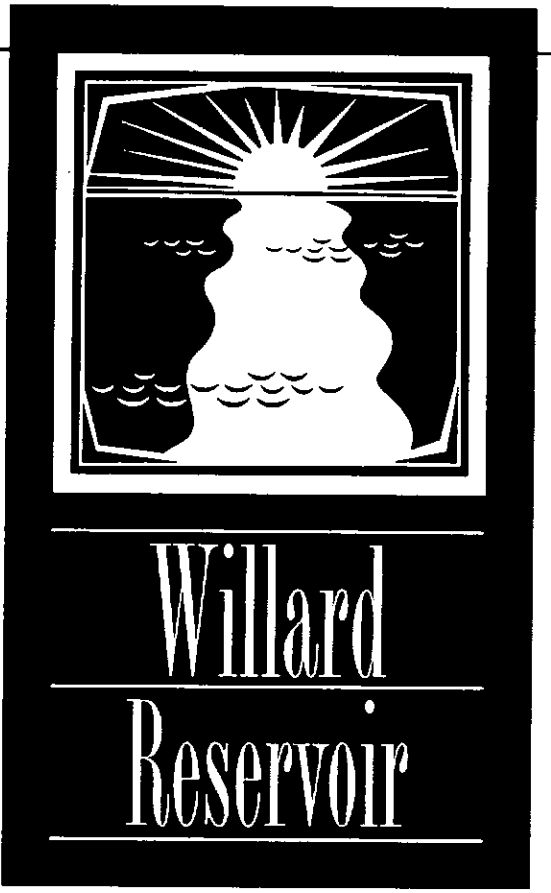


Willard Reservoir

Resource Management Plan

April 2000

U.S. Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Provo, Utah

Prepared By
The Bear West Consulting Team
145 South 400 East
Salt Lake City, UT 84111

This Resource Management Plan was prepared by the Bear West Consulting Team in cooperation with and for the Department of the Interior, Bureau of Reclamation, Upper Colorado Region, under Contract No. 1425-2-CA-40-12580, entitled *Resource Management Planning* and under Delivery Order No.1425-2-PD-40-12580-008,entitled *Preparation of Resource Management Plan for Willard Reservoir.*

PRO-FONSI-00-002

FINDING OF NO SIGNIFICANT IMPACT

Willard Reservoir Resource Management Plan
Weber Basin Project, Utah

United States Department of the Interior
Bureau of Reclamation

Upper Colorado Region
Provo Area Office
Provo, Utah

Recommended by:

Kerry Schwartz
Environmental Compliance Team Leader, Provo Area Office

April 10, 2000
Date

Concur:

Larry Flaharty
Manager, Resource Management Division, Provo Area Office

April 10, 2000
Date

Recommended by:

For Bruce C. Barrett
Area Manager, Provo Area Office

April 11, 2000
Date

Decision

The Bureau of Reclamation (Reclamation) has determined that implementing Alternative 2- Proposed Action Alternative for the Resource Management Plan (RMP) concerning Willard Reservoir will not have a significant impact on the quality of the human environment and that an Environmental Impact Statement is not required. This decision has been based on thorough review of the public comments received and the environmental impacts as described in the Draft Environmental Assessment of the Willard Reservoir Resource Management Plan (EA) [Reference Number: PRO-EA-00-001]. This decision is in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Council on Environmental Quality's Regulation for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR parts 1500-1508).

Proposed Action Alternative

Reclamation has decided to implement Alternative 2- Proposed Action Alternative as described in the EA. Alternative 2 prescribes management of Willard Reservoir that will provide year-round recreation opportunities while protecting the water quality of the reservoir, cultural resources that are present in the project area, and wildlife habitat including the bald eagle habitat. Visitor facilities will be renovated and built to provide quality recreation without adversely impacting the other resources in the project.

Other Alternatives Considered

Alternative1- "No Action" Alternative - Under this alternative, the present management of the area would continue. Existing Federal resource protection regulation would apply, but there would be no new management direction specific to this reservoir, and no new construction would occur.

Alternative 3 - This alternative would implement management practices similar to the Proposed Alternative to protect the water quality along with the natural and cultural resources in the area. However, marina facilities would be focused in the South Recreation Area.

Summary of Impacts

Implementation of the selected alternative for Willard Reservoir will have the following impacts:

Environmental Justice

- No minority or low income populations would be disproportionately affected by implementation of the Proposed Action Alternative.

Water Resources

- *Erosion* - With the increased enforcement of off-road vehicle (OHV) use in the area and improved roads in the South Recreation Area, erosion should decrease. Also, additional erosion control measures would be implemented.

- *Storm Drainage* - Neighboring jurisdictions would be encouraged to construct and maintain detention basins for stormwater runoff. The best case scenario would be removal of 8,000 pounds of sediment, 13 pounds of lead, and 13 pounds of zinc per year.
- *Boating* - With the refueling of boats occurring only at designated docks, the frequency of spills should decrease.
- *Construction* - Due to the construction that will take place, total suspended solids (TSS) may increase, but with the administration of best management practices, the increase will be minimized. This may include control pollutants by use of sediment and erosion controls, wastewater and stormwater management controls, construction site management practices, and other controls, including state and local control requirements.

Recreation and Visual Quality

- *Recreation Resources* - Total visitors at one time would be limited to the number of available parking spaces. This should be approximately 5,700 people at one time. This will decrease the congestion in the recreation areas. Also, the development of new and rehabilitation of existing facilities will enhance the visitors' experience.
- *Visual Resources* - There is potential to raise the level of "natural appearance" as areas are delineated, controlled, and dispersed, but the visual quality objective (VQO) will unlikely change.

Natural and Cultural Resources

- *Wetlands and Riparian Areas* - Wetlands would be avoided in any construction or rehabilitation. If the ditch in the South Recreation Area parking lot is piped, it could result in a detrimental impact on the cottonwood trees which serve as habitat for bald eagles.
- *Vegetation* - There would be a loss of 13 acres of Altered Land Habitat Type-Undeveloped in the Cottonwood Area which would be replaced with landscaping of native and drought tolerant plant species. Also, 11 acres of Farmed Land would be lost due to the expansion of the South Recreation Area parking lot.
- *Wildlife* - Wildlife would benefit from better management that would minimize effects to them and their habitats, including restricting boat launching, camping, parking, and exclude OHV access to critical habitats.
- *Threatened and Endangered Species* - Proposed construction and development within the area would avoid disturbance to bald eagles and their habitat.
- *Fishery* - Impacts to the fishery would be lessened with the limit on parking and boating. However, with the South Recreation Area marina facilities open in the winter, fishing pressure may increase during the winter months.
- *Pest Management* - Weed and pest infestations would likely pose less of a threat to wildlife and their habitat due to improved cooperation and coordination between agencies and formalized agreements regarding weed and pest eradication responsibilities and methods.
- *Cultural Resources* - The proposed management of the area will increase protection of cultural resources in the area. A Memorandum of Agreement will be

drafted between Reclamation and the Utah State Office of Historical Preservation to determine how cultural resources will be handled in the event of an inadvertent discovery situation for Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) and to implement a cultural resource monitoring plan for the project. Additional cooperative agreements between Reclamation and other involved parties concerning education and interpretive programs would be pursued to provide the public with better understanding of the importance of the cultural resources in the area.

Land Management

- This management would improve trail and internal road facilities that would help alleviate the current road, circulation, and parking needs. OHV use would also be enforced more in the project area.

Environmental Commitments

The environmental commitments prescribed for impacts due to implementation of the Alternative 2- Proposed Action Alternative will be completed as described in Chapter 6 of the EA. These components have been incorporated into the RMP management direction.

Continued Public Involvement

In addition to the public involvement discussed in Chapter 5 of the EA, a public meeting was held on February 22, 2000, from 6:00 to 8:00 p.m. at the Weber County North Branch Library in North Ogden, Utah. Thirteen people attended the meeting. A public notice announcing the meeting was sent to the media, and afterwards, a summary of the public meeting was sent to the media. Concerns addressed in the meeting included security, condition of access roads, use of boating beacons, availability of restroom facilities, vehicle parking, and camping areas.

On February 9, 2000, the Draft Environmental Assessment for Willard Reservoir was mailed for public comment to various federal, state and local agencies as well as the public. Ten written comments were received concerning the EA. Some of the comments expressed are summarized below along with Reclamation's response.

Summary of Written Comments Received	*Response to Written Comments*
I am opposed to prohibiting saddle animals in the entire area. There are many areas where this form of recreation is appropriate and valid.	Reclamation has set a precedence at other reservoirs to prohibit the use of saddle and pack animals on Reclamation lands to protect water quality from potential contaminants. Even though this is a cautious and conservative approach to water protection, Reclamation believes it is the most prudent action. However, since saddle animals have been used in the past in this project area, the use will be phased out over a 5 year period.

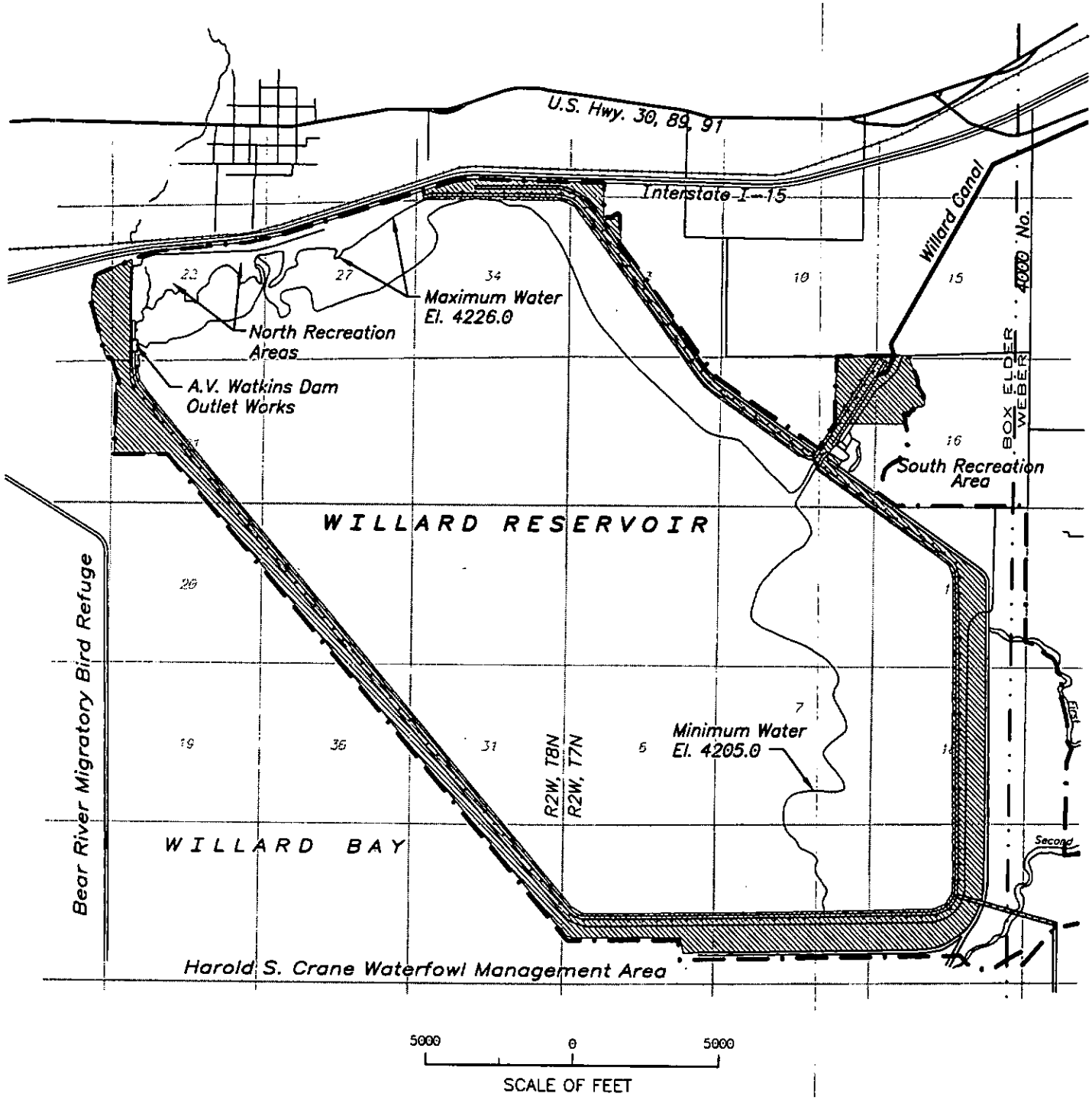
An increase in sewage can potentially effect water quality depending on how it is removed. We recommend including a description of how this sewage will be removed and an evaluation of the resulting environmental consequences.	Currently, a lagoon system is used in the North Recreation Area along with the use of vault toilets that are pumped and a drain field in the South Recreation Area. The design and construction of new sanitation facilities will be in accordance with current sanitation requirements of federal, state and local laws. The environmental consequences were evaluated in the EA.
The Primary Jurisdiction Zone for the inlet channel, as delineated on Map 1.1 of the EA, is insufficient for Weber Basin Water Conservancy District's maintenance and storage.	The Primary Jurisdiction Zone has been expanded to include part of the South Recreation Area that does not have facilities or current recreation opportunities. This is shown in the Willard Reservoir Primary Jurisdiction Zone map.
The Cottonwood Area is important as habitat for the bald eagle and other raptors in the area. We are opposed to development of that area into a campground.	Reclamation understands the importance of the bald eagle and its habitat in the area, and we are committed to protect them. The design of the campground and its future management is sensitive to the raptors in the area. In fact, the purpose of the campground is to enhance the interpretive opportunity already provided by the existing parking lot.

All comments received were appreciated, however, some comments not mentioned above were out of the scope of the current EA or already addressed in the RMP management direction.

Changes in the EA and RMP

The Primary Jurisdiction Zone has been expanded to include the part of the South Recreation Area that does not have facilities or current recreation opportunities. As stated in current contracts, the Primary Jurisdiction Zone is the lands that have reserved priority use by the United States for the operation and maintenance of the dam and appurtenant structures. The expansion of the Primary Jurisdiction Zone is to assure a proper amount of area for necessary maintenance activities associated with existing operations. The new Primary Jurisdiction Zone is shown in the Willard Reservoir Primary Jurisdiction Zone map.

In the EA, it is stated that boat fueling will only occur in the marinas. This has been changed to boat fueling will only occur at designated areas. These areas may or may not be in the marinas, but they will be designated and properly signed. The impacts concerning boat fueling would not change.



EXPLANATION

- Primary Jurisdiction Zone
- Reservoir Area Boundary
- Willard Dike
- County Line

WILLARD RESERVOIR
PRIMARY JURISDICTION ZONE

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Willard Reservoir Area Wide Management Direction

Willard Reservoir Specific Area Management Direction

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MAP

Chapter 1
Introduction

INTRODUCTION

This Resource Management Plan (RMP) for Willard Reservoir, in Weber County and Box Elder County, Utah provides management direction necessary to protect the rights of involved contracts, legislation, and agencies while identifying and scheduling measures necessary to achieve desired future conditions of the resources. Management direction in the form of goals, objectives, standards and guidelines, sets the stage for management actions, activities and uses which affect water, recreation, natural and cultural resources, partnerships and lands operations. Direction is applied plan-wide and to site-specific areas. Site specific areas lend themselves to suitable unique resource management and production. Monitoring and evaluation requirements are intended to assure conformance with requirements, quality and good stewardship.

The 10 to 15 year RMP duration is subject to certain contracts, agreements and to Reclamation instructions and policy. Actions that may take place are identified, but may not be assured, because of specific site conditions, changes in budgets, changes in economic conditions, and changes in laws and regulations.

MISSION

The Bureau of Reclamation (Reclamation) was created within the Department of Interior by the Reclamation Act of 1902. The purpose of the Act was to reclaim the arid west and to provide economic stability in 17 western states by developing irrigation projects. Over the years, single purpose projects gave way to the development and construction of multipurpose projects.

The mission of the Bureau of Reclamation is to manage, develop and protect water and related resources in an environmentally sound manner, in the interest of the American public.

The vision statement of the Upper Colorado Region is to enhance the quality of life through excellence in resource management.

HISTORY

Willard Reservoir is located about 12 miles north of Ogden. Most of the area lies within Box Elder County, Utah with the extreme southern portion of the project area extending into Weber County. The reservoir and surrounding project area is located within T8N, Ranges 2 and 3 West and T9N, Ranges 2 and 3 West.

In the late 1940s, it became apparent that the substantial population increase in Utah, as a result of World War II, was permanent, creating a significantly large water demand. The Weber Basin Project was then authorized by Act of Congress on August 19, 1949 (63 Stat. 677) for the diversion, storage and distribution of water of the Weber River and its tributaries and other sources.

Willard Reservoir, the lowest elevation storage facility of the Weber Basin Project, was completed in 1964. It collects flows that can't be stored by upstream reservoirs and winter releases through power plants. It is used to manage delivery of irrigation water to low lying project lands east of the Great Salt Lake. The primary purposes of Willard Reservoir are storage and delivery of water, recreation, and fish and wildlife.

The reservoir is an off-channel, fresh water, storage facility. Storage water is received via the Slaterville Diversion Dam on the lower Weber River and the eight mile long Willard Canal. The only live stream flowing into the reservoir is Willow Creek. Water for delivery is pumped from the reservoir by two pumps back into the Willard Canal where it flows back to the Slaterville Diversion Dam on the Weber River and the Layton Pumping Plant intake channel. The water is then pumped up into the Layton Canal which carries it another nine miles south for distribution into laterals for irrigation of project lands. Water storage, pumping, and delivery and the operation and maintenance of project works are the responsibility of the Weber Basin Water Conservancy District (Weber Basin) under a 1952 general contract between Reclamation and Weber Basin.

PLAN SCOPE AND AREA DESCRIPTION

The scope of this RMP applies to the lands, resources, and public uses of the Willard Reservoir project area comprising 12,593 acres as displayed on Map 1.1. Total project land area (surface acreage not inundated at full pool) is 2,673 acres.

Willard

U.S. Hwy. 30, 89, 91

Interstate I-15

Willard Canal

4000 No.

BOX ELDER
WEBER

3900 West

22 27 34 10 15 16

Maximum Water
El. 4226.0

North Recreation
Areas

A.V. Watkins Dam
Outlet Works

South Drain

South Recreation
Area

WILLARD RESERVOIR

Bear River Migratory Bird Refuge

20 1

19 30 31 6 7

Minimum Water
El. 4205.0

South Drain

First Salt Creek

Second Salt Creek

Mud Flats

WILLARD BAY

3000 0 3000 6000
SCALE OF FEET

Harold S. Crane Waterfowl Management Area

G.S.L. Canal

N

EXPLANATION

- Primary Jurisdiction Zone
- Willard Bay Wildlife Management Area
- Recreation Areas
- Natural Area Outside of Primary Jurisdiction Zone
- Reservoir Area Boundary
- Willard Dike
- County Line

NOTE

1. This drawing is based upon U.S.B.R. Drawing No. 526-412-6491 and U.S.G.S. Quad. Maps.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
PROVO AREA OFFICE
PROVO - UTAH

WILLARD RESERVOIR
GENERAL AREA
MAP 1.1

JANUARY 2000

The Willard Reservoir project area includes the reservoir itself, a dike that contains the reservoir, and surrounding lands that include public use and recreation areas as well as lands managed for their wildlife values. The reservoir is contained by the Arthur V. Watkins Dam and a 36 foot-high, 14.5 mile-long dike. The reservoir has a capacity of 215,000 acre feet at the maximum water level of 4,226 feet elevation and a 19 mile shoreline. When full, the reservoir water surface is 9,920 acres and only the northeastern shore has a natural appearing shoreline. The rest of the reservoir is surrounded by dike. At full pool, the fresh-water reservoir exceeds the elevation of the Great Salt Lake and the northwestern portion of the reservoir overlooks the water of adjacent Willard Bay. When reservoir storage drops, the shoreline of the Great Salt Lake is exposed on the south and southeasterly portions of the reservoir. At the minimum water level, the reservoir's capacity is 17,000 acre feet at an elevation of 4,205 feet and a water surface area of 7,200 acres.

Willard Reservoir is bounded on the east by private lands, utility corridors, and rights-of-way for Interstate 15, and the Union Pacific Railroad. On the south, it is bounded by private lands and on the west by the State of Utah's Harold S. Crane Waterfowl Management Area. On the north and northwest, it is bounded by the Great Salt Lake (State of Utah Sovereign Lands). The U.S. Fish and Wildlife Service (USFWS) administered Bear River National Migratory Bird Refuge is a short distance north of the project area.

The RMP addresses resource management activities on the Reclamation lands and the water surface of the reservoir. However, the RMP does not address the water operations of Willard Bay Reservoir.

MANAGING ENTITIES

Through contracts, agreements, and memorandums of understandings, administrative authority for certain resources and facilities is shared by Reclamation with Weber Basin Water Conservancy District, the Utah Division of Parks and Recreation (State Parks) and the Utah Division of Wildlife Resources (UDWR). Reclamation is the owner of the project. Weber Basin administers care, operation, and management of the water related functions. UDWR administers fish and wildlife aspects consistent with Utah State Law. By agreement with Reclamation, State Parks administers recreation functions in specific areas and UDWR manages wildlife and habitat within the Willard Bay Wildlife Management Area.

PLAN DEVELOPMENT

This Resource Management Plan is the selected alternative of the companion Environmental Assessment of the Willard Reservoir Resource Management Plan (EA) and is based on the various considerations that have been addressed in the EA. The planning process and the analysis which were used in developing the RMP, as well as the other alternatives that were considered, are described or referenced in the EA. The Environmental Assessment describes the alternatives considered in arriving at the RMP and discloses the environmental consequences of implementing the RMP and the alternatives considered. The EA is on file at Reclamation's Provo Area Office.

PUBLIC INVOLVEMENT

In February 1997, the public involvement process was initiated to provide opportunities for the public to express its interests, concerns and perspective during the initial stages of the planning process. The goal was to contact as many interested people as possible and to encourage their active participation in:

- Determining the significant resource management and environmental issues that the RMP should address,
- Identifying the goals and objectives of the plan, and
- Developing potential alternative means and measures to achieve the goals and objectives.

The public involvement process consisted of three main components:

- Contacts with management agencies,
- Coordination with the affected jurisdictions, and
- Public scoping through media announcements, mailings of a scoping notice, and public meetings.

The EA was sent for review and comment to those that had participated during the planning process including agencies, interest groups, and individuals. Copies of the mailing list can be found in the Project File. A public meeting to review the EA was held on February 22, 2000 at the North Weber County Branch Library.

A list of individuals that participated in the public meeting, or provided written or oral comments during the public involvement process, and further information on the public process can be found in the project file. The Finding of No Significant Impact (FONSI) was issued in April 2000 and is included in this document. Modification of the EA is discussed in the FONSI.

Issues

The Resource Management Plan addresses resource management problems and issues identified by Reclamation, affected jurisdictions, and the public. The public involvement process during the development of the EA identified five issue areas the RMP needed to address which are partnerships, water resources, recreation and visual resources, natural and cultural resources and land management.

Partnerships

Fish and Wildlife Resource Partnerships

Cooperation among managing agencies to make improvements in the fishery, and coordination with UDWR and the Harold S. Crane Waterfowl Management Area are issues.

Law Enforcement

The extreme southwestern portion of the project area is remote and does not have adequate road maintenance, monitoring of visitor activities, or law enforcement. There are concerns about too much trash and litter both in the use areas and in areas where anglers fish off the dike. Users are interested in more successful enforcement of regulations.

Trespass cattle in the North Recreation Area and campgrounds are a nuisance to park users. Continued enforcement (citations) and efforts to cooperate with livestock owners are needed.

Public Information

The public would like users to be better informed and to practice better boating etiquette, especially personal watercraft (PWC) operators. Users would also like to be alerted about problems they may encounter at the reservoir.

There are also opportunities for development of public education/information programs and facilities regarding Indian burials and cultural sites at Willard Reservoir.

Volunteers
Opportunities to better encourage and utilize volunteer organizations and interest groups is an issue.

General Partnerships
There are concerns about road maintenance and control of vehicle use in the south/southwestern portion of the project area (Also see Land Management). Improved coordination and cooperation on road maintenance and Off-Highway Vehicle (OHV) enforcement in this vicinity is an issue.

Cooperation among Box Elder County, State Parks, and UDWR is necessary to address concerns about insect control. The area is sprayed during summer to control mosquitos, but midge fly control is not successful. Spraying for mosquitos reduces food sources for birds in the project area and in adjacent wildlife refuges. Users do not believe that insect control is successful enough.

Partnering with universities, schools, and interested organizations could foster educational and interpretative programs associated with the wealth of cultural resources.

Water Resources

Water Quality
The primary water quality concerns at Willard Reservoir are high levels of phosphorus, turbidity and sediment. Willard Reservoir may become a culinary water source in the future. Among concerns are operation of sewage disposal in the north, leach fields in the south, and possible future boat dump stations at marinas. Other concerns included potential pollution from boat gas and oil and the inadequacy of full-time usable rest rooms.

Recreation And Visual Resources

Concessions/Special Uses
Concessions are currently offered in the North Recreation Area. State Parks is considering offering an opportunity for a concessionaire to operate within the South Recreation Area.

Recreation Development
The North and South Recreation Areas rely on culinary water for landscape watering. Another source of irrigation water should be identified and made available. Some users would like to see more shade, trees, and grass in

campgrounds and use areas. Water systems need improvements to facilitate repairs without having to turn off water to an entire area.

Managing agencies and the public have identified several use facilities needing improvement and the need for additional facilities.

The existing jetties at the North Recreation marina are failing and do not adequately protect the boat harbor. Jetty repair and dredging are important to maintain this key recreation access point. There are concerns about the visibility of the beacon and user safety on the upper end of the boat ramp because it is slippery. The north marina needs upgrading of the boat slips and facilities. A sanitation waste boat dump facility is needed at the docks.

Facilities such as rest rooms need to be more vandal resistant. In addition, there are concerns about the condition and availability of rest rooms and showers--mostly that they were not always in working order.

There is demand for dry boat storage. There is a demand for more camp and picnic sites and more group areas, but there is limited land available for such development. The water slide area in the North Recreation Area has been closed for years, but has the potential of being developed into a campground with full hookups to help meet the public demand. There is demand for more camping sites, full hook-ups for RV's, better RV dump stations at both recreation areas, and a request for more public phones.

There is an interest in more sand at the existing beach and adding beaches at certain locations along the dam/dike.

Users would like more formal, controlled parking added at the north marina instead of the informal current overflow parking. There is an interest in adding island plantings/trees in new parking areas.

At the South Recreation Area, there are concerns about traffic flow at the boat preparation area and an interest in improvements to ease the situation.

Recreation Management

Conflicts exist among different kinds of water-based recreation primarily because boaters and anglers congregate where there is less wind. In some instances anglers, power boaters, water skiers, personal watercraft, sail craft, and swimmers are all sharing the same areas contributing to congestion and user conflict.

Some users single out personal watercraft use as conflicting with other uses. The concentrated use areas include around the north marina and beach, in the southwestern corner of the reservoir, and all along the dike.

There are concerns about adequate presence of park personnel to give sense of order and to enforce regulations.

There are good opportunities for providing access to the water for people with disabilities because of the limited fluctuation of Willard Reservoir.

There is an interest for provision of more services including rest rooms and running water for winter/off-season campers/users.

Use Capacity
Reservoir boating capacity exceeds visitor parking capacity. Whether parking capacity should be increased, decreased, or maintained at the current level is an issue.

Determining the current carrying capacity of the reservoir and assessing the need to expand recreational areas is an issue.

There is an interest in placing a cap on the number of boats and the number of personal watercraft allowed on the reservoir at any given time.

Visual Resources
The visual impact of construction and development activities and use is a concern.

Natural and Cultural Resources

Vegetation and Wildlife Management
Bald eagles roost in the North Recreation Area cottonwoods during winter. Concerns include providing public viewing opportunities; maintaining dead or dying cottonwoods for roosting; and loss of cottonwoods due to beaver activity.

Better control of plant and animal pests is a concern. Weeds, particularly Dyers Woad and other noxious or invading weeds, are a problem. "Nuisance" animals—like skunks and raccoons—bother visitors, and beaver have destroyed several trees in the Willow Campground.

If there are other threatened, endangered or sensitive plant or animal species in the area, this is a concern.

In the area between the eastern shore and I-15, weed control and replacement with forage could provide pheasant habitat. There are wetlands in this area that are closed to foot and vehicle traffic.

UDWR would like to see the extreme north end of the project area managed for upland wildlife habitat. There are concerns about who would have lead management responsibility of the area, whether other recreational uses could occur, and that project works not be affected.

Weber Basin occasionally dredges the inlet channel and wastes this material between the canal dike and the recreation access road. Appropriate handling and disposal of the material is a concern.

There is little natural habitat for some of the warm water fishery species. Walleye need structure for cover, such as rock.

Cultural Resources

There is a high density of important cultural resources including a concentration of burial sites, structures and granaries. Concerns about protecting significant cultural resources and exploring opportunities for interpretation, public education, and cooperative research and monitoring were expressed. There are concerns about potential damage to submerged sites from dredging/ manipulation and an interest in conducting a site inventory should reservoir levels drop.

The Northwestern Band of the Shoshoni Nation is particularly interested in protection of human remains and cultural resources of their ancestors. The Tribe desires consultation and involvement in the development of these aspects of the RMP.

Land Management

Lands

There is a limited land base—available lands need to be optimized and yet have wetland and wildlife resources protected. Erosion along the shoreline continues to reduce the limited land base.

The policies for future leased use of Reclamation property at Willard Reservoir for grazing, gravel, or gun clubs is a concern.

Some boundary fencing is incorrectly located and does not reflect the surveyed boundary.

There are concerns about hazardous waste issues associated with the accumulation of lead shot at former gun club locations.

Roads/Trails

The access road from I-15 is narrow for RV's and boat trailers; better directional signs would be helpful. The road on the west side of the reservoir is also in poor condition affecting accessibility to the west side boat ramp.

Off-highway vehicle use is a problem. The dike is closed to unauthorized motorized access, however, people drive through or around gates to use the dike road and run dirt bikes on the dike face. These uses increase erosion, add to the maintenance problems, and damage survey markers. The Willard Bay Wildlife Management Area on the south has become a playground for OHV use causing surface and vegetative disturbance as well as other resource damage.

People use the access road to the Harold S. Crane State Waterfowl Management Area when it is too muddy causing road damage. There are concerns about road maintenance, seasonal closures, and directing vehicular use on the UDWR managed lands within the project area and the western side of the dike.

2

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Chapter 2
Existing Resources Inventory

INTRODUCTION

This chapter contains a description of the physical, biological, and socioeconomic conditions of the plan area. It provides a baseline for monitoring the effects on resources and the success of implementation of the RMP.

SETTING

Climate

The climate of Willard Reservoir and its tributary watersheds is classified as semiarid. Temperatures range from about -25 degrees to 105 degrees Fahrenheit. During the summer months, the days are warm and nights are generally cool, with occasional periods of hot weather. The average annual temperature is 50 degrees Fahrenheit and the growing season lasts approximately 160 days. The yearly precipitation ranges from 12 to 18 inches. Climatic conditions are considerably influenced by local topography and elevation.

Geology

Willard Reservoir is located on the east side of the Great Salt Lake, and is situated in areas of Lacustrine Sand and Silt. This material was deposited by the Bonneville Lake Cycle (Personius, 1990). East of the reservoir, there is an alluvial fan that begins at the mouth of Willard Canyon (Wasatch Mountain Range). The Wasatch Fault parallels the toe of the Wasatch Range, and is found about 1.5 miles east of the shoreline of the reservoir.

Willard Reservoir Demographics At-A-Glance

Because Willard Reservoir and Willard Bay State Park serve the urban Wasatch Front area, the affected environment cannot be solely limited to the boundaries of Box Elder and Weber counties, but rather, would also include the Salt Lake-Ogden Metropolitan Statistical Area, created by the total of Weber, Davis, and Salt Lake counties. For this demographic and economic study, the combined four county area will be referred to as the Willard Reservoir Statistical Area (WRSA).[1]

Demographics

Overall the WRSA is a highly urbanized area of more than 1.2 million people, equaling 63 percent of the state's total population. In 1982, the area first passed the million mark in population, having grown at an average annual rate of over 2.8 percent since 1970. The past couple of years has seen the growth slow to a more manageable average annual rate of 1.7 percent, slower than the state's 2.2 percent average for the same time period. According to recent projections, the WRSA should see population growth rates of under two percent for the near future. At this rate, the population would reach over 1.3 million people by the year 2000, and close to 1.5 million by the year 2005.

Net in-migration has occurred continually since 1991, slowing considerably for the past couple of years. However, high, steady rates of natural increases, (births minus deaths), are the driving force behind the area's population growth. Even when the WRSA experienced six consecutive years of net out-migration beginning in 1985, the overall population continued to grow at an average annual rate of over one percent.

Employment

The labor force grew rapidly in the early 1990s, increasing 5.7 percent between 1992 and 1993, and six percent from 1993 to 1994. In 1996, the labor force grew 2.3 percent to reach a total of over 659,000 persons. As expected with such growth, the unemployment rate has remained quite low. Since 1988, the unemployment rate has never risen above 4.8 percent and has consistently fallen for the past five years. Currently the rate stands at 3.2 percent, lower than the state's rate of 3.5 percent.

In 1995, the WRSA's total non-agricultural employment growth exceeded five percent for the third consecutive year. In 1996, the growth slowed just slightly at 4.9 percent, representing an additional 31,000 new jobs. The greatest percentage of these new jobs came in the service sector which is the largest employer in the area, responsible for 26 percent of total non-agricultural employment. The next largest employer is trade, with 24.4 percent of the area's employment. Trade continues to be a very stable employer, having seen their share of employment remain in the 24 percent range for over thirty years. However, the area's third largest employer, government, has seen their percentage of total non-agricultural employment fall for the past eleven years to a current share of 16.6 percent.

The construction sector continues to see healthy expansion in the WRSA, growing for the eighth consecutive year. Currently, the sector provides nearly 40,000 jobs, representing an all-time high of six percent of the total non-

agricultural employment. A large portion of this construction growth is in residential areas, where building permits totaled nearly 13,000 in 1996. In fact, this is the highest annual total of residential building permits since 1984 and is the seventh consecutive year of permit growth at an average annual rate of over 21 percent.

