Section XI

Special Concerns

SECTION XI – SPECIAL CONCERNS

11-01. LOCAL DEVELOPMENT ON ADJACENT LANDS

The land acquisition policy and physical characteristics at Lake Shelbyville prevent private land ownership or development near or adjacent to the shores of the lake. However, the recreational attractiveness of the project has resulted in subdivision platting in the vicinity of the lake. Several of these subdivisions are located on land formerly used as agricultural fields south of the Kaskaskia Arm of the lake and north of the Bruce-Findlay Road on the east side of the lake. Moultrie County Planning Commission zoning ordinances have regulated growth and quality of development, which has produced a development pattern complementary to the project and the general area. Additional subdivisions have been developed just north of Shelbyville. Problems could occur as the urban sprawl continues into the rural areas around Lake Shelbyville. To protect the Lake Shelbyville watershed lands and waters, additional zoning regulations in both Shelby and Moultrie counties may need to occur.

11-02. LAKE REGULATION AND FLOOD CONTROL STORAGE

At Lake Shelbyville there are two levels of flood control capacities, the flood control pool and the induced surcharge pool.

The flood control pool is that portion above elevation 599.7 (top of joint-use pool) feet NGVD and below elevation 626.5 feet NGVD and contains 474,000 acre-feet of storage. The main purpose of this pool is to store inflows that exceed downstream channel capacities (1,800 cfs). The range of releases from this pool can vary from 10 cfs to 4,500 cfs.

The induced surcharge pool is that portion above elevation 626.5 feet NGVD and below 630.5 feet NGVD and has storage of 107,100 acre-feet. Releases from the induced surcharge pool shall be increased or decreased, on a sliding scale, according to the pool stage. The minimum release shall be 4,500 cfs at elevation 626.5 feet NGVD and the maximum release shall be 116,300 cfs at elevation 630.5 feet NGVD. Should elevation 630.5 feet NGVD be exceeded the spillway gates will be opened above the water surface and free outflow conditions will exist. Releases from the induced surcharge pool will result in flooding and damage to the downstream area. If Lake Shelbyville were non-existent, then the daily storage values would be added to the downstream tributary effect causing more severe flooding of the basin. The present plan of regulation for Lake Shelbyville is to maintain the lake at pool elevation 599.7 from 1 April to 1 December. The pool will be lowered in the winter drawdown

level of 594.0 feet mean sea level for the remainder of the year. Fluctuations of the lake level will be most noticeable when heavy precipitation in the basin increases the inflow into the lake at a rate that would cause flooding downstream if passed through the dam and not stored. Downstream releases may exceed full bank (1,800 cfs) during the winter months. This will cause flooding in the low lands but at this same time of the year the crops have been harvested and the trees are dormant.

11-03. EFFECTS OF FLOOD CONTROL

As indicated in the 1974 Lake Shelbyville Environmental Impact Statement, the operation of Lake Shelbyville is intended to achieve the greatest possible benefit for each project purpose over the long run. Compromises are an inherent part of the operations and some adverse impacts are inevitable.

Downstream – The degree of effects on the downstream landowners depends on the severity of the storm causing flooding, and the elevation to which the lake is raised above the top of the joint-use pool. When the level of the lake is below elevation 610 feet NGVD and a storm producing heavy runoff both above and below the dam occurs, the releases from the reservoir will be low until the tributaries and the Kaskaskia River downstream of Shelbyville Dam have crested and within-bank flows can be maintained. An adverse effect of this plan of regulation is that the duration of high flow is extended considerably. The prolonged high river stage raises the ground water level to a point where downstream landowners' fields, though not flooded by surface flow, are completely saturated and unworkable. When the lake rises above elevation 610 feet NGVD, the plan is to release between 1,800 and 4,500 cfs from the lake. The release will flood the lands downstream of the dam and could occur once every five years for a period of three weeks. In addition, it could adversely affect the planting, growing, and harvesting of crops.

Upstream - As the level of the lake rises, portions of land used for recreation are inundated, thereby restricting their use. The degree and length of restriction depends upon the severity of the flood. A flood of the magnitude that can be expected once every five years will have some detrimental effects upon recreation at the lake. All of the recreation areas will remain open; however, some swimming, picnic, camping, and boat launching facilities will be inundated. Side effects of the area being inundated include the destruction of grass turf, loss of trees, accumulation of driftwood, reduction of visitation, and loss of marina income. The soils here are highly erosive and fluctuation of the water level plus wave action from wind and boats cause an eroded condition along the shoreline. Erosion also produces excessive turbidity along the water's edge. Vegetation destruction because of flooding increases possible erosion due to storm water runoff. Floods in excess of a five-year frequency cause proportionately greater damages. The fish population could be adversely affected if spawning coincides with receding high water.

11-04. LAKE FLUCTUATION IMPACTS ON FACILITIES

Lake fluctuation affects the use of swimming beaches, boat launching ramps, recreation facilities and marinas. Lake fluctuation also impacts shoreline erosion and fish spawning. These impacts are addressed in the following paragraphs.

Swimming beaches are developed so that they are functional with a fluctuating water level of plus or minus five feet. Water levels between five and ten feet above the normal summer pool cover the developed sand beach and reduce swimming activities (about 15 percent of the time). The swimming beach is closed once water levels are ten feet above normal summer pool (about 6 percent of the time). These higher water levels are generally occurring in May, June and July when visitation is the highest. Future actions include investigating the possibility of converting one of the beach areas into a high water beach.

The five-year flood renders boat-launching ramps unusable. High water boat ramps become operational when water covers the main boat ramps. There are nine high water ramps located around Lake Shelbyville. They are located at Dam West, Lithia Springs, Opossum Creek, Lone Point, Bo Wood, and Wilborn Creek Recreation Areas, Wolf and Eagle Creek State Parks, and Findlay Marina. These ramps allow boaters uninterrupted access to the water. However, the high water boat launching ramps are designed as two lane ramps and become congested within the ramp parking lots and at the ramps themselves especially on weekends. To reduce this congestion more high water ramps may need to be constructed or the existing ramps should be widened where it is feasible. For marina activity to continue temporary walkways have to be put in place and boat shuttles have to be provided so that the visitors can access the facility.

Management practices undertaken to reduce the effect of flooding on the recreation activities include the planting of water-tolerant trees and shrub species to preserve vegetative cover on low-lying recreation land, raising low portions of access roads to assure access to campgrounds and picnic areas during times of moderate flooding, riprap protection of key recreation areas which are subject to erosion at high pool stages, protecting lift stations from flooding so that toilet facilities can be used during moderate flooding, and drawing the pool elevation down to winter pool each fall so that additional flood storage capacity is achieved. The drawdown, allows the flood waters to be contained within the joint-use pool first, utilizing the flood control pool only as necessary on more severe floods. The drawdown has the adverse effect of exposing mud flats in shallow, thereby restricting access to portions of the lake by water. Since recreation activities are at a low intensity during the programmed drawdown, there is little adverse effect on recreation. In drought

years, however, seasonal pool cannot be reached by the first of April. The low water level does affect recreation as beaches are not fully usable, the bare strip around the lake is unsightly, and fewer boaters are on the lake.

Steps taken to counteract the effects of low water levels include the construction of boat channels from the launching ramps to deep water and excavation of underwater portions of launching ramps to accommodate boats during a moderate drawdown. The Corps of Engineers will continue to work with the Illinois Department of Natural Resources during the fish spawning season. The two agencies will work together to create and place artificial fish habitat structures in Lake Shelbyville. During fish spawning season, the level of the lake is maintained, when possible, at a constant elevation to assist in productive fish spawning, nesting and rearing activities. If the pool is low during spawning season, it will be raised slowly.

Recreation facilities such as lift stations, picnic shelters, comfort stations, and shower buildings will be removed and replaced with new facilities in a location above 614 feet NGVD where possible to avoid frequent inundation.

To reduce the effects of flooding the breakwaters at Findlay Marina and Lithia Springs Marina have been raised and the breakwater at Eagle Creek State Park will be raised. The breakwater at Eagle Creek State Park is located near the boat ramp. Findlay and Lithia Springs Marina breakwaters have been raised to 613 feet above sea level.

11-05. ACCESS TO PUBLIC LANDS

The following actions are proposed relative to real estate interests at the project that will improve operations if instituted.

(1) Six parcels of project land, totaling approximately 1,100 acres, are inaccessible because they are not contiguous to any road, and can only be reached by crossing private land. Access to these lands by project management personnel and/or their agents is essential for the following reasons:

(a) Resource management through development of food plots, succession control, timber stand improvement, reforestation, archaeological survey, etc.

(b) Fire protection of project land and protection of adjacent private property from fires originating on public land.

(c) Cleanup and debris removal.

(d) Boundary and surveillance.

(e) Protection of the resource through enforcement of Title 36.

The six parcels of project land that are inaccessible are located in Opossum Creek Recreation Area, Pine Tree Ridge Multiple Resource Area, Buck Run Multiple Resource Area, Slaughterhouse East Multiple Resource Area, Skull Creek Multiple Resource Area, and Log Cabin Multiple Resource Area.

It is proposed that an easement estate be acquired to provide a means of ingress and egress to six parcels of remote public land for use by the Government, its officers, agents, employees, and contractors in the management of Lake Shelbyville, reserving to the landowners the right to cross over or under the right-of-way.

(2) Dam East Recreation Area. It is anticipated that due to shoreline erosion a portion of the maintenance complex service road will be eliminated. This will not only affect access to the maintenance complex, but also access to one of the trilateration towers that is used to monitor the dam. An easement or purchase of private property would be necessary to access federal property that is now accessible by the service road.

(3) The public will be precluded from the use of these easements. The general locations of these proposed access easements are shown on Plate 4. Technical details, costs, and descriptive information will be provided in a supplement to the Real Estate Design Memorandum.

