NDEP does not believe that a mixing zone is appropriate.

In determining the size of a zone of mixing, each application is reviewed on a case-by-case basis taking into consideration the quality of waste water discharged, existing mixing zones, and the nature, condition and background concentrations of the receiving water, including the effects of the waste water on the designated beneficial uses of the receiving water and water quality standards. For toxic materials, a mixing zone where the chronic aquatic life standard is exceeded is allowed; however, the acute aquatic life criteria must not be exceeded within the mixing zone (NAC 445A.298). Mixing zones for substances that are highly bioaccumulative are not allowed. A substance is considered highly bioaccumulative if the bioconcentration factor (BCF) is greater than 100. Figure 1 is a decision tree to guide decisions related to mixing zones.

TOXICS CONTROL

Toxic material is defined in NAC 445A.110 as "...any pollutant or combination of pollutants which will on the basis of information available to the administrator, cause an organism or its offspring to die or to suffer any: disease, behavioral abnormality, cancer, genetic mutation, physiological malfunction, including a malfunction in reproduction, or physical deformation, if that pollutant or combination of pollutants is discharged and exposed to or assimilated by the organism, whether directly from the environment or indirectly through food chains."

Control over the discharge of toxic pollutants is accomplished by basing permit limits for toxic or potentially toxic discharges on the numeric water quality standards for toxic materials contained in NAC 445A.144 and Section 40 Code of Federal Regulations Part 131.36 and the narrative water quality standards contained in NAC 445A.121(4) and 445.121(5). The numeric standards can be used directly as permit limits, or as a basis for mixing zones or total maximum daily loads and wasteload allocations for discharges to water quality limited segments. NAC 445A.121(4) states that waters must be free of toxic substances in toxic amounts, and NAC 445.121(5) states that toxicity testing may be required if toxic materials are known or suspected to be present in a water. Permits may contain requirements for whole effluent toxicity testing. If the toxicity testing shows the effluent to be toxic, a toxicity identification evaluation and compliance schedule are required.

