

SECTION VIII – RESOURCE PLAN

8.01 ZONING OF LAKE LANDS AND WATERS – LAND AND WATER USE

Recreational development at Clarence Cannon Dam and Mark Twain Lake has generally proceeded as planned in Supplement No. 1 of the original Master Plan for the lake. All project lands have been allocated for the authorized purposes for which they were acquired. Plate 1 depicts land allocations for all project lands. Allocated project lands have been further classified to provide for development and resource management consistent with authorized project purposes and the provisions of NEPA and other Federal laws. The land classification process refines land allocations to fully utilize project lands and takes into consideration public needs, legislative authority, regional and project-specific resource requirements and classification categories. Plate 2 depicts land classification categories for all project lands. Each classification category and the lands that are assigned to each category are described in the following narrative sections.

a. Project Operations. The objective of this resource allocation is to provide adequate land for safe and efficient operation and management of the project land and water resources for all authorized purposes. Lands zoned in this category include the main dam, the powerhouse, the outlet channel, the re-regulation pool and dam, and lands required for administrative and maintenance needs. Agricultural use of these lands will be permitted on an interim basis when it does not conflict with use for authorized purposes. The OPERATIONAL MANAGEMENT PLAN (OMP) contains further details on this land resource allocation and use. Seven areas are classified in this allocation and are depicted on Plate 2 and described in Section 8.02.

b. Recreational Lands The objective of this zoning classification is to allocate lands, by virtue of location and natural resources, to intensive recreational use. Park and recreation lands are developed to provide for the intensive recreational activities of the visiting public. Factors such as road access, natural resources, recreational facility design, and management practices make these lands conducive to accommodating public use. Lands in this classification include areas for existing, proposed and future commercial concessions, recreational development, and group use. Natural resources management objectives and techniques may be implemented within intensive use recreation areas to sustain and enhance biological communities and ecosystems, to prevent vector and disease problems, and to promote the scenic qualities of the area. Any agricultural use must comply with applicable soil conservation practices. Section 8.03 further details the development and use of lands in this zoning category.

c. Environmental Sensitive Areas (ESA) Lands classified as environmental sensitive areas contain significant scientific, ecological, cultural or esthetic features. These areas are normally located within one of the other classification categories and must be taken into consideration by management to insure the sensitive areas are not impacted by excessive activity or conflicting management objectives. Natural resource management objectives and techniques may be implemented within environmental sensitive areas with full consideration for protecting the ecological or cultural aspect of these areas. Limited or no development of public use is generally contemplated on land in this classification. Eight areas are classified as environmental sensitive areas. Of these, four are considered ecological areas (ES-1, etc.) and four areas considered cultural areas (CS-1, etc.). These areas are described in Section 8.04 of this Plan.

d. Multiple Resource Management The objective of this zoning classification is to allocate lands to one or more of the following uses based on their location and their natural resources: (a) recreation-low density, (b) wildlife management general, (c) vegetative management and (d) inactive and/or future recreation areas. Nine areas are classified as recreation-low density, and one area is classified wildlife management. These are described in Section 8.05. No lands were classified as vegetative management or future recreation.

e. Flowage Easement Lands Flowage easement interest was purchased for 9,740 acres to obtain the right to periodically flood these lands to achieve the project flood control benefits. These lands begin at elevation 620 feet NGVD and terminate at 642 feet NGVD.

8.02 PROJECT OPERATIONAL LANDS

The following paragraphs provide a brief description of all lands classified as Project Operations: Areas are depicted on Plate 2 and are described in a clockwise progression around the lake beginning at the main dam.

(1) 0-1. Main Dam/Saddle Dams and Outlet Works/Corps Management/Maintenance Complex. The Clarence Cannon Dam, powerhouse and outlet works are located in this area of approximately 260 acres. The Clarence Cannon Dam was built in two sections consisting of an earthen embankment approximately 1,100 feet long and a concrete monolith structure measuring approximately 845 feet in length. The concrete section includes the powerhouse substructure and a gated spillway section with four 50 feet by 39 feet tainter gates used for flood control. To the extent practical, all releases are directed through the hydroelectric generator turbines rather than the tainter gates. The crest of the dam embankment is at elevation 653 feet NGVD.

The project administrative area is located just north of the main dam. Facilities include the project office, a maintenance complex, a fenced vehicle

compound, material storage, fuel tanks, weather station, and employee/visitor parking areas.

Located downstream of the main dam in the Warren G. See North Spillway Recreation Area is the electrical switchyard which is owned and maintained by Northeast Power Cooperative in Palmyra, Missouri on lands leased from the Corps. The switchyard directs electrical power generated by the Clarence Cannon Power Plant to Northeast Power Cooperative transmission lines located east of the dam.

Two small earthen saddle dams with a total area of approximately four acres are located north of the Frank Russell Recreation Area.

(2) 0-2. Water Treatment Plant, Clarence Cannon Wholesale Water Commission. This regional water treatment plant is located four miles west of Florida, Missouri off of state highway Rt. U. This facility was constructed in 1991 and 1992. The production and sale of water to members began on June 16, 1992

The Clarence Cannon Wholesale Water Commission (CCWWC) entered into a three party contract with the US Army Corps of Engineers and the State of Missouri to purchase water storage space in Mark Twain Lake. The contract allows for removal of a maximum of 16 million gallons of raw water per day with an allowance for a failure rate of 2 years out of every 100 years for not being able to supply the full 16 million gallons per day. The CCWWC owns the rights to 5.0 million gallons of storage space, while the remaining 11.0 million gallons of water per day are available to them through contract with the State of Missouri.

The CCWWC facilities consist of a 4.5 million gallons per day surface water treatment plant, which uses flocculation, sedimentation, and filtration to purify raw water to acceptable standards for drinking purposes. In addition to the main facilities, the infrastructure consists of 236 miles of transmission mains, four booster pumping stations, a raw water intake structure located on the North Fork Branch of Mark Twain Lake, and daily storage space for 4.5 million gallons of drinking water.

The CCWWC currently serves the following cities and water districts: City of Paris, City of Perry, City of Shelbyville, City of Madison, City of Huntsville, City of New London, City of Farber, City of Vandalia, City of Curryville, PWSD #1 of Shelby County, PWSD #1 of Knox County, PWSD #1 of Marion County, Thomas Hill PWSD #1, PWSD #2 of Monroe County, Cannon PWSD #1, PWSD #1 of Audrain County, PWSD #1 of Pike County, City of Edina, City of Lewistown, City of La Belle, PWSD #1 of Lewis County. Associate members include; City of Clark, City of Baring, and PWSD #1 of Macon County. Expansion is underway to serve additional customers.

