

**U.S. Department of the Interior
Bureau of Land Management**

Santa Cruz Lake Recreation Facilities Rebuild

DOI-BLM-NM-F020-2011-0023EA



U.S. Department of the Interior
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Chapter 1: Introduction

1.1 Background

The BLM proposes to rebuild all facilities and provide new hosts sites and administration sites at Santa Cruz Lake Recreation Area. Implementation of this proposed plan would be in phases over the next few years beginning in 2011.

Recreation program guidance is outlined in *The BLM's Priorities for Recreation and Visitor Services*, 2003, which includes goals and objectives. This project would meet the following objectives:

- “Increase law enforcement presence, or establish/improve other means to ensure public safety and security in support of recreation visitors.”
- “Review and establish policy for clear and consistent signing and information at recreation sites and facilities where fees are charged.”
- “Manage and maintain recreation sites and facilities to acceptable operational standards, with priority given to reducing the backlog of identified deferred maintenance projects.”

1.2 Purpose and Need

The primary purpose for the rebuild is to meet changing use patterns, improve administrative functions, address unmet visitor needs, and mitigate environmental concerns. Existing recreation structures were installed in the mid 60s and are in disrepair. Runoff from day use areas, camp sites, and roads is negatively impacting the function of these recreation facilities and increasing siltation of the lake. For example, none of the sites in the recreation area are universally accessible due to erosion and design. However, it is BLM standard to provide universal access where feasible. The rebuild is needed to bring the recreation facilities and opportunities at Santa Cruz Lake Recreation Area in compliance with the objectives of the BLM's Priorities for Recreation and Visitor Services and the 1988 Taos Resource Management Plan.

The highest demand at the recreation area is for shoreline access. The redesign would relocate day use sites closer to the North Shore to get visitor access on that particular beach. The main activity at Santa Cruz Lake is fishing from the bank; particularly along a ½ mile reach near the developed recreation sites; but there has been a steady increase in boating use over the past five years. At present there are 20 parking spaces for vehicles with boat trailers, which is not sufficient to meet current weekend demand. On weekends, employees become parking lot attendants to reduce conflicts for space between boaters, shoreline users, and hikers or picnickers. During high water levels, good fishing areas are hard to find or dangerous to reach. Existing trails should be improved to allow easier access to the fishing areas.

The Overlook is popular as a viewing area, for access trails leading down to the south shore, and as a staging area for mountain bike use on some of the existing two tracks. This use is expected to increase over the next several years. The site is used by large groups for Easter sunrise services and weddings. There are a total of twelve shelters. No water is available at the site.

At present, there are no administrative facilities. Currently, staff is using a storage building to report to duty and collect fees. After duty hours fee compliance by visitors is only 15% and most of that comes

from annual pass holders. Vandalism and other depreciative behavior also occurs after hours. There have been loud parties, tagging or graffiti, car break-ins, theft of generators, and food from campers, fights among visitors, and assault. An increase in visitor safety and a decrease in user conflicts could be achieved with a fee booth, gate, and host site. Fee compliance is 99% when staff is on duty.

Santa Cruz Irrigation District releases water from the lake between June and October. During this time the water level will drop as much as 50 vertical feet. In drought years the lake may even be drained. When water levels drop eight vertical feet from the current high water mark, the fishing dock is no longer usable; with a drop of 20 feet, visitation decreases as much as 55% due to poor fishing conditions. At a drop of 27 vertical feet the boat ramp is closed for the season.

In addition, the Santa Cruz Irrigation District (Irrigation District) is raising money to augment the height of the dam. The new layout of facilities is necessary to accommodate the planned increase in dam height of eight feet in the next two or three years due to loss of storage capacity from siltation. The design work for the recreation area would be done by a contractor. Construction may be done by BLM or a contractor depending on the complexity and cost of the design.

1.3 Land Use Plan Conformance

The *Taos Resource Management Plan* (RMP) of 1988 designated Santa Cruz Lake as a Recreation Area. Recreation is to be emphasized as a primary use and as an intensive recreation site both developed and undeveloped. The area is described as Semi Primitive. Two policies stated in the 1989 *Santa Cruz Lake Recreation Management Plan* and relevant to this project are:

- Facilities would be located and designed in a way that minimize erosion and siltation in the lake.
- Protection of scenic quality in facility planning would be considered.

No Visual Resource Management (VRM) objectives are defined in the RMP or in the Recreation Area Management Plan. A scenic inventory conducted in 2006 by the BLM found the resources surrounding Santa Cruz Lake to fall under Class II objectives, while developed recreation sites in the Taos Field Office are typically managed as a VRM Class III. The recreation setting prescription along the shoreline where the facilities are located is not determined in the 1988 Taos Resource Management Plan. However, the existing facilities lie somewhere between Front Country and Rural on the Natural Resource Recreation Settings Matrix, Appendix A.

The BLM as an agency has adopted a design philosophy for recreation facilities. The Vision Statement for *Guidelines for a Quality Built Environment* is:

“In support of our responsibility to manage diverse landscapes and multiple uses, the BLM will provide quality facilities for the public and its employees that are sustainable, attractive, functional, cost-effective, and responsive to place and setting.”

1.4 Identification of Issues

Issues were identified by BLM staff during an internal resource interdisciplinary team meeting. The proposed project was posted on the on-line NEPA log on March 12, 2010.

Based on these efforts, the following issues have been determined relevant to the analysis of this action:

1.4.1 Recreation

- How would the re-build be designed to meet consistency with the existing condition for the recreation setting?
- How would safety and security of visitors and the quality of the experience be addressed?

1.4.2 VRM

- How would the re-build be designed to blend with the characteristic landscape and be consistent with the existing condition?

