

FROM
FOREST
TO
LAKE

Envisioning the Emerald Necklace

Submitted to the users of the Cleveland Metroparks and Forest Hill Park on May 13, 2010 under the direction of Professor Wendy Kellogg, Associate Dean, Maxine Goodman Levin College of Urban Affairs, Cleveland State University and Jim Kastelic, Senior Planner, Cleveland Metroparks.



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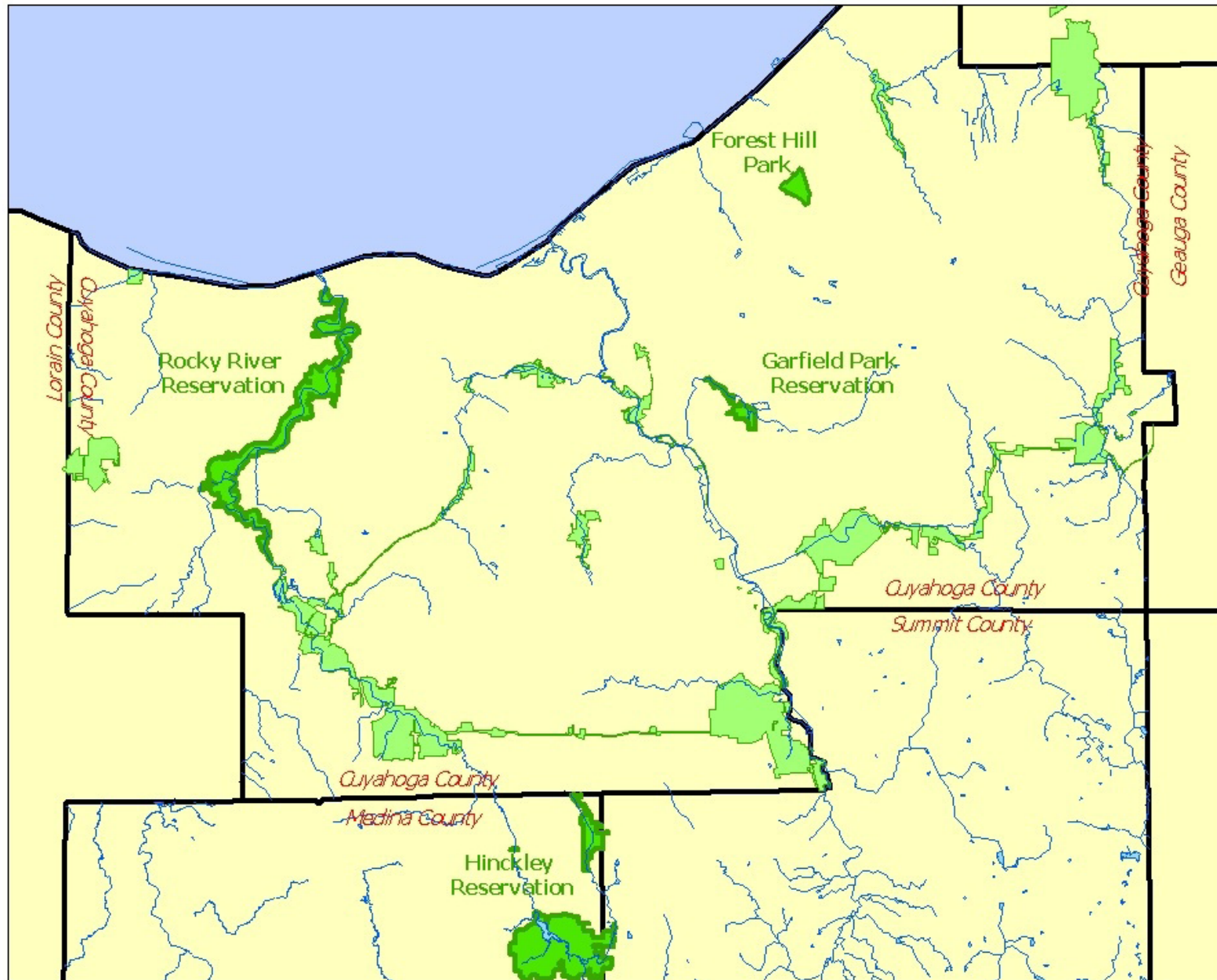
Rocky River Reservation

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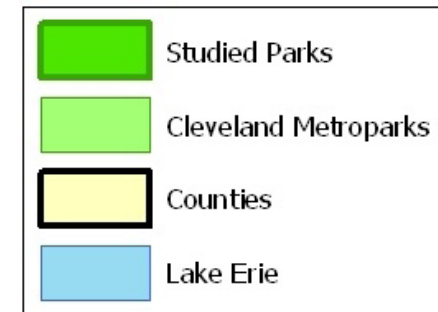
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2010 Metroparks Planning Studio Study Area



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Chapter 1.0
INTRODUCTION



Parks and open spaces provide direct and indirect benefits to residents of urbanized areas. These consist of economic, social and environmental amenities. Examples of these benefits include natural and cultural resource conservation, improved air and water quality, as well as preservation of biodiversity. Increased property values and improved human health and wellness are also benefits provided by green spaces. The availability of green space and its interrelationship with other land uses is a critical quality of life factor in most communities.

1.1 CLEVELAND METROPARKS

Cleveland Metroparks is the oldest and second largest park district in the state of Ohio. It is also the largest property owner in Cuyahoga County. A three-tiered mission of conservation, recreation and education guides the park district in its stewardship of plant and animal diversity, ecosystem management and the interpretation of the region's natural and cultural resources.

Cleveland Metroparks directly provides stewardship for 21,250 acres in sixteen reservations, primarily in Cuyahoga County. The Park District completed its most recent master plan, entitled Cleveland Metroparks 2000: Conserving Our Natural Heritage, in 1995. Since then, the Park District has added a total of 1,906 acres, including three new reservations (Ohio & Erie Canal, Washington and West Creek).

The mission of the Cleveland Metroparks is to, “conserve significant natural resources and enhance people’s lives by providing safe, high-quality outdoor education, recreation and zoological opportunities. Further, Cleveland Metroparks Zoo is committed to improving the future for wildlife.”

1.2 PROJECT GOALS AND OBJECTIVES

Goals

Cleveland Metroparks is currently updating its master plan. The goal of this project - “From Forest to Lake: Envisioning the Emerald Necklace,” - is to augment that plan by providing information and recommendations about the Metroparks. This project is also intended to enhance information about planning opportunities and partnerships with the Cuyahoga County Green Print, city park plans, state lakefront parks and other open space managed by nonprofit organizations.

Objectives

The objectives of this project are to understand the role of open space and parks in the region and to assess the influence of parks on surrounding communities. Another major objective is to identify the economic, social and ecological value contributed by parks to their communities. The study examines opportunities to enhance connections between Cleveland Metroparks and other existing parks. Links between parks and neighborhoods are also considered. Threats to the

value of existing parks and natural resources are identified and strategies for improvement are offered.

1.3 PROJECT ORGANIZATION – PHASE I

Phase one of this project divided research and analysis into five sections: Data and monitoring; valuation models; organizational landscape; regional collaboration; and user surveys.

Data and Monitoring

Research was conducted to identify the existing social, economic and ecological conditions in the Cleveland Metroparks planning regions. Some common themes that emerged included a general decline in county population and housing value, along with an aging housing stock. Foreclosures were shown to play a significant role in the planning regions.

Valuation Models

Methods for measuring the economic, social and ecological value of parks were researched and assessed. The effort resulted in three valuation models that could be applied to assign a dollar value to the Cleveland Metroparks. The main areas of focus were economic value, social value, and environmental value. Based on best practices and previous studies, the valuation models accounted for the overall services provided by parks. Millions of dollars of services are offered by the parks.

Organizational Landscape

Researching the organizational landscape for open space protection provided an opportunity to identify the status of recent greenspace projects. Planned projects were identified by reviewing the Cuyahoga County Greenprint. Assessment of over twenty organization's efforts identified existing green initiatives. In addition, research was conducted on the Towpath Trail as well as public transportation access to greenspace projects and the Cleveland Metroparks.

Regional Collaboration

Best practices for collaboration for park planning and management were explored. This section focused on how to make open spaces become great community places. Ideas were offered on gaining green space through land banking, easements, and conservancy groups. The role of collaborative relationships was analyzed.

User Surveys

Both on-site and web-based surveys were conducted to assess the user experience of the Cleveland Metroparks. The purpose of the survey was to obtain data regarding the demographic composition of Cleveland Metroparks users, satisfaction of park resources, facilities and programming, and overall value of the Metroparks mission of Conservation, Education and Recreation.

1.4 PROJECT ORGANIZATION – PHASE

2

The second phase of this project served as case studies of four parks within the region. Three of the parks were in the Cleveland Metroparks system. These include Garfield Park Reservation, Hinckley Reservation and Rocky River Reservation. The fourth case study, Forest Hill Park, is a municipal park straddling Cleveland Heights and East Cleveland.

Selection Criteria

In order to study a variety of parks, several selection criteria were applied. For example, the case studies capture an urban to rural gradient by exploring the rural communities of Hinckley Reservation to the highly urbanized communities around Garfield Park Reservation. Variation in size and amenities was also considered. The park selection accounted for opportunities to connect municipal parks (Forest Hill) with Cleveland Metroparks reservations and other assets such as Lake Erie. A final factor included opportunities to address the value of each park for its surrounding community.







Chapter 2.0
REGIONAL
LANDSCAPE



2.0 REGIONAL LANDSCAPE

Parks and open spaces play an important role in the quality of life for city neighborhoods in Northeast Ohio. Numerous studies have found that a neighborhood presence of parks and open space increases the value of surrounding properties. Parks and natural greenspace not only make our neighborhoods more attractive, but through conservation, they also provide opportunities for education and recreation.

There is a growing interest in the conservation of urban land. This is leading to increased attention to the economic valuation and viability of natural areas in urban environments. At the same time, land development continues to increase, resulting in a loss of important ecological areas. Destruction of riparian lands, wetlands and diverse plant communities continues at an alarming rate.

Population and housing trends in Cuyahoga County from 1970 through 2009

Cuyahoga County's population has declined by a substantial 24.6 percent since 1970. Population loss is due to the growth of surrounding counties as well as declining population trends for the entire Cleveland metropolitan statistical area over the

past twenty years. In 2000, the United States Census Bureau listed Cleveland's population at 478,403. Cuyahoga County has also started to see a decline in population. The pattern of population growth shows much of the city and inner suburbs declining in population with the growth occurring at the periphery of Cuyahoga County and in surrounding counties.

During the late 19th and early 20th centuries, Cleveland's growth was fueled by immigrants who flocked to the city seeking jobs generated by the industrial revolution. While the influx of immigrants fueled the unprecedented growth in wealth and commerce in greater Cleveland and across the country, this stream of humanity ceased during the depression and the Second World War. It was not until later in the twentieth century that new groups of immigrants have sought opportunity within the Cleveland Region. The largest of which that have settled in the City of Cleveland are Hispanic and Asian. Also, unlike the eastern and southern European immigration at the turn of the last century, many modern immigrants have the means to move directly to suburban communities.

Over the years, an increasing percentage of the city's population has been non-white. In 1990, just over half of Cleveland's residents were non-whites. During the 1990s

that number grew to 61.2 percent, with the proportion of African-Americans and Hispanics increasing the most. In 2000, over 50 percent of the City's population was African-American. The segregation of African Americans from whites and of African-Americans from Hispanics exceeds the averages for many large cities. Cleveland's African-American population is concentrated on the east side of the city and in the near eastern suburbs. Hispanics are concentrated in the city's west side neighborhoods. The city's African-American population increased by 10,837 persons, from 235,405 in 1990 to 246,242 in 2000. This increase occurred primarily because births exceeded deaths by more than 26,000. There was a net out-migration of 15,329 African Americans during the decade, which partially offset the increase in population.

Housing values in Cleveland Metroparks' East Planning Zone ranked the highest; the average property value in 2009 is \$340,797 (see Table 1: Property Values). The Central, West, Southeast, and Southwest Planning Zones housing values are comparable with a range of \$136,632 to \$194,573 (see Figure 1: Property Value Map).

The overall trend for housing within the Cleveland Metroparks region is one of continued spreading of the population.

As the region's population remains static, new housing construction at the periphery of the housing market region creates pressure on existing housing stock. The result has been that the older housing stock of the central city and inner-ring suburbs has become surplus to the region's housing needs. This effect is especially evident in neighborhoods originally constructed as industrial worker housing. As these neighborhoods decline in population, the remaining surplus in housing will remain vacant and subsequently abandoned, thus negatively impacting housing values in the Central Planning Region and specific areas within the Eastern Region which tends to have older pre World War Two developments.

Another manifestation of the decrease in competitiveness of older urban neighborhoods has been the number of foreclosures on obsolete homes. While 1990 data on sheriff sales within Cuyahoga County shows that this problem has been affecting Cleveland neighborhoods for the past twenty years, an increase in foreclosures has spread from the inner city out to the suburbs. The greatest affect occurred in Cleveland Metroparks' Southeast and West Planning Zones (see Figure 2: Foreclosure Map). The Southeast Zone reached a high of 17.24 percent (29,163 housing units), whereas, the West Zone trailed at 12.60

percent (3,758 housing units) in foreclosures (see Table 2: Foreclosures). According to RealtyTrac, in 2008, Cleveland ranked 24th in the nation with foreclosures. Foreclosures in the county remain elevated, with officials noting that foreclosure rates actually began to increase during 2003 and 2004, ahead of the nationwide trend, triggered by predatory lending practices throughout the city and inner ring suburbs. It is expected that continued weakness in the local housing market with a significant excess supply of housing will continue.

Population, housing and demographic information for areas surrounding existing Cleveland Metropark reservations compare changes over time

The population, housing, and demographic data were analyzed relative to the proximity to Cleveland Metroparks reservations. The results of the analysis varied in strength, with certain data variables that contrasted significantly relative to distance, while others appeared less affected by the relative proximity to the Cleveland Metroparks. The most compelling data was that of average home value, which showed a significant correlation between the distance of a property from Metroparks land and the value of that property (see Figure 3: Home Value Relative to Distance). Looking at data at the block group level,

those properties within two hundred feet of the Metroparks' boundaries had an average home value of about \$277,000. At the next buffer layer, between two hundred and four hundred feet, the average home value was about \$276,000. At the third buffer distance of six hundred feet the decrease in average home value becomes more significant. As the distance from the Metroparks continues to increase, the value of the property steadily decreases to an average of about \$263,000 at a distance of between twelve hundred and fifteen hundred feet. This result indicates that homebuyers may be willing to pay more to live within close proximity of Metroparks (see Tables 3 & 4: Home Value Relative to Distance).

The data also suggests that the income of residents is greater the closer they live to the Metroparks. In analyzing three categories of income, median household income, median family income, and median discretionary income, all three categories of income decrease as distance from the Metroparks increases. In looking at these results in graphical form (see Figure 4: Income Relative to Distance), the lines gradually drop over time. However, a significant drop occurs beyond the four hundred foot buffer mark, after which the decrease in income remains relatively steady. These results indicate a desire to live near the Me-





troparks, and after a certain distance the benefit is essentially lost; represented by the significant drop in income categories after the four hundred foot buffer zone. This same pattern exists for average home value, where a significant drop in home values occurred at the same buffer distance.

While distance appears to positively impact home values and income levels, the relationship between distance and education appears less significant. Figure 5 shows slight variations in education levels relative to distance, but there is not a significant change as seen for home value and income.

Other demographic data relative to distance from the Metroparks was gathered and is displayed in Table 5 (also see Figures 6 and 7).

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Chapter 3.0
GARFIELD
PARK
RESERVATION



Figure 1: Original Stonework

History

Garfield Park Reservation was established as Newburgh Park in the 1890s, by Cleveland's second Board of Park Commissioners. The site was selected after deciding, in 1893, that the south side of the city lacked natural recreational areas. The Commissioners selected the densely wooded valley where Mill and Wolf Creeks intersect on property purchased from the farms owned by the Carter, Dunham and Rittberger families. The park opened to the public in 1896 and was renamed Garfield Park in 1897.

The initial landscape plan was drafted by Boston architect Ernest W. Bowditch in a romantic European style that mimicked the designs of Frederick Law Olmstead. This included walking paths, cobblestone bridges, open spaces, wooded areas, swimming pool and two artificial lakes complete with a beach. One of the park's earliest attractions was a natural iron spring. The park became so popular that in 1915, the Broadway Avenue streetcar line was extended to accommodate visitors.

Following the Great Depression, the park was improved through the Work Projects Administration (WPA) which funded a boathouse, footbridges, and retaining walls along the lakes. After the war, the

park steadily deteriorated as a result of the worsening financial condition of the municipal parks department. In the 1960s and 1970s, vandalism and neglect led to the park becoming very unsafe. Jurisdictional disputes between the Cities of Cleveland and Garfield Heights exacerbated this deterioration.

In 1986, Garfield Heights approached Cleveland Metroparks which agreed to assume management of the park and facilities. Metroparks authorities developed a restoration plan that aimed to balance the rich history of the park with ecological concerns. Some stonework was restored, while the two lakes and some other facilities were allowed to revert to more natural conditions (see Figure 1: Original Stonework). In 2002, a privately-financed restoration project connected Garfield Park Reservation with Mill Creek Falls via a 1.18 mile paved trail. Metroparks assumed management of the new facilities soon after.¹

3.1 PHYSICAL RESERVATION

Garfield Park Reservation is located between Broadway Avenue and Turney Road, southeast of where these two streets intersect. The park is in an urban area flanked between a residential area of Garfield Heights and an industrial area along

Broadway. The park extends northward through a narrow easement to Mill Creek falls where the all-purpose trail and the park terminate (see Figure 2: Facility Map).

3.2 BUILT ASSETS

Garfield Park Reservation is endowed with many built assets; both new and remnants of the former city parkland. All modern structures are in good condition and heavily used. The following is a list of assets and attributes:

Red Oak Shelter

This is a permanent shelter house complete with electricity, picnic tables, and grills. A ball field, swings, and volleyball court are located near the facility. The shelter must be rented on Saturdays and Sundays for a price of \$150 and has a capacity of 140 people. As of April 2010, the facility has been heavily booked for the season (May through October).

Trolley Turn Canopy

This is a non-permanent canopy (tent) that is constructed in May and available through October. It houses picnic tables, grills, portable restrooms and has water connections. The space must be rented and is available all days of the week at a

price of \$50 for weekdays and \$100 for Saturdays and Sundays. The capacity of the canopy is 48 people. As of April 2010, the facility is heavily booked on weekends and moderately booked on weekdays.

Windy Ridge

This is a non-exclusive picnic area with a shelter house. It has grills, parking, and portable restrooms. It is also close to a ball field. There is no fee to use the shelter, so it is used heavily throughout the year.

Old Birch

This is a non-exclusive picnic area with picnic tables, grills, and portable restrooms. It is located near parking, swings, and a nature trail. It is also used often throughout the year since there is no user fee.

Nature Center

The Garfield Park Reservation Nature Center is located near the Broadway entrance in a former garage. It has bathrooms, telephones, and a picnic area outside. It is also staffed by volunteers who can answer any questions that may arise. The facility boasts an exhibit that takes visitors through the history of Garfield Park and provides information on animal species that can be found there.

The facility, however, is underutilized due to its location near the Broadway Avenue entrance of the reservation. The Turney Road entrance is the main point of entry for those visitors from the surrounding neighborhood. The three bus lines that run near the park are located on Turney Road. This means that most people who visit the nature center are those who drive to the reservation. The Metroparks user survey revealed that only 37.9 percent of people who were surveyed had ever been to the Nature Center.

Mill Creek Falls History Center

The history center is located in the northern section of Garfield Park Reservation near Mill Creek Falls. The building is an old single-family house that has been beautifully restored. The building currently houses and is owned by the Slavic Village Historic Society. Although it is not owned or operated by Cleveland Metroparks, the facility is an integral part of the reservation.

Mill Creek Falls

The overlook is a patio structure that suspends visitors above the falls, providing them with unparalleled views of Cuyahoga County's largest waterfall. The structure

itself is in good condition but is plagued by sporadic vandalism which is typically abated quickly by reservation staff. The location of the overlook is hidden from the closest road and has an unsafe feeling at times (see Figure 3: Mill Creek Falls).

Unpaved Trails

Garfield Park Reservation has five short, unpaved trails running mostly through the interior of the main part of the reservation. Together, these comprise 2.4 miles of trail that connect with each other or the All Purpose Trail (discussed below). These trails are not heavily utilized by visitors who tend to stay on the paved All Purpose Trail that circles the main part of the reservation.

All Purpose Trail

This paved trail circles the main part of the reservation and connects with the surrounding neighborhood through various spurs. The All Purpose Trail also houses multiple exercise stations that give users hints and routines that can increase their workout experience. This trail is by far the most popular attraction at Garfield Park Reservation.

Mill Creek Connector



Figure 3: Mill Creek Falls



Figure 4: Graffiti

This trail connects the All Purpose Trail with Mill Creek Falls to the north. The trail hugs Mill Creek as it winds behind the Garfield Heights and Cleveland neighborhoods that abut the stream. This access beyond this paved trail is limited as the trail runs along narrow easements provided by local property owners. This trail seems to have little usage which is probably due to the lack of signage or knowledge of where it leads. There also appears to be an issue with littering along the trail which is probably a result of low usage.

3.3 SERVICES

Garfield Park Reservation is home to many recreational and educational activities. Most educational activities are based out of the Nature Center while most recreational activities and programs are either on the trails or at the ball fields.

Formal Recreation

The largest formal recreational activity housed at Garfield Park Reservation is the Garfield Heights T-Ball League which is active in the spring and summer months. During this time, city youth utilize most of the ball field and picnic area facilities. Another large recreational activity hosted by the City of Garfield Heights is the annual Easter Egg Hunt.

Informal Recreation

Most recreation in the reservation occurs informally. During the day the All Purpose Trail is teeming with runners, walkers, skaters, etc. In the evenings and on weekends, the picnic shelters house barbecues and the ball fields and volley ball court are sites for pick-up games. There are also many people who enjoy sitting on benches enjoying nice weather.

Formal Education

The largest organized educational programs are Farm and Garden Day (in early June) and Bug City or Bug Day (mid August). Both are based out of the Garfield Park Reservation Nature Center but activities extend into the surrounding parklands. There are also numerous organized educational programs occurring most weekends in the spring, summer, and autumn. A short list of April (2010) activities include the following: April Fool's Day Walk (Pun-Tastic Trail), Freedom Reader's Book Club, Wildflower Folklore, The Day They Shot Lincoln historic interpretation, and Kids and Kites. All of the offered programs are listed on the Cleveland Metropark's Website or in the Plain Dealer Community Section.

Informal Education

The natural area of Garfield Park Reservation accommodates amateur naturalists and birdwatchers. There is also a waterfowl viewing area along Wolf Creek.

3.4 EVALUATION OF ASSETS

Of the assets listed above, most are in good shape and are adequately used by visitors. Any expansion of the physical facilities would exhaust the already heavily used parking facilities at the reservation. The only concern lies in the underutilization of the Mill Creek Connector Trail and its terminus, Mill Creek Falls. There is little signage leading visitors along the all purpose trail. In fact, many visitors do not know where it goes. Driving to the falls is even more difficult. Increasing the traffic along the trail and the Mill Creek Falls Overlook may also alleviate some of the current vandalism issues (see Figure 4: Graffiti).

3.5 SERVICES VALUATION MODEL

Based on the services valuation model described above, Garfield Park Reservation has a social value of \$1,866,976. This is based on the assumption of 86 hours of non-school based educational programming; 3,348 people exercising at least three times a week on park property; and 65

venue rentals per year (see Table 1: Social Valuation). This value is, of course, a very conservative estimate as many see the reservation as invaluable.

3.6 THREATS TO BUILT ASSETS

The only foreseeable stressor to the built environment is vandalism which is an issue at any urban park. This is especially true in underused parts of the reservation like the Mill Creek Connector and Mill Creek Falls. Parking is also a current stressor at Garfield Park Reservation.

3.7 RECOMMENDATIONS FOR BUILT ASSETS AND SERVICES

The following is a list of specific physical goals for Garfield Park Reservation:

- Advertise the existence of Mill Creek Falls. The Nature Center is the best venue for accomplishing this goal.
- Clearly mark the Mill Creek Connector Trail. Signs may not be the best method due to vandalism issues. Instead, mark the trail itself with paint and lead visitors on the trail and toward the falls. Let it be known that there is something spectacular at the end of the path.
- Change the orientation of the Mill Creek Falls entrance sign on Turney

Road. The current orientation leads drivers to believe that the entrance to that end of the park is to the right on Warner Road toward Broadway Avenue. The sign should be perpendicular to Webb Terrace which leads drivers to the cascade. Along with reorientation, new signage should be constructed to aid motorists toward the attraction (see Figure 5: Current Mill Creek Falls Sign).