(3) 0-3. Land Irrigation Type Sewage Treatment Facilities, North Extension of Mark Twain State Park. Operated by the Missouri Department of Natural Resources, the acreage comprised by the facility is included in the

acreage figures for the state park lease with the Corps of Engineers for recreational purposes.

(4) 0-4. Land Irrigation Type Sewage Treatment Facilities, Indian Creek Recreation Area. - These sewage treatment facilities comprise approximately 26 acres and serve the Indian Creek campground, picnic area, group use area, and Indian Creek Marina. This facility is a no-discharge storage and irrigation system comprised of a two-cell aerated lagoon with an aerated vault waste tank and a 16.9-acre irrigation area.

(5) 0-5. Land Irrigation Type Sewage Treatment Facilities, John F. Spalding Recreation Area. - These sewage treatment facilities comprise approximately 20 acres and serve the facilities located at the Ray Behrens Recreation Area, Blackjack Marina, M.W. Boudreaux Visitor Center, John C. "Jack" Briscoe Group Use Area, Frank Russell Recreation Area, Mark Twain Lake Project Office, Clarence Cannon Dam, and the John F. Spalding Recreation Area. This facility is a no-discharge storage and irrigation system comprised of a two-cell aerated storage lagoon with a fourteen-acre irrigation area.

(6) 0-6. Re-regulation Pool. A total of approximately 1,766 acres of land and water located downstream from the dam are designated for project operations. These lands lie along both sides of the re-regulation pool over most of its 9.5-mile length. This area, downstream of the dam, is in the historic floodplain of the Salt River and was primarily acquired to enable operation of the re-regulation pool for hydropower operations. The re-regulation pool is used to store and regulate large releases of water from the generation of hydroelectric power and to store water for the potential use of the pump-back feature of the hydropower plant. This area was evaluated for wetland development as part of the North American Waterfowl Management Plan and contains developed wetlands constructed through the authorities of this plan and project resource use objectives.

The area along the re-regulation pool is also used for low-density recreational activities including fishing, boating, hunting, hiking, and nature study. Gravel roads, hunter/fisherman lots and two boat ramps provide visitors access to the area. A paved two-lane boat-launching ramp with an associated paved parking area is located just below the main dam in the Warren G. See South Spillway Recreation Area and provides visitor access to the western portion of the pool. A second one-lane paved ramp and associated Hunter/Fisherman Lot # 70 is located upstream of the Re-regulation Dam and provides access to the eastern portion of the pool. Hunter/Fisherman Lot #71 is also upstream of the Re-regulation Dam and provides walk-in access to the pool, several wetlands and a wildlife viewing tower.

(7) 0-7 Re-regulation Dam The Re-regulation dam is located 9.5 miles from the main dam and is in the Bluff View Recreation Area. It consists of a compacted earth embankment, a gated concrete spillway, a sluice, and an operating house. The dam and its associated structures comprise approximately 10 acres. The total length of the dam is 1,550 feet.

8.03 RECREATION AREA PLANS - FACILITIES DEVELOPMENT

A description of all recreational development at Clarence Cannon Dam and Mark Twain Lake is presented in this section. A total of fifteen areas are classified and zoned as intensive recreational areas. A summarization of development at these areas, both existing and future, is presented below. The following subparagraphs describe recreation areas in a clockwise order around the lake as shown on Plate 2, "Land Classification Map."

Proposed facilities are those facilities that may be completed within a ten-year period following the update and approval of this Master Plan. New proposed facilities are accompanied by a general cost estimate in Section XIII. A benefit/cost analysis is completed for new proposed facilities to justify their development.

The future plans provided in the area descriptions describe what may occur in the area beyond the ten-year time frame. All developments are subject to current rules and regulations applicable at the time of development.

The following 15 areas have been classified as recreation lands:

1. M. W. Boudreaux Recreation Area – Plate 3
2. Ray Behrens Recreation Area – Plate 4
3. Robert Allen Recreation Area – Plate 5
4. South Fork Recreation Area – Plate 6
5. Mark Twain State Park – Plate 7
6. Stoutsville Recreation Area – Plate 8
7. North Fork Recreation Area – Plate 9
8. Mark Twain State Park – North Extension – Plate 10
9. Shell Branch Recreation Area – Plate 11
10. Sandy Creek Recreation Area – Plate 12
11. Indian Creek Recreation Area – Plate 13 and 14
12. John F. Spalding Recreation Area – Plate 15
13. Frank Russell Recreation Area – Plate 16
14. Warren G. See Spillway Recreation Area – Plate 17
15. Bluff View Recreation Area – Plate 18

(1) M. W. Boudreaux Recreation Area. This 268-acre multi-use area is located on the east shore of the lake, just south of the main dam on Missouri State Highway J. The area is divided into two distinct sub-areas, one featuring the M. W. Boudreaux Visitor Center and the other a group use development.

The northern portion of this area contains the M. W. Boudreaux Visitor Center, which is a Class B Visitor Center with 2 overlooks; exhibit rooms and a 49-seat theater/conference room. Development in the area includes the Northeast Missouri Vietnam War Memorial, 14 picnic sites, 2 overlooks, a

universally accessible waterborne comfort station, a nature trail, an amphitheater and a paved parking area.

There are no proposed or future plans for the Visitor Center area.

The southern portion of this area was renamed the John C. "Jack" Briscoe Group Use Area and is developed for group use activities. Facilities in the group use area include 20 campsites with electric hookups, a shower building, a group picnic shelter, a nature trail, a playground, 2 combination fountain/hydrants, and a group fire ring.

There are no proposed plans for the group use area, but future plans include the addition of group campsites and a playfield.

A site plan that illustrates all development at the M. W. Boudreaux Recreation Area is presented on Plate 3.

(2) Ray Behrens Recreation Area. This 858-acre multi-use recreation area is the most highly visited area on the lake and provides a diverse range of facilities for boaters, picnickers, hikers and campers. The area is located on the south shore of the lake approximately eight miles north of Perry. The area features 165 campsites with electric hookups, a full service marina, a four lane boat launching ramp with an associated fish cleaning station and parking area, a courtesy boat loading dock, a 15-site picnic area that includes a group picnic shelter and the Lick Creek Trail Head with parking for trailers. Support facilities include 4 playgrounds, a potable water supply distribution system consisting of fountain/hydrant units, 2 overlooks/trilateration stations, an outdoor amphitheater, a fire ring, 4 shower buildings, 4 waterborne comfort stations, one waterborne comfort/changing station, a trailer dumping station, a fee booth, 3 nature trails, and a paved parking area for 156 cars and 170 car-trailers. An additional 240 car parking spaces are located adjacent to the full-service marina in this area.

An area near Blackjack Marina was identified as a cultural sensitive area and was protected.