Wages and Income

Total non-agricultural wages have risen annually in the WRSA, totaling $16.9 billion for 1996. The average annual wage stands at $25,700, a 4.3 percent increase over 1995s average. In the 1990s, wages have grown at an average annual 3.5 percent rate. By comparison, the state's current average annual wage is a slightly lower $24,200 with a 1990s growth rate of just under 3.5 percent.

Per capita income totals for the residents of the WRSA have risen annually at a 5.3 percent average growth rate over the last five years. As of 1995, per capita income totaled $19,700, a six percent increase over 1994 totals. Comparatively, the per capita income for all state residents is $18,200, having grown 5.3 percent over the previous year.

Government Revenues

As another indication of economic prosperity, the total assessed valuation of property, both locally and centrally assessed in the WRSA has increased annually throughout the 1970s, 1980s, and 1990s. Their current 1995 value of $44.1 billion surpasses the previous year's amount by more than six billion dollars.

Gross taxable retail sales have grown consistently for the last nine years at an average annual rate of eight percent. Currently, the WRSA has registered sales of $16.8 billion, an increase of more than nine percent since 1995.

Tourism Industry

Tourism is an increasingly vital component in the economic stability of the WRSA. Since 1991, travel and recreational-related employment has grown faster than total non-agricultural employment at an annual average rate of 7.6 percent compared to 4.8 percent. Currently, this industry provides more than 56,000 jobs, mainly in the service and trade sectors, and accounts for nine percent of the area's total non-agricultural employment. However, the growth of this industry is, perhaps, more importantly characterized by the large amounts of revenues that are generated. Spending by travelers has grown at an average annual rate of 6.2 percent since 1991 and total more than $2.3 billion for 1996. This spending translates into a direct local tax impact of over $45 million. Gross taxable room rents in the area have passed the $279 million mark, nearly a $36 million

increase over the previous year's collection (Utah Department of Community and Economic Development 1997).

PARTNERSHIPS

Through contracts, agreements and memorandums of understandings, administrative authority for certain resources and facilities is shared by Reclamation with Weber Basin Water Conservancy District, State Parks and UDWR. Reclamation is the owner of the project. Weber Basin administers care, operation, and management of the water related functions. State Parks administers recreation functions in specific areas and UDWR administers fish and wildlife aspects consistent with Utah State Law and by agreement with Reclamation manages wildlife and habitat within the Willard Reservoir Wildlife Management Area. Garbage service at the reservoir is provided by the Wasatch County Solid Waste Special Service District and State Parks pays the District for this service.

WATER RESOURCES

Surface Water

Willard Reservoir receives water from the Ogden and Weber River systems. These two rivers join just upstream of the Slaterville Diversion Dam. The Willard Canal can deliver up to 1,020 cubic feet per second from the Slaterville Diversion to Willard Reservoir. Pumps at Willard Reservoir can lift water into the Willard Canal from Willard Reservoir and deliver water back to the Weber River at the Slaterville Diversion. Irrigation requirements below the Slaterville Diversion Dam are met by a combination of three reservoirs: Pineview, Causey, and Willard. During high water supply years, use of the Pineview and Causey Reservoirs allows for higher water levels in Willard Reservoir.

The historical average annual inflow to the Willard Reservoir is 126,200 acre-ft and evaporation is estimated to be 14,700 acre-ft. There are three outlets from Willard Reservoir: the gated overflow to the Great Salt Lake on the north side of the reservoir, the Willard Canal, and the Great Salt Lake Canal. The Weber Basin Water Conservancy District attempts to spill water every year through the Willard Reservoir to the Great Salt Lake to provide flushing for the reservoir.

Willard Reservoir was constructed in 1964 primarily for irrigation water storage purposes. By the mid 1980's approximately 30,000 acre-feet of the appropriated water remained unsold. In 1987, approval was obtained to increase Municipal

and Industrial sales through exchanges. The exchanges allow the use of higher quality water higher in the river system and make-up water for irrigation is provided from Willard Reservoir. At present, about 25,000 acre-feet of appropriated Willard Reservoir water remains unsold(Anderson, 1997 Olds, 1997). As sales take place and more of the reservoirs storage waters are utilized, it is expected that fluctuations in water level will increase.

Table 2.1 displays data regarding the reservoir summarized form the U.S. Geological Survey (USGS) water survey report for the year 1980.

Table 2.1 Willard Reservoir Data	
Maximum Surface Area	9,920 acres
Maximum Volume	215,100 acre-ft
Capacity of Active Storage	193,300 acre-ft
Dead Storage	16,850 acre-ft

Water Quality

The quality of water within Willard Reservoir is related to the quantity and quality of the water diverted from the Weber and Ogden Rivers during spring runoff, and secondarily to the increases in TDS caused by reservoir evaporation and leaching from bottom sediments or ground water inflow. Levels of TDS in the reservoir range from 383 to 945 mg/L, and average about 650 mg/L. The reservoir has a high surface area to volume ratio, shallow depth, and high wind action. This allows for high evaporation and keeps the reservoir water thoroughly mixed where temperature and dissolved oxygen are concerned. The water has also been found to be nutrient-rich, or eutrophic. Nitrogen levels are within acceptable State levels, but phosphorous frequently exceeds the maximum contaminant level (MCL). Table 2.2 summarizes key indicators of pollution within the reservoir.

Table 2.2 Willard Reservoir Water Quality Summary

Location	STORET No.	pH		Dissolved Oxygen (mg/L)		TDS (mg/L)		Total Nitrogen (mg/L)		Total Phosphorous (mg/L)	
		Avg	Range	Avg	Range	Avg	Range	Avg	Range	Avg	Range
Willard Canal at res. bound.	492035	8.3	8.0-8.6	8.5	7.1-12	360	162 -796	0.34	.15-.48	0.09	.045-.140

Table 2.2 Willard Reservoir Water Quality Summary

Location	STORET No.	pH		Dissolved Oxygen (mg/L)		TDS (mg/L)		Total Nitrogen (mg/L)		Total Phosphorous (mg/L)	
		Avg	Range	Avg	Range	Avg	Range	Avg	Range	Avg	Range
S Harbor Mouth 100 m west	492044	8.4	7.4-8.8	7.5	5.1-10.2	583	224 -792	0.16	.04-.34	0.05	.014-.110
SW Corner 0.5 mi offshore	492045	8.4	7.5-8.8	7.4	0.5-9.8	568	528 -656	0.10	.02-.26	0.05	.010-.135
mid NW dike 100 m offshore	492046	8.5	7.0-8.9	7.6	5.1-9.7	588	520 -656	0.07	.02-.16	0.04	.010-.111
N SE dike 100 m offshore	492047	8.4	7.5-9.0	7.4	4.8-9.8	582	506- 658	0.01	.02-.24	0.05	.010-.128
State Standard max contaminant level (MCL)			6.5-9.0		5.5 Min		1200 Max		4.0 Max		0.05 Max

External Phosphorous Loading

The largest source of total phosphorous to the reservoir is from watershed and stream bank erosion. Erosion in the watershed leads directly to sediment release, and the external loading of phosphorous and nitrates into the reservoir. Since the reservoir is located at the bottom of a major watershed drainage, it is very likely that the phosphorous is coming in from the outside. This is evidenced by the higher concentration in the canal than in the reservoir itself, as shown in Table 2.2.

Turbidity and Cadmium

Turbidity has exceeded state standards in 10 of the 27 samples. This is probably caused by the mixing of the water due to wind and the shallow nature of the reservoir. Dissolved cadmium concentration has exceeded the state standards in one of three samples. All other dissolved metal concentrations have been less than the MCL.

Lead Shot

A concern has arisen that gun clubs have affected the quality of the water within the reservoir by adding lead to the water. To estimate the effect of the gun clubs on water quality, the concentration of dissolved lead (STORET data) was analyzed. The maximum concentration was found to be 0.02 mg/L, which is lower than the state standard MCL of 0.05 mg/L. In 1975, the concentration was 0.005 mg/L, and in 1996, the concentration was less than 0.003 mg/L. Using this

information, it can be assumed that the gun clubs have not adversely affected the quality of water within Willard Reservoir.

RECREATION AND VISUAL QUALITY RESOURCES

Historical Visitation at Willard Bay State Park

Any analyzation of the State Park's historical visitation counts should begin with a cautionary note. Past counts for visitation have varied greatly due to both the overall complex nature of the task and, to a greater extent, the problematic counting methods employed. The 1992 State Comprehensive Outdoor Recreation Plan (SCORP) outlines in more detail the difficulties that surround visitation counts. Reference is made to an earlier report that concluded that methods of counting were either inconsistent or inadequate between parks and therefore the accuracy of past totals remains in question (Utah Department of Natural Resources, 1992). As counting methods have generally improved in recent years, for an attempt at an accurate study of Willard Reservoir visitation as possible, annual estimates prior to 1986 and monthly counts prior to 1990, will be discarded.

Annual Visitation

With the exception of rising above the 400,000 mark in 1986 and dipping below the 200,000 mark in 1989, annual visitation counts at Willard Reservoir have averaged in the mid to upper 200,000 visitor range. Since 1994, however, the average visitation has risen above the 300,000 level annually. Park management recorded over 312,700 visitors to the park in 1996—the highest total in ten years. This is shown in Table 2.3 Annual Visitation at Willard Bay State Park 1986 to 1996 (Utah Department of Natural Resources, 1997).

Table 2.3 Annual Visitation at Willard Bay State Park 1986 to 1996

Year	Total Visitation	Year	Total Visitation
1986	423,633	1992	270,791
1987	394,798	1993	269,729
1988	235,221	1994	308,705
1989	190,220	1995	282,993
1990	223,728	1996	312,745

Table 2.3 Annual Visitation at Willard Bay State Park 1986 to 1996			
Year	Total Visitation	Year	Total Visitation
1991	212,456		

Source: Utah State Division of Parks and Recreation, Annual Visitation Records.

Monthly Visitation

Seasonal visitation peaks in the summer, primarily on weekends between Memorial Day and Labor Day. July is the most popular month to visit with an average of 23 percent of annual visitation between 1990 and 1996. Following July is June, 21.4 percent, August, 17.6 percent, and May, 11.3 percent. The highest single month total in this time period occurred July 1996 with nearly 86,800 visitors recorded. The second highest total occurred June of the same year with over 70,700 visitors.

The least popular months for visits are December and January, each with an average 0.5 percent of annual visitation, followed by November, 0.7 percent, and February, one percent. Since 1994, November has been the least visited month by far, with an average count of slightly more than 600 visitors per month (Utah Department of Natural Resources, 1997).

Table 2.4 Monthly Visitation at Willard Bay State Park October to March: 1990 to 1996						
Year	Oct	Nov	Dec	Jan	Feb	Mar
1990	8,460	3,315	1,422	228	402	9,606
1991	9,528	2,340	1,237	1,683	2,364	10,623
1992	12,219	2,469	1,329	1,103	1,362	13,113
1993	12,864	2,655	1,410	1,339	1,359	5,565
1994	9,649	877	1,100	1,590	4,077	17,808
1995	6,901	715	1,481	1,701	5,948	7,853
1996	12,382	286	542	1,284	2,346	11,790
Total	**72,003**	**12,657**	**8,521**	**8,928**	**17,858**	**76,358**
% of Annual Total 1990-96	**3.8%**	**0.7%**	**0.5%**	**0.5%**	**1.0%**	**4.1%**

Table 2.5 Monthly Visitation at Willard Bay State Park April to September: 1990 to 1996						
Year	Apr	May	Jun	Jul	Aug	Sep
1990	15,376	23,848	67,768	54,714	26,223	12,366
1991	14,460	18,855	45,958	42,715	39,353	23,340
1992	18,393	43,692	46,638	59,022	51,909	19,542
1993	13,957	41,747	49,217	55,292	49,542	34,782
1994	23,308	32,383	59,060	67,456	54,876	36,521
1995	13,592	24,900	62,014	66,107	57,704	34,077
1996	16,666	26,277	70,749	86,785	50,387	33,251
Total	**115,752**	**211,702**	**401,404**	**432,091**	**329,994**	**193,879**
% of Annual Total	**6.2%**	**11.3%**	**21.4%**	**23.0%**	**17.6%**	**10.3%**

Source: Utah State Division of Parks and Recreation, Monthly Visitation Records.

Willard Bay State Park Visitor Profile

Visitor information was primarily obtained through a comprehensive Willard Reservoir user survey conducted by the Utah Division of Parks and Recreation between July 26 and September 15, 1996. The surveying consisted of two methods: a gate survey handed to park visitors as they entered the park, and a mail out survey sent to a random sample of those who made reservations at Willard Reservoir in the past year. The survey results from these two methods were compared and combined in an effort to more accurately represent who the average visitors are, and what their desires about the future planning of the park may be.[2] When appropriate, *Monthly Use Reports* filed by park management from 1995 to 1996 will be incorporated and cross-referenced as a secondary source of visitor information.

Visitor Demographics

Those filling out surveys at Willard Reservoir have a median age of 40 with half between the ages of 32 and 49. The median group size consists of two adults and three children with half of all groups between two to four adults and two to five children. The largest majority of visitors, 24.4 percent, come from Davis County—more so for those filling out the gate survey than those responding to the mail out. Following Davis County are Salt Lake and Weber counties, each with 18.5 percent. Box Elder County is fourth among Utah counties, responsible

for nearly ten percent of the visitation, however, a greater number of visitors, 15.3 percent, come from out of state. Monthly Use Reports filed from 1995 to 1996 help validate this total by showing an average 15.9 percent of out of state visitors during the two year time period.

The median 1995 pre-tax income of surveyed park visitors is $45,000 to $49,999, measurably higher than the state's 1995 median household income of $36,480 (U.S. Department of Commerce, 1995), but more in line with the FY1996 median family income for the Salt Lake-Ogden Metropolitan Area of $45,500 (U.S. Department of Housing and Urban Development). Over 38 percent of park visitors have incomes that exceed $50,000, while only about 17 percent have incomes below $25,000.

Totaling both survey results shows that nearly eight out of ten visitors use no special pass for entering the park. However, it may be worthwhile to note that almost 14 percent of mail out respondents use the Senior Citizen Fun Tag and over 11 percent of gate respondents use a Utah State Park Systems Pass.

Visitor Spending

Typically, visitors spend between $90 to $230 when visiting Willard Reservoir. According to the total survey, median spending totals among visitors is broken down as such: 225 persons spend $20 for gas; 214 persons spend $25 for food; 78 persons spend $10 for fishing and recreational supplies; 48 persons spend $25 for lodging; 16 persons spend $75 on rentals; and 21 persons spend $30 for other items.

Visitor Characteristics

The visitor frequents Willard Reservoir about five times a year, with those responding to the gate survey visiting slightly more often and the mail out respondents visiting slightly less. Concerning length of stay, obvious differences occur between the two surveyed groups due to mail out surveyed visitors being mainly campers and gate surveyed visitors being primarily day users. Over 86 percent of gate visitors stay less than 24 hours at the park, while 92 percent of mail out visitors stay at least one night. Averaging the two methods shows that half of visitors stay for the day and the other half camp at least one night. Over 46 percent of visitors stay at Willard Reservoir for eight hours or less.

Willard Reservoir is the primary destination for 86 percent of park visitors. Of the two major areas of the park, not surprisingly, the larger North area is visited by 76 percent of the visitors. If the entire park were to close, visitors would recreate at Pineview Reservoir by a margin of three to one over any other area. The distant next best choice would be Bear Lake.

Park Attractions

In general, visitors are attracted to Willard Reservoir's favorable waterskiing conditions, camping opportunities, and convenient location. Attractions differ noticeably between the two surveyed groups. Gate respondents are most attracted by the waterskiing and the recreational boating, while mail respondents are naturally most attracted by the camping opportunities, followed by the convenient location, and the good family area.

Recreational Activities

On a trip to Willard Reservoir, visitors will most likely participate in waterskiing (49.4 percent), camping (41.1 percent), boating (40.2 percent), and fishing (combined boat and bank, 30.1 percent). Those responding to the mail out survey are most likely to camp and fish, while gate respondents are more likely to go waterskiing, boating, and swimming, as well as ride personal watercraft.

Monthly Use Reports filed from 1995 to 1996 records a single recreational activity per visitor. Averaging this two year period reveals that annually, 20.1 percent of all visitors fish, 14.2 percent go waterskiing, 13.9 percent camp, and 12.3 percent go boating. Generally, between the months of June and August, waterskiing tops fishing as the park's number one activity.

Park Capacity Standards

Out of seven possible capacity standard options, limiting the number of boats on the reservoir draws the support of nearly 48 percent of the total surveyed respondents, or 51 percent of gate respondents. The option to limit the number of camping areas to a maximum number of vehicles is supported by approximately 40 percent of all visitors, or 46 percent of mail respondents.

Park Issues and Improvements

Visitors clearly feel that the maintenance of park facilities is the area of greatest concern in the category of park services, followed by security and safety on the reservoir.

In the category of park resources, visitors feel that the condition of the beach and rest rooms to be the most pressing issues. The problem of litter is also a noteworthy concern. The most important problem facing recreation ethic at the park by a wide margin is personal watercraft. Also of concern is the crowdedness at the boat ramps and on the reservoir.

Educational and Interpretive Opportunities

For the enhancement of recreational opportunities, over 44 percent of visitors feel that a boating education program is needed at Willard Reservoir. Gate respondents comprise the greatest portion of support for such a program with a total of 57 percent of visitors. Overall, 27 percent would like to have greater availability of park-related information (brochures, pamphlets, and such), while nearly 23 percent show interest in a Junior Ranger program that would teach recreational and environmental ethics to children and parents.

Recreation Opportunity Spectrum

In order to provide a spectrum of recreation opportunities, it is important to know what elements contribute to them. Some can only be determined by communicating directly with users and recreationists; others can only be surmised using best professional judgement and experience.

The Forest Service developed a system called Recreation Opportunity Spectrum or ROS, whereby recreation opportunities are categorized through evaluation of the setting in which the opportunity takes place. It is a framework for integrating recreation values or experiences into the planning process. For example, a very natural, primitive area with minimal and inconspicuous recreation facilities such as an informal hiking path suggests that the people who go there appreciate the solitude of the place and enjoy the freedom that comes from undeveloped places. This kind of recreation experience can only take place in a specific and appropriate setting. It would not be possible in a dense RV campground packed with people, busy with activity, and noisy with the sounds of people enjoying each other. These are two different experiences in two different settings. Documenting a range of experiences between these two very different experiences is the essence of the Recreation Opportunity Spectrum .

All experiences fall into ROS Class delineations. These classes include: Primitive, Semi-Primitive, Natural, Rural and Urban experiences. The differences between the classes vary in three main characteristics: the Activity taking place, the Setting - whether it is developed or undeveloped, and the Experience - are there many people or very few. These characteristics affect each other strongly; when one is modified or varied the others are also affected and modified.

Variation in characteristics is primarily a factor of accessibility. Easier access suggests that more and diverse activities can be accommodated because more and diverse populations are likely to occur in the same setting. When access is restricted to non-motorized activity (hiking) and the area is remote, there is less potential impact because there is less use, and vice versa.

In other words, there are limits to the amount of change in activity or setting before there is a corresponding and inevitable change in the human experience. The role of the resource manager is to determine the experience desired, and then manage the elements of the setting and activities to produce a predictable experience for recreationists within the overall framework of resource protection. Evaluating and identifying existing recreation opportunity is necessary prior to implementing any management system.

ROS Class Delineation

Physical Setting
Physical setting describes the physical elements and character of the area and is composed of four criteria: remoteness, size of area, evidence of humans, and outstanding features.

Remoteness is an indicator of the ability to experience more or less interaction with others and a sense of relative isolation or closeness to others. Access to the recreation areas associated with Willard Reservoir is by way of a developed asphalt road.

Size of area is approximately 2,673 acres (total project land area.) When full, Willard has a water surface of 9,920 acres. At minimum water level, the reservoir has a water surface area of 7,200 acres. There is a total developed land area of about 200 acres, consisting primarily of dike walls, campgrounds, day use areas, boat ramps, and parking lots.

Evidence of Humans occurs frequently and dominantly in the study area, particularly in the North Recreation Area. All of the roads are highly visible. There is no curb or barrier along the road, so people drive across lawns and grassy areas leaving ruts and disturbed areas. Evidence of human activities is also found through elements such as the dikes, buildings, camping facilities, marinas, beaches, signs, litter, power lines, vehicle parking areas, roads, fences, landscaped flower beds and lawns, disturbed vegetation, denuded soils, and occasional cattle. The experience at both marinas requires close interaction with many people, especially on weekends and peak times.

Outstanding features principally include the water itself. It dominates the landscape and the area both visually and physically from the northern recreation areas; but is not visible from the south recreation areas.

Physical Setting Determination All of the land within the Reclamation boundary is within one-half mile of either roads or the water surface. The area is compact

and perceived as one place, where the presence of others is constant and expected. The physical setting is predominantly Rural at the South Recreation Area, and is slightly more developed than Rural at the North Recreation Area, but not quite Urban.

Social Setting
Social setting describes the amount and type of contact between people, and reflects opportunities for solitude verses some degree of interaction.

There are developed and heavily used areas where the possibility of encountering other people is moderate to high, particularly in the fee areas, camping areas, on the marinas and the North Recreation Area beach areas. Both the North Recreation Area and the South Recreation Area are crowded with people and boats during summer weekends. Most people who use the area expect to encounter others most of the time. Most of the developed use areas are adjacent to or within close proximity to roads where encounters with other people are common place.

Encounters are likely to be low for people who access other areas of the reservoir by foot or boat, and those who venture further out on the bay. There is little evidence that people are walking long distances along the shoreline, or engaging in hiking or other activities. Primarily they are there to fish and boat. The area south of the South Recreation Area however, is used during the fall for waterfowl hunting and as a place for hunters to train their dogs.

The number of people who visit the reservoir vary greatly depending on the day of week and time of year. Summer months between Memorial Day and Labor Day, weekends and holidays draw the greatest number of people who are likely to have more social interaction with others. Weekday and off-season users are likely to have the opportunity to experience more solitude and fewer interactions with others.

Encounters with cattle also suggest an encounter with other people. Cattle are not a natural occurrence in the area and are known to be owned by someone. In an indirect way, they suggest human evidence and encounter, even when other people are not in the area.

Social Setting Determination: The Social Setting Criteria suggests a Rural to Urban designation because of the potential for social interaction and the proximity of people during high use periods. Again, the area is so compact and people tend to congregate along the shoreline. Even on the water, boats and personal watercraft users tend to stay close to shore. Both of these behaviors tend to increase the density of people in the area and increase the potential for social

interaction. The only opportunity for infrequent encounters would be on an off-peak day, during the week or in the areas used for hunting.

Managerial Setting
Managerial Setting refers to the amount of restriction and control perceived by people who are recreating in the area. Restrictions and control is typically in the form of signing and posted regulation, fencing and gates, entry stations, fees and patrols.

Willard Reservoir has obvious evidence of management and control in the area. The State Park is a fee area with staffed entry stations and State Park Rangers who patrol the area. There are buildings, rest room facilities, signage, fencing, roads, boat docks and other built features that strongly control human activity. The compact nature of the area also suggests that people feel more managed.

Managerial Setting Determination: The managerial setting is closest to a Rural designation at the South Recreation Area. Both the North and South Recreation Areas are accessed primarily by motorized vehicle, the extent of development suggests more control, and both marinas are fee areas. The North Recreation Area is more developed and attracts larger crowds, and there is always evidence of management and control. The North Recreation Area setting again, is between Rural and modern Urban.

ROS Class Attractiveness

Variety Rating
The one dominant ROS Class representing current management and use at Willard is Rural; however, there are some areas and times when Rural does not adequately describe the experience and when the experience is closer to one that might be found in a Urban ROS classification. Attractiveness ratings for each of these classes is determined by the Variety Class designations achieved through the Visual Resource Management (VRM) system. Variety Ratings are either Class A - Distinctive, Class B - Typical or Common, or Class C - Minimal.

Rural to Urban: Variety Ratings in the Rural and Rural to Urban areas, which include the reservoir surface, the eastern side of the reservoir, and the accessible areas south of the South Recreation Area were determined to be either Common to Minimal. The landscape features and vegetation communities are described below.

Class A - Distinctive Landscapes are those areas where features of landform, vegetation patterns, water forms and rock formations are of unusual or

outstanding visual quality, because they are usually not common in the landscape character subtype. At Willard Reservoir, there are no distinctive landscapes.

Class B - Common Landscapes are those areas where features contain variety and combinations in form, line, color, and texture but which tend to be common throughout the character subtype and are not considered unique or outstanding in visual quality. In another setting, the cottonwood/willow riparian vegetation type might be considered distinctive; however, at Willard it is obviously introduced and planned. Farmed farmlands are also common.

Class C - Minimal Landscapes are those landscapes whose features have little change in form, line, color, and texture. Most of the landscapes within the study area are Minimal, and include altered land - undeveloped which is dominated by grass species, altered land - developed composed of developed/landscaped campgrounds and use areas, open water vegetation at the shoreline, and salt marsh/salt flat vegetation.

Activity Opportunities
Each resource has inherent recreation opportunities or activity opportunities. At Willard, they are both water based and land based; however, even land based activity is focused on the water as the primary interest and reason for being in the area.

Activity Identification
Existing Activities: According to a recent survey by State Parks (*Willard Bay State Park Visitor Survey Results, January 3, 1997*), the dominant recreation activities at Willard are boating, camping, water-skiing, swimming, personal watercraft operation, and fishing. Fishing occurs throughout the year, but most intensely in the summer months with some ice fishing taking place in the winter. Other activities were also recorded, including picnicking, hiking, and sunbathing. The primary attraction, however, is water.

Potential Activities: Other activities are also possible in the area which are compatible with the dominant recreation activities currently occurring in the area. These include wildlife viewing, particularly with regard to the unique opportunities for bald eagle observation, cross-country skiing and snow shoeing.

Activity Criteria
The most important consideration in determining appropriate recreation activities for Willard Reservoir should be the ability of the physical resources to sustain use impacts, followed by issues of safety and desired experience.

Criteria useful in determining appropriate activities, either land based or water based, include:

Natural Resources: Recreation activity should not degrade the physical environment and have an adverse impact on vegetation resources, wildlife resources, and other important elements of the physical environment that make up the character and quality of the area.

Water Quality: Recreation activity should not degrade water quality or create erosion and situations which could impact the reservoir and the creeks.

Safety: Existing and potential activities which are consistent with the quality of the existing recreation experience are compatible. These activities will require similar levels of development and should occur in intensities consistent with existing activities.

Recreation Resources

Recreation use has occurred in 11 areas located within the identified North and South Recreation Areas.

The North Recreation Area includes Willow Campground, Cottonwood Day Use Area, Eagle Beach Day use Area, the Marina, Wiper Cove Day Use Area, and Pelican Beach Day Use Areas; the administrative area that includes park residences and shops, and some natural areas.

Some recreation also occurs in the Primary Jurisdiction Zone such as airboat access.

South Recreation Area includes the developed campground and day use area, dike areas that are used to access airboat launch sites, wildlife management areas, the Harold S. Crane Waterfowl Management Area, and the South Recreation Area Marina.

Existing Facilities

North Recreation Area

The North Recreation Area and its individual management areas is displayed on Map 2.1 on page 2-20.

Willow Campground: A paved road accesses Willow Campground. It has 40 campsites, 23 of which are double sites, making a total capacity of 63 camp units. There is also a group use area which can accommodate about 100 people,

with 25 parking spaces. Tables, grills, flush restrooms with flush toilets and showers, and a sewage dump station are available. ROS class delineation is rural to urban.

Cottonwood Day Use Area: This former site of the waterslide park is now used as access to the shoreline via a narrow roadway to a small 21 stall parking lot. ROS class delineation is rural.

Eagle Beach Day Use Area: A gravel road accesses the day use area at Eagle Beach. There is a group day use facility for about 100 people with shelter, large cooking grill, serving table, and enough tables to seat 100 people. The Mountain Man Rendezvous has been held in this management area. There are also 15 individual picnic shelters. There is a rest room, a concessionaire renting personal watercraft and gravel parking for about 185 cars. There is substantial room for overflow parking. ROS class delineation is rural to urban.

North Recreation Area Marina (Marina, Slips, and Boat Parking): The marina is accessed by a paved road, has two courtesy docks, five picnic shelters, one flush rest room and parking for 110 vehicle/trailer combinations and 88 single cars. Experience is rural to urban. On the south side of the marina is a boat dock rental marina for 28 boats. There are 30 parking stalls. There is a flush restroom within short walking distance. ROS class delineation is rural to urban.
Wiper Cove Day Use Area: Wiper Cove Day Use area is equipped with 13 picnic areas, four picnic shelters and parking for 28 vehicles. ROS class delineation is rural.

Pelican Beach Use Area: Pelican Beach Day Use area has 6 picnic shelters with tables and grills and parking for 23 vehicles. There is a flush rest room adjacent to the beach. ROS class delineation is rural to urban.

Administration Area: This area is split into two different subcategories: State Parks' administration area and the Primary Jurisdiction Zone. State Parks' administration area serves the administrative functions of the park including park personnel residences, maintenance shops, and storage, while the Primary Jurisdiction Zone is for the management of water operations. Recreation in the Primary Jurisdiction Zone is restricted by Reclamation and WBWCD. Additionally, there are undeveloped natural areas which are used for upland game management and special group events. ROS class delineation is rural to urban.

Natural Area: The strip of land south of the North Recreation area is used for upland game and waterfowl purposes. ROS class delineation is rural.

South Recreation Area
The South Recreation Area and its individual management areas is displayed on Map 2.2 on page 2-22.

Campground at South Recreation Area: The campsite at South Recreation Area is quite informal, with 11 shelters and enough camping area to serve about 25 families. Most of the sites would be considered tent campsites. There are two flush rest rooms, and parking for approximately 360 cars. Experience at this campsite is rural.

South Recreation Area Marina: The marina is accessed by a paved road. It is outfitted with three boat ramps and two courtesy docks. There is a large parking lot to the east of the marina with enough spaces for 100 vehicle/trailer combinations and 60 spaces for regular vehicles. The area includes a concessionaire building which has been used for food service in the past. To the south of the ramps is a boat dock rental marina for 18 boats. ROS class delineation is rural.

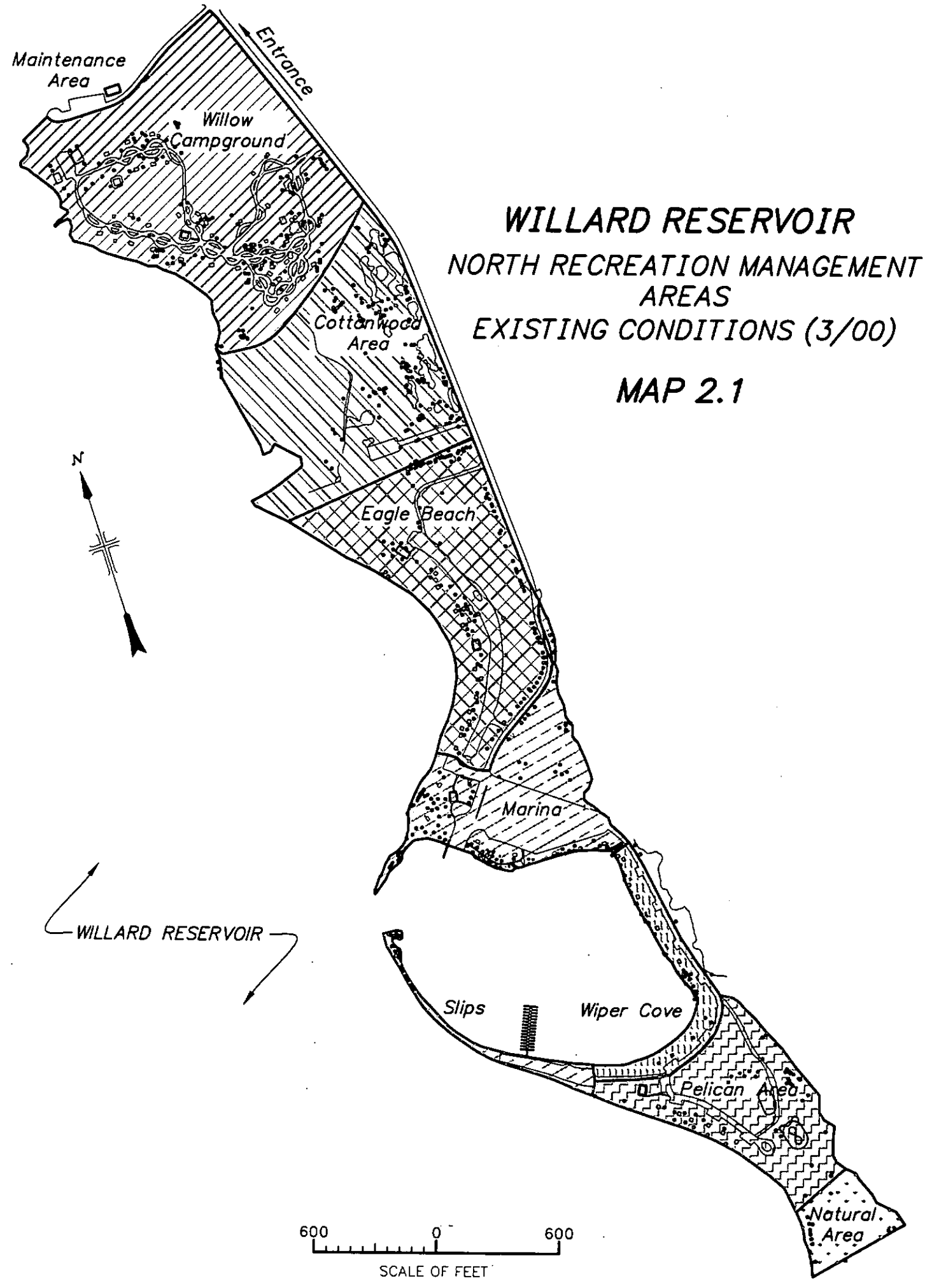
Natural Areas: The area south of the reservoir is managed by the Division of Wildlife Resources for wildlife purposes. The dike roads are used to gain access to the west side of the reservoir for airboat launching, and to gain access to the Harold S. Crane Waterfowl Management Area. ROS class delineation is rural.