- Relocate the Nature Center near the Turney Road entrance where most pedestrians enter the reservation. In its current location, the nature center serves mainly driving visitors who enter the park via Broadway Avenue. A good location is the point at which Garfield Parkway splits to form a circle around the park (see Figure 6: Site of Proposed Nature Center).

3.8 SOCIAL CONTEXT

Boundary Definition

The social context boundary surrounding the Garfield Park Reservation uses the reservation as a local neighborhood park. The field surveys reveal that the vast majority of users live within one of the three zip codes found within the social context. Since the Garfield Park Reservation began as a local city park and is generally

still used in the same capacity, the social context boundary was chosen to include the immediate residential neighborhoods, and thus the most likely users, and areas to project direct impact on the reservation.

The social context boundary is defined by a series of hard boundaries, including three railroad lines, Interstate 480 and a severe elevation change. A less severe barrier of industrial development also defines one boundary.

The northern boundary is defined by both the Norfolk rail line (heading northwest to southeast), and the CSX line (heading northeast to southwest). The western boundary is a steep hillside that separates residential zones from industrial use. East 156th street is the eastern boundary of the neighborhood, which is just west of Lee Road. Interstate 480 defines the southern edge of the neighborhood area. There are three different zip codes within the neighborhood 44105, 44125, and 44128 (see Figure 7: General Location Map).

3.9 NEIGHBORHOOD INVENTORY

The Garfield Park Reservation social context area is highly urbanized. This is more dramatic when compared to the context of most of the other Cleveland Metropark Reservations. While most Reservations are



Figure 5: Current Mill Creek Falls Sign



Figure 6: Site of Proposed Nature Center

found in suburban and semi-rural areas, the Garfield Park Reservation is located in direct connection to heavy industrial, material storage yards, high volume transportation networks, local retail centers, a sub-regional hospital and high density single family and low-rise multifamily neighborhoods. The six and one half square mile area that is measured in the social context boundary may be the smallest of the chosen study reservations, but the amount of human activity and population within is among the densest.

Garfield Park Reservation is found in an area that has been defined by its relation to the City of Cleveland and its topographical characteristics. The area lies within both the City of Cleveland and the City of Garfield Heights, though the bulk of the Reservation and most of the surrounding neighborhoods lie within the City of Garfield Heights.

Broadway Avenue bisects the Garfield Park Reservation social context area and is one of the highest order arterial roads within the Cleveland road system. Broadway allows for direct access to the central city from suburbs found south and east of Cleveland. Broadway Avenue is also notable in how it separates the social context area into two distinctly separate and different neighborhoods that surround the res-

ervation. The valley within which Broadway Avenue runs, as well as a main railroad line that parallels the street, reinforce this separation created by Broadway Avenue. Finally the industrial development along the rail, large land consumption by the reservation itself and a cemetery to the north and east of the reservation further widens the physical gap between the two neighborhoods.

North Neighborhood

To the north and east the neighborhood resembles those found on the southeast side of the City of Cleveland. The majority of the neighborhood lies within the City of Cleveland and much of the area within Garfield Heights sends its children to Cleveland City Schools.

A weakening industrial base that has poor access to the interstate further hampers the north neighborhood. Being hemmed in by railroads to the north, south and west and an industrial park to the east, this neighborhood is difficult to get into and out of and the streets tend to be narrow and somewhat confusing to navigate. Street patterns are disrupted by the municipal boundary that runs through the middle of the neighborhood.

South Neighborhood

Heading to the west and south from the Garfield Park Reservation lays a neighborhood that also finds a lot of use in the reservation, but a different experience is found both physically and socially.

Two differences are in the neighborhood's physical relation to the reservation and the urban fabric of the neighborhood. Garfield Park Reservation is much more closely tied to the neighborhood physically. The southern neighborhood lies just across the street from the reservation through much of their shared border. Numerous pedestrian access points are available to neighborhood residents. The grand boulevard entrance to the reservation is found in the south neighborhood. This is not unexpected both because much of the reservation was built in Garfield Heights by the City of Garfield Heights, and the southern neighborhood is largely part of the City of Garfield Heights.

Surrounding Land Use

The existence of three railroads and the Cuyahoga River valley just west of the neighborhood led this area to be developed for industrial uses. As was common in industrial development at the end of the nineteenth century, industrial sites are

strung along the rail lines and river valley. When Interstate 480 was built in the mid twentieth century, the established heavily industrial development transformed and shifted to more modern industrial sites seeking highway interchanges and the emerging mode of transportation (see Figure 8: Land Use Map).

Retail within the social context boundary is limited to traditional streetcar type ribbon development. All of the retail development services local retail needs; regional retail centers are found just south of the neighborhood boundary.

The largest section of retail development within the social context boundary is found along Turney Road. Turney Road runs through the center of the oldest Garfield Heights neighborhood north of Interstate 480. This neighborhood and its retail district reflect the era of its construction through its general lack of automobile parking availability.

Other retail sections can also be found along secondary arterial roads including Warren Road, Miles Road, East 93rd Street, East 131st Street and Garfield Boulevard. All of these are of a lower order of retail services when compared to the Turney Road District.

Other commercial activity can be found at the southern end of Broadway Avenue and along Granger Road. The nature of these businesses tends to service the industrial activity found near the interstate interchanges.

A larger retail center was recently built just south of the social context boundary. It was an attempt to create a larger regional retail service center. It is however failing at this time and seems to be burdened with significant environmental issues. The nearest regional retail option remain several miles away in either Maple Heights or on the west side of the City of Cleveland. While local retail needs can be generally met through much of Garfield Heights, higher order comparative shopping needs remain difficult for many residents with limited transportation options.

3.10 POPULATION AND HOUSING CHARACTERISTICS

Current Demographic Data – North Neighborhood

Demographic statistics of this area show a typical pattern found in an east side Cleveland neighborhood. The median household income for the north neighborhood was estimated below the City of Cleveland, the State of Ohio and the national

median household incomes. This number has not improved in the estimates since. Additionally the neighborhood has seen a continued decline in total population and an increase in foreclosure activity with the recent economic housing bubble. The weakening statistics reinforce a grim economic picture for a neighborhood that was weak ten years ago. A review of the sheriff sales activity maps show an area that had higher than average numbers of foreclosures when the larger housing market was relatively strong.

The racial diversity of the northern neighborhood is also typical of southeastern Cleveland neighborhoods. As of the 2000 census, this neighborhood was 95 percent African-American with several of the census block groups being entirely African-American. This is not necessarily an indicator other than the tendency of east side Cleveland neighborhoods to be isolated physically and socio-economically. It is common for neighborhoods in this part of the city to be overwhelmingly disadvantaged with few opportunities. Racially these neighborhoods all approach near homogeneity in having an African-American population (see Figures 9 through 11: Demographic Maps).

Current Demographic Data – South Neighborhood

Demographically the difference from the northern neighborhood is less substantive and more superficial. Median household incomes are somewhat higher than in the northern neighborhood, but not to a great extent. Income levels are lower than the City of Garfield Heights average, which is in turn lower than that of the region. While the residents of the southern neighborhood are somewhat better off, the difference is not enormous. In part the lack of better economic conditions is explained by an equal impact of a weakening position of the neighborhood in the greater job and industrial market. However access to regional transportation networks and general business strength is better for the southern neighborhood. This might explain the southern neighborhood's slightly better economic condition.

The noticeable demographic difference between the two neighborhoods is the racial distribution between the two. The southern neighborhood, while becoming more diverse over recent censuses, is still estimated at being over 85 percent white. When many of the east side Cuyahoga County suburbs have high levels of integration between white and black residents in lower middle class neighborhoods, the lack of diversity is to some degree notable in its uniqueness to the area in which it is

found.

Both the northern and southern neighborhoods have seen steady declines in population for several decades. This trend while still continuing is estimated to have slowed somewhat in the past ten years, both in raw numbers and in proportion to the total population. (See Figures 9 through 11: Demographic maps)

Housing Characteristics – North Neighborhood

The housing in the northern neighborhood is slightly older with much of the housing stock being built in the boom periods of the turn of the twentieth century and the 1920's.

Fortunately for the northern neighborhood, efforts have taken place to replenish the housing stock through scattered site home development. These efforts seem to have been focused on two areas, one in the eastern and one in the western end of the neighborhood. Success seems to be limited in creating market demand.

Further hampering the attempts to reinvigorate market demand for housing in the North Neighborhood is the increasing pressure created by the bursting of the housing bubble (see Tables 2 and 3: Foreclosure Tables). The result of years

of predatory loans, speculative bidding up of property and the resulting foreclosures has had a toll on the neighborhood and continues to create new problems. The most typical problems associated with vacant and/or abandoned homes are the impacts on property values, the potential for vandals or other activities that create safety, social or environmental hazards. Ultimately many of these homes end up abandoned, and thus creating vacant lots in the middle of once coherent physical neighborhoods. Unfortunately, this problem has not been new to the area, nor is it unique to the social context boundary. A similar pattern of increasing disruption created by foreclosure and vacant housing has been observed in the southern neighborhood (see Figures 12 through 14: Foreclosure Maps).

Housing Characteristics – South Neighborhood

The built environment of the southern neighborhood is different in many subtle ways that add up to a more comfortable built environment. The streets tend to be wider and the street pattern is more regular. The transition between the two municipalities is handled more smoothly within the street and block arrangements. Further, the housing stock is slightly newer and kept in better condition. The northern end of the southern neighborhood

may date from before the Great Depression, but less so in relation to the bulk of the housing stock when compared to the northern neighborhood. Much of the southern neighborhood was laid and constructed after the Second World War when normal economic conditions returned to the country as a whole. Little has changed or been added since, the one exception being the Mill Creek Subdivision in the City of Cleveland, immediately next to a section of the Garfield Park Reservation. This development still stands as one of the largest housing developments by total unit in the past thirty years.

One section at the southwestern tip of the neighborhood was recently consolidated into one landowner with the intention to develop a regional level retail center. While this has had an impact on the total housing units in the southern neighborhood, it was not a highly affluent neighborhood and it was as far from the reservation as possible within the social context boundary. It had little impact on Garfield Park Reservation. Fortunately, the land acquisition process was done on the open market using arms length negotiations.

3.11 HOUSING VALUATION MODEL

Based upon Lutzenhiser and Netusil's (2001) hedonic analysis of the effect of

open spaces on housing prices, value is added to the county base housing price by proximity to a reservation. These "buffers" are measured in feet and rely upon the count of single-family homes within each zone. These values are then inflated to 2009 values and normalized (by valuation model group). The neighborhood area is divided into five different ranges of 200 feet buffers. Each buffer range is measured from the Garfield Park Reservation (see Figure 15: Land Value Map).

Garfield Park Reservation is located in both the City of Cleveland the City of Garfield Heights. This differentiation causes a difference in the tax calculations due to differing tax rates for both municipalities. As such different property tax rates were used to calculate the valuation model. The property tax rate for the City of Cleveland in this neighborhood is currently 2.08 percent of total property value; within the City of Garfield Heights the rate is 2.9 percent.

The total property tax that is, in effect, created by the location of the Cleveland Metropark Reservation is estimated to be \$1,064,544 (see Table 4: Economic Valuation).

3.12 COMMUNITY GROUPS AND GOVERNMENT AGENCIES

The community groups and government agencies that would be amiable to working with Cleveland Metroparks Garfield reservation include Slavic Village Historical Society, governments of the City of Garfield Heights and City of Cleveland, the Ohio Environmental Protection Agency, Cuyahoga River community planning organizations, Board of Health, as well as Soil and Water Conservation Districts. In the survey process, some of the park users indicate that the park area was once much cleaner than it is today. Environmental issues cannot be avoided by the park management agency. A goal may be created for the cooperation with other organizations and agencies in developing and enhancing the reservation in both geographical and ecological levels.

3.13 THREATS TO SOCIAL CONTEXT

Foreclosure and the associated vacant or abandoned housing structures stand as one of the single largest threats to the Garfield Park Reservation social context area. As the housing bubble continues to collapse and generate defaulted home loans, neighborhoods such as those found near the reservation have higher than average occurrences of these foreclosures. In particular, the northern residential neighborhood within the area has abnormally

high occurrences of foreclosure and property abandonment.

The relative lack of job and business opportunity within the surrounding industrial areas when compared to peaks in the mid twentieth century, continues to keep the Garfield Park Reservation social context at a relative standstill economically. The population is now slowly diminishing and the housing stock continues to lose real value. Entire blocks of housing are weakly maintained, and need either major improvements to return to market competitiveness or replacement within the next decade. These flat to declining social and economic characteristics continue to threaten the neighborhoods and the Garfield Park Reservation's regional competitiveness.

Poor accessibility blocks opportunities for a large number of residents to come and use the Garfield Park Reservation. While not a true statement for the southern residential area, the northern neighborhood has few access points to the reservation. Additionally the lack of RTA service along Broadway Avenue forces those needing to use public transportation to ride around to the west side of the park to gain access. The difficult access could be potentially limiting the number of people who use the reservation.

Immediately southeast of the Garfield Park Reservation lies an industrial area built around the rail transportation and access to the interstate created by Broadway Avenue. The land is below street grade along this area which lends land uses to industry where visibility is to be minimized. Part of this industrial area includes the up stream of the Mill Creek which flows through the reservation. Additionally there is a defunct quarry that poses both safety and environmental hazards just east of Broadway Avenue across from the reservation.

Crime rates of the residential areas are also factors that impact the value of the reservation and neighborhoods. Crime index shows in year 2007 and 2008 that the crime rate is higher in the neighborhood than at the city and federal average. High crime rates most often directly affect the real estate market of residential neighborhoods. The value that the reservation could bring to residents and visitors depends on not only the recreational activities supplied by the park but also how safe the environment is in relation to the neighborhood.

3.14 RECOMMENDATIONS FOR SOCIAL CONTEXT

The continued decline to the surrounding

neighborhoods could potentially lead to less usage of the reservation and support for the conservation of the land. Park policy moving into the future should focus on improving reservation recognition within the community. Using the Cleveland Metroparks education capacity to reach out to the surrounding neighborhood groups to expand the usage of their educational programs would create support for the Cleveland Metroparks position within the community.

The mission of the park system is conservation, recreation, and education. Protecting open space and natural areas has been a priority of those three main missions; MetroParks has required that at least 80 percent of its acreage be maintained as natural area. To maintain this ratio, conservation and maintenance teams work closely to establish acquisition and management plans.

The continued decline in industrial use within the social context may lead to opportunities to expand the park's land holding or influence to conservation of natural resources or even reclamation of environmentally abused land. Properties immediately east and south include parts of the Mill Creek Watershed that flows through the reservation. Acquisition of these parcels or combined efforts to remediate and



maintain this land in a natural state would meet many of the goals stated by the Cleveland Metroparks.

The use of land and an existing green space in the adjoining Catholic Cemetery, could lead to connecting the reservation to other local green spaces and parks.

3.15 ECOLOGICAL CONTEXT

The Mill Creek watershed was used to evaluate the ecological context, as it is important to look at the whole watershed and not just Garfield Park Reservation. The stream and its watershed are interrelated forms, and so the ecological context will have similar effects on surrounding communities.

Boundary Definition

Mill Creek's ecological boundary stretches through various areas in Northeast Ohio. The creek itself runs through several neighborhoods including Shaker Heights and Beachwood and flows southwest into the Cuyahoga River in Cuyahoga Heights.

The mainstream of Mill Creek is 14.4 miles of open stream and 1.6 miles that are culverted. The Ohio Environmental Protection Agency (EPA) designates the creek as a warm water habitat. It is used

for agricultural and industrial water supply, and also connects to recreation areas. The stream itself does not meet water quality standards for primary contact recreation because of bacteria levels.²

There are six tributaries to Mill Creek, all of which play a role in the collection and management of the surrounding communities. The tributaries of Mill Creek are the Mapletown Branch, Busby Brook, Johnston Parkway Branch, Cranwood Creek, Warner Road Branch, and Wolf Creek, which meets Mill Creek at the Garfield Park Reservation.

Garfield Park Reservation is in the western portion of the watershed. There are several other green spaces and recreation areas near the reservation: Cranwood Park and two quarries are to the east; Crodele Park to the west; Calvary Cemetery, northeast; and Mill Creek Falls to the north. The Ohio & Erie Canal Reservation is west of Garfield Park Reservation.

3.16 NATURAL RESOURCE INVENTORY

Land in the Mill Creek Watershed is divided between urban areas, residential, forests, grasses, and waterways. Most of the land is residential (59 percent), followed by urban areas at 23 percent. Grassy areas

make up seven percent of the watershed's land use, while forested areas make up 11 percent.³

Forest

The forested areas in the watershed play a very important role to the surrounding landscape. Since the area has been so densely developed, the tree canopy becomes even more vital to the neighborhoods. The trees in the area are also very mature and include species such as buckeye, sycamore, ash, willow and oak trees (see Figure 16: Forest Cover).

Soil Condition, Infiltration and Erosion

Over 32 percent of the Mill Creek Watershed contains soils that are susceptible to erosion. Soils with high levels of silt produce high rates of runoff and are easily detached and transported downstream. Modified soils make up almost 60 percent of the watershed. These soils have been mixed, compacted or otherwise altered through development and no longer resemble their former characteristics."⁴ This is a very large issue through the entire watershed, but perhaps the most harmful in the northeast areas of the watershed including Beachwood, Shaker Heights and Highland Hills. Highland Hills has



Figure 17: Wetlands

many tributaries that channel into Mill Creek. Since the elevations of these areas are 1,100 to 1,200 feet above sea level and flow downstream to elevations of 900 to 700 feet, the velocity of the water in the stream system makes the banks much more susceptible to erosion.⁵

Garfield Park Reservation has a moderate level of erosion due to the natural environment, which is much better at collecting and managing storm water. Since areas upstream are much more susceptible to erosion, it will be necessary to protect their banks to not endanger the entire stream.

The soil infiltration rate in the Mill Creek Watershed is also very slow. The infiltration rate is the soil's ability to soak up water; this depends on the type of soil as well as its disturbance. The highland areas have slower infiltration rates, which could be attributed to growth as well as clay soils. The areas near Garfield Reservation are also slow, which can be contributed to the amount of housing stock in the area.

The amount of impervious surface over time has increased and changed the watershed's ability to channel storm water and runoff. The amount of impervious coverage within the riparian corridor has increased in the last 15 years from 25 percent to 28 percent. The entire watershed

has a much higher impervious surface cover at 52 percent.⁶

Wetlands

Wetlands are prominent in the Mill Creek Watershed. There are 57 wetlands on approximately 97 acres of land. The average size of a wetland is 1.7 acres, though the top ten wetlands are larger in size than the average, with 2.62 acres per each. In total, the top ten wetlands equal approximately 26.25 acres. The average wetland has a forested buffer that is low quality, with only 25 to 50 percent coverage. For the top ten wetlands, the forested buffer is in much better condition at 75 to 100 percent.⁷

Wetlands are important resources to restore water quality for watersheds. They act as filtering systems for pollutants as they manage storm water volume, and lessen the velocity of storm water since they can safely replenish groundwater in a natural function.

In the 2006 Cuyahoga County River Remedial Action Plan (RAP), Garfield Park Reservation was noted as the fifth ranked wetland area in the Mill Creek Watershed. The wetland is approximately two acres in size and is located along Wolf Creek; a tributary to Mill Creek. It is the location of the old pond, which has now filled in

and reverted back to a wetland. The area is still recovering, and is often plagued by storm water input, which causes silt deposits and erosion. It also has about 20 percent coverage of invasive species, most notably Reed Canary Grass. Reed Canary Grass is a very aggressive species that displaces native vegetation. It is introduced to an area though waterways, animals and people. It does little for the natural environment, as it is not a good food source for wildlife.⁸ (See Figure 17: Wetlands)

Hydrology

With development in the watershed, the hydrologic system has been severely changed and is no longer a completely natural system. Mill Creek has many tributaries that have been culverted or piped underground. For the stream system, 3.4 miles have been culverted; 20.3 miles are open, natural streams; and most notably, 30.7 miles is piped. The surface water no longer drains into its tributary to flow into the mainstream. The built environment has a high percentage of impervious surfaces, and has altered how stream channels handle runoff. During high flows, the changes to the streams promote a greater chance of erosion and flooding in the watershed because there is no longer a natural habitat to manage storm water⁹ (see Figure 18: Hydrology).



Mill Creek is receiving 25 percent less water than it should to support its beneficial uses. Since there have been so many changes to the natural filtering system, water quality has also changed over time. With lower flows on a normal day-to-day basis, there is a higher concentration of water pollution because there is not enough flow to dilute and filter the pollutants.

Pollutants in the stream can be found through sediment that smothers the natural habitat. Excessive nutrients in the water feed algal blooms and plants that clog the waterways; microorganisms eat this matter, which uses up the dissolved oxygen, killing fish and other aquatic life. Bacteria from combined sewers also play a critical role in the bacteria levels of the streams, which can sicken humans and aquatic life. Chemicals from the improper disposal of toxic products and illegal dumping, as well as trace metals are also issues for water quality.

Aquatic and Animal Life

Limited amounts of fish are located in Mill Creek. Fish including pollution-tolerant species such as creek chub, blacknose dace, and fathead minnows will be found. Fish communities in the lower Mill Creek, below the falls, are more diverse due to inter-

action with the Cuyahoga River. Diversity in the upper creek areas diminishes due to pollution and the waterfall that prohibits upstream migration.

Animals in the watershed area include deer, rabbits, squirrels, redtail hawks, turkey vultures, and songbirds. Since few species are found in such a densely populated area, the less urbanized cities in the watershed have a greater variety or population of species. No rare, endangered, or threatened species are known in the Mill Creek Watershed.¹⁰

3.17 ECOLOGICAL VALUATION MODEL

Based on the valuation model, the ecological services that the 114 acres of forest in Garfield Park Reservation provide is approximately \$2,772,590. The highest service provided was carbon storage, which was nearly 1.8 million, followed by storm water control at \$783,637. Forested areas also support biodiversity and habitat, which has a value of \$124,454. Air quality, hydrologic services, and soil formation/retention added to the overall ecosystem services, and had a total of about \$35,000 combined (see Table 5: Ecological Valuation).

Since the surrounding neighborhoods are

so dense, it makes sense that the carbon storage is so high for Garfield Park Reservation. Storm water management is a key issue to the success of the watershed and its neighborhoods; this figure proves that forested and natural areas best collect and manage storm water runoff.

3.18 THREATS TO ECOLOGY

Loss of Tree Canopy

From 1994 to 2000, there was a 16 percent reduction in the tree canopy in the riparian zone. In the whole watershed, the canopy cover has diminished by approximately 32 percent during that time, mainly from development and the natural death of trees.¹¹ Tree canopy helps store and filter storm water, recharge groundwater and provide habitat. Streams benefit in water quality when there is a higher level of tree canopy in the surrounding areas.

Invasive Species

There is also a relationship between forest cover and exotic plant species; the loss of forest cover facilitates the infiltration of these species. Invasive species in the Mill Creek area are mainly Glossy Buckthorn, Phragmites (reed), and Reed Canary Grass. These species were the most problematic as shown by the 2003 Cuyahoga River Wa-

tershed RAP.

Storm Water Runoff

Runoff and other nonpoint pollution sources produce approximately 16 percent of the pollutants in the watershed. Nonpoint pollution is caused mainly from stormwater traveling over the ground, since as it moves it will pick up natural and man-made pollutants.

Soil Condition

Most of the watershed is covered with soils that drain poorly. Wetland restoration and protection throughout the watershed will help water drain naturally into the earth and limit the amount of runoff.

3.19 RECOMMENDATIONS FOR NATURAL RESOURCES

Improvements to the watershed will positively affect Garfield Park Reservation. The following goals can apply to both the region through which Mill Creek travels, as well as Garfield Park Reservation.

- Make a community goal to increase the tree canopy. Have community events to show the benefit of maintaining canopy and encourage plantings.
- Clearing invasive species can be costly

in a large area; the unit cost for clearing invasive plants is \$220 and seeding/planting can cost around \$5,000 per unit. A site plan should be created to target the most infested areas first, where plants are prone to spread most rapidly.

- Protecting wetland areas and rebuilding natural stream channels are the best ways to protect against erosion and manage storm water runoff. Wetlands need to be restored, and buffer zones should be created or maintained so that there is greater connectivity and function for the wetlands.
- The combination of the soils and the increasing amount of impervious surface is a very dangerous combination. Soil condition in the watershed would be hard to change, but the amount of impervious surfaces can be altered through better design strategies. Design regulations should be implemented to reduce storm water runoff, pollution, and help with flood control, erosion, and water quality.

3.20 POLICY RECOMMENDATIONS

Information Sharing

Stressors to the park can be better managed if the problems and potential solutions are ingrained into the minds of the public

and of political entities. Goals should be set by communities to better manage pollution, enhance greenspace, and improve water quality. Educational programs of Garfield Park Reservation could be incorporated into the surrounding schools, and be enhanced to offer more information on ecological issues. The current programming does not focus enough on how changes can be made in the community to better the watershed.

Exciting projects such as the greening of Garfield Boulevard, should be more publicized and have updates to the community can see what progress is made. The community should also be informed about the valuation of the asset. Signage could be provided to show what the addition of trees and greenspace do for the community's value.