1.4.3 Water Quality

- How would construction affect siltation of the lake?

1.3.3 Soils

- How would construction affect soil stability?

Chapter 2: Description of Alternatives

2.1 Alternative A: Proposed Action

The first phase of this project would be construction of new administrative facilities to more effectively manage visitors at the North Shore of Santa Cruz Lake Recreation Area. An administrative site, a fee station, and a host site would be located at the top of the hill just off of NM Highway 503 leading to the entrance to the recreation area. Construction will include a gravel access road, offices with a phone, ware yard, and parking. The fee station would include a collection booth, a gate, a by-pass lane, and entry signing. The host site would be installed adjacent to the current fee station at the bottom of the hill. It would include a parking pad, electrical and water hook ups, a well, and a phone.

The second phase involves replacing all the recreation facilities within the Santa Cruz Lake Recreation Area, both the North Shore and the Overlook. Virtually all of the existing facilities will be rebuilt and located within existing disturbance. This includes the BLM entrance road (known as CR 98A) from NM Highway 503 to the North Shore. The Overlook would be closed to camping but the North Shore would remain open to camping.

Since funding for the Irrigation District project is uncertain, the BLM would not implement the redesign of the boat launch, fishing docks, and picnic area under the cottonwoods until the final phase of the project so they would still be available in their current configuration to visitors. These facilities could be under water if the planned increase in dam height of eight feet occurs in the future. Some fill will be borrowed from sediment from the lake during low water in order to raise the height of the facilities adjusting for an anticipated higher water mark. This will only be done on dry lake bed areas and dry material. Storm water control structures will be used to limit upslope runoff into borrow pit and runoff from borrow pit. There will be no stockpiling within lake high water mark, etc.

The Design Criteria listed in the Design Narrative describe each specific action being proposed. Refer to the Standard Design Objectives, for the overall guidance given to an architect for how sites should be placed to address the following values: traffic flow and arrival sequences, safe driving dimensions and proper road design, design elements that blend with cultural and natural settings, cost effectiveness, water systems that can be used year round, privacy between sites, large groups, all weather roads, defined trailheads, landscaping, provision of water, unobtrusive lighting, trash, restrooms, site furnishings, water quality, buried utilities, and sign bases. In addition to the Design Narrative, all disturbance in the project area would include the following stipulations for landscaping and vegetation.

- Recontour all disturbed areas, and grade to re-establish the approximate original contours of the land.
- Seed all disturbed areas with a BLM approved native mixture tested and certified in accordance with State law to be free of noxious weeds.
- The seed mixture shall be evenly and uniformly planted over the disturbed area and repeated until a satisfactory stand is established. All re-seeded areas will be mulched.
- Transplant trees from disturbance to use for shade and landscaping.
- All heavy equipment will be cleansed of mud and dirt prior to entering and exiting BLM land to avoid the transfer of noxious weed seeds.
- Any fill mixture brought in shall be from a weed free source.

The BLM will develop a Storm Water Pollution Prevention Plan (Prevention Plan) as required by the EPA for all sites. The Prevention Plan assess the risk of erosion and increased runoff for each proposed new site and identify appropriate mitigation to reduce that risk. In addition, the SWPPP will contain information about site control, use and storage of hazardous substances during construction (e.g., vehicle fueling control), emergency plans and contact information for site managers. Mitigation will address the risks identified in the soils and water sections of this EA. The BLM will also obtain a 404 permit and 401 water quality certification if warranted for any part of the construction.

A cultural resource inventory will be completed prior to any new earth disturbing activities outside the existing footprint of development.

Site Design Criteria - North Shore Use Area

Consists of two separate areas: A. shoreline area (parking, ramps, docks), and B. camping area.

1. County Road 98A is a BLM road. The BLM will conduct maintenance and improve drainage on this road as part of this project.
2. Shoreline - the ½ mile shoreline near the boat dock and parking areas is the key area for most visitors. A trail that would be one to three feet above the new high water line and protected from wave action would be one of the highest priorities. It could be connected (via steps) to picnic shelters on the tops of the hills and ridges near the lake. It could also be designed (through modification of the lakebed) to allow access to the shoreline 20 feet below the new high water line.
3. Boat Dock - increase length of existing boat dock by 60 feet.

4. Fishing Dock - lengthen access ramp to fishing dock to allow use at lower water levels. Relocate to a suitable area to accommodate projected rise of lake level. Increase water depth under fishing dock.
5. Parking (near boat dock) - increase to accommodate a total of 40 truck/trailer units and parking for 15 cars. Recontour to allow drainage into a new sediment pond.
6. Parking (near fishing dock) - the southwest end of the parking area will be affected by the increased height of the dam. The first row of parking closest to the retaining wall will be lost. The renovated parking lot should be paved, and able to accommodate a total of 65 cars or trucks. Renovated parking area should be sloped away from the lake with a suitably-sized sediment pond.
7. Vault Toilets - adjacent to boat ramp, replace existing vault toilet with new single-vault toilet; adjacent to paved parking area, replace one of the double-vault toilets with same, and relocate second vault toilet to the camping/day-use area; on east side of unpaved parking area, replace single vault toilet with a double vault toilet and consider relocation for easier access. In camp area, replace single vault toilet with a double vault toilet.