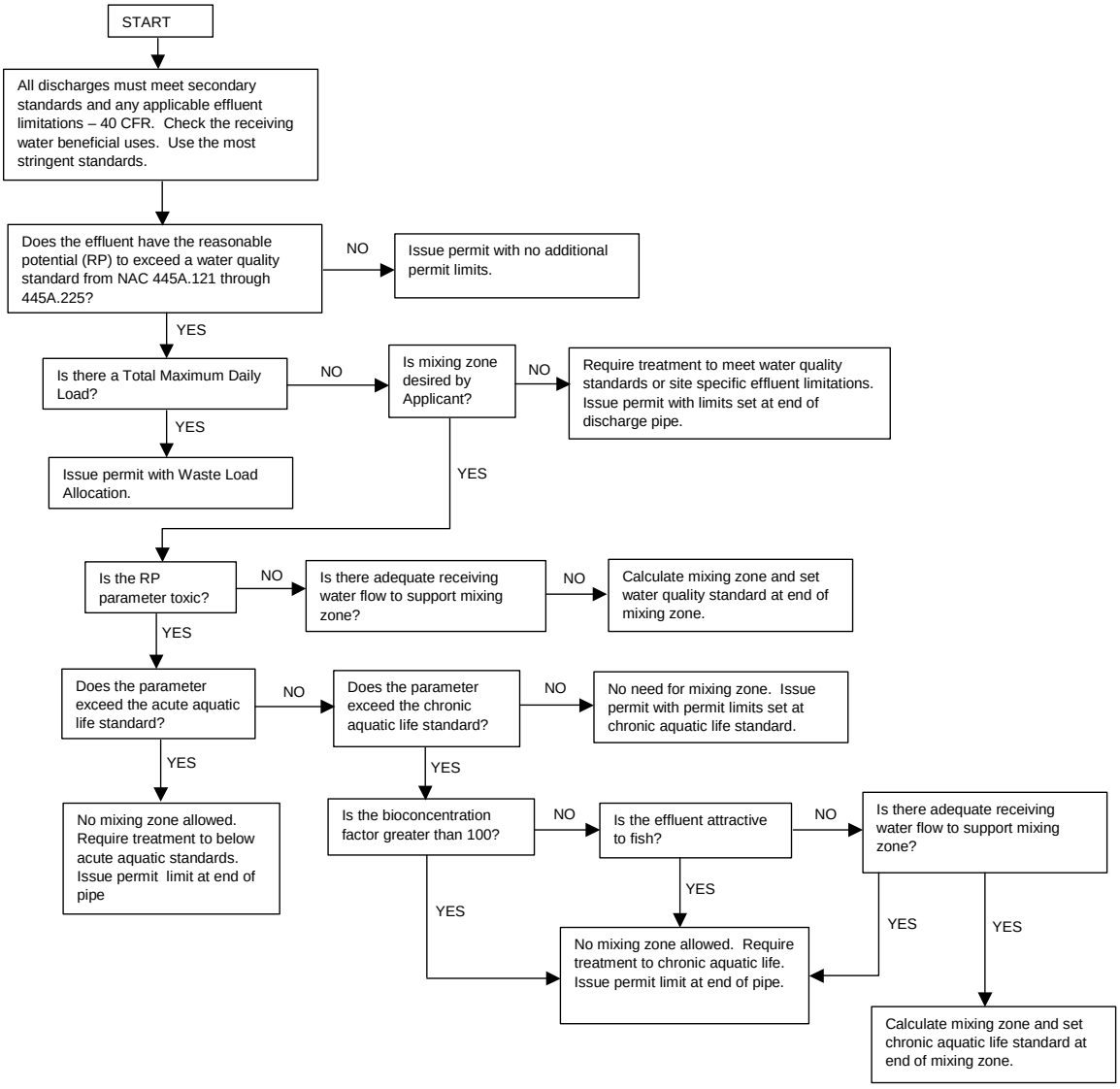

Figure 1. Decision Flowchart for Permit Limitations and Mixing Zones

Publicly Owned Treatment Works (POTWs) with a pretreatment program and POTWs with flows of 1 MGD or greater have permit requirements for priority pollutant monitoring of influent, effluent, and sludge. As a minimum, the monitoring is to be conducted on an annual basis.

Some of the water quality standards for metals, contained in NAC 445A.144, are expressed as the dissolved fraction rather than the total recoverable fraction. USEPA's NPDES regulations require that permit limits for metals be stated as total recoverable in most cases (40 CFR 122.45(c)). In developing effluent limitations for the metals which are expressed as the dissolved fraction in the water quality standards, there are two options. The simplest and most conservative option is to apply the numeric criteria in NAC 445A.144 directly as permit limits, as if dissolved concentration equals total recoverable concentration. With this option, the water quality standard will be met regardless of the nature of the transformations that occur in the receiving water.

The second option is to extrapolate from total recoverable metal in the effluent to dissolved metal downstream. Extrapolations from dissolved water quality standards to total permit limits depend to a large extent on the differences between the water quality characteristics of the effluent and those of the receiving water. The empirical extrapolation is intended to answer the question "What percent of the total recoverable metal in the effluent becomes dissolved in the downstream water?" This question can be answered by:

a. Collecting samples of effluent and upstream receiving water.

b. Measuring total recoverable metal and dissolved in both samples.

c. Combining aliquots of the two samples in the ratio of the flows of the effluent and upstream receiving water and mixing for an appropriate period of time under appropriate conditions.

d. Measuring total recoverable metal and dissolved metal in the mixture. Determine ratio of total metal to dissolved metal.

The total recoverable permit limit can then be obtained by multiplying the ratio from "d" above by the dissolved water quality standard. This second option will result in a site-specific permit limit. To implement this second option, the burden of proof will be on the discharger.

Additional information on setting permit limits can be found in EPA's June 1996 guidance document entitled "The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From A Dissolved Criterion" (EPA 823-B-96-007).

