

Nevada State Water Plan
PART 1 — BACKGROUND AND RESOURCE ASSESSMENT

Section 7
**Glossary on Selected Federal, State,
and Local Agencies and Organizations**

[Source: Nevada Division of Water Planning's *Water Words Dictionary*. Words presented in italics and the referenced appendices may be found in that source.]

(United States) Army Corps of Engineers (Corps or COE) — Originally formed in 1775 during the Revolutionary War by General George Washington as the engineering and construction arm of the Continental Army. Initially, the Corps of Engineers built fortifications and coastal batteries to strengthen the country's defenses and went on to found the Military Academy at West Point, help open the West, and to develop the nation's water resources. In its military role, the COE plans, designs, and supervises the construction of facilities to insure the combat readiness of the U.S. Army and Air Forces. In its civilian role, the COE has planned and executed national programs for navigation and commerce, flood control, water supply, hydroelectric power generation, recreation, conservation, and preservation of the environment. In a very general sense, the U.S. Army Corps of Engineers has a primary responsibility for water projects which protect property from potential flood damage, whereas the (U.S. Department of the Interior) *Bureau of Reclamation (USBR)* is responsible for primarily western water projects with respect to developing water sources for agriculture and commerce. In reality, however, quite often these federal agencies' project goals overlap with USBR's dams and reservoirs providing important flood protection and the COE's water projects — dams, locks, and canals — providing important water transportation linkages and benefits to commerce. The following are the COE's primary missions and objectives. [See Appendix E-2 of the *Water Words Dictionary* for a more complete description of the U.S. Army Corps of Engineers' organizational structure and primary missions and objectives.]

- [1] ***Navigation Improvements***—to assist in the development, safety, and conduct of waterborne commerce;
- [2] ***Flood Control***—to prevent or reduce flood damages and disruptions by accommodating flood flows in problem areas;
- [3] ***Hurricane and Storm Damage Reduction***—preventing or reducing tidal and storm-related damage by building protective structures, such as dams or barriers, in estuaries; by raising the heights of dunes and natural beaches; and by building groins, dikes, seawalls or breakwaters;
- [4] ***Coastal and Shoreline Erosion***—protect against ocean and lake shoreline erosion by providing seawalls, groins or other structures that reduce waves' destructive effects; by filling and nourishing beaches and dunes to replace and maintain lost areas; and by planting vegetation that will hold and stabilize erodible materials; by preventing streambank erosion through the use of gabions, riprap and vegetative plantings;
- [5] ***Water Supply***—at the request of local interests, include water supply storage in new projects, and modify existing projects for new or additional water supply storage, and in limited emergency circumstances, provide emergency supplies of clean water to a locality confronted by a source of contaminated water likely to cause a substantial threat to public health;
- [6] ***Hydroelectric Power***—facilities for hydroelectric power are recognized as primarily the responsibility of non-federal interests; however, the Corps may include hydroelectric power development in multipurpose projects when it complements the major objectives of flood control or navigation;
- [7] ***Outdoor Recreation***—facilitate the development of outdoor recreation facilities at Corps projects thereby providing a variety of opportunities for picnicking, camping, swimming, boating, hunting, fishing, hiking, and other pursuits;
- [8] ***Environment***—per various federal requirements (*Fish and Wildlife Coordination Act, Endangered Species Act, National Historic Preservation Act*), a recognition that Corps projects must include not only facilities

to mitigate unavoidable environmental damages, but also considerations of environmental restoration through opportunities created by the projects;

- [9] **Water Quality Control**—per *Federal Water Pollution Control Act (Clean Water Act)* requirements, the Corps is required to consider including water storage for regulation of stream flow and quality improvements in its reservoir and lake projects;
- [10] **Aquatic Plant Control**—per the *River and Harbor Act*, the Corps is authorized to conduct research and control or eradicate undesirable aquatic plants through research and application on the use of chemicals, mechanical harvesters, and natural enemies (insects, pathogens, and fish).

(United States) Bureau of Indian Affairs (BIA) — An agency of the U.S. Department of the Interior which has the primary responsibility for exercising the federal government’s trust relationship with Indian tribes. The BIA was first established in 1824 in the War Department, then transferred to the Department of the Interior in 1849. The BIA has prime responsibility to provide services to Indian tribes and plays a central role in the settlement process of Indian water rights disputes. The BIA exercises prime trust responsibility in providing federal government protection for Indian resources and federal assistance in resource development and management. Quite often this responsibility complicates the Department of the Interior’s other broad responsibilities to manage the use of lands and natural resources on public lands through its *Bureau of Land Management (BLM)* land use programs, its *Bureau of Reclamation (USBR)* water-related projects, and its *U.S. Fish and Wildlife Service (USFWS)* wildlife and habitat restoration programs, which may frequently come in conflict with the Bureau of Indian Affairs Indian water rights issues. [For example, in *Nevada v. United States* (463 U.S. 129{1983}), the United States Supreme Court held that the United States [Department of the Interior] could adequately represent more than one interest simultaneously, and so it is not subject to the same standards as a private trustee. In this case, the Court found that claims made by the United States on behalf of the Pyramid Lake Paiute Indian Tribe to protect fisheries should have been asserted in prior litigation. Nevertheless, the Court found the failure to do so was not a breach of its trust obligations to the tribe, even though the United States also had protected the competing interests of non-Indian irrigators.] Also see *Negotiated Settlement* and *Truckee River Operating Agreement (TROA)*.

(United States) Bureau of Land Management (BLM) — An agency of the U.S. Department of the Interior responsible for the stewardship of the nation’s public lands. The Bureau of Land Management is committed to the sustained management, protection, and improvement of these lands in a manner consistent with the needs of the American people. The BLM’s management philosophy is based on the principles of multiple use and sustained yield of our nation’s resources within a framework of environmental responsibility and scientific technology. The resources under the BLM’s oversight include recreation, rangelands, timber, minerals, watersheds, fish and wildlife, wilderness, air, and scenic, scientific and cultural values. The BLM oversees the largest natural resource base in the federal government. This base includes 270 million acres of public lands ranging from old growth forests in the Pacific Northwest to sun drenched desert ecosystems in the Southwest to Arctic tundra in Alaska. The BLM also supervises mineral leasing and operations on an additional 300 million acres of federal mineral estate that underlie other surface ownerships. BLM managed public lands provide habitat for thousands of wildlife and plant species, including some 220 federally-listed threatened and endangered species and 1,200 species considered candidates for listing. The BLM manages over 169,000 miles of fish bearing streams and more than 50 million acres of forested lands. In addition, the BLM is caretaker of an estimated 4 million cultural properties, including 400 listed in the *National Register of Historic Places*. The BLM also manages more than 1.6 million acres of designated wilderness and 22.8 million acres of wilderness study areas. More than 46,500 wild horses and burros roam BLM land in the West. The BLM permits and manages various uses of the public lands, including grazing, mining, recreation, and timber operations. These activities traditionally have been managed on an individual basis. However, more recently the BLM’s management efforts have shifted to a more comprehensive ecosystem basis of managing such lands to insure sustained benefits for future generations of Americans. The Bureau of Land Management has its headquarters office in Washington, D.C. There are an additional eleven state offices for managing resources in the western states of Alaska, Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Wyoming. BLM resources for the Eastern United States are managed out of Springfield, Virginia. The BLM also supports a National Interagency Fire Center (NIFC) in Boise, Idaho as well as a public information service center (SC) in Denver, Colorado and a centralized employee training center in Phoenix, Arizona. In Nevada alone, the BLM manages some 48 million acres of public lands

or approximately 67 percent of all lands in Nevada.