Development approved in previous supplements but not yet constructed includes conversion of three campground comfort stations to shower buildings, conversion of 50 existing campsites to full service hookup sites, upgrade of 30 amp to 50 amp electrical service at individual sites, and an archery range in the day use area.

Proposed facilities include a 2-lane high-water boat ramp, a replacement fee booth equipped with a restroom and a floating breakwater for Black Jack Marina. Other proposed development plans include expanding the campground by 65 campsites with electric hookups and providing support facilities, i.e., 3 shower buildings, a playground, fountain/hydrants and 30 parking spaces. Due

to current visitor use and trends, this area was selected over the Indian Creek Campground as the preferred location for additional camping development. The breakwater will be funded by others.

Future plans for the area include the development of additional campsites and associated support facilities. Approximately 160 acres located in the northwest portion of this area is held in reserve for the potential development of resort concession facilities.

A site plan that illustrates all development at the Ray Behrens Recreation Area is presented on Plate 4.

(3) Robert Allen Recreation Area. This 1,083-acre area located on the south side of the lake about midway along the main body of the pool area has been developed as a multi-use area. Recreational developments include a 4-lane boat-launching ramp, 2 courtesy boat loading docks, a 2-lane high-water boat launching ramp for use at 625 feet NGVD and above, 3 picnic sites, a vault toilet, and parking spaces for 160 car-trailers and 10 cars. Included in the parking space total are 60 car-trailer spaces located in an overflow parking lot.

Proposed plans for this area include relocating the existing vault toilet above the flood pool at the next scheduled major repair and a fish cleaning station.

Future plans include the addition of group facilities and a vault toilet.

Approximately 207 acres located on the western most peninsula of the Robert Allen area north of Missouri State Highway 154, is being held in reserve for the potential development of a resort concession.

A site plan that illustrates all development at the Robert Allen Recreation Area is presented on Plate 5.

(4) South Fork Recreation Area. This 176 acre multi-use recreation area is located at the northeastern point of the South Fork of the Salt River as it joins the main body of the lake. Facilities located here include a 4-lane boat launching ramp, two courtesy loading docks, 3 picnic sites, a vault toilet, and a 120 car-trailer and 15-car spaces parking lot.

Proposed development includes a fish cleaning station, enlarging the parking lot by 30 spaces and relocating the existing vault toilet above the flood pool at the next scheduled major repair.

The area also has the potential to accommodate an additional commercial concession marina.

A site plan that illustrates all development at the South Fork Recreation Area is presented on Plate 6.

(5) Mark Twain State Park. Recreation Area 5, an area of approximately 1,073 acres, comprises the central portion of the 2,700-acre Mark Twain State Park and is leased to the Missouri Department of Natural Resources. The State Park contains 1,559 acres leased from the Corps of Engineers, while the remaining acreage is owned in fee title by the State of Missouri. Recreation Area 8 (Mark Twain State Park – North Extension) forms the northern portion of the park, while an area owned by the State of Missouri forms the southern boundary of the park. Existing development in Recreation Area 5 is shown on Plate 7, which includes a paved access road, a four-lane boat launching ramp, a 100-car and 145-car/trailer parking area, and a vault toilet. A visitor contact station is also proposed for development on state park property at the intersection of Highway 107 and Route U.

An area of land south of Recreation Area 5 is owned in fee title by the State of Missouri and is operated as part of Mark Twain State Park. This portion of the park contains a 103-site campground, a one-lane boat ramp, an overlook, 20 picnic sites, one playground, six miles of hiking trails, two picnic shelters, two washhouses, five vault toilets, one amphitheater, a scout camping area, fish cleaning station and a boat ramp parking lot.

Development proposed for this area includes four to six cabins in the existing campground, construction of a fee booth, development of 50 additional campsites, an additional washhouse, installation of electric service to campsites that currently do not have electric service and development of mountain bike trails in open areas and hiking trails in wooded areas just south of State Route U.

Future plans include a cabin development east of the Route U boat ramp.

(6) Stoutsville Recreation Area. This 486-acre multi-use recreation area has been developed for day-use recreational activities. The area is located on the North Fork Branch of Mark Twain Lake. A portion of the area has been developed for intensive recreational use while the remainder of the area is held in reserve for future development. Facilities located here include a 4-lane boat launching ramp, 2 courtesy boat loading docks, a high water boat launching ramp for use at 625 feet NGVD and above, 3 picnic sites, 1 vault toilet, 1 fish cleaning station, and 35 car and 145-car/trailer parking spaces. This area is periodically used as a training site for local National Guard and Reserve units.

Proposed plans for this area include relocating the existing vault toilet above the flood pool at the next scheduled major repair.

Future development planned for this area includes expanding the picnic area and support facilities. The area also contains a potential marina-concession site and a site suitable for future development as a beach.

A site plan that illustrates all development at the Stoutsville Recreation Area is presented on Plate 8.

(7) North Fork Recreation Area. This 703-acre area is located on the North Fork Branch of the Salt River adjacent to the southeastern portion of the Stoutsville Recreation Area. The area is zoned for recreational use with most of the site reserved for future development. Existing development is limited to a gravel access road, a 20 car-trailer parking lot, and a 4-lane boat-launching ramp.

Development previously approved for this area includes a vault toilet.

There is no proposed development for this area.

Future development planned for this area includes a paved access road, group picnic shelter, picnic sites, vault comfort station, and additional car and car/trailer parking spaces.

A site plan that illustrates all development at the North Fork Recreation Area is presented on Plate 9.

(8) Mark Twain State Park - North Extension. This area includes 486 acres of land leased to the Missouri Department of Natural Resources which comprises the northernmost portion of the Mark Twain State Park. Existing recreational facilities are shown on Plate 10, and include a 4-lane boat launching ramp with an associated 10-car and 120-car/trailer space parking area, two vault toilets, 13 picnic sites and a swimming beach with an associated changing house and parking area for 75 cars. Other facilities include the "Si" Colborn Group Camp with four barracks-style cabins, a washhouse, a kitchen and dining hall, an office/infirmary, swimming facility, play areas, and land irrigation sewage treatment plant.

This location was approved for marina development in 1995 at the request of the MDNR, but no marina development occurred. In 1998, the MDNR requested that the area be re-designated as a swimming beach and it was re-opened as such in 2000.

Proposed development includes an equestrian trailhead and parking area to tie into the Corps of Engineers Joanna Multi-use Trail, an equestrian campground, restroom facilities, and a fish cleaning station and associated parking near the Rt. 107 boat ramp. Also proposed is the completion of the Camp Colborn area to include 4 sleeping cabins, a washhouse and a recreation hall.

There are no future developments planned for this area.

(9) Shell Branch Recreation Area. The developed portion of this 377-acre area features a 4-lane concrete boat launching ramp, a 15 car-trailer parking lot and a courtesy boat dock.

