



LAKE CHARLESTON

Master Plan

February 2014



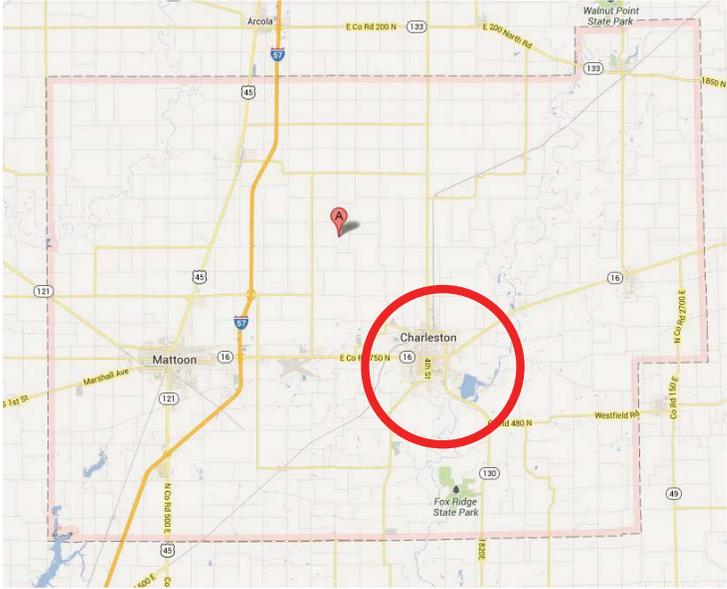
SITE ANALYSIS

CONTEXT

STATE



COUNTY



CITY

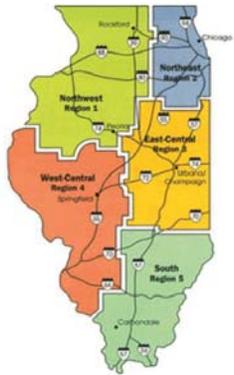


Conclusion:

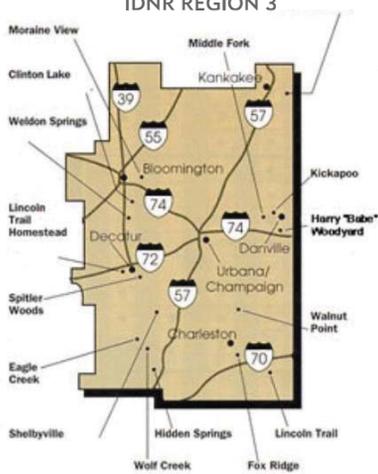
- 1. Lake Charleston represents one of the most significant recreational resources in east-central Illinois.
- 2. Lake Charleston is the largest lake in Coles County.

LAKE CHARLESTON'S RELATIONSHIP TO REGIONAL RECREATION

IDNR REGIONS



IDNR REGION 3



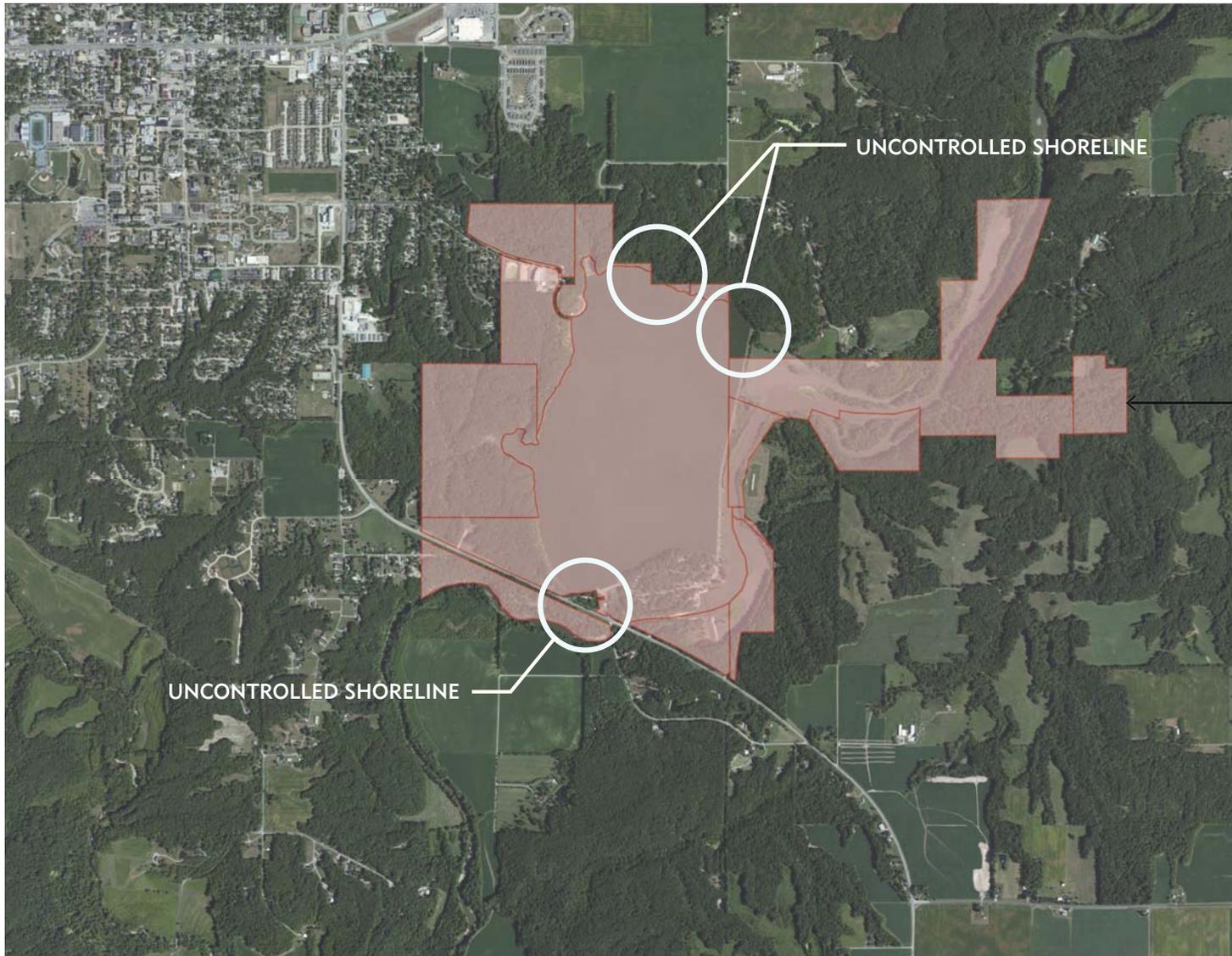
IDNR REGION 3 - REGIONAL PROGRAMMING OFFERED