11-06. MAJOR FACILITY CONSOLIDATION, RENOVATION, AND/OR REPLACEMENT (CRR)

The majority of existing facilities at Lake Shelbyville were constructed during the late 1960's and early to mid 1970's. While these facilities were adequate at the time of construction, some have now exceeded their estimated useful life. Age of the facilities, combined with increasing and changing demands from visitors, have in many cases resulted in facilities in such a condition that routine maintenance is not sufficient to make repairs. These facilities now require either major renovation or complete replacement of the existing facility in order to remain operational.

While the masonry and brick comfort stations located in recreation areas would normally have a useful life of up to fifty years, many factors significantly reduce this estimate. These buildings are unheated during the off-season and their masonry construction is subjected to the full effects of freeze and thaw actions during the winter. Intensive cleaning services required because of heavy use have increased the amount of moisture in building materials. As a result, a series of cracks have begun to develop in the concrete slabs, which

serve as foundations for these structures. In addition, the masonry block and brick walls, as well as the mortar joints, have begun to deteriorate. These conditions will require full replacement of both buildings and foundations. In addition, these buildings do not fully comply with the Uniform Federal Accessibility Standards for the disabled, which will require complete renovation of the interiors to correct.

In-ground electrical service lines have an estimated useful life of eight to ten years. The existing electrical lines in recreation areas that provide service to campsites and other facilities are deteriorating. Insulation surrounding the electric cable has begun to break down and cause periodic faults and loss of power within the recreation areas. Electrical usage during peak periods of the recreation season often exceeds the capacity of the electrical service lines resulting in blown-circuit breaker conditions or low voltage to camping areas. Also, current amperage requirements for existing electrical hookup boxes located at the campsites exceed the amperage available in the electrical distribution panels. Many new recreational vehicles have electrical system wired for 50-amp service. Existing electrical hookup boxes provide a maximum of 30-amp service. Renovation of the electrical service for these areas will require replacement of all in-ground service lines, as well as replacing the electrical distribution panels with panels which will allow for higher amperage. Individual electrical hookup panels at campsites will require upgrading to provide for 50-amp service.

Shower buildings serving the recreation areas are starting to exceed their useful life. Some of the main shower buildings have large cracks in the main walls. Other shower facilities were created in the recreation areas by converting a flush comfort station into a mini-shower building. Most of these are inadequate in servicing the number of visitors. These facilities are also in need of structural repair and amenities need to be added to properly serve the visitors. The shower buildings were not originally designed to meet the needs of disabled individuals. Most existing shower facilities are not in compliance with the current guidelines and laws concerning accessibility to disabled individuals. These facilities require renovation in order to meet current guidelines and laws concerned with universal accessibility.

The vault comfort stations located in the Lithia Springs, Whitley Creek, Little Bluestem (Area F), and Camp Camfield areas were estimated to have a useful life of twenty to twenty-five years. These facilities were not constructed with materials treated to resist moisture. This has allowed decay to form in the inner walls of the structural framing of these facilities. The concrete vaults that collect wastewater in some of these facilities are not watertight and allow ground water to enter and exit vaults depending on groundwater levels. These buildings will require removal, renovation, or replacement soon.

The water distribution system was adequate when it was constructed, but now it has many problems. Normal aging along with weather conditions have made the lines brittle and corroded. Each spring when the water is turned on numerous leaks occur. The shut-offs themselves have become worn and corroded. Water fountains and hydrants do not meet current standards regarding anti-flowback and prevention of contamination. Eventually the entire water system will need to be replaced.

Some facilities in the recreation areas are underutilized and will be removed, replaced, or consolidated with other facilities.

Table 18 provides a list of proposed actions for Corps of Engineers facilities. It lists the facilities that need to be consolidated, renovated, or replaced as well as new and future proposed actions. Proposed new actions are in addition to existing facilities. Future actions are actions that may occur beyond the ten-year time frame of this Master Plan Update. Cost estimates for new and CRR actions are provided in Section XIII. The Lake Shelbyville Operational Management Plan (OMP) provides detailed information for each year, as required.

There are three commercial concession marina facilities and one resort located at Lake Shelbyville. Future commercial development will require the preparation of a market potential and feasibility analysis study.

TABLE 18
LAKE SHELBYVILLE
PROPOSED NEW, CONSOLIDATION, RENOVATION, OR REPLACMENT AND FUTURE ACTIONS FOR CORPS OF ENGINEERS FACILITIES

Facility	Consolidate	Renovate	Replace	New	Future
Main Dam OP-1 Section 8.04.a. Plate 20					
Piezometers (as needed)			X		
Electrical System		X			
Roadway Light Electrical System			X		
East & West Gallery Spiral Staircases			X		
Machinery (as needed)		X	X		
Bridge and other metal works		X			
Security items				X	
Pedestrian & Bike Walkway/Trail					X
Project Administration Complex and Visitor Center OP-2 Section 8.04.b. Plate 20 Maintenance Complex OP-3 Section 8.04.c. Plate 20					
Project Administration Complex	X		X		
Operations and maintenance facility	X		X		
Visitor Center	X (possibly)		X		
Visitor Center Front Entrance Doors & Comfort Station		X			
Land Treatment Systems OP 7 – 10 Section 8.04.g-j.					
Land Treatment Plants	X		X		
Whitley Creek Land Treatment System OP-9 Section 8.04.i.					
Fish Nursery Pond					X
Dam West Recreation Area – Area 1 Section 8.05.a. Plate 6					

Facility	Consolidate	Renovate	Replace	New	Future
Vending Area		X			
Electrical Service		X			
Beach Picnic Shelter			X		
Snowmobile Trail		X			
Overlook / Comfort Station / Picnic Shelter	X		X		
Water lines			X		
Fish Nursery Pond				X	
Land Lease to City of Shelbyville				X	
Overlook Berm Picnic Shelter Electric Service				X	
Beach Shower Building Replacement					X
Feasibility of High Water Beach					X
Opossum Creek Recreation Area – Area 2 Section 8.05.b. Plate 7					
High Water Boat Ramp	X	X			
Comfort Station #1			X		
Add-on shower buildings		X			
Primary Boat Ramp			X		
Water Lines			X		
Campsite Water and Sewer Hookups				X	
Tent Campsite Electrical Service				X	
Multipurpose Trail					X
Group Camp					X
Campsites – Remove 4					X
Coon Creek Recreation Area – Area 3 Section 8.05.c. Plate 8					
Comfort Station #11	X		X		
Comfort Station near site 176	X		X		
Nature Trail		X			
Comfort Station #8	X		X		
Comfort Station # 5	X		X		
Comfort station on A or B leg	X		X		
Add-on Shower House on A-leg	X		X		
Add-on Shower House on E-leg	X		X		
Add-on Shower House on H-leg	X		X		
Campsites (26 total)		X	X		
Water lines			X		
Shoreline Stabilization		X			
Trail from fee booth to main shower				X	
Second Trailer Dump Station				X	
Additional Parking Spaces				X	
Campsite Sewer and Water Hookups				X	
Lone Point Recreation Area – Area 4 Section 8.05.d. Plate 9					
Secondary Exit and Roadway		X			
Day Use Picnic Shelter			X		
Comfort Station #3			X		
Main Shower Building			X		
Amphitheater			X		
Fee Booth			X		
Water Lines			X		
Campsites # 29 and 30			X		
Shoreline Stabilization		X			
Tent Campsite Electrical Service				X	
Campsite Water and Sewer Hookups				X	
Wilborn Creek Recreation Area – Area 7 Section 8.05.g. Plate 11					
Picnic Shelter	X		X		
Group Camp Comfort Station	X		X		
Group Camp Campsites		X			
Comfort Station #1	X		X		

Facility	Consolidate	Renovate	Replace	New	Future
Water and Sewer Lines			X		
Fish Cleaning Station			X		
Boat Ramp Comfort Station			X		
Shoreline Stabilization		X			
Multipurpose Trail					X
Feasibility of High Water Beach					X
Concession Site					X
Bo Wood Recreation Area – Area 8 Section 8.05.h. Plates 13 and 13a					
Nature Trail			X		
Campsites 47 –55		X			
Entrance Road		X			
Campground	X	X	X		
Fish Cleaning Station			X		
Campsite Water and Sewer Hookups				X	
Comfort Station in proposed group camp area			X		
Sullivan Beach and Okaw Bluff Group Camp – Area 10 Section 8.05.j. Plate 14					
Okaw Bluff Nature Trail		X			
Water lines			X		
Okaw Bluff Frame House	X		X		
Okaw Bluff Stone House	X		X		
Sullivan Beach Picnic Shelter			X		
Feasibility of High Water Beach					X
Whitley Creek Recreation Area – Area 11 Section 8.05.k. Plate 16					
Campground	X		X		
Amphitheater			X		
Playground			X		
Vault Comfort Station			X		
Concession Site				X	
High Water Boat Ramp				X	
Shoreline Stabilization		X			
Group Camp					X
Multipurpose Trail					X
Lithia Springs Recreation Area – Area 13 Section 8.05.n. Plate 18					
Amphitheater			X		
D leg entrance parking lot		X			
Boat Ramp Parking Lot		X			
South B-leg Comfort Station	X		X		
Picnic Shelter			X		
Vault Comfort Station			X		
Add-on Shower House #1	X		X		
Add-on Shower House #2	X		X		
Day-use Comfort Station			X		
Fish Cleaning Station			X		
Water lines			X		
Additional Parking Spaces				X	
Campsites Water and Sewer Hookups				X	
Sand Volleyball Court				X	
Beach Outdoor Shower				X	
Bench Shelters				X	
Campground Expansion					X
Multipurpose Trail					X
Dam East Recreation Area – Area 14 Section 8.05.o. Plate 5					
Comfort Station #2	X		X		
Comfort Station #1	X		X		
Non-native Grass Area		X			
Possible Concession Site				X	
Picnic Shelter Vehicle Access				X	