There is no proposed development.

Future development includes a day use area with picnic sites, a picnic shelter, vault toilet, a large car/trailer parking area and a paved access road.

A site plan that illustrates all development at the Shell Branch Recreation Area is presented on Plate 11.

(10) Sandy Creek Recreation Area Current recreational development in this 594-acre area includes an access road, a hunter/fisherman parking lot, a recreational fishing pond and a nursery pond.

A number of undisturbed Indian burial mounds were discovered in this area by a University of Missouri archaeological survey team and they are now known as the Crigler Mound Group Archeological Site. The site is listed in the National Register of Historic Places as provided by the Historic Preservation Act of 1966, Public Law 89-665.

There is no proposed or future development planned for this area.

A site plan that illustrates all development at the Sandy Creek Recreation Area is presented on Plate 12.

(11) Indian Creek Recreation Area. This 2,775-acre multi-use area is the largest recreational area on the lake. Located on a large peninsula in the east central portion of the north shore of the lake, the area is accessed from Missouri State Highway HH and an off-project county connector road. Several day use areas, a full service marina, a major campground, boat ramp, amphitheater/day use area, and a group camping facility are all located within this recreation area.

The main campground at Indian Creek features 190 campsites with electrical hookups, 20 hike-in tent camping sites, a single lane boat-launching ramp, and a beach. Support facilities include 5 shower buildings, 4 waterborne comfort stations, 2 playgrounds, a campground fee booth, 3 vault toilets, a system of hydrant/fountains, a fish cleaning station, and 2 trailer dumping stations.

A group camping area located outside of the main campground provides 25 trailer camping sites, 12 tent sites without electrical hookups, 1 shower building, 1 waterborne comfort station, a group picnic shelter, combination hydrant/fountains, and a playground.

Day use areas located within Indian Creek Recreation Area feature a 4-lane boat launching ramp with an associated fish cleaning station, two courtesy boat loading docks, a high water boat launching ramp for use at 625 feet NGVD and above, a waterborne comfort/changing station, a waterborne comfort station, a playground, a nature trail, 13 picnic sites, a full service marina, a group picnic shelter, an outdoor amphitheater with an associated fire ring, combination fountain/hydrants and a recreational fishing pond. A land irrigation sewage treatment plant and parking for 370 cars and 207 car-trailers support the entire Indian Creek Recreation Area. The marina area also features a 150-car parking lot and a 2-lane boat-launching ramp.

Development plans previously approved for the Indian Creek Recreation Area include adding showers to 3 campground comfort stations, conversion of 50 existing sites to full service hook ups, upgrading electrical service to individual campsites from 30 to 50 ampere, a primitive equestrian camping area at the day use area and relocation of the west boat ramp comfort station out of the flood pool. Expansion of the Indian Creek Campground by 75 trailer sites was proposed and approved in Supplement No. 7, *Additional Recreational Facilities Design Memorandum No. 9, The Master Plan, 1982*. Support facilities for the campsite development will include 2 shower buildings, one waterborne comfort station, 9 combination hydrant/fountains, a playground, and an additional campground fee booth. This expansion is still warranted; however, due to visitor trends and preferences, priority will be given to developing a newly proposed 65 campsite expansion at the Ray Behrens Campground.

Proposed development in this plan includes the development of a vault comfort/changing station near the existing Indian Creek beach, a playground, relocation of the east ramp vault toilet out of the flood pool, and a universally accessible fishing pier at Henderson Lake.

Future development plans for the area include the expansion of the concession area with overnight accommodations and an additional expansion of the campground.

A site plan that illustrates all development in the Indian Creek Recreation Area is included on Plates 13 and 14.

(12) John F. Spalding Recreation Area. This 506-acre multi-use recreation area is located eight miles north of the main dam on the northeastern end of the lake. Missouri State Highway J provides the primary access to the area. The area has been subdivided into two use categories. One area features a boat ramp and parking area and the second provides picnic facilities and a swimming beach. A project operations area, O-5, that includes a wastewater land treatment site and saddle dam is located in the easternmost portion of the Spalding area. The wastewater land treatment site provides services to all facilities on the eastern end of the lake.

A four lane concrete boat-launching ramp with paved parking area for 40 cars and 155 car-trailers is featured in a portion of this area. A gravel parking lot with a 20 car-equestrian trailer capacity and an associated universally accessible loading ramp provides access to the Joanna Multi-purpose trail that meanders through the western portion of the area. Support facilities at the boat ramp include two courtesy boat loading docks, a fish cleaning station, a 2-lane high water boat launching ramp for use at 625 feet NGVD and above, a combination fountain/hydrant, and a waterborne comfort/changing station.

Facilities for the swimming beach and picnic area include 2 picnic shelters, 1 picnic shelter with waterborne comfort station, 1 waterborne comfort station, 1 waterborne bathhouse, 1 playground, combination fountain/hydrants, 33 picnic sites, and parking for 430 cars and 30 car-trailers.

Development plans previously approved for this area include relocation of the bathhouse out of the flood plain.

There are no proposed plans for this area.

Future plans include setting aside a portion of the recreation area, approximately 200 acres in size, as a potential resort site.

A site plan that illustrates all development at the John F. Spalding Area is located on Plate 15.

(13) Frank Russell Recreation Area. This 578-acre recreation area lies adjacent to the northern abutment of the dam and has been developed primarily for camping. Currently the area contains 65 campsites with electrical hook-ups, a campground fee booth, one centrally located shower building, 3 vault toilets, 2 playgrounds, an amphitheater, several combination fountain/hydrants units, a fishing pier, a trailer dumping station, and parking for 10 vehicles. Other development within the recreation area includes a horse corral/shelter with access to the Joanna Trail, a universally accessible loading ramp, and a universally accessible fishing pond.

Proposed actions include the replacement of existing vault-toilets with water borne comfort stations, upgrading of electrical service to 50 amperes at individual sites and water and sewer hookups for 20 campsites. A portion of the Frank Russell Recreation Area is proposed as a potential resort site.

Future development plans for the area include additional campsites with electrical service, a shower building and comfort stations.

A site plan that illustrates all development at the Frank Russell Recreation Area is presented on Plate 16.

(14) Warren G. See Spillway Recreation Area This 226-acre recreation area lies contiguous to Clarence Cannon Dam along the north and south sides of the re-regulation pool and is accessed by Highway J. The Corps administration and maintenance compound form the northern border of the area. The area features opportunities for many day use recreational activities including fishing, picnicking, boating, shooting and special event activities.

Facilities on the north side of the re-regulation pool are in the Warren G. See North Spillway Recreation Area and include 1 vault toilet, 1 vault comfort station, several combination fountain/hydrants, 57 parking spaces, 5 universally accessible parking spaces and a playground. A parking area is provided for visitors to the Cannon Dam Power Plant Exhibit Area.