Table 2.6 summarizes the Recreation Opportunity Spectrum delineation by Management Area.

Table 2.6 Recreation Opportunity Spectrum Delineation by Area

North Recreation Area	
Willow Creek Campground	Rural to Urban
Cottonwood Day Use Area	Rural
Eagle Beach Day Use Area	Rural to Urban
Wiper Cove Day Use Area	Rural
Pelican Beach Use Area	Rural to Urban
North Recreation Area Marina (Marina, Slips, and Boat Parking)	Rural to Urban
Primary Jurisdiction Area	Rural to Urban

Table 2.6 Recreation Opportunity Spectrum Delineation by Area	
Natural Area	Rural (Managed as Semi-Primitive)
South Recreation Area	
Campground at South Recreation Area	Rural
South Recreation Area Marina	Rural
Natural Areas	Rural (Managed as Semi-Primitive)



WILLARD RESERVOIR

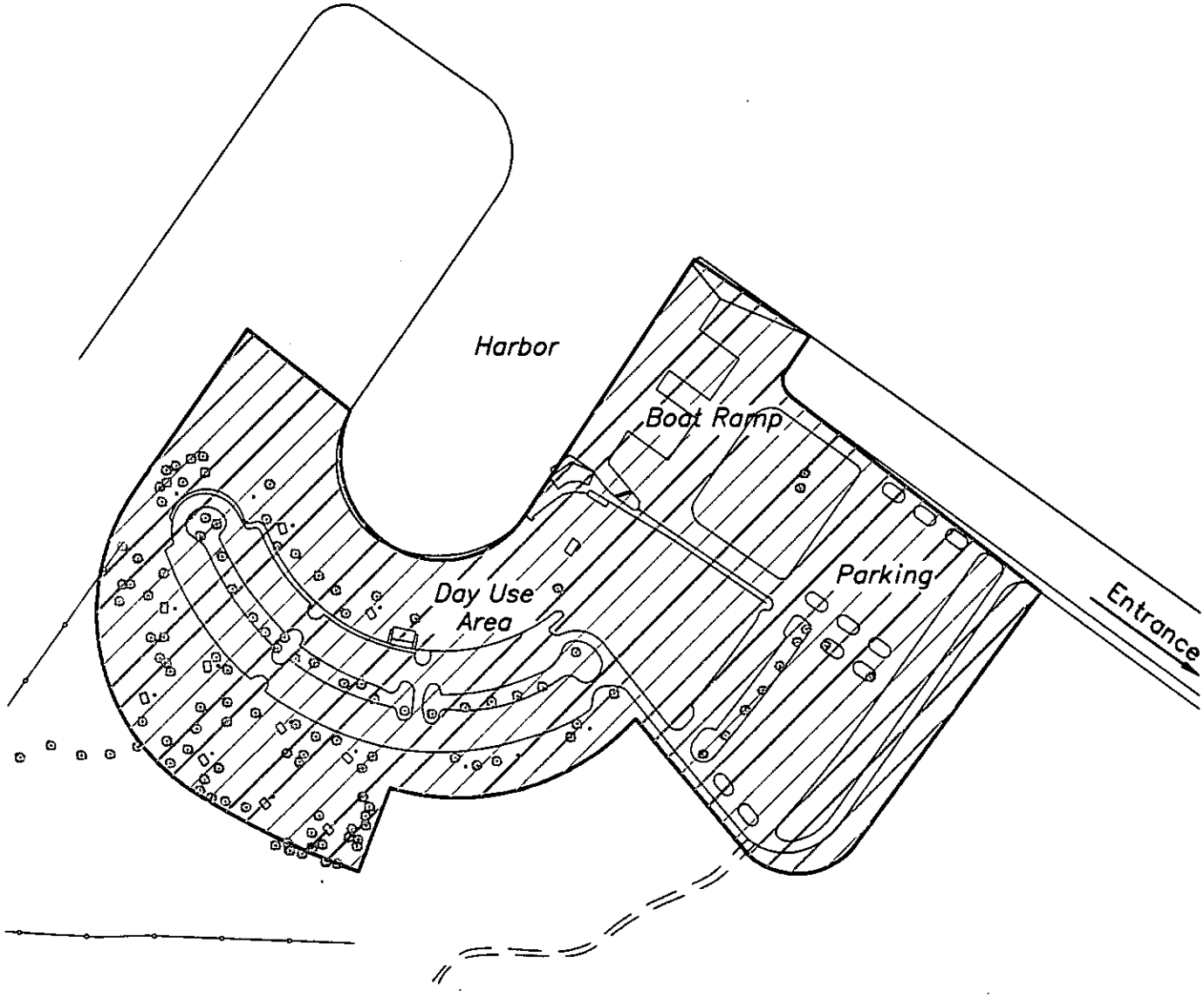
NORTH RECREATION MANAGEMENT AREAS EXISTING CONDITIONS (3/00)

MAP 2.1

WILLARD RESERVOIR

SOUTH RECREATION MANAGEMENT AR
EXISTING CONDITIONS (3/00)

MAP 2.2



Visual Resource

Characteristic Landscape

Willard Reservoir sits at the edge of the Great Salt Lake, and at the base of the Wasatch Mountains. It is a roughly rectangular body of water separated from the Great Salt Lake by a man-made dike. Interstate Highway 15 essentially forms the eastern border of the reservoir. The immediate environment is almost entirely man-made; however, the mature size of some of the vegetation lends a natural-appearing quality to the developed areas of the park.

Views across the reservoir from North Recreation Areas are broad and expansive, with Antelope Island and other distant Great Salt Lake features in the background beyond the dike. Views to the east end dramatically with sloping hillsides covered with fruit orchards and the steeply vegetated slopes of the Wasatch Range. Views within the developed areas are greatly enhance by the now mature cottonwood trees planted to provide shade for campers and picnickers. From a distance, the presence of the mature cottonwood trees and other dense vegetation helps to screen from view many of the developed facilities. In general, the appearance of the immediate (foreground) landscape is pleasant, and while it is not a natural landscape, it nevertheless gains much of its beauty from the overall setting in which it occurs. The abundance of birds and small mammals attracted to the vegetation also add to the enjoyment of the area.

Views from the lake surface are often constricted by the dike, especially from nearby the dike. Only toward the center of the lake's surface, are views permitted over the dike to the landscape beyond. These views are even more confined when water levels are low. Views back to the North Recreation Areas are enhance by the cottonwood trees and other vegetation that screens the campground facilities from view.

Except for the large trees at the developed areas, the remainder of the landscape is made up of flatlands that are either farmed, or have been disturbed by construction of the dike and have revegetated with native vegetation, invasive weeds, and wetland plants. These areas are fairly typical in appearance to other nearby salt marsh and mudflat conditions.

Access to the northern area is directly off of Interstate 15. Large cottonwood trees and other dense vegetation gives the entry a pleasant, although obviously

modified appearance. The general appearance and quality of experience at this entry is pleasant.

Access to the southern area is less direct and requires exiting the interstate via SR 312 and then traveling through farm and ranch country to the State Park entrance. The route passes adjacent to a large electrical substation, as well as several farm and ranch settlement areas and other man-made elements. Access to the southern area is less attractive; however, the campground itself has several large trees (again planted to provide shade) which greatly enhance the appearance of the otherwise worn campground facilities.

Absorptive Capability

Absorptive capability is a measure of the landscape's ability to recover from and adapt to modifications, whether they are natural or man-made. It is generally a combination of physical site features such as slope, vegetation, and soils. At Willard Reservoir, slope has little influence on absorptive capability, except for the dike itself, because the area is generally flat and open in appearance. The open areas are particularly susceptible to visual intrusion, and thus have a low absorptive capability. In other words, any modification to the landscape such as the introduction of a structure or building, construction of a road or other disturbance, is likely to be highly visible and appear not to be consistent with the characteristic landscape. Whereas, that same modification to the landscape occurring in dense vegetation such as the mature cottonwoods, willows, and other shrub vegetation would be relatively inconspicuous as it would be screened and buffered from broad views. Here absorptive capability is moderate to high, because modifications would be less visually intrusive.

Cultural Modifications

Cultural modifications are very evident throughout the area. In the northern recreation areas, the dike is a dominant feature setting the edges of the reservoir on the north, west and south sides. Its sloped banks rise approximately 36 feet upward to form a consistent and uniform linear element in the landscape whether viewed from land or water. Interstate 15 is a dominant feature along the eastern edge of the Willow Creek Campground Area and south toward Pelican Beach, along with the high voltage overhead power lines evident along the park entrance road. In the South Recreation Area, the dike is still a very obvious presence and even more dominant than in the northern area because it obscures views to the reservoir's water surface, and must be traversed in order to access the water.

In addition to these cultural modifications, there are numerous access roads, farmed fields, power lines, an electrical substation, agricultural out-buildings,

and other structures evident in the area, particularly in the developed recreation areas.

Distance Zones

Distance zones define and categorize the landscape into three separate zones based on the amount of detail that is normally perceived by viewers. Most of the landscape within the State Park area is relatively close to the shoreline, principal recreation area access routes, or nearby developed areas, allowing visitors to view the area in detail. Thus, the dominant distance zone is foreground as mapped on the Visual Quality Map found in the project file. Areas that are normally viewed from a distance of one-quarter mile or father would be considered middle ground or background. Often, these are outside of the study area boundary; however, areas outside the boundary do have a direct affect on visual quality in the project area.

Generally, foreground views reveal more obviously man made objects and elements, such as roads, shelters and restroom structures, power lines, and mown lawns and grasses. These are most likely to dominate views within and adjacent to the developed recreation areas. Middle ground and background views, perhaps from the water's surface while boating, reveal less detail regarding the level of development, and here the large cottonwood trees and other dense vegetation in the developed areas helps to screen from view some of the lines and textures that are not natural appearing.

Views from the Interstate toward the northern recreation areas, and vice versa, are also somewhat screened due to the trees and large shrubs that have grown into the buffer area. With additional plantings along this eastern edge, much of the visibility of the highway could be almost completely obscured.

Some project areas at the southern end are sometimes obscured from view by the dike or other close-up vegetation types, thus a few middle- and background areas are noted.

Variety Class

Variety class defines the degree of variety or diversity found in the landscape. The primary determinant of variety class is vegetation (*Vegetation Mapping Report*, 1999). Three variety classes are used: Class A - Distinctive, Class B - Common, and Class C - Minimal. Within the project area, there are no vegetation types considered to be Distinctive.

Several vegetation types fall into the Common class:

- Cottonwood/willow riparian: these are found primarily in the developed campground areas, where many trees have been planted to provide shade.
- Farmed land: these are found south, east and north of the reservoir, and are used for growing irrigated crops such as corn, grain, alfalfa and others.

The remaining mapped vegetation types are classified as Minimal. These include:

- Altered land - undeveloped: these include the dikes, grassy lawn areas, and other vegetated areas that have been disturbed by man and are now dominated by weeds and grasses.
- Altered land - developed: these include the campgrounds, picnic areas, roads, beaches and boat ramps.
- Open water: these areas are often inundated with water and thus are either sparsely vegetated or devoid of vegetation.
- Salt marsh/mudflat: much of this area is managed by the Division of Wildlife Resources. They are poorly drained and have little vegetation (low growing weeds and grasses) or no vegetation.

Sensitivity Level

Sensitivity level considers the amount of public concern for visual quality or scenic quality of an area. Landscapes in which the public has expressed particular concern are more critically managed and are considered Sensitivity Level 1. To be considered Level 1, the landscape must be visible from a primary travel route where at least one-forth of the visitors have a major concern for visual quality.

While passers-by have not been surveyed, many of those who frequent the recreation facilities at Willard Reservoir participated in a Visitor Use Survey during summer and fall 1996 (*Willard Bay State Park Visitor Survey Results*, January 3, 1999). One of the questions on the survey specifically asked about what attracts people to Willard Bay State Park. Scenic Beauty was identified by just over 11 percent of visitors as a reason for coming to the park. Overall, it ranked 11th out of 17 attractiveness options.

Although much of Willard Reservoir is visible from a primary travel route (Interstate 15), users who come to the reservoir in very high numbers indicate a low to moderate interest in scenic quality, thus Sensitivity Level 2 has been assigned throughout the area.

Visual Quality Objectives

The Visual Management System (VMS) developed by the Forest Service uses distance zones, variety class and sensitivity level to establish Visual Quality Objectives (VQOs) for various landscape types. Visual Quality Objectives for the areas within the project boundary are shown on the Visual Quality Map, and represent existing visual quality in the area.

There are two VQOs at Willard Reservoir, Modification and Maximum Modification. Both reflect the developed and modified nature of the landscape throughout the area.

Modification characterizes a variety of site conditions. Areas where the landscape has been altered but not developed (Altered Land - Undeveloped), the salt marsh/mud flats, the open water edge conditions; and areas where the developed recreation areas occur (Altered Land - Developed) and farmed land occur. The cottonwoods that are part of the Cottonwood/Riparian vegetation type found in the campgrounds and day use areas are also characterized as modification. Here the landscape character appears moderately altered, thus scenic integrity is considered to be moderate. Many of these areas still appear somewhat natural because they are vegetated; however, it is readily apparent that landscape modifications have occurred.

Maximum Modification characterizes conditions in areas where the landscape has been heavily modified, and primarily includes the dike, which is considered to have very low scenic integrity because deviation from a natural appearing landscape dominates the visual environment.

While Modification and Maximum Modification VQOs represent the existing visual condition, it may be possible to attain a future desired VQO that has a more natural appearance. This can be accomplished by various mitigation measures including additional plantings of native plants for purposes of reclaiming weeded and overgrazed areas of salt marsh and mudflats, and in the cottonwood/riparian areas which extend beyond the developed campground areas into the surrounding landscape.

In the northern area, such mitigation measures would begin to provide a strong buffer and screen between Willow Creek Campground and the Interstate, would enhance the immediate environment for campers and day use recreationists, and would improve the overall view of the developed areas from boats on the reservoir. With additional plantings absorptive capability could increase, and the overall aesthetic appearance of the area could improve.

In the southern area, mitigation measures could be effective in improving the natural appearance of the salt marsh/mud flat areas. However, the dike is a dominant feature here and mitigation measures would have little impact in reducing its dominance or screening it from view because the dominant views occur in the foreground at the campground.

Table 2.7 Visual Quality Objectives by Area	
North Recreation Area	
Willow Creek Campground	Modification
Cottonwood Day Use Area	Modification
Eagle Beach Day Use Area	Modification
Wiper Cove Day Use Area	Modification
Pelican Beach Use Area	Modification
North Recreation Area Marina (Marina, Slips, and Boat Parking)	Modification
Administration Area	Modification
Wildlife Management Natural Area	Modification
South Recreation Area	
Campground at South Recreation Area	Modification
South Recreation Area Marina	Modification
Dike	Maximum Modification
Wildlife Management Natural Areas	Modification

NATURAL AND CULTURAL RESOURCES

Vegetation and Wetlands

Soils

The easternmost portion of the project area is located within the Lasil-Fridlo association of somewhat poorly drained and moderately well drained, nearly level and gently sloping loans on broad low lake terraces and lake plains(Chadwick, 1975). The western parts of the project area are located on the

Playas-Saltair association which consists of playas and poorly drained, nearly level silty clay loans on lake beds and broad plains. The soils were formed in highly stratified, calcareous, mixed alluvium derived mainly from limestone, sandstone and quartzite. Some of the soil types in this area are highly saline. Slopes range from 0 to 1 percent.

Habitat/Vegetation Types

There are six general habitat/vegetation types within the area as displayed on maps 2.3 - 2.6 beginning on page 2-31.

Farmed Land Habitat Type (Fa)

This vegetation type is generally underlain with Syracuse or Warm Springs fine sandy loam soil. The water table is between 24 and 40 inches below the surface. Syracuse soils are used for irrigated crops including alfalfa, small grains, sugar beets, tomatoes and corn for silage as well as range. When abandoned, these areas may revert to disturbed sites dominated by weedy plant species. These sites primarily occur northeast, south and east of the southern boat ramp.

Altered Land Habitat Type - Undeveloped (AltU)

This habitat type has been altered by humans and is comprised of areas such as large dikes and grassy lawns, as well as the area of an abandoned water park. These areas are highly disturbed are dominated by grasses and weedy species including Kentucky bluegrass (*Poa pratensis*) (planted and irrigated) as well as cheatgrass (*Bromus tectorum*), Canada thistle (*Cirsium arvense*), and teasel (*Dipsacus sylvestris*).

Altered Land Habitat Type - Developed (AltD)

This habitat type includes the developed portions of the property such as campgrounds, picnic areas, roads, beaches and boat ramps. They are unvegetated or planted with non-native species such as Kentucky bluegrass.

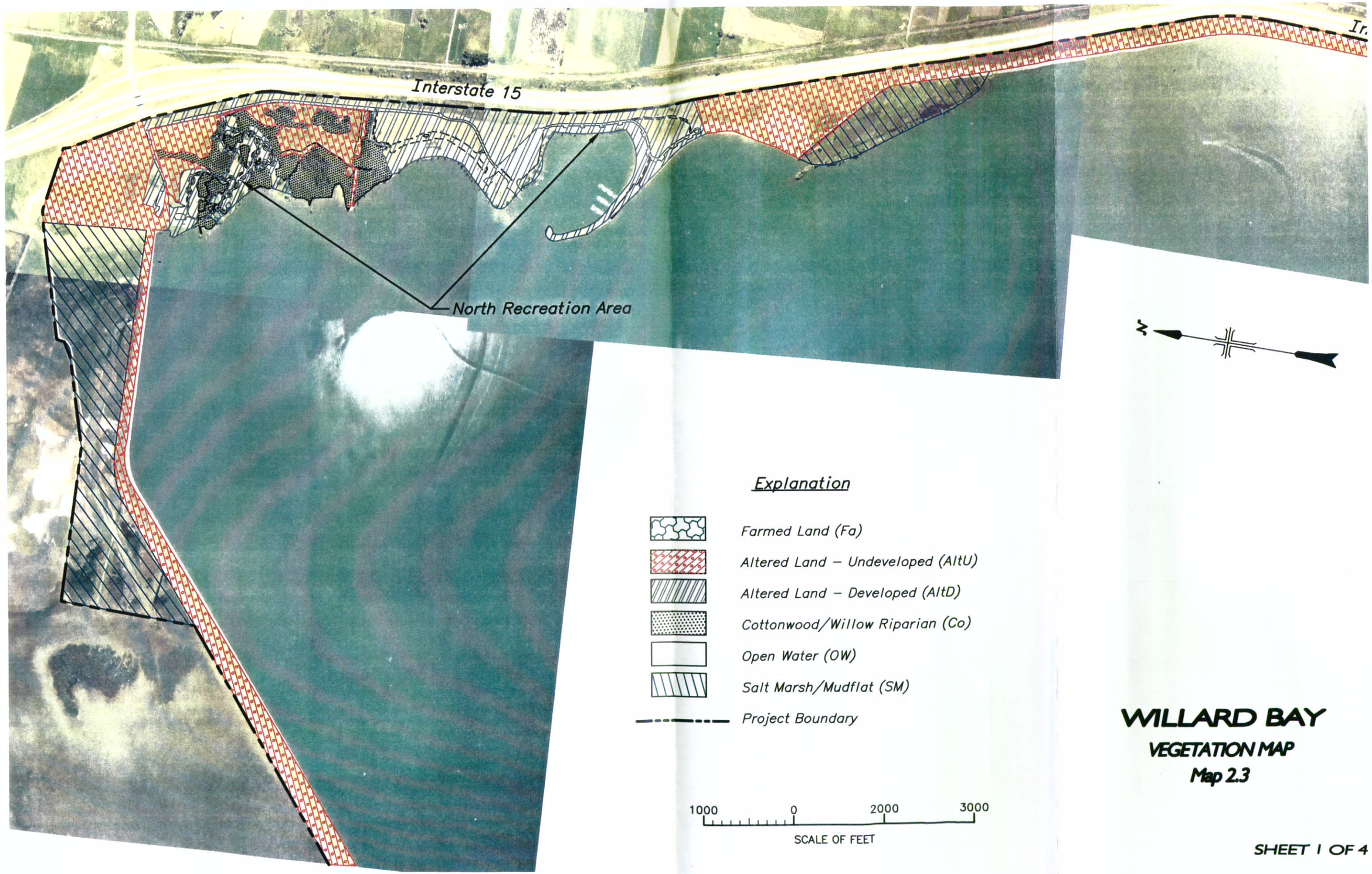
Cottonwood/Willow Riparian Habitat (Co)

This habitat type comprises about 20 percent of the wetland types within the project area. In some places, trees have been planted for shade and are maintained by sprinklers. These areas are generally lower in elevation than the surrounding upland area and collect runoff during precipitation events, thereby providing the important function of water quality improvement. The overstory is dominated by narrowleaf cottonwood (*Populus angustifolia*), coyote willow (*Salix exigua*), red-osier dogwood (*Cornus stolonifera*) and tamarisk (*Tamarix sp.*). Dominant vegetation associated with freshwater emergent wetland plant communities, which are found in ditches, along ponds and other waterways and in isolated low spots, include Joe-pye weed (*Eupatoriadelphus maculatum*), hairy

willowherb (*Epilobium ciliatum*), prostrate knotweed (*Polygonum aviculare*), cattails (*Typha spp.*), lady's thumb (*Polygonum persicaria*), common reed (*Phragmites australis*), reed canary-grass (*Phalaris arundinacea*), curly dock (*Rumex crispus*), rushes (*Juncus spp.*), red-osier dogwood (*Cornus stolonifera*), and coyote willow (*Salix exigua*). The largest wetland/riparian area is located within the northern campground and has been flagged and surveyed. A small riparian area is located within the parking area of the southern park and is dominated by cottonwoods. There should be no further disturbance to this habitat type.

Open Water Habitat (OW)
These areas are generally unvegetated or sparsely vegetated with submerged vegetation. They occur within stream banks and inside borrow areas, ponds and the reservoir area.

Salt Marsh/Mudflat Habitat Type (SM)
Salt marshes are interspersed with and landward of the mudflats located along the south and southeast sections of Willard Reservoir. This area is currently managed by the Utah Division of Wildlife Resources as part of the Harold S. Crane Waterfowl Management Area. There are two other salt marsh sites, one located along the east side of the reservoir and one west of the North Recreation Area boat ramp. Dominant vegetated associated with salt marsh communities include Olney's threesquare (*Scirpus americanus*), hardstem bulrush (*Scirpus acutus*), cattail (*Typha spp.*), lady's thumb (*Polygonum persicaria*), salt grass (*Distichlis spicata*), tamarisk (*Tamarix sp.*), and common reed (*Phragmites australis*). The salt marsh and associated mudflats comprise over 80 percent of the wetlands in the Willard Reservoir boundary. Soils in the mudflats are of the Saltair and Refuge Series which are poorly drained and somewhat poorly drained soils with slow to moderate permeability. Mudflats have little or no vegetation growing on them.



Explanation

- Farmed Land (Fa)
- Altered Land – Undeveloped (AltU)
- Altered Land – Developed (AltD)
- Cottonwood/Willow Riparian (Co)
- Open Water (OW)
- Salt Marsh/Mudflat (SM)
- Project Boundary

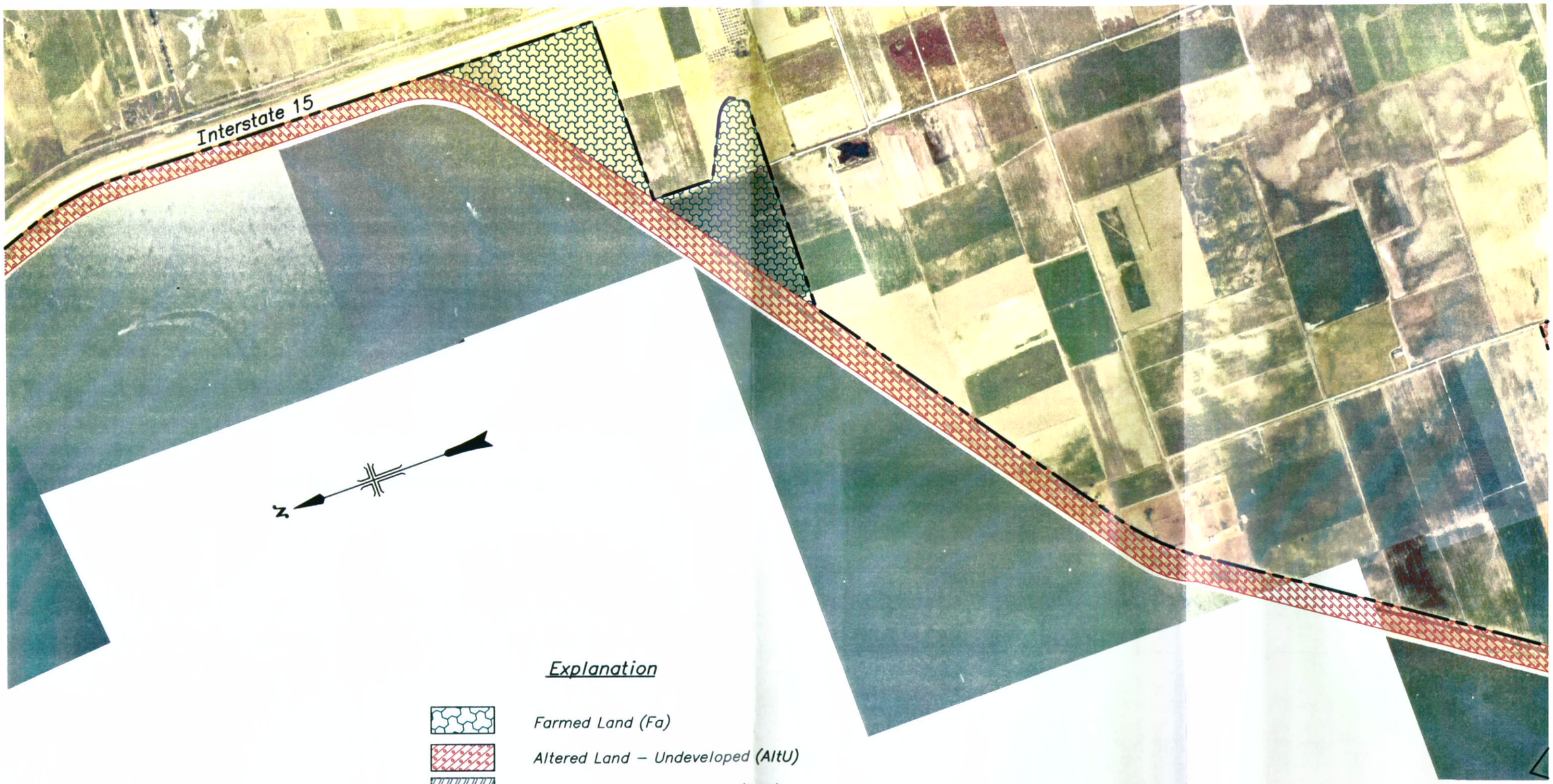
1000 0 2000 3000

SCALE OF FEET

WILLARD BAY

VEGETATION MAP

Map 2.3



Explanation

- Farmed Land (Fa)
- Altered Land – Undeveloped (AltU)
- Altered Land – Developed (AltD)
- Cottonwood/Willow Riparian (Co)
- Open Water (OW)
- Salt Marsh/Mudflat (SM)
- Project Boundary

1000 0 2000 3000

SCALE OF FEET

WILLARD BAY
VEGETATION MAP
Map 2.4

Explanation

- Farmed Land (Fa)
- Altered Land – Undeveloped (AltU)
- Altered Land – Developed (AltD)
- Cottonwood/Willow Riparian (Co)
- Open Water (OW)
- Salt Marsh/Mudflat (SM)
- Project Boundary

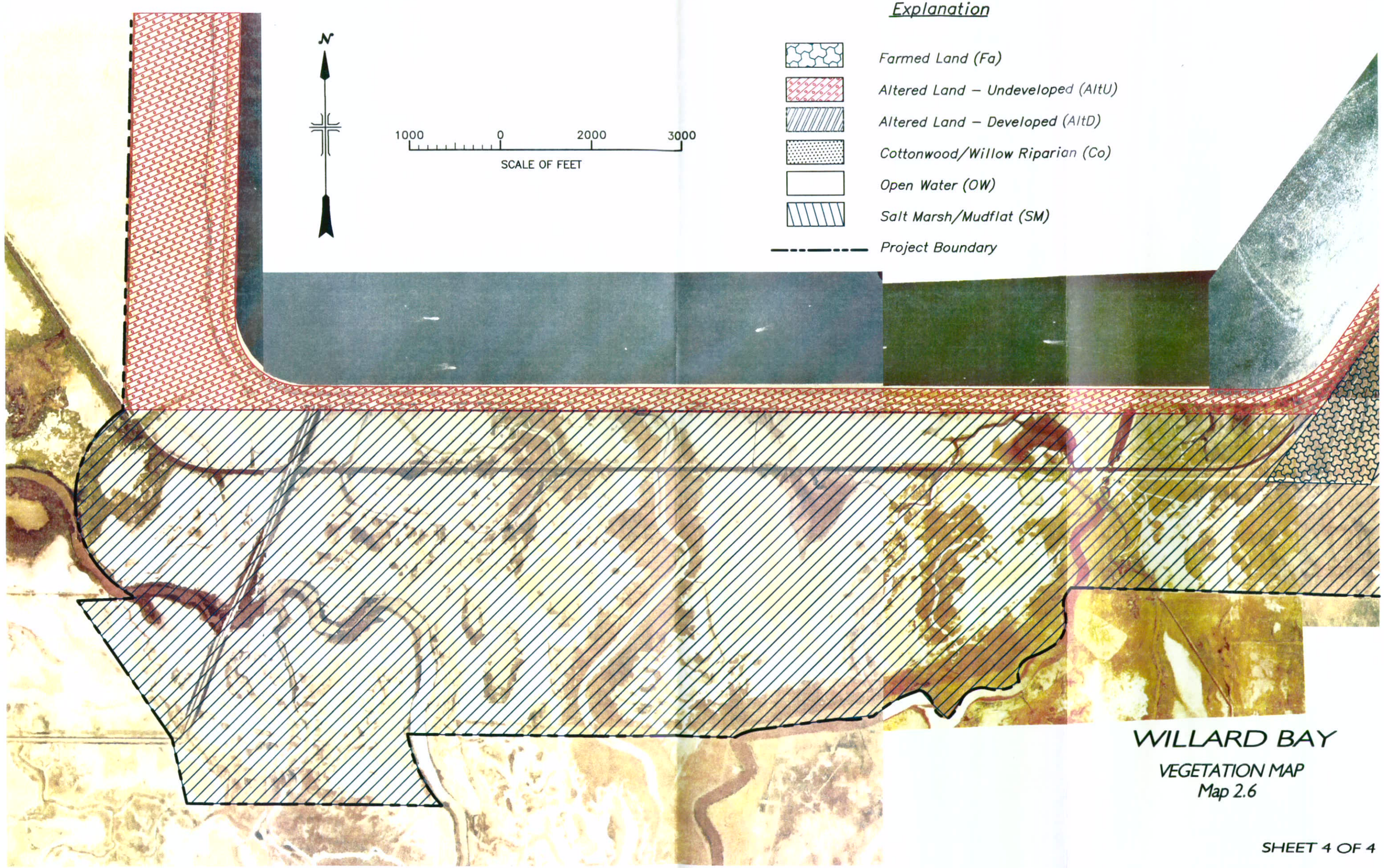
1000 0 2000 3000

SCALE OF FEET

WILLARD BAY

VEGETATION MAP

Map 2.5



WILLARD BAY

VEGETATION MAP
Map 2.6

SHEET 4 OF 4

Wetland Jurisdictional Areas

The Cottonwood/Willow Riparian Habitat, Open Water Habitat and the Salt Marsh/Mudflat Habitat represent potential jurisdictional areas which are regulated by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act of 1977 (CWA). These areas are called Waters of the United States and include lakes, streams, rivers, ponds, playas, mudflats and wetlands. The CWA sets forth a goal of restoring and maintaining existing aquatic resources in the United States. To achieve a goal of no overall net loss of wetland functions and values, the Corps strives to avoid adverse impacts and offset unavoidable adverse impacts to existing aquatic resources through mitigation requirements.

The Corps and the U.S. Environmental Protection Agency jointly define wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to saturated soil conditions (Federal Register, 1986)." In general, wetland plants are typically adapted to saturated soil conditions and are able to grow, compete, reproduce and/or persist in anaerobic soil conditions. Areas exhibiting wetland hydrology are permanently or periodically inundated or have soil saturation within a major portion of the root zone during the growing season of the prevalent vegetation. Functional values associated with wetland and riparian habitat include groundwater recharge and discharge, flood storage and synchronization, sediment trapping, shoreline anchoring, food chain support, and providing fish and wildlife habitat.

Prior to any proposed development outside of the existing campgrounds (both north and south) and the old waterpark area, further wetland delineation should occur. Due to the scale of these maps, small wetland areas may not be easily seen and identified on the aerial photographs, including wetland strips associated with various stormwater ditches and along fill areas.

Permits must be obtained from the Corps for the discharge of dredged or fill material into Waters of the United States, including wetlands. Applications are evaluated based on the purpose and need of the project and whether a project:

- has been designed to avoid impacts to Waters of the United States to the maximum extent,
- if impacts must occur, whether the impacts are minimal, and
- if unavoidable adverse impacts occur, a plan is proposed to offset the loss of functions and values to the aquatic resource (Federal Register, 1980).

Only after an application has gone through this "sequencing" process is a decision made on whether the project may obtain a Federal permit. Nationwide permits have been issued for some types of minor activities such as bank stabilization and repair of existing structures which may apply to certain proposed activities (Federal Register 1996). However, it must be noted that these permits, in their current form, are valid for five years and will be renewed or changed in the year 2001.

Threatened and Endangered Plant Species

Ute Ladies'-tresses (Spiranthes diluvialis), a threatened plant, has the potential to exist within the area. Before any construction, a survey for Ute Ladies'-tresses must be conducted. This survey should be conducted in August for identification purposes. If Ute Ladies'-tresses are found, they should be avoided in construction.