A total of 32 day-use or camping shelters would be located along the North Shore or in what is now known as the campground:

8. Day-Use Shelters – Ideally, about 34 sites would be located within 100 or 150 feet of the shoreline, and spread out along the ½ mile “developed” part of the shore. Each shelter would have a perforated metal table/seating for eight, as well as space for two wheelchairs; a trash can, and on-ground grill. There could be steps or trails designed to access the shore from each shelter, as well as to access nearby parking areas.
9. Camping/Day-Use Shelters – these would be located in the current campground area. Six sites need to be designed specifically for camping, with a flat area adjacent to each suitable for one or two tents. Three of these camping sites should be able to accommodate an RV up to 40 feet. All shelters would have a table that would seat eight with two additional spaces for wheelchairs, a trash can, and on-ground grill.
10. Group Shelter - provide one group shelter to accommodate 25 people, with as much separation as possible from the existing overnight use area.
11. Water – one hydrant/water fountain is needed in the camp area, another one near the paved parking area, and a third near the unpaved parking area.
12. Access Roads - cut hill just past existing fee station for a safer road vertical alignment; install speed bumps or humps to slow traffic for safety.
13. Consider recontours of the lake bottom near shore that facilitates boating use near the day-use shelters.
14. Plant shade trees with low to medium water requirements to replace cottonwoods that will be flooded by the 8-foot rise in water levels.
15. Locate two sites for BLM use for the temporary storage of hot ash; 55-gallon capacity.

16. Add a boat cleaning station to avoid aquatic invasive species. As funding becomes available, this part of the project can be implemented. Consider a fish cleaning station, somewhere near the boat dock that would be easy to clean and easy to control odors.

Site Design Criteria - Administrative Site, Fee Station, Host Stations

1. Construct a graveled access road with gate at entrance from County Road 98A.
2. Construct a fee collection station to the top of the hill just before start of descent to the lake (near private land). Station would be small in size and located on the county road; a bypass lane to the right side (west side) would be constructed for traffic.
3. Construct an administrative office and warehouse, ware yard, and parking for seven vehicles. Ware yard would be access-controlled with fencing and its own gate, and capable of overnight parking for three vehicles and a bobcat or backhoe. Site should be at least 100 feet from the entrance. Flammable storage unit would be located in the ware yard area. A new well would be needed for the facility.
4. Camp Host Site – to be located west of the well-house. Each site would have a pad for up to a 42-foot trailer, and all hook-ups, including telephone.
5. At current fee collection/administrative building, remove fee tube and entry signing; building will be used for storage of cleaning supplies, toilet paper and other items used on a daily basis by recreation area staff. The two metal storage units would be relocated to the new administrative site and ware yard.

Site Design Criteria - Overlook Campground

1. Entry Road - shall have a designed cross section for drainage. Resurface road leading to the campground and overlook trailhead. Rehabilitate drainage structures on entire road.
2. Rim Area - Install a safety barrier along the rim adjacent to parking and picnic shelters for visitor safety and to resolve erosion problems, and provide a graveled trail five feet wide along the barrier. There would be nearby parking for six vehicles for viewing purposes, and four picnic shelters, each with parking for two vehicles. There would be enough separation from the trail and these shelters so as not to make walkers uncomfortable being too close to people using the shelters. Shelters would have a table, grill and trash can.
3. Camp Area – Provide four shelters with a picnic table, on-ground grill, and trash can.
4. Vault Toilet - replace double vault toilet with same. Move single vault toilet to fee area at top of hill leading to north shore area. The toilet should be located for ease of access from both the camp area and rim area.
5. Trails - define all trailheads along entrance road and sign trailhead.

2.2 Alternative B: No Action

Santa Cruz Lake Recreation Area would continue to be managed with the current facilities built in the mid 60s.

Chapter 3: Affected Environment

3.1 Recreation

Located 10 miles east of Espanola off of NM State Highway 76, Santa Cruz Lake is 121 surface acres when full to capacity and fed by the Rio del Medio and Rio Frijoles. The Recreation Area is 640 acres. Elevation is 6,285' at the lake and 6,660' at the Overlook. Temperatures are up to 102 degrees in the summer and as low as 12 degrees in the winter. The lake is stocked with 20,000 rainbow trout from mid February to late July. German brown trout are found in the lake and naturally stocked by the two streams that feed the lake. A few Bluegills are caught by anglers each year. It is home to the state record for rainbow trout (March 1999, 33" long and 32lbs).

Seventy-five percent of visitor use is local coming from Espanola Valley. Most of the remaining 25% is still from New Mexico (Santa Fe and Albuquerque) with a small percentage coming from out of state or over-seas. Most are anglers fishing from the bank and boaters. Families come to picnic. There is a minimal amount of hiking and bird watching, about 2 percent. Camping is also less popular at the Recreation Area at about 4 percent. Larger groups enjoy the Overlook for holidays which only gets about 1 percent of total use of paying visitors.

This Recreation Area provides a Rural setting around campgrounds and Back Country everywhere else. Rural settings include some modification of landscapes, proximity to highways, modern facilities, proximity to sights and sounds of human activity, on site personnel, management controls, and routine patrols. It offers two campgrounds, four trails, and boat/fishing docks. The trail system at the Santa Cruz Lake Recreation Area is also included in the National Recreational Trail System. The trail system is 6.38 miles in length and includes Laguna Vista, La Caja, Overlook, and Debris Basin Trails.

Currently, the BLM maintains 34 day-use/camping spaces, 29 shelters, and 5 outdoor toilets along the lakeshore, on the northern end of the lake, and 13 shelters and one outdoor toilet on a bluff overlooking the lake.

Table 1: Visitor Use for Santa Cruz Lake

Year	Visits
2005	144,820
2006	105,048
2007	112,374
2008	126,125
2009	92,543

3.2 VRM

Santa Cruz Lake lies within the hills, ridges, and foot slopes around woodlands and scrublands of North Central New Mexico Valleys and Mesas. This landscape offers complexity and harmony from green valley bottoms, to light red cliffs, to blue mesas and mountains. Panoramic views of the valley from woodland foothills near Cerro Piñon are expansive and extend to the Sangre de Cristos on the east and Black Mesa on the west. It is a rural valley of many repeating small meandering cliffs and bluffs with light tan, pink and rust exposed alluvium slopes.