Recreational Resources, IDNR Region 3	Regional Programming Offered																	Size (Acres)	Notes														
	Beach	Boating	Camping	Concession	KC Skiing	Fishing	Hiking and Running	History	Horseback Riding	Hunting	Picnicking	Swimming	Winter Sports	Dog Training	Trap Range	Snowmobiling	Mountain Biking			Canoeing	Scuba Diving	Archery	Trapping	Amphitheatre	Springs	Zipline	Adventure Course	Springs	Nature Playground	Sand Volleyball	Ice Skating	Breeding	Rock Climbing
Clinton Lake State Recreation Area	●	●	●	●	●	●	●	●	●	●	●	●	●																			9300	
Eagle Creek State Recreation Area		●	●	●		●	●	●	●	●	●	●	●																			2200	
Fox Ridge State Park		●	●			●	●	●	●	●	●	●	●																			2064	
Harry "Eliab" Woodyard State Natural Area						●	●	●	●	●	●	●	●																			1104	
Hidden Springs State Forest			●			●	●	●	●	●	●	●	●																			1200	
Iroquois State Wildlife Area				●		●	●	●	●	●	●	●	●	●	●	●	●															2480	
Kickapoo State Recreation Area		●	●	●	●	●	●	●	●	●	●	●	●							●												2842	
Lincoln Trail State Park	●	●	●	●	●	●	●	●	●	●	●	●	●					●														1023	
Lincoln Trail Homestead State Memorial				●	●	●	●	●	●	●	●	●	●																			162	
Middle Fork State Fish and Wildlife Area	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●												2700	
Moraine View State Recreation Area	●	●	●	●	●	●	●	●	●	●	●	●	●																			1687	
Shelbyville State Fish and Wildlife Area	●					●	●	●	●	●	●	●	●								●											6200	
Spiller Woods State Natural Area			●			●	●	●	●	●	●	●	●																			203	
Walnut Point State Park	●	●	●	●	●	●	●	●	●	●	●	●	●																			671	
Weldon Springs State Park			●	●	●	●	●	●	●	●	●	●	●										●									550	
Wolf Creek State Park	●	●	●	●	●	●	●	●	●	●	●	●	●							●												785	

TOTAL IDNR R3 ACREAGE 35171

Conclusion:

1. The region offers many traditional recreational programming opportunities, but there is an opportunity at Lake Charleston to offer unique adventure-based programs in order to create a distinct brand for the park and the community.
2. The Lake Charleston recreational area is of a scale that rivals state parks.



PROPERTY OWNERSHIP

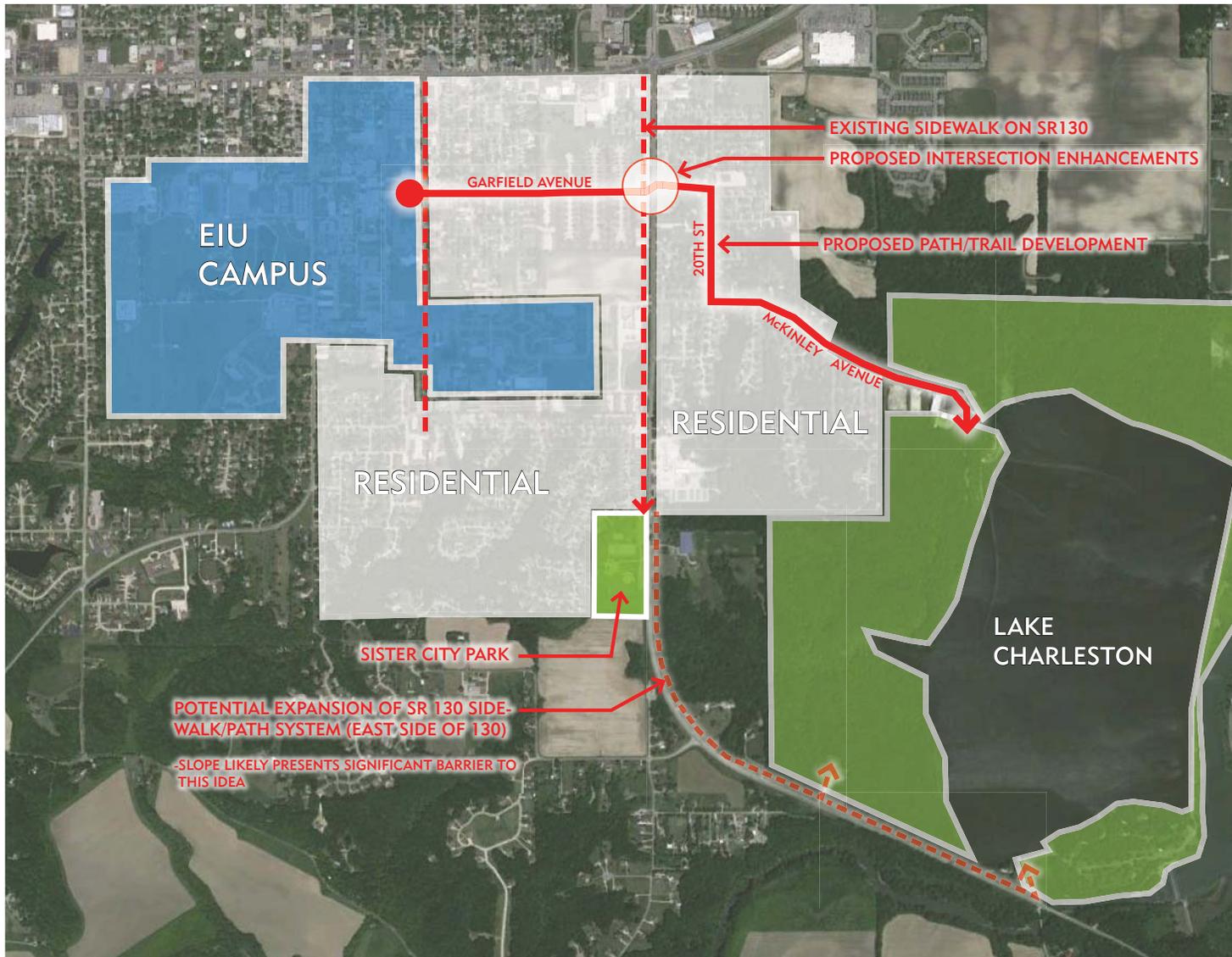
965 ACRES TOTAL OWNED BY CHARLESTON ADJACENT TO LAKE (for all shaded land north of SR 130)-