Facility	Consolidate	Renovate	Replace	New	Future
Easement or Purchase of Private Land					X
Multipurpose Trail					X
Spillway Recreation Area – Area 15 Section 8.05.p. Plate 5					
Comfort Station #2			X		
Spillway East Fish Cleaning Station			X		
Spillway West Fish Cleaning Station	X		X		
Non-native Grass Area		X			
Parking Area				X	
Multipurpose Trail					X
Project Wide					
Campsite Electrical Service		X			
Primary Boat Ramps		X			
Water Tower Point Multiple Resource Area LD-1 Section 8.06.a.(1)					
Multipurpose Trail Segment					X
Arrowhead Multiple Resource Area LD-2 Section 8.06.a.(2)					
Illini Trail		X			
Chief Illini Multiple Resource Area LD-3 Section 8.06.a.(3)					
Illini Trail		X			
Camp Camfield Multiple Resource Area LD-4 Section 8.06.a.(4) Plate 12					
Trail System		X			
'79 YCC Amphitheater			X		
McClure Pond Multiple Resource Area LD-5 Section 8.06.a.(5)					
Multipurpose Trail Segment					X
Slaughterhouse West Multiple Resource Area LD-6 Section 8.06.a.(6)					
Multipurpose Trail Segment					X
Woods Lake Multiple Resource Area LD-8 Section 8.06.a.(8) Plate 14					
Access Trails		X			
Adams Multiple Resource Area LD-11 Section 8.06.a.(11)					
Multipurpose Trail Segment					X
Refuge Point Multiple Resource Area LD-12 Section 8.06.a.(12)					
Multipurpose Trail Segment					X
Big Red's Timber Multiple Resource Area LD-16 Section 8.06.a.(16)					
Multipurpose Trail Segment					X
Water Plant Multiple Resource Area VM-10 Section 8.06.c.(10)					
Multipurpose Trail Segment					X
Whitley Creek Bottoms Multiple Resource Area VM-13 Section 8.06.c.(13)					
Wetland and Fish Nursery Pond				X	
Houser Multiple Resource Area VM-15 Section 8.06.c.(15)					
Multipurpose Trail Segment					X
Seven Hills Multiple Resource Area VM-16 Section 8.06.c.(16)					
Multipurpose Trail Segment					X
Sand Creek Multiple Resource Area VM-17 Section 8.06.c.(17)					
Multipurpose Trail Segment					X
Lithia Springs Chautauqua Environmental Sensitive Area ES-C-2 Section 8.07.b. Plate 19					
Wooden Bridge			X		
Interpretive Signage				X	
Security Lighting				X	
Waterborne Comfort Station					X

11-07. SEWAGE TREATMENT SYSTEMS

a) Wastewater Treatment Systems

Whitley Creek Land Treatment Facility. A preliminary engineering report – sewer system evaluation for Whitley Creek and Wilborn Creek wastewater

facilities was completed in September 2001. Wastewater from the Bo Wood Recreation Area, Sullivan Marina and Campground, Okaw Bluff Group Camp, Sullivan Beach, and Whitley Creek Recreation Area is collected in sewers and pumped to the Whitley Creek Land Treatment Facility. The land treatment facility was constructed in 1995 when it replaced a package activated sludge plant that was abandoned and demolished. The facility is permitted by the Illinois Environmental Protection Agency (IEPA) to treat 19,800 gallons per day. The sewage is collected in a 1.3-acre (1.3 million gallon) facultative lagoon and then pumped to an approximate 3-acre spray field for final discharge. Overall, the facility is well maintained and has had no serious problems, complaints, or discharge violations, but this facility is nearing capacity and is under restrictions by the IEPA for additional flows. There is no runoff or stream discharge from the spray field. The facility is limited to spray irrigation during periods when the fields are not saturated, rainfall is not imminent, and when the ground is not frozen or snow covered. However, a tremendous amount of infiltration occurs through the system and must be monitored very closely during high rainfall to ensure that it does not over top the lagoon.

Sending the wastewater to the City of Sullivan will require constructing the necessary lift stations, force mains, and improvements in or near the Bo Wood Recreation Area so that the wastewater from the recreation areas currently served may be sent to Sullivan for treatment. Estimated costs of connecting to the City of Sullivan sewage system includes installing city sewer system for $303,000.00 and an annual operation and maintenance cost of $9,210.00. Existing facility costs $28,000.00 to operate and maintain annually. The annual savings of this project would be $18, 790.00.

Wilborn Creek Wastewater Treatment Plant. The existing extended aeration mechanical treatment plant was constructed in 1973 and has a permitted capacity of 15,000 gallons per day. Because of the seasonal variations of flow, the plant is very difficult to operate during the winter when the flows are the lowest. The discharge permit requires that the effluent be chlorinated and de-chlorinated prior to discharging to Lake Shelbyville. The plant was cited by the IEPA for failure to meet the effluent chlorine concentration and for failure to install a de-chlorination system. These problems have been corrected with installation of a tablet feeder for de-chlorination. However, due to low recreation use during parts of the year the plant continues to exceed acceptable chlorine discharge levels allowed by IEPA. This is due to low water inflow that is inadequate to dilute the chlorine. The plant is in poor condition and should be replaced with a treatment system better suited to variable flow and operating conditions. The Corps of Engineers has approached the City of Sullivan to replace the plant with a pump station to transfer the sewage to the city for treatment.

Abandoning the facility will require constructing a lift station, force main, and improvements so that the wastewater may be sent to the City of Sullivan for

treatment. Estimated costs of connecting to the City of Sullivan sewage system include installing city sewer system for $314,000.00 and an annual operation and maintenance cost of $9,108.00. Existing facility costs $34,200.00 to operate and maintain annually. The annual savings of this project would be $25,092.00.

b) Gravity Sewers and Lift Stations

Whitley Creek Recreation Area. The installation of the existing campground sewers and lift stations was completed in 1973. The Whitley #1 lift station receives wastewater from the recreation area and the Sullivan Beach lift station. It then pumps to the Whitley #2 lift station, which pumps to the lagoon at the Whitley Land Treatment Facility. The gravity sewers and manholes in the Whitley Creek Recreation Area have not been inspected but observation of the pumping stations indicates there are infiltration and inflow (I & I) problems in this area. The manholes are brick construction and may be a source of I & I. It is proposed that the Whitley Creek Recreation Area be closed and facilities will be consolidated with the facilities at the Bo Wood Recreation Area. When the consolidation is complete, the removal of the sewers from service will reduce the amount of I & I sent to the Whitley Land Treatment Facility for treatment.

Sullivan Marina and Campground. Gravity sewers in the camping area at the marina collects and sends wastewater to a lift station that pumps the wastewater across the lake and into the Sullivan Beach lift station. There is a flow meter on the force main located near the beach lift station. There are no known problems with the sewers in this area although there may be some I & I from the collection system. The Sullivan Marina and Campground contributes approximately 12% of the design capacity of the Whitley Creek Land Treatment Facility. It should be possible to reduce these flows by locating and repairing the sources of I & I in the collection system.

Okaw Bluff Group Camp. Sewage collected at the Okaw Bluff Group Camp is pumped to the Sullivan Beach lift station. There are no known problems with the sewers or lift station in this area. These facilities will be removed due to shoreline erosion. The removal and replacement of the facilities at the group camp are mentioned in the Shoreline Erosion Management Plan.

Sullivan Beach. The Sullivan Beach lift station receives sewage from Sullivan Marina and Campground, Okaw Bluff Group Camp, and Sullivan Beach Recreation Area. There is a problem with the lift station being submerged during high lake level events. This does not result in a major increase in flow, but does shut down the Sullivan Beach, Sullivan Marina, and Okaw Bluff Group Camp lift stations. The Sullivan Beach lift station will be raised to an elevation that will make it become manageable during periods of high water.

Bo Wood Recreation Area. The existing Bo Wood campground sewers were telescoped in 1999. The gravity sewer pipes are plastic and there are some leaking joints. However, there is no evidence of collapse, failure, or significant root intrusions. There are sags and low spots that have collected significant amounts of seepage, solids, and debris and the gravity sewers should be cleaned. The manholes are brick construction and appear to be a source of I & I. The amount of flow caused by I & I is not known, as a complete flow study was not conducted. Removing the seepage and solids will help reduce odors at the manholes and lift stations and will lower the concentrations of influent biological oxygen demand (BOD) treated at the land treatment facility. These manholes and sewers will be replaced or abandoned during the construction of the new Bo Wood campground. This will reduce I & I flow to the Whitley Creek Land Treatment Facility.

Prior to 1994, wastewater from the Bo Wood camping area was treated on-site with an extended aeration treatment plant. Before this time, the Bo Wood plant received flow from the Whitley Creek Recreation Area via the Whitley #2 pump station and force main running north across the lake. The Bo Wood plant was abandoned and replaced with a pump station in 1995 when the Whitley Creek Land Treatment Facility was completed. The force main under the lake was reversed and the Bo Wood wastewater was then pumped south across the lake to the Whitley Creek #2 lift station.

Wilborn Creek Recreation Area. Gravity sewers collect wastewater for treatment at the extended aeration mechanical treatment plant. The sewers have not been inspected, but observations indicate there are I & I in the sewer system. To help eliminate I & I into the sewer system after it is connected to the Sullivan Force Main the sewer lines will need to be replaced that run from the boat ramp comfort station, picnic area comfort station, and fish cleaning station to the lift station that services those facilities.

c) Wastewater Treatment Alternative with the City of Shelbyville

The City of Shelbyville provides sewer service to Dam West, Dam East, and Spillway Recreation Areas. The Dam East Recreation Area also includes the Administration, Visitor Center, and Maintenance buildings. The City of Shelbyville has a contract with the Corps of Engineers to provide this service. A proposal has been made to the city to expand its sewer services to also include Opossum Creek, Coon Creek, Lone Point, and Lithia Springs Recreation Areas. Lithia Springs Recreation Area also includes the Lithia Springs Marina.