Whole Effluent Toxicity Testing

Whole effluent toxicity testing (WET) is required in NPDES permits where toxics are known or suspected. The toxicity test is able to assess the impact of discharged toxicants independent of effects from other factors. USEPA regulations in 40 CFR 122.44(d)(1)(v) require NPDES permits to contain whole effluent toxicity limits where a permittee has been shown to cause, have the reasonable potential to cause, or contribute to an in-stream violation of a narrative criterion. The

acute flow through or static replacement tests are required to be conducted in general accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" USEPA/600/4-85/013. The permittee is required to conduct an acute 48-hour flow through or static replacement test using daphnia and an acute 96-hour flow through or static replacement toxicity test using fathead minnows.

Whenever acute toxicity effluent limits have been exceeded the permittee shall initiate a toxicity identification evaluation (TIE) within 24 hours of exceedance to identify the cause(s) of the toxicity. The TIE shall be conducted in general accordance with USEPA manuals EPA/600/3-88/034, 035 and 036 or any subsequent update. Where appropriate, a toxicity reduction evaluation (TRE) will be conducted in general accordance with USEPA manuals EPA/600/2-88/062 or any subsequent revisions.

In addition to the acute toxicity testing requirements, NDEP has recently been requiring some NPDES permittees to perform a chronic toxicity study over a two year period. The associated permits have included language defining the study components, including chronic toxicity tests and toxicity identification evaluation (TIE). The data collected through these study, and through the chronic toxicity testing and TIE procedures, are for informational purposes only and will not be used to assess compliance or in an enforcement action against the permittee.

PRETREATMENT

Industrial facilities that discharge into Publicly Owned Treatment Works (POTWs) must comply with certain requirements know as pretreatment. Compliance with an approved pretreatment program is a permit requirement for all POTWs having flows of 5 MGD or greater. This requirement can also be included for smaller POTWs if significant industrial pollutant loading is considered likely, and the municipality has the ability to run the program. Significant industrial dischargers to POTWs which do not have a pretreatment program are required to obtain a discharge permit directly from NDEP.

GROUNDWATER PERMITS

“Waters of the State” is defined by NRS 445A.415 as all waters situated wholly or partly within or bordering upon this state, including but not limited to all bodies or accumulations of water, surface and underground, natural or artificial. The discharge of any pollutant from a point source to any waters of the State without a permit is prohibited by NRS 445A.465. NRS 445A.490 prohibits the issuance of a permit that authorizes any discharge into waters of the State that would result in the degradation of existing or potential underground sources of drinking water. NRS 445A.575 prohibits the discharge of any radiological, chemical or biological warfare agent or high-level radioactive waste into any waters of the State.

Specific water quality standards have not been formally adopted by the State for groundwater. Until groundwater standards are adopted, the Division will continue the policy of setting permit limits at levels specified in the Standards for Toxic Materials Applicable to Designated Waters, NAC

445A.144 or an appropriate level of concentration based on NAC 445A.22735, to prevent groundwater degradation.

It is the applicant's responsibility to provide all required analytical data for the Division to establish groundwater discharge effluent limitations and to make a permit determination.

Groundwater Effluent Limitations

Groundwater permits contain specific effluent limitations for each constituent in a discharge that has the potential to degrade waters of the State. Effluent limitations are based on the prevention of degradation of groundwater beyond the standards contained in NAC 445A.144, beyond background levels, if existing water quality exceeds the standards of NAC 445A.144, or beyond risk-based action levels established pursuant to NAC 445A.22735.

Discharge effluent limits are developed based on a review of the discharge characterization data, site characterization data including but not limited to soil types, attenuation capacity, etc., potential contaminant mobilization from the soil, depth to groundwater, and current and potential uses of the groundwater. The potential for degradation of area surface waters is also considered.

NAC 445A.22735 requires the establishment of action levels for contaminated groundwater. The action levels for groundwater must be established at the following levels:

(1) The presence of ½ inch or more of a petroleum substance that is free-floating on the surface of the water of an aquifer, using a measurement accuracy of 0.01 feet.