- LAKE IS 440 ACRES
- LAND IS 525 ACRES
- APPRX 200 ACRES IS CONTIGUOUS TO RESIDENTIAL AREAS

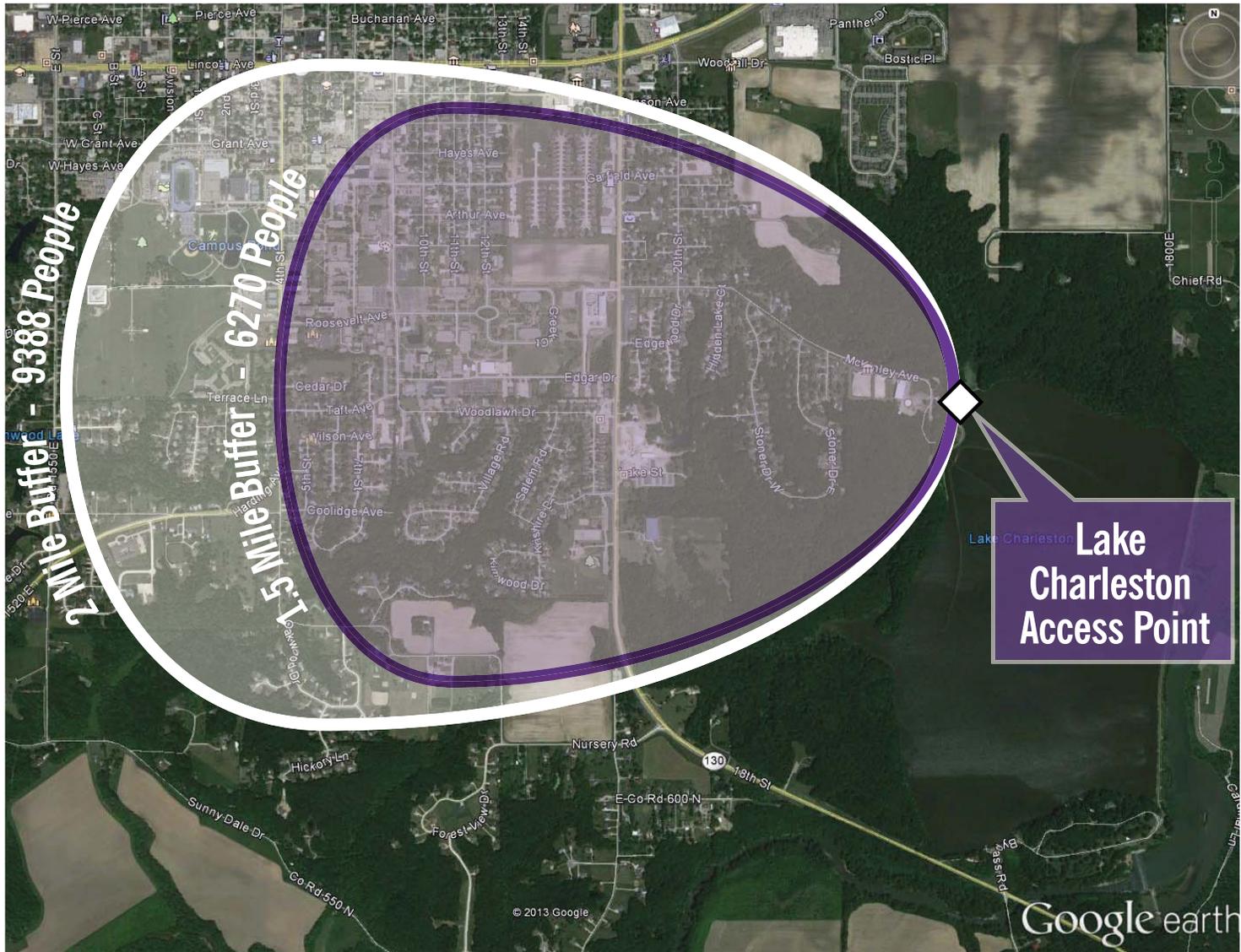
Conclusion:

Charleston does not control 100% of the Lake Charleston shoreline.

Securing control of the entire shoreline and some portion of the adjacent land would mean providing access to 965 acres of recreational area to the citizens of Charleston, and would enhance this resource as a regional attraction.