Expansion of Greenspace

Mill Creek travels along the Chaincraft property, which is a small business/industrial park, nearly hidden from the roadway. It is located within the flood plain of Mill creek. Since the property is so close in proximity to the reservation, a long-range plan for relocating current businesses and linking property with Cleveland Metroparks Garfield Reservation should be formed. This site could be a demonstra-

tion site illustrating how environmental contamination can be remediated and benefits of flood control and wildlife habitat can be restored (see Figure 19: Expansion Map).

The quarries just northeast of Garfield Park Reservation have two owners: Garfield Alloys, Incorporated and Catholic Charities. Garfield Alloys, Inc. owns the western portion, which is about 35.9 acres, and the remaining section is about 14.8 acres. The lake covers about 42.1 acres, which crosses ownership boundaries.

The City of Garfield Heights applied for and received Clean Ohio Grant Funds (CORF) to develop and implement a plan to fill the quarries with clean fill. The quarries are a safety hazard, but dump trucks are there daily to fill them and to reintroduce the area, and maintain them as wetlands. This will help collect and manage storm water runoff, and be a conservation area. The process of filling the quarries and planting native wetland species can be used as an educational element for the community. Since the quarries are just northeast of Garfield Park Reservation, a pathway could be connected from Broadway Avenue to link the two resources.

Calvary Cemetery is the largest cemetery in the Catholic Diocese of Cleveland,

and is the resting place of a number of prominent industrialists and executives in Cleveland history. The cemetery covers approximately 302 acres of land. Rail lines and Broadway Avenue bisect Garfield Park Reservation from the cemetery, however there is a possible link to the cemetery with the completion of the quarries wetland project. The Cuyahoga County Greenprint demonstrates a possible linkage to the eastside of Cleveland off of Broadway Avenue, and Martin Luther King Jr, Drive. The cemetery could become an additional pathway for recreation use, as well as an educational opportunity to offer history of the cemetery and Cleveland Catholic Charities. The Metroparks and Cleveland Catholic Charities could form a partnership to allow more access to the large amount of greenspace that the cemetery offers the community.

Expansion to the north of Garfield Park Reservation will give neighborhoods that are currently cut off from the park areas, and natural areas in general, an opportunity to have access. The north neighborhood, as referred to earlier, has little connectivity and will benefit by the expansion.

Neighborhood Connection

Better position the Garfield Park Reservation as an urban park oriented to serving

its position as a neighborhood park (see Figure 20: Park and Neighborhood).

To achieve this end the Cleveland Metroparks needs to:

- Improve access for users regardless of their choice of transportation
- Strengthen the educational and organized recreational elements of the reservation by positioning the activities in close contact with each other
- Orient traditional park elements to focus on neighborhoods and the largest number of reservation users
- Improve physical facilities in order to further improve recreational and educational activities

The Garfield Park Reservation holds an important open space and recreational position within the surrounding neighborhoods. Originally created by the city government, the reservation has a long history of filling the need of its nearby residents as a daily park.

The effort to focus the reservation's resources to better fill this role as a local recreational opportunity can also be paired with efforts to expand the use and opportunities of educational and entertainment programs.



Figure 20: Park and Neighborhood

Most of the built physical assets of the reservation are found along the eastern edge of the reservation along or overlooking Broadway Avenue. The Red Oaks picnic pavilion and the Nature Center are located a significant distance from the nearest RTA bus stop or other commonly used pedestrian access points. Additionally the Nature Center could be expanded to offer new and wider array of educational programs and entertainment options.

An effort to better engage the physical assets with transportation and pedestrian access point could lead to more use of the facilities and programs. Expanding picnic facilities, adding playground equipment or adding other recreational infrastructure along the west side of the reservation would make these services more physically available to both those who live in the immediate neighborhood and those who rely on public transportation to reach the reservation (see Figure 21: Facility Improvement Map).

Adding a new Nature Center to this expansion of service near the main entrance of the reservation at Garfield Boulevard would position the center to also have better access to all visitors to the reservation. Choosing a site to repurpose to these expanded activities could help maintain conservation values. The reuse of under-

utilized land could minimize the encroachment of physical facilities on conservation space.

The parking lot near the Windy Ridge Picnic area is oversized and underused for most of the year. The condition of the parking lot is also deteriorated. Using this space and the already developed picnic areas associated with the parking is an appropriate place to add physical improvements. The material and equipment storage area that has encroached on the parking lot could also be claimed for either recreational opportunities or a new Nature Center.

This site is desirable for several reasons. The location is already a developed but underutilized piece of land. The maintenance uses could be moved to fill the vacated space from the existing Nature Center.

The suggested site is located in an advantageous position within the reservation. The site is positioned in a place that is closely located to public transit stops at Turney Road and the entrance of the reservation. It is also positioned in a place that is close to the edge of the reservation so that the facilities would be convenient for local residents to use.

Embracing the role as a neighborhood asset could create an opportunity to increase the usage of the existing facilities and programs while also justifying new investments in additional attractions. Many of the people interviewed in the field survey expressed little to no knowledge concerning education or entertainment programs within the reservation. Given that the Garfield Park Reservation is one with limited expansion possibilities for a regional attraction without encroaching on existing conservation land, a plan to expand the user base might prove to be unobtainable. Therefore, the existing role should be the focus of future site improvements.

3.21 MARKETING RECOMMENDATIONS

According to the CSU-Cleveland Metroparks survey, most visitors of Garfield Park Reservation are from the surrounding neighborhoods. This is surprising, however, since Mill Creek Falls—the largest waterfall in Cuyahoga County—should be a regional attraction. People from the region simply do not know about Mill Creek Falls. Furthermore, few people who use the park often know of its existence. The lack of outsider visitation and knowledge is perceivably the result of insufficient marketing of the natural landmark. To fix this problem and to draw more visitors to the

reservation, Cleveland Metroparks should more actively market Mill Creek Falls. The following are some recommendations for accomplishing this goal.

Create a Hallmark

The best way to let visitors who already frequent the park know about the falls is to change the entrance signs on either side of the park. If these signs integrated a waterfall into the graphics, people would instantly know that there is a waterfall somewhere within the property. They may be inclined to ask more questions or seek out the natural attraction. Emblems should also be created for the reservation that remind those who see it that Mill Creek Falls is on the property (see Figure 22: Current Nature Center Sign).

Improve Mill Creek Connector Signage

Currently, the Mill Creek Connector trail signage is the same as all other trails in the reservation. It is labeled by a small post with a tiny icon symbolizing the trail. However, few casual visitors pay any attention to these markings. They are there to meander around without worrying about which trail they are on. However, if this trail were to be labeled by the terminus (i.e. the waterfall) instead of the all-purpose trail that leads there, more visitors may be

inclined to visit. If a large sign is not possible due to vandalism issues, painting a sign directly on the path would also work.

Realign Mill Creek Falls Entrance Sign

As stated in the physical reservation section (above), one simple fix to the confusing vehicle entrance of Mill Creek Falls is to realign the entrance sign. The current location and orientation of the entrance sign is extremely confusing to drive-in visitors. The sign should be perpendicular to Webb Terrace instead of Warner Road. Arrows should also be added to let everyone know exactly where to go. Signage should also be improved at the intersection of Turney and Ella Avenue for those visitors travelling from the main section of the park to the falls via car.

Advertise

Cleveland Metroparks does not actively advertise that Mill Creek Falls exists. Their website (www.clemetparks.com) does not mention the waterfall in the brief description of Garfield Park Reservation. The trail and park maps also downplay the existence by simply numbering the attraction. To increase visitor occurrences, Metroparks must increase awareness through advertising. This may mean discussing it on their website or putting a graphic on

maps to show where it is. In fact, creating a Garfield Park Reservation Hallmark and improving the connector trail signage would both help advertise the attraction.

These are just a few minor (and fairly cheap) ideas. There is room for creativity, also. Perhaps having a waterfall festival or coordinating a special event with the Slavic Village Historical Society would also help advertise. The possibilities are endless.

3.22 PARTNERSHIPS

Cleveland Metroparks has relationships with multiple groups who have an interest in Garfield Park Reservation and the surrounding area. These groups include Slavic Village Historic Society, Mill Creek Watershed Partnership, and the cities of Cleveland and Garfield Heights. Beyond the existing partnerships, Cleveland Metroparks should forge relationships with Catholic Charities, Tourney Road Businesses, and Broadway Avenue Industries.

Slavic Village Historical Society

The Slavic Village Historical Society owns and operates the Mill Creek Falls History Center in the northern part of Garfield Park Reservation. This History Center is located just across from Mill Creek Falls provides bathrooms and interesting dis-



Figure 22: Current Nature Center Sign

plays for visitors. This partnership should be maintained since the History Center greatly enhances the northern park experience and creates a destination that may draw visitors to the falls.

Mill Creek Watershed Partnership

The Mill Creek Watershed Partnership is a community-based organization of citizens, businesses, government agencies and community groups dedicated to working together for the improvement of the Mill Creek Watershed. Mill Creek has a large watershed that includes portions of many communities in Cuyahoga County including Beachwood, Cleveland, Cuyahoga Heights, Garfield Heights, Highland Hills, Maple Heights, North Randall, Shaker Heights and Warrensville Heights.

Since Mill Creek and Wolf Creek (a major tributary) meet within in the boundary of Garfield Park Reservation, the partnership between Cleveland Metroparks and the Mill Creek Watershed Partnership must be maintained. This will ensure water quality programs within and outside of the reservation, positively affecting all areas involved.

City of Cleveland

Most of the northern section of Gar-

field Park (Mill Creek Connector and Mill Creek Falls) lies within the City of Cleveland. Though Cleveland Metroparks maintains all of the easements along the trail and Mill Creek Falls, the city has jurisdiction over all of the roads and access point to these attractions. The most important access point is Webb Terrace via Turney Road which is beyond confusing for most motorists. Working with Cleveland to alleviate some of the complicated route between the main part of Garfield Park Reservation and the falls would benefit both parties.

City of Garfield Heights

Most of Garfield Park Reservation is located within the city of Garfield Heights. Garfield Heights is also in control of the quarry located across Broadway Avenue from the east entrance to the reservation. If this quarry were to be connected to Garfield Park Reservation, collaboration with the city would be necessary. This is especially true considering the substantial barriers that exist between the two properties (Broadway Avenue and the railroad tracks). Furthermore, a partnership with the city could give Cleveland Metroparks some leverage when dealing with property owners along Chaincraft Road to the southeast of the reservation.

Catholic Charities

Beyond the quarry, to the northeast of most of Garfield Park Reservation is the massive, park-like Calvary Cemetery controlled by Catholic Charities. A connection to this cemetery would increase the length of the paths of the reservation substantially. To accomplish this, collaboration would have to occur between Cleveland Metroparks and Cleveland Catholic Charities. Both organizations could benefit from this connection. Garfield Reservation would increase the paths that it offers its visitors and Calvary Cemetery would increase attendance which, in turn, would increase safety throughout their grounds.

Local Businesses and Industries

Garfield Park Reservation is located between two very different areas. On the west is a residential area with a commercial strip along Turney Road. To the east is a mainly industrial corridor along Broadway Avenue. Partnerships between both the commercial business owners on the west and industrial owners on the east would be beneficial to all parties.

Commercial business owners would benefit from the increased traffic to and from the park. They would also benefit from an enhanced streetscape north along Turney



Road into the “Mill Creek Falls Neighborhood”. Though external development is certainly not within the mission of Cleveland Metroparks, Garfield Park Reservation would experience more activity in the northern section if a commercial organization were to beautify Turney. This is why a partnership is necessary.

A relationship with the eastern industrial owners is more ecologically important. Upstream from Garfield Park Reservation is an industrial area off of Chaincraft Road. This area is located between a forested hillside and Broadway Avenue. This area is in poor shape undoubtedly causes polluted runoff into Mill Creek. A partnership with these industries could prove invaluable for the health of the stream and all those living or enjoying areas downstream. This type of relationship satisfies Cleveland Metroparks’ first mission: Conservation.