(2) The presence of a hazardous substance, hazardous waste or a regulated substance in groundwater at a level of concentration equal to the maximum contaminant level for that substance or waste established pursuant to the Safe Drinking Water Act, 42 U.S.C. §§300f et.seq., and 40 CFR Part 141, as those sections exist on October 3, 1996.

(3) A level of concentration equal to the background concentration of a hazardous substance, hazardous waste or a regulated substance, if that level of concentration is greater than the maximum contaminant level established pursuant to 42 U.S.C. §§300f et.seq., and 40 CFR Part 141.

(4) If a maximum contaminant level has not been established for a hazardous substance, hazardous waste or a regulated substance, a level of concentration equal to:
   (a) The background concentration of the waste or substance; or
   (b) An appropriate level of concentration that is based on the protection of public health and safety and the environment as determined by using the Integrated Risk Information System or an equivalent method approved by the Division.

In addition to effluent limitations, groundwater permits contain monitoring requirements for flow measurement and water quality sampling. The sampling frequency, the sample type, the parameters to be monitored, the parameter limitations, the analytical methods, and the reporting frequency are determined by the Division. Monitoring requirements must enable reasonable assessment of the

discharger's performance relative to permit effluent limitations and the potential impact on the environment.

In determining the terms and conditions of the permit, primary consideration is given to the quality of the receiving groundwater. Effluent limitations are established that will protect the water quality of the receiving water.

Groundwater Permit Process

Any entity who wishes to discharge pollutants into waters of the State must first obtain a discharge permit from the Division. If the discharge is to groundwater, then a groundwater permit is required.

When the Division receives an application for a permit to discharge to groundwater, the following process takes place:

(1) The application is reviewed to determine if it is complete. An application is deemed complete if sufficient information is supplied for the Division to determine the quantity and quality of the effluent; the receiving water and point of discharge; and that the discharge will not cause a violation of the NAC 445A.144 standards or degrade the receiving water.

(2) Discharge effluent limits are developed and incorporated into a draft permit.

(3) The draft is circulated to the staff of the bureau issuing the permit for review.

(4) The applicant is given an opportunity to comment on the revised draft permit.

(5) The proposed permit is public noticed, per NAC 445A.234, in a paper of local circulation and sent to interested persons on the mailing list including other appropriate governmental agencies. A period of not less than 30 days following the publication of the public notice is provided to receive comments on the proposed permit.

(6) At the end of the public comment period, the Division reviews the comments received and makes revisions where warranted. If a request for a public hearing was not received during the 30-day comment period and any changes were not significant, the permit is issued and transmitted to the permittee.

(7) If request(s) for a public hearing is/are received, the Administrator determines whether to hold a public hearing. The determination is based on the degree of public interest expressed for holding a hearing. Instances of doubt are resolved in favor of holding a hearing. If the Administrator determines that a public hearing will be held, that hearing must be public noticed at least 30 days prior to the hearing date.

(8) After the public hearing is held, the Administrator determines whether to issue the permit as proposed, with modifications, or not to issue the permit.

The duration of the issued permit is fixed and cannot exceed five (5) years. The expiration date is recorded on each permit. If the permittee wishes to continue to discharge, an application for a permit renewal must be filed 180 days before expiration. The process outlined above also applies to permit renewals. The fees charged to each applicant are deposited in a water pollution control permit fund used to administer the permit program. Once the permit is issued, the permittee must report any changes in the discharge by submitting a permit modification. A permit may be revoked or suspended if the terms of the permit are violated or if the permit was obtained under false pretenses. If the activity for which the permit was issued becomes unauthorized due to NRS or NAC changes, the permit will either be revoked or modified.

Any person aggrieved by the issuance, denial, renewal, suspension or revocation of a permit may appeal the Administrator's decision to the State Environmental Commission.

Groundwater Mixing Zones

A zone of mixing for the assimilation of discharges is not allowed for groundwater permits. Compliance monitoring wells, if required, must be placed within 250 feet downgradient of the discharge.