BIKE/PED ACCESS



SERVICE POPULATION



EXISTING PARKS

BACKGROUND

Lake Charleston is located on the Embarras River in Coles County in east-central Illinois. The main stem of the Embarras River originates in the City of Champaign and flows in a southerly direction to Lake Charleston.

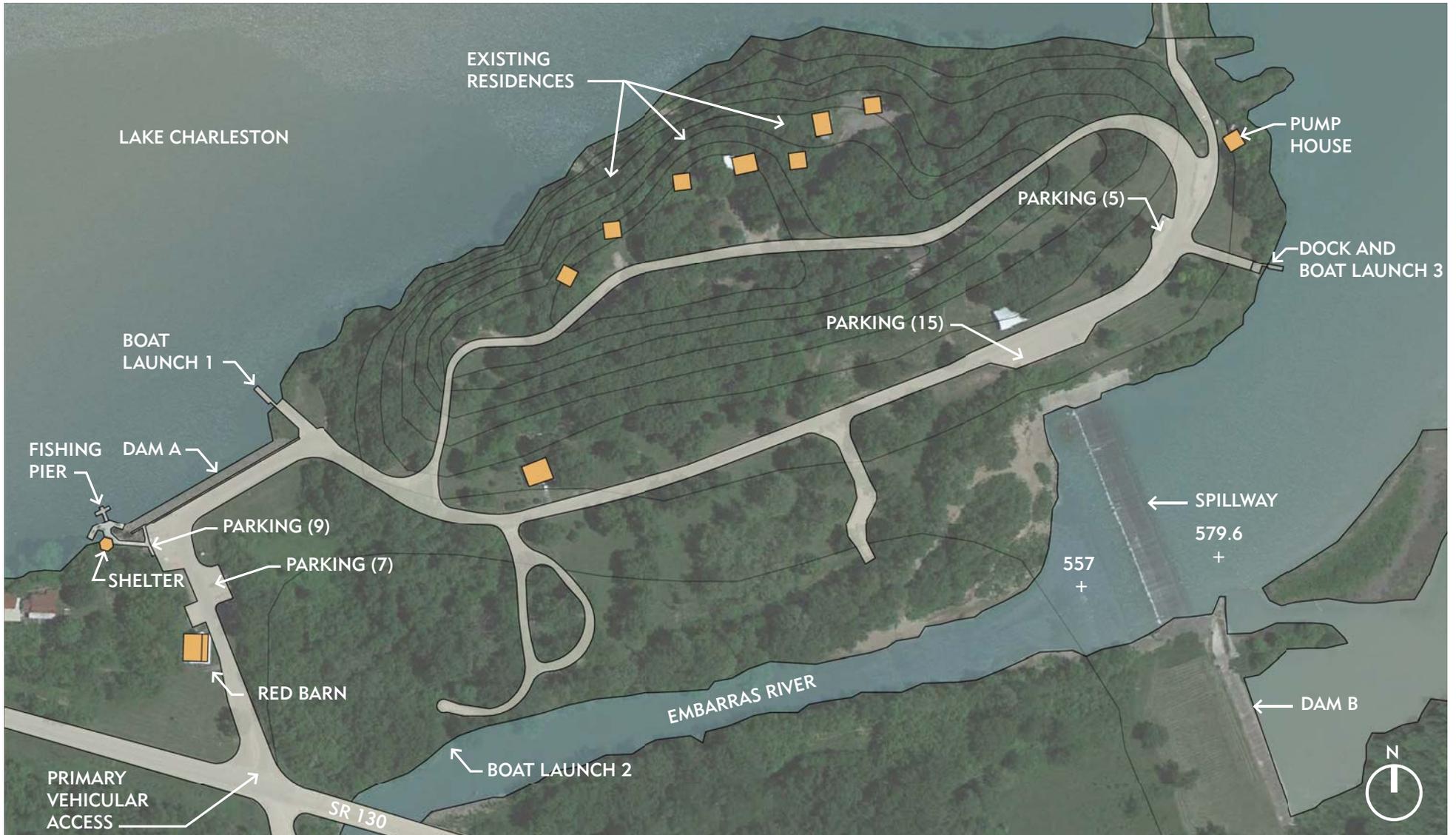
The drainage area of the Embarras River upstream of the Riverview Dam at Lake Charleston is 786 square miles and drains parts of Champaign, Vermilion, Douglas, Edgar and Coles Counties. There are no other major lakes or dams in the watershed upstream of Lake Charleston.