Recreational facilities on the south side of the re-regulation pool are in the Warren G. See South Spillway Recreation Area and include a 2-lane boat launching ramp, a vault toilet, a vault comfort station, an overlook, several combination fountain/hydrants, a playground, 45 parking spaces, 7 universally accessible parking spaces, 104 car/trailer parking spaces, a shooting range, and 2 group picnic shelters and a multi-purpose building with a no-discharge waste water infiltration system. This area is utilized as a special event activities area by a variety of groups and organizations.

The shooting range has been named in honor of the late Assistant Operations Manager, David C. Berti. The shooting range will be known as the David C. Berti Shooting Range.

Development plans previously approved for this area include universally accessible fishing piers, a waterborne comfort station/shower facility, a picnic shelter and an earthen berm with a concrete retention wall to support bleachers for the community activity area.

There are no proposed plans for this area.

Future plans for the area include development of a clay target shooting area and picnic sites.

A site plan that illustrates all development at the Warren G. See Spillway Recreation Area is presented on Plate 17.

(15) Bluff View Recreation Area This 45 acre recreation area is located downstream of the Re-regulation Dam and is developed for a variety of day use activities. Improvements in the area include a one-lane boat launching ramp, a group picnic shelter, 2 vault toilets, a playground, 4 picnic sites, and parking spaces for 83 cars and 20 car-trailers.

Proposed development plans for this area include a fish cleaning station.

There are no future development plans for this area.

A site plan that illustrates this development is presented on Plate 18.

8.04 ENVIRONMENTAL SENSITIVE AREAS

The following paragraphs describe the areas classified as environmental sensitive areas (ESA). These areas are depicted on Plate 2, and are described in clockwise progression around the lake beginning at the main dam. The zoning of cultural sites as environmental sensitive areas insures their protection.

Eight areas are classified as environmental sensitive areas. Of these, four are considered ecological sensitive areas (ES-1, etc.) and four areas are considered cultural sensitive areas (CS-1, etc.):

1. ES-1 Lick Creek Ecological Sensitive Area – Plate 2
2. ES-2 Quarry Lake Ecological Sensitive Area – Plates 2 and 6
3. ES-3 Indian Creek Ecological Sensitive Area – Plates 2 and 13
4. ES-4 Little Indian Creek Drainage Area (Joanna Ridge) Ecological Sensitive Area– Plates 2 and 15
5. CS-1 Hatten Mounds Cultural Sensitive Area – Plate 2
6. CS-2 Pollard Cemetery Cultural Sensitive Area – Plates 2 and 7
7. CS-3 Shell Branch Village Sites Cultural Sensitive Area – Plates 2 and 10
8. CS-4 Crigler Mounds Cultural Sensitive Area - Plates 2 and 12

(1) ES-1 Lick Creek Ecological Sensitive Area. The 1,404-acre Lick Creek Ecological Sensitive Area features a variety of natural attributes that make it a unique area in the Salt River basin. Vegetative and scenic qualities of the area make it an ideal location for ecological study. Extending southward along both sides of Lick Creek, on the east from the John C. “Jack” Briscoe Group Use Area and on the west from the Ray Behrens Recreation Area, the area is easily accessed by hikers and equestrian users. The 7 ½-mile Lick Creek Trail currently extends through a portion of the area. The diverse Lick Creek drainage area contains a broad cross section of the plant types found in the Salt River Basin. Of particular note is the Western Wall-Flower (*Erysimum capitatum*), found in 1974 on limestone outcroppings in this area. Many of the limestone bluffs provide scenic vistas of the lake. The area is managed to provide diverse vegetative structure for wildlife.

(2) ES-2 Quarry Lake Ecological Sensitive Area, South Fork Salt River. Located at the northern tip of the South Fork Recreation Area, the Quarry Lake Ecological Sensitive Area comprises 10 acres and features an abandoned quarry that forms a small clear lake. Surrounding the lake, 30-40 feet high vertical walls of limestone are reflected in the very clear water and many forms of aquatic life are visible. Although the lake is man-made, the overall scenic effect is of great interest and charm. Protection of this site will

preserve an area of striking beauty. The area is managed to provide diverse vegetative structure for wildlife.

(3) ES-3 Indian Creek Ecological Sensitive Area. The 987-acre Indian Creek Ecological Sensitive Area lies along both sides of the Indian Creek Branch of Mark Twain Lake. Ecological features of the area are noteworthy and will be preserved under this designation. The bluffs located in the area are largely wooded and feature a good representative cross section of the flora of this region of Missouri. Another feature of this ecological zone is an unnamed cave, which will be protected under this classification.

The Indian Creek Ecological Sensitive Area contains some of the largest expanses of native prairie grassland on the Mark Twain Lake Project. Prescribed burns are implemented to maintain the vegetative structure within the area. The area is managed to provide diverse vegetative structure for wildlife.

The area lies adjacent to the highly developed Indian Creek Recreation Area and affords visitors excellent opportunities for hiking and ecological study. A portion of the Joanna Trail runs through this area.

(4) ES-4 Little Indian Creek Drainage Area (Joanna Ridge). The Little Indian Creek Drainage Area comprises 1,232 acres and is located along the eastern shoreline of the Little Indian Creek Branch that is composed of diverse ecosystems. Scenic limestone bluffs rim the area, while the plateau areas above the bluff feature a glade type ecosystem with post oak, white oak, and red cedar as the dominant species. Ground cover species include patches of prairie grass, lichens and mosses. The southeastern portion of the area (S 1/2 Sec. 15, Section 16 T 55 N, R &W) provides an extremely interesting prairie remnant ecosystem of which Big Bluestem and Little Bluestem prairie plants are typical.

ES-4 consists of large tracts of warm season grass prairies, which are managed through a prescribed burn program. The area is managed to preserve its diverse vegetative habitat structure for wildlife. A portion of the Joanna Trail runs through this area.

Previously approved facilities for this area include a self-composting vault toilet, signs and bulletin boards. These facilities were not constructed because the service and maintenance entrance to the area was lost and the service and maintenance requirements could not be met.

(5) CS-1 Hatten Mounds. These mounds are located on the South Fork of the Salt River 1 ½ miles south of State Highway 154. Excavation has been done on both sites and identification indicates occupation since Archaic times (CA. 3,500 years ago). These salvage excavations, conducted by Dr. Dale R. Henning, were done between 1960 and 1962 under the auspices of the

University of Missouri. The mounds were used by Archaic and Late Woodland peoples.

Although the principal mound may be eventually restored, the hillside is expected to yield further burial sites and evidence of habitation. The location is beautiful, and provides a vista over the South Fork area.