(United States) Bureau of Reclamation (USBR) — An agency of the U.S. Department of the Interior responsible for many of the dam, reservoir, and irrigation projects in the Western United States. The USBR reclamation program was authorized by the Reclamation Act of 1902 which was initially intended to reclaim the arid and semiarid lands of the Western United States by conserving and supplying irrigation water to make them productive. Since that beginning, the USBR’s mission has expanded considerably to include multipurpose water development by providing water for irrigation, hydroelectric power, water for homes, businesses and factories, outdoor recreation, flood control, fish and wildlife enhancement, improved water quality, river regulation and control, and other related uses of water. Currently the USBR administers some 322 storage dams, 14,490 miles of canals, 174 pumping plants, and 50 hydroelectric plants. USBR water irrigates 146,000 farms in the West, provides part or all the water needs on nearly 10 million acres, yielding enough food for 33 million people, and also provides 620 billion gallons of water a year of municipal and industrial use in western towns and cities. In terms of its original intent and broad governing guidelines, the U.S. Bureau of Reclamation is primarily responsible for water projects with respect to developing water sources for agriculture and commerce, while the *U.S. Army Corps of Engineers (COE)* has had primary responsibility for water projects which protect property from potential flood damage. In reality, however, quite often these federal agencies’ project goals overlap with USBR’s dams and reservoirs providing important flood protection and the COE’s water projects—dams, locks, and canals—providing important water transportation linkages and benefits to commerce.

Colorado River Commission [Nevada] — An agency of the State of Nevada consisting of seven members, to include four members appointed by the Governor and three members from the *Southern Nevada Water Authority Board of Directors*. The Colorado River Commission has broad statutory authority to establish policies for the management of Nevada’s allocation of power and water resources from the Colorado River and for the development of designated land in Southern Nevada.

Department of Conservation And Natural Resources [Nevada] — The mission of the Department is to conserve, protect, manage, and enhance the Nevada’s natural resources in order to provide the highest quality of life for Nevada’s citizens and visitors. The Department consists of nine divisions and/or agencies which include:

- [1] ***Division of Conservation Districts*** — Regulates the activities of the state’s locally elected conservation districts which work for the conservation and proper development of the state’s renewable natural resources by providing services to individual landowners and coordination with other public and private agencies.
- [2] ***Division of Environmental Protection (DEP)*** — Responsible for the administration and enforcement of all environmental statutes and regulations; issues permits, monitors for air and water pollution and inspects solid and hazardous waste management. The Division consists of the *Bureau of Air Quality*, the *Bureau of Water Pollution Control*, *Bureau of Mining Regulation and Reclamation*, *Bureau of Water Quality Planning*, *Bureau of Corrective Actions*, *Bureau of Waste Management*, and the *Bureau of Federal Facilities*. The *State Environmental Commission* is also part of the Division and is responsible for adopting necessary environmental rules, regulations and plans authorized by statute. [See Appendix E-4 for a more complete description of DEP’s functional responsibilities.]
- [3] ***Division of Forestry*** — Manages and coordinates all forestry, nursery, endangered plant species and watershed resource activities on certain public and private lands; responsible for protecting structural and natural resources through fire protection, prevention and suppression. The Division also conducts the Forestry Conservation Camps Program which coordinates and supervises the outside work performed by inmates residing in Department of Prison conservation camps.
- [4] ***Division of State Lands*** — Acquires, holds, and disposes of all state lands and interests in lands; provides technical land-use planning assistance, training, and information to local units of government or other agencies; develops policies and plans for the use of lands under federal management and represents the state in its dealings with the federal land management agencies.
- [5] ***Division of State Parks*** — Plans, develops, and maintains a system of parks and recreational areas for the use and enjoyment of residents and visitors. The Division also preserves areas of scenic, historic, and scientific significance in Nevada.

- [6] **Division of Water Planning** — Provides technical, financial and economic assistance to government agencies and individual citizens concerning regional and local water supplies; develops and implements a statewide water resource management plan and policy initiatives on a watershed basis; conducts hydrologic, climatologic, and socioeconomic data collection, research, modeling, forecasting and data analysis; develops and implements water resource public information and education programs; provides technical and financial assistance and outreach programs to assist local governments, watershed planning groups, and other agencies with respect to water resource matters; and develops and implements a statewide water conservation program.
- [7] **Division of Water Resources** — Responsible for protecting the health and safety of Nevada citizens through the appropriation of public waters. 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 major construction and housing projects; 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.
- [8] **Division of Wildlife** — Preserves, protects, manages and restores wildlife and its habitat within the state for aesthetic, scientific, recreational and economic benefits; tasked with promoting safety for persons and property in the operation of equipment and boating vessels
- [9] **Natural Heritage Program** — Serves as a centralized repository containing detailed information on sensitive (threatened and endangered) species of animals, plants, and communities; provides information on biology, habitats, locations, population and conservation status, and management needs.

(United States) Department of the Interior (USDI) — Originally established by Congress in 1849 as the executive department of the United States government, the USDI's function has changed from that of performing housekeeping duties for the federal government to its present role as custodian of the nation's natural resources. As the nation's principal conservation agency, the USDI has the responsibility of protecting and conserving the country's land, water, minerals, fish, and wildlife; of promoting the wise use of all these natural resources; of maintaining national parks and recreation areas; and of preserving historic places. It also provides for the welfare of American Indian reservation communities and of inhabitants of island territories under U.S. administration. As of 1988 the USDI managed more than 220 million hectares (550 million acres, or 850,000 square miles) of federal resource lands; about 340 units of the national park system; 70 fish hatcheries, and 442 *National Wildlife Refuges (NWF)*; and numerous reclamation dams that provide water, electricity, and recreation. The USDI also constructs irrigation works, enforces mine safety laws, makes geological surveys and prepares maps, conducts mineral research, and administers wild and scenic rivers as well as national and regional trails. The USDI is currently in charge of the *Bureau of Indian Affairs (BIA)*, the *U.S. Fish and Wildlife Service (USFWS)*, the *National Park Service (NPS)*, and the *U.S. Geological Survey (USGS)*. It also oversees the Bureau of Mines, which is responsible for ensuring that the nation has adequate mineral supplies and for overseeing and evaluating all aspects of minerals research; the *U.S. Bureau of Land Management (BLM)*, which manages public lands and their resources; the *U.S. Bureau of Reclamation (USBR)*, which assists local governments in reclaiming arid lands in western states and provides programs for hydro-electric power generation, flood control, and river regulation; the Minerals Management Service, which deals with leasable minerals on the Outer Continental Shelf and ensures efficient recovery of mineral resources; and the Office of Surface Mining Reclamation and Enforcement, which helps to protect the environment from adverse effects of mining operations. Other agencies under the USDI's jurisdiction include the Office of Small and Disadvantaged Business Utilization and the Office of Territorial and International Affairs.