UNDERGROUND INJECTION CONTROL (UIC) PERMITS

Nevada has primacy for the federal Underground Injection Control (UIC) program. Any person proposing to own, construct, alter, use, operate, repair or abandon any injection well must comply with the regulations in NAC 445A.810 through 445A.925. The purpose of a UIC permit is to prevent pollution of ground water.

The Underground Injection Control (UIC) program categorizes wells into five classes.

Class I: This classification refers to deep wells injecting industrial or municipal waste below the lowermost source of potable ground water (defined to be less than 10,000 ppm total dissolved solids). Class I injection wells are prohibited in Nevada.

Class II: These injection wells are associated with the production and storage of oil and natural gas.

Class III: Injection wells that involve special processes in the extraction of minerals or energy other than geothermal energy.

Class IV: This classification refers to injection wells which receive hazardous or radioactive waste and are completed into or above a potable source of ground water. Class IV injection wells are prohibited in Nevada.

Class V: Any well not included in classifications I-IV are considered Class V injection wells. Generally speaking these wells are shallow and inject non-hazardous waste into or above a potable ground water source. USEPA recently adopted specific Class V well regulations and NDEP will develop appropriate regulations to comply with the USEPA regulations.

Underground injection of industrial waste, municipal sewage effluent, high level radioactive waste and hazardous waste is prohibited in Nevada. Injection of fluid which degrades the physical, chemical or biological quality of an aquifer is also prohibited, unless an aquifer exemption is granted by the Administrator.

The UIC program is part of the Safe Drinking Water Act program and receives considerable funding from the Drinking Water State Revolving Fund set-aside monies.

GENERAL PERMITS

A general permit is an “umbrella” permit for a specific, defined type of discharge. The conditions for the permit and monitoring requirements are the same or similar for all entities under the permit. Entities desiring inclusion must submit a “Notice of Intent” to the Bureau of Water Pollution Control for review. General permits may be revoked and NDEP may require someone with a general permit to obtain an individual permit.

Nevada obtained delegation of general permit authority from USEPA on July 27, 1992. The delegation modified previous NPDES delegation, and required additions to the NRS, NAC, and Memorandum of Agreement. General permits must be issued in accordance with NRS 445A.475 and 445A.480, NAC 445A.266 through 445A.272, 40 CFR 122.28, and the Memorandum of Agreement with USEPA.

Five permits have been issued that cover the following areas: 1) NVR300000 for stormwater discharges associated with industrial activity from metals mining activities, 2) GNV0022233 for stormwater discharges associated with industrial activity (excluding metals mining), 3) GNEV9201 for discharges from septic tanks, 4) NVR100000 for stormwater discharges associated with construction activities disturbing 5 or more acres (as of March 10, 2003, this permit will cover construction activities disturbing 1or more acres), and 5) NVS040000 for discharges from small Municipal Separate Storm Sewer Systems (MS4s). These permits are considered "baseline" permits, and contain the minimum federal requirements. These requirements include pollution prevention, best management practices, inspections, certifications, compliance with the effluent limitations contained in 40 CFR Subchapter N, and reporting.

Once a general permit is issued, by NDEP, then eligible dischargers obtain coverage by submitting the required information and filing fee. The required information is usually called a Notice of Intent, or NOI. Individual permits can be required in accordance with NRS 445A.480. NDEP policy is to issue "authorization letters" after evaluating the information submitted. The authorization letter gives the authorization date, reporting dates, and any special conditions. As of November 2002, the following numbers of NOIs have been filed:

- NVR300000 (mining) – 62
- GNV0022233 (industrial)– 367
- GNEV9201 (septic) – 102
- NVR100000 (construction) – 1,020
- NVS040000 (MS4s) - 0

TEMPORARY PERMITS

NRS 445A.485 allows the issuance of temporary permits for the discharge of pollutants or the injection of fluids through a well. The permit is valid for not more than 180 days. Each temporary permit must ensure compliance with the following factors, whenever applicable:

a) Effluent limitations;
b) Standards of performance for new sources;
c) Standards for pretreatment;
d) Standards for injections of fluids through a well;
e) Any more stringent limitations, including any limitations necessary to meet standards of water quality, standards of treatment or schedules of compliance developed by NDEP; and,
f) TMDL deminimus levels.