Figure 2: Facility Map

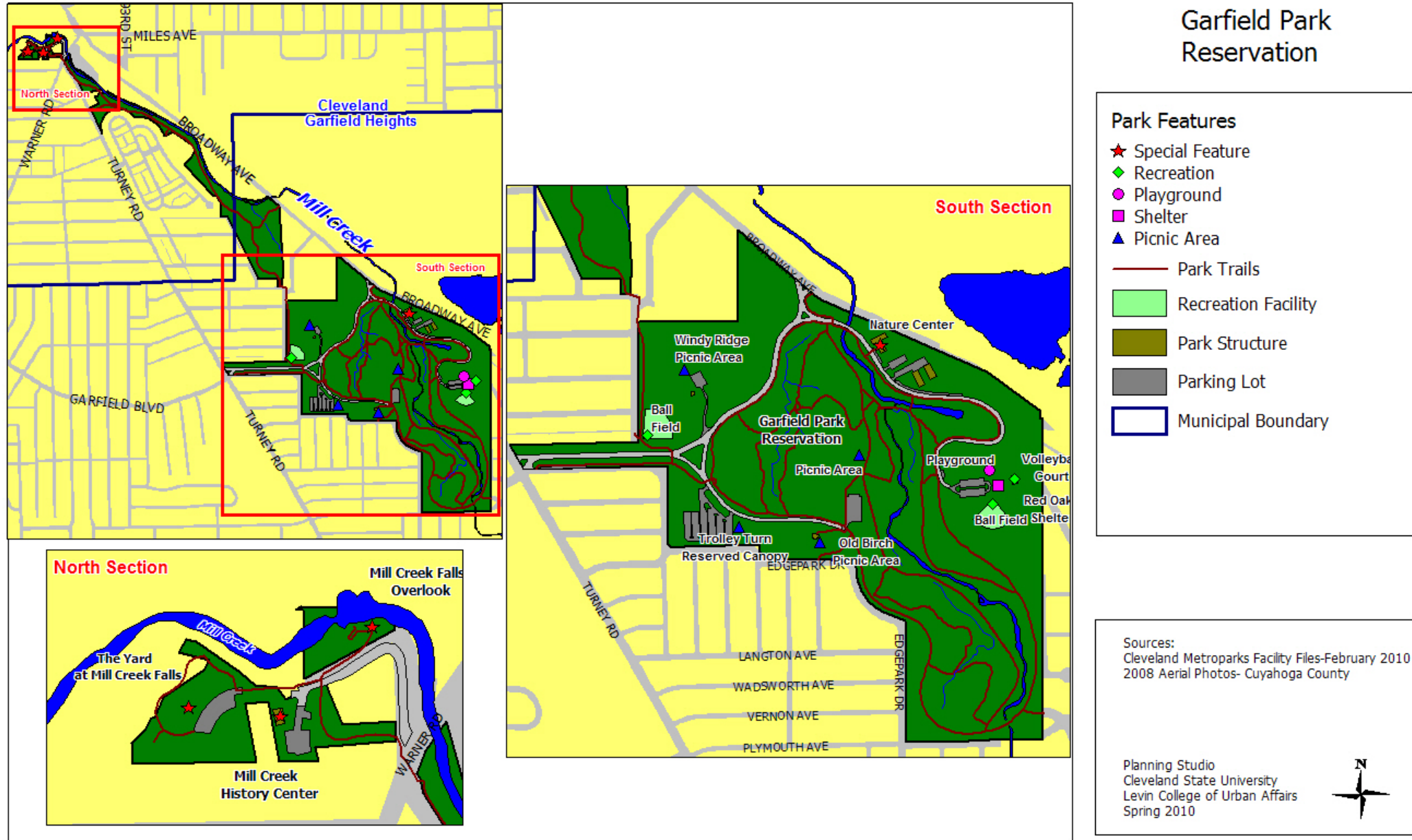


Figure 8: Land Use Map

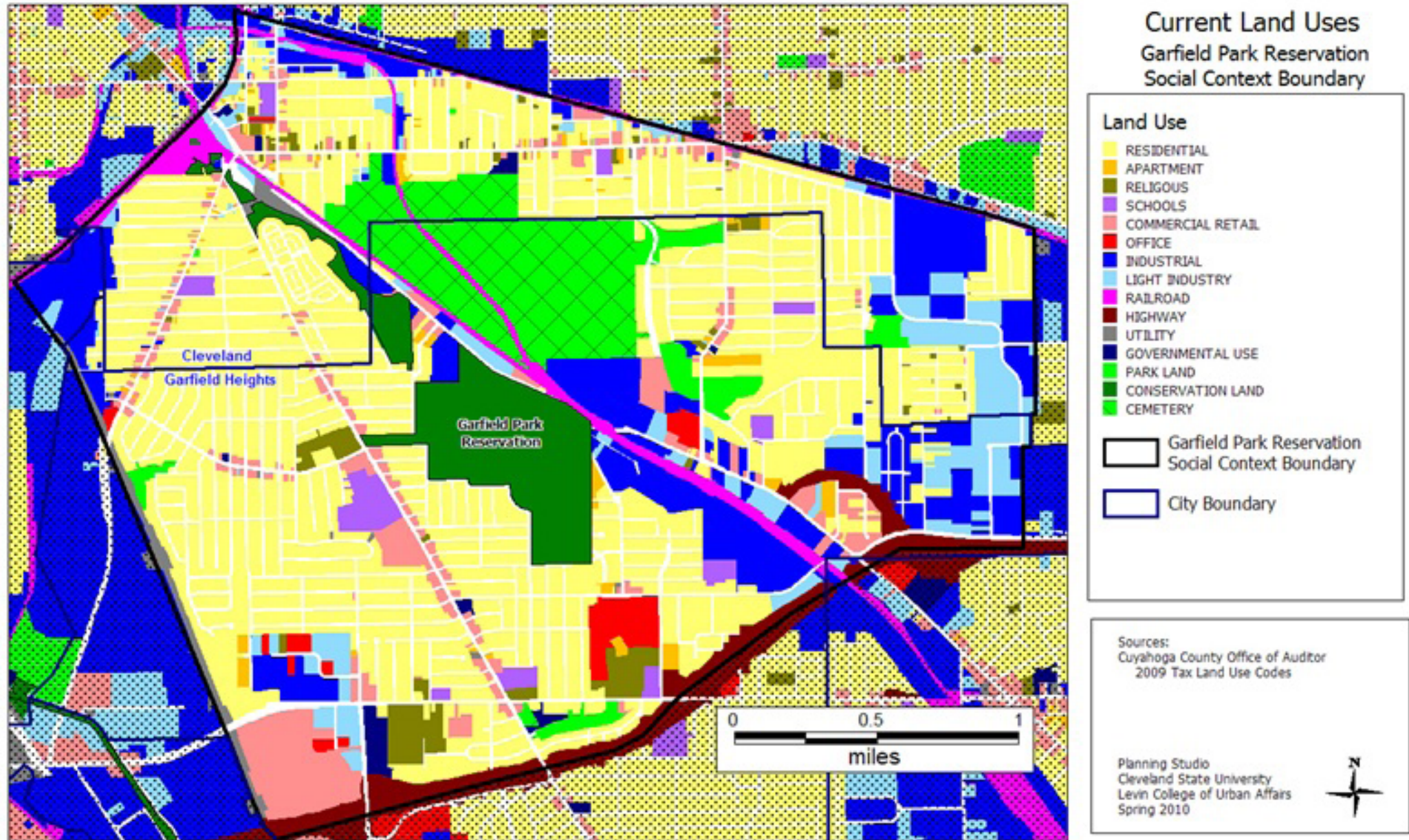


Figure 9: Demographics Map

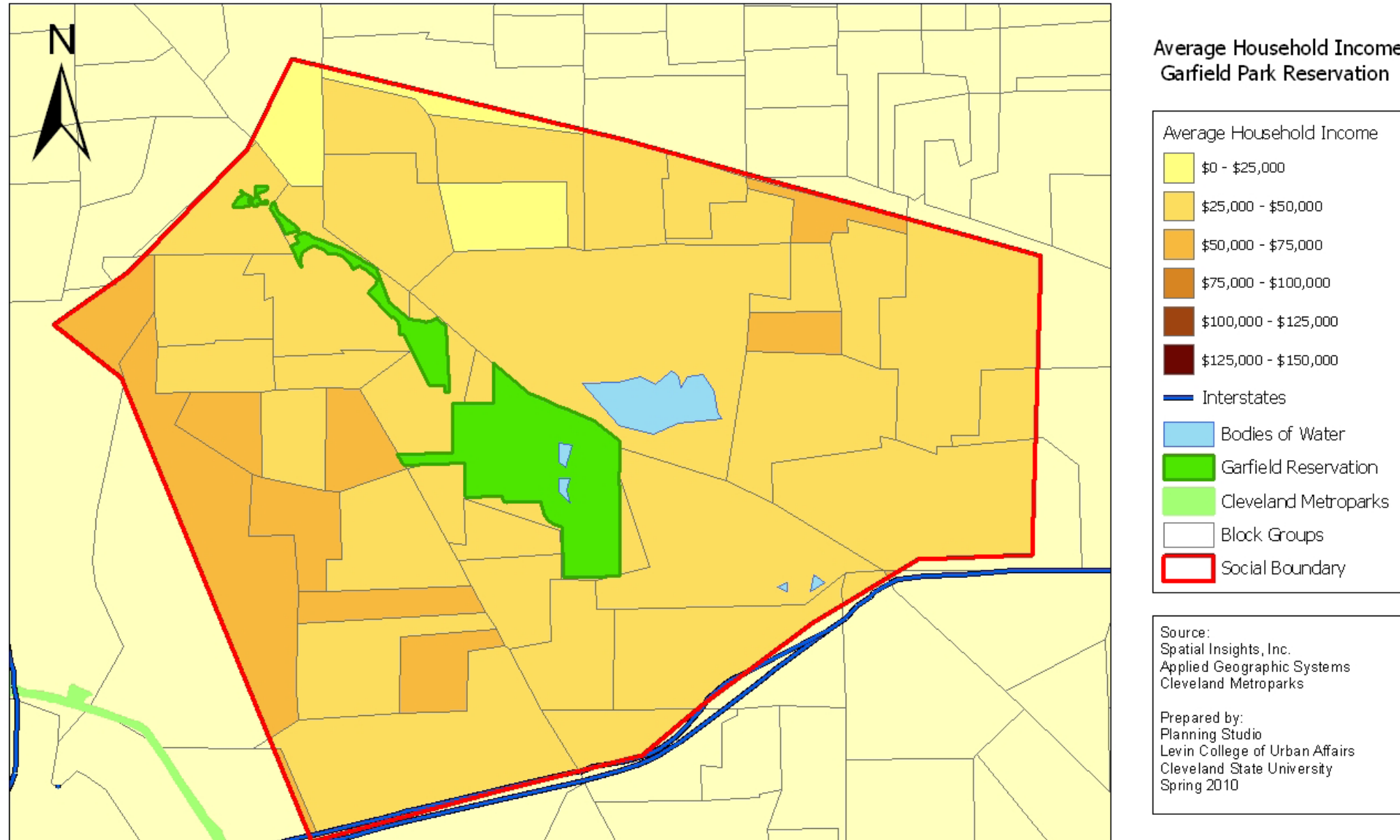


Figure 10: Demographics Map

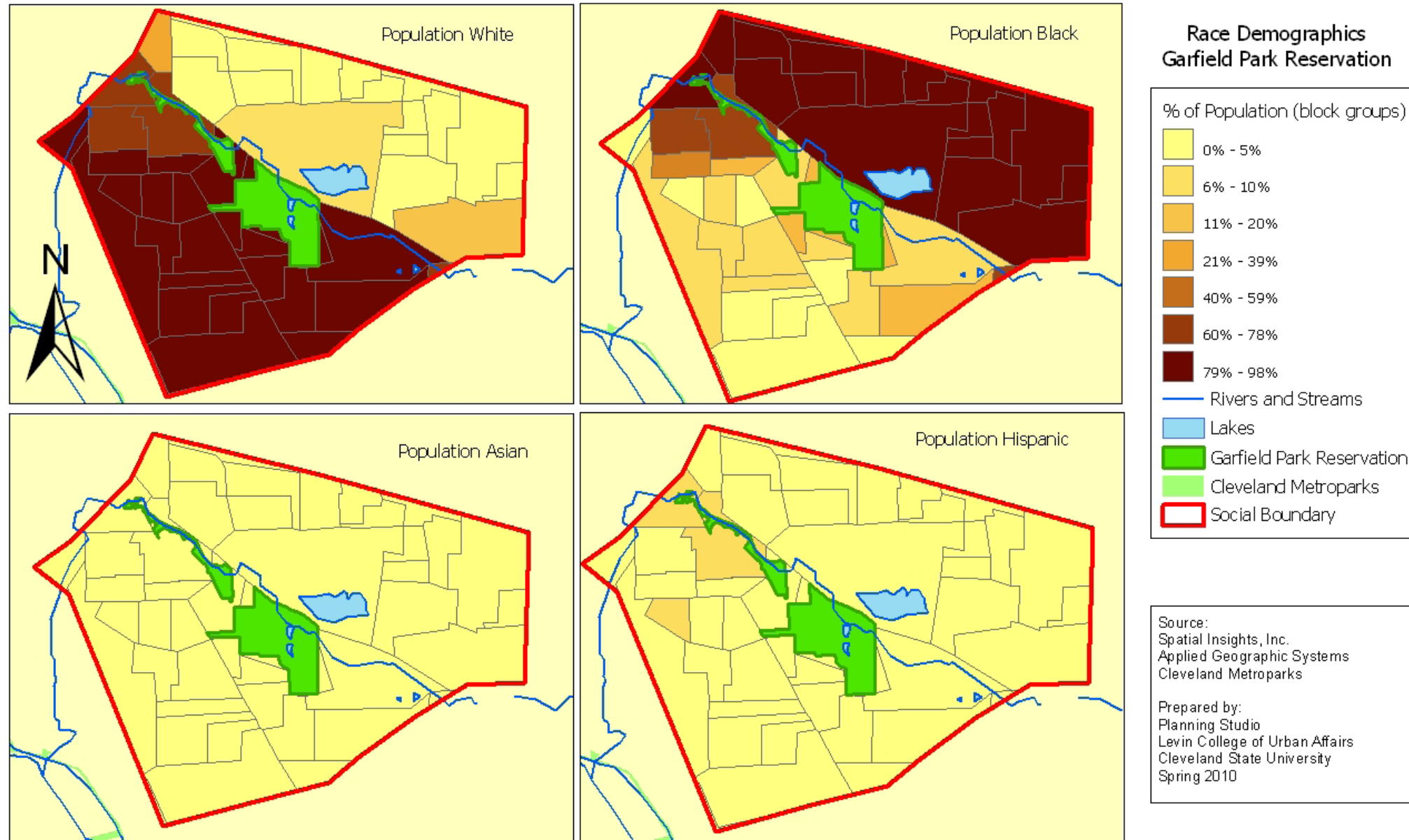


Figure 11: Demographics Maps

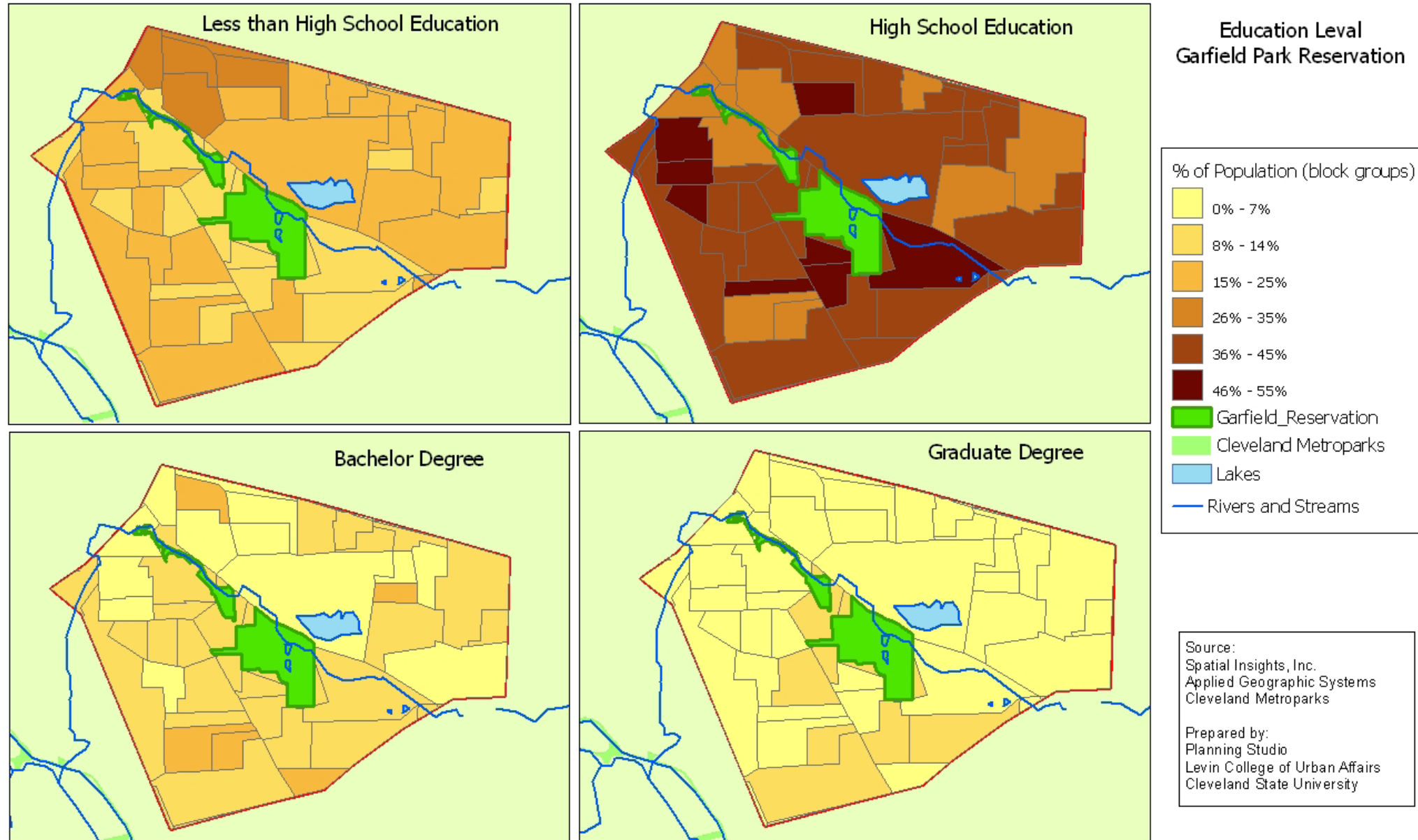


Figure 12: Foreclosure Maps

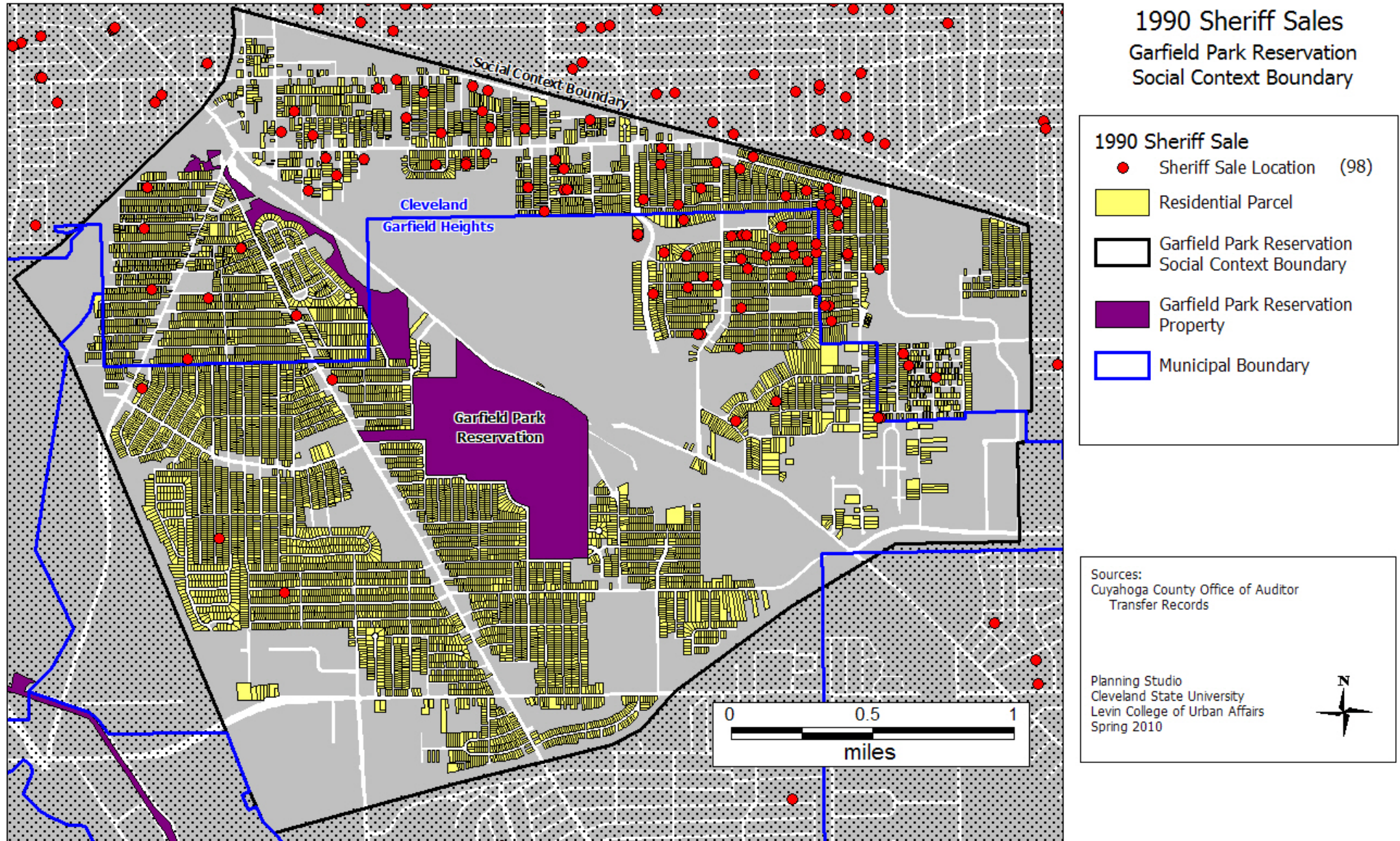


Figure 13: Foreclosure Maps

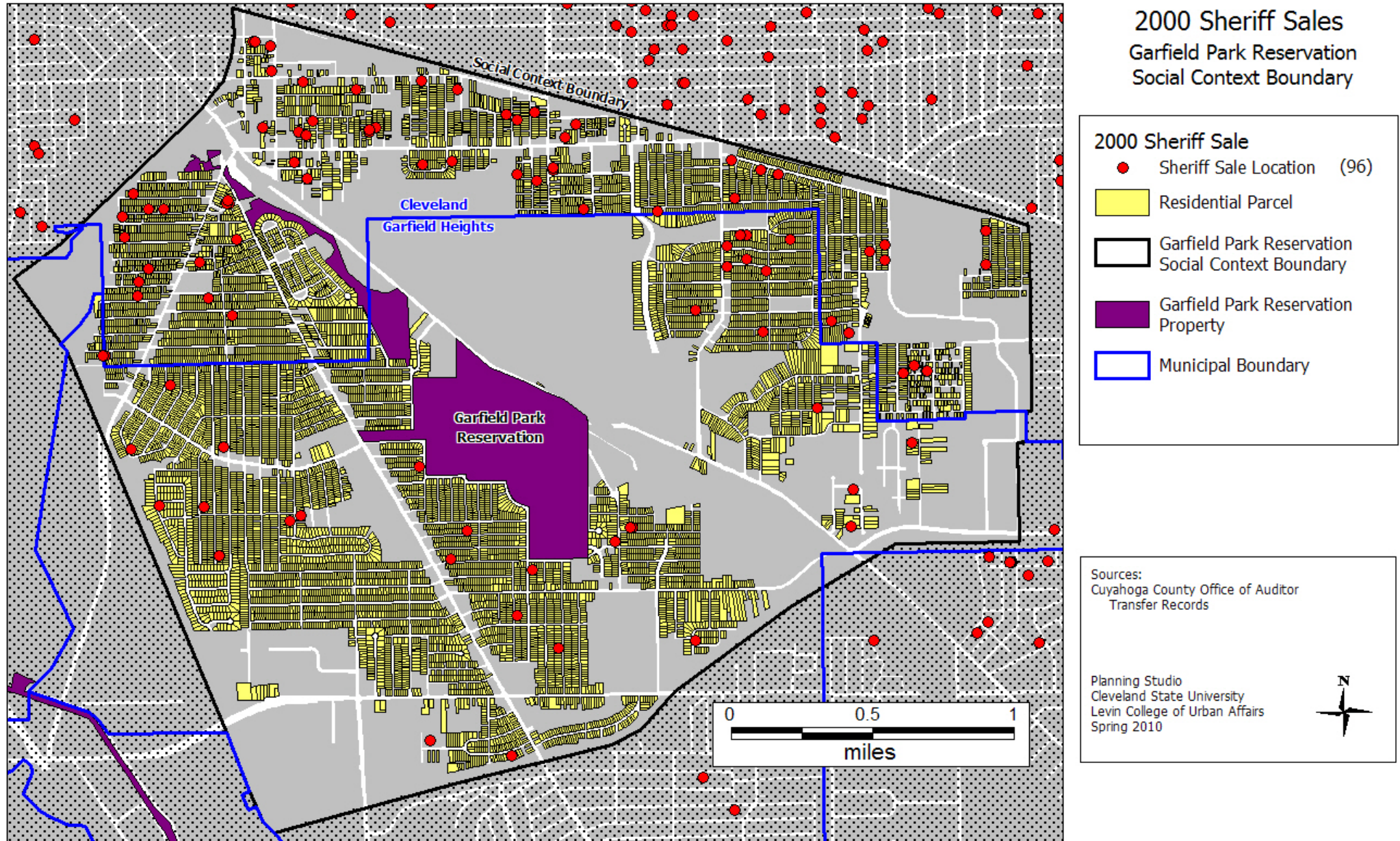


Figure 14: Foreclosure Map

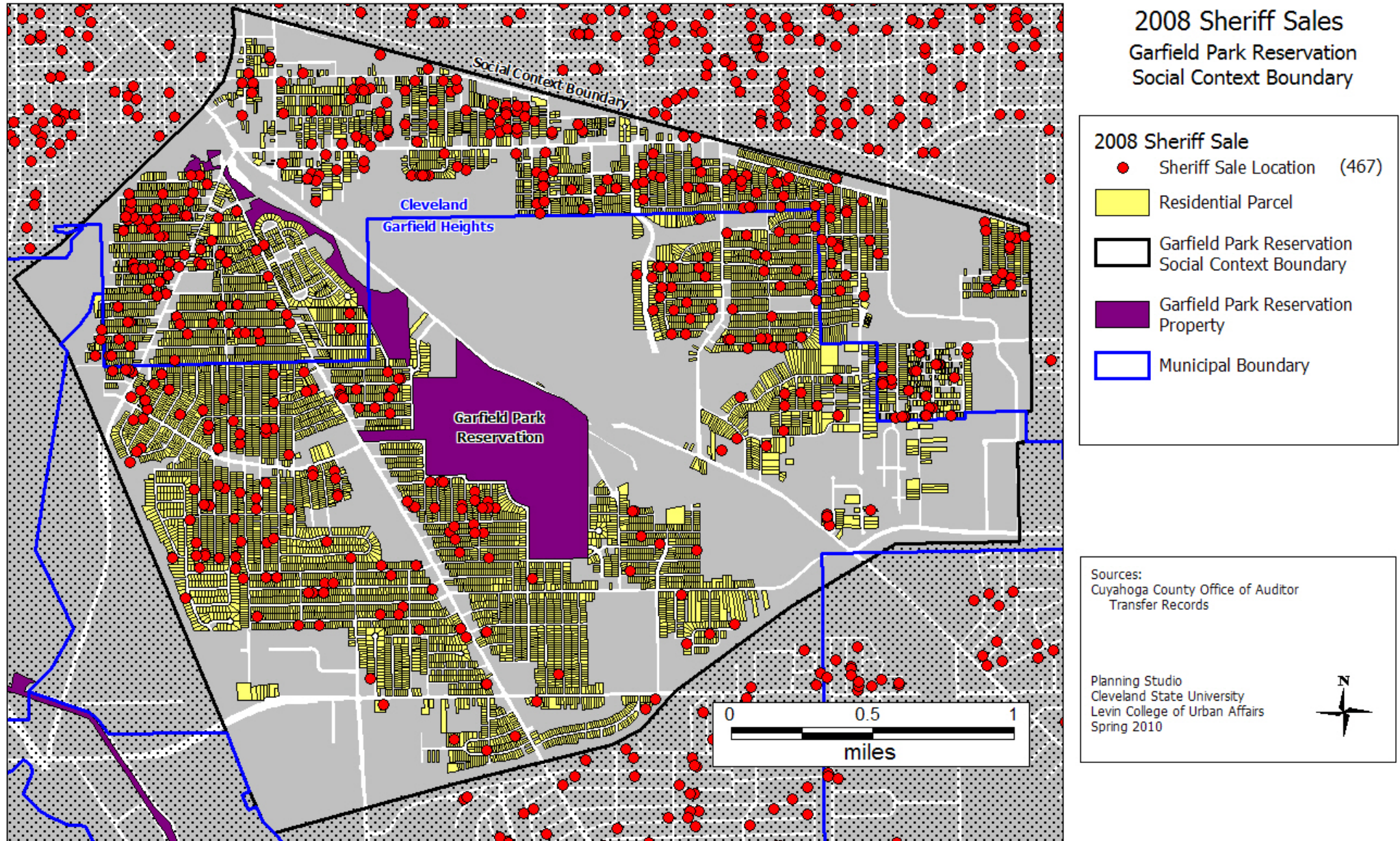


Figure 15: Land Value Map

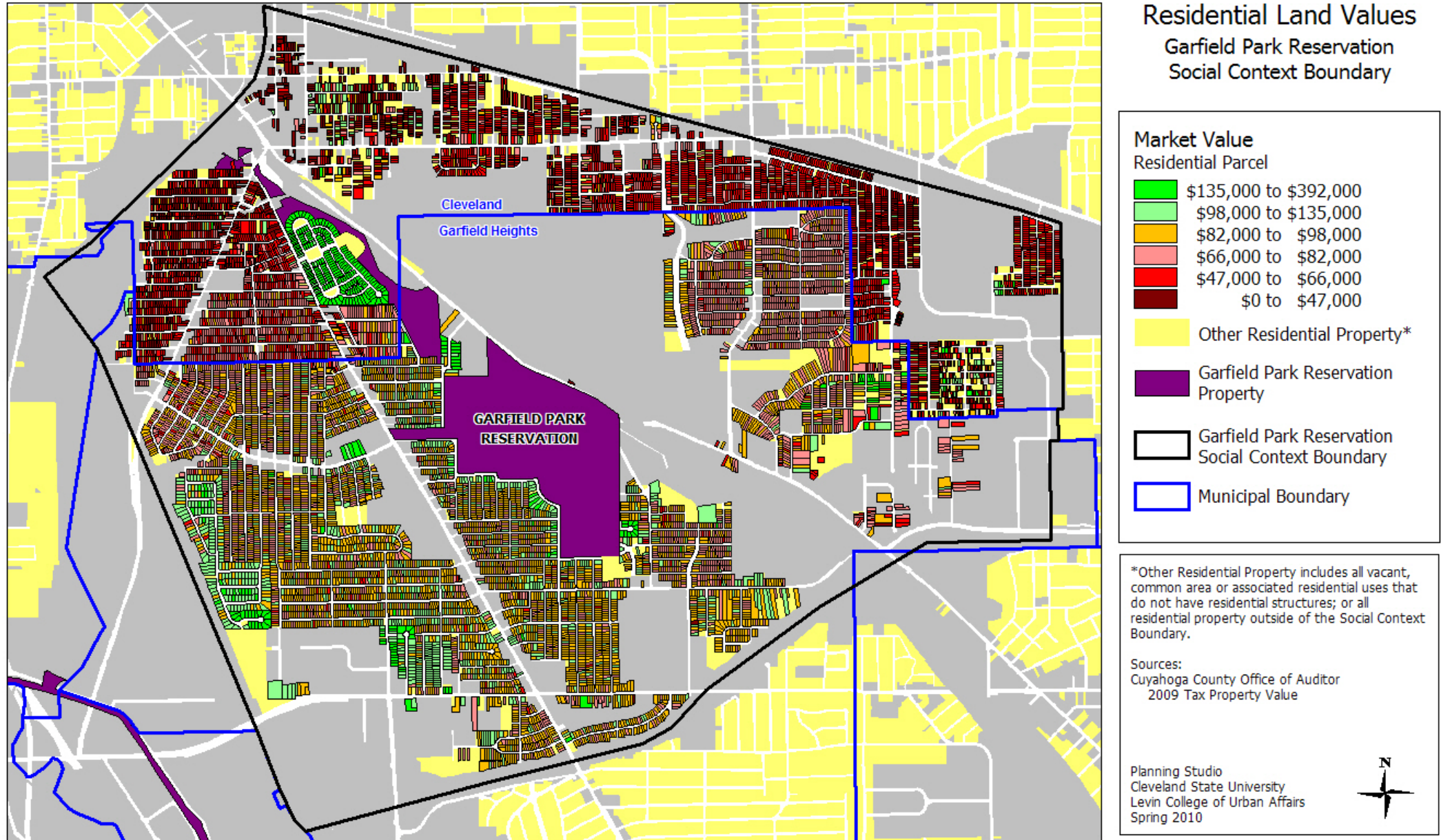




Figure 16: Forest Cover

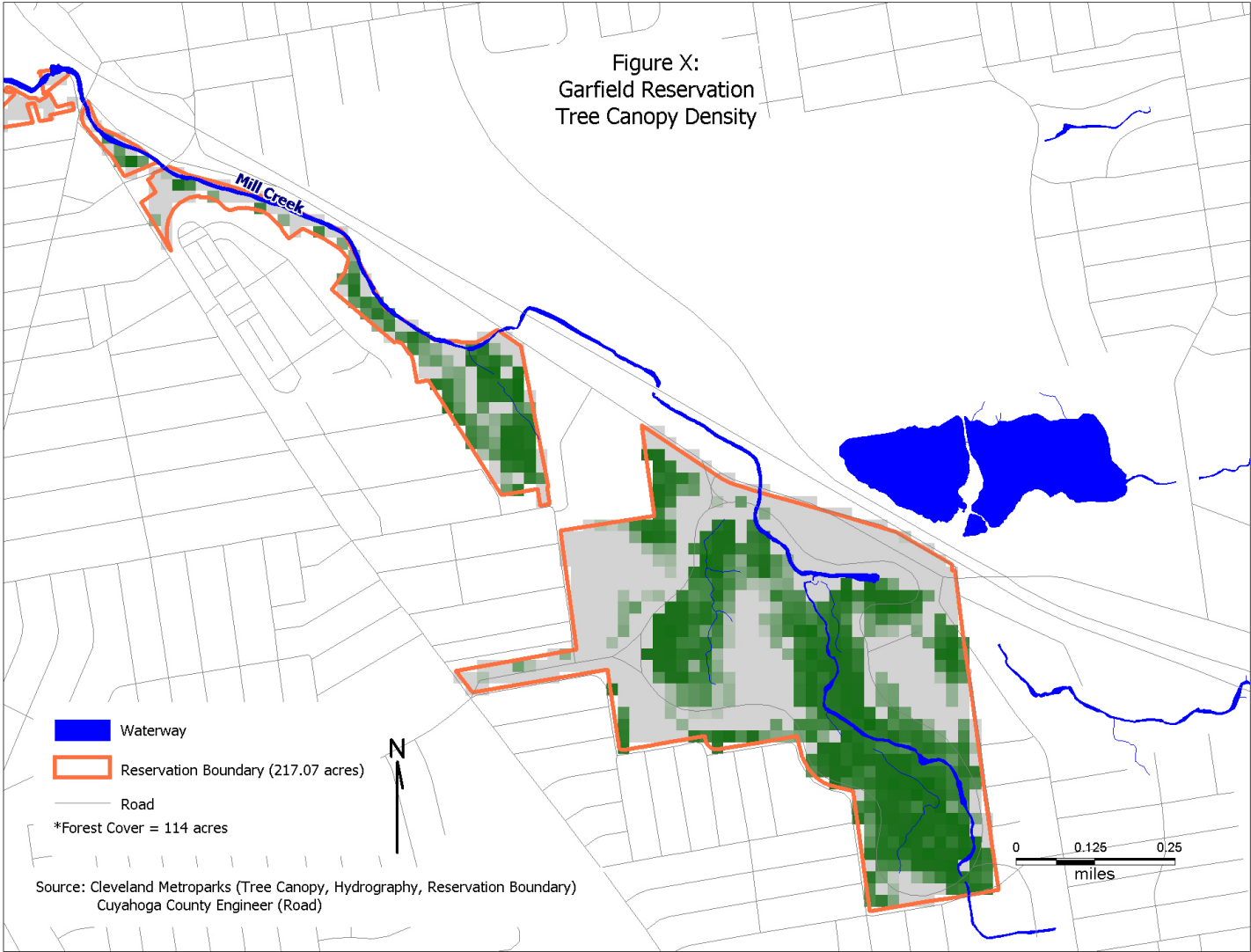


Figure 18: Hydrology

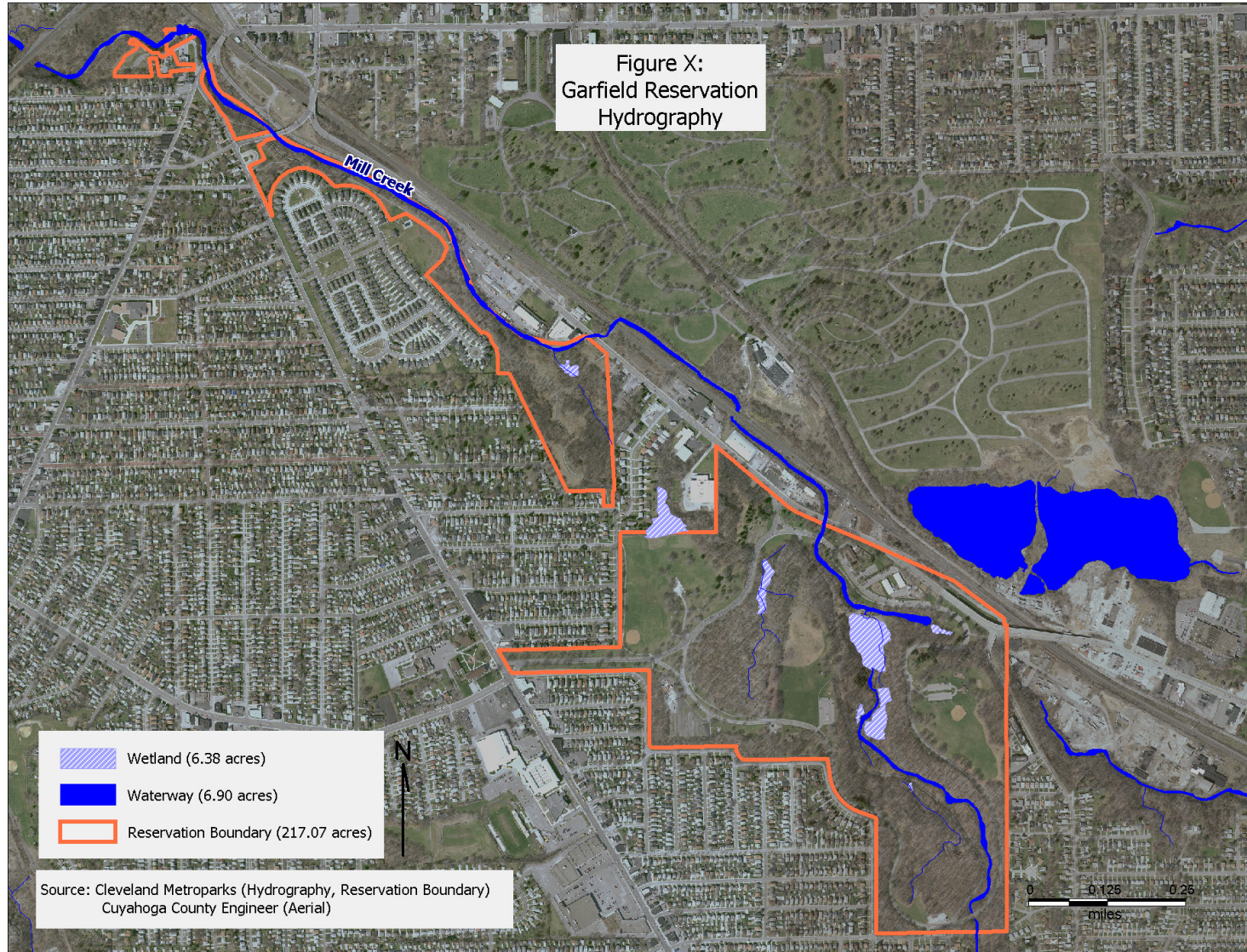
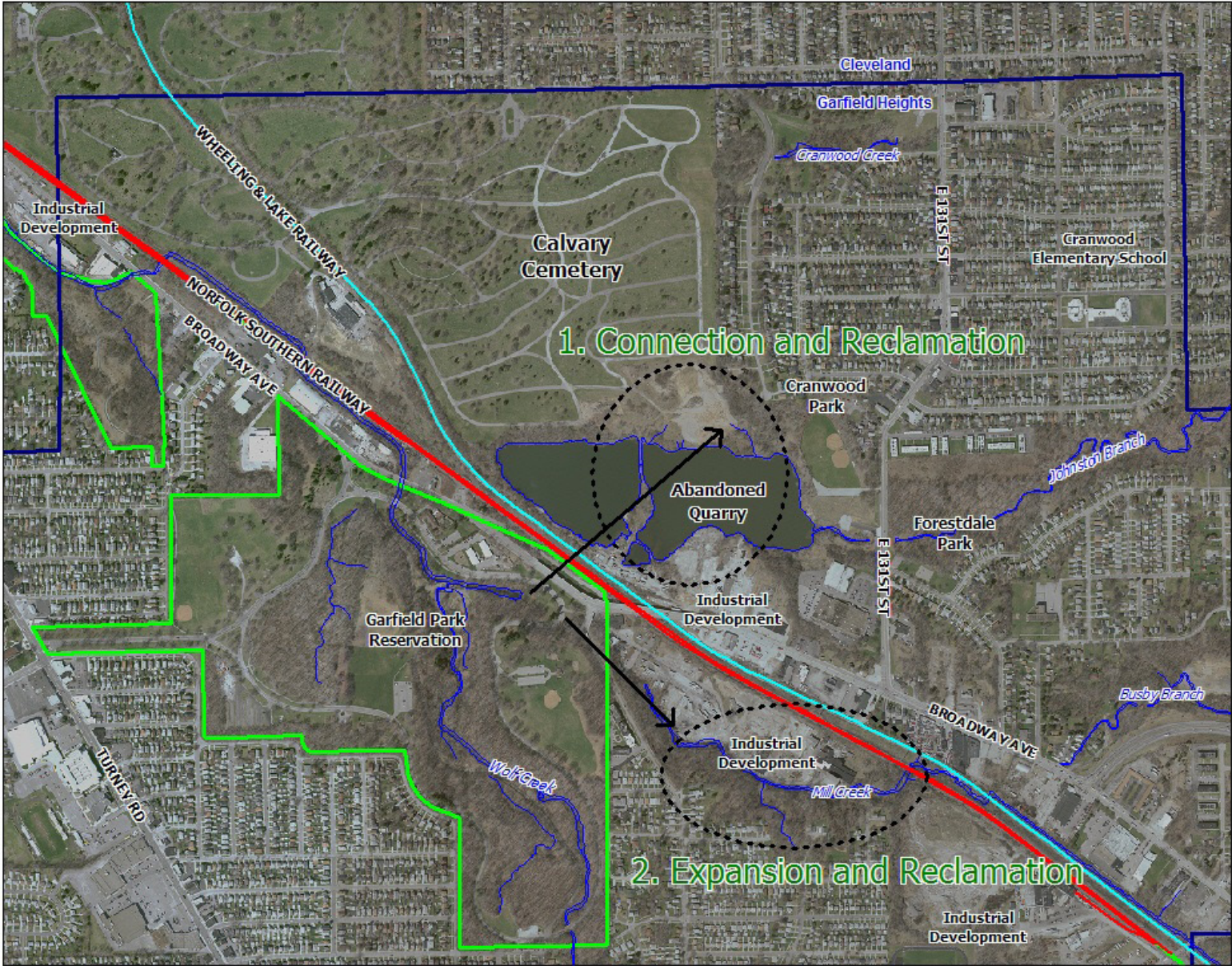


Figure 19



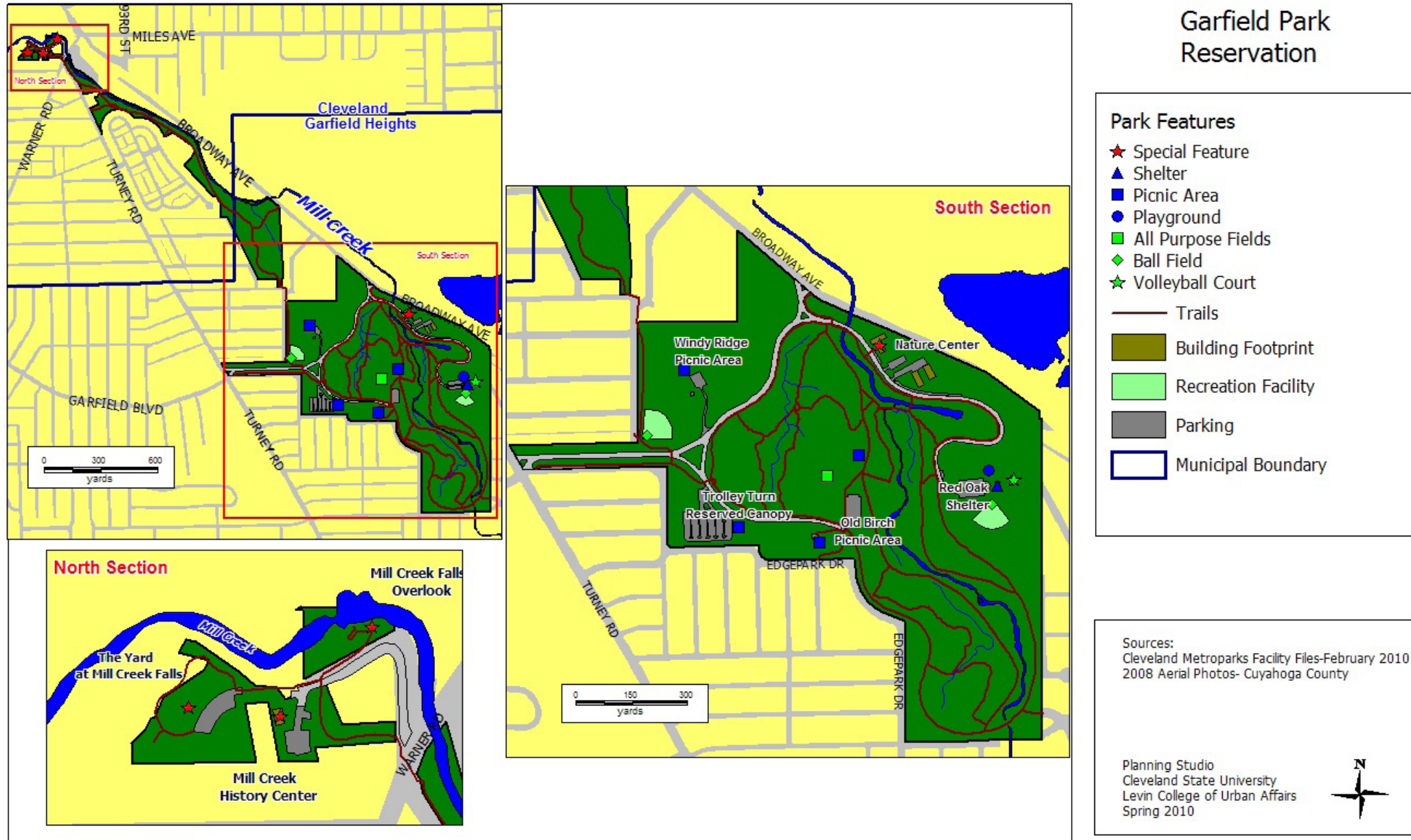
Potential Opportunities Expand and Connect

Source:
2008 Aerial Photos- Cuyahoga County

Planning Studio
Cleveland State University
Levin College of Urban Affairs
Spring 2010



Figure 21





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Marcel Albota
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Chapter 4.0
HINCKLEY
RESERVATION



Figure 3: Bridge and Trail

History

As a result of the efforts of George Emmett, a Hinckley Township resident, and John F. Johnson, who donated more than 230 acres to the Metroparks, Hinckley Reservation became part of the Cleveland Metroparks in the early part of the 1920s. The Reservation is now one of the sixteen reservations in the Cleveland Metroparks system (see Figure 1: Hinckley Reservation Location Map).

As a part of the Metroparks System, Hinckley Reservation became part of Cleveland's "Emerald Necklace." It is an open space for natural beauty and diversity, a place for wildlife, plants and people to flourish in harmony. A place to protect, conserve and appreciate and a natural place that provides an "escape" from day-to-day life.

4.1 PHYSICAL RESERVATION

The 2,803-acre reservation is located in Hinckley Township in the northeastern corner of Medina County, which falls within the southwest planning zone of the Cleveland Metroparks. The reservation is comprised of two non-contiguous areas, a main reservation located between Ledge Road and Bellus Road and a smaller area located north of the main reservation.

The majority of the reservation is located within Medina County, with a small portion located in western Summit County. A smaller, separate area is located north of the main park along the east branch of the Rocky River (see Figure 2: Facility Map).

Hinckley Reservation is dominated by the 90-acre Hinckley Lake, with two small fishing lakes on the south side; Ledge Lake and Judge's Lake. These feature a wide variety of amenities like swimming, hiking, boating and fishing. Sledding and ice skating areas are also offered in the winter season (see Table 1: Picnic Areas).

4.2 BUILT ASSETS

Ledge Pool and Recreation Area

Located along Ledge Lake, the recreation area features a heated, 80 by 100 foot stainless steel pool. It is open from Memorial Day weekend through mid-August. The area also offers a concession stand, fishing along the shore of Ledge Lake, sand volleyball, a basketball court, and reserved picnic facilities.

Trails

Paved all purpose trails run throughout the reservation. A hike around Hinckley Lake will provide an excellent introduction to

the area and should provide a good representation of surrounding flora and fauna (see Figure 3: Bridge and Trail). This trail is well-populated with joggers and bikers, especially in the summer and on weekends. In general, the All Purpose Trail runs adjacent to West and East Drives.

A dirt hiking trail follows the immediate shoreline most of the way around the lake. It traverses woodland, including pine and spruce plantings, and therefore offers optimal birding opportunities. However, it does not extend into any "deep woods" (see Table 2: Hinckley Reservation Trails).

For individuals who are interested in equestrian activities, the reservation provides six miles of bridle trails. According to the online survey associated with this project, these are in high demand, with desired expansion.

Hinckley Lake Amenities

The largest inland lake within Cleveland Metroparks, Hinckley Lake features Hinckley Lake dam, which impounds the Rocky River East Branch, a boathouse, Johnston's Picnic Area, a scenic overlook, and the Buzzard Roost parking Area (see Figure 4: Historic Hinckley Lake). It is encircled by two park roads, West Drive and East Drive. Both roads have entrances

off Bellus Road on the north side of the park, and on State Road, which cuts north and south through the center of the park. Many of the park's primary destinations are accessed from West Drive. Other park areas are accessed from East Drive, Kellogg Road, Ledge Road, State Road, Bellus Road, and Parker/Harter Roads, all which serve to form boundaries for the Reservation (see Figure 5: Lake Boathouse).

Whipps Ledges Amenities

Picnic areas and hiking trails can be found at Whipps Ledges, located east of State Road (see Figures 6 & 7: Whipps Ledges). It is an interesting aspect of the reservation with an unusual exposure of large outcroppings of Sharon Conglomerate; soft and porous sandstone laid down during the Coal Age almost 250 million years ago. Atop these ledges, which rise 350 feet above Hinckley Lake, grows a magnificent forest of oaks and other hardwoods.

Worden's Ledges Amenities

A similar formation to Whipps Ledges, this area displays a series of carved figures, including carved images of George Washington and Thomas Jefferson, a sphinx, clipper ship, face, cross, and Bible. The figures were carved in the 1940s by an eccentric landowner, Noble Stuart. He was the

son-in-law to the namesake of the ledges, Hiram Worden.

4.3 SERVICES

Thousands of guests visit Hinckley Reservation each year. During the summer months, non-motorized boating, picnicking and hiking are the most prominent activities. Baseball, drive-in movies and the Ledge Pool also draw visitors in warm weather. In the winter, Hinckley Lake is well known for ice fishing and skating.

Formal Recreation

Visitors of all ages can enjoy the diverse recreational activities available at this reservation. Baseball, skating and kayaking are among the organized activities taking place at Hinckley Reservation. A Learn to Swim Program is also offered for children and adults.

Informal Recreation

Hinckley Reservation offers visitors a multitude of choices for relaxing and shedding day-to-day burdens. While observing the natural habitat of flora and fauna, a visitor can enjoy year-round recreational activities such as sledding, fishing, swimming, boating, picnicking and hiking.

Formal Education

Hinckley Reservation offers a variety of opportunities to study nature in its natural environment. The Hinckley Reservation Floating Water Lab offers programs organized by naturalists. The Floating Water Lab serves as a microcosm of Hinckley Lake's ecosystem and provides an increased understanding and appreciation of our natural environment. Other organized environmental education activities, such as Nature Tracks, function to broaden the knowledge of visitors about nature by using a SMART board technology. Educational programs attract history buffs with the Worden Heritage Homestead and the stories behind the unusual carvings at Worden's Ledges. Additional educational and recreational events are scheduled throughout the year.

Hinckley Reservation is also noted for the annual return of the buzzards or turkey vultures, a prominent feature of the park (see Figure 8: Historic Buzzards Roost). The celebration takes place each year during the weekend after March 15, traditionally called Buzzard Sunday. The buzzards have been making the annual trek since the 1800's but the phenomenon of the returning birds was first noted in 1957. Since that time, thousands come each year to witness their arrival. Falcons and hawks are also

guests of the Hinckley Reservation at the annual Buzzard celebration.

Informal Education

The park is open year-round to birdwatchers, up-and-coming naturalists, and nature observers who share a love of the outdoors. Hiking trails are marked with informational references about the various types of trees that are native to the area.

4.4 EVALUATION OF ASSETS

Of the assets listed above, most are in good shape and are adequately used by visitors. The hiking trails and picnic areas are all in good condition with minimal amounts of litter. The restrooms are not as well maintained. Signage, however, is lacking in some areas. Visitors may be encouraged to explore less traveled parts of the reservation if better signage directed the way. At the Hinckley Lake dam, the observation deck is also in need of repair.

4.5 SERVICES VALUATION MODEL

Based on the services valuation model described previously, Hinckley Reservation has a social value of \$7,291,509 (see Table 3: Social Valuation). This number is based on 844,029 total visitors to the reservation during 2009, including 57,029