Wildlife

Numerous species of waterfowl utilize the area in and around Willard Reservoir. This is partially due to its proximity to the Pacific flyway and nearby waterfowl management areas. Located to the north of the reservoir is the Bear River Migratory Bird Refuge, to the west is the Harold S. Crane Waterfowl Management Area and the Great Salt Lake, and to the south is the Ogden Bay Waterowl Management Area (Ogden Bay WMA). The Ogden Bay WMA receives water that is stored in Willard Reservoir. Weber River water is diverted through the Willard Canal, stored in Willard Reservoir and released to maintain flows in the Ogden Bay WMA (MOA-Contract No. 14-06-400-4643). Most of the manageable upland wildlife habitat within the area boundary is located on lands located to the south of the reservoir.

The reservoir and associated wetland and upland habitat within the area boundary are utilized by many waterfowl and non-waterfowl species of birds, such as ducks, geese, swans, shorebirds, and songbirds. Upland game birds, such as ring-necked pheasant (Pheasanius colchicus), California quail (Lophortyx californicus), and mourning dove (Zenaidura macroura) are managed for on lands south of the reservoir. Raptors, such as the northern harrier (Circus cyaneus), and the red-tailed hawk (Buteo jamaicensis), are also observed by visitors to the area. In the winter months, bald eagles (Halioeetus leucocephalus), a federally listed species (threatened), congregate in trees around the shoreline of the lake near the north recreation area. Mammals observed on lands within the reservoir area boundary include: cottontail rabbit (Sylvilagus audubonii), jackrabbit (Lepus sp.) raccoon (Procyon lotor), red fox (Vulves fulva), striped skunk (Mephitis mephitis), muskrat (Ondatra zibethicus), and long-tailed weasel (Mustela frenata).

Reptiles and amphibians, such as the great basin rattlesnake (Crotalus viridis), wandering garter snake (Thamnophis elegans), great basin skink (Eumeces skiltonianus), short-horned lizard (Phrynosoma douglassii), and the northern leopard frog (Rana pipiens), are among the species that have potential to occur on lands within the project area.

Wildlife Management

To mitigate for waterfowl habitat loss associated with the development of Willard Reservoir, Reclamation acquired and developed approximately 1,800 acres of State sovereign land located west of the reservoir. Dikes, and a delivery canal with inlet structures were constructed to create ponds that could be managed as marshes. Ownership and management responsibility for these lands, known as the Willard Waterfowl Management Area, was transferred to the UDWR in 1963. The name has since been changed to the Harold S. Crane Waterfowl Management Area and the size has been expanded to encompass over 11,000 acres. An agreement is in place with UDWR that retains access and operations rights across these lands as necessary for Reclamation to complete activities associated with the Weber Basin Project (MOA-Contract No. 14-06-400-2871).

In 1973, Reclamation entered into an agreement (MOA-Contract No. 14-06-400-5925) with UDWR to transfer wildlife administration and development responsibilities for lands located to the south of the reservoir. The area is known as the Willard Wildlife Management Area. An updated agreement for management of the area was implemented in 1980 (MOA-Contract No. 0-07-40-L1478) for a 10 year term. In 1987 this agreement was supplemented (MOA - Contract No. 06-07-L1450) to include management of an additional 100 acres adjacent to the south marina. In 1991 a new agreement was drafted but never signed. Because the 1980 MOA for management of the Willard Wildlife Management Area has expired, a new agreement has been drafted and is being negotiated.

The Willard Bay Wildlife Management Area now encompasses almost 2,000 acres and is managed primarily for the benefit of upland species with emphasis placed on the ring-necked pheasant. The Willard Bay Wildlife Management Area contains a mix of upland and wetland habitats ranging from agricultural land to mudflats. Management activities that have been implemented by UDWR to improve pheasant habitat include; planting food plots, cooperative farming (Contract No.3-07-40-L1410), supplemental feeding in winter, planting nesting cover, establishment of shrub rows, predator control, and limited irrigation. Although UDWR is responsible for maintaining roads, fences, and habitat, land ownership and mineral rights remain in the name of the United States.

Reclamation also reserved access and operations rights as necessary for operation of the Weber Basin Project. Recreational use of the area includes hunting, fishing, dog training, bird watching and trapping. However, illegal dumping, all terrain vehicle use, trespass livestock, trap and skeet shooting and dispute over responsibility for law enforcement are problems associated with the area that need to be resolved.

An area approximately 50 acres in size exists at the north end of the reservoir within the reservoir area boundary. This parcel of land is within Reclamation's primary jurisdiction zone and was originally utilized for borrow material during reservoir construction. Overgrazing and habitat degradation have occurred in this area as a result of past livestock grazing leases and trespass cattle. Grazing has been discontinued and Reclamation recently constructed a fence and cattle guard to exclude neighboring livestock from the area. The UDWR has expressed interest in assuming management responsibility for this area and a parcel of land situated between the east dike of the reservoir and I-15. The UDWR is concerned that these areas are being overtaken by noxious weeds, especially Dyers Woad (Isatis tinctoria) and would like to assume responsibility for weed control and enhance habitat for pheasants and songbirds. Presently, weed control is being done by the county.

In the past, beavers (Castor canadensis) have damaged some of the trees within the park. When this occurs, the skills of a local trapper are solicited and the offending animal is removed.

Abundant roosting sites (dead cottonwood trees) around the reservoir shoreline and a supply of winter-killed gizzard shad in the reservoir attract bald eagles to the North Recreation Area in the winter. This large concentration of wintering eagles also attracts many visitors/bird watchers to the State Park. However, concern over visitor safety has prompted State Park officials to selectively remove some of the dead cottonwood trees to reduce the risk of injury from a falling tree limbs. Peregrine falcons (Falco peregrinus) utilize hacking towers on the nearby shores of the Great Salt Lake, however, the bald eagle is the only federally listed species that might be affected by activities within the reservoir boundary area at this time.

Fishery

At maximum capacity the surface area is 10,000 acres, maximum depth is 30 feet and 215,000 acre feet of water is stored. The bottom is flat, fairly uniform and composed primarily of sand and silt.

Willard Reservoir is eutrophic in nature. Very little thermal stratification occurs in the summer due to the occurrence of periodic storms that create surface waves and mixing with bottom sediments. This mixing action results in increased turbidity and reduced light transparency, thus restricting development of emergent or submergent vegetation to the more sheltered areas of the reservoir. Surface ice generally forms by December and disappears by March.

The Utah Department of Wildlife Resources conducted an ecological survey of water quality in the reservoir. Summertime water temperatures were found to vary between 75 and 80 degrees Fahrenheit. Dissolved oxygen content was at or near saturation at all times and the pH was slightly alkaline. Physical and chemical parameters within the reservoir are best suited for maintenance of a warm water fishery.

The Utah Department of Wildlife Resources manages the fishery resource in Willard Reservoir. The UDWR began stocking largemouth bass (Micropterus salmoides), walleye (Stizostedion vitreum), channel catfish (Ictaluras punctatus), white bass (Morone chrysops), and fathead minnow (Perca flavescens) in Willard Reservoir in 1965. Black crappie (Pomoxis nigromaculatus) were illegally stocked by anglers shortly after the reservoir was completed. Because water for Willard Reservoir is diverted from the Ogden and Weber Rivers and Willard Creek, fish species present in the reservoir somewhat reflects what exists in those streams and what once existed in ponds flooded by the reservoir. Other fish species known to have occurred in the reservoir historically include: brown trout (Salmo trutta), black bullhead (Ictalurus melas), bluegill (Lepomis macrochirus), carp (Cyprinus carpio), cutthroat trout (Salmo clarki), Delta smelt (Hpomesus transpacificus), green sunfish (Lepomis cyanellus), mottled sculpin (Cottus bairdi), rainbow trout (Salmo gairdneri), mosquitofish (Gambusia affinis), redside shiner (Richardsonius balteatus), Utah chub (Gila atraria) Utah sucker (Catostomus ardens), emerald shiner (Notropis atherinordes), fathead minnow (Pimephales promelas), log perch (Percina caprodes), pond smelt (Hypomesus olidus), sand shiner (Notropis stramineus), and spottail shiner (Notropis hudsonius). However, most of these species have been unsuccessful in establishing and maintaining a viable population within the reservoir.

Throughout the history of Willard Reservoir, the sport fishery has experienced up and down cycles. These cycles appear to coincide with introductions of forage fishes which improve fishing temporarily until the forage population is suppressed by predation and the fishery declines. The reservoir has experienced several drawdowns in the past that exposed much of the dike rip-rap which provides shoreline cover for both forage species and young-of-the-year gamefish

thus making them more vulnerable to predation. Coordination between UDWR and WBWCD prior to making seasonal reservoir changes could minimize impacts and possibly benefit reservoir fish populations.

In the past, fish attractors (tire reefs, Christmas tree bundles) were placed in the reservoir basin to provide additional cover for small fish and improve angler success. Most of the trees have since decomposed. Tires still remain in the reservoir. Placement of structures within Reclamation reservoirs for the purpose of creating fish habitat has recently become a topic of concern. There is potential for fish habitat structures to interfere with operation and maintenance and present a hazard to boaters.

Shipman (1977) conducted a study of the utilization of natural and artificial spawning habitat by channel catfish in Willard Reservoir. Types of spawning habitat evaluated consisted of dike riprap, milk cans, plastic trash cans, and automobile tires. Utilization of the artificial structures by spawning catfish was low, however, it was concluded that adequate channel catfish spawning habitat is provided by the existing riprap dike that surrounds the reservoir.

Spottail shiners were stocked in 1981, 1982 and 1983 to improve the forage base for walleye and black crappie. In 1982, Delta smelt were also stocked. Only short term benefits were realized from introduction of the spottail shiner and Delta smelt and their establishment of a self sustaining forage base was unsuccessful (Sommerfeldt 1984).

In 1990, UDWR introduced the gizzard shad (Dorosoma cepedianum) into Willard Reservoir in an attempt to provide forage and boost the walleye / channel catfish sport fishery. This introduction was done on an experimental basis due to concerns over possible transfer of gizzard shad into other Utah waters. Current fishing regulations prohibit possession of gizzard shad. Preliminary results of gizzard shad introductions indicate that they are being utilized by predator fishes and growth rates have increased.

In 1993 hybrid white bass "Wipers" (Morone sp.) were introduced to utilize the additional forage provided by gizzard shad and exploit the under-utilized pelagic habitat within the reservoir. Preliminary results of this introduction confirms that the wipers are utilizing the abundant forage and are growing at a rapid rate. Establishment of a wiper fishery has been popular with reservoir anglers.

Threatened, Endangered, and Candidate Animal Species

The bald eagle (Haliaeetus leucocephalus) currently is the only threatened species known to be in the project area. There is potential for two candidate species to be found in the area: the Fat-whorled Pondsnail (Stagnicola bonnevillensis) and Ogden Rocky Mountain Snail (Oreohelix peripherica wasatchensis).

Range Resources

Currently no grazing permits exist, however trespass livestock do utilize the north end of the reservoir.

Cultural Resources

An abundance of information is available regarding cultural resources within the current project area. More than a dozen cultural resource projects have been previously conducted in and near the reservoir since the turn-of-the century. Many of these projects were carried out during the early 1900s, while another flurry of activity began in the 1960s, in preparation for the inundation of the newly constructed reservoir. Beginning in the mid-1980s, cultural resources work began around the southern portion of the reservoir in response to fluctuating lake levels and increased shoreline erosion. These projects primarily focused on the study of prehistoric human burials exposed by erosion in and around the boundary of Willard Reservoir.

Of the many previous projects, only a few were formal pedestrian inventories, including large-scale surveys undertaken by avocational archaeologists from the Promontory/Tubaduka Chapter of the Utah Statewide Archaeological Society (USAS). In 1990 and 1991, the Office of Public Archaeology at Brigham Young Unviersity conducted a pedestrian inventory of 2,180 acres of Bureau of Reclamation lands within the current project area (Baker et al. 1992). This inventory covered all but 250 acres of the current project area located near the South Marina. However, the largest percentage of projects previously undertaken in and near the current project area have been excavations, including both limited testing and full scale excavation of at least 25 sites. The bulk of these excavations have focused on the recovery and/or protection of prehistoric human (Fremont and Late Prehistoric) skeletal remains.

As a result of the many formal and informal inventories of the area, at least 87 cultural resource sites have been documented in and near the project area. Fourteen of these sites contain human burials (23 burials in all). The exact number of sites found in and near the project area is somewhat sketchy, as records of cultural resources work maintained at the Utah State Historic Preservation Office are not up to date. However, a close approximation of the

number of sites can be obtained through more intensive searching of the individual project reports. Of the 87+ sites in the general area, as many as 60± are located within the current Willard Reservoir RMP project area. These 60± sites include at least 59 prehistoric sites, five of which are known to contain human burials, and one historic trash scatter. To date, all of the *known* human remains at these sites have been recovered through archaeological excavation.

LAND MANAGEMENT

Transportation And Parking

Main Roads

Willard North Marina Road (SR-315) and Willard South Marina Road (SR-312) are both two lane paved roads that lead from the entrance to the north and south marina, respectively, directly to the boat docks in each marina. The Utah Department of Transportation (UDOT) maintains these two roads and they are in relatively good condition. Other roads outside the park are maintained by Box Elder County and Weber County.

Based on 1998 UDOT traffic counts, the daily traffic volume on the Willard Reservoir North Marina Road (SR-315) was 1,980 vehicles, with 485 daily vehicles on the Willard South Marina Road (SR-312). A two lane road can accommodate up to 10,000 vehicles a day without excessive traffic congestion or delays. Therefore, on an average day, the level of service into both the north and south marina at Willard Reservoir is very good. However, congestion does occur during peak weekend periods in the summer months.

Congestion is greatest at the north marina boat loading dock where waits as long as 45 minutes can occur on the busiest weekends. Congestion at the boat dock could be reduced by increasing the width of the existing dock at the north marina or by adding a second loading dock. Currently, a maximum of six or seven boats/personal water crafts can use the loading dock at one time. Increased capacity at the boat loading dock is not required to meet the existing weekday demand at Willard Reservoir.

Some congestion is also experienced at the two entrances to the park. Adding a second travel lane into the park at the entrance stations could decrease the delay during peak periods. However, during peak periods two park attendants are used to decrease the wait at the park entrance. Even with two park attendants the traffic sometimes backs up to the I-15 entrance ramp. While the road handles

the traffic capacity, the entrance causes a bottle neck for people entering the State Park.

Roads in the Park

Most of the roads in the park are paved, but many of them are in disrepair. Potholes and excessive cracking are common throughout the park. These roads are maintained by the State's Division of Parks and Recreation. Many of the campground roads and trailer parking areas are inadequate for larger trailers. Most of the campground roads are only ten feet wide and should be widened to a minimum of 12 feet to better accommodate recreational vehicles.

The road on the southwest and west sides of the reservoir is in very poor condition. This dirt road has large ruts created by vehicles (four-wheelers) using the road when it is wet. The poor condition of this road affects the accessibility to the west side boat ramp.

Trails

No developed trail system exists within the State Park. However, there is a small "nature trail" in the North Recreation Area.

Off-Highway Vehicle Use

Off-Highway Vehicle (OHV) use is prohibited. However, there is an OHV training area in the park used to train the public on proper off-highway driving techniques but this site is scheduled to be abandoned. Concerns have been expressed that although OHV's are prohibited, they are used illegally on the dike, and southwest of Willard Reservoir. Box Elder County allows OHV use on the roads they control, such as the road south of the reservoir. OHV use creates erosion problems, damages vegetation, and can potentially damage the culturally significant Burial Area west of the dike. A fence to physically restrict OHV access to these areas could address this problem. Another potential solution would be stricter enforcement of the OHV restrictions.

Parking Areas

During peak periods there is not adequate paved parking at the park, particularly near the north marina. The field east of Eagle Beach is used for overflow parking. Fields become muddy and impassible in wet weather, but the parking demand generally does not exceed the available paved parking when the weather is bad. Striping in the existing parking lots needs to be maintained (re-striped) regularly, so that the lots can be used as efficiently as possible. When the parking stall stripes are not visible more cars park between two spaces, which decreases the number of cars that can fit in the lot. Further, providing additional paved parking should be considered.

ENDNOTES

1 The demographic and economic data provided in this analysis, unless otherwise noted, is from the following sources: Population and migration data-- the Utah Population Estimates Committee; Economic and demographic projections-- Utah Governor's Office of Planning and Budget, Demographic and Economic Analysis Section, UPED model; Employment, wage, and1995 per capita income totals-- the Utah Department of Workforce Services; Building permit totals-- the University of Utah Bureau of Economic and Business Research; Per capita income totals prior to 1995- U.S. Bureau of Economic Analysis; Gross taxable sales, assessed valuations- the Utah State Tax Commission.

2 It is beyond the scope of this work to evaluate either the survey methodology or sampling techniques. A more thorough explanation can be found in the *Willard Bay State Park Visitor Survey Results*, prepared by the Division of Parks and Recreation.

3

MAPS

Chapter 3
Management Directives

INTRODUCTION

This chapter provides long-range management direction for Willard Reservoir and surrounding lands in response to public issues and management concerns. Implementation of the management direction is key to translating the goals, and management direction/requirements stated in the RMP to achieve desired future conditions and results on-the-ground. All uses and activities of the area covered by the RMP including permits, contracts, and other instruments must be consistent with the management requirements in both the:

- Area Wide Management Direction, and
- Specific Area Management Direction.

RESOURCE MANAGEMENT GOALS

The following goals are expressed in general and describe a desired condition to be achieved some time in the future. The management alternatives in this chapter are the implementation strategies to achieve these goals. The goals are grouped into five areas.

Partnerships

- Create, maintain, and support partnerships and agreements to achieve the goals of the RMP.

- Actively support partnerships with parties such as, Weber Basin Water Conservancy District, Willard City, Box Elder County, Weber County, local landowners, Friends of Willard Bay, Utah Department of Environmental Quality, Utah Department of Transportation, the Utah Division of State Parks and Recreation, the U.S. Fish and Wildlife Service, and the Utah Division of Wildlife Resources to facilitate best management of the resources while providing benefits to partners.

- Work with local communities to determine how activities on project lands benefit or adversely effect them. Strive to implement projects and programs beneficial to local communities that are consistent with goals of the RMP.

- Support partnerships with government entities and local conservation groups to provide public awareness of vegetation, water and game and non-game wildlife values in the project area.

- Pursue environmental management activities within the project area with other private, state and federal agencies to avoid habitat degradation or loss.

- Encourage partnerships to help educate the public on the purpose of Willard Reservoir, the importance of the watershed and the public's role in maintaining water quality.

- Provide the public with the opportunity to learn about the natural, cultural and historical resources of the project area and the need for courtesy and safety.

- Encourage partnerships among the Northwestern Band of the Shoshoni Nation, the State of Utah, area Universities, and archaeological societies on future protection, interpretation, and management of pre-historic cultural resources in the project area.

Water Resources

- Support, participate in, or where appropriate, lead in management efforts to maintain the water quality of Willard Reservoir.

- Protect or improve Willard Reservoir's water integrity for storage, quality and delivery.

- Allow uses that maintain water quality or improve the established Utah State standards for Willard.

- Manage to effectively control sources of pollution in the project area.

Recreation and Visual Resources

- Maintain or improve the quality and diversity of the recreation experience at Willard Reservoir.
- Evaluate the impact of recreation activities on Willard Reservoir and surrounding lands.
- Protect or enhance the visual resource of the project area.
- Provide a variety of recreational opportunities that maintain the quality of the recreation experience in the project area.
- At Willard Reservoir, provide accessible experiences and facilities for persons with disabilities.
- Manage recreation effects at levels which compliment the setting of Willard Reservoir.
- Provide adequate facilities and management to accommodate recreation while protecting the resources of the project area.
- Provide for health and safety of the public within the project area.

Natural and Cultural Resources

- Protect Willard Reservoir resources essential to fish and wildlife habitats and populations.
- Protect sensitive resources and the natural environment.
- Comply with all relevant laws for the protection of the environment.
- Protect threatened and endangered species and minimize impacts to sensitive resources in the project area.
- Protect and improve fish and wildlife habitat to the extent practicable within the operational constraints of Willard Reservoir.
- Protect or enhance the quality of the fisheries and fish habitat at Willard Reservoir within the framework of existing laws and management authority.

- Protect or enhance existing wetlands at Willard Reservoir.
- Control erosion in the project area, where practicable.
- Protect or enhance air quality in the project area.
- Protect the cultural and paleontological resources of the project area.
- Identify areas and management not suitable for development in the project area.
- Implement integrated pest management strategies in the project area.

Land Management

- Identify appropriate and compatible land uses that optimize the benefits to the public within the reservoir's operating criteria.
- Clarify and resolve land ownership, property boundaries and management responsibilities in the project area.
- Identify areas and management suitable for project purposes, access, roads, trails, utilities, wildlife habitat, and other land uses and activities.

DESIRED FUTURE CONDITION

This section describes the desired future condition for Willard Reservoir and its surrounding lands resulting from implementation of this Resource Management Plan (described as Alternative 2 in the corresponding EA).

The water quality at Willard Reservoir is protected. The culinary water supply and sewer systems are rehabilitated or upgraded. Highly erodible shorelines with high nutrient content are stabilized, and watercraft refueling is restricted to designated areas. Storm water run-off entering the project area has been reduced because neighboring jurisdictions have constructed and are maintaining detention basins.

With the formalized agency cooperation, among Reclamation, Weber Basin, State Parks, and UDWR, wildlife and recreation management conflicts are reduced. Vegetation is healthy from the recent planting of drought tolerant native plant species. Sensitive wildlife areas are protected.

Every effort is made to protect cultural resources including improving coordination with involved entities. Interpretive media is provided such as brochures or signs that alert visitors of the important cultural resources, their protection, and penalties for their disturbance or collection.

Existing recreation facilities are renovated, new facilities and opportunities are provided, the number of people is limited, and overflow activities adversely impacting natural resources are eliminated. Recreation user safety and experience are optimized through reduction of conflicts and congestion as well as through provision of convenience facilities appropriate for the activity.

The reservoir continues to be visually dominated by the dike surrounding it and campgrounds, marinas, and public access areas are apparent. Many types of watercraft use the reservoir simultaneously (water ski and fishing boats, sailcraft, and personal watercraft). The reservoir perimeter areas remain the area of high or moderate watercraft and user density due to shelter from the wind and fish feeding contact. Restricted no-wake zones exist near marinas, docks, and popular beaches. Because boaters tend to congregate in similar areas, they see and hear other boats.

In the North Recreation Area, existing facilities are rehabilitated and expanded facilities provided. Recreation sites are accessible to people with disabilities and more areas are open for winter recreation uses.

In Cottonwood Campground, bald eagles are viewed and access to the shoreline and natural trail preserved. While the Cottonwood Campground is developed for RV overnight camping with full utilities, critical nesting, foraging, and other habitat features are retained, protected, and managed for wildlife. Facilities and use are restricted to designated areas.

Eagle Beach accommodates urban beach oriented day use recreation. Motorized land vehicles are controlled. No overflow parking occurs. Sand beaches, shade pavilions, rest rooms and a refueling station are provided.

Day use improvements at Wiper Cove and Pelican Beach include shelters, rest rooms, and designated vehicle access.

The North Marina boat ramp is widened, temporary dry storage is added, slips are improved, and additional courtesy docks are provided.

A new overnight group use facility with utilities is provided and day use facilities renovated in the Pelican Beach Area and the OHV training area is removed.

In the South Recreation Area, roads are improved, parking increased, new picnic shelters, and rest rooms renovated and expanded, and seasonal visitor use increasing. The area, except for the marina facilities, is closed during the winter for wildlife protection.

The pockets of natural areas around the reservoir are revegetated and wildlife and waterfowl are abundant.

The Primary Jurisdiction Zone complements dam and dike operation needs.

MANAGEMENT DIRECTION

The following section specifies the management directions necessary to accomplish the goals of this Resource Management Plan. Management directions that apply to all management areas are discussed under the Area Wide Management Direction. Management directions specific to an individual management area are discussed under the Specific Area Management Direction. Please reference the table of contents for area and subject.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
OPERATIONS PARTNERSHIPS			
Project Purposes Fully protect the purposes for which the Willard Reservoir project lands were acquired or withdrawn.	WBWCD to care for, operate, and maintain the Willard Reservoir construction works. Repayment Contract between the US and WBWCD for the construction of Willard Reservoir Contract No. 14-06-400-33. Amendatory Repayment Contract between the US and WBWCD for increasing cost, Contract No. 14-06-400-1756, 6/30/1961. Amendatory Repayment Contract between the US and WBWCD for conformance with the Reclamation Reform Act, 5/9/1985. Emergency Contract between the US and WBWCD for replacement of portions of the Arthur V. Watkins Dam, Contract No. 5-07-40-R0180, 7/3/1985. Operation Agreement between the US and WBWCD for restoration of the Arthur V. Watkins Dam, Contract No. 9-07-40-R0780, 3/8/1989.	Evaluate proposed use activities against original purposes, contracts and agreements. Evaluate at the time of activity proposal and document in Reservoir Management Reviews.	USBR, WBWCD, State of Utah, and other entities. Documents on file with USBR, Provo Area Office, Provo, Utah.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Establish and maintain conveyance facilities. Contract among the US and Utah Power & Light regarding electric service furnished to Willard Canal Pumping Stations, Contract No. 14-06-400-1674 50 year License Agreement between the US and Box Elder County for discharge of water into Willard Bay, Contract No. 3-07-41-L0340, active until 5/23/2033.		Documents on file with USBR, Provo Area Office, Provo, Utah.
Project Uses and Appurtenances Allow partnership management where project purposes and RMP direction can be met.	Provide for highways and access roads as appropriate. Easement for access road between the US and Willard City Contract No. 8-07-40-L3210, entered into on 9/13/1988. Provide for natural gas pipelines where appropriate. 50 year License Agreement between the US and Mountain Fuel Supply Company to construct, operate and maintain a 3" gas pipeline, Contract No. 6-07-01-00051, active until 10/20/2025.	Evaluate activity proposals against project purposes, contracts and agreements. Evaluate at the time of proposal and document in Reservoir Management Reviews.	Document on file with USBR, Provo Area Office, Provo, Utah. Document on file with USBR, Provo Area Office, Provo, Utah.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Provide for power line appurtenances where appropriate. 50 year License Agreement with American Telephone and Telegraph Company for a buried cable, Contract No. 14-06-400-5371, active until 8/19/2020. 50 year License Agreement with Utah Power and Light Company to construct, operate and maintain a 12.5 kv Powerline, Contract No. 14-06-400-4535, active until 10/5/2016. 50 year License Agreement with Utah Power and Light Company to construct, operate and maintain a 7.2 kv Powerline, Contract No. 14-06-400-4773, active until 8/22/2017. Grant Easement with Utah Power and Light Company, Contract No. 5-07-40-L0310.		Documents on file with USBR, Provo Area Office, Provo, Utah.

FIRE PREVENTION PARTNERSHIPS

Regulations Ensure appropriate fire management regulations and procedures are in place and enforced in developed and dispersed areas.	Develop fire prevention programs for the areas.	Observe fuel conditions and apply appropriate action (by contract/ permitted management entity).	Contract/permitted management entity.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Construct fire breaks and/or manipulate vegetation as necessary to reduce the risk and spread of wildfires. Revegetate burned areas promptly with an appropriate seed mixture to reestablish vegetation and prevent erosion. Allow confined fires such as in fireplaces, grills, stoves, or lanterns, unless special restrictions. Post restrictions. State Parks Regulations: R651-613 and R651-613-1.	Monitor burned areas annually for revegetation success (by the contract/permitted entity).	Coordinate with State Parks, UDWR, USBR, WBWCD, and other adjacent landowners.
Fish and Wildlife Management Utah Division of Wildlife Resources is the wildlife authority for the State of Utah and is charged with the responsibility to protect, propagate, manage, conserve, and distribute protected wildlife throughout the state.	Management activities are subject to the broad policy-making authority of the Wildlife Board. Activities regulated by UDWR are specified in Title 23 of the Utah Code, or addressed in rules or proclamations as provided by Utah Code. UDWR has primary responsibility for enforcement of fish and wildlife related laws however any peace officer of the state has the same authority to enforce these laws.	Enforce and field review.	UDWR, State Parks, USFWS and appropriate law enforcement.

FISH AND WILDLIFE PARTNERSHIPS

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Where appropriate, cooperate with aquatic habitat improvements for the sport fishery. Cooperate and coordinate with UDWR regarding the Harold S. Crane Waterfowl Management Area and the Willard Reservoir Wildlife Management Area and with USFWS on the Bear River Migratory Bird Refuge.		
Fish and Wildlife Use Manage for fish and wildlife use as appropriate.	Establish fish and wildlife agreements. Memorandum of Agreement between the US and WBWCD relating to the development of the Willard Waterfowl Management Area, Contract No. 14-06-400-2871, 4/15/1963. Supplement to MOA between the US and WBWCD relating to the development of the Willard Waterfowl Management Area, Contract No. 14-06-400-2871, 11/6/1964. Time Extension to MOA between the US and WBWCD for administration and development of lands and facilities at Willard Reservoir for wildlife management purposes, Contract No.14-06-400-2871, 9/1/1965.	Comply with contracts, plans and agreements. Track in Reservoir Management Reviews.	Documents on file with USBR, Provo Area Office, Provo, Utah.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Memorandum of Agreement between the US and the Utah Fish and Game regarding water supply to the Ogden Bay Bird Refuge, Contract No. 14-06-400-4643, 9/15/1967. Memorandum of Agreement between the US and UDWR for administration of wildlife management purposes Contract No. 6-07-40-L1450, 8/28/1987.		
GENERAL PARTNERSHIPS, PRIVATE, COUNTY, STATE, TRIBES, FEDERAL, ETC.			
Governmental, Tribes and Conservation Groups Pursue Partnerships among USBR, State parks, Northwestern Band of the Shoshoni Nation, SHPO, UDWR to establish communication, coordination, resource protection and mitigation recovery procedures. Form partnerships with entities and local conservation groups to provide public awareness of cultural, vegetation, water, and game and non-game wildlife values.	Pursue MOA with SHPO.	Document progress/need in Reservoir Management Reviews.	USBR, Northwestern Band of the Shoshoni Nation, State Parks, WBWCD, UDWR, Box Elder County, and Weber County, Archaeological Society of Utah, Utah State University and SHPO, and the Friends of Willard Bay.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Local Communities and Tribes Work with local communities and Tribes to determine what activities they believe benefit or adversely affect them. Strive to implement projects and programs beneficial to local communities that are also consistent with the RMP.		Document progress/need in Reservoir Management Reviews.	USBR, State Parks, WBWCD, UDWR, Box Elder County, Weber County and the Northwestern Band of the Shoshoni Nation.
New Partnerships As appropriate, pursue partnerships with parties such as, Box Elder County, Weber County, local communities, Utah Division of Parks and Recreation, U.S. Fish and Wildlife Service, Utah Department of Transportation, Northwestern Band of the Shoshoni Nation, concessionaires, and the Utah Division of Wildlife Resources to facilitate best management of the resources while providing benefits to partners.	Structure partnership agreements to attract, encourage, and sustain cooperative and effective management while enhancing visitor services and protecting public resources for areas.	Document progress/need in Reservoir Management Reviews.	USBR, WBWCD, Box Elder County, Weber County, Northwestern Band of the Shoshoni Nation, and others.
Private, State, Tribe(s) and Federal Sectors Pursue natural resource management activities with other private, state, Tribal, and federal agencies to avoid habitat fragmentation and maximize benefits to the public.			USBR, WBWCD, UDWR, Northwestern Band of the Shoshoni Nation, Friend of Willard Bay and others.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Pursue cooperative private/ state parks/ USBR initiatives and/or concession agreements with private enterprises to achieve needed recreation development.			
Encourage volunteers to enhance management.	Invite private, non-profit, church and other organizations to assist with activities such as spring clean-ups, plantings, trail maintenance, resource interpretation and camp hosting.	Report volunteer efforts to USBR annually.	State Parks, Friends of Willard Bay, counties, school district, churches, and various organizations.
Interpretative Programs			
Describe, as appropriate, high interest or unique geological, paleontological, biological, cultural features or management concerns for public information and, as appropriate, develop interpretative information for these sites.	Design interpretative service programs where it will help resolve management problems, reduce management costs, obtain visitor feedback, increase public understanding of project management, enhance visitor use, and provide safe use of the area. Program elements should include: 1. Facility use guidelines and regulations. 2. Water and land use etiquette, and safety regulations. 3. Project purposes, characteristics, limitations, capacities, and public benefits. 4. Opportunity guides and maps.	Determine visitor profile and interpretative themes/ media in Reservoir Management Reviews.	USBR, State Parks, UDWR, Northwestern Band of the Shoshoni Nation, Archaeological Society of Utah, Utah State University, Weber State, SHPO, Hawk Watchers International, and the Utah Aquatic Nuisance Species Action Team.