Department of Water Resources (DWR) [California] — The California state agency within *The Resources Agency* that is responsible for long-term water planning, operation of the *State Water Project*, and state water conservation programs. The basic goal of the DWR is to ensure that California's needs for water supplies, water-related recreation, fish and wildlife, hydroelectric power, prevention of damage and loss of life from floods and dam failure, and water-related environmental enhancements are met; and to ensure that the manner in which these needs are fulfilled is consistent with public desires and attitudes concerning environmental and social

considerations. The *California Water Commission*, also within The Resources Agency, serves as a policy advisory body to the Director of the DWR on matters within the department’s jurisdiction and coordinates state and local views on federal appropriations for water projects in California. The commission also conducts public hearings and investigations statewide for the department and provides an open forum for interested citizens to voice on water development issues. The *California State Water Resources Control Board (SWRCB)*, located within the California Environmental Protection Agency, is assigned the responsibility to protect water quality and allocate water rights.

Desert Research Institute (DRI) [Nevada] — The Desert Research Institute was created in 1959 by an act of the Nevada Legislature as a unit of the University of Nevada. When the University of Nevada System was formed in 1968, DRI became an autonomous, nonprofit division of this system. Since that time DRI has grown to be one of the world’s largest multi-disciplinary environmental research organizations focusing on arid lands. The DRI operates from statewide facilities in Las Vegas, Reno, Stead, Laughlin, and Boulder City. The DRI’s activities are directed from five research centers representing the *Geosphere* (Quaternary Sciences Center), *Hydrosphere* (Water Resources Center), *Biosphere* (Biological Sciences Center), and *Atmosphere* (Atmospheric Sciences Center and Energy and Environmental Engineering Center). Multi-disciplinary teams drawn from these centers are assembled to address basic and applied research problems on a project-by-project basis. Listed below are the DRI’s five research centers and their primary mission statement. [See Appendix E–3 of the *Water Words Dictionary* for a more complete listing of the DRI’s major laboratories operated and the principal skills and activities supported.]

- [1] ***Atmospheric Sciences Center (ASC)*** — The ASC is a nationally recognized leader in the field of atmospheric sciences. The ASC’s mission is to improve the fundamental understanding of the earth’s atmosphere, particularly as it relates to the weather and to the climate of arid regions. The ASC is the home of the strongest atmospheric modification research program in the United States.
- [2] ***Biological Sciences Center (BSC)*** — The BSC focuses on plant and soil biology from an ecological perspective. The BSC’s mission is to improve the fundamental understanding of the earth’s biosphere, thereby providing the knowledge needed to effectively manage biological resources important to the future use and habitation of the earth.
- [3] ***Energy and Environmental Engineering Center (EEEC)*** — The EEEEC largely conducts air resources research. The EEEEC’s mission is to conduct high-quality research to understand current and future human impacts on the environment, especially air quality, and the technology that can be applied to mitigate these impacts.
- [4] ***Quaternary Sciences Center (QSC)*** — The QSC is one of approximately 15 Quaternary research programs worldwide. The QSC’s mission is to improve the fundamental understanding of past climates and associated environmental responses and human adaptations to climate change during the Quaternary Period (covering the last 1.8 million years).
- [5] ***Water Resources Center (WRC)*** — The WRC is the largest water research group focused on arid lands in the United States. The WRC’s mission to improve the fundamental understanding and knowledge of hydrologic systems, with special emphasis on arid lands, for more effective management of hydrologic resources.

(State) Division of Health [Nevada] — An agency within the Department of Human Resources, State of Nevada, whose primary water-related mandate (Nevada Revised Statutes 445.361) is “to provide water which is safe for drinking and other domestic purposes and thereby promote the public health and welfare.” The Division serves as the primacy agency for the *Public Water System Supervision Program (PWSSP)* as authorized under the federal *Safe Drinking Water Act (SDWA) [Public Law 93–523]* and its amendments. The Division implements State Board of Health regulations which address drinking water monitoring and quality, public water system construction, and public water system operator certification. To accomplish its tasks, the Division consists of a number of Boards and Bureaus, to include:

- [1] ***State Board of Health*** — Advises the Health Division Administrator on matters relating to public health and welfare.
- [2] ***State Health Officer*** — Primary state adviser on matters pertaining to medical health; oversees the activities of the Bureau of Laboratory Services, Bureau of Community Health Services, Bureau of

Family Health Services, Bureau of Disease Control and Intervention Services, and the Bureau of Health Planning.

- [3] **Bureau of Health Protection Services** — Provides for safe drinking water, health engineering, sanitation (food, dairy, drugs and cosmetics), and radiological health matters.
- [4] **Bureau of Laboratory Services** — Microbiology lab, chemistry lab, research and testing on community water systems.
- [5] **Bureau of Community Health Services** — Family planning, community health nursing, and clinic services.
- [6] **Bureau of Family Health Services** — Genetics, special children’s clinic, children’s dental services, newborn screening, and health promotion and education.
- [7] **Bureau of Health Planning** — State health plan, primary care development center, state center for health statistics, tobacco control initiative.
- [8] **Bureau of Disease Control and Intervention Services** — Programs dealing with surveillance, immunization, TB control.
- [9] **Bureau of Licensure and Certification** — Programs dealing with health facilities, laboratory personnel certification, emergency medical services and trauma.
- [10] **Bureau of Administrative Services** — Fiscal management, personnel, affirmative action, legal services, vital records, and cancer registry.

(United States) Environmental Protection Agency (EPA) — The U.S. Environmental Protection Agency (EPA) is responsible for implementing the federal laws designed to protect the environment. EPA endeavors to accomplish its mission systematically by proper integration of a variety of research, monitoring, standard-setting, and enforcement activities. As a complement to its other activities, EPA coordinates and supports research and anti-pollution activities of state and local governments, private and public groups, individuals, and educational institutions. EPA also monitors the operations of other Federal agencies with respect to their impact on the environment. EPA was created through Reorganization Plan #3 of 1970, which was devised to consolidate the federal government’s environmental regulatory activities into a single agency. The plan was sent by the President to Congress on July 9, 1970, and the agency began operation on December 2, 1970. EPA was formed by bringing together 15 components from 5 executive departments and independent agencies. Air pollution control, solid waste management, radiation control, and the drinking water program were transferred from the Department of Health, Education, and Welfare (now the Department of Health and Human Services). The federal water pollution control program was taken from the Department of the Interior, as was part of a pesticide research program. From the Department of Agriculture, EPA acquired authority to register pesticides and to regulate their use, and from the Food and Drug Administration, EPA inherited the responsibility to set tolerance levels of pesticides in food. EPA was assigned some responsibility from the Atomic Energy Commission, and absorbed the duties of the Federal Radiation Council. The enactment of major new environmental laws and important amendments to older laws in the 1970s and 1980s greatly expanded EPA’s responsibilities. The agency now administers ten comprehensive environmental protection laws:

- [1] Clean Air Act (CAA)
- [2] Clean Water Act (CWA)
- [3] Safe Drinking Water Act (SDWA)
- [4] Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or “Superfund”)
- [5] Resource Conservation and Recovery Act (RCRA)
- [6] Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- [7] Toxic Substances Control Act (TSCA)
- [8] Marine Protection, Research, and Sanctuaries Act (MPRSA)
- [9] Uranium Mill Tailings Radiation Control Act (UMTRCA)
- [10] Pollution Prevention Act

The primary mandates for the water-related programs administered through the EPA Water Management Division are the *Federal Water Pollution Control Act (Public Law 92–500)*, as amended, commonly referred to as the *Clean Water Act (CWA)*, and the *Safe Drinking Water Act (SDWA — Public Law 93–523)*. The CWA addresses the discharge of pollutants from point and nonpoint sources into waters of the United States (as defined). The goal

of the SDWA is to protect public health over lifetime exposure to drinking water by ensuring that the source water as well as the system storage distribution and service lines are free and protected from contamination. EPA water-related programs establish national and regional objectives, promote delegation of programs to states (primacy), and support that delegation in a manner that ensures achievement of required objectives. Also see *Science Advisory Board (SAB)*. The following constitute the principal offices of the EPA. [See Appendix E–1 of the *Water Words Dictionary* for a more complete description of the organizational structure of the U.S. Environmental Protection Agency and a description of each office’s functions.]