A wastewater land treatment system located at the Lithia Springs Recreation Area handles approximately 1.6 million gallons of wastewater annually. The sewage is collected in a facultative lagoon and then pumped to a spray field for final discharge. The facility is limited to spray irrigation during

periods when fields are not saturated, rainfall is not imminent, and when the ground is not frozen or snow covered.

The wastewater treatment facilities at Opossum Creek and Lithia Springs Recreation Areas have a projected life of 50 years. During this period significant maintenance will need to be performed. It is estimated that each wastewater lagoon will need to be cleaned out, liner replaced, and new rock riprap installed at a minimum 2.5 times during the projected life. At the end of the projected life it is anticipated that a total rebuild will be necessary.

The total cost requires that the project be installed in two phases. Factors that have an impact on the project are land easements, funding, and grants. The City of Shelbyville and Shelby County are in good position to receive CDAP grants. The total cost of the two phases is estimated at $1,073,000.00. Annual operation and maintenance of the project is estimated at $24,500.00. Annual operation and maintenance of the existing facilities is $47,500.00. Annual savings would be $23,000.00.

d) Wastewater Alternatives for Findlay Marina

Sewage at Findlay Marina is being collected in three holding tanks totaling 4,500 gallons. Sewage volume requires the tanks to be pumped out every week throughout the year and often twice a week during high-use periods between Memorial Day and Labor Day. The marina would like to expand the facility to possibly include such things as cabins, restaurant, and a lodging facility that provides rental rooms. One of the factors that determine if these facilities will be put in place is the availability of a water-borne sewage disposal system. The primary solution is to construct a lift station and force main connection to the Village of Findlay. Other solutions could involve connecting to the City of Shelbyville or Sullivan Force Main.

e) All work concerning sewage treatment will be done in accordance with the appropriate permits from IEPA.

11-08. CONSOLIDATION OF CAMPING OPPORTUNITIES AT WHITLEY CREEK AND FORREST W. “BO” WOOD RECREATION AREAS

None of the campsites that are rented to the public in Whitley Creek Recreation Area have electrical hookups. Numerous large old trees are creating hazards for visitors and make adding electricity to the campsites a poor choice. The current configuration of the campground is also inefficient. It is divided into two separate sections with two entrances. Only one entrance has a fee booth and that creates control and security problems in the area. The buildings in Whitley Creek Recreation Area are approximately 30 years old. Settling problems have made the opening of doors on the main shower building very difficult. Also, some of the masonry wing walls on the comfort stations are

deteriorating more rapidly than expected due to lack of capstones. A vault toilet in this area is in need of extensive repair and should be replaced. A large lift station was installed to pump the sewage from the area to a land treatment facility. This lift station is located in a low area near several campsites and visitor complaints about the odor are common. The sewer and water lines are starting to fail and will require serious renovation in the next few years. At the time of original construction, barrier free design was not considered and people with disabilities have trouble using some of the facilities.

Forrest W. “Bo” Wood Campground currently experiences the highest occupancy rate of any campground at Lake Shelbyville. Consolidating 69 Whitley Creek campsites with the facilities in the Forrest W. “Bo” Wood Recreation Area and providing electrical hookups to them will dramatically increase both the capacity and revenue in the Bo Wood campground. The increase in visitors to the area will benefit the local economy. Other facilities that will be consolidated from Whitley Creek Recreation Area to Bo Wood Recreation Area include one main shower building, one comfort stations, one trailer dump station, and eight water fountains and/or hydrants. Further, consolidating two campgrounds into one provides operational and maintenance cost efficiencies.

Consolidating these two camping areas will have a positive impact on long-term operation and maintenance. The net number of buildings, water lines, sewer lines, acres requiring mowing, roads, sidewalks, and other infrastructure items will be reduced through this consolidation. Operations and maintenance staff, as well as service contractors, will have to make only one stop rather than two to perform their duties, which will increase efficiency. In addition, the public will be better served with newer facilities that are easier to find. Bo Wood Recreation Area is near a state highway while Whitley Creek Recreation Area, although fairly nearby geographically, is located on a secondary road and is more difficult for visitors to find.

Projected cost of modernization is $1,217,000.00, which includes construction, contract, plans and specifications and S&I. Even without considering savings in O&M cost efficiencies, increased revenue alone should recoup the expense of consolidation in approximately 15 years. It is estimated that this modernization project will result in an O&M cost savings of $10,000.00 per year.

11-09. ADMINISTRATION AND MAINTENANCE FACILITIES

The existing office facilities at Lake Shelbyville consist of an administration building, a trailer, a small office building, and a small building converted into an office. The administration building was constructed as a resident engineer’s office with a two-bay garage in 1963 and has since served as a permanent administration office for the lake management staff. The

original office building has been supplemented with a trailer, conference room building, and sewage treatment plant building that have been converted into office buildings.

The existing office facilities are inadequate as a project headquarters. Over the years a number of changes have been made to the facilities in an attempt to accommodate the changing functions and responsibilities of the lake management staff. Nevertheless, the complex is deficient as the lake headquarters because of inadequate office space for staff, inefficiencies regarding staff meeting together or with the public, lack of conference area, inaccessibility for persons with disabilities, inefficient utility systems, inefficient heating and cooling systems, and inefficient roof and windows. It is proposed that the administration office headquarters at Lake Shelbyville, which now consists of four separate structures, be consolidated into one building. The replacement building will be administratively and economically efficient, meet current accessibility standards, plumbing and electrical codes. The design will be consistent with the aesthetic qualities of the project area. It is estimated that consolidation of the Administration and Maintenance Complex into one building complex will result in a savings of $100,000 per year.

Existing condition of office facilities – The existing office facilities are inadequate as a lake headquarters. Over the years a number of changes have been made to the facilities in an attempt to accommodate the changing functions and responsibilities of the lake management staff. Nevertheless, the complex is still inefficient as the lake headquarters, for the following reasons:

Size. The existing administration building is far too small to accommodate the entire staff. Some of the staff has to be housed in separate buildings due to the inefficient size of the administration building. Four different buildings are used for employee office space.

The main administration building was originally built to serve as the resident engineer's office during the construction of the lake. Several modifications to the original design have been made to accommodate the needs of the employees over the years. A small building located in the administration building vehicle compound has been converted into office space. This is a portable building that was abandoned by a contractor several years ago.

In the maintenance compound, which is located over a half a mile away from the administration building, there are two buildings that serve as employee office buildings. One of the buildings was salvaged from a sewage treatment plant and converted into an office building. The other building is a trailer that Carlyle Lake surplused and Lake Shelbyville acquired to use as an office building. This trailer originally served as the resident construction office at Carlyle Lake in the mid-1970's.

Space Utilization. The current Administration buildings do not meet the space utilization requirements for the size of the Lake Shelbyville staff (23 permanent, 4 permanent seasonal employees, and 24 STEP/SCEP employees). According to the Logistics Management Space Utilization Report, January 2003, the net space for all actual office space at Lake Shelbyville equals 2,201 square feet and the gross space for everything except restrooms, kitchen, and heating/cooling utility room equals 2,744 square feet. Existing net square feet per person is 59.97 and gross square feet per person is 74.76. Per Army Regulation 405-70, total net square feet authorized per person is 130 and total gross square feet authorized per person is 162. According to these figures the existing office space is not adequate for the personnel at Lake Shelbyville.

Inefficiency. Because four structures are used for the administration functions an awkward employee-working environment exists at the lake headquarters. For example, a face-to-face meeting often requires walking to another building. This is at best an annoyance and detracts from efficient office protocol. This condition is particularly noticeable during the cold weather months when staff members must bundle up in winter clothing before attending a meeting, which is held in a building other than the one they normally work in. At other times, such as an unscheduled public inquiry at the front office area of the administration building, an employee must be retrieved from their workstation to report to the administration building, for a brief meeting with the inquiring visitor.

Inadequate Meeting Space. The original use for the administration building (then a resident engineer's office) called for a large open area adjacent to the main entrance, two enclosed offices, men and women's restrooms, and a garage area. At the present time the open area near the entrance is used as a reception and clerical space and the garage area has been blocked to create workstations. The building is without an enclosed conference room and the only available space in the building for group meetings is in current employee workstation areas. Consequently, when a meeting is held the employee or employees who normally work in the area are interrupted by meeting participants and they either leave their workstation or make do at their workstation because there are no other unoccupied areas to move to.

Accessibility. None of the four structures meet the current Uniform Federal Accessibility Standards (UFAS) criteria for accessibility. The entranceway and restrooms at the main building are too small for maneuvering when the doors are in the open position. Although the entranceway at the main entrance could be replaced for a reasonable cost the restrooms would require extensive architectural, structural, and plumbing renovation before the building would meet current accessibility criteria. In addition, renovation to accommodate movement and circulation would require more floor area, and if

done, would reduce the existing space now needed for office and administration functions.

The floor of the trailer within the maintenance compound sits approximately 36 inches above the ground and adjacent parking lot. Access into the trailer requires climbing steps located just outside each of the two entrance doors at both ends of the trailer. The trailer has one restroom and is designated for unisex use. The width dimension of the restroom and door are both 30 inches. For these reasons the trailer is physically incapable of serving disabled users.

The makeshift office building located within administrative building compound is not accessible due the door not being at ground level. The doorway is located about 18 inches off of the ground and requires anyone entering this office to step up into the office.

The small building in the maintenance compound that serves as office space has one restroom and it is designated for unisex use. The width dimension of the restroom and door are not wide enough for accessibility. The entrance doorway is also not wide enough. For these reasons this building is physically incapable of serving disabled users.