participants in educational programs, and 43 venue rentals. A total of 79,236 individuals use the all purpose trails. Of those, an estimated 8,715 regularly utilize the reservation for physical fitness purposes, with 7 percent runners, 3 percent bikers and 1 percent inline skating. This value is a very conservative number due to the lack of separate data for Hinckley Reservation, the statistics for the reservation are compiled with Brecksville Reservation data.

4.6 THREATS TO BUILT ASSETS

Stressors on the built assets at Hinckley Reservation are observed by numerous site visits and discussions with the park personnel. The key stressors identified are as follows:

- Lack of information available to visitors interested in using the park and its amenities
- Hiking and biking trails are expensive to maintain from the existing budget
- Erosion due to improvements and paved trails that interfere with natural rain water collection
- Increased vehicle traffic and pollution that progressively has changed the ambiance of the park

4.7 RECOMMENDATIONS FOR BUILT ASSETS AND SERVICES

The following is a list of specific goals for Hinckley Reservation to maintain and improve the quality of services throughout the reservation:

- Develop a visitor center at the Bellus Road entrance. The proposed center will provide better information about the reservation and the surrounding areas.
- The lack of proper signage around the reservation requires an improvement of trail markings for easy accessibility throughout entire reservation.
- Connecting the sections of the park that are disconnected, with on/off road trails, will create a better trail flow will greatly improve user-friendliness.
- Analyze the dam structure and spillway for a better nature-integrated redesign in collaboration with Army Corps of Engineers. However, this could be an expensive capital improvement project and not a priority for the near future.
- Redesigning the educational programs of Hinckley Reservation is essential. A larger variety of offerings would increase the number of visitors and the revenue stream of the park. Possible opportunities include collaboration with Cleveland Orchestra for weekend lunch concerts, rain gardens for native plants, and an urban vegetable garden inside the park's natural habitat in col-

laboration with Cleveland Botanical Garden.

4.8 SOCIAL CONTEXT

Boundary Definition

The boundaries chosen to define the social context of Hinckley Reservation were transportation routes forming edges along the four sides of the park. Four major Interstate Highways can be found within two miles of Hinckley Reservation. Interstate 71, located just west of the reservation provides access to downtown Cleveland, which is about a 30-minute drive, and to the Cleveland Hopkins International Airport, which is approximately 15 minutes north. North of the Reservation is Interstate 80, also known as the Ohio Turnpike, which provides east-west connections to the entire United States. South of the reservation is Interstate 271, which begins just northwest of Hinckley and terminates with I-90 near Euclid. Finally, to the east is Interstate 77, originating in downtown Cleveland and terminating in Columbia, South Carolina.

The Reservation is bounded by Bellus Road to the north, which provides access to the swimming area at Hinckley Lake and the dam, State Road to the south, and East and West Drives. Entrances to the Reser-

vation are off Bellus and State Roads.

The following boundaries were chosen to analyze the social characteristics of the area around Hinckley Reservation. Interstate 80 east to Interstate 77 south to Interstate 271 west to Ledge Rd west to Weymouth Rd west to Pearl Rd north to Elyria-Twinsburg east, to Interstate 80 east. These boundaries were chosen based on ZIP code responses from the user surveys conducted at the reservation.

4.9 NEIGHBORHOOD INVENTORY

Surrounding Land Use

Because of the rural character of the area, retail trade near Hinckley Reservation is relatively limited. However, an analysis of the business characteristics for Hinckley Township reveals that approximately 57 acres are zoned for general business. Some of the current uses include a CVS Pharmacy in the Bennetts Corner area, a chiropractor, some offices and a mini-golf course/golf ball driving range near the Bellus Road entrance to the reservation.

Hinckley Township abuts the growing communities of Brunswick, Brunswick Township, Strongsville and North Royalton. Pressure for development is emanating outward from these communities. The

pattern of existing land use is located for the most part along jurisdictional boundaries shared with these communities. There are primarily three areas where commercial and industrial uses are located: the intersection of State Route 303 (Center Road) and West 130th Street; the northeast corner of West 130th Street and Boston Road (Bennetts Corners); and the intersection of State Route 303 and Ridge Road (State Route 94) at Hinckley Center. The largest concentration of commercial land use is located at State Route 303 and West 130th Street. A fourth area comprised of the mini-golf/driving range establishment is located near the Bellus Road entrance to the reservation.

Residential development on $\frac{3}{4}$ acre lots, which results in a density of approximately one unit per acre, is also concentrated in the Bennetts Corners area. This sits across from similar suburban type residential development in Brunswick. Central water and sewer lines service all of these more densely developed areas, with the exception of the mini-golf/driving range. These developed areas account for approximately 900 acres, or about five percent of the 17,238 acres in the township. Another 9,560 acres (55 percent) are considered developed, though they have a much more rural, open feel, with two acre lot sizes. The average density is over four acres per



Figure 4: Historic Hinckley Lake



Figure 5: Lake Boathouse

unit. See the table below for a breakdown of existing land uses (see Table 4: Suburban Type Development).

4.10 POPULATION AND HOUSING CHARACTERISTICS

Current Demographic Data – Within Social Context Boundary

The current (2009) population within the social boundary is 106,235 persons. The total number of households is 39,983. Of those households, 387 are without a vehicle. The total population of the Medina County census tracts within the social boundary area is 52,376. The average household income is \$79,094. To view this data broken down by block group see Figure 9: Income Map. Education levels vary at the block group level within the social boundary (see Figure 10: Education Map). The racial composition of the social boundary is predominantly White, with small African American, Asian, and Hispanic populations (see Figure 11: Race Map).

Current Demographic Data – Within Hinckley Township

The total population of Hinckley Township is 6,753 persons, of which 28 percent is urban and 72 percent is rural. There are

3,420 males in the township (50.6 percent) and 3,333 females (49.4 percent). The racial composition of the township is 97.6 percent White Non-Hispanic, 0.1 percent African American and 0.8 percent Asian. There are no American Indians or Alaska Natives in the township. The median age for males is 41.0 years and the median age for females is 40.8 years. The average household size is 2.90 people, while the average family size is 3.17 people.

Projected Demographics – Within Social Context Boundary

Within the social boundary, the total population is projected to dip and then increase again by 2019; with population estimates dropping to 103,431 in 2014, and bouncing back up again to 106,116 in 2019. While population is projected to drop by 2014, the number of households is projected to increase to 40,971 from 2009 estimates of 39,983. They are expected to increase substantially from 2014 to 2019, with an estimated number of 63,711 households. The total number of households without a vehicle is expected to drop in 2014 to 323 from its current level of 387 (see Table 5: Projected Demographics).

Housing Characteristics

In Hinckley Township, the median house

or condo value in 2008 is \$310,050, compared to \$214,700 in 2000. The mean price for a detached house is \$344,575 in 2008. The median contract rent for apartments in 2008 is \$677 (lower quartile is \$577, upper quartile is \$870). Figure 12: Home Value, displays the current home values at the parcel level, illustrating the areas within the social boundary that represent the highest and lowest housing values relevant to Hinckley Reservation.

A GIS analysis was conducted using buffers at 200-foot intervals, from 200 to 1,500 feet from the Hinckley Reservation. The data reflects a fairly stable home value until around 1,500 feet, where the average value increases substantially (see Figure 13: Home Value and Distance). This counter-intuitive phenomenon is due to the fact that the homes immediately surrounding the reservation are predominately lower value cottage-type houses. At 1,500 feet, modern suburban development becomes more common.