- [1] Office of the Administrator (OA)
- [2] Office of Administration and Resources Management (OARM)
- [3] Office of Enforcement (OE)
- [4] Office of General Counsel (OGC)
- [5] Office of Policy, Planning, and Evaluation (OPPE)
- [6] Office of International Activities (OIA)
- [7] Office of Inspector General (OIG)
- [8] Office of Water (OW)
- [9] Office of Solid Waste and Emergency Response (OSWER)
- [10] Office of Air and Radiation (OAR)
- [11] Office of Prevention, Pesticides and Toxic Substances (OPPTS)
- [12] Office of Research and Development (ORD)

Federal Emergency Management Agency (FEMA) — An independent agency of the federal government founded in 1979 and reporting to the President of the United States and headquartered in Washington D.C. FEMA’s mission is to reduce loss of life and property and protect our nation’s critical infrastructure from all types of hazards through a comprehensive, risk-based, emergency management program of mitigation, preparedness, response and recovery. Primary support functions of FEMA include; (1) advising on building codes and flood plain management; (2) teaching people how to get through a disaster; (3) helping equip local and state emergency preparedness; (4) coordinating the federal response to a disaster; (5) making disaster assistance available to states, communities, businesses and individuals; (6) training emergency managers; (7) supporting the nation’s fire service; and (8) administering the national flood and crime insurance programs (*National Flood Insurance Program*). FEMA’s operating directorates consist of: (1) Mitigation Directorate; (2) Information Technology Directorate; (3) Federal Insurance Administration (Program); (4) Operations Support Directorate; (5) Preparedness Directorate; (6) Response and Recovery Directorate; (7) United States Fire Administration; and (8) ten Regional Offices. FEMA’s ten regions, Federal Regional Centers, and states included in each region are:

- [1] Region I (Boston, Massachusetts) — Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont;
- [2] Region II (New York, N.Y., Caribbean Division – San Juan, Puerto Rico) — New York, New Jersey, the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands;
- [3] Region III (Philadelphia, Pennsylvania) — District of Columbia, Delaware, Maryland, Pennsylvania, Virginia, West Virginia;
- [4] Region IV (Atlanta, Georgia) — Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee;
- [5] Region V (Chicago, Illinois) — Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin;
- [6] Region VI (Denton, Texas) — Arkansas, Louisiana, New Mexico, Oklahoma and Texas;
- [7] Region VII (Kansas City, Missouri) — Iowa, Kansas, Missouri, Nebraska;
- [8] Region VIII (Denver, Colorado) — Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming;
- [9] Region IX (San Francisco, California) — Arizona, California, Hawaii and Nevada; and the Territory of American Samoa, the Territory of Guam, the Commonwealth of the Northern Mariana Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau;
- [10] Region X (Bothell, Washington) — Alaska, Idaho, Oregon and Washington.

(United States) Fish and Wildlife Service (USFWS) — Part of the U.S. Department of the Interior, the early beginnings of the Fish and Wildlife Service go back to 1871 when the federal government established the Commissioner of Fisheries. In 1896, the Division of Biological Survey was established within the Department

of Agriculture. In 1939, these functions were transferred to the Department of the Interior. Then in 1940, these functions were formally consolidated and redesignated as the Fish and Wildlife Service. Further reorganization came in 1956 when the Fish and Wildlife Act created the Bureau of Sport Fisheries and Wildlife. An amendment to this act in 1974 designated the Bureau as the U.S. Fish and Wildlife Service. Today the USFWS consists of a headquarters in Washington, D.C., eight regional offices, and over 700 field units and installations. Included are more than 470 National Wildlife Refuges, comprising more than 90 million acres, 57 fish and wildlife research laboratories and field units, 43 cooperative research units at universities across the country, nearly 135 national fish hatcheries and fishery assistance stations, and a nationwide network of law enforcement agents and biologists. The functions of the USFWS primarily includes the following:

- [1] Acquires, protects and manages unique ecosystems necessary to sustain fish and wildlife, such as migratory birds and endangered species;
- [2] As specified in the *Endangered Species Act (ESA)* (1973), as amended, and in conjunction with the *National Marine Fisheries Service (NMFS)*, determines critical habitat and develops recovery plans for protected endangered and threatened species of plants and animals;
- [3] Operates fish hatcheries to support research, develop new techniques and fulfill the public demand for recreational fishing;
- [4] Operates wildlife refuges to provide, restore, and manage a national network of lands and waters sufficient in size, diversity and location to meet society's needs for areas where the widest possible spectrum of benefits associated with wildlife and wildlands is enhanced and made available;
- [5] Conducts fundamental research on fish, wildlife and their habitats to provide better management and produce healthier and more vigorous animals; also protects fish and wildlife from dislocation or destruction of their habitats;
- [6] Renders financial and professional assistance to states, through federal aid programs, for the enhancement and restoration of fish and wildlife resources;
- [7] Establishes and enforces regulations for the protection of migratory birds, marine mammals, fish and other non-endangered wildlife from illegal taking, transportation or sale within the United States or from foreign countries; and
- [8] Communicates information essential for public awareness and understanding of the importance of fish and wildlife resources, and changes reflecting environmental degradation that ultimately will affect the welfare of human beings.

Also see *National Wildlife Refuge System*, *Endangered Species Act (ESA)*, *Endangered Species*, *Threaten Species*, and *National Oceanic and Atmospheric Administration (NOAA)*.

(United States) Forest Service (USFS) — The largest and most diverse agency of the U.S. Department of Agriculture, the Forest Service provides leadership in the management, protection, and use of the nation's forests and rangelands, which comprise almost two-thirds of the nation's federally owned lands. The creation of the Forest Service go back to 1891 when the President was authorized to establish Forest Reserves from forest and range lands in the *Public Domain*. In 1905 the responsibilities for the management and protection of these Forest Reserves was transferred from the Department of the Interior to the Department of Agriculture and the Forest Service was formally established. The Forest Reserves were then renamed National Forests. Today the Forest Services manages 156 National Forests, 19 National Grasslands, and 16 Land Utilization Projects that make up the National Forest System located in 44 states, Puerto Rico, and the Virgin Islands. Much of the nation's fresh water supply flows from National Forest System lands and insuring adequate yields of high quality water and continuing soil productivity are primary aims of the Forest Service's watershed management programs. The Forest Service manages more than 14 percent of the nation's 1.2 billion acres of forest range. This National Forest System (NFS) rangeland is managed to conserve the land and its vegetation while providing food for both domestic livestock and wildlife. The Forest Service manages fish and wildlife habitat on the National Forests and National Grasslands in cooperation with the individual states' fish and game departments. Of the 191 million acres of National Forests, 86.5 million acres are classified as commercial forests, available for, and capable of, producing crops of industrial wood. National Forest timber reserves are managed on a sustained-yield basis to produce a continuous supply of wood products to meet the nation's economic demands while maintaining the productive capacity of these lands. In 1924 the Forest Service pioneered the establishment of wilderness areas on National Forest lands. National Forest lands are a major source of mineral and energy supplies with regulatory and