Utility Systems. Each structure has its own heating, cooling, and electrical systems. A separate system for each structure is inefficient and necessitates a duplication of operational and maintenance time, expense, and a need for different replacement parts for each system. The resources currently being used to keep four administrative structures operational can be more effectively used elsewhere at the lake. The incoming electrical service panel boxes and telephone switchboard for the main administration building are located in the storage and lunch facility room. This location for electrical and telephone connections is a hazard for office staff and an obstacle for electrical and telephone personnel. The existing wiring for electronic equipment and telephones does not have the capacity to provide the proper services needed. The systems have been re-wired several times creating tripping hazards throughout the office.

Heating and Cooling System. The main administration building is not energy efficient. It is heated and cooled by a boiler system with individual registers under windows and near entrance doors. Over the years attempts have been made to balance the heating and cooling temperatures and the humidity level. The cooling system has leaked Freon in the past and must be serviced more than normal to ensure it is working properly. Since the system is outdated parts have to be special ordered.

The trailer is a prefabricated structure with little insulation in the floor, walls, and ceiling. It is hard to heat and cool this building due to the lack of insulation and the inability to add more insulation due to the block building design. Some

interior improvements have been made including replacing all of the windows with double pane sliding windows.

The small building in the maintenance compound has recently undergone some interior remodeling. Building was sealed to reduce water infiltration and to help improve the energy efficiency.

The makeshift building in the administration compound is heated and cooled by a single unit that has to run nearly constantly to keep a relatively comfortable temperature. Water and sewer is not available in this building and workers have to walk to another building to use the restroom.

Roofs. The roof on the administration building has a history of leaking. There is evidence of this throughout the building. Majority of the rooms in the building have several ceiling tiles that are water stained. The roof has been repaired several times in the past. The roof is a flat roof that allows water to pool. When the water does not drain off of the roof properly this increases the chances of the water leaking through the seams of the roof membrane.

The roofs on the trailer and small building within the maintenance compound also have flat roofs and the same problems that exist at the administration building could exist at these buildings.

Windows. The windows that are located throughout the buildings are inefficient. Several of them allow air and moisture to pass through. The windows are only partially operable and worn seals are likely the cause of the infiltration. Minor maintenance repairs have been made on the windows in the administration building to reduce the problem such as replacing the window cranks and caulking the frames. These repairs are just a temporary solution to the problem. Dry wall under windows in the Administration building is deteriorating due to moisture leaking around the windows. All the windows in the trailer had to be replaced due to the large amount of water that was getting inside. Even though the windows were replaced, some infiltration still occurs.

Crack in Southeast Wall. A crack exists in the southeast wall of the administration building. The majority of this crack runs along seams in the masonry brick that is present in the wall. The length of this crack is approximately 30 feet long. Where the crack exists the wall has moved about 1 to 2 inches. The crack is located towards the top of the wall that is enclosed by an interior wall, insulation, and paneling. This makes it hard to monitor any movement or further structural damage that could occur. Wooden and metal supports have been placed in different places along the crack to temporarily stabilize the wall. It is hard to determine how long this temporary solution will last. A permanent solution would require extensive architectural and structural renovation.

Crack in the Foundation. Due to the administration building settling a crack exists in the southwest corner of the foundation. The crack appears to go through the entire foundation on both sides of the corner. The stress from the foundation being cracked has caused the brick wall above it to crack as well. These cracks are being monitored for further movement.

Potential Health Risk.

Asbestos. Asbestos, which is a hazardous material and health risk when it is disturbed and not handled properly, is associated within the tile in the administration building restrooms.

Mold and Mildew. Mold and mildew is present throughout the office buildings. It is located inside the walls posing a persistent health hazard. Despite several attempts to eradicate the mold and mildew the problem still exists.

Location of New Facility. Three alternatives are identified as potential building sites for a new combined Administration and Maintenance Complex.

1) Build a new Administration Building at the site of the existing Maintenance Compound

2) Build a new Administration and Maintenance Compound adjacent to existing Administration Building

3) Build a new Administration and Maintenance Compound at the Dam West Day Use Area

Evaluation of Alternatives

a. Build a new Administration Building at the site of the existing Maintenance Compound – This site has been determined as unsuitable. All utilities necessary are present. The entrance road to the existing maintenance compound is restricted by the amount of land in public ownership. Additional land would have to be purchased in order to widen the access area to meet highway standards for two-way traffic required for a public entrance road into a new Administration and Maintenance Complex. According to the Shoreline Erosion Plan, approved in 1993, the estimated 30-year erosion limits of the Lake Shelbyville shoreline will impact the Dam East Recreation Area including the Maintenance entrance road in the future, further necessitating the purchase of additional lands. Finally, the road system into the Dam East Recreation Area would have to be revised to allow better visibility and access by the public to a new Administration Complex.

b. Build a new Administration and Maintenance Compound adjacent to existing Administration Building – This is a viable alternative. All necessary, utilities are present. Changes to the public entrance, parking lots and road system would be minor. However, care would have to be taken to ensure a safe entrance and exit for equipment and delivery trucks onto the Dam East roadway due to the large curve that presents a blind spot in the roadway. The site adjacent to the existing administration building was the site of a home with in-ground swimming pool and other structures that were removed after the Corps purchased the land. Care will need to be taken during design and construction to ensure any new structures are not built on top of the old home site or that the area is sufficiently compacted. Although this site is less than ½ mile from the dam, features of the dam are not visible from this location. Nonetheless, security of the dam will be maintained. However, during high security situations, such as Federal Protection Condition (FPCon) Charlie, the Administration Building and Maintenance Complex will be difficult to access due to security restrictions associated with the Dam. This results in bad public relations during potentially stressful events. People who are used to our current location will have no problem finding us. The Maintenance Complex will be much more visible to the public. This is a security and aesthetic problem due to its openness right off of Route 16. The site under this proposal is currently used as a Special Events site. This is the only special events area in a Day Use area on the southern end of the lake that has adequate room that includes a large open area and shade for large events. Construction of an Administration and Maintenance Complex will eliminate the ability to have large events because of the space requirements that will be necessary for storage of equipment, materials and supplies within a compound. The construction of the Maintenance portion of the Complex will be more costly since you can't take advantage of a basement for storage at the location due to requirements of needing an elevator.

c. Build a new Administration and Maintenance Compound at the Dam West Day Use Recreation Area – This is the preferred alternative. All utilities are present at the proposed site and/or adjacent to it. For energy efficiency, this location would be protected on the North side by trees and would face the maximum sun direction during the winter months. The new location will present some initial problems with people finding the building who are used to it being at Dam East. However, many customers use 9th Street to access the existing Administration Building, Dam West and other Corps recreation areas so the change in building location should have minimal impact on public traffic patterns. In addition, the location of the new complex within the Dam West Recreation Area, the busiest day-use area at Lake Shelbyville, will offer convenient access to our customers and will provide for quicker emergency response times to incidents within this busy area. The Maintenance Complex can be built behind the Administration Building off the existing high water boat ramp parking lot thus creating a more secure and aesthetically pleasing

presence. The area near the high water boat ramp is currently used as a storage area for large materials and building the complex in that location will eliminate multiple storage areas. The Lake Shelbyville Dam is less than ½ mile from Dam West and the entire lake-side of the dam is visible from this area therefore security of the Dam will be maintained. In addition, access to the Administration Building and Maintenance Complex will not be limited during FPCon levels or other high security measures undertaken on behalf of the Dam and may in fact deter current vandalism problems within the Dam West Area ensuring a higher security presence. Access to the Administration Complex during high water situations will not be an issue with proper planning and will increase public safety efforts during high-water when the recreation facilities within Dam West are closed due to inundation. The Dam West Beach is the largest and busiest beach at Lake Shelbyville. As a result, several interpretive programs, ranger patrols and maintenance activities take place in this area. Having the Administration and Maintenance Complex within the Dam West Recreation Area will increase response time and driving time to this area. As an alternative, incorporating a Visitor Center with the Administration and Maintenance Complex in this location would allow for consolidation of administrative personnel, better access to our customers and more room for special events. Using the existing hillside to incorporate a two-story Administration Building will reduce costs as it is cheaper to build vertically than horizontally, and lower portions of the building can be used for storage of materials and supplies reducing the additional structures that will be needed for the Maintenance portion of the complex. Good planning will eliminate the need for an elevator by using a combination of ramp walkways, sidewalks and parking spaces on the upper and lower sections of the building. The proposed site is currently reserved for a future resort area. By designating the site of the existing Administration Building as a future resort site, it would allow for future development in the Dam East Recreation Area that incorporates the Special Event site and Visitor Center with convenient public access and high visibility from Route 16. Keeping a future resort separate from the Corps' recreation facilities at Dam West Recreation Area will distribute public use of the project and eliminate conflicting uses within the Dam West Recreation Area. For example, overnight resort customers would be disturbed by the noise of early take off by large fishing tournaments that use the boat ramp at 5:00 a.m. or earlier. Moving the authorization of the resort site to Dam East Recreation Area will eliminate problems with collection of Day Use Fees within the Dam West Recreation Area. In addition, moving the resort site to Dam East Recreation Area will eliminate potential economic impact and/or safety concerns during high-water events when the Dam West Recreation Facilities are closed due to inundation. A proposed action in this Master Plan is to add a pedestrian/bike trail across the main dam. The trail would provide easy access from Dam East Recreation Area to Dam West Recreation Area and could be utilized by the Dam East Resort customers.

Recommendations. The administration office headquarters at Lake Shelbyville, which now consists of four separate structures, should be consolidated into one complex. A new complex should be administratively and economically efficient, accessible, and designed to be consistent with the aesthetic qualities of the lake area. Further study will be scheduled and funded to make final determination of the most feasible alternative and design for a replacement administration and maintenance complex facility.

Pictures of the existing office facilities and conditions are located in the Appendix 2.

11-10. VISITOR CENTER FACILITIES

The Lake Shelbyville Visitor Center was completed in 1979 and the last complete exhibit update was in 1985. The following items need to be addressed.