4.11 HOUSING VALUATION MODEL

Based on Lutzenhiser and Netusil's (2001) hedonic analysis of the effect of open spaces on housing prices, value is added to the county base housing price by proximity to a reservation. These "buffers" are measured in feet and rely on the count of

single-family homes in each zone. These values are inflated to 2009 values and normalized. Each buffer range is measured from the Hinckley Reservation. All of the homes in the analysis intervals fall within the Highland School District, which has a tax rate of 1.48 percent.

Based on this analysis, the total property tax that is, in effect, created by the location of Hinckley Reservation is estimated to be \$287,436 (see Table 6: Economic Valuation).

4.12 COMMUNITY GROUPS AND GOVERNMENT AGENCIES

Rocky River Watershed Council

The Rocky River Watershed Council concentrates efforts on protecting, restoring and perpetuating the Rocky River Watershed. Primary to their mission is public education, watershed planning and facilitating communication and cooperation between stakeholders. The recognition that it is increasingly important for local watershed groups to help local governments and residents understand the complexity of sound management techniques enables the RRWC to act as an intermediary between larger entities and localities. The council assists in public education regarding flooding, erosion and storm water

run-off. On site assistance is available for stream bank restoration, river clean-ups and remediation efforts. Often, identifying where the council's efforts can be most advantageous, is the greatest obstacle toward effective partnerships.

Community Partnerships

Community partnerships within the social context boundary of the Hinckley Reservation require reservation staff to establish and maintain contact with neighboring community service managers. The interconnectivity of the reservation and its neighbors is apparent during roadway repairs, utility infrastructure and future development goals within the Township. The opportunities present when stakeholders who are familiar with each other's goals and limitations can expedite projects that otherwise may lay dormant.

Public-Private Partnerships

The efforts of corporate volunteers provide the reservation staff the ability to maintain areas of the reservation that would not ordinarily be included in day-to-day maintenance. Non-profit partnerships with local organizations also bolsters staffing in many areas of park maintenance, establishing Eagle Scout projects through the Boy Scouts of America achieves small-

er project goals while also providing a learning experience for the scouts. These non-profit partners include: The Hinckley Historical Society, neighboring riding clubs and stables, and businesses within the Hinckley Chamber of Commerce.

4.13 THREATS TO SOCIAL CONTEXT

The predominant social threat to the study area is increasing population pressures from neighboring counties. As Cuyahoga County's population has declined and Summit County's population has remained relatively stagnant, the population of Medina County has increased. One mitigating circumstance in this situation is that the dominant residential zoning for Hinckley Township at two acre lots will not allow extremely dense development pressures.

4.14 RECOMMENDATIONS FOR SOCIAL CONTEXT

Support Low-Density Development

In the survey associated with this project, the majority of respondents stated that 'conservation' is the most important planning parameter for the Cleveland Metroparks. Therefore, the Metroparks should partner with Hinckley Township and Medina County to evaluate and maintain the current residential zoning

regulations in the immediate area around the park. The two acre residential regulations allow for continued growth of the area, while mitigating the effects of urban sprawl from neighboring counties.

Encourage Community Partnerships

Given the prevalence of the equestrian related activities in the area, the reservation should partner with the township and neighboring riding clubs and stables to establish an “Equestrian Friends of Hinckley” organization. The organization could provide input and guidance for these activities. Given the costs for establishing and maintaining bridle trails, watering facilities and use-specific parking areas, the organization could implement a membership fee system to mitigate these costs, while providing an opportunity for these activities to continue.

The social context encompasses the relationship between the Metroparks and their neighboring communities. Encouraging close working relationships between the Hinckley Reservation Park Manager and Hinckley Township Trustees should be a continuous goal. This is a critical relationship to cultivate and maintain as the township faces the potential loss of revenue from a reduced tax base if the park expands into previous taxed property.

4.15 ECOLOGICAL CONTEXT

Watersheds are a critical frame of reference for the land, water and all living creatures from microorganisms to human populations. The quality of the watershed translates equally to the quality of life for all organisms. In effect, water is the lifeblood of everything within the watershed.

Boundary Definition

Hinckley Reservation is a non-contiguous park area, situated slightly to the southwest of the main ‘necklace’ of parks that surrounds the greater Cleveland region. The connector linking the Reservation and the main body of parks is the Rocky River watershed. The watershed in this zone encompasses 294 square miles. It partially includes Cuyahoga, Lorain, Medina and Summit Counties. The East and West Branches are the main headwater sources with the tributaries adding to the volume. The East Branch courses through the reservation. The smaller contributing headwaters systems are associated with the tributaries and sub-watersheds. The Rocky River basin contains approximately fifteen stream segments or water bodies; some other tributaries are Abram, Baldwin, Plum and Healey Creeks. The Rocky River flows south to north; from a maximum elevation of 1,250 feet to Lake Erie at 571

feet (see Figure 14: Rocky River Map).

4.16 NATURAL RESOURCES INVENTORY

Rocky River, while originating in a more rural area, travels through thirty-two municipalities and townships. The dominant land use overall is only 14 percent urban, but its development density is located in the headwater systems. Examples of headwater urban concentration are: more than 45 percent in Abram Creek; Baldwin Creek, 27 percent; Plum Creek (Brunswick), 21 percent; and Healey Creek, a tributary to East Branch, 90 percent development (although low density) in the upper half its headwaters. Each of these areas is noted as having or potentially having impairment.

The upper reaches and headwaters areas of a watershed are important for two main reasons. First, everything flowing down from this point impacts the main stem and lower reaches. Therefore, it is important that it remain in as high quality and naturally intact condition as possible. Second, negative water events are exacerbated by high density development. Therefore, it is necessary to balance land uses in headwater areas. The lower segments of the watershed have the most impervious surfaces in urban and suburban areas.

Water quality is of particular importance in the upper reaches of a watershed. Therefore, point and non-point sources of water pollution should receive special attention. Point sources are those that are known discharges; some possessing permits. Non-point discharges are unknown, broader sources. Examples of non-point pollution include residential lawn wastes and chemicals; commercial, industrial and agricultural runoff; animal waste from livestock and pets; and uncontrolled dumping of materials, including land excavations, building debris, chemicals, etc. (see Figure 15: Areas of Concern).

Forest

Hinckley Reservation has a broad expanse of forested area. The tree canopy coverage is a wide mix of deciduous red and sugar maple, beech, a variety of ash, oak, tulip, hickory, cottonwood, Ohio buckeye, apple, black tupelo and some evergreens such as hemlock and pines. The coverage is mainly intact forest with few edges which increases undisturbed habitat for avian, mammal, flora and fauna species. Undisturbed habitat can account for a higher and healthier quality of life with more successful proliferation. The tree canopy spreads across 2,178 acres of the park's total 2,804 acreage (see Figure 16: Forest Cover).

Soil Condition, Infiltration and Erosion

The Rocky River watershed is located within the Erie/Ontario Lake Plain ecoregion. The land features of this ecoregion were formed during last ice age when glaciers retreated. The glaciers leveled plains while leaving behind notable geographic formations such as higher remnant beach ridges, glacial till ridges, drumlins, till plains and outwash terraces. The main stem river bed consists of a bedrock substrate. Primary watershed soils are productive Alfisols which are moist mineral soils containing an alluvial horizon in which silicate clays have been deposited.

Hydrology

The Rocky River has a length of over 664 miles, including its tributaries. Most of the riparian corridor is forested with easy access from the surrounding urban and suburban communities. The convergence of the East and West Branches is about 12 miles from the mouth of the river at Lake Erie. The river's mouth is configured for boating. It showcases an artificial lagoon designed in the West Channel (a side water way), plus the Lake Erie access channel. The Harbor utilizes 4,200 feet of the river.

The main stem of the river is relatively shallow with good movement and velocity.

The highest water volume occurs February to April and the lowest amounts August to October. Precipitation in this temperate region falls as 37 inches of rain and 56 inches of snow.

The Ohio EPA designates the Rocky River watershed as a warm water basin. The upper reaches of the East Branch are the healthiest in water quality and diversity of species and habitat. Some segments of the upper reaches are challenged with failing septic system contamination and land development. Lower reaches have higher density land use with significant impairment from runoff and sewage, ammonia, metals and habitat alteration (see Figure 17: Hydrography).

Aquatic and Animal Life

A wide variety of animal species can be found in various habitats within the reservation. These include red tailed fox, raccoons, chipmunks, brown squirrels, opossums, skunks, ground hogs, mice, voles, moles, shrews, weasels, coyotes and white tailed deer. Over recent years, deer populations have expanded to such large numbers that it is now a major problem for the park.

The coyote population has increased, creating more contact with humans, despite

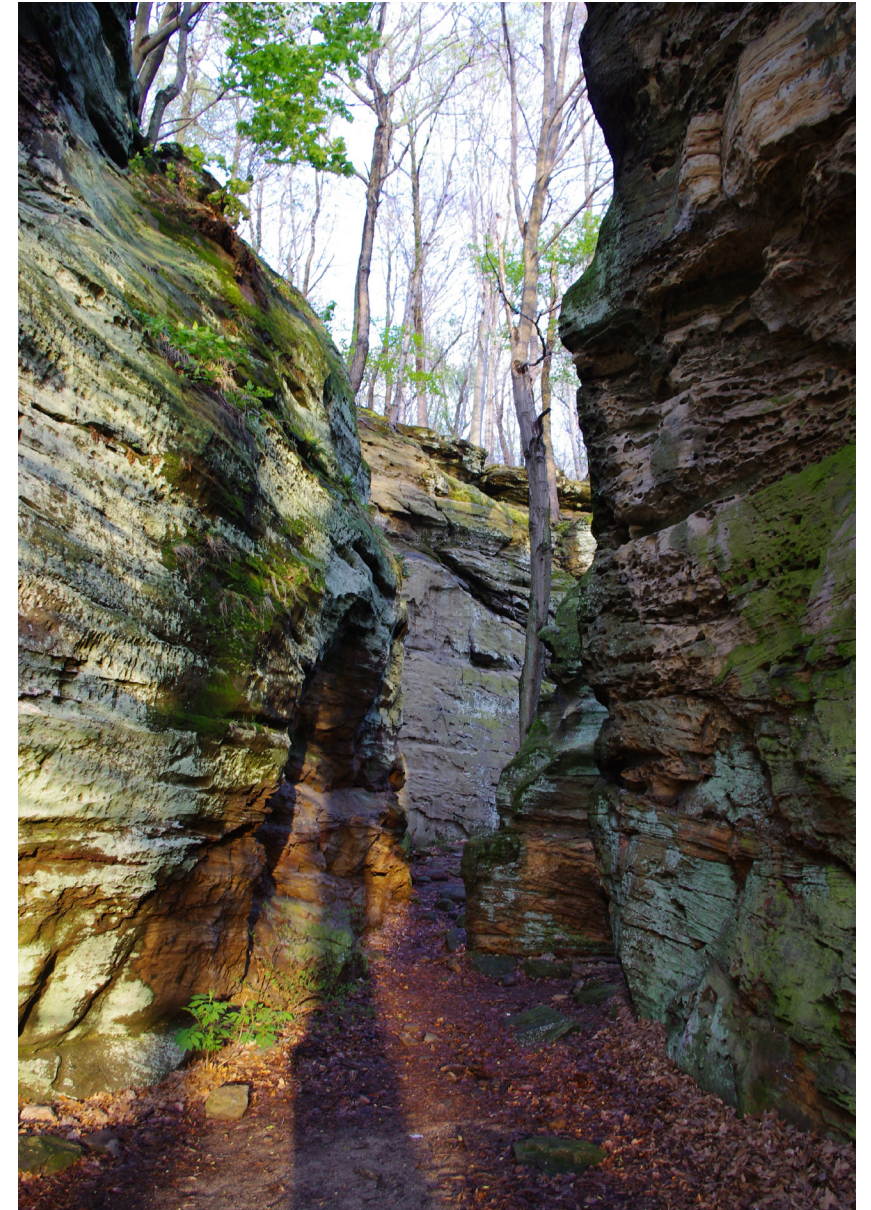


Figure 6: Whipps Ledges



Figure 7: Whipps Ledges

their instinctive behavior to retreat and avoid contact. The increase in coyotes may well be reflective of the abundance of wildlife in the parks and open spaces. Access to food in designated human spaces may contribute to increased human contact. Therefore, it is recommended that caution be exercised in close encounters.

Bird watching is a popular recreational activity, whether done in a backyard, park or on an extended field excursion. Bird watching also produces a documented count of migrant and local species, providing a fairly accurate record of population trends. The Western Cuyahoga Audubon Society closely monitors the bird population in the Hinckley Reservation. Counts taken over a number of years reveal avian information and surrounding flora data. Correlations between species and flora may account for the rise and fall of populations of certain species.

Ohio Audubon has designated Hinckley Reservation as an important bird area (IBA). The Audubon Society defines an IBS as a “tract of land that the Ohio Audubon Society has determined crucial to the existence of birds and other wildlife because of their habitat.” The Audubon Society works in collaboration with the Cleveland Metroparks to protect and conserve the avian and flora populations

within Hinckley and other Metropark reservations.

Local or non-migrating birds include (partial list): cardinal; robin; white breasted nuthatch; blue jay; downy, hairy, and red-bellied woodpeckers; mourning dove; house sparrow; and black capped chickadee. Migrating birds include (partial list): a variety of warblers such as Canada, black throated blue, yellow throated, palm, cerulean, prothonotary, bay-breasted and red start; song sparrow; great crested flycatcher; eastern wood peewee; eastern kingbird; veery; gray catbird; cedar waxwing; red shouldered hawk; and turkey vulture.

The turkey vulture is one of the largest birds of prey in Ohio and can be seen on warm days in a wing v-position riding the sky thermals without wing beats. The thermals (pockets of heated air) lift the bird which continually adjusts to remain within the column of rising warm air. Buzzard Sunday is an annual event celebrating the return of the migrant turkey vulture (“buzzard”) and draws an enthusiastic crowd from all parts of the United States. This year’s March festivities welcomed 6,000 visitors.

Aquatic life varies with the type of habitat. For those who enjoy fishing, Hinckley Lake and the East Branch are stocked

with steelhead smolts (which increase the population overtime), small mouth bass and trout. The wetland area on the north side of Hinckley Lake is the largest and highest quality wetland, most likely due to the park-protected upstream waters. Some salamanders as well as macro invertebrates are found here. Three classifications of streams run through the park and the aquatic life varies with the order. Perennial warm water will vary from perennial cold water streams. Ephemeral or intermittent streams are seasonal and will have the lowest diversity and counts.

4.17 ECOLOGICAL VALUATION MODEL

Preservation of the parks and the forests and watersheds within them has substantial economic benefits in the form of ecosystem services. Services such as watershed protection and carbon storage (in forests) can be more valuable than forest related products (timber, pulp, etc.).

A combination of the ecoservices based on the forested area of 2178 acres totals \$18,610,808. The services include hydrologic, carbon storage, air quality maintenance, storm water control, bio/diversity habitat, and soil formation/retention (see Table 7: Ecological Valuation).

4.18 THREATS TO ECOLOGY

Forest

Two stressors stand out with regard to major forest impacts. First, the Emerald Ash Borer is a wood-boring beetle that reaps devastation on the many varieties of ash by depositing eggs below the bark. The resulting larvae consume the cambium layer which virtually kills the tree by eventually girdling the trunk. The adult beetles actively fly May through September and the rest of the year the larvae continue to consume the trees. The Ohio Department of Agriculture prohibits the movement of any ash tree parts and also prohibits any wood (not just ash) removal from an infected/quarantined county. A \$4,000.00 fine supports the warning. As of January 2010, the Department has quarantined 67 of Ohio's 88 counties. The Cleveland Metroparks prohibits any movement of wood in or out of the parks. The borer has been active in Ohio since 2003.

The second stressor is deer browsing. The high population of the white tailed deer has resulted in degradation and/or loss of forest floor flora and any flora that rises to the height of the deer 'browse line' (the height the deer are able to reach to eat). The degradation and loss of flora impact the fauna and in-

sect life that rely on the plants for nourishment. Additionally, the species that can help the forest pollinate and maintain self-rejuvenation are lost. The numbers of species of fauna and insect life may be so reduced that the population can be considered eliminated in some areas.

Hydrology

Main stressors on the watershed impact the quality of the water and everything living in it:

High nitrogen levels, habitat alteration and increasing siltation. The lower reaches of the river, and its tributaries, are affected daily by the surrounding urban and suburban land uses. Commercial and industrial discharges, either permitted or unauthorized, can easily exceed allowable EPA (Environmental Protection Agency) levels. Pressure from businesses has kept permissible levels of discharge at a level that exceeds the limit of what is naturally acceptable to maintain a stream's balance. Zero discharge is the healthiest approach to preserving waterways, but the EPA compromises until technologies, science and funding can significantly reduce levels of discharge to near-natural states. Upper reaches of the headwaters face septic system failures, bank degradation, land development and habitat alterations. Impervious surfaces of the large parking areas

and paved walkways within the park cause runoff that carries pollutants that impact the surrounding habitats. The ratio of impervious areas to pervious areas is low as compared to other reservations, but improvements can be considered. Technologies may bring down the costs of new material. Pervious hard surface materials are on the market now, but at uncompetitive costs (see Figure 18: Impervious Surfaces).

Animal Life

As mentioned above, overgrazing deer populations have led to loss of forest floor and meadow fauna. This stresses the animal species that rely on that fauna. Natural controls from predatory species no longer exist, except for the occasional young or injured deer. Deer tend to browse at forest edge lines. The increased development of land use has formed a new pattern of forest edging where large tracts of intact forest are now fragmented, increasing the linear footage of forest edges. The deer population has increased as a result of no predators and an abundant, easily accessible, food source. The deer wander to take advantage of the new patterns of forest edge lines. They travel through urban and suburban residential and commercial lands, including the park system, where they remain generally undisturbed.



Attempts to control or balance the elevated deer population are achieved through permit-sanctioned culling. Although anti-conception measures were studied, the current culling method remains the most practical and successful. An accurate number of deer per square acre for a natural balance might be between ten and twenty, with variations due to habitat conditions (geology, vegetation, water bodies, and impervious surfaces). In Hinckley Reservation, the average count per acre is far higher. The deer density is devastating vegetation to the degree that not enough food exists for the deer population. This results in a segment of the deer population that dies from malnutrition. The positive aspect of culling is that the meat is processed quickly to maintain freshness and then is distributed to organizations that help feed the hungry.

Reduction of deer populations also impacts the conservation of avian habitats. When the forest floor is denuded of all vegetation, the opportunities for ground feeding birds decline or are eliminated. If a bird species cannot find adequate food sources, it will not have a successful nesting season. This leads to a very rapid (next generation) decline in the species either by the death of that bird or by no reproduction.

Avian conservation is approached by collaborating with birding interest groups: Western Cuyahoga Audubon Society, Kirtland Bird Club, Eastern Cuyahoga Audubon Society, Cleveland Science Club, and programs sponsored by the nature centers in the Cleveland Metroparks. Similar interests in conserving and protecting species and habitat are a growing concern as bird populations decrease. Many avian, flora and fauna studies, in addition to formalized recorded counts, help develop plans to achieve more favorable conditions. Private citizens, university students, and smaller organizations all share in providing data and support for conservation venues. The work by the Western Cuyahoga Audubon Society in the IBA areas is an excellent example of collaboration success.

Currently, West Nile Virus appears not to be a significant avian threat since counts have receded after the crest around 2002. However, naturalists, birders and the scientific community continue to monitor the virus. Any reports are closely investigated and watched. Certain bird species were damaged more than others, such as blue jays. In 2010, the jays appear to be increasing in numbers again.

Rabies transmitted by raccoons, bats and skunks are an ongoing animal and human health issue for the park system. The dis-

ease has its history in the 1970's when an infected raccoon was discovered in Virginia. As increasing reports of rabies spread across Ohio from the eastern boundary, the park worked with the USDA-APHIS Wildlife Services to halt the movement at the Cuyahoga River line. Work continues today, in affiliation with the Cuyahoga County Board of Health and the Ohio Department of Health, using an effective program that dispenses animal ingestible vaccine packets. A reduction in rabies is attributable to this multi-agency effort. The counter measures to control rabies are critical since animals are responsible for transmitting approximately ninety percent of reported cases.

Monitoring the health of fish in the greater Lake Erie region is conducted by the Ohio Sea Grant College Program. The VHS (Viral Hemorrhagic Septicemia) disease noted in Lake Erie fish in the early and mid 2000's could cause significant deformities. However, an infected fish could also present no symptoms. Due to the easy transmission of the disease from fish to fish, the Cleveland Metroparks Natural Resources Division warns that no fish are to be moved between bodies of water. It further warns that all water vehicles be cleaned. This acts as an alert for prevention. There appears to be no harm to humans consuming infected fish. The virus

requires low temperatures and prospers mostly in the cool spring season. Mammal body temperatures are too warm for virus survival.

4.19 RECOMMENDATIONS FOR NATURAL RESOURCES

Conservation, Education and Recreation

The Cleveland Metroparks has an active stance on conservation. Considering it to be the main mission objective of its three tiers (conservation, education and recreation), policies and programs are created and implemented to support resolution of the park's environmental challenges. Programs are specific to address the issues while the overarching policies are established to develop long range plans that will become multi-generational in goals and outcomes. The skill-set resources of the park employees allow flexibility within this framework to adjust to changing situations and events. Conservation remains forefront in decision making as population and land uses shift, often creating unexpected additional challenges. The three-tier approach can be thought of as building blocks to construct a naturalized environment through conservation measures strengthened by educational structures allowing visitors to enjoy an enriching and positive recreational experience in

the great outdoors.

Educational Outreach

Conservation practices currently underway by Hinckley Reservation may be additionally supported by greater educational outreach programs that give the participants the opportunity to learn directly how these practices touch their lives.

- Additional funding would be required to develop programs, provide materials, ensure follow up contact to maximize the educational experience and expand the programs based on participant feedback.
- Developing business and government partnerships would strengthen funding and government policy efforts to facilitate the educational outreach opportunities.
- Growing the volunteer and resource base would connect separate smaller organizations, entities, and individuals by creating an overarching group dedicated to the same goals and commitments. Each group remains intact and is empowered by the scope of the new main body. It entails a synergistic approach.

Opportunities for Collaboration and Expansion

Most rivers in the United States flow through numerous political boundaries with each boundary area including different political agendas and priorities, different hydrological formations, different land use contexts (industrial, agricultural, residential), and different watershed valuations. Maintaining or improving the quality of waterways becomes complex with potentially conflicting governments, agencies and stakeholders involved. Restoration or maintenance may be delayed or shelved due to the nature of working across so many organizations.

Hinckley Reservation plays a unique role in the life of the river. The upper reaches of the Rocky River's East Branch are relatively protected within the park. In addition, most of the land along the river in Cuyahoga and Medina counties (the riparian corridor) is owned by the Cleveland Metroparks. This positioning offers an outstanding opportunity to have a strong and singular valuation and management vision for the river and watershed. While the land ownership along the corridor is significant, the quality of the health of the waterways still requires an active network of partnerships with other agencies, stakeholders and governments (federal, state, and local) due to a variety of impacts that may cause impairments or potential threats: point and non-point runoff, ero-



Figure 8: Historic Buzzards Roost



Figure 19: Phelps School Before

sion, sediment control, and flooding.

Land in close proximity to Hinckley Reservation noted for possible park expansion, acquisition or watershed protection includes private and government holdings. The Cleveland Metroparks has a non-aggressive approach to growth: the organization requires an invitation from a prospective party. The process may involve outright land acquisition or conservation easements. A recent acquisition of a 250 acre plot was completed with three separate owners.

Other possibilities for expansion exist to the east of the reservation and along the riparian corridor. Partnerships with the Rocky River Watershed Council and the Western Reserve Land Conservancy help to further this process. The intent is to protect the Rocky River Watershed. The primary responsibility of the park system is conservation:

“The Board of Park Commissioners may acquire lands either within or without the Park District for conversion into forest reserves and for the conservation of the natural resources of the state, including streams, lakes, submerged lands, and swamplands, and to those ends may create parks, parkways, forest reservations, and other reservations and afforest, develop,

improve, protect, and promote the use of the same in such a manner as the board deems conducive to the general welfare.”

4.20 POLICY RECOMMENDATIONS

Additional Funding

Create close business-to-park partnerships. Ask businesses to adopt and support a group of students, volunteers, agenda, or program based on the interests, skills and resources of the business. The approach is a long-term mentoring relationship that builds a sense of place through commitment to the people within the environment. The connections that increase the bonds are the activities created and implemented together toward a common vision and goal, while being guided by the park’s conservation framework. This is the opposite approach to general funding. This type of partnering carries the rewards of abundant funding.