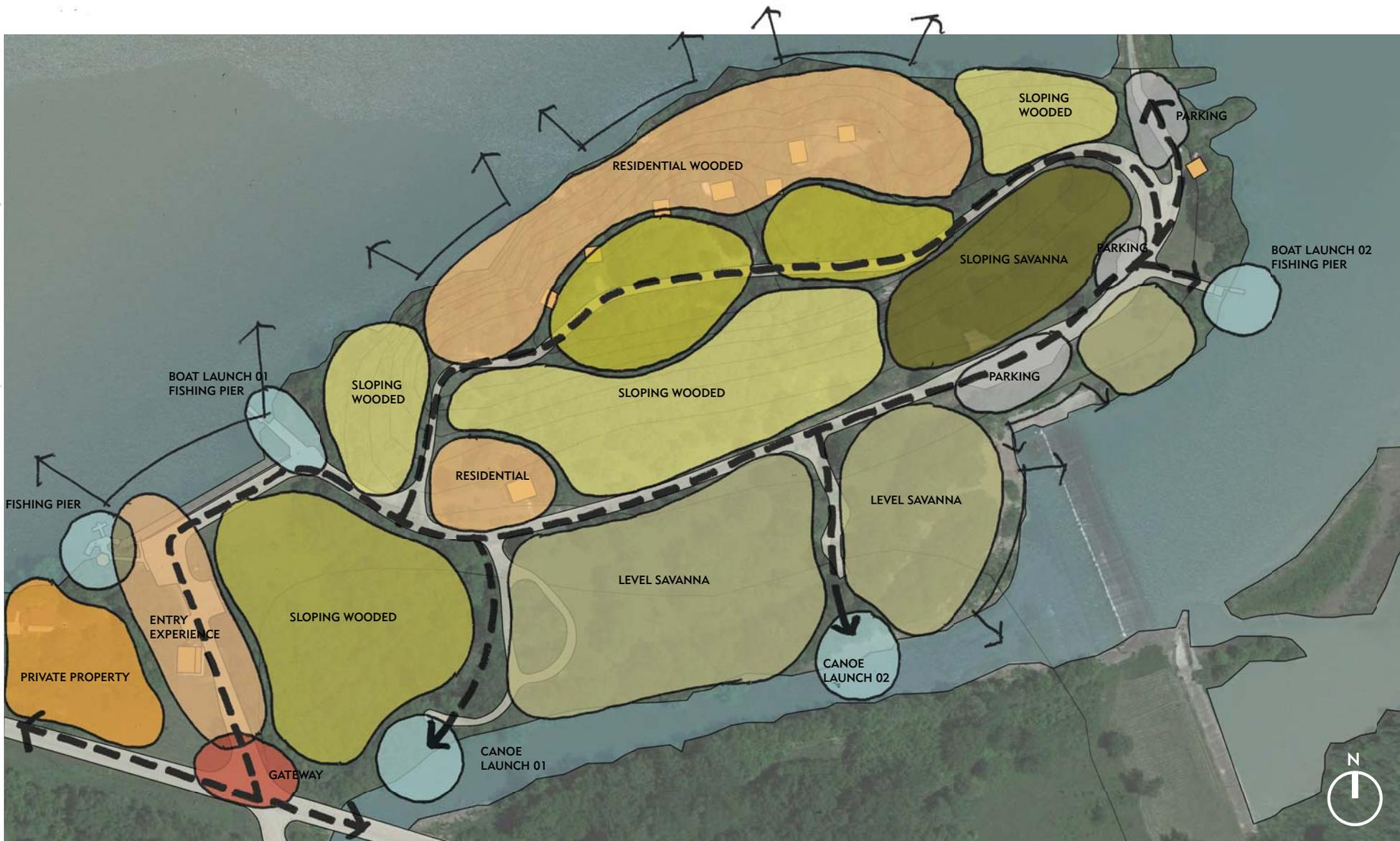
Lake Charleston serves as the sole source of water supply to the City of Charleston and Eastern Illinois University. The lake was initially created by construction of a dam across the Embarras River in 1947. The dam consists of two earth embankments and a 420-foot long overflow spillway.

In 1982 the City of Charleston constructed a dike across the lake to form a side channel reservoir which could hold water at an elevation 8 feet higher than the old lake. This increased the water supply. At the same time, the Embarras River was diverted away from the side channel reservoir in order to reduce the sedimentation rate.

Water is now pumped from the old lake bottom outside of the dike to the side channel reservoir to maintain adequate water supply for the city. (From Channell Scour Induced by Spillway Failure at Lake Charleston, Illinois by Demissie, Bogner, Tsihrintzis and Bhowmik, 1986).

The current planning effort has been brought about by land use changes on the Peninsula, or Lake Island Tract. Several families and individuals have leased land on the north side of the peninsula since the 1950s. In 1992, the City Council voted to have all leases renewed until 2009, at which time the land would be transformed into a recreational area. The residents and the City have been engaged in a legal dispute for several years regarding this transition. One objective of the plan is to identify potential ways that the Lake Island Tract can become a regional recreational destination and thereby inform the conversation about land use transition.







View From Dam A



Dock and Boat Launch 3



Red Barn



Landscape Character, Lower Park



Spillway



Landscape Character, Upper Park



Pump House

GOALS

- Create pedestrian and cyclist connection(s) between Lakeview Park, Woodyard Conservation Area and the Lake Island Tract.
- Provide pedestrian access throughout the peninsula
- Minimize vehicular access in favor of peds/bikes
- Create link between residential areas and the three recreational areas
- Improve the basic function and appearance of the Peninsula (objective?)
- Increase the program offerings on the Peninsula (objective?)
- Identify the best use of the north side of the peninsula at the time that the land use transition occurs
- Make the recreational experience on the Peninsula so compelling it will justify the land use transition being pursued by the City