(6) CS-2 Pollard Cemetery. This site is located east of State Highway 107 and north of the town of Florida. Three identified mounds make up the site. Members of the Pollard family are buried in the larger mound. These mounds are of interest to the archaeologist because of their proximity to numerous prehistoric villages. The vista is admirably located for viewing the lake and provides an opportunity for interpretation of the significance of Native American occupancy.

(7) CS-3 Shell Branch Village Sites. The Shell Branch Village Sites are located on the southernmost side of Shell Branch Creek where it enters Mark Twain Lake. Dr. Dale R. Henning (University of Missouri) tested these two sites in 1961. Both sites were extensively occupied, judging from the amount of surface material recovered. Although Archaic (CA 3,500 years ago) materials are found on both, the principal occupations appear to have been by Late Woodland Peoples. Evidence of funerary practices, food resource development and house form and use has come from these sites. The site yielded valuable archeological information and also is of great interest to the general public.

(8) CS-4 Crigler Mounds. These Native American burial mounds are known as the Crigler Mound Group Archaeological Site. The site was listed on the National Register of Historic Places in 1974 (Federal Register, Vol. 29, No. 108, June 4, 1974) and is located in Monroe County, Missouri, two miles east of the town of Florida in the undeveloped portion of the Sandy Creek Recreation Area.

The Crigler Mound Group Archeological Site is composed of seven mounds that were investigated by a University of Missouri survey team in 1960. Dr. Dale R. Henning was the field archaeologist in charge of the investigation. The mound group, known locally as "Crigler Cemetery", is possibly the largest and best-preserved group within the Mark Twain Lake project.

The zoning of these mounds as a culturally sensitive area ensures their protection.

8.05 MULTIPLE RESOURCE MANAGEMENT LANDS AREA DESCRIPTIONS

The following ten areas have been classified as Multiple Resource Management Lands with primary classifications as listed below. These areas are depicted on Plate 2 of this plan.

- (a) Recreation - Low Density
 - (1) ML-1 Lick Creek Multiple Resource Area.
 - (2) ML-2 Pigeon Roost Multiple Resource Area.
 - (3) ML-3 Allen Multiple Resource Area
 - (4) ML-4 North Fork Multiple Resource Area
 - (5) ML-5 Shell Branch Multiple Resource Area
 - (6) ML-6 Crigler Multiple Resource Area
 - (7) ML-7 Sandy Creek Multiple Resource Area
 - (8) ML-8 Indian Creek - Upper Drainage Multiple Resource Area.
 - (9) ML-9 Little Indian Creek Multiple Resource Area
- (b) Wildlife Management General
 - (10) MW-1 Upper End - Multiple Resource Area.

Recreation - Low Density

(1) ML-1 Lick Creek Multiple Resource Area (MRA). The 560-acre Lick Creek MRA forms the southern boundary of public lands lying on Lick Creek east of State Route J, approximately one mile north of the town of Perry, MO. The area is characterized by a small area of bottomlands with steep bluffs or steep banks on the opposing side of the creek. Pool elevations lie within the confines of the historic creek channel. Included within the area is a hunter/fisherman parking lot and a one-lane boat ramp.

The original vegetation was oak-hickory forest on the uplands with bottomland hardwoods in the lower area and along drainages. Most of the lands were cleared and was either in pasture or row cropped prior to the formation of the lake. Since then the area is being allowed to revegetate. The slopes and drainages have remained forested and are in need of management due to the effects of previous poor land management practices.

The area is being managed to produce diverse vegetative habitat structure for wildlife. Hunting, fishing, and nature study are popular pursuits in this area.

(2) ML-2 Pigeon Roost Multiple Resource Area. The 1,609-acre Pigeon Roost MRA lies between the Ray Behrens and Robert Allen Recreation Areas and acts as a buffer zone between these two areas that have been developed for intensive recreational use. The area embraces the Pigeon Roost and Ely Branches, which flow into the lake from the south.

These lands were originally oak-hickory forest and approximately 1,100 acres are still classified as forest. However, most of this forest is second growth timber, occupying lands that at one time had been cleared for agricultural uses. The remaining areas are in various stages of succession and grasses.

The area is managed to produce diverse vegetative habitat structure for wildlife.

The area contains a gravel access road and a hunter/fisherman parking lot with a boat-launching ramp designed for small fishing boats. The lot and boat-launching ramp provide access for low-density recreational activities such as hunting, fishing, hiking, and nature study.

(3) ML-3 Allen Multiple Resource Area. The 345-acre Allen MRA lies between Robert Allen Recreation Area and Mark Twain State Park and acts as a buffer zone between these two areas that have been developed for intensive recreational use. Ground elevations range from the top of the conservation pool (El. 606 feet NVGD) to over 690 feet NVGD. The original vegetative cover in the area was forest. The tops of the ridges were cleared and farmed prior to the formation of the lake, but are now in various grasses, and successional stages. The slopes and drainages are currently forested. Hunting, fishing, boating, and nature study are popular recreational pursuits in the area. The area is also being managed to produce diverse vegetative habitat structure for wildlife.

(4) ML-4 North Fork Multiple Resource Area. The North Fork MRA comprises 643 acres and lies between the North Fork Recreation Area and the North Extension of the Mark Twain State Park. The area was covered with oak-hickory forest before the arrival of Euro-American settlers. With the settlement of the area, the land was mainly cleared for agricultural purposes and now is generally open except for forested drainages and small-forested tracts. Portions of the area were reforested after acquisition by the government. Other areas are managed under the agricultural lease program, as warm season grasslands or succession fields. The area is available for low-density recreation activities.

(5) ML-5 Shell Branch Multiple Resource Area. This 614-acre area lies between the North Extension of the Mark Twain State Park and the Shell Branch Recreation Area. The area acts as a buffer between the eastern edge of the state park and between private lands and the lakeshore. Gravel access roads provide continuous access for hunting, hiking, fishing, boating,

and nature study. The Shell Branch MRA also features a cultural resource site consisting of two Indian Village sites. (See description of CS-3.) These sites contain material from the Archaic period through the Woodland period with the principal occupation being in the Woodland Period. A prairie grass restoration area and a wildlife food plot are also located within this area. The area is also being managed to produce diverse vegetative habitat structure for wildlife.

(6) ML-6 Crigler Multiple Resource Area. The approximately 242-acre Crigler MRA lies between the Sandy Creek Recreation Area and the Shell Branch Recreation Area. The area is mostly forested and consists of a series of ridges with a southern aspect terminating in Mark Twain Lake. The area contains a minor access site with a gravel road and parking lot, and a trail to the lake. The area is used for hunting, fishing, hiking, and other low-density recreational pursuits.