Grasses and sage are visible in lower areas while Piñon-juniper woodlands are found in draws and tops of bluffs. Cottonwoods and grasses can also be seen in valley bottoms and around Santa Cruz Lake which is a reservoir and recreation area within a small basin ringed by steeply sloping hills. This area inventoried as a Class II Visual Resource Inventory (VRI) with the exception of the facilities around the shore line. Developed recreation facilities around the North Shore and Overlook of the lake include power lines, fishing docks, toilets, an access road, primitive trails, and shelters and can be characterized as a VRI Class III.

VRI Class II: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

VRI Class III: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

3.3 Water Quality

The project area is located in the Santa Cruz River watershed and drains directly into Santa Cruz Lake. The Santa Cruz watershed above this location is primarily undeveloped with only one small community, Cundiyo, upstream of the lake. The upstream condition in the watershed directly translates to good water quality in the lake. According to the §303(d)/§305(b) report for New Mexico (New Mexico Environment Department, 2010), Santa Cruz Lake was last assessed in 2004 and fully supported all designated uses. Designated uses identified include domestic water supply, high quality coldwater aquatic life, industrial water supply, Irrigation, livestock watering, municipal water supply, primary contact, secondary contact, and wildlife habitat. Given that the lake is meeting so many designated uses, it can be inferred that the water quality of the lake is very high.

In addition to Santa Cruz Lake, the current facilities and proposed project sites lie adjacent to and in existing ephemeral channels that drain the surrounding watershed. These channels deliver water and sediment to the lake. Facilities that are located within these channels have been protected from flood flows by levees that funnel the water past and by small check dams.

Waters Of the United States

Santa Cruz Lake may be classified as a Water of the US (WoUS) because it has a direct surface connection with interstate waters (Rio Grande). Activities occurring within the ordinary high water of a WoUS that result in the discharge of material require a permit from the US Army Corps and a water quality certification from the New Mexico Environment Department.

Fisheries

Santa Cruz Lake is a popular fishing area and provides habitat for a number of game species. Rainbow trout are stocked by the New Mexico Department of Game and Fish (Game and Fish) on numerous days in the spring and early summer while the lake water level is still high enough to access the boat ramp. The (Game and Fish) has also stocked Rio Grande cutthroat trout on occasion. Brown trout are present in the lake, but no longer actively stocked.

A fish population survey completed in 2006 documented a total of 80 fish represented by 3 species caught over a 12 hour period using nets and electro fishing techniques. In 2008, a total of 64 fish represented by 2 species were caught in a 12 hour period using only nets. The major difference between the 2 years was the loss of bluegill from the survey 2008. The most likely reason for change in bluegill catch is the lack of electro fishing 2008, which accounted for all bluegill individuals in 2006. Fish species tend to be more active near the lake surface at night and less active at the surface during the day.

Amphibian and invertebrate surveys have not been completed for Santa Cruz Lake. Observation of near shore habitat in June 2011 in areas within the proposed construction zone indicated an invertebrate community that includes only a few of the species (scuds, water boatmen, midges) that should occur. This is not surprising given that near shore areas are dry for months at a time and lack complex habitat structure such as rocks or vegetated wetlands. A single bullfrog was noted near proposed construction zones in June 2011. It is likely that hydrologic and recreation disturbance in these areas will limit aquatic communities from developing beyond a few tolerant species.

3.4 Soils

The proposed project area identifies a total of 17.3 acres of potential ground disturbance that covers 10 different soil types. On existing sites, soils are bare or covered by structures. It can be assumed that soils around existing facilities are compacted by vehicles and foot traffic. Table 2 shows soil types by acreage for rebuild sites and properties that are relevant to project impacts (National Resource Conservation Service, 2009).

Of particular interest, there are a number of soils in the proposed rebuild area that exhibit erosion potential and/or are found on steep slopes. Steeper slopes increase the potential for soil loss if soils are disturbed during construction or remain bare after project completion. Soils with known erosion hazard regardless of slope are also at high risk for damage or loss during construction. Note that the area identified as water includes the shoreline zone that is subject to flooding if the reservoir were full and an arroyo channels that is adjacent to the camping area.

Table 2.

Map Symbol	Soil Name	% Slope	Proposed Action Acreage	Camp Area Rating	Off-Road/Trail Erosion Hazard	K Factor, Whole Soil	Path & Trail Rating
200	Predawn loam	1-4	2.25	Somewhat limited	Slight	0.28	Somewhat Limited
202	Alire loam	2-6	2.39	Somewhat limited	Slight	0.24	Somewhat Limited
206	Encanatado very cobbly, sandy loam	25-45	0.61	Very Limited	Moderate	0.05	Very Limited
212	Junebee gravelly, sandy loam	5-15	1.29	Somewhat limited	Slight	0.15	Not Limited
213	Levante-Riverwash complex	1-3	3.42	Very Limited	Slight	0.17	Very to Somewhat Limited
218	Pedregal very gravelly loam	2-15	1.6	Very Limited	Slight	0.15	Somewhat Limited
222	Sipapu-Yuzarra-Kachina complex	5-65	0.38	Very to Somewhat limited	Slight-Severe	0.15	Very-Somewhat limited
223	Kachina fine, sandy loam	5-15	0.86	Somewhat limited	Slight	0.15	Not Limited
224	Portillo extremely gravelly, sandy loam	25-50	0.55	Very Limited	Severe	0.02	Very Limited
W	Water		3.95	Not Rated	Not Rated	Not Rated	Not Rated

Chapter 4: Environmental Effects

4.1 Direct and Indirect Effects

4.1.1 Alternative A: Proposed Action

4.1.1.1 Recreation

The proposed project and design would meet descriptors of the physical, social, and administrative Rural setting. However, there will be changes to the level of management control and presence due to administrative facilities such as a fee booth and host site. Changes to naturalness and facilities could be consistent depending on design and style of structures and roads. These facilities should fit with the local culture, landscape, and level of surrounding development.