PROGRAM

Basic Requirements

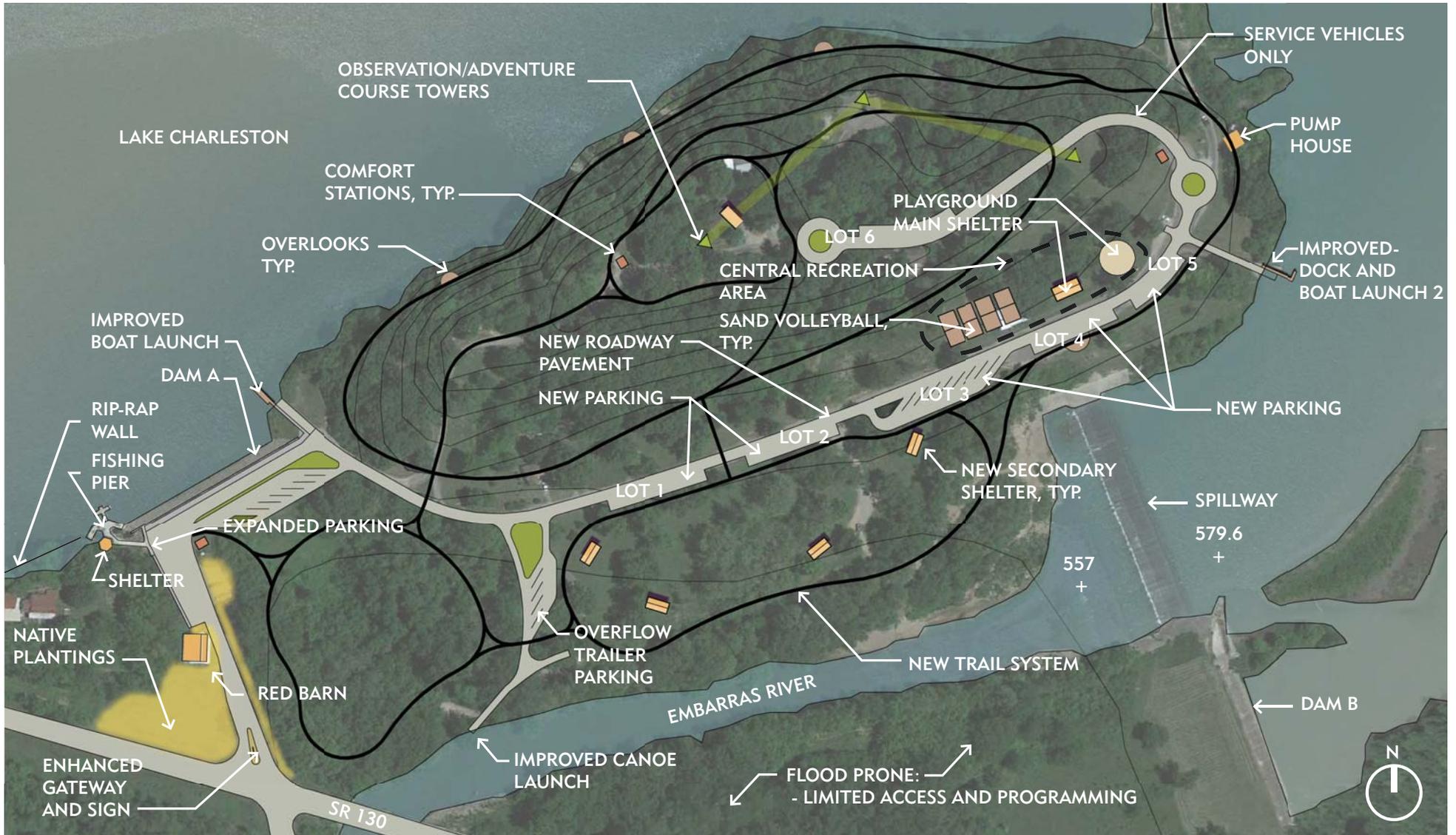
- Canoe/Boat Launch Improvements
- Designated Fishing Areas
- Large Shelter
- Modest Restroom Facilities
- Nature Playground
- Sand Volleyball
- Sledding Hill
- Trails - hiking and x-country skiing

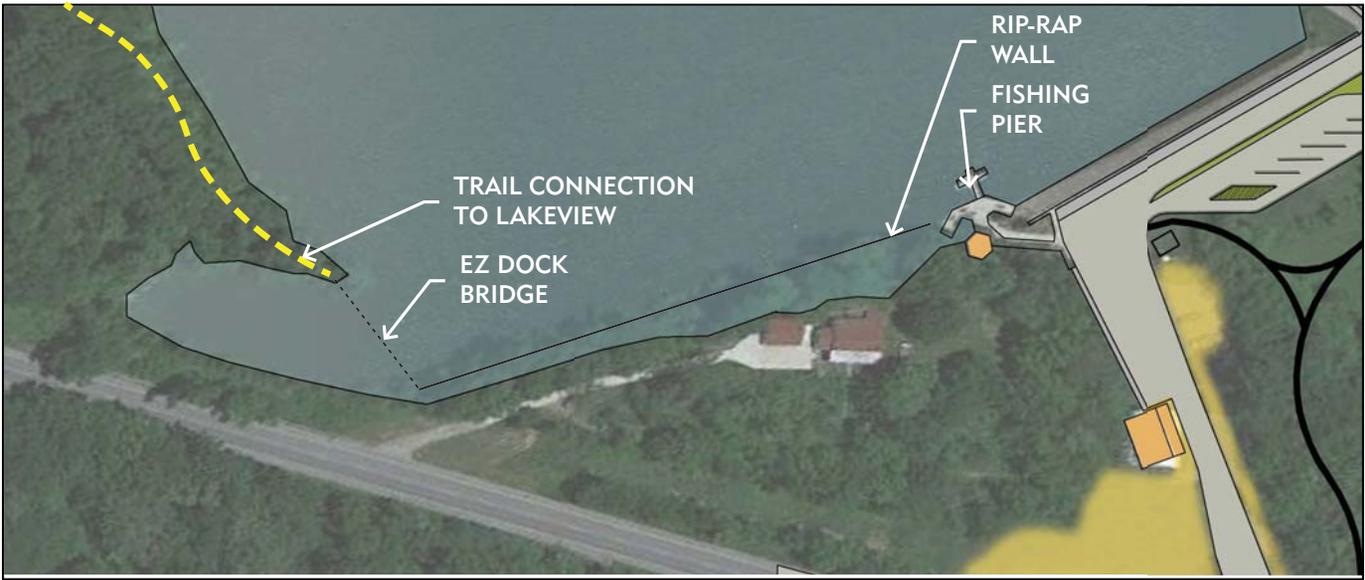
Unique/Regional Attraction Possibilities

- Adventure Course/Zipline (potentially run by private vendor)
- Archery Range Camping (Boy Scouts/Girl Scouts)
- Mountain Bike Trail
- Music Venue
- Observation Tower
- Outdoor Ice Skating Facility
- Paintball (private vendor)



MASTER PLAN







TRAIL SYSTEM

EXISTING TRAIL SYSTEM

A well established and well maintained single track trail system for both hikers and bikers exists within Lakeview Park. The two main loops of the system are generally flat and easily accessible with spurs from the main loops that offer more advanced travel with steeper switchbacks, and access to the lower wetlands. The route offers opportunities for views out to the lake and beyond that could be enhanced with tree removals or viewing platforms. The trail ends at the wetland noted as C on the illustration. With low water levels in the fall, the wetland is easily crossable on existing deer paths.