Example: The Floating Lab, on Hinckley Lake, has a program that can be expanded. By linking specific businesses that have the interests, skills and resources for a particular segment of the program, employees can offer assistance to a group of science students. The students will visit the business to see how research is translated into information and products that benefit

society. The relationship follows the students from high school and into college, and beyond. These are connections that will bring the students back to the park and back to the region. It builds a generational commitment to the park and deeply develops a bond with sense of place and purpose. This type of initiative also naturally spurs a growing network for both the students and the businesses, and strengthens the region’s economy by keeping well-educated young professionals here.

Grow the Volunteer and Resource Base

Hinckley Reservation is a large reservation facing numerous challenges that require additional help. Many small organizations and individuals want to become involved on a long term basis. An overarching group can assess the skills and resources of the volunteer organizations and individuals. Based on this information, they would be given the opportunity to network and become involved with other similar people. They can work together to achieve their volunteering goals under park guidance.

Example: Various hiking groups exist in the region and have a volunteering effort. They don’t know each other; yet share a goal in wanting to create better maintained natural trails in Hinckley. They know that erosion, overgrowth, dog waste, trash, and



signage are park challenges and want to participate. The overarching group could connect them to other actively participating groups, increasing the number of volunteers focused on specific tasks. The tasks appear to be less of a challenge when more people come together, offering ideas and energies and even social opportunities.

A website connecting these groups could offer a new format of communication and provide the park with a new format for marketing its conservation and educational agendas. Recreation can happen as the people come together to work toward their common goals. Volunteering becomes a social event. The website would be created by the park and open to public viewing. Stories and photographs can be shared online. It is very interactive and carries the visual coloring and appearance of the Metroparks environment.

These are general ideas that have a more localized context. The scope of the programs is short termed and focuses on specific agendas.

Flagship Branding

The Cleveland Metroparks is a regional organization rooted in a long history of conservation and education. It is well known and respected across the United States.

The location of the park system is central in the Midwest with easy access by plane, train or automobile. It is the central loop in Northeastern Ohio linking communities by crossing political boundaries for the education and enjoyment of its people.

Populations are shifting away from the Cleveland urban core to more suburban terrains and often out of Ohio. The economic downturn lessens funding and visitor counts. This is the time for the Cleveland Metroparks to take a step into a new era of conservation outreach and education by placing itself in a flagship model that will brand the park system as a unique key regional, state and national leader.

The flagship concept is creatively spurred by the synergistic energies of ideas that renovated education and a school building in Washington, D.C. The school is the Phelps Architecture, Construction, and Engineering High School. An overview can be seen at: <http://www.educationdesignshowcase.com/view.esiml?pid=247>.

In 2006, the 1933 school had been closed for five years; abandoned and neglected. Residents, business, and government recognized that the flourishing engineering and construction trades needed to have an engine fueling new professionals. None currently existed. What happened in two

years, when the doors opened to greet its first students, wasn't a miracle in building rapidly, but it was a spectacular event in formulating functional, realistic ideas promoted and carried out by multiple stakeholders. Business, individuals and government were a collective force that drove the project. The educational programs are state-of-the-art in a building that is state-of-the-art. The majority of funding came from state appropriations followed by grants and donations. The collaboration was so successful that the project came in at 75 percent of budget (see Figures 19 & 20: Phelps School Before and After).

Cleveland and the surrounding region are dissolving the long held image of being a rust belt area by grasping the new energy technologies. Related 'green' businesses are mushrooming all over Northeastern Ohio. Located centrally in this new vitality of the new century is the Cleveland Metroparks. Following is the flagship concept that can carry Cleveland Metroparks along that cresting wave:

- The Cleveland Metroparks needs to teach and train professionals, students, the community and park visitors to carry the goals of the mission into the future.
- Renovate a closed Cleveland school using the LEED methods and remain-



Figure 20: Phelps School After

ing mindful of historic preservation guidelines. The building will use the latest, best green methods of construction and connect the new methods to the integrity of historic design and relevance. All effort to involve material conservation (recycling) and designs to draw the human context into the environment could be achieved by careful design and material selection by a collective group of designers, engineers, educator, naturalists, and visionaries. Private, commercial, and government participation is required in the collective.

- The building would be a Cleveland Metroparks conservation and education community center in which schooling accounts for only one of many activities. The focus follows the three tier park perspective of conservation, education and recreation. This is a center established to promote, strengthen and generationally empower that focus. Activities appropriate for this location would include: a school; community events; an adult learning center; resources for various established green industries; an incubator for emerging green industries and adjunct trades/industries; a main nature center; a publisher of a new, heavily marketed and branded parks educational book line; a clearinghouse for environmen-

tal publications; science labs relevant to conservation; gardens; an outdoor museum and lab; native plant gardens; green workshops; and an art gallery.

- Develop a website that is the environmental search engine, similar to the Google concept. Anyone wanting and needing environmental, green information would automatically think of searching 'greenit'. Nobody has done this yet.
- The school could be multi-tiered in purpose: 1) a magnet school for the Cleveland School District. Programs focus on environmental concerns but also address full academic requirements; 2) a school for scientific professionals to learn the latest environmental techniques and concepts and to network within a synergistic, vital learning center unlike any in the nation; 3) a school that hosts workshops for the non-professional, but environmentally concerned citizen; 4) a school for architects, builders, developers, real estate agents, and the construction trade to update and integrate new methods and techniques.

The flagship concept is particularly compelling because:

- Cleveland is closing schools that need use. It is a collaboration with new visions for a region that is becoming

known as the Green City on a Blue Lake.

- Cleveland needs to educate new generations of urban children who can understand their environment, their place in it, and how to become an engaged citizen.
- Cleveland is losing its population and visitors to other cities, when the 'Jewel' is the Emerald Necklace.
- Cleveland has the environmental context to be a leader and national/international draw for ecotourism. A vibrant marketing plan that is supported by the collective group will only continue to expand into developing new market shares. Collaboration between organizations will benefit everyone.
- It is critical that the center be a large concept in scope to be able to open its doors to all ideas and opportunities that the new technologies hold to help the citizens of planet earth live more responsibly while enjoying an enriched quality of life.
- No other organization is positioned with such significant land holdings that can function as a large outdoor laboratory on land. Turning to the north, the possibility exists of extending the lab to the lake.
- No other organization has thought of this. No one else has all the key elements.