The quality of the recreation experience would be improved due to increased access to the main attraction; the shore line. Administrative facilities such as a phone line, fee booth, and camp host site will enable personnel to safely work longer hours and increase management presence at the recreation area. This in turn, would result in better fee compliance and increase safety and a sense of well being for the visitor, as well as reduce vandalism. A concession for snacks, ice, and fishing equipment was identified in a visitor survey as a demand by man respondents. If provided, it would enhance the experience for anglers and other visitors.

Shade trees along the shore line may be lost due to design that would accommodate a possible increase in the high water mark of the lake due to raising the height of the dam to offset lost storage capacity due to siltation.

Closing the Overlook to camping would displace a small percentage of users, approximately 4%. They would still be able to camp at the Northshore as well as Borrego Mesa, 17 miles east on Santa Fe National Forest, Bandelier National Park, (30 miles west), Nambe Falls (10 miles south), and Orilla Verde (35 miles north). On the other hand it would prevent much of the vandalism that occurs at the Overlook after hours when staff is not available without the aid of a camp host.

4.1.1.2 VRM

Visibility of facilities at Santa Cruz Lake would be primarily from the Overlook, and along NM Highway 503 and private residences. At the Overlook it is possible to make out the location of the boat ramp, fishing docks, roads, and some shelters and vehicles. Shade trees will be planted near parking areas, shelters, and along the shoreline. Contrasts from updated facilities compared with the current facilities viewed from the Overlook would be weak in form, line, color, and texture with the characteristic landform and vegetation. This would meet existing inventory Class III objectives along the shoreline. The viewing platform at the Overlook would include a combination of barriers of steel and stone columns; providing protection without blocking views with solid mass.

The proposed fee booth would be visible for short distances from NM 503 and may attract the attention of the casual observer. Moderate contrasts to line, color, and structures could result for the installation of the fee booth as seen from the highway. Existing trees may partially screen the facility. The design of the fee station will mimic local custom and culture with metal roofs, stucco finish, and cedar fascia. Any additional mitigating measures should be taken to ensure that the project meets existing Class II inventory objectives in this area. In addition, the proposed warehouse will be visible from private residences in the immediate area and may be seen from NM 503. To mitigate visibility from the highway and long distances, the warehouse roof will be designed with a lower profile pitch and a dark, BLM approved color.

4.1.1.3 Water Quality

Impacts to water quality will be primarily indirect effects from potential increased runoff and soil erosion. Bare ground up slope from Santa Cruz Lake can result in reduced percolation of water into soil and higher runoff. Bare soil is also more subject to loss from water erosion. Therefore, turbidity is likely to be the primary water quality impact. Another indirect effect could result from fluids spilled from construction equipment. The SWPPP will address these issues and reduce the likely impact.

Waters of the US

Construction of recreation facilities that would occur under the proposed action will affect sediment stored on the bottom of Santa Cruz Lake, but would not require permits to be issued by the US Army Corps. Extension of the boat ramp will occur upslope and outside of the existing ordinary high water of the lake. Removal of sediment below the high water mark will occur when the lake level is low and occur only on dry lake bottom surfaces, thereby avoiding discharge of material into the lake.

Fisheries

The proposed action will only impact fish and other aquatic fauna where material is borrowed from lake bottom deposits. Since borrow areas will be dry prior to excavation, there will be no significant direct loss of aquatic fauna. Mitigation of construction activities will result in no indirect loss of aquatic fauna from water quality impairments. Deepening of the lake area around the fishing dock will provide an increase in fish habitat available to anglers during the daytime, when fish generally avoid shallow shore areas. Given the high level of disturbance occurring at the fishing dock and boat ramp due to ongoing management activities, it is unlikely that the proposed action will have a detrimental effect on aquatic habitat in the construction zones.

4.1.1.4 Soils

The direct impact to soils will be from removal of vegetation and heavy equipment. Loss of surface vegetation exposes soil to the effects of wind and water erosion. Wind erosion can be minimized by keeping soil surface moist while construction is occurring and avoiding work during spring, when wind events are more frequent. Water erosion mitigation will be specifically addressed in the SWPPP. Generally, use of barriers both up slope and down slope will reduce the potential for water erosion by reducing overland flow onto and from the construction sites. Post project protection can include the maintenance of those barriers and revegetation of bare soil areas. Contouring work areas during implementation will also reduce bare soil slope and therefore runoff.

4.1.2 Alternative B: No Action

4.1.2.1 Recreation

If the Irrigation District raises the height of the dam, the boat ramp and one toilet would be flooded as would the fishing docks and accessible ramps. These areas would remain flooded because the site would not be redesigned. Shade trees may be lost due to flooding.

There would continue to be conflicts among uses and management challenges due to vandalism, erosion, poorly functioning facilities, safety, lack of accessibility, and low fee compliance. Recreation facilities would continue to deteriorate and fail to provide universal access. Excess erosion and runoff from access routes would continue to be an issue and contribute to siltation of the lake. Opportunities for shoreline

access for picnicking and fishing would remain limited. Administrative facilities for BLM staff and volunteer hosts to address fee compliance, vandalism, and safety would not be made available.