INFORMATION MANAGEMENT AND PARTNERSHIPS

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	5. Reservoir boating and sailing conditions and hazards. 6. Developed and dispersed recreation use regulations. 7. Environmental interpretation and education on cultural resources, water quality and water conservation, wildlife, and wetlands, etc. 8. Off highway vehicle access status, guides, and maps. 9. Waste management, fire prevention, sanitation, and use of fuels and chemicals.		
Interpretive Partnerships Coordinate interpretive efforts with appropriate entities.			USBR, WBWCD, State Parks, UDWR, UDOT, or Northwestern Band of the Shoshoni Nation, Archaeological Society of Utah, USU, SHPO, and Hawk Watchers International.
Signage Establish clear, consistent signage to orient the public, and identify available opportunities at use areas and facilities.	Use Upper Colorado Region, Regional Sign Guide. Use Utah Department of Natural Resources, Division of Parks and Recreation Sign Handbook. Provide signs at key locations for effective visitor orientation.	Document compliance/needs in Reservoir Management Reviews.	USBR, WBWCD, Utah State Parks, UDWR, UDOT, Box Elder County, Weber County, Hawk Watchers International, and others.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Post boundary signs at logical locations. Place signs at entrances, boat ramps, picnic areas, and camping areas. Coordinate warning, traffic control, interpretive, and informational signs.		
LAW ENFORCEMENT AND SAFETY PARTNERSHIPS			
Appropriate Law Enforcement Share/coordinate interagency law enforcement (civil, wildlife resources, and recreation public use regulations) between Box Elder County, Weber County, UDWR, and State Parks.	Maintain law and order to protect the health and safety of persons using the area. Control litter, discourage vandalism, and perform search and rescue operations as appropriate. Notify the Box Elder and Weber County Sheriffs and USBR immediately, when a death or life threatening situation occurs, of criminal acts, of project structure failures, of resource contamination (oil or chemical spills), or when natural phenomenons (landslides and fires) occur. Under Utah Title 73, Chapter 18, Utah Division of Parks and Recreation governs the operation, equipment, and numbering of vessels....on the waters of this state. "Waters of this state" means any waters within the territorial limits of this state.	Report safety hazards and other enforcement difficulties annually to involved entities.	USBR, State Parks, UDWR, and Box Elder and Weber County Sheriffs.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Discharge of Firearms Prohibit discharge of firearms, bow and arrow, or air and gas weapons across, into, or from recreation areas except for authorized hunting seasons and locations.	State Parks Regulation R651-612. UDWR Big Game Proclamation.	Enforce.	State Parks and UDWR.
Emergency Communications Provide emergency communication and coordinate with local law enforcement.		Enforce.	Utah State Parks emergency communication to Box Elder County and Weber County
Hunting Allow hunting as prescribed by state law.	State Parks Regulation R651-603-5. UDWR Big Game Proclamation.	Enforce.	State Parks and UDWR.
RECREATION MANAGEMENT PARTNERSHIPS			
Recreation Management Encourage other qualified agencies to assume recreation management responsibilities. Current management is as a park area within the Utah State Park system.	Accommodate public recreation as per public law 89-72 and Title 28 of PL 102-575.	Comply with original contracts and agreements. Evaluate prior to issuance of new agreements.	Document of file with USBR, Provo Area Office, Provo UT. 1992 SCORP.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

PARTNERSHIPS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Memorandum of Understanding between US, and Utah Department of Natural Resources re: Administrative and Development of Willard Reservoir for recreation purposes, Contract No. 7-05-40-L0240, active until 11/15/2001. Concession Agreement Amended Concession Contract between State Parks and Fun in the Sun Rentals, Inc., active until 05/25/2001. (State Parks Contract #966467) Concession Agreement between State Parks and Ogden Gun Club , active until 12/31/2002. (State Parks Contract #981551) Recreational Land Lease Agreement between State Parks and Pintail Duck Club, active until 12/31/2004.		

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

WATER RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
WATER OPERATIONS			
Care, Operation, and Maintenance Continue administration for construction works and factors affecting water integrity.	Operate by the: Annual Operating Plan, Standing Operating Procedures, Emergency Action Plan, and Designer's Operating Criteria.	Review plans and agreements annually or more often as needed.	USBR, WBWCD and see partnerships section of Area Wide Management Direction, above. Documents on file with USBR, Provo Area Office, Provo, Utah.
Reservoir Water Level Fluctuations Willard Reservoir is a long term storage facility. Fluctuations are relatively small (approximately 2 feet) except in times of drought. WBWCD controls water fluctuations.	Inform USBR, WBWCD, State Parks, UDWR and USFWS when major/sudden reservoir fluctuations are planned.	Communicate appropriately.	WBWCD
Safety and Enforcement Post and enforce safety rules for primary operations areas including the dike, pumping plants and other appurtenances.		Interpret and enforce.	WBWCD, State Parks, UDWR, and Box Elder and Weber County Law Enforcement.
WATER QUALITY			
Best Management Practices Implement best management practices relative to water quality in all resource activities.	Comply with the State of Utah drinking water source protection rule.	Observe algae blooms and related fish kills by UDWR and State Parks. UDWR document and report incidences to WBWCD and USBR.	WBWCD, USBR, State of Utah Department of Environmental Quality, Water Quality and Drinking Water Divisions, State Parks, UDOT, UDWR, Box Elder and Weber counties, and local jurisdictions.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

WATER RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
(Best Management Practices Continued)	Meet or exceed state and federal water quality standards for drinking, wildlife, esthetic and recreation uses. Prohibit public motorized land vehicles below the high water line except at designated sites. Nonpoint source water quality management plan for Utah. Prohibit livestock grazing such as pack and saddle animals. Refueling will only occur at designated docks/facilities. Coordinate with Weber and Box Elder counties, WBWCD, and USBR to assure best management practices are being implemented. Protect wetlands for water quality purposes. Implement a public education program to interpret the benefits of water quality and to discourage acts that pollute. Where appropriate, stabilize highly erodible shorelines that have high nutrient concentrations.		

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

WATER RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
(Best Management Practices Continued)	Coordinate with UDOT to assure that controls to limit the impacts from highway spills on I-15 are implemented, specifically hazardous material spills. Encourage responsible entities to treat storm water runoff before it drains into Willard Reservoir including constructing storm water basins.	Comply with existing standards.	
Facilities Construct facilities to meet State of Utah, Box Elder County, and Weber County standards. Protect reservoir water quality from the impact of park development.	Provide adequate rest rooms and trash receptacles. Locate them to facilitate public use. Control erosion and pollutant loading at the source. Construct non-eroding conveyance facilities.	Comply with existing standards in facilities development. Inspect fuel storage tanks annually. Document during Reservoir Management Reviews.	State of Utah, USBR, Box Elder County and Weber County.
Pathogens Manage to protect water quality and to reduce the potential for concentrations of pathogens (causing giardia and cryptopsoridium) in the water.	Close areas, mitigate effects or restrict use where documentation shows water quality can not be maintained.	Comply with set standards or procedures. Document compliance in Reservoir Management Reviews or as needed.	WBWCD and USBR.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

WATER RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Water Development and Conservation Develop/redevelop water and sanitation facilities needed for recreation purposes.		Comply with standards and reporting requirements. Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, Federal, State, Box Elder and Weber Counties water and sanitation entities.
Water Quality Protection Maintain or improve water quality.	Manage water quality compatible with the following state beneficial use designations: • 1C, protected for domestic purposes with prior treatment, • 2A, protected for primary contact (swimming), • 2B, protected for secondary contact (boating, water skiing, etc.), • 3B, protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain, • 3D, protected for waterfowl, shore birds and other water-oriented wildlife including the necessary aquatic organisms in their food chain, and • 4, protected for agricultural purposes including irrigation of crops and stock watering. Limit or restrict other uses as necessary to protect water quality.	Prescribe and conduct water quality and biological monitoring of the reservoir, its tributaries and releases.	WBWCD, USBR and Utah Department of Environmental Quality.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

WATER RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Do not approach or exceed Maximum Contaminate Levels (MCL) established by US EPA Safe Drinking Water Act rules and regulations.		
WATERSHED PROTECTION			
Watershed Protection Encourage management practices in the reservoir watersheds that maintain or improve reservoir water quality. Encourage neighboring jurisdictions to construct and maintain detention basins to reduce flows and water quality problems.		Comply with current water quality standards. Document in Reservoir Management Reviews.	USBR, WBWCD, Box Elder County, Weber County and surrounding property owners.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
CONCESSIONS/SPECIAL USES			
Applications Act on recreation special use applications according to the following priorities: 1. Public service operations catering to the general public. 2. Group type operations. 3. Private type operations.	An application for permit may be denied if the authorizing officer determines that: 1. The proposed use would be inconsistent or incompatible with the purpose(s) for which the lands are managed, or with other uses, or, 2. The proposed use would not be in the public interest, or 3. The applicant is not qualified, or 4. The use would be inconsistent with applicable Federal and State laws, or 5. The applicant does not or cannot demonstrate technical or financial capability.	Comply with concessions management agreements. Document in Reservoir Management Reviews.	USBR and State Parks.
Private Initiatives Pursue cooperative private/USBR initiatives and/or concessionaire agreements with private enterprise to achieve needed recreation development.		Comply with contracts, agreements and existing planning document direction. Document in Recreation Management Reviews.	State Parks, WBWCD, and USBR.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Allow the private sector to provide recreation oriented operation/ maintenance, administration, and/or vendor services, where appropriate.			
RECREATION DEVELOPMENT			
Construction Priority Generally place priority for construction/reconstruction on restoration of existing facilities presently below standards.		Assess ranking order. Monitor in Reservoir Management Reviews.	
Development Requirements Comply with all applicable Federal, State, and local laws, rules, and regulations in the development of facilities, including sanitation facilities. Develop facilities based on compatibility with authorized reservoir project purposes, long-term management and funding capability, management goals and objectives, and environmental protection factors. See Specific Area Management Direction.	Guidelines and principles contained in PL 89-72 as amended by Title 28 102-575 and other laws and agreements as applicable.	Comply in design and construction.	USBR, State Parks, WBWCD, Box Elder County and Weber County.
Facility Replacement Replace facilities when rehabilitation costs are 50 percent or more of replacement costs or when existing facilities cease to be compatible with site design or ROS Classification.	Refer to specific area management for ROS Classification.	Evaluate facility condition. Document in Reservoir Management Reviews or more often if needed.	State Parks, WBWCD, USBR, Box Elder County and Weber County.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Landscaping Allow shade tree planting above the reservoir high water mark only.		Document compliance in Reservoir Management Reviews.	USBR, State Parks, WBWCD, and concessionaires.
Private Development Allow recreation development by non-Federal (including associated third party) partners as approved in writing, by USBR, and when consistent with existing agreements and planning documents.		Comply with contracts, agreements, and planning documents. Document in Reservoir Management Reviews.	USBR and State Parks.
Private Exclusive Facilities Do not allow private exclusive recreation use facilities. Phase out existing recreation facilities deemed to be exclusive use when lands are needed for greater public purposes.		Enforce.	USBR, State Parks, UDWR, and other managing entities.
ROS Classification Provide facilities appropriate to the ROS Classification. Facilities may include water, power, sanitation, electricity, roads, camp spurs, pavilions. See Specific Area Management Direction		Comply with contracts, agreements, and planning documents. Document in Reservoir Management Reviews.	USBR and State Parks.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Trails Construct pedestrian, bike, and fishing access trails. Include appropriate sanitation stations and trash receptacles. See Specific Area Management Direction.		Comply with contracts, agreements, and planning documents. Document in Reservoir Management Reviews.	USBR, State Parks, Box Elder County, Weber County and others.
RECREATION MANAGEMENT			
Activities Manage for a year-round spectrum of recreation experiences while meeting the adopted ROS class. See Specific Area Management Direction.	USDA Forest Service ROS System; Chapter 60, Project Planning ROS Users Guide; and Chapter 63, ROS Setting Indicator and Analysis Technique Guidelines.	Determine user profile and preferences at 3 to 5 year intervals (by State Parks). Prepare annual recreation and wildlife summaries (by State Parks) for: USBR's "Annual Report," "Federal Recreation Fee Report," and to respond to Congressional and public inquiries.	State Parks, USBR, and UDWR. 1992 SCORP.
Health and Safety Ensure appropriate law enforcement, waste, and fire management regulations and facilities are in place and enforced in recreation areas.		Enforce.	State Parks, UDWR, Box Elder County and Weber County.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Maintenance in General Provide facility maintenance to ensure an acceptable level of public safety, health, sanitation, and natural and cultural resources protection.	Manage by an operation and maintenance plan that prescribes maintenance schedules and tasks.	Perform annual facility condition inventories (by State Parks) and coordinate with USBR on conditions and needs. Document in Reservoir Management Reviews. Presence of trash, litter, damage to structures, erosion, excessive bare ground, and presence of noxious weeds are indicators of maintenance need and Code-A-Site category.	State Parks, Box Elder County and Weber County.
Management by Others Encourage other qualified entities to assume recreation management responsibility.		Comply with existing contracts and Recreation Management Memorandum of Agreement.	USBR.
Management Agreement Manage recreation consistent with this Willard Bay Resource Management Plan and Recreation Agreement.	Federal Water Project Recreation Act (Public Law 89-72). Use a Memorandum of Agreement (MOA) as the mechanism to formalize relationships and responsibilities.	Comply with agreements and plans. Document in Reservoir Management Reviews.	Parties to the MOA are: USBR, WBWCD, and State Parks.
Parking on Beaches Prohibit public motorized land vehicles from driving or parking on beaches or below the high water mark, except for watercraft launching at approved sites.		Interpret and enforce.	State Parks.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Reservoir Water Quality Maintenance Restrict or terminate recreation uses that threaten or exceed Maximum Contaminate Levels (MCL) for products, such as volatile and synthetic organic compounds.	USEPA Safe Drinking Water Act rules and regulations.	Prescribe and conduct water quality and biological monitoring of the reservoir, its tributaries and releases.	WBWCD and USBR.
Saddle and Pack Animals Phase out the use of saddle and pack animals, except for administrative purposes.		Interpret and enforce.	USBR, WBWCD, State Parks and UDWR.
Special Events Give precedence to normal park activities/operations when scheduling special events.	Review of special events requests by the recreation manager.	Comply before scheduling.	State Parks.
Use Capacity Manage recreation use to not exceed design capacity. Limit camping or recreation use as necessary to protect water quality, riparian, aquatic, or other sensitive resources or communities and to maintain the quality of the desired recreation experience.		Comply with capacity limits and safety. Document in Reservoir Management Reviews or more often as needed.	State Parks and USBR. 1992 SCORP.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Restrict use in and/or rehabilitate recreation sites where unacceptable environmental damage is occurring. Rehabilitate camp or picnic sites that are in Code-A-Site category "extreme."	USDA Forest Service Research Paper PNW-209, Dated 1976.		
User Conflicts Minimize conflicts and promote user safety in waters and lands.	Comply with State Parks and USBR guidelines.	Interpret and enforce.	State Parks.
User Fees Charge appropriate user fees based on cost effective year-around service. Provide cost effective service.	On fee title lands, return fees in excess of the administrative, operation, and maintenance, development, and facilities replacement costs to the USBR to be applied against the WBWCD repayment contract. Comply with State Parks and USBR guidelines and approved fee structure.	Monitor compliance annually.	Utah State Parks and Recreation Board and State Parks.
Wakeless Areas Enforce wakeless speeds in designated areas.	State Boating Act and State Parks and USBR boating regulations.	Enforce.	State Parks.
Watercraft Launching Restrict watercraft launching that requires motorized tow vehicles to designated boat access areas. See Specific Area Management Direction.		Assess launching location. Document in Reservoir Management Reviews or more often if needed.	State Parks, WBWCD, and USBR.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Watercraft Limit Limit watercraft on the reservoir to not exceed available parking. Further reduce total craft numbers as necessary to reduce user conflicts.	**Physical/Biological:** Protect drinking water quality at the fluctuating reservoir source (which includes all project lands). **Managerial:** Provide cost-effective recreation administration by managing through the Utah State Boating Act, rather than providing single purpose water use areas for individual recreation activities. Under Utah Title 73, Chapter 18, Utah Division of Parks and Recreation governs the operation, equipment, and numbering of vessels....on the waters of this state."Waters of this state" means any waters within the territorial limits of this state. **Social:** Provide multi-purpose opportunities with low to moderate potential for conflicts with windcraft use, personal watercraft use, fishing, motor boating and other water related activities.	Enforce.	State Parks.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION PLANNING			
Inventory System			
Distinguish between developed and undeveloped (dispersed) use areas and management. Utilize a Nationally approved Recreation Opportunity Spectrum (ROS) system appropriate to the scale of the project. Inventory the recreation resource and evaluate it as an integrated part of the planning and implementation process at detail ROS mapping scale which address: 1. Physical setting, 2. Social setting, and 3. Managerial setting.	USDA, Forest Service ROS System; Chapter 25, ROS Users Guide. Rural to Urban: The physical and social setting tends to be rural except at group sites, beaches and marina areas. Rural (managed as Semi-Primitive): The exterior influence on natural area settings tend to be rural but are managed to protect natural area values. See specific Area Management Direction.	Prepare an annual recreation and wildlife summary (by State Parks) for: USBRs "Annual Report", "Federal Recreation Fee Report," and to respond to Congressional and public inquiries.	USBR, UDWR, and State Parks. Inventory map on file at USBR, Provo Area Office.
Motorized Vehicle Use			
Allow motorized vehicle use where appropriate. Refer to Specific Management Areas.		Review proposals.	USBR, State Parks, and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
VISUAL ENHANCEMENT			
Development Achieve landscape enhancement through addition, deletion, or alteration of landscape elements. Examples of these include: 1. Addition of vegetation species to introduce unique form, line, color, or texture to existing plant communities. 2. Vegetation manipulation to open up vistas or screen out undesirable views. 3. Addition of structures which enhance the natural landscape.	USDA, Forest Service Visual Management System, Volume 2, Chapters; 2. Utilities, 3. Range, 4. Roads, 6. Fire, and 8. Recreation	Field inspect.	USBR, State Parks, and others.
VISUAL MANAGEMENT AND DEVELOPMENT			
Development Design and implement management activities to blend with or complement the characteristic landscape at the adopted visual quality objective level. See Specific Area Management Direction. The Visual Quality Objectives are: 1. *Preservation:* Generally, ecological changes are the only activities allowed.	The Visual Management System USDA, Forest Service Visual management System, Volume 2, Chapters: 1. The Visual Management System, 2. Utilities, 3. Range, 4. Roads, 6. Fire, and 8. Recreation	Comply with visual condition. Document in Reservoir Management Reviews.	USBR, State Parks, WBWCD, and others.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
2. *Retention:* Activities not visually evident in the characteristic landscape are allowed. 3. *Partial Retention*: Activities which are visually subordinate in the characteristic landscape are allowed. 4. *Modification:* Activities which visually dominate the characteristic landscape in foreground and middle ground are allowed. 5. *Maximum Modification*: Activities which visually dominate the characteristic landscape in background are allowed.			
Duration of Impact The maximum time limit after construction activities have ceased, for project rehabilitation to meet the adopted VQO is: Preservation — Immediately Retention — 2 years Partial Retention — 2 years Modification — 5 years Max. Modification — 5 years	USDA, Forest Service Visual Management System, Volume 2, Chapter 1; The Visual Management System	Comply with recovery duration time limit. Document in Reservoir Management Reviews.	USBR.
Exceptions The dike, canal and pumping appurtances, due to their strong contrasts with the natural appearing environment.		Field inspect.	USBR and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
VISUAL PLANNING			
Inventory Inventory the visual resource and integrate it as part of the planning and implementation process at detail mapping scales which address: 1. Variety Classes - the landscapes visual attractiveness, 2. Sensitivity Levels - the public's visual expectation at various viewing distances and; 3. Visual Quality Objective (Scenic Integrity)- the visual prescription for definitive land areas.	USDA, Forest Service Visual Management System, Volume 2, Chapter 1; The Visual Management System.		USBR. Inventory Map in file at USBR, Provo Area Office.
VISUAL REHABILITATION			
Rehabilitation Rehabilitate facilities and areas which do not meet the adopted Visual Quality Objectives (VQO). See Specific Area Management Direction.	USDA, Forest Service Visual Management System, Volume 2, Chapters: 2. Utilities, 3. Range, 4. Road, 6. Fire, and 8. Recreation	Comply with desired visual condition. Document at project completion and in Reservoir Management Reviews.	USBR.
Priorities Set rehabilitation priorities for existing conditions as follows:		Field Inspect	USBR and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

RECREATION/VISUAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
1. Relative importance of the site and amount of deviation from the adopted VQO. Foreground areas have the first priority, middle ground areas have second priority, and background areas have third priority. 2. Length of time it will take natural processes to reduce the visual impacts so that they meet the adopted VQO. 3. Benefits to other resource management objectives gained through rehabilitation.			

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
AIR QUALITY			
Air Quality Meet Federal air quality standards and state air quality regulations during construction and management activities.	Implement methods to control smoke and dust. Obtain agricultural burn permits and do not exceed appropriate clearing indexes where control burning is implemented.	Enforce.	Utah State Department of Environmental Quality.
CULTURAL/PALEONTOLOGICAL			
Inventories Perform class 1, 2, or 3 surveys to determine areas of high and low potential for cultural resources.	36 CFR 800	Perform appropriate site-specific surveys and consult with SHPO before project approval.	USBR, Utah State Historical Preservation Office, Northwestern Band Shoshoni Nation, Archaeological Society of Utah, and USU.
Listed Sites Protect, find an adaptive use for, and or interpret cultural and paleontological resources which are listed on the National Register of Historic Places, National Register of Historic Landmarks, or may be determined to be eligible for the national registers. Refer to Area Wide Information Management Partnership section for further information.	36 CFR 800	Determine damage/destruction due to unauthorized and uncontrollable natural agents. Document in Reservoir Management Reviews.	USBR and Utah State Historical Preservation Office.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Management			
Protect and foster public use and enjoyment of cultural and paleontological resources:	Archaeological Resources Protection Act of 1979 43 CFR 10	Determine damage/destruction due to unauthorized and uncontrollable natural agents. Document in Reservoir Management Reviews.	USBR: Provo Area Office Archeologist or Upper Colorado Regional Archeologist.
A. Conduct appropriate studies to provide information necessary for an adequate review of the effect a proposed undertaking may have on cultural values.	Executive Order 11593		
B. Give adequate consideration to modifications or alterations to proposed undertakings, including digging holes for recreation hunting purposes, that could avoid, mitigate, or minimize adverse effects.			
C. Immediate notification of the appropriate Federal or tribal authority is necessary in the event of discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony.	Native American Graves Protection and Repatriation Act	Assure compliance during construction activities.	
D. The appropriate "Indian tribe shall be consulted when an undertaking will affect Indian lands or properties of historic value to the tribe on non-Indian lands."	36 CFR 800	Assure compliance during construction activities.	
E. Collect and record information from sites where appropriate.			

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
F. Issue antiquities permits to qualifying academic institutions or other approved organizations for the study and research of sites. G. Interpret sites as appropriate, and foster public appreciation of these resources.			
Nomination Nominate or recommend cultural or paleontological sites to the National Register of Historic Places or National Natural Landmarks in the following priority: A. Sites representing multiple themes: B. Sites representing those which are not currently on the National Register within the State; or C. Sites representing themes which are currently represented by single sites.	36 CFR 60 36 CFR 800	Nominate as appropriate. Document in Reservoir Management Reviews.	USBR.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GEOLOGY/MINERALS/SOILS			
Appropriate Minerals Management Assure that mineral development is permissible and compatible with project purposes and that mineral activities do not adversely affect planned or current uses. USBR owns the surface rights on acquired lands (not mineral rights).	*Leasables:* Coordinate with BLM, (authority for review and issuance of federal minerals permits). Act of 2-25-90 (30 USC 181 et. Seq.). An Interagency agreement between USBR and BLM, 3-25-1983. Coordinate with Utah Division of Oil, Gas and Mining, (authority for review and issuance of private minerals permits). *Locatables:* Withdrawn lands are withdrawn from minerals entry by: Commissioner's order of 8-22-1952 and PLO-3676, 6-10-1965. Coordinate with the Utah Division of Oil, Gas and Mining, (authority for review and issuance of private minerals permits). Written permission from the State Park for mineral removal is required by: Utah Title 63, Chapter 11.	Assure compliance where USBR has control. Document in Reservoir Management Reviews.	USBR, State Parks, and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Salables: USBR retains authority for review and issuance of permits. Written permission from State Park's for mineral removal is required by: Utah Title 63, Chapter 11.		
Geologic Hazards Avoid geologic hazards, where possible, during construction and/or in ground disturbing activities.	Analyze site specific geological hazards prior to locating permanent facilities.	Comply in design and construction.	Utah Geological Survey (UGS) Landslide Information.
Gravel Borrow Pits Continue use of existing gravel pits as necessary for facility maintenance and rehabilitation.	Minimize disturbance from gravel operations to recreation visitors where possible. Return mined out borrow pits to a natural appearing contour, top soil, and revegetate to minimize weed infestation, soil loss and visual effects.	Determine on-site compliance, when project ceases, and document in Reservoir Management Reviews.	USBR.
Soil and Moisture Conservation Prepare and execute programs for the conservation of soil and moisture.		Document compliance during Reservoir Management Reviews or more often as needed.	USBR.
Soil Protection Minimize adverse impacts to the soil resource, including accelerated erosion, compaction, contamination and displacement.	Protect and conserve topsoil when conducting surface disturbing activities.	Document compliance at project completion, and during Reservoir Management Reviews.	USBR, State Parks, and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	Provide adequate drainage and revegetation on areas disturbed during construction or use activities and stabilize the areas to control soil erosion. Rehabilitate disturbed areas that are eroding excessively and/or contributing significant sediment to the reservoir or streams.		
HABITAT/FISHERIES MANAGEMENT			
Habitat/Fisheries Management Enhance habitat quality fishery.	Enforce fishing regulations according to the Utah Fish and Game Code. Construct habitat enhancement structures where compatible with water operations management and safe to the public. Generally maintain natural area along each side of streams to enhance spawning and vegetation and reduce impacts from development.	Report unexpected fish kills to UDWR. Prepare annual recreation and wildlife summaries (by State Parks) for: USBR's "Annual Report", "Federal Recreation Fee Report", and to respond to Congressional and public inquiries.	USBR, WBWCD, UDWR, and State Parks.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
INTEGRATED PEST MANAGEMENT			
Pest/Aquatic Nuisance Management Control and reduce the spread of pests and aquatic nuisances first and then work on local established populations.	Coordinate with appropriate entities such as UDWR, Box Elder County and Weber County to regulate undesirable or invasive pests.	Conduct annual field inspections of depredations by insects and disease. Document in Reservoir Management Reviews.	USBR, State Parks, WBWCD, UDWR, Box Elder and Weber County, Weed Control, permittees, concessionaires, proponents, and others.
Weeds/Noxious Weeds Control and reduce noxious weeds and poisonous plants, using integrated pest management techniques and strategies; including the use of herbicides, biological control agents, and or mechanical or hand treatments.	Require those authorized to conduct soil disturbing activities, to control noxious and/or invading weeds on the disturbed area during the use or construction period. Coordinate with Box Elder County and Weber County. Apply pesticides only after approval by USBR and in addition, apply restricted use pesticides under the direction of certified applicators. Follow label instructions. To control the spread of weeds, consider the need for an herbicide treatment in conjunction with other rehabilitation efforts, following any wildfire.	Conduct annual field inspections.	USBR, State Parks, WBWCD, permittees, concessionaires, proponents, and others.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
VEGETATION MANAGEMENT			
Enhance Wildlife Habitat Enhance wildlife habitat where appropriate.		Evaluate habitat condition in project planning and rehabilitation.	USBR and others.
Livestock Grazing Prohibit domestic livestock grazing.		Enforce.	USBR and State Parks.
Revegetate Disturbed Areas Revegetate disturbed or damaged areas or sites.	Close or restrict roads as needed. Rehabilitate closed areas to approximate original contour, drain, seed and sign. Gate and/or sign restricted roads. Implement a travel and public use strategy to enhance wildlife habitat.	Comply in project planning and during implementation. Document in Reservoir Management Reviews.	USBR and State Parks.
Sensitive Species Manage habitat of sensitive species to keep them from becoming threatened or endangered.	Coordinate with USFWS.	Comply in planning and management. Document in Reservoir Management Reviews.	USBR, UDWR, USFWS, and State Parks.
Surface Disturbing Activities Minimize surface disturbing activities that alter vegetative cover.	Restrict use or close sites where erosion or environmental damage is occurring.	Document vegetative condition during Reservoir Management Reviews.	USBR, State Parks, and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Threatened and Endangered Species Manage habitat for recovery of endangered and threatened species. Where activities or uses may adversely affect T&E species or their habitats initiate consultation procedures. Include the results of consultation in determining the viability of the activity or use.	Coordinate with the USFWS to provide effective protection and management of threatened and endangered species. Follow the Utah Field Office Guidelines for Raptor Protection from Human and Land Disturbances.	Comply in planning and management. Document in Reservoir Management Reviews.	USBR, USFWS, UDWR, State Parks and WBWCD.
Wetlands and Flood Plains Provide effective protection and management of wetlands and flood plains.	Prior to implementation of surface disturbing activity delineate and evaluate riparian and/or wetlands that may be impacted. Executive Orders 11988 and 11990	Determine if impacts to wetland and if so, obtain U.S. Army Corps of Engineers 404 permit for wetlands disturbance if required.	USBR.
WILDLIFE MANAGEMENT			
Sensitive Species Manage areas to keep sensitive species from becoming threatened or endangered.	Coordinate with USFWS. Follow the Utah Field Office Guidelines for Raptor Protection from Human and Land Disturbances.	Comply in planning and management. Document in Reservoir Management Reviews.	USBR, UDWR, USFWS andState Parks.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Threatened and Endangered Species Where activities or uses may adversely affect T&E species or their habitats initiate consultation procedures. Include the results of consultation in determining the viability of the activity or use.	Coordinate with the USFWS to provide effective protection and management of threatened and endangered species. Follow the *Utah Field Office Guidelines for Raptor Protection from Human and Land Disturbances.*	Comply in planning and management. Document in Reservoir Management Reviews.	USBR, USFWS, UDWR, State Parks and WBWCD.
Waterfowl Seasonal Avoidance Restrict activities and construction during sensitive nesting and migration periods.		Enforce. Document in Reservoir Management Reviews.	Area administrator, WBWCD, USBR and UDWR.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
FIRE SUPPRESSION			
Fire Suppression Employ best wildfire prevention techniques. Control wildfires at all intensity levels.		Control. Document in Reservoir Management Reviews or more often if needed.	Specific Area Administrator/Partner under contract.
HAZARDOUS WASTES			
Hazardous Waste Conduct hazardous waste reviews.		Comply with standards or procedures Document in Reservoir Management Reviews.	WBWCD, USBR, State Parks.
LANDS			
Boundary Fences Construct fences in conformance with acceptable standards. Afford passage and migration of wildlife where appropriate.	USDI BLM 1995 BLM Fencing Manual Handbook H-1741-1. Contact livestock owners when their animals are in trespass. Take appropriate action.	Inspect fence conditions annually. Identify maintenance and/or repair needs. Document in Reservoir Management Reviews.	Managing entity.
Boundary Location Locate, mark, and post land lines according to the following priorities: A. Lines needed to meet planned activities;		Report attainment. Document in Reservoir Management Reviews.	USBR.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
B. Lines needed to protect lands from encroachment, and C. All other lines.			
Land/Rights-of-way Acquisition Classify lands or interest in lands for acquisition where lands are valuable for USBR purposes according to the following priorities: A. Where lands or rights-of-way are needed to meet project or resource management goals and objectives. B. Lands which provide habitat for threatened and endangered species of animals and plants. C. Lands having historical or cultural resources, outstanding scenic values or critical ecosystems, when these resources are threatened by change of use.		Record in the Foundation Information for Real Property Management (FIRM) or current land management system. Document in Reservoir Management Reviews.	USBR, WBWCD and State Parks.
Land Disposal Dispose of lands which are found to be no longer needed for project purposes.	Disposal based on Federal Property and Administrative Services Act of 1949 and 41 CFR 101-47	Record in the Foundation Information for Real Property Management (FIRM) or current land management system. Document in Reservoir Management Reviews.	USBR, WBWCD, and State Parks.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Land Withdrawals Retain existing withdrawals needed for project purposes. Relinquish existing withdrawals which are no longer needed for Project Purposes.	Section 204 of the Federal Land Policy and Management Act of 1976 (43 USC 1714).	Conduct informal withdrawal reviews to evaluate the continuation of USBR withdrawals (20 year intervals generally). Record relinquishments in the Foundation Information for Real Property Management (FIRM) or current land management system. Document in Reservoir Management Reviews.	USBR, WBWCD, State Parks, and other entities.
Non-Recreation Special Use Management Act on special-use applications according to the following priorities. 1. Land and use activity request relating to public safety, health and welfare, for example highways, power lines and public service improvements. 2. Land and use activities that benefit only private users, for example, road permits, rights-of-way for power line telephones, and waterlines.	Section 10 of the Reclamation Project Act of 1939 and 43 CFR 429. A. Discretionary consideration to deny a permit could include the following: (1) The proposed use would be inconsistent or incompatible with the purpose(s) for which the lands are managed, or with other uses, (2) The proposed use would not be in the public interest, (3) The applicant is not qualified,	Review special use permits, leases, licenses, easements, applications, amendments, transfers, and administration for compliance.	USBR, State Parks, UDWR,and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
	(4) Use would be inconsistent with applicable Federal and/or State laws, or		
	(5) The applicant does not or cannot demonstrate technical or financial capability.		
Off-Site Influences to Recreation Sites Approve special-use applications for areas adjacent to recreation sites when the proposed use is compatible with project purposes and use of the recreation site.	Section 10 of the Reclamation Project Act of 1939 and 43 CFR 429.	Evaluate recreation setting, experience, and management objectives.	USBR, State Parks, and WBWCD.
Pollution Control and Abatement Verify that all activities requiring a Spill Prevention Control and Counter Measure Plan are in accordance with Environmental Protection Agency and Corps of Engineers guidelines.	Report oil and chemical spills to the EPA National Response Center in Denver, Colorado; to the Utah Emergency Response Center, Box Elder and Weber County Sheriffs; the WBWCD; and/or the USBR as directed by the Emergency Action Plan.	Comply with the Emergency Action Plan.	USBR.
Resource Activities Comply with the intent of project purposes in the design and implementation of resource development activities.	Verify crossing agreements, out grants, unauthorized uses, health and safety hazards, and identify lands not needed for project purposes.	Update Land Use Inventories annually. Document in Reservoir Management Reviews.	USBR, WBWCD, State Parks, UDWR, and others.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Utility Lines Encourage burying utility and lines, except when: A. Recreation and visual quality objectives of the area can be met using an overhead line. B. Burial is not feasible due to soil erosion or geologic hazard or unfavorable geologic conditions. C. Greater long-term site disturbance would result. D. It is not technically feasible, or economically reasonable.		Conduct on-site inspections.	USBR, State Parks, and WBWCD.
ROADS/TRAILS			
Private Purpose Roads Put roads under special-use permit or easement that are needed for the benefit of private uses, and are not needed for public travel or administration.	Section 10 of the Reclamation Project Act of 1939 and 43 CFR 429.	Record in the Foundation Information for Real Property Management (FIRM) or current land management system. Document in Reservoir Management Reviews.	USBR, State Parks, and WBWCD.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Roads Across Private Lands Acquire rights-of-way for roads and trails that cross private lands, where appropriate.		Record in the Foundation Information for Real Property Management (FIRM) or current land management system. Document in Reservoir Management Reviews.	USBR, State Parks, and WBWCD.
Road Maintenance and Use Pursue agreements with private or public entities to provide on-going maintenance of roads and parking areas. Restrict vehicular traffic to designated improved roads, except for authorized uses. Close roads when unacceptable environmental or road damage is occurring as a result of road use. Maintain structures, bridges, cattle guards, etc., to be structurally sound and safe for use. Coordinate with UDOT to assure safe ingress and egress.	Utah State Code 27-12-23.5 and 27-12-23.10 (7), (8).	Document in Reservoir Management Reviews. Comply with agreements/permits. Document road inspections/analysis. Document road condition. Conduct on-site inspections.	USBR, State Parks, WBWCD, and UDOT.
Road Rehabilitation Convert roads not needed for authorized activities to trails or rehabilitate the road to approximate pre-disturbed conditions.		Site Inspections. Document at Reservoir Management Reviews.	USBR, WBWCD, and State Parks.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Special Purpose Roads/Trails Encourage the development of roads and trails when constructed or reconstructed for special purposes to meet existing and potential needs.		Comply with existing contracts/agreements.	
Specific Purpose Roads Construct or reconstruct local road and trails to provide access for specific resource activities such as campgrounds, trail heads, wildlife management, and leases with the minimum amount of surface disturbance by fitting the road to the topography. See Specific Area Management Direction.		Comply with existing contracts and agreements.	USBR, State Parks, and WBWCD.
Trail Maintenance and Use Maintain trails for designated uses and close trails to inappropriate uses.		Determine trail condition and travel status. Document in Reservoir Management Reviews.	USBR, State Parks, and WBWCD.
TRAVEL/ACCESS			
Automobile/Motorized Vehicle Travel Prohibit public motorized vehicles (intended for land travel) from driving or parking on beaches or below the high water mark.			