CONNECTING TRAIL SYSTEM

The trail system shown is an example of potential new trails to complete the connection from Lakeview through Woodyard and to a southerly point to cross Lake Charleston for access to the Lake Island Tract. Further study is needed to determine the necessity of a permanent structure to cross the wetland. This structure could be a simple boardwalk or similar to the footbridges that currently exist within the park. In the spring or after heavy rains this area may be inundated with water making it inaccessible without the aid of a simple boardwalk or footbridge to cross the low points. After crossing the wetland the terrain is steep but access to the higher elevations is accessible with a series of switchbacks. The higher elevations are generally flat and tend to be good for trail layout.

KEYNOTES

- A. Wayfinding. While the trail is easy to find from the parking lot a kiosk with trail information, including a permanent trail map, and trail rules is needed. Permanent trail markers along the route with trail designation and distances would enhance the experience. Current trail wayfinding efforts have become unreadable over time.
- B. A high vista of over Lake Charleston and to the Lake Island Tract is offered. Creation of a viewing area is recommended.
- C. Location of wetland crossing via footpaths, boardwalk or footbridge.
- D. Connection and creation of trail head and trails to Woodyard.
- E. Termination of the trail system with a connection point to cross the cove via installation of an EZ Dhaaock system for access to the Lake Island Tract.

LEGEND

- Existing Trail - - - - -
- Future Trail - - - - -



Single Track Trail



Trail Wayfinding



High Vista



Approach to Wetland



Wetland



Wetland Crossing



Upper Elevation Terrain



Approach to South Connection



Approach to South Connection



PHASING

As part of the master plan process a schedule of implementation of the different features has been created. The schedule is broken into phases that are grouped together with like elements. Below is a brief description of the amenities in each phase.

Phase 1

Phase 1 will focus on smaller efforts that will make an immediate visual and usage impact for a lower investment.

1. As part of the 2013/14 budget staff is planning to remove the docks at the river and the lake and replace them with EZ Dock floating dock units. These units are the same as was installed at the pavilion. Cost: \$20,000
2. To better announce the entry to the park a portion of the existing asphalt will be milled and replaced and a new entry sign will be added. Cost: \$23,825
3. To limit patron vehicular access to the levee a gate will be installed at the top of the road leading down to the levee. Access will remain for city vehicles but the gate will stop cars from parking at the bottom of the incline. Cost: \$2,000

Phase 1 Total: \$45,825

Phase 2

Phase 2 focuses on a central recreation area with a larger investment. This recreation area, located in roughly the same location as the previous shelter, will offer different amenities that will attract different demographics and serve to activate usage at the peninsula. In order to reactivate the peninsula area, the elements proposed in this phase would be most effective if done at one time rather than in separate phases.

1. The main shelter for the park is located in this area with an attached double comfort station which consists of men's and women's facilities. Due to the nature of the surrounding environment it was determined that a vault system is the best option as opposed to a septic and more cost efficient compared to running a sanitary line to the site. Cost: \$180,884
2. To attract families to the peninsula a large playground is proposed. By purchasing the play equipment through the U.S. Communities program and installing it with city forces the city would be able to better maximize the money expended. Cost: \$125,000
3. 4 sand volleyball courts are proposed. These courts could be programmed for volleyball leagues during the week or weekend and utilized by patrons who are using the shelter when leagues are not occurring. Cost: \$28,425
4. Site furnishings; benches, drinking fountains, grills, picnic tables and trash receptacles. Cost: \$15,746
5. Site utilities; electric and water service. Cost: \$20,000

Phase 2 Total Cost: \$370,054

Phase 3

To provide park users opportunities to use other parts of the park for gatherings a series of 5 smaller secondary picnic shelters, each with picnic tables are proposed.

Phase 3 Total Cost: \$176,791

Phase 4

As part of ongoing facility maintenance the ramps at the lake and the river would be removed and replaced.

Phase 4 Total Cost: \$48,526

Phase 5

The condition of the existing road is very poor in some locations and is wider than it needs to be for the purpose it serves. This phase is to only mill and resurface the existing road but consideration should be given to making the road narrower.

Phase 5 Total Cost: \$171,105

Phase 6

In order to alleviate the overflow parking during certain peak usages times on the lake, like crappie season, overflow parking is proposed near the lake boat launch. This asphalt parking lot will require a large amount of fill that will be supplied by city forces.

Phase 6 Total Cost: \$122,500

Phase 7

As the park begins to develop, users will have a need to park at various points around the park rather than at the peninsula or the lake parking lots. To provide for that need a series of 6 total parking lots are proposed. These lots stretch from the west to the east with one being located at the highest point of the peninsula.

Phase 7 Total Cost: \$285,000

Phase 8

Additional overflow trailer parking is proposed near the area that currently serves as the canoe launch.

Phase 8 Total Cost: \$113,440

Phase 9

To further the City's ownership of land adjacent to the lake to form a cohesive boundary it is proposed that the property that abuts the entry be purchased.

Phase 9 Total Cost: Market Value

Phase 10

To attract a diverse group of users to the park and take advantage of its natural features, which are unique to the Central Illinois area, an observation tower is proposed. The area is a popular destination for birders from around the region, many whom travel to different locations when rare birds are sighted. The accessible tower would be placed at the highest point on the Lake Island Tract with permanent binoculars and telescopes mounted on it. Some amount of tree clearing and an accessible path to the tower would be needed. To further use the tower as an attraction staff could organize events such as "Bald Eagle Days" when the birds are nesting in the area.