4.1.2.2 VRM

There would be no change to the characteristic landscape. However, mature cottonwoods may be lost due to flooding.

4.1.2.3 Water Quality

There would be no new impacts to water quality under this alternative. Ongoing soil erosion from bare soil areas will continue to result in occasional water turbidity and accumulation of lake sediment in areas near shoreline recreation sites.

Waters of the US

There would be no impacts to WoUS under this alternative.

Fisheries

Ongoing recreation activities and water management will continue to impact aquatic fauna in near shore habitats. There will be no change in impacts under this alternative.

4.1.2.4 Soils

The impacts to soils under the No Action would include ongoing erosion of soil from areas lacking vegetation. There would be no new loss of vegetative cover or new disturbance of soil from site preparation by heavy equipment.

4.2 Cumulative Effects Analysis

A cumulative impact, as defined in 40 CFR 1508.7, is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other action.

4.2.1 Cumulative Actions

4.2.1.1 Past and Present Actions

Created for irrigation of the Santa Cruz Valley, the Santa Cruz dam was built by the Bureau of Reclamation in 1929. The reservoir, the dam, and the ditch were authorized by the General Land Office with a right of way. Over the last 80 years the capacity of the reservoir has decreased by 34% due to siltation.

The New Mexico Department of Game and Fish (Game and Fish) immediately began stocking the lake and built recreation facilities in 1962 and '63. Recreation was managed through a permit from the BLM. In 1966 BLM took over the management of the recreation area and constructed additional facilities. The facilities built in the '60s are within the 6,734 acre-feet right of way capacity.

The BLM rebuilt the day use fishing area and added fishing docks, a well, lighting, and additional parking in 1994.

4.2.1.2 Reasonably Foreseeable Actions

At present, the elevation of the dam above stream bed is approximately 100 feet. The Irrigation District was permitted in 1925 to construct the dam 120 feet above stream bed. Irrigation District can raise the dam 20 feet above current level when funding is available. The height of the high water mark of the lake will increase if the Irrigation District raises the height of the dam by eight feet to offset storage capacity lost due to siltation. Funds are being sought for this project.

4.2.2 Cumulative Effects

4.2.2.1 Recreation

Cumulative effects would be similar to the effects of the No Action alternative. If the Irrigation District raises the height of the dam, the boat ramp and one toilet would be flooded as would the fishing docks and accessible ramps. These areas would remain flooded because the site would not be redesigned. Shade trees may be lost due to flooding.

4.2.2.2 VRM

There are no cumulative impacts identified for VRM.

4.2.2.3 Water Quality

There are no cumulative impacts identified for water quality.

4.2.2.3 Soils

There are no cumulative impacts identified for soils.

Chapter 5: Consultation and Coordination

5.1 Summary of Consultation and Coordination

There is ongoing communication with the Irrigation District.

5.2 Summary of Public Participation

This Environmental Assessment will be distributed at Santa Cruz Lake Recreation Area and the Irrigation District for a 30 day public review from mid-June through mid-July.

5.3 List of Preparers

Tami Torres – Outdoor Recreation Planner

Gerald Martinez – Santa Cruz Lake Manager
John Bailey – Assistant Field Manager, Recreation
Herb Chavez – Engineer
Greg Gustina – Fisheries Hydrologist

Chapter 6: References

U.S. Department of the Interior, Bureau of Land Management.

1988 Taos Resource Management Plan

1989 Santa Cruz Lake Recreation Area Management Plan

2000 The Rio Grande Corridor Final Plan

2011 Guidelines for a Quality Built Environment. First Edition.

Natural Resources Conservation Service

2009 Web Soil Survey, Santa Fe County Area, New Mexico. Version 6.

New Mexico Environment Department, Surface Water Quality Bureau

2010. 2010 – 2012 State of New Mexico Clean Water Act §303(d)/§305(b) Integrated Report.

Appendix A

DESIGN NARRATIVE

SANTA CRUZ LAKE RECREATION AREA NORTH SHORE AND OVERLOOK REBUILD

August 2009 – Revised November 2010

Design Goals

The primary purpose for the redesign is to meet changing use patterns, improve administrative functions, address unmet public needs, and mitigate environmental concerns. Through the redesign the agency would have a recreation area that is efficient to operate, reduces the environmental 'footprint' of needed facilities, and improves the visitor experience. The new layout of facilities will accommodate the planned increase in dam height of eight feet in the next two or three years.

Function of the Facilities

Santa Cruz Lake Recreation Area is open year round. The busiest months are March to October. It is estimated that during this eight month period approximately 85% of visitation occurs, amounting to about 90,000 visitors. The primary purpose of a visit is fishing (90% of all users). Next is picnicking (5% are here just for that purpose, but many of the fishermen would list this as a secondary use). Only 3% come to camp, and 2% to hike or to sightsee.

Most of the fishing is bank fishing, particularly along a ½ mile reach near the developed recreation sites; but there has been a steady increase in boating use over the past five years. At present there are 20 parking spaces for vehicles with boat trailers which are not sufficient to meet weekend demand. On weekends, employees become parking lot attendants to reduce conflicts for space between boaters, shoreline users, and hikers or picnickers. During high water levels good fishing areas are hard or dangerous to reach. Existing trails should be improved to allow easier access to the fishing areas.

There are a total of 28 shelters with picnic tables, and four picnic tables without shelters under trees near the fishing dock. Visitors use three criteria to select a site - its proximity to the lake, nearby shade trees, and/or the view. Most are for day-use activities; ten are specifically for camping, but are also selected for day-use when those near the shore are taken. There are four water hydrants located throughout the developed area which are available only during the warm months – the well is shut down in October and reopened in April.