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

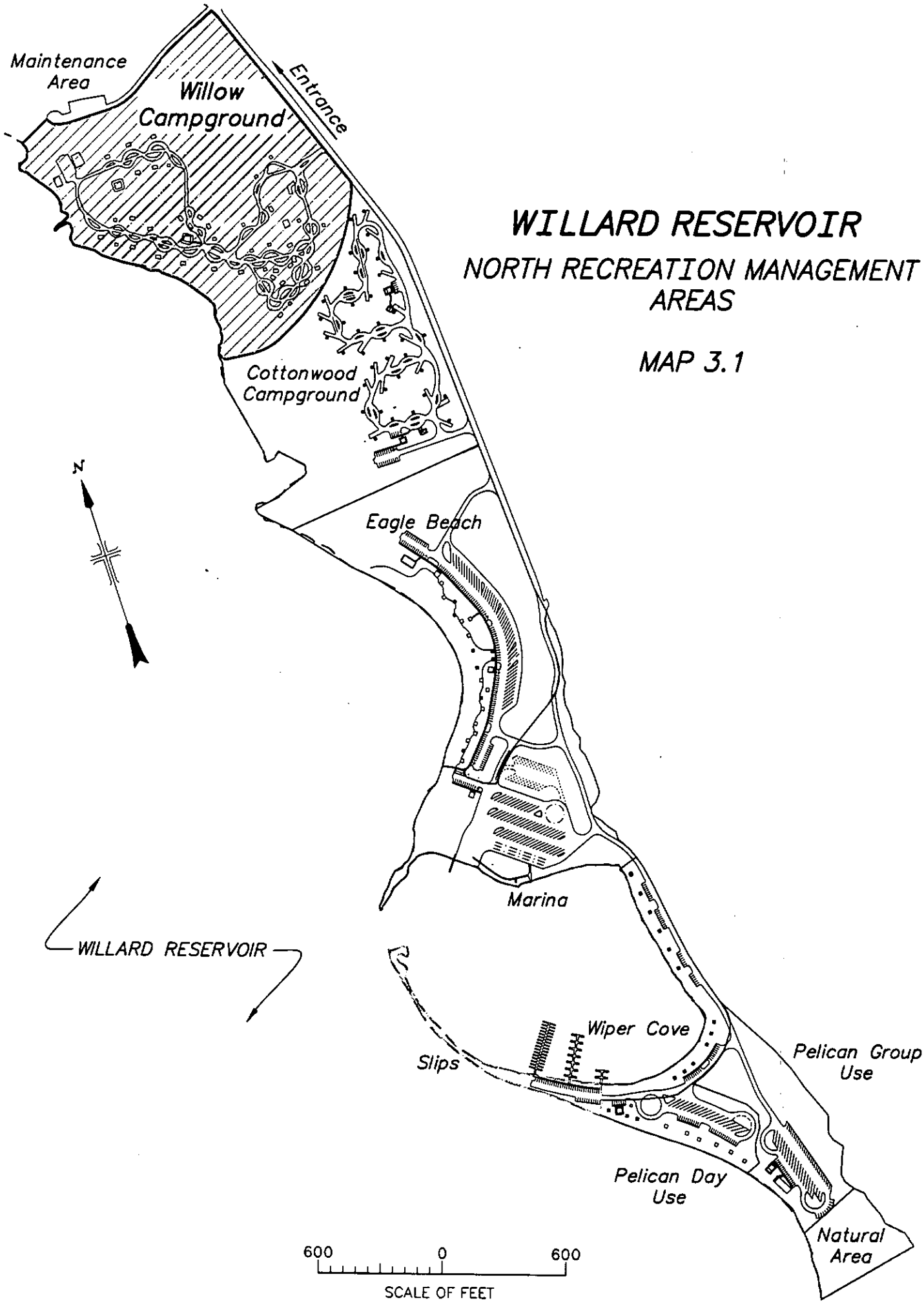
LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Prohibit vehicles from travel and parking outside areas developed specifically for travel or parking purposes.			
Disability Access Construct accessible facilities which meet the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the Uniform Federal Accessibility Standards (UFAS).		Comply with ADAAG and UFAS. Document in Reservoir Management Reviews.	USBR and State Parks.
Off-Highway Vehicles OHV Use Designations: maintain closure of Reclamation lands to off-highway vehicle use, except for areas or trails specifically opened. Classify specific areas or trails as to type of vehicle(s) use.(See specific management area) Where practicable, regulate OHV use on USBR lands consistent with adjoining public and private land use. Accomplish OHV enforcement through Federal, State, county, or local law enforcement agencies.	Where open, comply with Utah State OHV Law Title 41, Section 22.	Evaluate roads, areas and trails as necessary and document in Reservoir Management Reviews.	USBR, WBWCD, State Parks, Weber and Box Elder counties, and UDWR.

WILLARD RESERVOIR AREA WIDE MANAGEMENT DIRECTION

LAND MANAGEMENT

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Visitor Access Provide controlled access points for area use.(See Specific Management Areas)			State Parks and USBR.

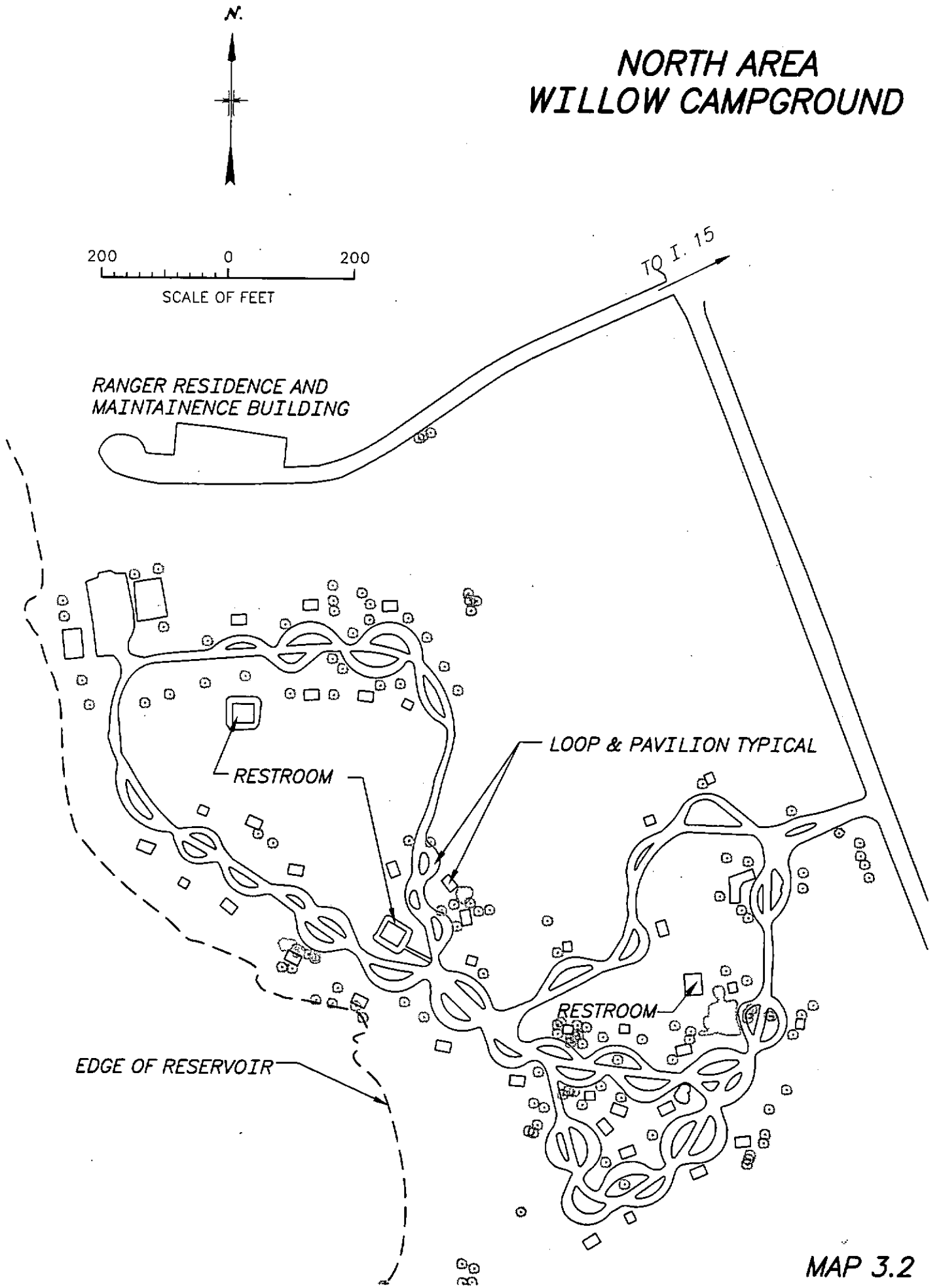


WILLARD RESERVOIR

NORTH RECREATION MANAGEMENT AREAS

MAP 3.1

NORTH AREA
WILLOW CAMPGROUND



MAP 3.2

WILLARD RESERVOIR SPECIFIC AREA MANAGEMENT DIRECTION

WILLOW CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Allow uses which protect water quality/ delivery and complement developed recreation objectives. Emphasize recreation management and administration for single-family overnight camping. Strive to operate at a full service level.		Comply with water and related project purposes while managing primarily for land-oriented overnight developed recreation use. See monitoring requirements below.	State Parks, WBWCD, and USBR.
WATER RESOURCES			
Water Development and Conservation Develop/redevelop water and sanitation facilities needed for recreation purposes. Apply water conservation techniques in the development of rest rooms, drinking water and irrigation facilities.		Comply with current water quality and sanitation standards and reporting requirements. Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, and Federal, State, Box Elder County water and sanitation entities.

WILLARD RESERVOIR SPECIFIC AREA MANAGEMENT DIRECTION

WILLOW CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Manage for a land based rural to urban recreation opportunity spectrum experience (development scale 4) at the existing developed recreation areas. Continue to manage for overnight camping.	***Rural to Urban Recreation Opportunity Spectrum Class and Development Scale 4*** Allow a high degree of site modification. Allow formalized and contemporary architecture. Provide facilities for the comfort and convenience of the users. Facilities may include flush toilets, showers, and electrical hookups. Synthetic materials may be used. Develop formal walks or surfaced trails to minimize impacts to the natural environment. Allow up to 5 family units per acre. Allow plant materials foreign to the environment, including mowed lawns and clipped shrubs. Allow formal interpretive services.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Facilities Development Develop appropriate facilities where the present facilities are not meeting the demand and where it meets the highest net public benefit. Provide facilities and access for site protection, efficient maintenance, and user convenience.	**Physical/Biological:** Resurface bituminous surface roads and camp units and update rest room facilities. **Managerial:** Provide cost-effective maintenance for roads, rest rooms and camping facilities. **Social:** Provide for family and group overnight camping.	Comply in planning, design and construction. Conduct reviews. Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

WILLARD RESERVOIR SPECIFIC AREA MANAGEMENT DIRECTION

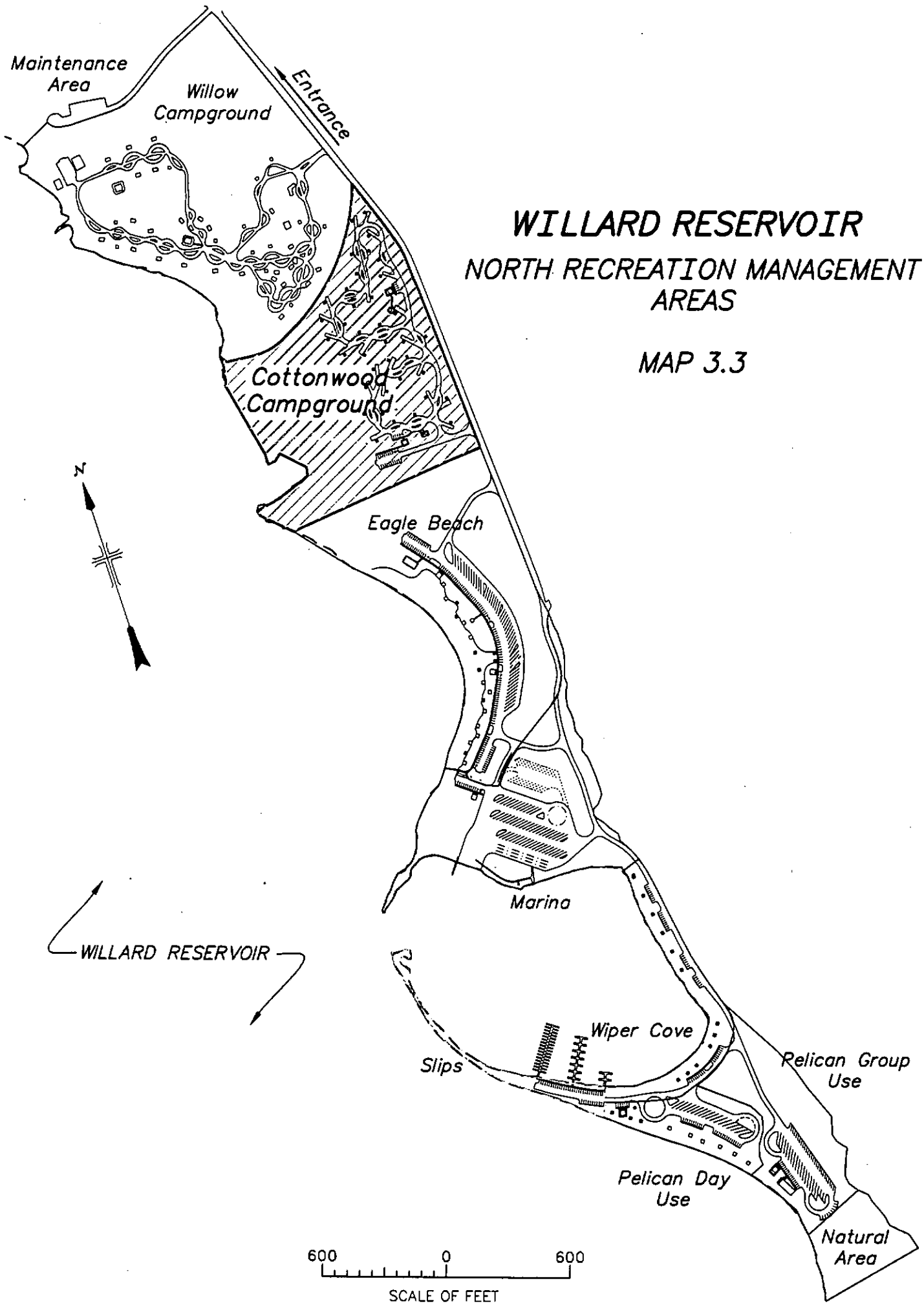
WILLOW CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Generally provide: * Parking and rest room improvements. * Renovate campground with approximately 40 single camping units, roads, and trails. * Maintain a 100 PAOT group area * Interpretive displays			
Landscaping Manage vegetation to enhance visual quality and recreation opportunities on existing and proposed sites.		Evaluate vegetation benefits, Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Overnight Camping Allow overnight camping.		Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Visual Management Manage for a modification visual quality objective as viewed from on-site.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

WILLARD RESERVOIR SPECIFIC AREA MANAGEMENT DIRECTION

WILLOW CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to assure they are compatible with developed recreation site objectives.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.

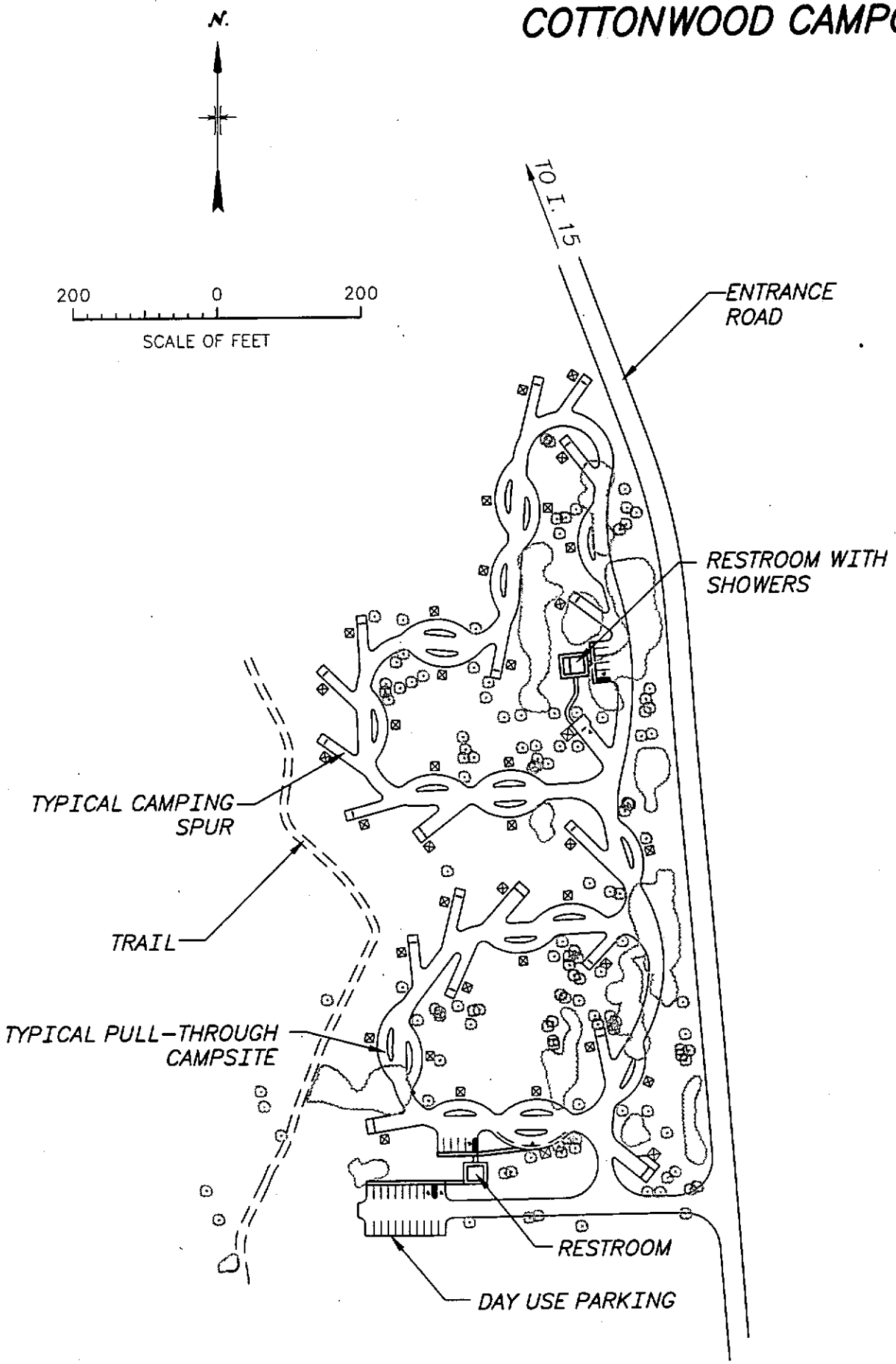


WILLARD RESERVOIR

NORTH RECREATION MANAGEMENT AREAS

MAP 3.3

NORTH AREA
COTTONWOOD CAMPGROUND



MAP 3.4

SPECIFIC AREA MANAGEMENT DIRECTION

COTTONWOOD CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Allow uses which protect water quality/ delivery and complement developed recreation and wildlife viewing objectives. Emphasize recreation management and administration for year-round, single-family overnight camping. Strive to operate at a full service level.		Comply with water and related project purposes while managing primarily for land-oriented overnight developed recreation use. See monitoring requirements below.	State Parks, WBWCD, and USBR.
WATER RESOURCES			
Water Development and Conservation Develop/redevelop water and sanitation facilities needed for recreation purposes. Apply water conservation techniques in the development of rest rooms, drinking water and irrigation facilities. Schedule irrigation at low water use periods.	Comply with current water quality and sanitation standards and reporting requirements.	Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, and Federal, State, and Box Elder County water and sanitation entities.

SPECIFIC AREA MANAGEMENT DIRECTION

COTTONWOOD CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Manage for a land based rural recreation opportunity spectrum experience (development scale 4). Manage for overnight uses year round.	***Rural ROS Class and Development Scale 4*** Allow highly developed facilities mostly designed for the comfort and convenience of the users. Designs may be formalized and architecture, contemporary. The facilities may include drinking water, flush toilets, showers, and electrical hookups. Synthetic materials may be used. Develop formal walks or surfaced trails to minimize impacts to the natural environment. Allow formal interpretive services.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Facilities Development Develop appropriate recreation facilities for year round overnight camping where it meets the highest net public benefit. Provide facilities and access for site protection, efficient maintenance, and user convenience.	**Physical/Biological:** Construct a bituminous surface road, spurs/pull throughs, and rest rooms. **Managerial:** Provide cost-effective recreation construction/maintenance on facilities. **Social:** Provide for single family overnight camping.	Comply in planning, design and construction. Conduct reviews. Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

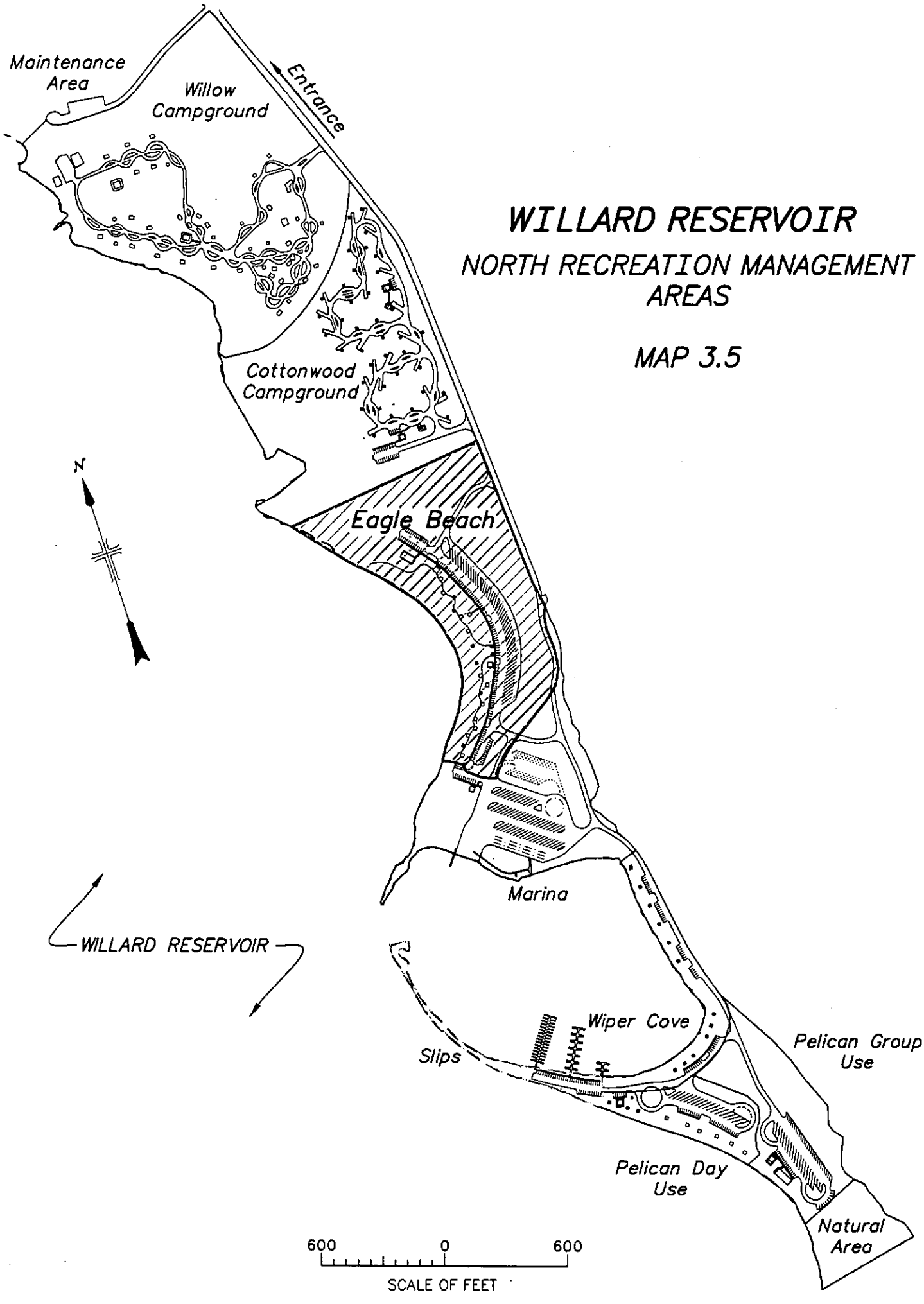
COTTONWOOD CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Generally provide: * Approximately 40 single camp units that can be used year round if in demand. * Parking for access to the nature trail. * Water, sewer, and electrical hook-ups along with appropriate rest rooms.			
Landscaping Manage vegetation to enhance visual quality and accommodate recreation use.		Evaluate vegetation benefits, Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Overnight Camping Allow single family overnight camping year-round.		Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Visual Management Manage for a modification visual quality objective as viewed from on-site.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

COTTONWOOD CAMPGROUND MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to assure they are compatible with developed recreation sites and use objectives.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.

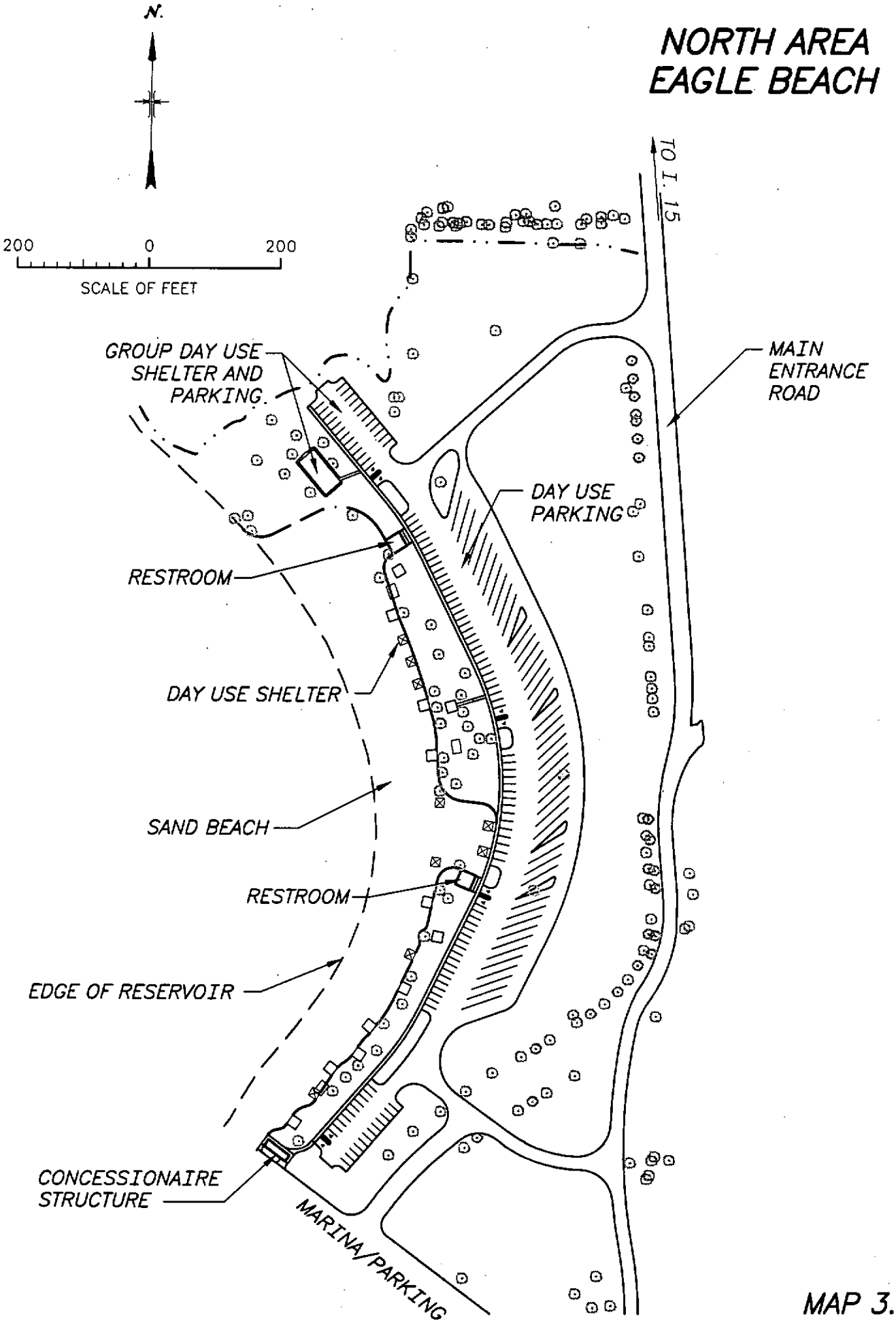


WILLARD RESERVOIR

NORTH RECREATION MANAGEMENT AREAS

MAP 3.5

NORTH AREA
EAGLE BEACH



MAP 3.6

SPECIFIC AREA MANAGEMENT DIRECTION

EAGLE BEACH DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Allow uses which are compatible with reservoir water quality/delivery and day use developed recreation opportunities. Provide for a beach-oriented day use recreation experience for single family and group use. Allow private concessions, that compliment day-use recreation activities. Strive to operate at a full service level.		Comply with water and related project purposes while managing primarily for land-oriented day-use developed recreation. See monitoring requirements below.	State Parks, WBWCD, and USBR.
WATER RESOURCES			
Water Development and Conservation Develop/redevelop water and sanitation facilities needed for recreation purposes. Apply water conservation techniques in the development of drinking water, rest rooms and irrigation facilities.		Comply with current water quality and sanitation standards and reporting requirements. Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, and Federal, State, and Box Elder County water and sanitation entities.