management responsibilities for mineral activities shared with the Department of the Interior, Bureau of Mines. The Forest Service, with one of the world's largest wildland firefighting forces, provides direct fire protection and control for National Forest System lands as well as cooperative fire control on several million additional acres. The Forest Service is responsible for the forest management aspects of the Watershed Protection and Flood Prevention Program administered by the *Natural Resources Conservation Service (NRCS)*. The Forest Service also participates in the forestry aspects of the River Basin Program, which guides and coordinates water and related land resource planning among several federal departments. The Forest Service operates an extensive forestry research program consisting of eight Forest and Range Experiment Stations, a Forest Products Laboratory, and 75 research labs located throughout the U.S., Puerto Rico, and the Pacific Trust Territories. The Forest Service is organized into nine (9) regions as listed below (regional headquarters are in parentheses):

- [1] **Eastern Region** (Milwaukee, Wisconsin) — Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, West Virginia, Ohio, Indiana, Michigan, Illinois, Missouri, Iowa, Wisconsin, Minnesota;
- [2] **Southern Region** (Atlanta, Georgia) — Virginia, North Carolina, South Carolina, Kentucky, Tennessee, Georgia, Florida, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas;
- [3] **Rocky Mountain Region** (Denver, Colorado) — South Dakota, Nebraska, Kansas, Wyoming, Colorado;
- [4] **Northern Region** (Missoula, Montana) — North Dakota, Montana, Idaho (northern part only), South Dakota (northwest corner only), Wyoming (northwest corner only);
- [5] **Intermountain Region** (Ogden, Utah) — Nevada, Utah, Idaho (except northern portion), Wyoming (western portion only);
- [6] **Southwest Region** (Albuquerque, New Mexico) — Arizona, New Mexico;
- [7] **Pacific Northwest Region** (Portland, Oregon) — Washington, Oregon;
- [8] **Pacific Southwest Region** (San Francisco, California) — California, Hawaii;
- [9] **Alaska Region** (Juneau, Alaska) — Alaska.

(United States) Geological Survey (USGS) — An agency of the U.S. Department of Interior responsible for providing extensive earth-science studies of the Nation's land, water, and mineral resources. The USGS was established by an act of Congress on March 3, 1879, to provide a permanent federal agency to conduct the systematic and scientific "classification of the public lands, and examination of the geological structure, mineral resources, and products of national domain." An integral part of that original mission is to publish and distribute the earth-science information needed to understand, plan the use of, and manage the nation's energy, land, mineral, and water resources. Since 1879, the research and fact-finding role of the USGS has grown and been modified to meet the changing needs of the nation it serves. As part of that evolution, the USGS has become the map-making agency for the federal government, the primary source of data on surface- and ground-water resources of the nation, and the employer of the largest number of professional earth scientists. The USGS is organized into three operational Divisions: the National Mapping Division (NMD), charged with development and application of mapping and *Geographic Information System (GIS)* technology; the Geologic Division (GD), which conducts geologic mapping and research; and the Water Resources Division (WRD). The mission of the Water Resources Division of the USGS is to provide the hydrologic information and understanding needed to manage the nation's water resources to benefit its residents. Typical water resource programs sponsored by the WRD include:

- [1] Data collection to aid in evaluating the quantity, quality, distribution, and use of the nation's water resources;
- [2] Analytical and interpretive water-resources appraisals to describe the occurrence, quality, and availability of surface and ground water throughout the nation;
- [3] Basic and problem-oriented research in hydraulics, hydrology, and related fields of science and engineering;
- [4] Scientific and technical assistance in hydrology to other federal, state, and local agencies;
- [5] Development and maintenance of national computer data bases and associated Geographic Information Systems (GIS) of hydrologic data — streamflow, water quality and biology, groundwater characteristics, and water use; and
- [6] Public distribution of water-resources data and results of water-resources investigations through reports, maps, computerized information services, and other forms of release.

Programs of the Water Resources Division are funded under three types of arrangements:

- [1] *Federal Program* — funding is appropriated directly to USGS by the U.S. Congress for projects of national interest;
- [2] *Cooperative Program* — funding is shared by USGS and interested state and local agencies; and
- [3] *Other Federal Agencies (OFA) Program* — funding is supplied by federal agencies requesting technical assistance from the USGS.

The Water Resources Division's headquarters is at the USGS National Center in Reston, Virginia. Regional offices are maintained in Reston; Atlanta, Georgia; Denver, Colorado; and Menlo Park, California. With the exception of the National Research Program (NRP) centers at Reston, Denver, and Menlo Park, most of the WRD program is distributed to 51 USGS District Offices organized by state boundaries.

National Oceanic and Atmospheric Administration (NOAA) — An agency of the U.S. Department of Commerce, the National Oceanic and Atmospheric Administration was formed in 1970, but its origins may actually be traced as far back as 1807 when President Thomas Jefferson ordered a survey of the new nation's coastline. Today, NOAA has translated the United States' geographic, atmospheric, oceanic, and meteorological informational needs into an organization concentrating in the following principal areas:

- [1] ***Research and Analysis*** — NOAA researchers and scientists in the areas of oceanography, meteorology, biology, and physics explore the sea and air for new clues aimed at understanding or reversing environmental damage such as ozone depletion, the greenhouse effect, and possible global warming;
- [2] ***Satellite Imaging and Mapping*** — NOAA's satellites provide essential information for accurate weather forecasts, monitor winter snowpack conditions across the country, and gauge the health of coastal estuaries;
- [3] ***Data Compilation and Dissemination*** — The results of NOAA's data collection, satellite mapping, and research and analysis affords vast stores of information in NOAA's global data centers available for climate, oceanographic and geophysical reports vital to the public and industry;
- [4] ***Forecasting and Weather Warning*** — Through the National Weather Service (NWS), NOAA provides extensive information and warnings when severe weather threatens life and property.

The National Oceanic and Atmospheric Administration consists of a number of separate agencies to effect these research, analysis, monitoring, informational, and forecasting requirements.