- The total usable square footage in the Lake Shelbyville Visitor Center is 2,852 square feet (lobby 612 sq ft, exhibit room 1,170 sq ft, multipurpose room 780 sq ft, restrooms 290 sq ft). Reasonable square footage to accommodate customer needs associated with the visitor center and to make the facility efficient would be 4,000 to 6,000 square feet.

- Most of the exhibits are showing their age and are in need of repair or replacement, especially the ones that have some type of mechanical device. These types of exhibits are experiencing frequent breakdowns which create inconveniences for the visitors. The Lake Shelbyville introduction video that is shown regularly in the Visitor Center was last updated in 1996. The newest exhibit is an interactive kiosk that was purchased and installed in 1998. Problems are already being experienced with this exhibit and require being updated on a regular basis to reflect current information.

- Located in the entrance lobby are two large displays that deal with Corps of Engineers history and the purposes of Lake Shelbyville as well as an information kiosk, a sales area, and a reception area. The entrance lobby space is too small to accommodate all of the visitor needs. Tours are conducted on a frequent basis and generally there is not enough space in the lobby to address an entire group together so other arrangements have to be made. That creates an inconvenience for the tour group and the person conducting the tour.

- The Corps of Engineers has a cooperative agreement with the Kaskia-Kaw Rivers Conservancy to operate a sales area in the Visitor Center to support Corps operations. The sales area was placed in the entrance lobby, which is a congested area and is too small to serve the needs of the visitors. This is the only area in the visitor center where the person working in the

reception area could control the sales area, but due to this area being a high traffic area it is difficult to protect the sales products from damage or theft at all times.

- The multipurpose room is used for functions that include a theater, meeting room, classroom, program area, and exhibit area. Since this room is used for many diverse purposes it creates problems, such as there is no room to display any traveling exhibits and still have room for visitors to view videos such as the Lake Shelbyville Introductory Video.

- Location of New Facility. Five alternatives were identified as potential building sites for a new visitor center.

1) Replace and consolidate visitor center with new administration building at the site of the existing maintenance complex.

2) Replace and consolidate visitor center with new administration and maintenance complex adjacent to existing Administration Building

3) Replace and consolidate visitor center with new administration and maintenance complex in the Dam West Recreation Area.

4) Replace or renovate visitor center in Dam East Recreation Area.

5) Locate new visitor center in the Woods Lake East area.

6) Partnering with the Illinois Department of Natural Resources to locate the visitor center somewhere along the Bruce-Findlay Road, Road 7 on Plate 4.

- Depending on the time frame concerning the replacement of the visitor center, it is proposed that the front entrance doors and comfort station be renovated to meet Uniform Federal Accessibility Standards. The comfort station entry is on the outside of the building. The renovation would include creating an interior entrance for the comfort station. The sinks and toilet facilities in the comfort station are operated by button mechanisms that are hard to use and cause visitors some inconveniences and it is recommended that these operating mechanisms be replaced with more user-friendly mechanisms.

Pictures of the existing visitor center facilities and conditions are located in the appendix 2.

11-11. SHORELINE USE MANAGEMENT POLICY.

The subject of shoreline management is fully addressed in the Shoreline Use Management Policy, which is included in the Lake Shelbyville Operational Management Plan. The Shoreline Use Management Policy was prepared and implemented as a management tool to lessen the impact of private exclusive use along the public shoreline of Lake Shelbyville. The policy was prepared under authority of Title 16 United States Code 460d; Title 36 Code of Federal Regulations 327.30 Lakeshore Management at Civil Works Projects as implemented by Engineer Regulation 1130-2-406, 31 October 1990. The objective of the policy is to provide guidance for the protection of shorelines. Four basic considerations were used in formulating and updating the Shoreline Use Management Policy. These were: a) demand for water oriented recreational facilities is increasing while the amount of shoreline is fixed; b) development of private property adjacent to the project is certain to continue; c) shoreline erosion continues to be a problem at Lake Shelbyville and steps must be taken to minimize shoreline erosion, especially in recreation areas and areas with adjacent development; d) the ownership of land adjoining public projects does not convey special rights or privileges to use public land and waters.

No private docks or structures exist or are allowed on the Lake Shelbyville shoreline. The only facilities that exist or are allowed along the shoreline are commercial concessions or public facilities.

Mowing permits are issued according to District policy. The only mowing permits that are issued at Lake Shelbyville are for a field tile that existed on private land prior to government ownership and twenty-one situations resulting from a boundary line resurvey in 1980. The field tile now spans both public and private land and a single annual mowing is permitted. Permits to mow a seventy-five foot radius from an occupied residence were issued to those twenty-one individuals whose home or outbuilding existed prior to government ownership of land at Lake Shelbyville and was adversely affected by the boundary line moving close to their private residence or outbuilding causing hardship as a result of the 1980 resurvey.

Due to erosion of the shoreline southeast of Bo Wood Recreation Area, it may be necessary to acquire additional land in Sections 23 and 26 of T13NR5E, Moultrie County, Illinois. The shoreline has eroded to within 100 feet of the fee boundary in some locations. Three privately owned homes bordering government lands could eventually be affected as well.

Another area where it will be necessary to acquire additional land or an easement on private property is in the Dam East Recreation Area to ensure access to federal property. This acquisition of land or easement is necessary because in approximately 15 to 20 years a portion of the maintenance complex

access road, which also serves one of the three trilateration station will be impacted due to the effects of shoreline erosion.

11-12. SHORELINE EROSION

Shoreline erosion at Lake Shelbyville is caused by a combination of factors: fluctuating lake level, waves created by wind and boat actions, and the soil surrounding Lake Shelbyville being predominately glacial sandy clay with little resistance to erosion.

The Final Letter Report, Lake Shelbyville Shoreline Erosion Management Plan, 29 January 1993, which is a supplement to this Master Plan, was prepared to recommend the facilities needing protection, consolidation, removal, or replacement because of predicted shoreline erosion over the next 30 years (baseline 1990). The following is the summary from the Shoreline Erosion Management Plan.

Some endangered facilities must be protected to ensure safety of the dam. Some parks must be protected immediately because of the limited land base for public use. Therefore, Dam East, Dam West, and Lithia Springs Recreation Areas along with Okaw Bluff Group Camp, Eagle Creek State Park, Sullivan and Findlay Marina are areas considered to be first priority for protection, removal, or replacement of facilities. The locations of lesser priority are Bo Wood, Lone Point, Coon Creek, Opossum Creek, Whitley Creek, and Wilborn Creek Recreation Areas along with Wolf Creek State Park. All other areas are lower priority for work to be performed due to the length of time (approximately 15 years) before the facilities are threatened.

Shoreline erosion at the Bo Wood Recreation Area is becoming so severe that it is threatening not only to jeopardize the user but also many of the facilities themselves. Our study indicates, based on past rates, that within another 20 –30 years (baseline 1990) the erosion will destroy enough of the Bo Wood facilities that operation of the campground will be impractical economically. A detailed cost analysis shows that protecting the camping facilities is cost prohibitive. Therefore, removing and replacing with new facilities is the only reasonable alternative. After receiving significant public comments about the economic and aesthetic value of this area to the Sullivan, Illinois community, the Corps of Engineers propose to remove and replace all camping facilities to another location within the Bo Wood Recreation Area. This solution will better serve our neighbors and guests as we retain full use of one of our highest quality public use areas.

Review plan and make amendments as needed in the future. An additional feasibility study will be conducted to define cost effective methods to provide shoreline erosion protection in the Coon Creek, Lone Point, and Lithia

Springs Recreation Areas that ensures the continued use of all existing recreation facilities and infrastructure.

Recommended Plan.

The following areas and the facilities have been identified in an environmental assessment report and the proposed recommended action of erosion management to be taken, such as protection, removal, or replacement has been determined. An environmental assessment and Finding of No Significant Impact (FONSI) report is located in the Final Letter Report, Lake Shelbyville Shoreline Erosion Management Plan, March 1993.

a) Concerning the Shoreline Erosion Management Plan, the following work has been completed.

Dam East and Dam West Recreation Areas

- Protected the trilateration station to preserve historical data concerning movement of the dam.
- Protected the land near the Visitor Center to ensure adequate space for special events in this area.
- Protected the boat ramp.
- Protected the large point of land north and east of the beach. This peninsula is necessary to protect the beach from wave action.
- Removed and replaced picnic shelter from Opossum Creek to Dam West for fishing tournaments and large group events.

Lithia Springs Recreation Area

- Protected the boat ramp.
- Protected the trilateration station to preserve historical data concerning movement of the dam. Protection of this facility will also protect the campsites and other facilities nearby.
- Protected the beach, nearby campsites and roads.

Findlay Marina

- Protected the land to provide a stable bank to attach docks and to provide for adequate vehicle parking.

Bo Wood Recreation Area

- Protected the boat ramp
- Protected the landfill site that is located north of the picnic shelter.

Opossum Creek Recreation Area

- Removed and replaced the group picnic shelter and parking facilities to the Dam West Recreation Area.

Lone Point Recreation Area
- Protected the boat ramp

Eagle Creek State Park
- Protected any threatened facilities including the Eagle's Landing Building at the Eagle Creek Lodge.

b) <u>The following work still needs to be completed under the Shoreline Erosion Management Plan.</u>

Lithia Springs Recreation Area – Part of Phase 1
- Remove and replace 1 to 3 campsites located in the northern part of the campground.

Sullivan Marina and Campground – Part of Phase 1
- Protect the land, as needed, to provide a stable bank to attach docks.
- Protect the docks by constructing a breakwater.
- Cost estimate for the recommended plan according to the Shoreline Erosion Management Plan is $775,000.

Bo Wood Recreation Area – Phase 2
- Remove 58 campsites, related facilities and roads. This will leave an uneconomical remnant for a campground; therefore, remove and replace a majority of the campground and access to the boat ramp to another location within the Bo Wood Recreation Area to ensure continued public use of this area.
- Cost estimate for the recommended plan according to the Shoreline Erosion Management Plan is $1,617,000.