SPECIFIC AREA MANAGEMENT DIRECTION

EAGLE BEACH DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Manage for a land based rural to urban recreation opportunity experience (development scale 4). Provide sand beaches, turf, pavilions, concessions, boat ramps.	***Rural to Urban ROS Class and Development Scale 4*** Allow highly developed recreation facilities mostly designed for comfort and convenience of the users. Development may be formalized and architecture may be contemporary. The facilities may include drinking water flush toilets and electricity. Allow the use of synthetic materials. Encourage the use of formal walks and surfaced trails to protect natural resources. Allow a development density of 5 per acre. Encourage interpretive services.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Facilities Development Develop appropriate recreation facilities where the present facilities are not meeting the demand and where it meets the highest net public benefit. Provide facilities and access for site protection, efficient maintenance, and user convenience.	**Physical/Biological:** Construct a bituminous surface road and parking. Provide additional structures and rest rooms. **Managerial:** Provide cost-effective recreation construction/maintenance on facilities. **Social:** Provide a family and group beach experience.	Comply in planning, design and construction. Conduct reviews. See following concept sketch(s). Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

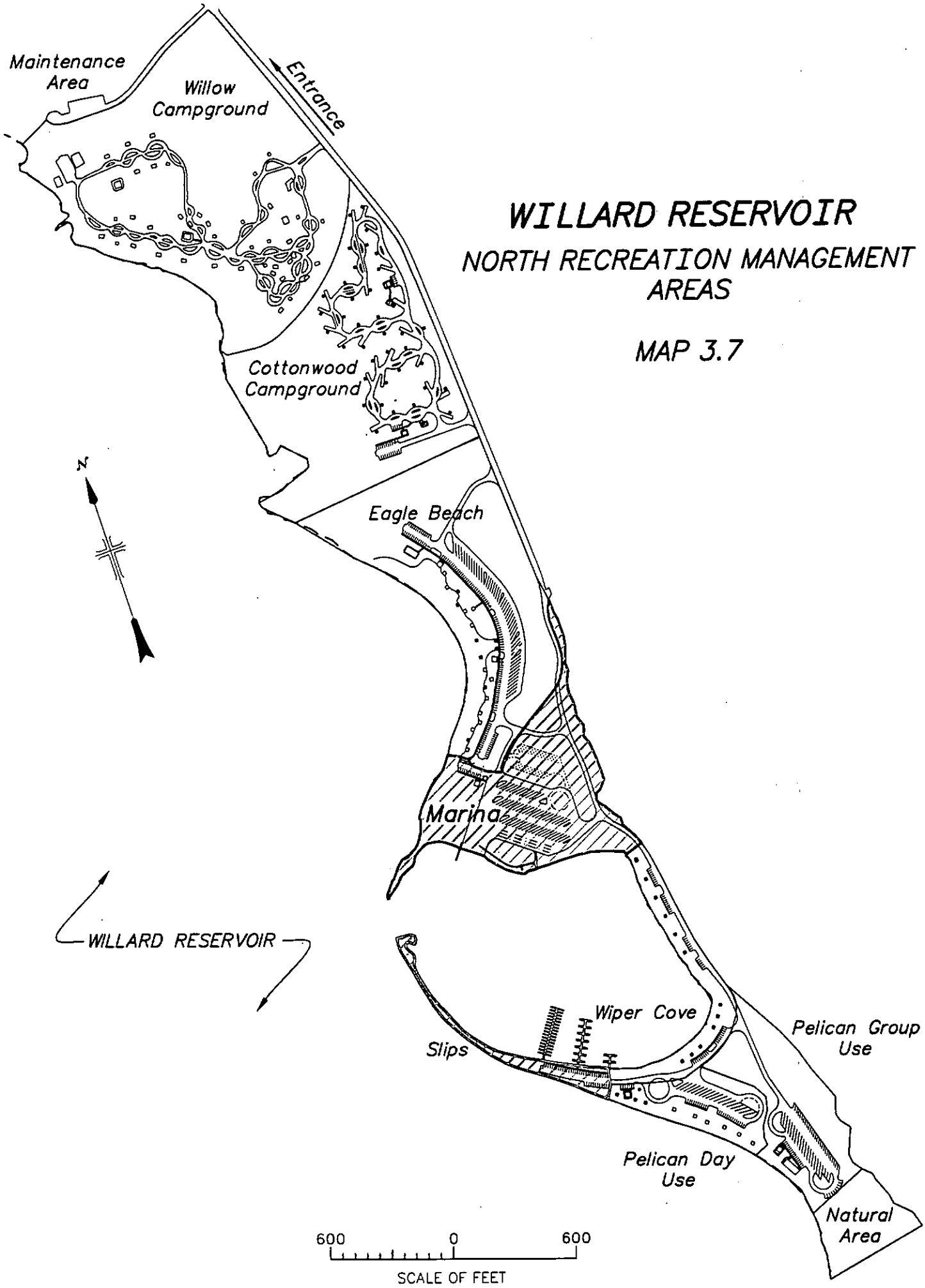
EAGLE BEACH DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Generally provide: • A concession building. • Sand beach with erosion protection. • Drinking water. • 15 to 20 pavilions on turf. • Trailer/tow vehicle and single vehicle parking stalls. • One 120 PAOT group pavilion. • Rest rooms.			
Landscaping Manage vegetation to enhance visual quality and wildlife use and accommodate recreation use.		Evaluate vegetation benefits, Document in Reservoir Management Reviews.	Department of Interior, Secretarial Order No. 3190 State Parks, WBWCD, and USBR.
Overnight Camping Prohibit overnight camping.		Enforce. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Visual Management Manage for a modification visual quality objective as viewed from on-site.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

EAGLE BEACH DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACTS AND REFERENCES
Wakeless Zone Provide a wakeless corridor parallel with the shoreline.		Enforce.	State Parks, WBWCD, and USBR.
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to assure they are compatible with developed recreation sites and use objectives.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.

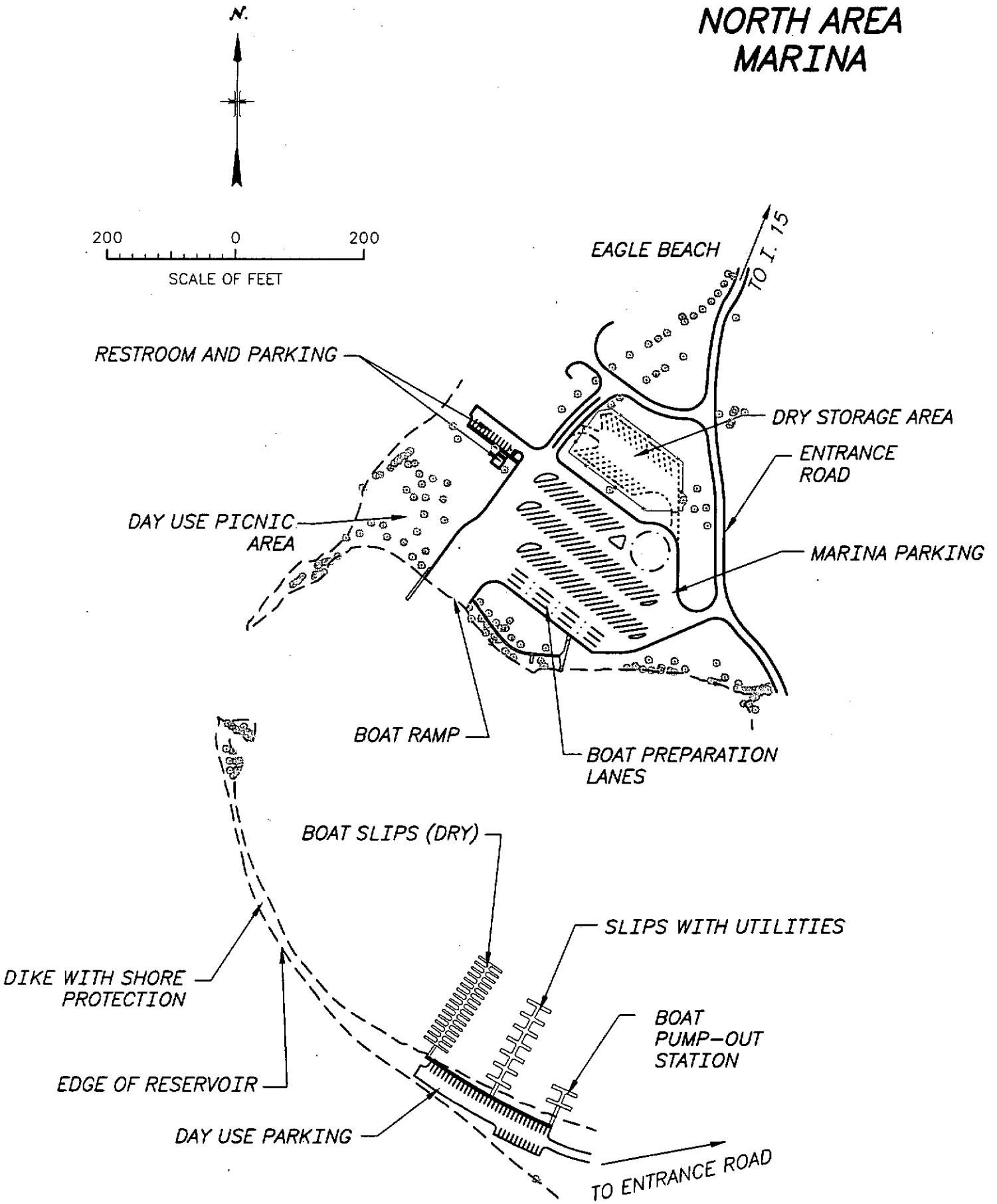


WILLARD RESERVOIR

NORTH RECREATION MANAGEMENT AREAS

MAP 3.7

NORTH AREA MARINA



MAP 3.8

SPECIFIC AREA MANAGEMENT DIRECTION

MARINA MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Allow uses which protect reservoir water quality/delivery and which complement day use recreation activities, the boat ramp, boat parking, and dry boat storage. Allow private concessions.		Comply with water and related project purposes while managing primarily for land-oriented day-use developed recreation. See monitoring requirements below.	State Parks, WBWCD, and USBR.
WATER RESOURCES			
Water Development and Conservation Develop water and sanitation facilities needed for recreation purposes. Apply water conservation techniques in the development of rest rooms, drinking water and irrigation facilities.		Comply with current water quality and sanitation standards and reporting requirements. Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, and Federal, State, and Box Elder County water and sanitation entities.

SPECIFIC AREA MANAGEMENT DIRECTION

MARINA MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Manage for a land based Rural to Urban recreation opportunity experience (development scale 4). Provide picnic sites, dry boat storage, and parking.	***Rural to Urban ROS Class and Development Scale 4*** Allow highly developed recreation facilities mostly designed for the comfort and convenience of the users. The facilities may include drinking water and flush toilets. Encourage the use of formal walks and surfaced trails, as needed, to protect the natural resources. Plant materials that may be foreign to the environment. Allow formal and contemporary architecture.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Facilities Development Develop appropriate recreation facilities where the present facilities are not meeting the demand and where it meets the highest net public benefit. Provide facilities and access for resource protection, efficient maintenance, and user convenience. Generally provide: • Drinking water. • Rest rooms. • Boat parking and dry boat storage. • Boat ramp, slips, and docks	**Physical/Biological:** Construct a bituminous surface road and turn around with boat parking, and a concessionaire building. **Managerial:** Provide cost-effective recreation construction on roads. **Social:** Provide for boat parking and launching.	Comply in planning, design and construction. Conduct reviews. See following concept sketch(s). Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

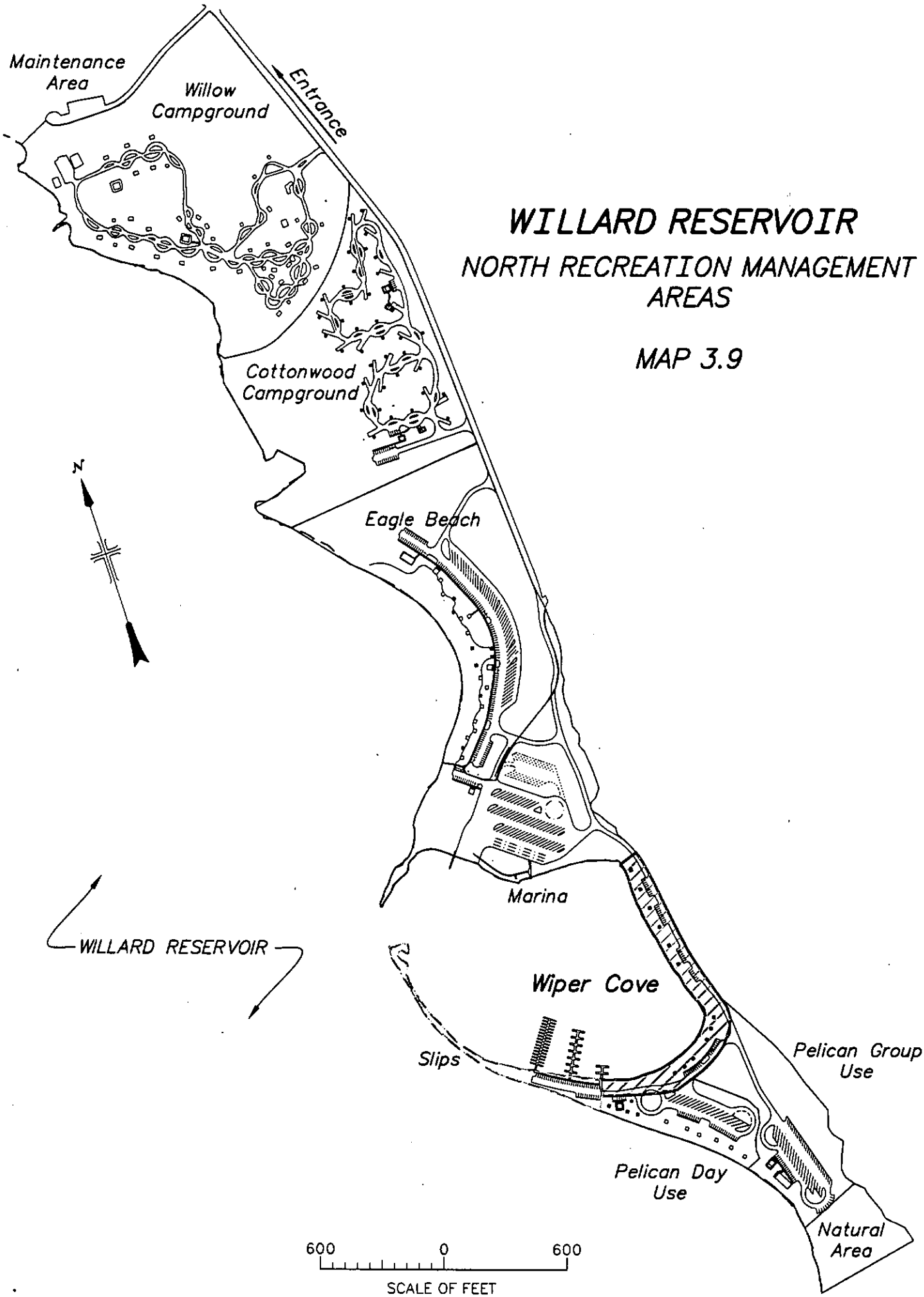
MARINA MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Landscaping Manage vegetation to enhance visual quality and wildlife as well as accommodate recreation use.	Department of Interior, Secretarial Order No. 3190	Evaluate vegetation benefits, Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Overnight Camping Prohibit overnight camping.		Enforce. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Visual Management Manage for a modification visual quality objective as viewed from on-site.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Wakeless Zone Provide a wakeless corridor.		Enforce.	State Parks, WBWCD, and USBR.
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas, including recreation areas, where unacceptable environmental damage is occurring.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

MARINA MANAGEMENT AREA

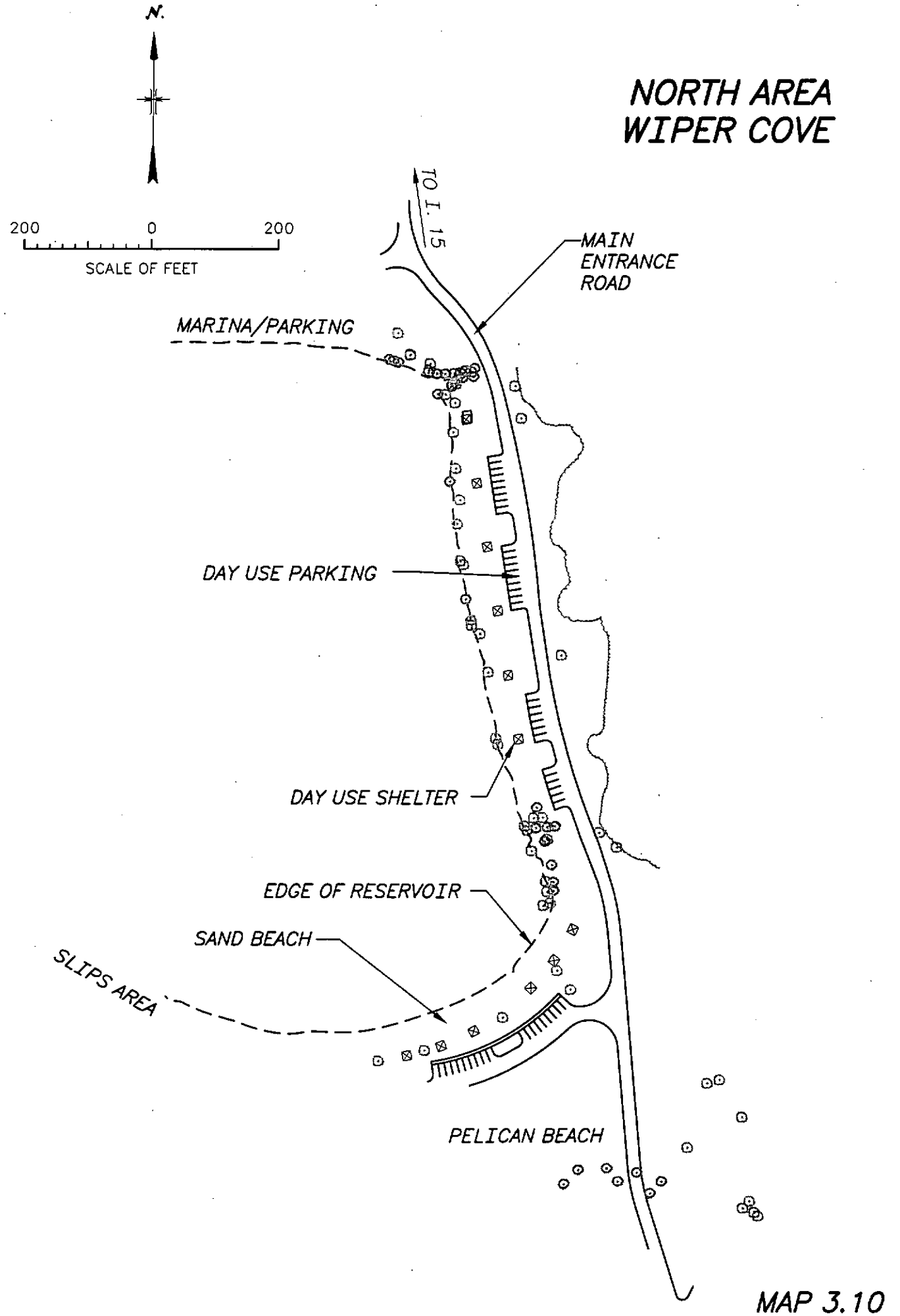
MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to be compatible with developed recreation sites and use objectives.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.



WILLARD RESERVOIR

NORTH RECREATION MANAGEMENT AREAS

MAP 3.9


N.
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SCALE OF FEET
NORTH AREA
WIPER COVE
TO I. 15
MAIN
ENTRANCE
ROAD
MARINA/PARKING
DAY USE PARKING
DAY USE SHELTER
EDGE OF RESERVOIR
SAND BEACH
SLIPS AREA
PELICAN BEACH
MAP 3.10

SPECIFIC AREA MANAGEMENT DIRECTION

WIPER COVE DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Allow uses which are compatible with reservoir water quality/delivery and day use developed recreation opportunities. Provide for a beach-oriented day use recreation experience for single family with water access. Strive to operate at a full service level.		Comply with water and related project purposes while managing primarily for land-oriented day-use developed recreation. See monitoring requirements below.	State Parks, WBWCD, and USBR.
WATER RESOURCES			
Water Development and Conservation Develop/redevelop water and sanitation facilities needed for recreation purposes. Apply water conservation techniques in the development of drinking water, rest rooms and irrigation facilities.		Comply with current water quality and sanitation standards and reporting requirements. Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, and Federal, State, and Box Elder County water and sanitation entities.

SPECIFIC AREA MANAGEMENT DIRECTION

WIPER COVE DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Manage for a land based Rural recreation opportunity experience (development scale 4). Provide turf, pavilions, and fire pits.	Rural ROS Class and Development Scale 4 Allow highly developed recreation facilities mostly designed for the comfort and convenience of the users. The facilities may include drinking water and flush toilets. Encourage the use of formal walks and surfaced trails, as needed, to protect the natural resources. Allow a development density of 5 family units per acre and plant materials that may be foreign to the environment. Allow formal and contemporary architecture.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Facilities Development Develop appropriate recreation facilities where the present facilities are not meeting the demand and where it meets the highest net public benefit. Provide facilities and access for site protection, efficient maintenance, and user convenience. Generally provide: • Drinking water. • 10 to 15 pavilions on turf • Single vehicle parking stalls. • Approximately 130 PAOT • Rest rooms.		Comply in planning, design and construction. Conduct reviews. See following concept sketch(s). Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

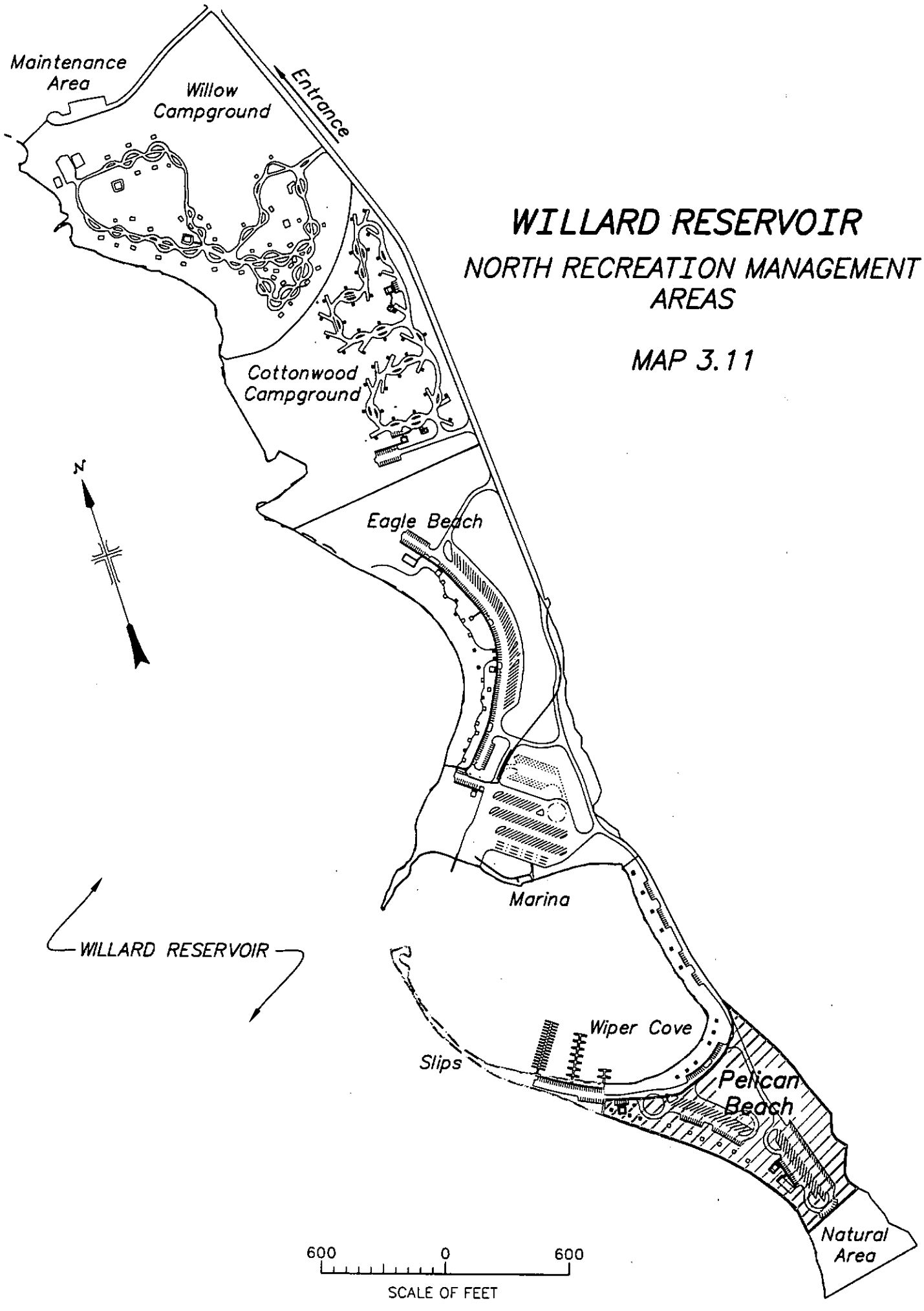
WIPER COVE DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Landscaping Manage vegetation to enhance visual quality and wildlife use and accommodate recreation use.	Department of Interior, Secretarial Order No. 3190	Evaluate vegetation benefits, Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Overnight Camping Prohibit overnight camping.		Enforce. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Visual Management Manage for a modification visual quality objective as viewed from on-site.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Wakeless Zone Provide a wakeless corridor parallel with the shoreline.		Enforce.	State Parks, WBWCD, and USBR.
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

WIPER COVE DAY USE MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to assure they are compatible with developed recreation sites and use objectives.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.

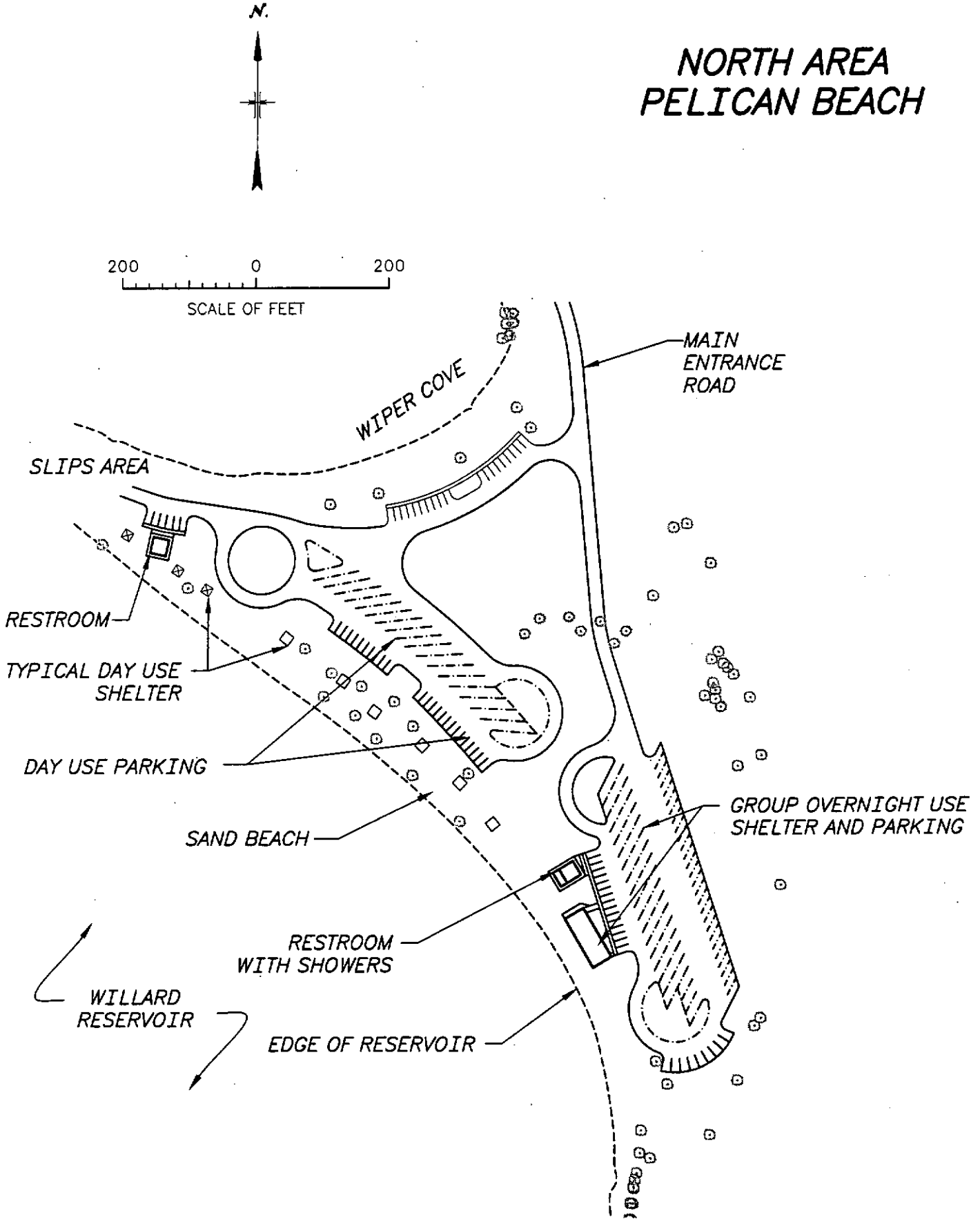


WILLARD RESERVOIR

NORTH RECREATION MANAGEMENT AREAS

MAP 3.11

NORTH AREA
PELICAN BEACH



MAP 3.12

SPECIFIC AREA MANAGEMENT DIRECTION

PELICAN BEACH MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management ***Pelican Beach Day Use Area*** Allow uses which are compatible with reservoir water quality/delivery and day use developed recreation opportunities. Provide for a recreation experience for single family, with water access. ***Pelican Beach Group Use Area*** Develop and manage for group overnight recreation opportunities. Provide facilities for a group recreation experience.		Comply with water and related project purposes while managing primarily for land-oriented day-use developed recreation. See monitoring requirements below.	State Parks, WBWCD, and USBR.
WATER RESOURCES			
Water Development and Conservation Develop/redevelop water and sanitation facilities needed for recreation purposes. Apply water conservation techniques in the development of drinking water, rest rooms and irrigation facilities.		Comply with current water quality and sanitation standards and reporting requirements. Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, and Federal, State, and Box Elder County water and sanitation entities.

SPECIFIC AREA MANAGEMENT DIRECTION

PELICAN BEACH MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Manage for a land based Rural to Urban recreation opportunity experience (development scale 4). Provide turf and pavilions.	***Rural to Urban ROS Class and Development Scale 4*** Allow highly developed recreation facilities mostly designed for the comfort and convenience of the users. The facilities may include drinking water, flush toilets, showers and electricity. Encourage the use of formal walks and surfaced trails, as needed, to protect the natural resources. Plant materials that may be foreign to the environment. Allow formal and contemporary architecture. Allow a development density of 5 units per acre. Encourage interpretive services.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Facilities Development Develop appropriate recreation facilities where the present facilities are not meeting the demand and where it meets the highest net public benefit. Provide facilities and access for site protection, efficient maintenance, and user convenience.		Comply in planning, design and construction. Conduct reviews. See following concept sketch(s). Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

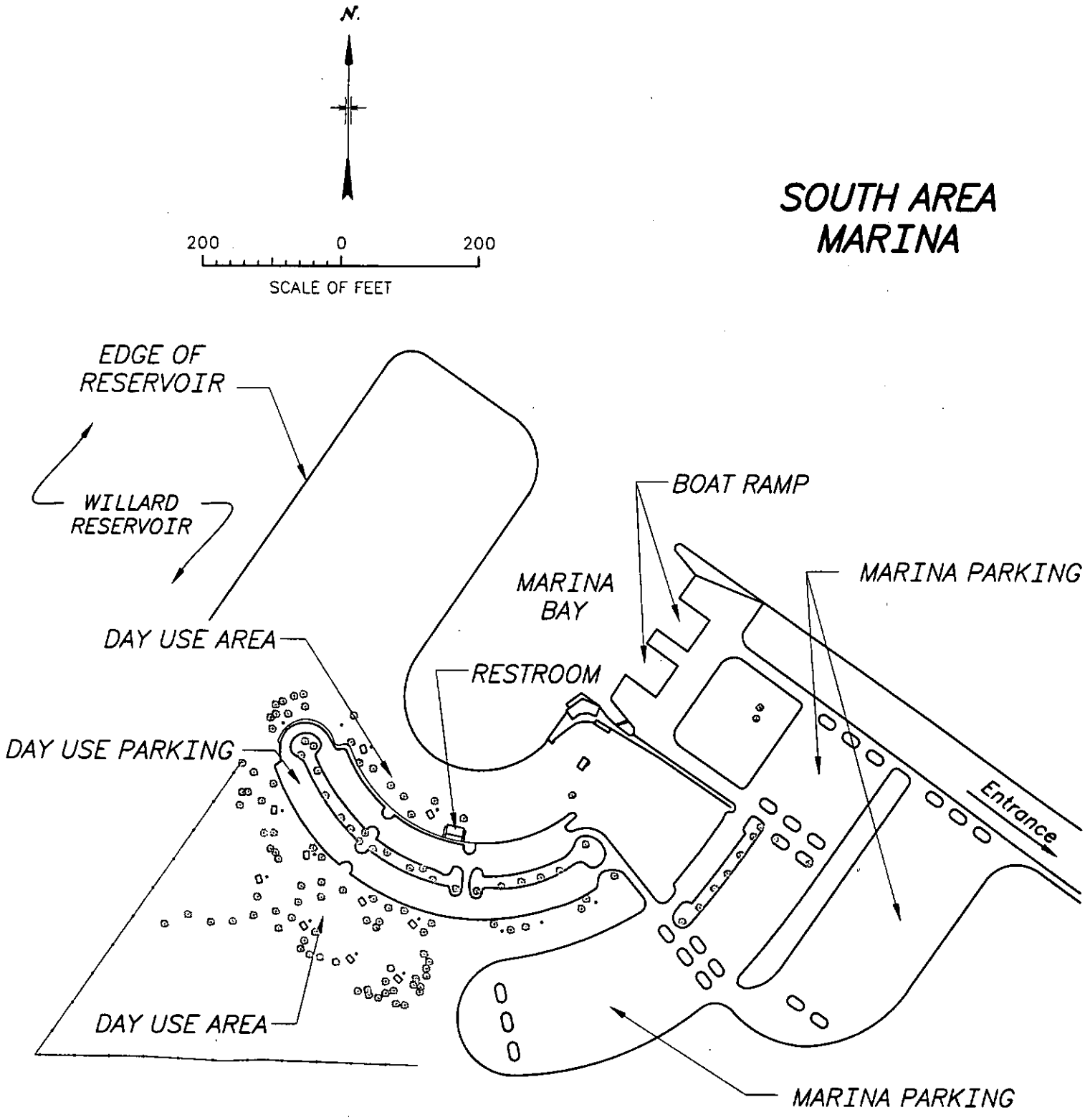
PELICAN BEACH MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Pelican Beach Day Use Area Generally provide: • Drinking water • 5 to 10 pavilions on turf • Trailer/tow vehicle and single vehicle parking stalls • Rest rooms ***Pelican Beach Group Use Area*** Generally provide: • Drinking water • Pavilions on turf for approximately 180 PAOT • Trailer/tow vehicle and single vehicle parking stalls • Rest rooms with showers			
Landscaping Manage vegetation to enhance visual quality and wildlife use and accommodate recreation use.	Department of Interior, Secretarial Order No. 3190	Evaluate vegetation benefits, Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Overnight Camping Allow overnight camping only in the group use area.		Enforce. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Visual Management Manage for a modification visual quality objective as viewed from on-site.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

PELICAN BEACH MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to assure they are compatible with developed recreation sites and use objectives. Eliminate existing OHV Training Area.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.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SCALE OF FEET
SOUTH AREA
MARINA
EDGE OF
RESERVOIR
WILLARD
RESERVOIR
BOAT RAMP
MARINA
BAY
MARINA PARKING
DAY USE AREA
RESTROOM
DAY USE PARKING
Entrance
DAY USE AREA
MARINA PARKING

MAP 3.13

SPECIFIC AREA MANAGEMENT DIRECTION

SOUTH RECREATION MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Allow uses which protect water quality/delivery and which are compatible with developed recreation day-use objectives. Emphasize land management for year round day-use picnicking and boat launching. Manage to protect health and safety and reduced service recreation operation levels.		Comply with water and related project purposes while managing primarily for land-oriented day-use developed recreation. See monitoring requirements below.	State Parks, WBWCD, and USBR.
WATER RESOURCES			
Water Development and Conservation Develop/redevelop water and sanitation facilities needed for recreation purposes. Apply water conservation techniques in the development of rest rooms, drinking water and irrigation facilities. Schedule irrigation at low water use periods.	Comply with current water quality and sanitation standards and reporting requirements.	Document in Reservoir Management Reviews or more often as needed.	State Parks, WBWCD, USBR, and Federal, State, and Box Elder County water and sanitation entities.