The Overlook area is popular as a viewing area, to access trails leading down to the south shore, and as a staging area for mountain bike use of some of the existing two tracks. This use is expected to increase over the next several years. The site is used by large groups – for example, Easter sunrise services, and weddings. There is no water at the site, and a total of twelve shelters. We propose to retain six shelters at the Overhead and convert them in two group shelters, one accommodating approximately 20 visitors and the other to accommodate 8-12

visitors. The remaining six shelters shall be relocated to the North Shore (four as one large group shelter) and to the area known as “Turtle Head”.

Santa Cruz Irrigation District will release water for irrigation from June to October. During this time the water levels will drop as much as 50 vertical feet. In drought years the lake may even be drained. When water levels drop eight vertical feet from the current high water mark, the fishing dock is no longer usable; with a drop of 20 feet, visitation decreases as much as 55% due to poor fishing conditions. At a drop of 27 vertical feet the boat ramp is closed for the season.

When designing any improvements along or close to the shoreline wave action needs to be considered in order to protect the facilities.

Standard Design Objectives

1. Carefully design arrival sequences. Employ obvious circulation networks and clear signage. Provide for safe car, bus, and recreational vehicle access from two lane road. Minimize pedestrian activity and vehicular circulation interface. Minimize user group conflicts between day and overnight users, large groups, and fishermen and other recreation uses of the lake.
2. Roads and entry drives should provide unobstructed sight lines and dimensions for safe entering and exiting.
3. Make the recreation resource and facilities accessible to people with disabilities wherever possible in the design. The standards of universal (barrier free) design should be incorporated.
4. All structures should be designed to blend with the cultural and natural landscape. Make use of local design elements that reflect the rustic, rural cultural setting. Maintain/improve scenic quality as viewed especially from the main road into the recreation area when replacing or relocating trails, facilities, utilities, parking areas and site furnishings.
5. The design of facilities will incorporate materials that are cost-effective over their expected twenty year life, with low maintenance costs and resistant to vandalism.
6. The water distribution system should be designed for ease of winterizing; hydrants which would be used year-around should be frost free but still capable of accommodating summer temperature extremes. Temperature extremes for this region range from summer highs of 100°F to winter lows of -5°F.
7. Establish a sense of privacy - use trees, boulders and topography to provide visual separation between sites.
8. Meet the increasing demands for family and group use of the recreation area with replacement shelters that can accommodate 10 people, and the location of at least one shelter that can accommodate up to 25.

Site Design Criteria - Entire Recreation Area

1. Roads – all-weather roads crowned with base course and drainage suitable for future paving. Designed for ease of snow and ice removal, accommodating large vehicles such as school buses and RVs 25 feet or longer where appropriate and incorporating logical circulation patterns. On-site roads and parking should be designed and constructed to sit lightly within the existing topography, minimizing the amount of cut and fill and potential visual impacts as seen from trails and recreation sites.
2. Parking/Trail heads- use flexibility in design of parking layouts that respond to the terrain, vegetation and space available. They may be used year round. Snow, hot dry summers, rainy periods and other extreme climatic conditions should be accommodated. When selecting surface material consideration should be given to its durability and maintenance, dust and glare. Parking areas and spaces should be clearly defined to prevent indiscriminate vehicle parking. Spaces should be roomy to accommodate the loading and unloading of gear to and from the vehicle. Pull-through for RVs should accommodate ample clearance for RVs. Trail heads should be well designed and segregated from camping/picnic sites. Trails should be identified to provide foot access between camping / day-use sites, boat launch area, restrooms, and shoreline fishing areas. Separate trails from vehicle traffic where possible for safety and from the use areas to reduce conflicts and interference.
3. Landscaping – minimize new areas disturbed by construction activity. Areas that are disturbed or that are no longer going to be used should be replanted with native grasses and shrubs in a mix consistent with that found in the natural surrounding landscape. Use vegetation, rocks or other natural materials where possible to create separation of sites for privacy, control erosion and restrict foot traffic. High foot traffic areas would be hardened with durable materials. Provide open spaces for games, site separation and tent camping space. Landscape grading should be designed to appear as natural as possible. Reduce to the extent possible undesirable plant species within recreation sites. Level spaces with a durable surface material for pitching a tent or tents should be provided adjacent to group shelters and individual units for camping and day-use as terrain permits.
4. Water - include provisions for drinking fountains. Water outlets should be accessible and spaced for convenience throughout the campground. They should have a drinking fountain as well as spigots for hoses or filling of bottles. The water system and all hydrants should be available for use year-round.
5. Lighting - unobtrusive solar lighting with timers as necessary to provide for safety and security (host sites and restrooms).
6. Trash Receptacles - provide space for dumpsters or similar containers up to six cubic yards and in the winter small individual trash cans. These would be located for ease of access by large collection vehicles yet readily and safely accessible to recreation users. Each should have a concrete base.
7. Restrooms - spaced for convenience to users and service. Structures shall be CXT or equal and should reflect the architectural style for the recreation area. Replace all existing vault

8. toilets with like amount. All restrooms should have urinals. Location may vary from current sites.
9. Site furnishings - provide furnishings that are welcoming, comfortable to use, durable, vandal resistant, and easy to maintain or repair. They should have a visual continuity through material type, color and form, and be barrier-free.
10. Water quality restoration - reduce the potential for non point source pollution (mainly sedimentation from sheet and rill erosion) by improving hydrologic function, soil stability, and soil productivity. Watershed restoration is a corrective measure to increase ground cover (vegetation or litter), increase infiltration, slow overland flow and conserve the soil resource, enhance soil productivity, reduce flood occurrence and flood damage, improve water quality to ensure compliance with state and federal water quality standards, and reduce on-site soil loss.
11. Utilities should be buried (electric, telephone, water).
12. Sign bases – create a design for entry sign supports near the main entrance on County Road 98A and the entrance to the Overlook area.