EFFLUENT REUSE

Treated effluent may be used for pasture and forage crop irrigation, golf course irrigation, landscape irrigation and wetlands enhancement. Each of these uses may require a different level of treatment to prevent nuisances and protect public health. General requirements and restrictions for the use of treated effluent for irrigation are contained in NAC 445A.275 through 445A.280.

The regulations require that along with a secondary level of treatment, a level of disinfection tailored to meet one of nine applicable categories of reuse be met. The main emphasis of the regulations are centered on protecting the public from pathogens in aerosols propelled by spray irrigation and groundwater protection.

After the permit has been issued, an Effluent Management Plan (NAC 445A.275(1)(a)) must be submitted to NDEP for review and approval prior to start of operations. This plan shall outline the basic steps for the proper application of wastewater effluent as well as methods used to prevent public access and/or methods of notification to the public. Effluent reuse will be carried out as outlined in NDEP guidelines, permits and regulations.

Chapter 6
RESIDUAL WASTE

LEGAL AUTHORITY

Federal sludge management requirements are contained in Clean Water Act sections 208, 303, and 405; and in 40 CFR sections 130.5, 130.6, 503 and 513. Nevada has authority to control sludge and septage disposal. NAC 444.646 requires that "sewage sludges, septic tank pumping .... shall be deposited at a land disposal site only if provisions for such disposal are included in the operational plan and approved by the solid waste authority". NRS 445A.465 states: "Except as authorized by a permit issued by the department ... it is unlawful for any person to discharge any pollutant from any point source into any waters of the State or treatment works." Under NRS 445A.410, a sludge disposal site is defined as a "treatment works". This gives NDEP authority to permit sludge disposal. Furthermore, all discharge permits (NPDES or State) require the disposal of sludges and solids in accordance with all applicable Federal, State and local Regulations.

DISCHARGE PERMITS

Discharge permits contain conditions requiring sludge monitoring, reporting, and disposal methods to be in compliance with all applicable federal, state, and local laws and to be approved by NDEP. A reopener clause may be included so that future federal requirements can be added if needed. If a facility serves greater than 10,000 people, the discharge permit, at a minimum, requires sludge monitoring for heavy metals. Monitoring frequency is dependent on the volume of sludge production.

Based on the need to control the land disposal of sludge and septage, and NDEP's authorities, as defined by both Federal law and State regulations, the Bureau of Water Pollution Control requires that a permit be issued before sludge or septage may be disposed of or utilized on the land. Because of the wide range of potential sites and quantities of sludge and septage disposed of throughout Nevada, no single policy is applicable. Each disposal/utilization proposal must be assessed and site-specific conditions determined. To assure that approval or disapproval is not granted in an arbitrary manner, but is based on sound environmental measures, extensive guidelines for both septage and sludge disposal have been developed. These guidelines are intended to determine the potential environmental and health problems and, therefore, operating and monitoring requirements.

Industrial sludge is disposed of as industrial or hazardous waste under the regulations of those programs. The majority of sewage derived sludge currently goes to sanitary landfills, which are regulated under the solid waste program. Sludge incinerators are permitted under the air program.

Chapter 7
STATE REVOLVING FUND

LEGAL AUTHORITY

Section 603: Title VI of the Clean Water Act (CWA) provides for establishment of State Revolving Fund (SRF) programs. SRFs may make loans, refinance existing debt, and provide loan guarantees or bond insurance. SRFs, however, may not make grants.

The 1989 session of the Nevada State Legislature adopted legislation authorizing the Nevada Department of Conservation and Natural Resources to accept and operate the State Revolving Fund (SRF), a fund to finance the construction of treatment works and the implementation of pollution control projects (NRS 445A.060 through 445A.160). The regulations to carry out the provisions of the statute are found in NAC 445A.685 through 445A.805.