SPECIFIC AREA MANAGEMENT DIRECTION

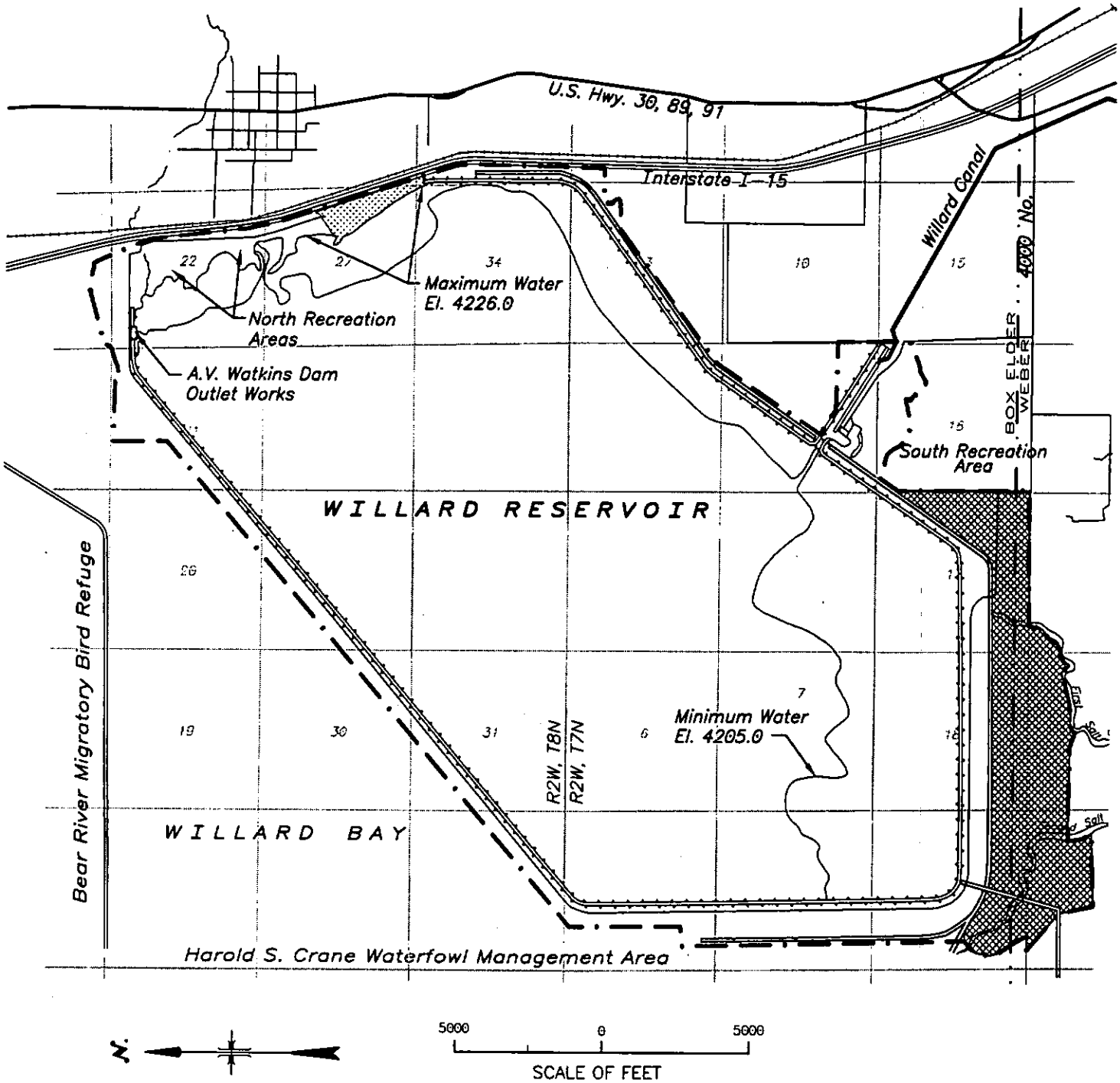
SOUTH RECREATION MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Manage for a land based Rural recreation opportunity experience (development scale 4). Provide day use facilities: pavilions, and parking.	**Rural ROS Class and Development Scale 4** Allow highly developed recreation facilities mostly designed for the comfort and convenience of the users. The facilities may include drinking water and flush toilets. Encourage the use of formal walks and surfaced trails, as needed, to protect the natural resources. Allow a development density of 5 family units per acre and plant materials that may be foreign to the environment. Allow formal and contemporary architecture.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Facilities Development Develop rest room, picnic facilities, and expanded parking lot.		Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Landscaping Manage vegetation to enhance the natural landscape appearance, wildlife use and recreation convenience.		Evaluate vegetation benefits, Document in Reservoir Management Reviews.	Department of Interior, Secretarial Order No. 3190. State Parks, UDWR, WBWCD, and USBR.
Overnight Camping Prohibit overnight camping.		Enforce. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

SOUTH RECREATION MANAGEMENT AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Visual Management Manage for a modification visual quality objective as viewed from on-site.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Close/rest areas and sites that cannot be maintained in code-a-site categories moderate to heavy.	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Soil and Water Resource Improvements Restore soil disturbances caused by human use to soil loss tolerance levels commensurate with the natural ecological processes of the area.		Evaluate soil conditions. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to assure they are compatible with developed recreation sites and use objectives.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.



EXPLANATION

- Willard Bay Wildlife Management Area
- Natural Area
- Reservoir Area Boundary
- Willard Dike
- County Line

NOTE

Natural Areas are also included in Primary Jurisdiction Zone

WILLARD RESERVOIR
NATURAL AREAS
MAP 3.14

SPECIFIC AREA MANAGEMENT DIRECTION

NATURAL MANAGEMENT AREAS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Allow uses which protect water quality/delivery and complement natural area objectives. Generally, manage natural areas for natural process, except those with various special permitted uses such as shooting ranges, dog training areas, special events, and air boat access points. Some natural areas are within the Primary Jurisdiction zone (See specific Management Area). ***Willard Bay Wildlife Management Area*** Allow uses which protect water quality/delivery and which are compatible with wildlife values.		Comply with water and related project purposes while managing primarily for land-oriented natural conditions. See monitoring requirements below. Comply with water and related project purposes while managing primarily for wildlife. See monitoring requirements below.	WBWCD, USBR, USFWS, UDWR, and State Parks.
WATER RESOURCES			
Water Conservation and Development Apply water conservation techniques in area activities and development of rest rooms and drinking water.		Comply with current water quality and sanitation standards and reporting requirements. Document in Reservoir Management Reviews or more often as needed.	WBWCD, USBR, and Federal, State, and Box Elder and Weber Counties, water and sanitation entities.

SPECIFIC AREA MANAGEMENT DIRECTION

NATURAL MANAGEMENT AREAS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Except for roads, parking and access areas, manage for a land based semi-primitive use (development scale 2). Manage visitor use to protect or enhance soils, plants, and animals; and to provide a low incidence of contact with other individuals and groups. Interpret natural features where appropriate.	***Semi-Primitive ROS Class and Development Scale 2*** Minimize site modifications. Provide improvements for protection of the site rather than comfort of the user. Use a minimum of public controls and little obvious visitor regimentation. Restrict public motorized access, where appropriate. Provide informal interpretative services.	Evaluate recreation condition and development scale. Document in Reservoir Management Reviews.	WBWCD, USBR, State Parks.
Facilities Development Develop appropriate recreation facilities where the present facilities are not meeting the demand and where it meets the highest net public benefit; generally allow staging areas and trails with associated trailhead facilities.		Comply in planning, design and construction. Conduct reviews. Assess development scale. Document in Reservoir Management Reviews.	WBWCD, USBR and State Parks.
Landscaping Manage vegetation to maintain or enhance natural area and wildlife values.	Department of Interior, Secretarial Order No. 3190.	Evaluate vegetation benefits, Document in Reservoir Management Reviews.	State Parks, UDWR, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

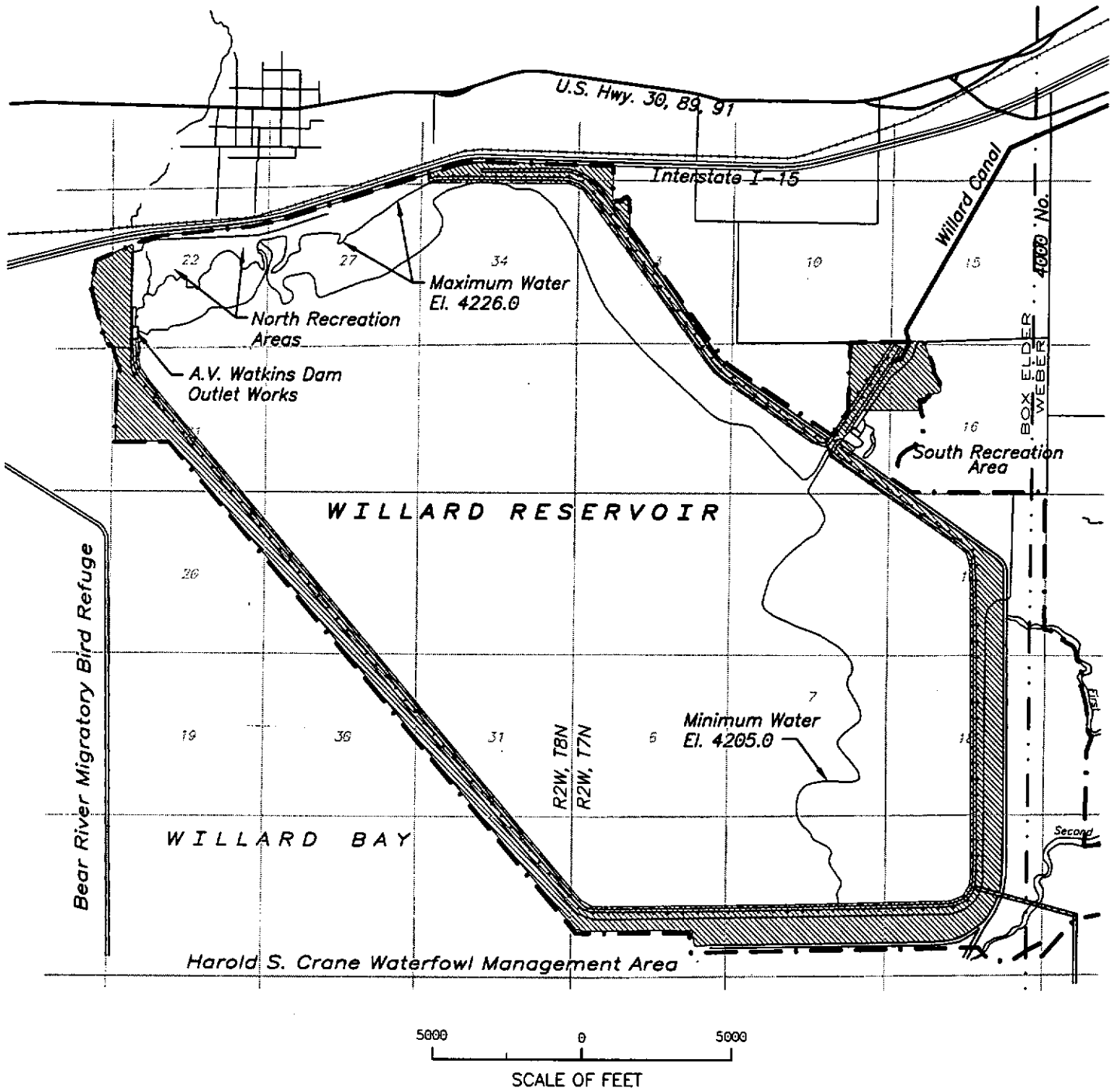
NATURAL MANAGEMENT AREAS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Natural Area Recreation Management Manage for semi-primitive recreation uses (for isolation and solitude), which provide opportunities for activities, such as study, scenery viewing, bird watching or other nature and wildlife related activities.		Evaluate recreation condition and Development Scale. Document in reservoir management Reviews.	State Parks, WBWCD, and USBR.
Overnight Camping Prohibit overnight camping.		Enforce. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Visual Management Manage for a partial retention visual quality objective as viewed from on-site.	***Partial Retention Visual Quality Objective*** Allow development or facilities which appear subordinate to the natural landscape. Allow up to two years after project completion for revegetation to meet this objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	WBWCD and USBR.
Watercraft Launching Access Restrict watercraft launching, requiring motorized tow vehicle assistance, to the existing marinas.		Assess launching locations. Document in Reservoir Management Reviews or more often if needed.	WBWCD and USBR.
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Close/rest areas and sites that cannot be maintained in code-a-site categories moderate to heavy.	Evaluate site condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

NATURAL MANAGEMENT AREAS

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Soil and Water Resource Improvements Restore soil disturbances caused by human use to soil loss tolerance levels commensurate with the natural ecological processes of the area.		Evaluate soil conditions. Document in Reservoir Management Reviews.	State Parks, WBWCD, USBR, and UDWR.
Vegetative Improvements Maintain preferred vegetative to enhance wildlife values. Maintain healthy diverse plant communities.		Evaluate vegetative condition. Document in Reservoir Management Reviews.	USBR , WBWCD, State Parks, and UDWR.
LANDS			
Facilities Development Prohibit development in the area including concessions, except for trails and staging areas.		Assess development scale. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.
Trails Construct or reconstruct and maintain trails only when needed to meet natural area objectives.		Evaluate trail standard and condition. Document in Reservoir Management Reviews.	State Parks, WBWCD, and USBR.



NOTE

Natural Areas are also included in Primary Jurisdiction Zone

EXPLANATION

- Primary Jurisdiction Zone
- Reservoir Area Boundary
- Willard Dike
- County Line

WILLARD RESERVOIR
PRIMARY JURISDICTION ZONE
MAP 3.15

SPECIFIC AREA MANAGEMENT DIRECTION

PRIMARY JURISDICTION ZONE AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
GENERAL MANAGEMENT AND PARTNERSHIPS			
Area Management Manage to benefit water operations and to protect the dam and dike for safety purposes. Restrict use of the area to those permitted by the WBWCD and USBR. Only provide public use facilities compatible with water operation purposes.		Comply and manage specifically for water and related project purposes. See monitoring requirements below.	WBWCD and USBR.
WATER RESOURCES			
Water Operations Operate according to operating contracts with WBWCD. Maintain canals, channels and drains. Allow placement of excavated materials within the Primary Jurisdiction Zone.		Review plans and agreements annually or more often if needed.	USBR, WBWCD, Army Corp of Engineers, and State of Utah. See Areawide Management Direction.
RECREATION/VISUAL RESOURCES			
Appropriate ROS Management Prohibit recreation activities, except as specifically designated.		Enforce.	WBWCD and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

PRIMARY JURISDICTION ZONE AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
Visual Management Manage for maximum modification visual quality objective except for modification in the South Recreation Area.	***Modification Visual Quality Objective*** Allow development or facilities which visually dominate the natural landscape, but harmonize with or complement it. Allow up to five years after project completion for revegetation to meet this objective. The dike and other operating appurtances are exceptions to the modification visual quality objective.	Evaluate visual condition. Document in Reservoir Management Reviews.	WBWCD and USBR.
NATURAL/CULTURAL/HISTORIC/PALEONTOLOGIC RESOURCES			
Natural Area Management Apply appropriate management within the Primary Jurisdiction Zone to Farmed Land, Cottonwood/Willow Riparian, Salt Marsh/Mudflat and non-developed lands that fall within the Altered Lands-Undeveloped as displayed on Map 2.3-2.6.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	WBWCD and USBR.
Site Rehabilitation Restrict use on and/or rehabilitate areas where unacceptable environmental damage is occurring.	Rehabilitate sites or areas that reach code-a-site category extreme (sites that will continue to deteriorate unless rehabilitation measures are applied).	Evaluate site condition. Document in Reservoir Management Reviews.	WBWCD and USBR.

SPECIFIC AREA MANAGEMENT DIRECTION

PRIMARY JURISDICTION ZONE AREA

MANAGEMENT DIRECTION	STANDARD OR GUIDE	MONITORING	CONTACT AND REFERENCE
LANDS			
Roads and Trails Design, construct, and maintain roads and trails to assure they are compatible with developed recreation sites and use objectives.		Evaluate development standard and condition. Document in Reservoir Management Review or more often if needed.	State Parks, WBWCD, and USBR.

4

TABLES

Chapter 4
Plan Implementation

INTRODUCTION

During implementation of the RMP, Reclamation and its partners will be guided by existing and future laws, regulations, policies and guidelines. This RMP is designed to supplement, not replace, direction from these sources.

Coordination and cooperation in varying degrees, with administering entities, is necessary for successful implementation of the RMP. Entities include Box Elder County, Weber County and local governments, Weber Basin, State Parks, UDWR, U.S. Fish and Wildlife Service, U. S. Army Corps of Engineers, permittees, users, interested public, and others.

PLAN REVISION AND AMENDMENT

The decision of whether an amendment to the Resource Management Plan is needed, will be determined by Reclamation as issues arise. Factors which could affect a plan revision include:

- Plan implementation that substantially alters the goals of the plan.
- Changes necessitated by changed social, physical, environmental or economic conditions.
- Changes needed to accommodate changed conditions that occur during implementation of the plan.
- Use needing authorization from instruments such as, permits, contracts, and cooperative agreements which is not consistent with the plan.

It is expected that a comprehensive RMP revision would occur within the next 10 to 15 years. Plan monitoring should occur every three to five years or more often as needed.

PLAN COMPONENTS FOR IMPLEMENTATION

Some plan components are scheduled for immediate implementation while others are scheduled for implementation over a period of years. Plan components that do not require new or additional funding are scheduled for immediate implementation. Since this RMP identifies such items as capital and facility improvements for budgeting purposes, improvements that require additional appropriations of funds will occur as funds become available.

Table 4.1 Implementation Schedule

Management Direction (Chapter 3)	Implementation	Target Year
PARTNERSHIPS		
Project Purposes (page 3-7)	Evaluate proposed use activities against original purposes, contracts and agreements.	2000 and continuing.
New Partnerships (page 3-13)	Develop and implement partnerships to attract, encourage, and promote best administration of resources and cost effective service benefitting resources and services to recreation, wildlife and natural areas.	2000 and continuing.
Interpretive Programs (page 3-14)	Promote interpretative and educational programs to resolve management problems, reduce management costs, obtain visitor feedback, increase public understanding of project management, enhance visitor use and safety.	2000 and continuing.
Signage (page 3-15)	Establish information signs for visitor orientation.	2000 and continuing.
Signage (page 3-16)	Post boundary signs at appropriate locations.	2000 and continuing.

Table 4.1 Implementation Schedule		
Management Direction (Chapter 3)	**Implementation**	**Target Year**
Recreation Management (page 3-17)	Develop a new Memorandum of Understanding for recreation management.	2001
WATER RESOURCES		
Best Management Practices (pages 3-19-3-21)	Implement a public education program to interpret the benefits of water quality and to discourage acts that pollute.	2000 and continuing.
	Stabilize highly erodible shorelines that have high nutrient concentrations.	2001 and continuing.
	Prohibit public motorized land vehicles from driving or parking on beaches or below the high water mark.	2000
	Restrict refueling to designated areas.	2001
	Encourage neighboring jurisdictions to treat storm water run-off offsite.	2000 and continuing.
Facilities (pages 3-21)	Construct facilities, both drinking water and sanitation, to meet State of Utah and County standards.	2000 and continuing.
Water Quality Protection (pages 3-22)	Conduct water quality and biological monitoring of the reservoir, its tributaries and releases.	2000 and continuing.

Table 4.1 Implementation Schedule		
Management Direction (Chapter 3)	**Implementation**	**Target Year**
RECREATION/VISUAL RESOURCES		
Saddle and Pack Animals (pages 3-29)	Phase out the use of saddle and pack animals, except for administrative purposes.	2005
Watercraft Launching (pages 3-30)	Restrict watercraft launching that requires motorized tow vehicles to designated boat access areas.	2000
Watercraft Limit (page 3-31)	Limit watercraft to not exceed available parking. Further reduce total craft numbers as necessary to reduce conflicts.	2000
Willow Campground Area Management (page 3-57)	Manage for single-family overnight recreation.	2000
Willow Campground Area Facilities Development (page 3-58)	Construct/rehabilitate recreation facilities.	2002
Cottonwood Campground Area Management (page 3-63)	Manage for single-family overnight camping.	2001
Cottonwood Campground Area Facilities Development (page 3-64)	Construct recreation facilities.	2001
Eagle Beach Day Use Area Management (page 3-69)	Manage for beach-oriented day use recreation experience for single family and group use.	2000
Eagle Beach Day Use Area Development (page 3-70)	Construct recreation facilities.	2001

Table 4.1 Implementation Schedule		
Management Direction (Chapter 3)	**Implementation**	**Target Year**
North Recreation Area Marina Area Management (page 3-75)	Manage for day use recreation activities. Facilities include the boat ramp, boat parking, and dry boat storage.	2002
North Recreation Area Marina Facilities Development (page 3-76)	Construct/rehabilitate recreation facilities.	2002
Wiper Cove Day Use Area Management (page 3-81)	Manage for beach-oriented day use recreation experience for single family with water access.	2000
Wiper Cove Day Use Facilities Development (page 3-82)	Construct/rehabilitate recreation facilities.	2003
Pelican Beach Area Day Use Management (page 3-87)	Manage for a single family day use recreation experience with water access.	2000
Pelican Beach Area Group Use Management (page 3-87)	Develop and manage for group overnight recreation opportunities.	2002
Pelican Beach Area Facilities Development (page 3-88)	Construct/rehabilitate recreation facilities.	2002
South Recreation Area Area Management (page 3-92)	Manage for day-use recreation and boat launching.	2002

Table 4.1 Implementation Schedule		
Management Direction (Chapter 3)	**Implementation**	**Target Year**
South Recreation Area Facilities Development (page 3-93)	Construct/rehabilitate recreation facilities.	2003
NATURAL/CULTURAL/PALEONTOLOGICAL RESOURCES		
Natural Areas Management (page 3-96)	Manage areas for natural processes. Appropriate permitted uses such as shooting ranges, dog and OHV training areas, special events, and air boat access points, may occur.	2000 and continuing.
Pest/Aquatic Management (page 3-43)	Coordinate with State of Utah, Box Elder and Weber Counties and other appropriate entities to regulate undesirable or invasive pests.	2000 and continuing.
Weeds/Noxious Weeds (page 3-43)	Control and reduce noxious weeds and poisonous plants.	2000 and continuing.
Revegetate Disturbed Areas (page 3-44)	Revegetate disturbed or damaged areas or sites.	As sites are identified and funding becomes available.
Threatened and Endangered Species (page 3-45)	Where activities or uses may adversely affect T&E species or their habitats, initiate consultation procedures.	As activities are identified.
LAND MANAGEMENT RESOURCES		
Boundary Fences (page 3-47)	Construct appropriate fences.	2000 and continuing.
Boundary Location (page 3-47)	Locate, mark and post land lines.	2000 and continuing.

Table 4.1 Implementation Schedule		
Management Direction (Chapter 3)	**Implementation**	**Target Year**
Dike/Primary Jurisdiction Zone Area Management (page 3-101)	Manage to benefit water operations and to protect the dike for safety purposes. Use of the area may be restricted to those permitted by the Weber Basin Water Conservancy District and Reclamation.	2000 and continuing.
Dike/Primary Jurisdiction Zone Area Management (page 3-101)	Only provide public use facilities compatible with water operation purposes.	2000 and continuing.

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Chapter 5
List of Preparers

U.S. Department of the Interior Bureau of Reclamation Project Management	Jim Jensen, Project Manager and Contract Officer, and Elizabeth Hales, *Provo Area Office*
Bureau of Reclamation Environmental Protection Specialist	Kerry Schwartz, *Provo Area Office*
Bureau of Reclamation Mapping	Mike McMillian, *Provo Area Office*
Bear West Consulting Team RMP Team Management and RMP Document Preparation	Emilie Charles, *Bear West Company*
Water Quality, Supply, and Rights	Greg Poole, *Hansen, Allen and Luce*
Wetland Vegetation	Katherine Trott, *U.S. Department of the Interior, Bureau of Reclamation, Provo Area Office*
Recreation, Visual Quality and Mapping	Jan Striefel, *Landmark Design*
Transportation	Edgar Perez, *Centennial Engineering, Inc.*
Socioeconomic	Natalie Gochnour and Susan Rutherford, *Governor's Office of Planning and Budget*
Wildlife, Fisheries, and Range Resource	Russ Findlay, *U.S. Department of the Interior, Bureau of Reclamation, Provo Area Office*
Cultural Resources	Mike Polk and Heather Weymouth, *Sagebrush Archaeological Consultants*

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Chapter 6
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Chapter 7
Glossary

GLOSSARY

/	Per
<	Less-than sign
%	Percent
AADT	Annual Average Daily Traffic. The total volume of traffic for the year divided by the number of days in the year.
Acre-feet	A measure of water quantity one acre of water one foot deep or 325,851 gallons.
ADT	Average Daily Traffic. The total volume during a given time period, in whole days greater than one day and less than one year, divided by the number of days in that time period.
Affected Environment	Parts of the environment that would be effected by a change in operation of management.
Algae	Simple plants containing chlorophyll; most live submerged in water.
Algal blooms	Rapid and flourishing growth algae.
Alternatives	Different way of addressing the issues, concerns and management activities identified during scoping. These serve to provide the decision maker and the public a clear basis for choices among the management options.
Anoxic Water	Water which has been depleted of oxygen and is deadly to fish.

Animal Unit Month (AUM)	The amount of feed or forage necessary to sustain one cow or its equivalent for one month.
Baseline	The beginning measuring point.
BLM	Bureau of Land Management
Browse	(1) Tender parts of woody vegetation that are eaten as food by animals. (2) To consume. Browsing is distinct from grazing because it refers to eating woody material, whereas grazing is usually restricted to nonwoody plants.
Candidate species	Animal or plant species that are being considered for federal designation as either threatened or endangered.
cfs	Cubic feet per second; a measure of streamflow volume. One cubic foot is 7.48 gallons. A flow of 1 cfs produces 448.8 gallons per minute.
Character type	Large physiographic area of land that has common characteristics of landforms, rock formations, water forms and vegetative patterns.
Decadent	Of an age past maturity and approaching mortality.
Demographics	The statistical characteristics of a human population.
Developed recreation	Recreation that requires facilities, resulting in the concentrated use of an area, such as campgrounds.
Dispersed recreation	Recreation use that requires few, if any, improvements and may occur over a wide area.
Domestic animal	Any various animals, such as cat, dog, horse, sheep, cow, pig domesticated ao as to live and breed in a tame condition.
Emergent	Vegetation that is rooted below the water surface and extends above the surface.
Endangered Species	Species that are in danger of extinction in all or a significant portion of their range. Secretary of Interior makes the determination.

EPA	Environmental Protection Agency
Erosion	The wearing away of the land surface by running water, wind, ice or other geologic agents, or resulting from human or animal activities.
Eutrophication	Increase of mineral and organic nutrient in a body of water that depletes dissolved oxygen and may result in the suffocation of fish.
Flood plain	A nearly level plain of sand, silt or clay that borders a stream and is subject to flooding unless protected artificially.
Forage	All food available for grazing animals.
Forb	Any herbaceous (non-woody) plant having broad leaves and therefore excluding grasses and grasslike plants. Herbaceous plants form the lowest layer of vegetation in most plant communities.
Game species	Huntable wildlife.
GOPB	Governor's Office of Planning and Budget
GPM	Gallons per minute
Grazing	The act of animals feeding on fresh grass and herbaceous plants.
Habitat	Place or type of site in which an animal or plant naturally or normally occurs.
Herbaceous	Resembling an herb, a green, leafy plant that does not produce persistent woody tissue.
Herbicide	Any substance used to kill an unwanted plant.
Hydric	Hydric soils are saturated, flooded or ponded for a period during the growing season sufficient to develop anaerobic conditions favoring hydrophytic vegetation.
Hydrophytic	Vegetation or plants that tolerate and thrive in wet soils.

Indicator species	A species whose presence in a certain location or situation at a given population level indicates a particular environmental condition. Their population changes are believed to indicate effects of management activities on a number of other species or water quality.
Jurisdictional wetlands	Jurisdictional wetlands are defined as those seasonally or permanently wet areas that come under the domain or authority of the USACE for purposes of regulatory permitting on the basis of meeting wetland criteria as described in the 1987 Federal Manual.
MCL	Maximum contaminant level
Maximum Modification	Visual Quality Objective indicating that human activities would dominant the natural landscape and may not blend with it when viewed from up to 5 miles away.
MOA	Memorandum of Agreement
mg/l	Micrograms per liter—Equivalent of one part per million.
Mitigation	Avoiding or minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating or restoring the affected environment; reducing or eliminating the impact by preservation and maintenance operations during the life of the action.
Modification	A Visual Quality Objective indicating human activity may dominate the natural landscape, but should still blend with it.

National Environmental Policy Act (NEPA)	The National Environmental Policy Act (NEPA) is the basic national charter for protection of the environment. There are two main objectives of NEPA: (1) to ensure that agencies consider every significant aspect of the environmental impact of a proposed action, and (2) to inform the public of potential impacts to the human environment and involve it in the NEPA decision-making process.
Non-jurisdictional wetlands	Wetlands that do not fall under the jurisdiction of the USACE on the basis of meeting wetland criteria as described in the 1987 Federal Manual.
OHV (Off-highway vehicle)	Utah State law defines an OHV as any snowmobile, all-terrain type I vehicle, all-terrain type II vehicle, or motorcycle.
PAOT	An acronym for "people at one time" per acre.
Partial Retention	A Visual Quality Objective indicating that human activities would appear subordinate to the natural environment, and should blend with it.
Per capita income	The total income of a group divided by the number of people in the group.
pH	A measure of the relative concentration of hydrogen ions in a solution; this value indicates the acidity or alkalinity of the solution.
ppm	Parts per million
Preservation	A Visual Quality Objective allowing ecological changes only.
Prey	An animal or animals taken as food by another animal.
Raptors	Birds of prey such as, hawks, eagles, owls, falcons, harriers, kites.

Recreation Opportunity Spectrum (ROS)	A land classification system developed by the Forest Service that categorizes lands into six classes. The classes range on a continuum from primitive to urban and vary in their setting and type of recreation available.
Retention	A Visual Quality Objective indicating that human activities are not evident to the casual visitor.
Riparian	Land areas adjacent to streams or lakes that are usually only seasonally flooded. Unlike seeps, bogs or marshes they are not constantly wet, but are dependent on the soil moisture from the stream or lake for maintaining the vegetation and is usually composed of trees and shrubs.
RMP	Resource Management Plan
Roaded Natural	A classification of the Recreation Opportunity Spectrum (ROS) characterized by predominantly natural-appearing environments with moderate sights and sounds of man. Interaction between users may be low to moderate, but with strong evidence of other users.
ROW	Rights-of-way
Run-off	The precipitation discharge in stream channels from a drainage area. The water that flows off the land surface without sinking is called surface runoff; that which enters the ground before reaching surface streams is called ground-water runoff.
Rural	A classification of the Recreation Opportunity Spectrum (ROS) characterizing an area where the landscape has been considerable altered by the works of man with prevalent sights and sounds of man. Interaction between users maybe high.
Semi-primitive	A classification of the Recreation Opportunity Spectrum (ROS) characterized by a predominantly natural-appearing environment with minimal sights and sounds of man. There is a low concentration of users but often evidence of use.

Sensitive species	A plant or animal species, subspecies or variety for which a Federal agency has determined there is a concern for the species viability, as evidenced by a significant current or predicted downward trend in the population or habitat.
Sensitivity level	Level of concern by user of visual quality.
Spillway	Overflow channel of the dam
State Parks	Utah Division of Parks and Recreation
STORET	The name of the State of Utah Division of Water Quality system for storing the resulting data generated from the analysis of water samples.
SWTR	Surface Water Treatment Rule
Texture	Refers to the nature of materials used for exteriors of buildings and facilities and their visual relationship to the surrounding environment. For instance, naturally colored wood, log or natural stone facing and cedar shake roofing materials would be more likely to blend in with the naturally occurring textures of a forested setting than would smooth or shiny surfaces.
Threatened Species	A species that is not currently in danger of extinction, but is likely to in the foreseeable future. This status is determined by the Secretary of Interior.
Trip	A single or one-direction vehicle movement with either the origin or destination (exiting or entering) inside the study area.
UDOT	Utah Department of Transportation.
Urban	A classification of the Recreation Opportunity spectrum (ROS) characterized by an area of urbanized environment with dominant structures and extensive sites and sounds of man. Interaction between users is high.
UDWR	Utah Division of Wildlife Resources
USACE	United States Army Corps of Engineers

USBR	United States Bureau of Reclamation
USFWS	United States Fish and Wildlife Services
USU	Utah State University
Variety Class	A particular level of visual variety or diversity of landscape character.
Viewshed	A landscape unit seen from a key viewing area.
Visual Resource	The composite of basic terrain, geologic features, water features, vegetative patterns and land-use effects that typify a land unit and influence the visual appeal the unit may have for visitors.
Visual Quality Objectives (VQO)	A code that refers to a desired visual development level for a specific area. The code indicates the degree to which activities are noticeable in the natural environment, for example, whether human activities will dominate, be subordinate or be evident in the natural environment.
Water Rights	A legal right to take water and put it to use.
WBWCD	Weber Basin Water Conservancy District
Weber Basin	Weber Basin Water Conservancy District
Wetland	Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.