- [1] ***National Weather Service (NWS)*** — The National Weather Service operates a vast network of automated weather stations around the nation equipped with sophisticated doppler radar systems on the ground as well as sophisticated satellites providing detailed imaging which provide meteorologists and citizens early warnings of severe weather conditions. In cooperation with the Federal Aviation Administration (FAA), the NWS is proceeding with establishing some 1,000 fully automated weather data collection sites, termed *Automated Surface Observing Systems (ASOS)*.
- [2] ***National Ocean Service (NOS)*** — The National Ocean Service charts and surveys America's coastal waterways, providing safe passage for commerce and recreation interests. The NOS also plays a major role in managing America's coastlines and NOAA's *Coastal Zone Management Program* strives to protect wetlands, water quality, beaches, wildlife, and other important resources and uses of our coasts. As part of the NOS, NOAA's *National Marine Sanctuaries*, the nation's underwater national parks, provide unique undersea preserves to protect important coastal resources. The NOS monitors the health of the coast and probes how our use of the nation's nearshore waters affects the environment.
- [3] ***National Environmental Satellite, Data and Information Service (NESDIS)*** — The NESDIS operates the world's largest environmental data storage and distribution facility providing extensive and highly detailed data on weather, the oceans and geophysics. The NESDIS is also responsible for NOAA's polar orbiting and geostationary satellites which provide important information on the oceans and atmosphere. Other NESDIS satellites collect images of cloud and storm patterns which are then relayed to NOAA's National Weather Service and are extensively used by the nation's meteorologists for local weather reporting and forecasting.
- [4] ***National Marine Fisheries Service (NMFS)*** — The NMFS serves as steward for America's living marine resources, conducting research necessary to manage these valuable resources and enforces

fishery regulations, maintains the wholesomeness of U.S. seafood products, and protects coastal fishery habitats and nurseries. The NMFS manages the 32 federal fishery resource plans, covering more than 230 species, and plays a key role in protecting coastal habitats, marine mammals and endangered and threatened species per the *Endangered Species Act (ESA)*.

- [5] **Office of Oceanic and Atmospheric Research** — NOAA’s scientists conduct leading edge research on weather, climate, air quality, the oceans and the Great Lakes through a network of environmental laboratories and monitoring stations as well as through university researchers supported by NOAA through the *National Sea Grant College Program* and the *National Undersea Research Program*.
- [6] **NOAA Corps** — NOAA also operates the nation’s smallest uniformed service consisting of some 400 officers commanding NOAA’s fleet of hurricane hunter aircraft and environmental research ships providing in a variety of scientific and research operations.

National Weather Service (NWS) — An agency of the (U.S. Department of Commerce) *National Oceanic and Atmospheric Administration (NOAA)*, the primary mission of the National Weather Service is to protect life and property and enhance the nation’s economy by providing warnings and forecasts of hazardous weather, including thunderstorms, flooding, hurricanes, tornadoes, winter weather, and tsunamis. The primary customer of the NWS is the private weather industry whose meteorologists receive data and information directly from the NWS and incorporate it into local news reports. The NWS also operates its own radio network; the *NOAA Weather Radio* is the sole government radio system providing direct warnings of hazardous weather conditions and natural disasters to private citizens through a network of 390 transmitters across the nation. The NWS provides short and long-range forecasts, severe weather warnings, and atmospheric data continually to private weather vendors for a fee using a telephone data transmittal system called *Family of Services*. NWS Doppler radar data is provided through the *NWS NEXRAD Information Dissemination Service (NIDS)* and is available from commercial weather vendors under an agreement with the NWS. The *NOAA Weather Wire Service* is the primary NWS telecommunications network for NWS forecasts, warnings, and other products to the mass media (TV, radio, newspaper) and emergency management agencies. It consists of a satellite communications system operated under contract by GTE/Contel. In a joint effort with the Federal Aviation Administration (FAA), some 250 NWS manual data collection field offices will be replaced with approximately 1,000 automated data collections sites, termed *Automated Surface Observing Systems (ASOS)*, thereby greatly enhancing both the timeliness and frequency of the NWS weather reporting capabilities.

(United States) Natural Resources Conservation Service (NRCS) — Formerly known as the *Soil Conservation Service (SCS)*, an agency of the U.S. Department of Agriculture, the Natural Resources Conservation Service (NRCS) had its beginnings with a 1929 emergency act of Congress in response to the famous Dust Bowl when land practices, primarily in the Midwest Farm Belt, caused extensive soil erosion and threatened the food production of the United States. Initially, ten experiment stations were established to work with Land Grant Universities to study soil erosion and ways to prevent it. As a result of these initial efforts, the Soil Erosion Service was established in 1933 to show American farmers new ways of preventing and recovering from soil erosion. In 1935 Congress changed the Soil Erosion Service into the Soil Conservation Service and made it a permanent agency of the U.S. Department of Agriculture. In 1994 the name was change to Natural Resources Conservation Service to denote a broader role of responsibility in natural resource conservation. Presently, the NRCS works in three primary areas: (1) soil and water conservation; (2) resource inventories; and (3) rural community development. These activities are covered under a number of direct NRCS programs, involving only NRCS resources, and NRCS assisted programs, involving the NRCS and at least one other government agency.

Direct NRCS Programs:

- [1] Technical Assistance
- [2] Great Plains Conservation Program
- [3] Watershed Protection, Long-Term Contracts (Public Law 566)
- [4] USDA Compliance Plans

NRCS Assisted Programs:

- [1] Agriculture Conservation Program
- [2] Water Bank Program
- [3] Colorado River Salinity Control Program

- [4] Conservation Reserve Program
- [5] Water Quality Incentive Program
- [6] Emergency Conservation Program
- [7] Wetlands Reserve Program

Newlands (Irrigation) Project [Nevada] — One of the first Department of the Interior, *U.S. Bureau of Reclamation (USBR)* (U.S. Reclamation Service at that time) irrigation projects completed in the United States. The project was authorized originally as the *Truckee–Carson Irrigation Project* on March 14, 1903 by the Secretary of the Interior and was renamed the Newlands Project in 1919 in honor of Nevada Senator Francis G. Newlands, who originally sponsored the 1902 Reclamation Act. Derby Dam, located on the lower Truckee River, was completed in June 1905 to divert waters from the Truckee River Basin to the Carson River. In August 1906 the Truckee Canal was completed between the Truckee and Carson rivers. Waters began flowing through this canal in 1906 while 1907 proved to be the first full year of irrigation. Lahontan Reservoir was completed in 1915 on the Carson River to receive Truckee River waters through the Truckee Canal and provided a more stable supply of water for irrigation needs to a defined service area in the Town of Fernley and the lower Carson River Basin near the City of Fallon, Churchill County, in western Nevada. The project originally (1902) called for the possible irrigation of up to 450,000 acres; however, this figure was continually reduced, finally to approximately 73,000 acres when it was found, after much legal controversy, that the full use of the waters of Lake Tahoe would not be available. Soon after the project was authorized, this figure of irrigable acreage was reduced to 210,000 acres in 1904, to 172,000 acres in 1910, and to 97,400 acres in 1925, of which 73,301 acres were determined to be irrigable in 1926. The project’s service area currently consists of approximately 73,800 acres of land that are entitled to receive irrigation water, of which only approximately 58,000–60,000 acres are actually irrigated. Water for these lands is supplied from the Truckee and Carson rivers. Water from the Truckee River is diverted to the Carson River Basin at Derby Dam via the 32.5–mile long Truckee Canal. Since its completion, the Newlands Project has been embroiled in controversy resulting from intense competition for the limited water from these two rivers. Controversy has centered on the actual number of acres with legal water rights, the classification of irrigation lands as *Bench Land* or *Bottom Land* (which determines the applicable water duty — 4.5 AF/year or 3.5 AF/year, respectively), the maximum allowable water duty, the efficiency of project operations, and the volume of water diverted from the Truckee River’s terminus, Pyramid Lake. In 1967, *Operating Criteria and Procedures (OCAP)* were first instituted in order to maximize the use of Carson River flows to satisfy project requirements and to minimize water diversions from the Truckee River at Derby Dam. Even so, controversy continued and in 1973, the Federal District Court in Washington, D.C. ordered the implementation of a new OCAP for this project. Amid continued controversy, in 1985 the Bureau of Reclamation published an *Environmental Assessment (EA)* which examined an alternative OCAP. Based on comments to this 1985 EA, the Bureau of Reclamation made the decision to initiate an *Environmental Impact Statement (EIS)*. A final OCAP was approved in 1988. *Public Law 101–618*, enacted on November 16, 1990, (also referred to as the *Negotiated Settlement*), requires the current OCAP to remain in effect at least through December 31, 1997, and is intended to allow all principal parties to develop a new *Truckee River Operating Agreement (TROA)*. A major issue has been to secure an adequate water supply (both as to quantity and quality) to preserve Pyramid Lake and protect its environmentally sensitive fish species, the endangered cui-ui (*Chasmistes cujus*) and the threatened Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*).