GENERAL

The purpose of the SRF is to provide low interest loans to municipalities which need to construct wastewater treatment works and/or pollution control projects. In order for a project to receive a loan during a funding period, the plans and specifications for that project must have been approved by NDEP prior to the sale of State Matching bonds for that funding period. These loan funds are not sufficient to satisfy all the State's wastewater treatment needs. With this constraint, the limited funds must be used in a manner consistent with the water quality and public health goals of the State in order to ensure maximum public benefit. The priority system described below reflects the policies of NDEP regarding the utilization of the SRF, and is structured to support the following goals:

- Elimination of surface and groundwater pollution within the State.
- Protection of the health of the people of the State from the threat created by the inadequate treatment, collection and improper disposal of municipal wastewater and wastewater from non-point sources.
- Attainment of water quality standards adopted by the State Environmental Commission to protect designated beneficial uses.
- Operation of the SRF program in such a manner so as to impose the minimal possible financial burden on municipalities and other entities eligible for loans from the SRF.

As part of its annual application for a capitalization Grant under Title VI, an Intended Use Plan (IUP) is submitted to USEPA annually. The IUP serves as the planning document for managing the grant funds for the State Revolving Fund (SRF). The IUP also identifies the specific projects and activities to be funded from the SRF.

PRIORITY CLASSES

The determination of project priority is a two-step process. Projects are grouped into broad classes in order to establish relative priorities under the provisions of the Clean Water Act. Projects in each class are then ranked in priority order in accordance with ranking formulas.

Class A: Treatment works or pollution control projects necessary to eliminate documented public health hazards in unsewered communities as evidenced by a finding of violation which has been issued in writing by the public health authority having jurisdiction over the area. The finding of violation is accompanied by an official action taken to halt or restrict construction of individual sewerage disposal systems, or to eliminate or restrict the discharge from a treatment works or non-point source. These actions are necessary to eliminate documented public health hazards in sewered communities where existing facilities have exceeded their useful life and have deteriorated to the point that a public health hazard exists.

Class B: Treatment works or pollution control projects necessary to correct existing surface water quality standards violations. Violations must be documented by instream water quality data and have resulted in a notification of water quality standards violations being issued by NDEP to the municipal discharger or to the person(s) responsible for the non-point source discharge.

Class C: Treatment works necessary to correct violations of discharge permit limitations. Permit limit violations must be documented by discharge monitoring reports or NDEP compliance monitoring, with a resultant notice of violation and administrative order issued by NDEP.

Class D: Treatment works or pollution control projects necessary to eliminate and/or prevent interference with an existing beneficial use of groundwater where it has been determined that such an interference exists.

Class E: Treatment works necessary to increase capacity or reliability, or provide a degree of treatment beyond that required by water quality standards or permit requirements, in order to reclaim and reuse wastewater or to otherwise provide for treatment works or pollution control projects to sustain compliance with water quality standards or maintain beneficial uses.

Class F: Interceptors in sewered communities, pumping stations, infiltration inflow correction and sewer system rehabilitation.

Class G: Projects which provide wastewater treatment and collection in existing unsewered communities where no public health hazards or water standards violations have been demonstrated or to provide wastewater collection systems to unsewered portions of sewered communities.

Class H: All other treatment works or pollution control projects.

PROJECT RANKING

Projects are ranked within the Priority Classes in accordance with a numerical score derived from the following formulas:

Classes A, F and G:

PV = log(population served) + R

Classes B and C:

PV = VF + WQF + R

Class D:

PV = GW + R

Class E:

PV = D + C + E + R

Class H:

PV = R

Where:

PV is the point value assigned to each project.
R is readiness factor.

Readiness Factor (R)

The numerical score for the readiness factor (R) is determined in the following manner:

Plans and Specifications approved by NDEP (This includes everything needed to bid the project).	10 points
Facility Plan approved by NDEP final plans and specifications to be completed within six months.	7 points
Facility Plan approved by NDEP.	5 points
A Revolving Load Fund Project Priority List Information Form has been submitted.	1 point

Violation Factor (VF)

VF which applies only to Class B and C projects, is a violation factor based upon the highest existing beneficial use for which a stream is utilized. The numerical value for VF is determined from Table 3.