Phase 10 Total Cost: \$258,000

Phase 11

In order to create an attraction that appeals to both local and regional users, an Adventure Course/Zipline is proposed. There are many variations of this type of attraction and variations of management types. An ideal situation would be for the city to team with EIU and a private management company in this effort.

1. Adventure course/Zipline. An adventure course offers different obstacles and routes with ziplines running between towers. Cost: \$500,000
2. Remove the existing road up to the top of the peninsula and install new roadway with an access gate at the bottom of the hill. Cost: \$482,350
3. Miscellaneous storage for ropes, harnesses, etc. Cost: \$15,000
4. A double comfort station, similar to the one used at the main shelter, would be placed at the top of the peninsula to serve users of the course. Cost: \$85,000

Phase 11 Total Cost: \$1,082,350

Phase 12

To achieve the long range goal of connecting the different park properties to the Lake Island Tract with paths, an EZ Dock system is proposed to cross the cove west of the pavilion. The EZ Dock bridge would connect to the rip-rap wall that is part of the ongoing shoreline protection projects within the water treatment plant. The rip-rap portion is a budget item within the water treatment plant's budget and not reflected in this cost.

Phase 12 Total Cost: \$40,400

Phase 13 - Ongoing

There are two parts of the long term maintenance of the facility that are viewed as ongoing and do not have specific dollar amounts associated with them but are important facets to the overall usage and health of the park system. Those elements are a cohesive, connected trail system and vegetation maintenance. To facilitate the long range goal of connecting the Lake Island Tract, Lakeview Park and the Woodyard Conservation Area through a system of walking/biking trails it is recommended that the city implement an annual trails strategy. This strategy would include;

1. Maintaining existing paths through clearing brush, trees, etc.
2. Improving trail signage within the trail system
3. Closing off existing trails that the city does not desire
4. Create new trails through the Woodyard Conservation Area and coordinate efforts with the proper state authorities
5. Include public groups in the planning process such as mountain bikers and hikers. Brendan Lynch of Bike N Hike is a good resource for this effort.

6. Work with local groups to organize trail work days
7. Annual budget amount for trail maintenance

The Lake Island Tract is a highly diverse ecosystem with many micro environments occurring within its borders and adjacent properties, ranging from river flood plain to uplands and everything in between. If properly managed, the Lake Island Tract in particular, has the potential to attract a very diverse set of plants and animals and become a destination to visitors. To ensure this environment is protected and enhanced it is recommended the city implement a long range vegetation plan. Some of the items addressed in such a plan would include;

1. Removal of invasive species, such as Honeysuckle.
2. Removal of lawn in areas that are not used for recreation and replaced with native prairie plantings. This will also help to reduce costs associated with mowing.
3. Where possible add aquatic plantings along the shoreline of the lake to encourage fish cover.
4. Begin a program of prescribed burns to return the woodlands to a healthy state.

IMPLEMENTATION PHASING SUMMARY

Phase 1

Install gate at entrance to levee
 Mill & Resurface entry pavement from Highway 130
 New Entry Sign
 Upgrade dock to EZ Dock system at the lake (2013/14) budget
 Upgrade dock to EZ Dock system at the river (2013/14 budget)

Phase 1 Total \$45,825

Phase 2

Benches (5)
 Comfort Station - Double
 Drinking Fountain (2)
 Electric Service
 Grills (4)
 Picnic Tables (12)
 Playground
 Sand Volleyball Courts (4)
 Main Shelter
 Trash Receptacle (3)
 Water Service

Phase 2 Total \$370,054

Phase 3

Picnic Tables (20)
 Secondary Shelter (5)

Phase 3 Total \$176,791

Phase 4

Lake Ramp Removal and Replacement
 River Ramp Removal and Replacement

Phase 4 Total \$24,263

Phase 5

Mill & Resurface Main Park Road

Phase 5 Total \$171,105

Phase 6

Asphalt Parking Lot for Lake Boat Launch
 Fill Soil for Parking Lot - by City Forces

Phase 6 Total \$122,500

Phase 7

Secondary Parking Lot 1
 Secondary Parking Lot 2
 Secondary Parking Lot 3
 Secondary Parking Lot 4
 Secondary Parking Lot 5
 Secondary Parking Lot 6

Phase 7 Total \$285,000

Phase 8

Overflow Trailer Parking

Phase 8 Total \$113,440

Phase 9

Property Acquisition of Neighboring Property

Phase 9 Total Market Value

Phase 10

Observation Tower
Permanent Binoculars (4)
Permanent Telescopes(4)
Tree Clearing
Accessible Path to Tower

Phase 10 Total \$258,000

Phase 11

Adventure Course/Zipline
Remove Existing Residential Road
Construct New Road to Tower
Access Gate
Miscellaneous Storage
Comfort Station - Double

Phase 11 Total \$1,082,350

Phase 12

EZ Dock Bridge System Across Cove to Rip-Rap Wall (Rip-Rap Wall
is a future project coordinated and funded through the Water Treatment Plant)

Phase 12 Total \$40,500

Phase 13

The following items are an annual occurrence. As such no specific dollar amounts have been associated with them. It is anticipated that work days can be established with various user groups

Maintain existing paths
Improve trail signage
Close existing undesirable trails
Create new trails through the Woodyard Conservation Area
Inclusion of public hiking and biking groups
Organize trail work days
Annual trail maintenance budget



RATIO

Architecture
Preservation
Interior Design
Landscape Architecture
Urban Design & Planning
Graphic Design

Indianapolis, Indiana
Champaign, Illinois
Raleigh, N. Carolina
Chicago, Illinois

RATIOarchitects.com
RATIOblog.com