Whitley Creek Recreation Area – Part of Phase 4
- Protect the boat ramp.
- Cost estimate for the recommended plan according to the Shoreline Erosion Management Plan is $431,000.

Opossum Creek Recreation Area – Part of Phase 4
- Protect the boat ramp, but not that portion of the parking lot within the erosion limit. If this part of the parking lot becomes unsafe, remove it.
- This recommendation is removed from the Shoreline Erosion Management Plan. Proposed actions for the Opossum Creek boat ramps are mentioned in Section 8.05.

Coon Creek Recreation Area – Phase 3
- Protect the boat ramp.
- Cost estimate for the recommended plan according to the Shoreline Erosion Management Plan is $362,000.
- Protect the beach and the parking area.

- Cost estimate for the recommended plan according to the Shoreline Erosion Management Plan is $259,000.
- Protect the turnarounds.
- Cost estimate for the recommended plan according to the Shoreline Erosion Management Plan is $560,000.

Lone Point Recreation Area – Part of Phase 4

- Protect location along the eastern shoreline of the campground that will be threatened with erosion within the next 30 years (baseline year 1990).
- Cost estimate for the recommended plan according to the Shoreline Erosion Management Plan is $199,000.
- Designate this area for overnight group use only so that all overnight group use occurs in this area. No new or additional facilities will be provided. (Based on customer needs, utilization, and efficiency this item has been revised in this master plan as stated in Section VIII.).

Okaw Bluff Group Camp – Part of Phase 4

- Remove and replace group camp and remove facilities as they become unsafe.
- Continue as an operation and maintenance area by replacing facilities for the Naval Reserve Construction Battalion (Sea Bees) to utilize.
- Cost estimate for recommended plan according to the Shoreline Erosion Management Plan is $234,000.

Wilborn Creek Recreation Area – Part of Phase 4

- Protect the boat ramp.
- Cost estimate for recommended plan according to the Shoreline Erosion Management Plan is $356,000.
- Protect the road and parking lot located in the northwestern part of the area near the beach.
- Cost estimate for recommended plan according to the Shoreline Erosion Management Plan is $46,000.
- Remove and replace picnic shelter.

Wolf Creek State Park – Part of Phase 4

- Protect the boat ramp.
- Cost estimate for recommended plan according to the Shoreline Erosion Management Plan is $358,000.

Camp Camfield – Part of Phase 5

- Realign trails as they become unsafe.

Bluestem Future Recreation Area (Area F) – Part of Phase 5

- Realign or remove gravel roadways as they become unsafe.

11-13. WATER SUPPLY STORAGE DEMANDS.

Currently Lake Shelbyville has 177,795 acre-feet joint-use storage volume. 24,714 acre-feet can be utilized for water supply, which is 13.9% of joint-use volume. Yield estimated is 17 mgd after 40 years of sedimentation.

Currently Carlyle Lake has 230,227 acre-feet joint-use storage volume. 32,692 acre-feet can be utilized for water supply, which is 14.2% of joint-use volume. Yield estimated is 24.5 mgd after 40 years of sedimentation.

The following is a listing of existing State water supply contracts for Lake Shelbyville:

1. Eagle Creek (existing – golf course irrigation) up to 480 acre-feet (lake withdrawal)
2. Holland Energy (existing – electric generation) up to 8.0 mgd release (river withdrawal)
3. Timberlake Golf Course (existing – irrigation) up to 50 acre-feet (lake withdrawal)
4. Shelby County Country Club (existing – irrigation) up to 50 acre-feet (lake withdrawal)
5. Holland Regional Water System (existing – regional public water supply) up to 7.5 mgd release; requests maximum average annual daily release of 5.0 mgd. They intend to share Holland Energy's withdrawal structure located upstream of Cowden.

Below is a budget analysis of the water supply demands and water supply available:

Formal Request From	Avg Annual Use	Peak Use	Supply	Withdrawal
Gateway PWS	4.0 mgd	6.3 mgd	Carlyle	Lake
Dynegy (Baldwin)	14.35 mgd	58.0 mgd	either	River(Releases)
Prairie State Generating Company	13.35 mgd	18.0 mgd	either	River (Releases)
Totals	31.7mgd	82.3 mgd		

Lake Shelbyville Available Supply — Carlyle Lake Available Supply

Existing Water Supply Contracts:

Eagle Creek Golf Course	480.0 acre-feet
Shelby Country Club	50.0 acre-feet
Timberlake Golf Course	50.0 acre-feet
Holland Energy	8.0 mgd
Holland Energy	5.0 mgd
Prairie State Generating Co.	3.5 mgd

Governor's Run Golf Course 190 acre-feet equivalent to less than 0.2 mgd

Existing Contract Summation = 17 mgd

Available Supply = 17 – 17 = 0 mgd Available Supply = 24.5 – .2 = 24.3 mgd

Total Available Supply: Lake Shelbyville and Carlyle Lake = 0 + 24.3 = 24.3 mgd
Total Average Annual Demand = 31.7mgd
Negative Balance (Demand exceeds Supply) -7.4 mgd

As shown, the total water supply demand exceeds the available supply by 7.4 mgd. Considerations are being made in an effort to satisfy all the requests with a provision for potential time-line allocation reductions based on contract reductions in State storage due to sedimentation and increased needs of public water supply systems. The initial water supply needs of Holland Regional and Gateway will be much less than the quantity being requested since their systems needs are based on phased development of water treatment facilities and service area growth.

Currently the Illinois Department of Natural Resources is conducting an analysis of the lake and river impacts in allocating the remaining water supply storage in Lake Shelbyville and Carlyle Lake.

11-14. BACKLOG MAINTENANCE AND REPAIR PLAN.

The majority of the facilities at Lake Shelbyville were constructed in the early 1970's; therefore, most have exceeded their service life. Age of facilities combined with increasing demands from visitors has resulted in facility conditions in which routine maintenance is not sufficient. These facilities now require either major renovation or complete replacement in order to remain operational. An extensive inventory and analysis was conducted of all facilities and structures at Lake Shelbyville by an employee task force team. Lake Shelbyville work leaders and management reviewed the task force team report and recommendations were made for future maintenance and replacement items. Decisions were made by analyzing conditions of existing facilities and evaluating customer usage trends in an effort to reduce project operation and maintenance costs, better serve the customers, improve efficiency, and increase utilization and revenue. All of the recommendations for future maintenance and replacement items are included in the proposed items for each recreation area in Section VIII.

Machinery in the main dam is approximately 33 years old. Some of the machinery is obsolete and need of repair. To ensure safe and reliable operation of the main dam the machinery system needs to be examined to determine what needs to replaced or renovated. The metal spiral staircases in the east and west galleries were originally painted with lead-based paint. The staircases are rusting, which is affecting the structural integrity and replacement is needed. The main dam also has confined space and security issues and

concerns that need to be addressed. Main dam water seepage and pressure monitoring devices (piezometers) are becoming inoperable and need to be replaced as needed.

Most of the electrical service lines in the recreation areas are over 30 years old and are deteriorating and is need of replacement. Some of it does not meet electrical code, parts experience frequent breakdown, and the current 30-amp campsite electrical hookups do not accommodate customer needs. Most camping units today require 50-amp electrical service. Upgrading the camping units from 30-amp service to 50-amp service would reduce operational maintenance; improve efficiency, and increase utilization and revenue.

Water and sewer lines within recreation areas are in need of replacement due to age and deterioration. Many of the lines no longer meet codes, require frequent repair, and are often unreliable. Large quantities of ground water infiltrate the sewage systems through the deteriorating lines causing excessive flows into wastewater treatment facilities and unnecessary wear-and-tear on lift stations.

Some of the comfort stations, shower buildings, water fountains, and hydrants need to be consolidated, renovated, removed, or replaced to reduce operation and maintenance costs, improve efficiency, and accommodate customer needs. Some of the plumbing concerning these facilities does not meet plumbing code and frequent repairs are needed. Some of the comfort station and shower building masonry structures are deteriorating.

All major maintenance and repair work items are reviewed and updated during each fiscal year. All items are ranked in priority order and included in the next scheduled budget request ensuring that the budget request reflects the complete listing of resource needs for the lake. In addition, all items are approved in the Lake Shelbyville Master Plan and the Operational Management Plan.

During each fiscal year, the Backlog Maintenance and Repair (BMAR) list is reviewed. This list ranks all work items at the lake above and beyond the normal Operation and Maintenance (O&M) work at the lake. As new items are identified, they are added to the list. This list forms the basis for future budget requests.

In the last quarter of each fiscal year, the lake develops work plans which detail the specific items of work that need to be done at the lake during the upcoming fiscal year. Included in these work plans are the BMAR work items. While there is never enough funding for all these items, several of the highest priority items are approved conceptually so that if funding becomes available, this work may be done.

Funding is available from several possible sources: O&M funds, cost shares and Congressional additions. Availability varies and constant diligence is required to identify and develop sources. At times, additional funds become available at the end of the fiscal year or from unanticipated sources such as flood damage repairs or security improvements. Advance planning is necessary to be prepared should additional funding become available during each fiscal year from any source.

In short, the lake maintains a comprehensive list of major work items that is reviewed regularly. Funding requests are made through normal channels annually. Additional funding sources are developed and requests are made as opportunities are presented.

11-15. BOAT RAMP FACILITIES

a) General. All of the boat ramps at Lake Shelbyville have a design deficiency because they are not wide enough to meet facility standards, which includes accommodating a courtesy dock. By 1970, all of the primary boat ramps at Lake Shelbyville were constructed based on proposed use criteria and standards that accommodated the average boat and trailer size for that time period. According to current Corps of Engineers Recreation Facilities and Customer Services Standards EM-1110-1-400, minimum boat ramp launch lane width is 15 feet and a courtesy dock must be provided with a minimum width of six feet and a minimum length of twenty feet. By these standards a four-lane boat ramp should be 66 wide and the four-lane ramps at Lake Shelbyville are only 58 feet wide, which is 8 feet short of meeting today's standards.