Table 3. Values for Violation Factor (VF)

Existing Beneficial Use	VF Points
Drinking Water	20
Bathing and Water Contact	15
Aquatic Life	15
Boating and Aesthetic	10
Wildlife Propagation	10
Industrial Use	5
Agricultural Use	5

Water Quality Factor (WQF)

WQF is a water quality factor, which applies only to Class B and C projects. The numerical value of WQF is based on the segment to which a treatment plant discharges or which is affected by the discharge from a non-point source and is determined from Table 4. The point values are based upon populations, downstream users and environmental sensitivity with the given basin. It is only one of several factors used to establish relative rankings for projects.

Groundwater Factor (GW)

GW is a factor that applies only to projects in Class D. The numerical score for this factor is determined by treatment works or pollution control projects that are necessary to:

Eliminate an existing contamination of groundwater used for drinking water.	10 points
Eliminate an existing contamination of groundwater used for purposes other than drinking water.	5 points
Prevent potential contamination of groundwater used for drinking water.	3 points

Direct Discharge Factor (D)

D is a factor related to the elimination of a direct discharge to surface waters or groundwater (irrigation with effluent, wetlands enhancement, other forms of reuse) - The numerical factor is 10 points.

Table 4. Values for Water Quality Factor (WQF) by Stream

Basin	Segment	Points
Truckee	Truckee River: Below Steamboat Creek	10
	Truckee River: Above Steamboat Creek	
	Bronco Creek	
	Gray Creek	
Carson	Lake Lahontan	
	Carson River	
	East Fork Carson River	
	West Fork Carson River	
Colorado	Lake Mead	
	Las Vegas Wash	
Humboldt	Humboldt River	8
Colorado	Colorado River	
	Virgin River	
	Beaver Dam Wash	
	Meadow Valley Wash	
	Muddy River	
Walker	Walker River	6
	West Walker River	
	East Walker River	
	Topaz Lake	
	Desert Creek	
	Sweetwater Creek	
Snake	Owyhee River	
	Salmon Falls Creek	
	Jarbidge River	
	Bruneau River	
Snake	Big Goose Creek	4
	Shoshone Creek	
N.W.Lahontan	Smoke Creek	
Great Salt Lk	Snake Creek	
Central Nev	Chiatovich Creek	
	Leidy Creek	
	Indian Creek	
N/A	Class A Waters	2
	Class B Waters	
	Class C Waters	

Capacity Factor (C)

C is a factor related to projects which increase treatment plant capacity. Point values are determined based on existing or committed flow in the following manner:

0 to 50% permitted capacity	0 points
50% to 85% permitted capacity	5 points
Over 85% permitted capacity	10 points

Efficiency Factor (E)

E is a factor related to projects which improve treatment efficiency, treatment plant reliability or to provide a higher level of treatment than required by the discharge permit. The point value for E is 7 points.

ADOPTION OF PRIORITY LIST AND PUBLIC PARTICIPATION

Each year NDEP will prepare a project priority list. Prior to the beginning of each funding period, NDEP will conduct a survey of proposed wastewater treatment works within the State. A form for each proposed project is completed by eligible loan applicants. The form provides a description, justification, estimated cost, and implementation schedule for the project. Utilizing this information and other data obtained from the discharge permit program, water quality management plans, municipal compliance plans, local district health officials and other sources, the proposed projects are classified and ranked to develop the state project priority list.

NDEP will conduct a public hearing on the proposed priority list in order to solicit public comment and encourage public participation. No later than 15 days prior to the hearing, copies of the priority list and priority system will be distributed to all parties which have expressed an interest in receiving such information, and will also be available at NDEP's office in Carson City. No later than 30 days prior to the public hearing, notice of the hearing shall be published in newspapers statewide.

The Administrator of NDEP or his designee will act as hearing officer, and will consider all testimony presented at the public hearing or in writing prior to the public hearing. Based upon the testimony, NDEP may modify the proposed list prior to adoption.