(7) ML-7 Sandy Creek Multiple Resource Area. The 259-acre Sandy Creek MRA serves as a buffer between private lands and the Indian Creek Recreation Area. The area consists of a series of old agricultural fields interspersed with forested ridges. Originally, these lands were all oak-hickory forest. With the advent of the Euro-American settler, the areas suitable for agricultural purposes were cleared and cultivated. These areas now lie above the top of the conservation pool (El. 606 feet NVGD) but are well within the flood pool (El. 638 feet NVGD) and are maintained as openings for the purpose of wildlife management. The entire area is available for the low-density recreation activities.

(8) ML-8 Indian Creek - Upper Drainage Multiple Resource Area. The 517-acre Indian Creek Multiple Resource area comprises the upper limits of public land on the Indian Creek tributary to the lake. The area is comprised of an area of bottomlands with the lake being confined to its ancestral channel in all but flood stages.

The original vegetation was oak-hickory forest on the uplands with bottomland hardwoods in the lower areas and along stream courses. The uplands have been cleared and converted to agricultural purposes with the bottomlands being converted to pasture lands. The results of prior poor management practices are being corrected by allowing a portion of the area to revegetate naturally to more beneficial habitat.

The area is currently being managed for low-density recreation use. A portion of the Joanna Trail runs through this area.

An access lot was previously approved for this area.

(9) ML-9 Little Indian Creek Multiple Resource Area. The Little Indian Creek MRA lies along the Indian and Little Indian Creek branches of Mark Twain Lake and serves as a buffer zone between public and private lands. Comprising 867 acres, the area features plateaus and limestone bluffs. The plateau above the bluff consists of an upland hardwood forest with post oak,

white oak, and hickory dominant. The ground cover includes patches of prairie grass, forbs and a variety of secondary succession species. The area is currently being used for low-density recreation. The area is managed to produce diverse vegetative habitat structure for wildlife. A portion of the Joanna Multi-use Trail is located within ML-9.

(10) MW-1 Upper End Multiple Resource Area. An area encompassing a total of 14,536 acres, the Upper End MRA encompasses project lands west of the Stoutsville and South Fork recreation areas. The area includes all project lands found along the upper reaches of the North Fork, Middle Fork, Elk Fork, South Fork and Long Branch tributaries of the Salt River and thus contains a large amount of riparian lands as well as lands along the lakeshore. To facilitate a description of this diverse area, it will be divided into three sub-areas as follows: 1) South Fork and Long Branch sub-area, 2) Elk Fork and Middle Fork sub-area, and 3) North Fork sub-area.

1) South Fork and Long Branch Sub-area – The South Fork and Long Branch Sub-area extends southward on both sides of South Fork Branch from the South Fork Recreation Area (Rt. 154) to near the community of Santa Fe, Missouri. It includes the South Fork, Long Branch, and Brush Creek tributaries to Mark Twain Lake. The original vegetative cover in this area was generally forest; however, the tops of the ridges and areas with gentler slopes were cleared and farmed after settlement of the area. The marginal farmlands are now in various successional stages with some areas being managed for native warm season grasses. The flatter areas, which are not susceptible to flooding, are being managed under the agricultural lease program. The slopes and drainages remain timbered. The area is used for low-density recreation with hunting, fishing, hiking, and nature study being popular pursuits.

2) Elk Fork and Middle Fork Sub-area – The Elk and Middle Fork Sub-area includes the lands along the South and Middle Forks westward of the juncture of the South and Middle Fork branches. Originally, these lands were covered by forest; however, with the coming of Euro-American settlers, the flatter portions were cleared and used as farmlands or for hay and pasturelands. Now the marginal farmlands are in various grasses and successional stages with some areas being managed for native warm season grasses. The flatter lands, which are not susceptible to flooding, are being managed under the agricultural lease program. The steeper slopes and drainages are still forested.

A portion of this area is designated as a seasonal waterfowl refuge. The refuge is comprised of approximately 3,000 acres of land and water that have been set-aside as a resting area for the migrating waterfowl. Waterfowl hunting and boating is prohibited in the area from October 15 through December 31. The area remains open for other recreation pursuits.

3) North Fork Sub-area – The North Fork Sub-area includes lands along the North Fork west of the Stoutsville Recreation Area and Mark Twain State Park. It includes the Otter Creek, Crooked Creek, and Buck Creek tributaries to Mark Twain Lake. The North Fork Wetland Restoration Area is located in this area.

These lands were originally covered in oak-hickory forest; however, with the arrival of Euro-American pioneers, the areas suitable for agricultural use were cleared. After the construction of Mark Twain Lake, the more deteriorated areas became covered in grasses or woody growth. The steeper slopes and drainages are forested.

A tract of land (O-2) in the southern most section of this area near Mark Twain State Park is leased to the Clarence Cannon Wholesale Water Commission for operation of a water treatment plant. This area will be used for the plant maintenance corridor, road, and utility corridors.

The remainder of the area is available for low-density recreation activities.

8.06 IMPLEMENTATION

a. Introduction

The means of accomplishing a development program is equally as important as the plan itself. Current national priorities limit development and renovation options more than in the past. At the same time, recreation visitation to Mark Twain Lake is no longer increasing at the annual rate of the 1980's, 1990's. Nevertheless, a need exists for the proposals contained in this Master Plan; and this need is expected to become greater in the future. It should also be recognized that changing priorities could drastically affect the manner and schedule for implementing this Master Plan. Hopefully, this Master Plan will have continuing utility despite any changing priorities that may affect its implementation.

b. Implementation Methods

There are five basic implementation methods currently available for development at Mark Twain Lake:

(1.) Cost Sharing

Funding for cost sharing may well be more difficult to secure than in the past. In addition to providing at least 50 percent of the development cost of a proposal up front, the cooperating local governmental entity must also

agree to operate, maintain, and provide major replacements for the new development.

Requirements for cost sharing recreational development with non-Federal public interests will be considered when the need for such facilities can be sufficiently demonstrated.

The current Corps regulation, ER 1165-2-400 requires that all recreational developments be cost shared 50 percent by non-Federal public agencies. The non-Federal sponsor is required to enter into a cost sharing contract with the Corps prior to construction and agree to assume operation and maintenance responsibilities for the completed recreation facility. In addition, the non-Federal sponsor must agree to more than offset the annualized federal investment by assuming the responsibility for operation and maintenance of existing recreation areas operated by the Corps. There is one exception to this policy that permits the construction, operation and maintenance of new facilities without cost sharing. The one exception is the authority for upgrading sanitary facilities in existing Corps managed recreation areas to meet urgent sanitation needs in accordance with provisions of applicable state and federal laws.