(The) Resources Agency [California] — The mission of the California Resources Agency is to oversee the state’s activities relating to the conservation, management, and enhancement of California’s natural and cultural resources; including land, wildlife, water, and minerals. The administrative head of The Resources Agency, the Secretary for Resources, is a member of the Governor’s Cabinet, serves as the Governor’s representative on the Agency’s boards and commissions, and oversees administration of the *California Environmental Quality Act (CEQA)*. The California Resources Agency is comprised of the following entities:

- California Coastal Commission
- Department of Boating and Waterways
- Department of Conservation
- California Conservation Corps
- Department of Fish and Game

- Department of Forestry and Fire Protection
- Department of Parks and Recreation
- Department of Water Resources
- California Energy Commission
- California State Lands Commission
- San Francisco Bay Conservation and Development Commission
- California Tahoe Conservancy
- Colorado River Board of California
- Coachella Valley Conservancy
- Santa Monica Mountains Conservancy
- State Coastal Conservancy
- State Reclamation Board

Other special programs administered by The Resources Agency include:

- CERES, the California Environmental Resources Evaluation System
- California Biodiversity Council
- California Rivers Assessment
- CAL–FED Bay–Delta Program
- Natural Community Conservation Program
- California Ocean Resources Management Program

Southern Nevada Water Authority (SNWA) [Nevada] — An agency created in 1991 through a cooperative agreement among the seven regional water and wastewater agencies in southern Nevada. The purpose of the SNWA was to address water resource management and water conservation on a regional basis through *Integrated Resource Planning (IRP)* techniques and, through such efforts, plan, manage, and develop additional supplies of water for southern Nevada. The seven regional agencies comprising the SNWA include:

- [1] Big Bend Water District (Laughlin)
- [2] City of Boulder City
- [3] City of Henderson
- [4] City of Las Vegas
- [5] City of North Las Vegas (serving portions of unincorporated Clark County and the City of Las Vegas)
- [6] Clark County Sanitation District
- [7] Las Vegas Valley Water District (LVVWD, serving the City of Las Vegas and portions of unincorporated Clark County)

Potable water in the Las Vegas region is provided by five different water purveyors: Big Bend Water District, Boulder City, City of Henderson, Las Vegas Valley Water District (LVVWD), and the City of North Las Vegas. Wastewater service is provided by four different agencies: Boulder City, City of Henderson, the City of Las Vegas and Clark County Sanitation District. Also see *Southern Nevada Water System (SNWS)*.

Southern Nevada Water System (SNWS) [Nevada] — On October 22, 1965, President Lyndon B. Johnson signed legislation authorizing construction of the Alfred Merritt Smith Water Treatment Facility and the Robert B. Griffith Water Project. These two projects form the Southern Nevada Water System, which supplies municipal and industrial water to the Las Vegas Valley Water District, Nellis Air Force Base and the cities of Boulder City, Henderson, and North Las Vegas. The Southern Nevada Water System refers to the system of treatment and transmission facilities that diverts raw Colorado River water from Lake Mead, and delivers potable water to three major retail water purveyors in the Las Vegas Valley, as well as Nellis Air Force Base and Boulder City. The treatment facility, located on the shores of Lake Mead, is known as the Alfred Merritt Smith Water Treatment Facility (AMSWTF). The transmission facilities, which divert water from Lake Mead to the treatment plant and then deliver treated water to Boulder City through the River Mountains tunnel and throughout the Las Vegas Valley, are referred to as the Robert B. Griffith Water Project. Treatment facilities were constructed in two stages by the State of Nevada acting through its Colorado River Commission. Transmission facilities were also constructed in two stages by the federal government through the U.S. Bureau of Reclamation. The state and federal facilities work together to form the Southern Nevada Water System which, as of January 1, 1996, is controlled by the *Southern Nevada Water Authority (SNWA)*. SNWA in turn employs the Las Vegas Valley Water

District (LVVWD) as its operating agent. The principal facilities of the SNWS are detailed below:

Treatment Facilities – Treatment facilities currently have the capacity to treat 600 million gallons per day (MGD). Until completion of the SNWS Phase II Improvements in 1999, delivery capability is 480 MGD. During 1997 the treatment plant produced an average of 314.8 MGD. The maximum day production was 469.5 MGD. The treatment process involves disinfection, aeration, flocculation, filtration and post-treatment. Disinfection is accomplished primarily by the application of chlorine; however, new facilities will employ ozonation for disinfection as well. Aeration is done primarily to improve aesthetic qualities of the water. Flocculation is a chemical process that causes minute particles in the water to coagulate into larger particles that can be filtered out. Filtration is provided by 26 filters, each with 2800 square feet of surface area; the filter media is composed of anthracite coal, silica sand, and aggregate. Filter performance is monitored and, when it declines below acceptable limits, the filter is backwashed. All backwash water is reclaimed and recycled to the head of the facility; no backwash water is returned to Lake Mead. Sludge captured in the backwash process is dried and disposed of in a landfill. Post-treatment is the addition of a small amount of chemicals to retard corrosion, and additional chlorine if necessary, to prevent bacteriological regrowth in the distribution systems. Water quality is assured by testing samples taken from over 260 different locations throughout the system. Samples are tested for chemical, microbiological, and other contaminants. Lake Mead has proven to be a very high quality water source which, along with effective design and operation of the treatment facilities, allows SNWS to provide water that exceeds all applicable standards to the over one million people in the Las Vegas Valley.

Transmission Facilities – Transmission facilities begin with the 13-foot diameter intake tunnel, which diverts Lake Mead water from 150 feet below its surface and conveys it through Saddle Island to Pumping Plant #1. The pumping plant lifts the water up to the raw water aqueduct, which conveys it to the AMSWTF. Treated water is lifted 708 feet to the River Mountains Tunnel, where it flows 4 miles by gravity to the Las Vegas Valley. After emerging from the tunnel, water is diverted to various points throughout the valley, where it is handed off to the facilities of retail purveyors at 17 rate-of-flow control stations. Pumping plants are used to move the water uphill, and rate-of-flow control stations are used to regulate and measure the flow into customers' storage facilities. Water from the AMSWTF is also conveyed to Boulder City by five pumping plants and eight miles of pipelines. Once it enters the system, treated water is never exposed to open air until the consumer uses it. SNWS consumes approximately 10 percent of the power generated by Nevada Power Company, making it the largest single customer.

Major Components of the Transmission Facilities – (1) Intake Tunnel: 1400 feet long, 13 feet in diameter; (2) 6 miles of raw and treated water aqueducts, 10 feet in diameter, and associated surge tanks; (3) River Mountains Tunnel: 4 miles long, 12 feet in diameter; (4) 14 major pumping plants and associated electrical equipment; (5) 18 major lateral systems totaling over 80 miles of pipeline as large as 12 feet in diameter; (6) 17 rate-of-flow control stations and associated regulating tanks.