To accommodate Corps of Engineers recreational standards for public safety each boat ramp has a portable courtesy dock, which takes up at least one lane at each ramp. Due to the size of boats and courtesy dock placement a four-lane boat ramp is only operational as a three-lane ramp and a two-lane boat ramp is only operational as a one-lane ramp. It is proposed to renovate all primary boat ramps except for the one within Dam West Recreation Area to accommodate the courtesy docks so that all of the authorized lanes can be utilized.

Other required or recommended items in EM-1110-1-400 that pertain to boat ramps include minimum of two lanes for standard launch ramps, with actual number of lanes determined by usage demand and additional launch lanes considered where launch line waiting time exceeds 10 minutes during peak periods and carrying capacity makes additional lanes feasible.

b) Dam West Recreation Area Primary Boat Ramp Facility. Dam West Recreation Area is the busiest day-use recreation area at Lake Shelbyville with a total of 481,630 visitor hours in 2003. Available parking spaces for the boat ramp area include 145 vehicle towing trailer spaces and 175 individual vehicle

spaces. Two individual vehicle spaces will accommodate a trailer and tow vehicle. This area is heavily congested due to use by both the general public and fishing tournament participants, especially on the weekends from Memorial Day to Labor Day. In 2003, from the first weekend in April to the first weekend in September, nine fishing tournaments were held in this area. Two out of the nine tournaments had 100 boats in them and two others had 150 boats in them. During the larger fishing tournaments all of the parking spaces are full and vehicles have to park along the roadsides in the grass. The area experiences both major boat ramp congestion and long waiting periods during these fishing tournaments, especially during the afternoon when all of the tournament boats are trying to get off the water and the general public is trying to get on the water.

The Dam West Recreation Area is authorized a four-lane boat ramp, but due to the courtesy dock and size of boats it only functions as a three-lane ramp and does not meet the current Corps of Engineers facility standards. Renovating the existing ramp to accommodate the courtesy dock is not an option because the area where the ramp is located cannot accommodate the additional width which would include adding to the existing boat maneuvering and backing area. Also, a comfort station would have to be removed to accommodate the construction of the addition and this in turn would not alleviate all of the problems associated with the boat ramp area.

It is proposed that the existing primary boat ramp will remain the same and will be operational as a three-lane boat ramp with a courtesy dock and a two-lane ramp with a courtesy dock will be constructed within the vicinity of the large group shelter to help disperse the use within the area and to better manage fishing tournament activity in conjunction with the large group shelter.

In addition, the existing primary boat ramp within this area becomes non-functional at the lake level of 610. The area near the Dam West large group picnic shelter where the two-lane ramp is proposed has an elevation 612. A boat ramp in this area will extend the visitor operational use of the boat ramps within Dam West Recreation Area.

From 1971 to 2003 in the timeframe of May 1 thru September 30, which is approximately 4,896 days, the lake level was above 612 for 289 days, which comes to approximately 5.9% of the time and the lake level was in between 610 and 612 for 207 days, which comes to approximately 4.2% of the time.

This proposal will bring the total number of boat lanes within the Dam West Recreation Area to five (original 4 lanes plus one lane relocated from Opossum Creek Recreation Area). The total number of authorized boat ramp lanes for Lake Shelbyville will remain the same. However, locations will be adjusted to better accommodate visitor demands and management objectives.

c) Opossum Creek Recreation Area Boat Ramp Facilities. The existing boat ramp facilities within Opossum Creek Recreation Area include a four-lane primary ramp and a two-lane high water ramp. This recreation area is located approximately 5 miles north of Dam West Recreation Area, 5 miles south of Coon Creek Recreation Area and approximately 8 miles southwest of Lone Point Recreation Area. The boat ramps within those other three areas are very heavily used and the Opossum Creek ramp is the least used out of all of the ramps located at Lake Shelbyville. The reason this ramp is not used is because launches must be made on the main portion of the lake where the waves from the wind and boat traffic makes it very difficult to maintain control of a boat while it is being launched.

It is proposed to consolidate the primary ramp within this area with the high water ramp, which is located in a protected cove. A three-lane year round ramp with a courtesy dock would exist after the consolidation is made. Both of the ramps share the same parking lot, so additional parking would not be needed. The parking lot would need to be rehabilitated to remove an incline, which exists at the entrance to the high water ramp. This incline makes it difficult to back down the ramp without losing sight of the boat that is being towed. Removing the incline would be part of rehabilitating the high water ramp into a year round ramp. After the high-water ramp is rehabilitated it will alleviate some of the pressure at the other nearby ramps. In addition, user fee revenue will increase at this ramp as use will increase. Operation and maintenance costs will be reduced because the number of boat ramps that need to be maintained in this area is reduced from two to one.

d) Lithia Springs Recreation Area Boat Ramp Facilities. Three types of visitors, day-users, campground users, and marina users, utilize the boat ramp facilities within Lithia Springs Recreation Area. The boat ramp facilities that are maintained by the Corps of Engineers within this area includes a two-lane primary ramp, two-lane high water ramp, and a parking lot that has twenty-one individual vehicle spaces and forty-six vehicle towing trailer spaces. The Lithia Springs Marina facilities, which are maintained by a private concessionaire, are on both sides of the boat ramp.

Parking and boat launching congestion problems exist for both the Corps of Engineers and the marina because there are not enough parking spaces and launching lanes to accommodate the number and types of users. In 2003, the total number of visitor hours for the Lithia Springs Recreation Area was 4,887,894 and 420,861 visitor hours for the Lithia Springs Marina. Due to lack of parking and other circumstances, day-users utilize the marina parking lots and marina slip renters utilize the day-use boat ramp parking lot. To help alleviate the congestion and increase revenue it is proposed that the existing boat ramp and marina parking lots be enlarged so that the different types of users can be separated and managed more efficiently. The existing two-lane

primary and high water boat ramps within this area are only useable as a one-lane ramp due to the placement of the courtesy dock. Delays in launching occur due to the size of the ramps and due to both the marina and the public utilizing the ramp at the same time. It is proposed that both these ramps be renovated to accommodate a courtesy dock, so that the ramps can be utilized as two-lane ramps.

e) High Water Boat Ramp Facilities on the Northern Portion of Lake Shelbyville. Currently on the northern portion of the lake there is authorization for two two-lane high water boat ramps. One is located within the Bo Wood Recreation Area and the other one is located within the Wilborn Creek Recreation Area. Due to courtesy dock placement, the existing two-lane ramps function as one-lane ramps, so during periods of high water between lake levels of 610 and 614, only two boat ramp lanes accommodate all lake visitor boat launching activity from the Bo Wood, Wilborn Creek, and Whitley Creek Recreation Areas, Sullivan Marina and Campground, Okaw Bluff Group Camp, and all minor access areas on the northern portion of the lake. During that period of high water, the Bo Wood and Wilborn Creek boat ramps become heavily congested and launch waiting time is usually up to two hours.

The design of the Wilborn Creek high water ramp, which is associated with the primary boat ramp parking lot, is a concern of public health and safety because when the lake level reaches 610.10 the parking lot starts to be inundated by water and is completely inundated at 615.90, which closes the high water ramp.

At the lake level of 615.90 or higher, the single useable launching lane within Bo Wood Recreation Area serves the entire northern portion of the lake. The congestion and launch waiting time at the Bo Wood ramp only increases and at times becomes completely unmanageable when the Wilborn Creek ramp closes. The available parking spaces within the Bo Wood boat ramp area include 49 vehicle towing trailer spaces and 91 individual vehicle spaces. Two individual vehicle spaces can accommodate a trailer and tow vehicle. When the only ramp open on the northern portion of the lake is the one at Bo Wood, the majority of the time all of the spaces are full and vehicles are parked along the road and in the grass areas within the picnic area.

The lake level history for 2002 was as follows:

610.0 to 615.0	40 days
615.1 to 615.8	14 days
615.9 or above	16 days

Total days above 610.0 (May 13 – July 21) 70 days

It is proposed that a four-lane high water ramp be constructed within the Whitley Creek Recreation Area. This would alleviate congestion and launch

waiting times that occur within the Bo Wood and Wilborn Creek Recreation Areas. Before the high water ramp is constructed within the Whitley Creek Recreation Area options of consolidating the primary ramp with the high water ramp will be investigated to reduce operation and maintenance costs.

Table 19
Lake Shelbyville Boat Ramp Elevations

Bo Wood Recreation Area Primary boat ramp becomes unusable at elevation 609.94 High water boat ramp becomes usable at elevation 606.0 High water boat ramp becomes unusable at elevation 621.79
Dam West Recreation Area Primary boat ramp becomes unusable at elevation 609.94 High water boat ramp becomes usable at elevation 606.0 High water boat ramp becomes unusable at elevation 627.64
Lithia Springs Recreation Area Primary boat ramp becomes unusable at elevation 609.81 High water boat ramp becomes usable at elevation 606.0 High water boat ramp becomes unusable at elevation 616.66
Lone Point Recreation Area Primary boat ramp becomes unusable at elevation 609.41 High water boat ramp becomes usable at elevation 607.0 High water boat ramp becomes unusable at elevation 624.69
Opossum Recreation Area Primary boat ramp becomes unusable at elevation 609.90 High water boat ramp becomes usable at elevation 604.0 High water boat ramp becomes unusable at elevation 629.06
Wilborn Creek Recreation Area Primary boat ramp becomes unusable at elevation 610.10 High water boat ramp becomes usable at elevation 609.0 High water boat ramp crest is at elevation 617.30***** *Note: Access to the high water ramp goes under water at elevation 615.90