This Master Plan does not contain any cost sharing proposals, but may in the future serve as a basis for initiating such actions. Any program proposals will be based on a letter of intent provided by the non-Federal sponsor and shall include: (1) estimated cost of the proposed development; (2) cost to be borne by the cost sharing sponsor; (3) method of repayment the cost sharing sponsor will use to match Federal funds; and (4) understanding of the cost sharing sponsor regarding assumption of operation and maintenance.

(2.) Development Solely by Local Interests Under an Outgrant.

As in the past, local governmental entities with all or part of a project in their jurisdiction, may obtain use, under a lease or license. All costs are the sole responsibility of the local sponsor and operation, maintenance, and major replacement costs must be borne by them also.

(3.) Regular O&M General Funds.

The use of Operation and Maintenance funds is restricted to normal O&M activities and when facilities are in need of total rehabilitation, consolidation, relocation or replacement. Changes or upgrades to facilities is restricted to current O&M funding levels for replacement or rebuilding of existing facilities.

(4.) Development by Concessionaire.

Another development method that could be used at Mark Twain Lake involves the implementation of some of the plans proposed in this Master Plan by a concessionaire. Only activities for which there is a viable commercial market are eligible. For developments undertaken in this manner; operation, maintenance, and major replacements are also provided by the concessionaire.

(5.) Challenge Cost-Share

The challenge cost-sharing program provides opportunities for public and non-Federal groups and individuals to contribute to and participate in the operation and/or management of recreation facilities and natural resources at Corps water resource development projects. Partnering with others provides a way to stretch the Corps of Engineers budget by sharing the cost of developing, operating and managing recreation facilities and natural resources.

(6.) Continuing Authorities Program (CAP).

The Corps of Engineers undertakes studies of water and related resources problems and opportunities as directed or authorized by Congress. These Congressional authorizations are contained in public laws, and in resolutions of either the House Public Works and Transportation Committee or the Senate Environment and Public Works Committee. Study authorizations can be unique, study-specific authorities, or they can be standing program authorities, usually called continuing authorities, under which specific studies and projects may be done. These studies are done at the discretion of the Secretary of the Army or the Chief of Engineers to address water resource related problems and opportunities and determine Federal interest.

Some continuing authorities are relevant to the Mark Twain Lake environmental stewardship mission and potentially applicable:

Section 206, Water Resource Development Act (WRDA) 1996 – Aquatic Ecosystems Restoration

This CAP authorizes small aquatic ecosystem restoration projects up to \$5 million in federal cost per project if it is in the public interest and cost effective. The project must be cost-shared (65 percent Federal, 35 percent Non-federal); non-federal sponsor is responsible for 100 percent of operation and maintenance (O&M) as well.

Section 1135, WRDA 1986 – Project Modifications for Improvement of the Environment

This CAP is intended for modifying structures and/or operations of existing Corps of Engineers constructed projects for environmental enhancement purposes, consistent with project purposes. Federal cost per project is limited to \$5 million and a non-federal sponsor must cost-share (25 percent) design and construction and is 100 percent responsible for O&M.

Section 22, Planning Assistance to States (PAS)

Section 22, of WRDA 1974 authorizes the Corps of Engineers to assist states in preparing plans for the development, utilization and conservation of water and related resources of drainage basins within the state.

Requests from states arise from local identification of problems.

Typical studies are general in detail and do not include design for project construction. The program can encompass many types of studies including:

- Ecosystem restoration
- Water supply
- Water quality
- Water conservation
- Hydropower development
- Flood control
- Erosion and navigation

State allotments are limited to \$300,000 annually but generally are between \$10,000 to \$25,000.

Section 216 – Flood Control Act of 1970 – Completed Project Review

Section 216 authorizes review and report to Congress of the operation of completed project when found advisable due to significantly changed physical or economic conditions.

The recommendations of the report may advise modifying structures or their operation, and improvements for the quality of the environment in the overall public interest.

Mark Twain Lake Master Plan

8.07 Summary of Water and Land Use Classification

Table 8-1

Plate No.	Area No.	Location Name	Acres	
Intensive Recreational Areas				
3	1	M. W. Boudreaux Recreation Area	268	
4	2	Ray Behrens	858	
5	3	Robert Allen Recreation Area	1083	
6	4	South Fork Recreation Area	176	
7	5	Mark Twain State Park	1073	
8	6	Stoutsville Recreation Area	486	
9	7	North Fork Recreation Area	703	
10	8	Mark Twain State Park - North Extension	486	
11	9	Shell Branch Recreation Area	377	
12	10	Sandy Creek Recreation Area	594	
13,14	11	Indian Creek Recreation Area	2775	
15	12	John F. Spalding Recreation Area	506	
16	13	Frank Russell Recreation Area	578	
17	14	Warren G. See Spillway Recreation Area	226	
18	15	Bluff View Recreation Area	45	
			Total	10234
Environmental and Culturally Sensitive Areas				
2	ES-1	Lick Creek	1404	
2, 6	ES-2	Quarry Lake, South Fork Salt River	10	
2, 13	ES-3	Indian Creek Environmental Sensitive Area	987	
2, 15	ES-4	Little Indian Creek Drainage Area (Joanna Ridge)	1232	
2	CS-1	Hatten Mounds	*	
2, 7	CS-2	Pollard Cemetery	*	
2, 10	CS-3	Shell Branch Village Sites	*	
2, 12	CS-4	Crigler Mounds	*	
			Total	3633
Multiple Resource Management Areas - Low Density Recreation				
2	ML-1	Lick Creek	560	
2	ML-2	Pigeon Roost	1609	
2	ML-3	Allen	345	
2	ML-4	North Fork	643	
2	ML-5	Shell Branch	614	
2	ML-6	Crigler	242	
2	ML-7	Sandy Creek	259	
2	ML-8	Indian Creek Upper Drainage	517	
2	ML-9	Little Indian	867	
			Total	5656
Multiple Resource Management Areas - Wildlife Management				
2	MW-1	Upper End	14536	
			Total	14536
Project Operations				
2	O-1	Main Dam/Saddle Dams and Outlet Works/Corps Management/Maintenance Complex	260	
2	O-2	Water Treatment Plant, Clarence Cannon Wholesale Water Commission	*	
2	O-3	Land Irrigation Type Sewage Treatment Facilities, North Extension of Mark Twain Lake State Park	**	
2	O-4	Land Irrigation Type Sewage Treatment Facilities, Indian Creek Recreation Area	26	
2	O-5	Land Irrigation Type Sewage Treatment Facilities, John F. Spalding Recreation Area	20	
2	O-6	Re-Regulation Pool	1766	
2	O-7	Re-Regulation Dam	10	
			Total	2082
Land Use Classification Acreage				36141
General Recreation Waters				18600
All Project Fee Lands and Waters				54741

* Acreage for these areas is included in other areas

** Acreage for this area is included in acreage for Mark Twain State Park