State Water Resources Control Board (SWRCB) [California] — The water rights and water permitting agency of the State of California. The SWRCB consists of five members (to include a Chairman and Vice Chairman) whose responsibility it is to “protect water quality and allocate water rights” within the State of California. To assist in these functions, the SWRCB is served by a staff to include an Executive Director, a Chief Deputy and nine (9) Regional Board Executive Officers serving the regions of:

- [1] North Coast Region;
- [2] San Francisco Bay Region;
- [3] Central Coast Region;
- [4] Los Angeles Region;
- [5] Central Valley Region;
- [6] Lahontan Region;
- [7] Colorado River Basin Region;
- [8] Santa Ana Region; and
- [9] San Diego Region.

Tahoe Regional Planning Agency (TRPA) [California and Nevada] — A bi-state regulatory agency created in July 1968 as part of a provisional California–Nevada Interstate Compact developed by the joint California–Nevada

Interstate Compact Commission which was formed in 1995. The TRPA was the first bi-state regional environmental planning agency in the United States. The TRPA was intended to oversee land-use planning and environmental issues within the Lake Tahoe Basin and is dedicated to preserving the beauty of the region. Today, the TRPA leads the cooperative effort within the basin to preserve, restore, and enhance the unique natural and human environment of the region and is a leading partner in a comprehensive program which monitors water quality, air quality, and other threshold standard indicators. The TRPA's Environmental Thresholds Carrying Capacities (ETCC) programs are designed to address the following thresholds:

- Water Quality
- Air Quality
- Soil Conservation
- Vegetation
- Fisheries
- Wildlife
- Scenic Resources/Community Design
- Recreation
- Noise

The structure of the TRPA consists of a 15-member Governing Board which sets TRPA policy, oversees administration of the agency, approves all amendments to the Lake Tahoe Basin Regional Plan and reviews major project applications. The Governing Board is advised by a 19-member Advisory Planning Commission made up of area planning and natural resource management professionals, and lay persons. The Executive Director directs approximately 50 staff members in the following principal functional areas: (1) Environmental Education; (2) Environmental Improvement Program (EIP) Facilitation; (3) Environmental Compliance Division; (4) Project Review Division; and (5) Long Range Planning Division. Representation on the TRPA's Governing Board is as follows:

- [1] Governor of California Appointee (California);
- [2] Governor of California Appointee (California);
- [3] California Assembly Speaker Appointee (California);
- [4] California Senate Rules Committee Appointee (California);
- [5] El Dorado County Appointee (California);
- [6] Placer County Appointee (California);
- [7] City of South Lake Tahoe Appointee (California);
- [8] Governor of Nevada Appointee (Nevada);
- [9] Nevada Government Appointee (Nevada);
- [10] Nevada Department of Conservation & Natural Resources Appointee (Nevada);
- [11] Washoe County Appointee (Nevada);
- [12] Douglas County Appointee (Nevada);
- [13] Carson City Appointee (Nevada);
- [14] Nevada at-Large Appointee (Nevada);
- [15] Presidential Appointee (United States)

In late 1995 the TRPA created the Shorezone Partnership Committee of 20 organizations and entities to lessen the problems among those interested in the future development of Lake Tahoe. Those represented included: California and Nevada state lands; California and Nevada state parks, California Department of Fish and Game, California Tahoe Conservancy, Lahontan Regional Water Quality Control Board; League to Save Lake Tahoe; Nevada Division of Wildlife; Tahoe Lakefront Owners Association; TRPA; Tahoe Research Group; Tahoe-Sierra Preservation Council; U.S. Army Corps of Engineers; U.S. Forest Service; commercial property owners; Lake Tahoe marinas; Lake Tahoe tour-boat operators; other private property owners; and Lake Tahoe Basin recreation concessionaires.

Truckee-Carson Irrigation District (TCID) [Nevada] — The agent of the U.S. Department of the Interior *Bureau of Reclamation (USBR)* which serves the interests of the water-righted agricultural water users in the *Newlands (Irrigation) Project*, located in Churchill County, Nevada. The Newlands Project, originally named the Truckee-Carson Irrigation Project, was America's first federal reclamation project completed under the Reclamation Act of 1902. The Truckee-Carson Irrigation District has operated the Newlands Project since 1926

and is responsible for dispersing some 320,000 acre-feet of water from the Carson and Truckee rivers during normal water years. TCID is responsible for the operation of the Lake Tahoe Dam at the outlet to Lake Tahoe at Tahoe City in Placer County, California, Derby Dam on the lower Truckee River in Washoe County, Nevada, Lahontan Dam on the lower Carson River in Churchill County, Nevada, and, some six miles below Lahontan Dam, the Carson Diversion Dam which distributes the releases from Lahontan Reservoir into the project's principal "T" (T-Line) and "V" (V-Line) primary distribution canals. Within the Newlands Projects, there are 102 miles of main canals, 312 miles of irrigation laterals, an extensive system of private ditches, 345 miles of drainage ditches, and numerous diversion dams and regulating reservoirs. TCID offices are located in Fallon, Nevada (Churchill County), and its operations are managed by a Project Manager, a board of seven members, and approximately 50 full-time employees. In 1978 the USBR canceled the contract under which TCID had operated the project since 1926. The cancellation was in response to a refusal of the farmer-dominated organization to follow federal water conservation guidelines, or *Operating Criteria and Procedures (OCAP)*. TCID has been operating under a temporary contract since 1984.

Walker River Irrigation District (WRID) [Nevada] — The litigation of *Pacific Live Stock Company v. Antelope Valley Land and Cattle Company* and the issuance of *Decree 731* caused a number of farmers in Smith and Mason valleys to band together in April 1919 and form the Walker River Irrigation District (WRID). WRID included all irrigated areas in Nevada on the East Walker River, the West Walker River, and the main Walker River, except those areas within the Walker River Indian Reservation. WRID moved to obtain the financing and rights to both Bridgeport and Topaz reservoir sites, sites which had earlier been selected and surveyed by the U.S. Reclamation Service (USRS, currently the U.S. Bureau of Reclamation, USBR). The water rights for Topaz Reservoir were obtained from the liquidation of the Antelope Valley Land and Cattle Company. Although WRID was established as a Nevada agency serving lands entirely within Nevada, its reservoirs would be located either entirely in California (Bridgeport Reservoir) or partially in California and Nevada (Topaz Reservoir). Funding for dam and reservoir construction and operation was obtained privately with water recipients obligated to pay off the debt. Initial funding was held down as WRID assumed no responsibility for the construction or maintenance of irrigation canals, ditches, or laterals.

Water Alliances For Voluntary Efficiency (WAVE) — A water conservation program conceived by the U.S. Environmental Protection Agency (EPA) in December 1992 and designed to help increase water efficiency in U.S. lodging facilities. The program encourages participating hotels to install water efficient technologies for bathroom fixtures, dish washing and laundry facilities, cooling towers, and landscaping. The program's goal is to reduce water use and associated energy consumption, help inform hotel guests and employees about the importance of water conservation, and help hotels realize a monetary savings for their efforts. Program components consist of technical assistance, research material availability, computer software programs to survey water use and evaluate options, and public recognition of participation.