Site Design Criteria - North Shore Use Area

Consists of two separate areas: A. shoreline area (parking, ramps, docks), and B. camping area.

17. Shoreline - the ½ mile shoreline near the boat dock and parking areas is the key area for most visitors. A trail that would be one to three feet above the new high water line, and protected from wave action would be one of our highest priorities. It should be connected (via steps) to picnic shelters on the tops of the hills and ridges near the lake. It should also be designed (through modification of the lakebed) to allow access to the shoreline 20 feet below the new high water line.
18. Boat Dock - increase length of existing boat dock by 60 feet.
19. Fishing Dock - lengthen access ramp to fishing dock to allow use at lower water levels. Relocate to a suitable area to accommodate projected rise of lake level. Deepen water depth under fishing dock.
20. Parking (near boat dock) - should be increased to accommodate a total of 40 truck/trailer units and parking for 15 cars. Recontour to allow drainage into a new sediment pond.
21. Parking (near fishing dock) - the southwest end of the parking area will be affected by the increased height of the dam. The first row of parking closest to the retaining wall will be lost. The renovated parking lot should be paved, and able to accommodate a total of 65 cars or trucks. Renovated parking area should be sloped away from the lake with a suitably-sized sediment pond.
22. Concession Building Consideration- Locate site for a possible future concession building near the boat ramp. Cleared, level area should be at least 200 sq. feet in size.

23. Vault Toilets - adjacent to boat ramp, replace existing vault toilet with new single-vault toilet; adjacent to paved parking area, replace one of the double-vault toilets with same, and relocate second vault toilet to the camping/day-use area; on east side of unpaved parking area, replace single vault toilet with a double vault toilet and consider relocation for easier access. In camp area, replace single vault toilet with a double vault toilet.

A total of 32 day-use or camping shelters would be located along the North Shore or in what is now known as the campground:

24. Day-Use Shelters – Ideally, about 34 sites would be located within 100 or 150 feet of the shoreline, and spread out along the ½ mile “developed” part of the shore. Each shelter would have a perforated metal table/seating for 8, as well as space for two wheelchairs; a trash can, and on-ground grill. There should be steps or trails designed to access the shore from each shelter, as well as to access nearby parking areas.

25. Camping/Day-Use Shelters – these would be located in the current campground area. Six sites need to be designed specifically for camping, with a flat area adjacent to each suitable for one or two tents. Three of these camping sites should be able to accommodate an RV up to 40 feet. All shelters would have a table that would seat 8 with two additional spaces for wheelchairs, a trash can, and on-ground grill.

26. Group Shelter - provide one group shelter to accommodate 25 people, with as much separation as possible from the existing overnight use area.

27. Water – one hydrant/water fountain is needed in the camp area, one near the paved parking area, and a third near the unpaved parking area.

28. Access Roads - cut hill just past existing fee station for a safer road vertical alignment; install speed bumps or humps to slow traffic for safety.

29. Consider recontours of the lake bottom near shore that facilitates boating use near the day-use shelters.

30. Plant shade trees with low to medium water requirements to replace cottonwoods that will be flooded by the 8-foot rise in water levels.

31. Locate two sites for BLM use for the temporary storage of hot ash; 55-gallon capacity.

32. Consider a fish cleaning station, somewhere near the boat dock, that would be easy to clean and easy to control odors.

Site Design Criteria - Administrative Site, Fee Station, Host Stations

Design a graveled access road with gate at entrance from County Road 98A.

1. Design a fee collection station/administrative office at the top of the hill before start of descent to the lake. Station/office would be small enough to be located on the county road; a bypass lane to the right side (North side) would be constructed for traffic. This structure would incorporate a toilet, sink and small kitchen area within it. Possible boat wash area near this structure would have to be considered in the design.
2. Site a 1,000 sq. ft. warehouse, wareyard, and parking for seven vehicles. Wareyard would be access-controlled with fencing and its own gate, and capable of overnight parking for three vehicles and a bobcat or backhoe. Site should be at least 100 feet from the entrance. Flammable storage unit should be located in the wareyard area. A new well would be needed for the facility.
3. Camp Host Sites – design one to be located west of the well-house. The site would have a pad for up to a 42-foot trailer, and all hook-ups, including telephone.
4. At current fee collection/administrative building, remove fee tube and entry signing; building will be used for storage of cleaning supplies, toilet paper and other items used on a daily basis by recreation area staff. The two metal storage units would be relocated to the new administrative site and wareyard.

Site Design Criteria - Overlook Campground

1. Entry Road - shall have a designed cross section for drainage. Resurface road leading to the campground and overlook trailhead. Rehabilitate drainage structures on entire road.
2. Rim Area - Install a safety barrier along the rim adjacent to parking and picnic shelters for visitor safety and to resolve erosion problems, and provide a graveled trail five feet wide along the barrier. There should be nearby parking for six vehicles for viewing purposes, and two group shelters. There should be enough separation from the trail and these shelters so as not to make walkers uncomfortable being too close to people using the shelters. Shelters would have tables, grills and trash cans. Extra pad of concrete shall be provided adjacent to big group shelter for special occasion large groups.
3. Vault Toilet - replace double vault toilet with same. Move single vault toilet to fee area at top of hill leading to north shore area. The toilet should be located for ease of access from both group shelters.
4. Trails - define all trailheads along entrance road and sign trailheads.