Figure 2

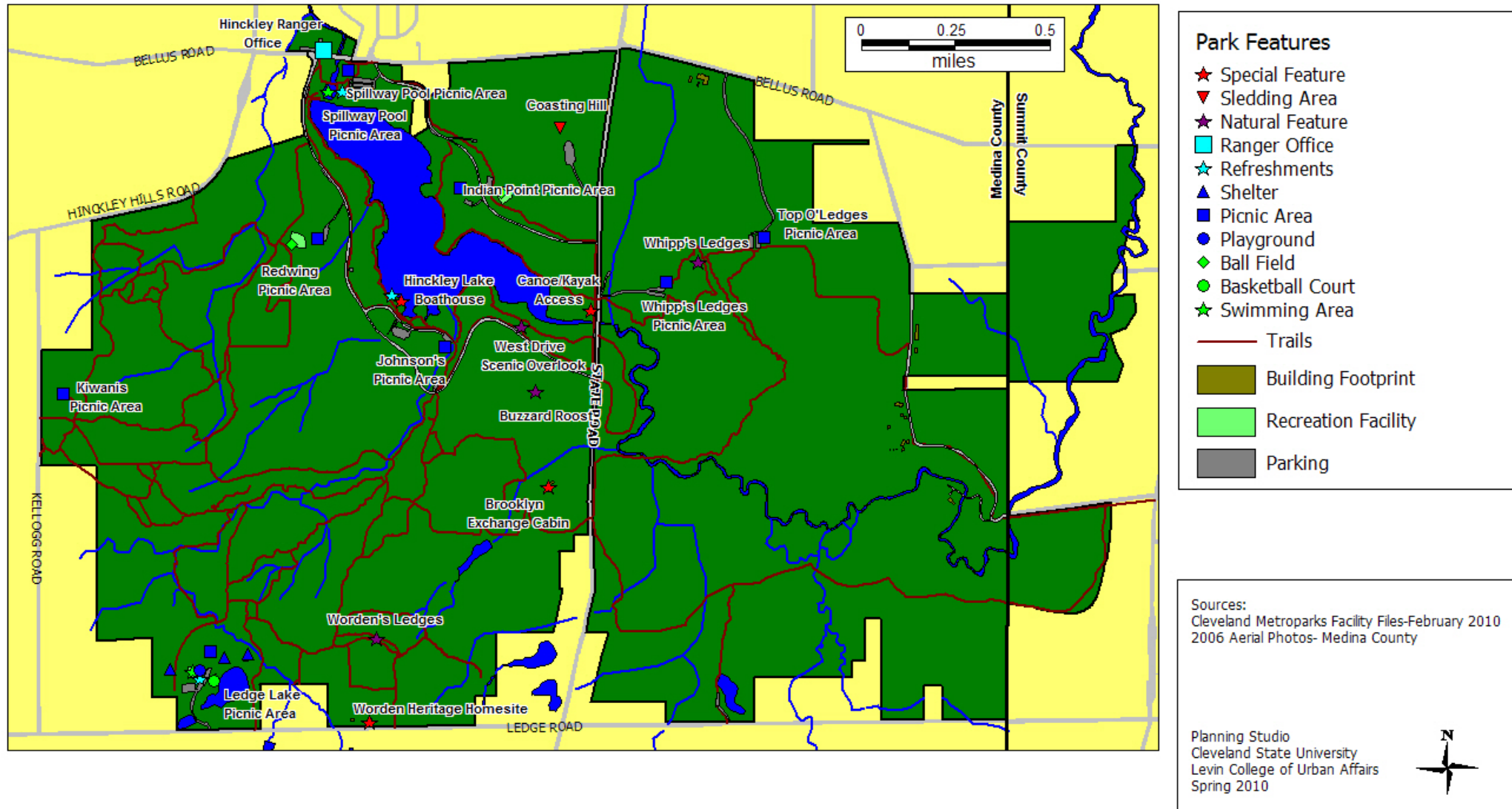


Figure 9

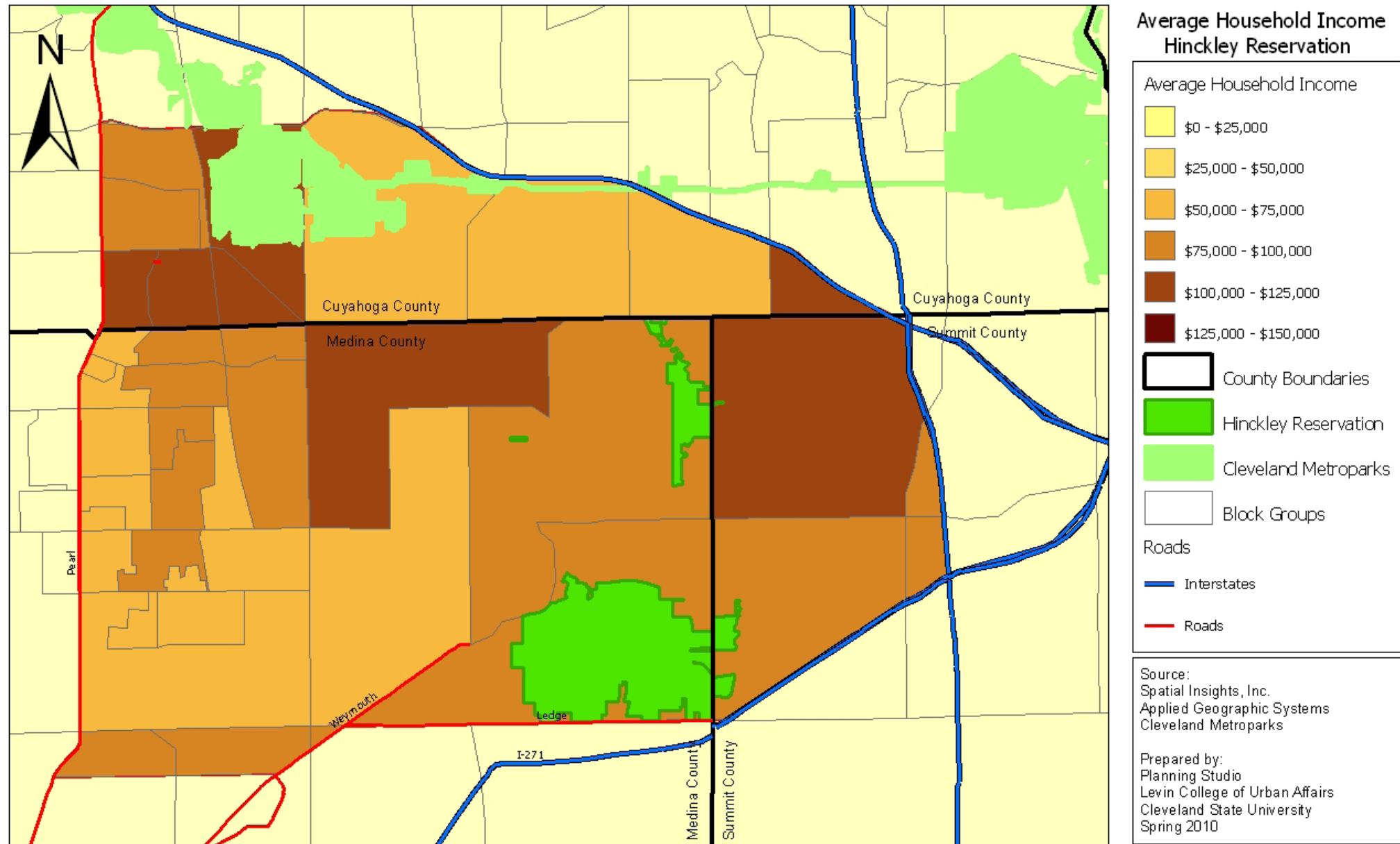


Figure 10

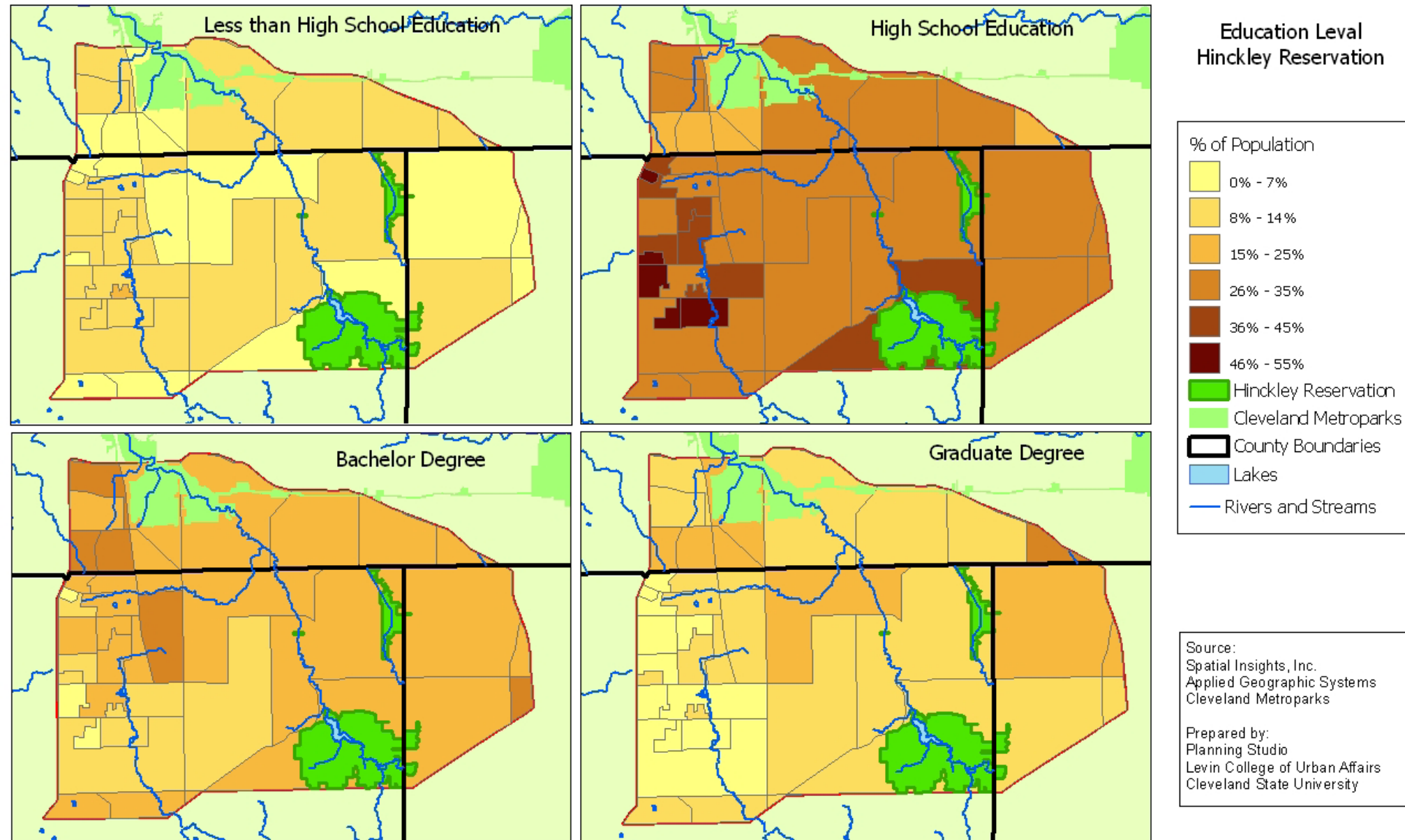


Figure 11

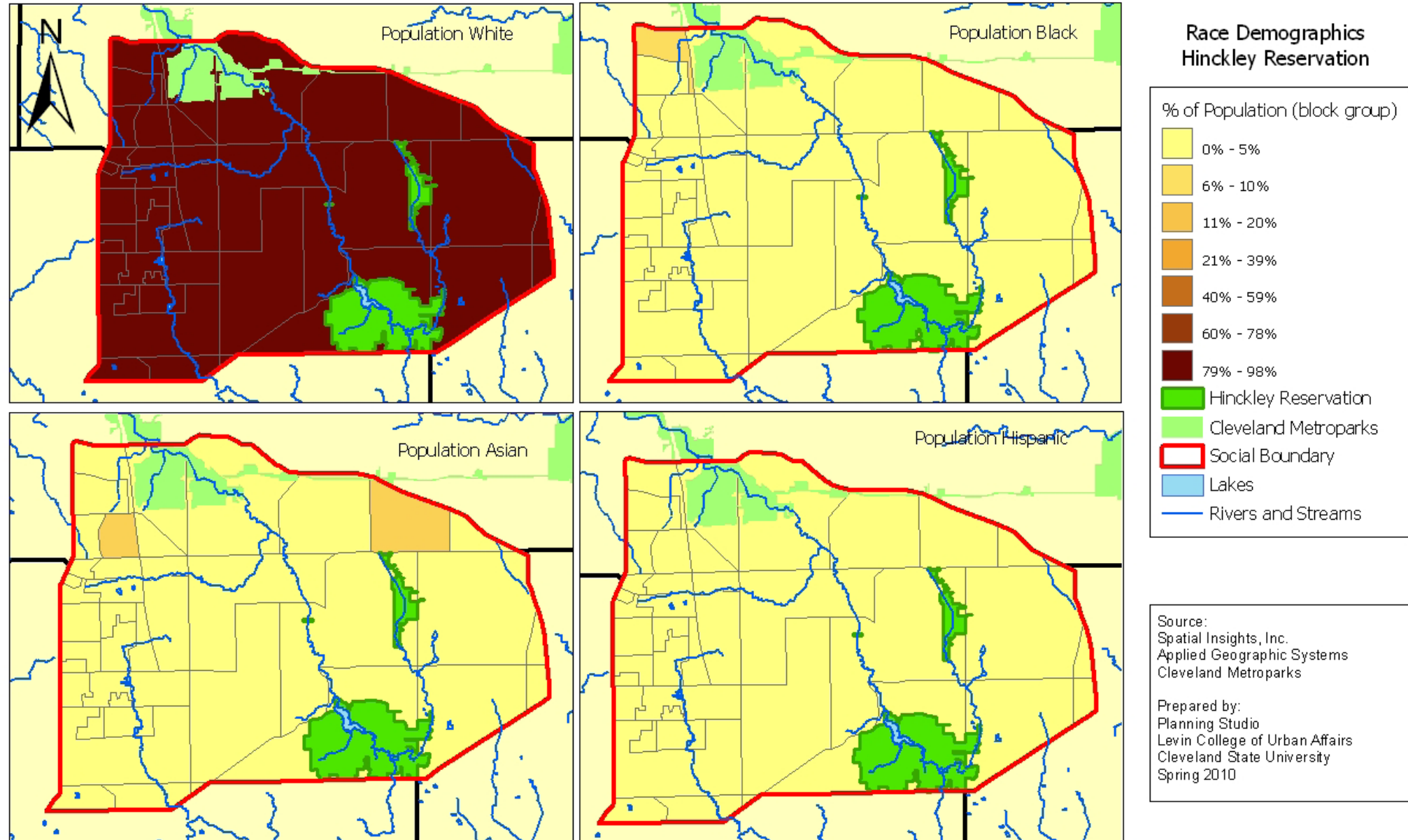




Figure 14

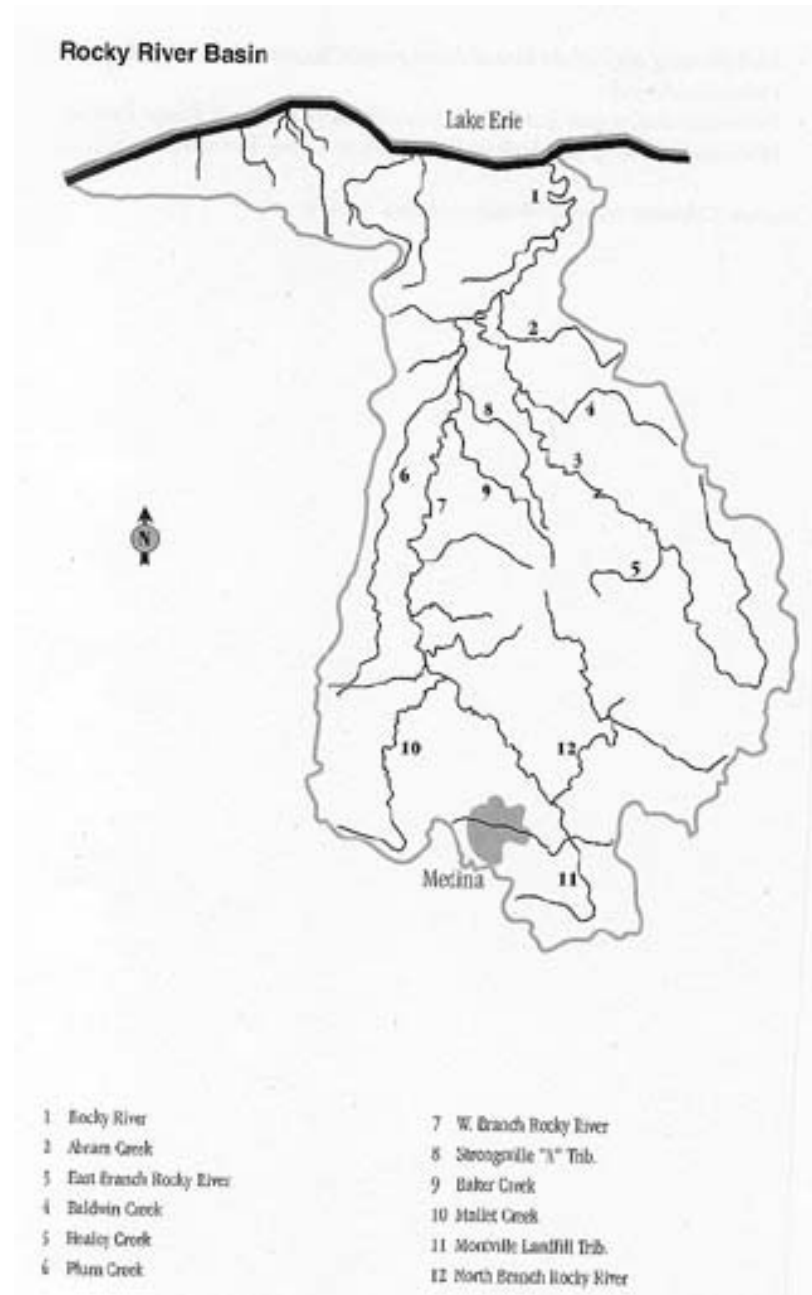


Figure 15

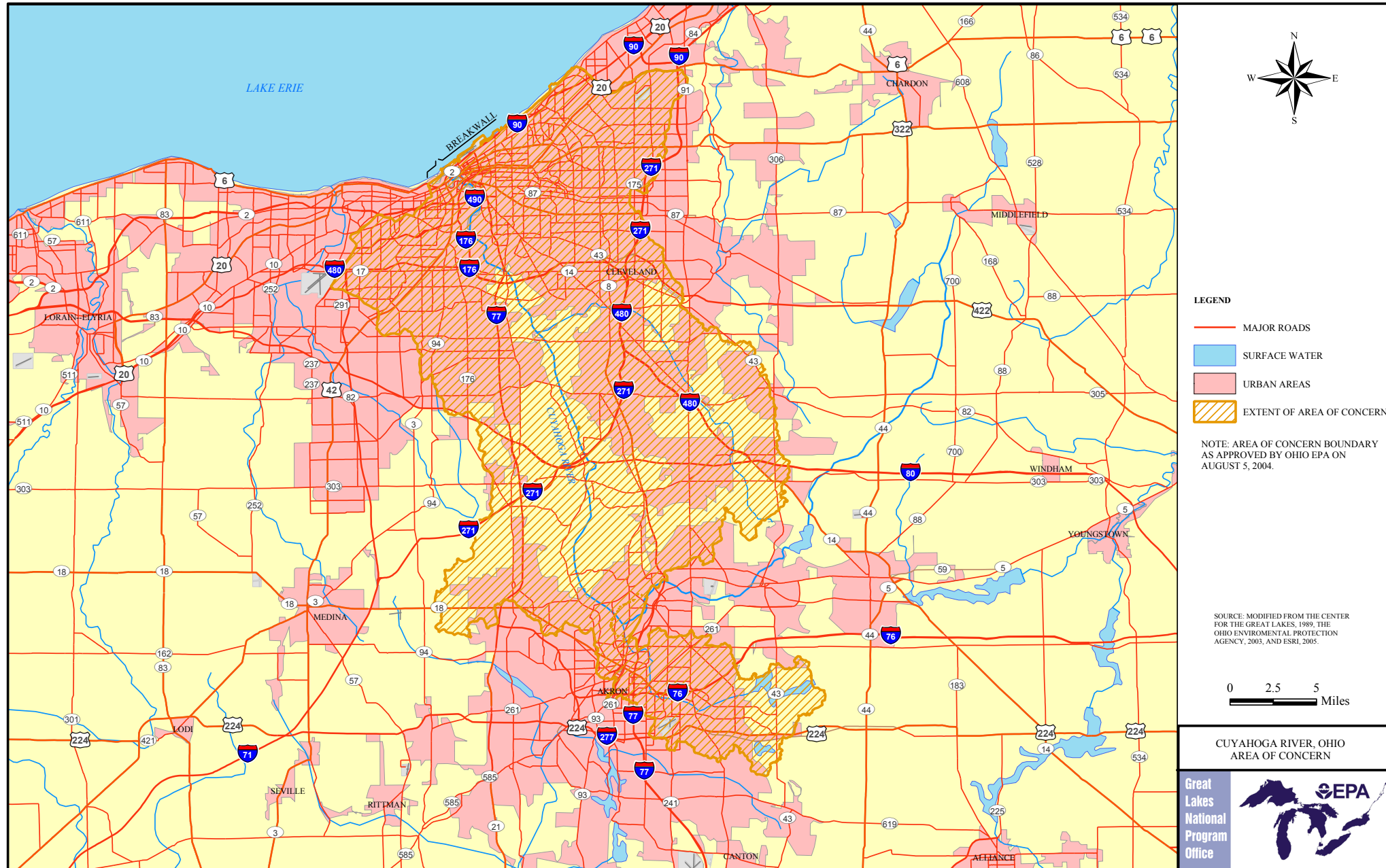


Figure 16

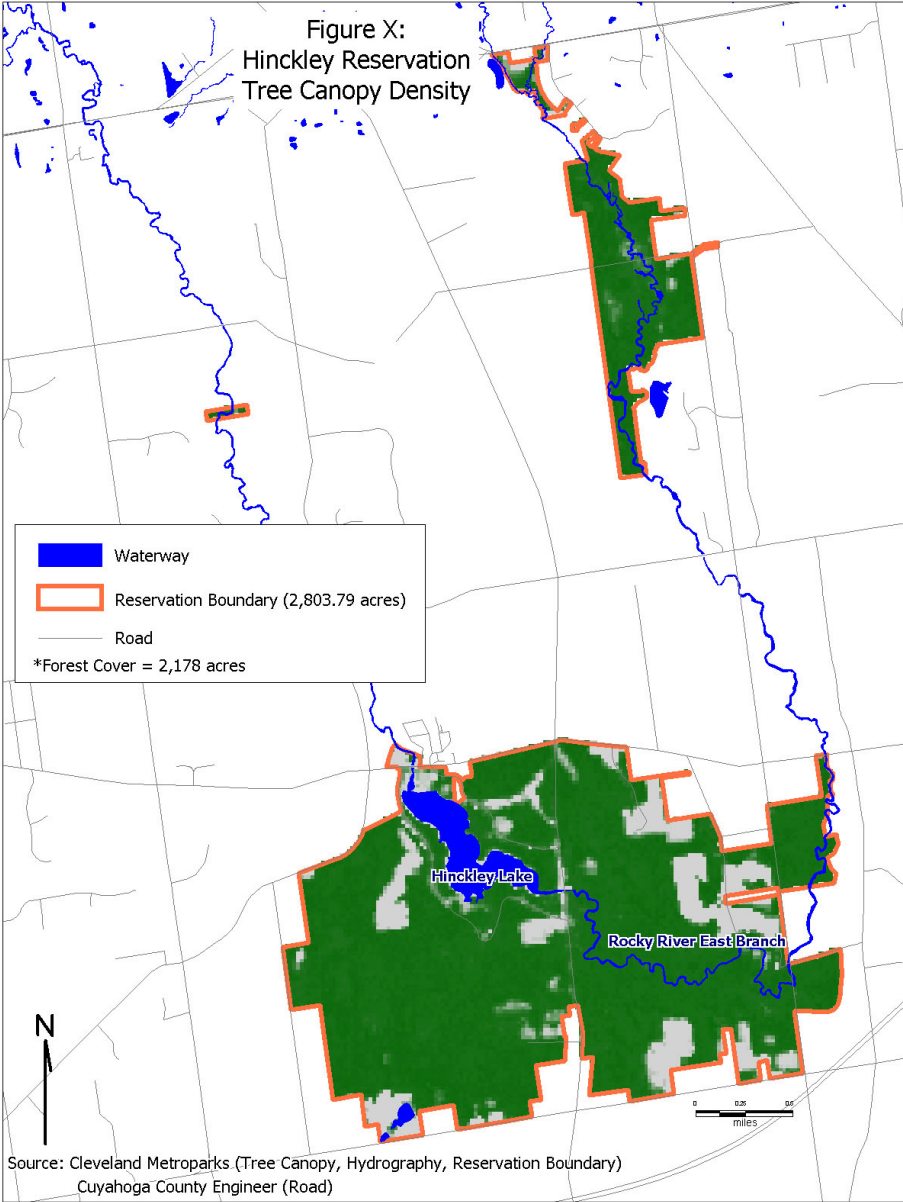


Figure 17

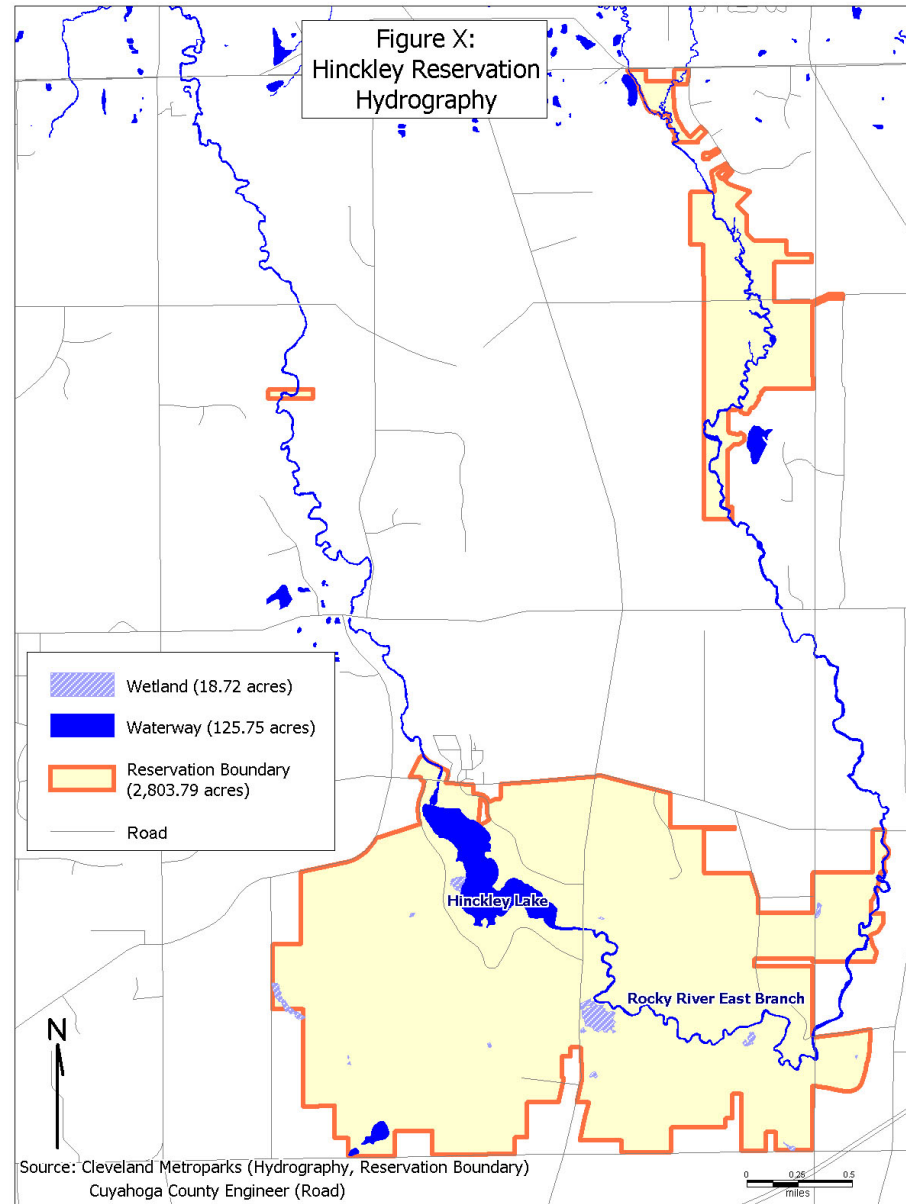
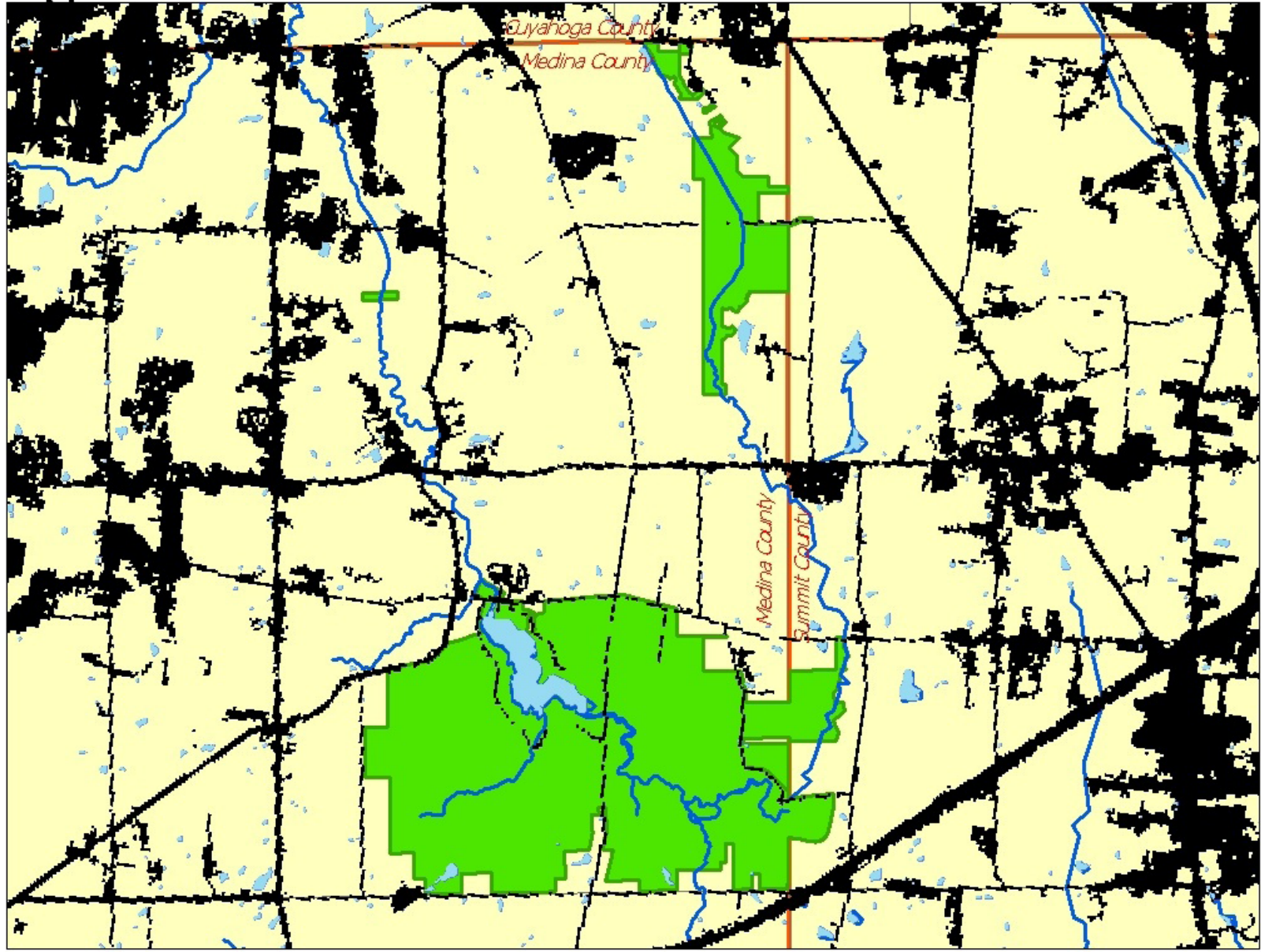





Figure 18

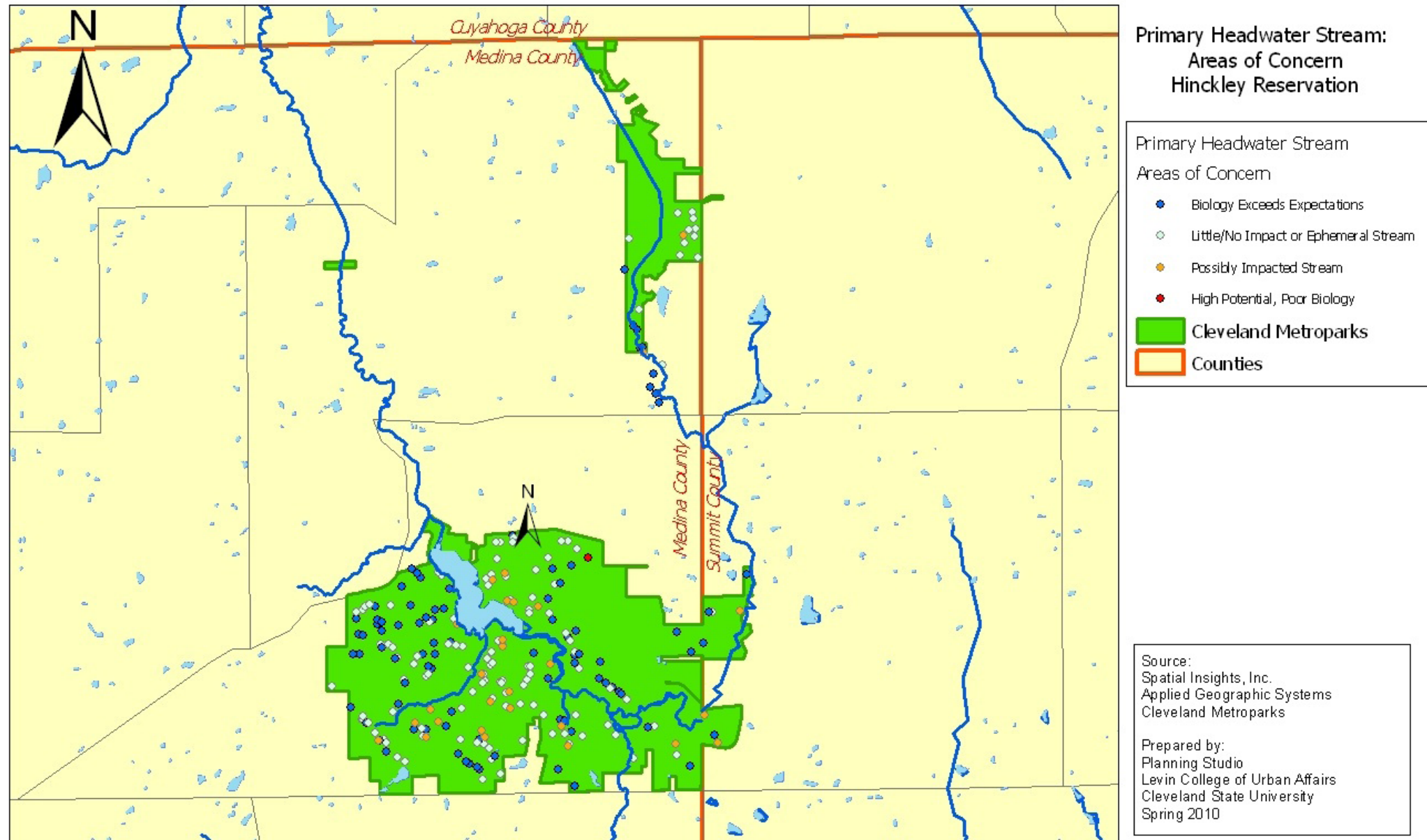


Impervious Surfaces
Hinckley Reservation

	Impervious Surfaces
	Cleveland Metroparks
	Counties

Source:
Spatial Insights, Inc.
Applied Geographic Systems
Cleveland Metroparks

Prepared by:
Planning Studio
Levin College of Urban Affairs
Cleveland State University
Spring 2010



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Chapter 5.0

*ROCKY
RIVER
RESERVATION*



Figure 1: Rocky River Reservation

History

By the turn of the 20th century, Cleveland had become a sprawling metropolis. At the time, it was the country's sixth largest city and home to more than 560,000 residents. As the area rapidly lost land to residential development, city leaders began to look outward; their sights set upon the Rocky River Valley. In an effort to preserve and protect the remaining "natural beauty spots" beyond the city borders, the Cleveland Metroparks were conceived. The leader of this rising tide was a self-taught Cuyahoga County engineer named William Stinchcomb. In 1919, Stinchcomb made his first purchase toward envisioning an "emerald necklace" within, what is known today as, the Rocky River Reservation (see Figure 1). The bluff of his first transaction overlooks the Rocky River and onward to the city of Cleveland. Today the site honors Stinchcomb's legacy of preservation with a monument dedicated upon his passing in 1959.

5.1 PHYSICAL RESERVATION

The Rocky River Reservation is one of the Metroparks most extensive holdings with over 2,500 acres. The long, narrow parkway stretches through eight Cuyahoga County communities and exemplifies Stinchcomb's vision. As it beckons those

who grow weary of the city din, its alluring siren taking the form of forest, field and waterway, invigorate, energize and sustain its captive audience (see Figure 2: River Corridor).

The 2,576 acres that make up the Rocky River Reservation are situated around the Rocky River in Cuyahoga County. The reservation stretches nearly thirteen miles and borders eight communities including Berea, Brook Park, Cleveland Fairview Park, Lakewood, North Olmsted, Olmsted Township and Rocky River. The river, its gorges and steep cliffs that line the Rocky River Valley are the most prominent natural features and provide unique character and picturesque vignettes as the river winds its way to Lake Erie.

Access to the reservation is limited due to the steep cliffs of shale that line the valley. There are two main entrances, a southern entrance located in Berea and a northern entrance located between the Lakewood and Rocky River borders. Additional access roadways include: Grayton, Mastick, Cedar Point, Brookpark, Puritas, Old Lorain Road, and Hogsback and Rockcliff Lanes. Cleveland Hopkins Airport forms a barrier for much of the Brook Park portion of the reservation, while several bridges fracture the flow of traffic to the north (see Figure 3: Bridge Near Fairview

Park).

Located in the Western Zone of the Cleveland Metroparks planning area, the reservation is maintained by a staff of twenty; nineteen full-time and one part-time. During the summer, the staffing is increased by approximately 12 to 15 seasonal workers.

5.2 BUILT ASSETS

Picnic Areas

Rocky River Reservation maintains a variety of recreational and educational opportunities within its borders. Visitors who enjoy less formal recreational opportunities can enjoy the ten picnic areas that line the Valley Parkway. Each facility offers shelter, grills, and restrooms while providing unique characteristics and amenities including playing fields, fishing access, fitness trails or meadows for kite-flying. Two facilities; Sycamore and Will Bend are reservable shelters available for a fee of \$100 on weekdays and \$150 on weekends and holidays.

Trails

Fifteen different trail options, from the 0.2 mile Shepherd Lane Trail to Rocky River Reservation's 13.6 mile paved all purpose trail, are provided for those who prefer

walking, jogging or hiking. As trail users travel along they share the river's landscape with local anglers, many of whom take advantage of the trout stocked by the Cleveland Metroparks annually. Former river fords provide perches for fisherman to lure their prey and much enjoyment can be had not only fishing, but observing the art of the sport. Rockcliff Springs located near the I-90 overpass is not only popular with fisherman, but also with physical fitness buffs who can take advantage of the 1.3 mile Rockcliff Springs Fitness Trail (see Figure 4: Fishermen).

Golf

The reservation includes three golf courses: Big Met, Little Met and Mastick Woods. Big Met Golf Course and Little Met Golf Course, both built in the 1920s, have enjoyed extensive remodeling over the years; including irrigation and drainage systems and cart paths. The construction of a new clubhouse at Big Met is an example of a Leadership in Energy and Environmental Design (LEED) sustainable site. The new building, with its state-of-the-art design and environmentally sensitive building techniques, reduces the amount of energy used in building operations, and exemplifies the conservation principles and values associated with the Cleveland Metroparks system. While Big Met provides an 18-hole

course for the more experienced player, Little Met and Mastick Woods, both nine-hole courses, provide a less challenging environment surrounded by forests, rolling hills and the Rocky River (see Figure 5: Golfers).

Equestrian Facilities

Rocky River Stables and the Lewis Road Riding Ring are within the park borders and centrally located adjacent to the reservation's 15.4 miles of bridle trails. The riding stable is operated by Valley Riding Company through an agreement with the park. In lieu of rental fees, the company provides funding for a portion of annual capital improvements. The park system maintains the facility. Memorial and Tyler Fields are specifically for baseball, with Memorial Field exclusively leased and maintained by the city of Lakewood for their youth program.

Marina

The Rocky River Reservation is also home to the Scenic Park/Emerald Necklace Marina. The 85-boat marina provides storage, dockside fuel service, professional motor and mechanical repair, winter storage and a boat launch ramp for 15' to 30' boats. Bait, ice, snacks and gifts are available at Sails Point and refreshments at the Wa-

terside Grill. Both Marina concessions are run privately.

Nature Center

The newly constructed Rocky River Nature Center provides visitors with interactive displays and exhibits detailing the history of the Rocky River Valley. A wildlife viewing area offers Amish-made rockers from which to observe the bird feeding station. An extensive series of trails, gardens, wetlands, ponds and the river provide additional opportunities for exploration. The nature center hosts a number of educational forums and non-profit events. A sampling of clubs and societies that host meetings at the nature center include: Western Cuyahoga Audubon Society, Cuyahoga Astronomical Society, Greater Cleveland Beekeepers Association, Northeast Ohio Association of Herpetologists, Cleveland Metroparks Southwest Camera Club, and the Rocky River Watershed Council (see Figure 6: Nature Center).

Historic Attractions

Several venues are available for visitors looking for a bit of history including: the Stinchcomb-Groth Memorial Scenic Outlook, the Lawrence Grist Mill and Frostville Museum. The Stichcomb-Groth Memorial is the site of the first Metroparks acqui-



Figure 2: River Corridor



Figure 3: Bridge Near Fairview Park

tion nearly seventy years ago; a monument honors the park's first supervisor William Stinchcomb. The Frostville Museum, located within reservation boundaries, is operated by the North Olmsted Historical Society. The museum complex consists of eight historic buildings and is open on weekends and for special events. Admission is free (see Figures 7a-d: Park Facilities Map).

5.3 SERVICES

In 2009, over 8-million people visited the Rocky River Reservation of the Cleveland Metroparks, nearly half of these visits were recreational. Educational activities are focused at the Rocky River Nature Center and at several interpretive sites along the all purpose trail, these include informational signage highlighting wetlands, gardens and astronomy.

Formal Recreation

The diversity of the reservation provides a multitude of formal recreation opportunities appealing to a broad array of visitors. Boating, kayaking, golf, soccer and baseball are a few of the organized activities that take place within park borders. The stables extend the recreational opportunities by providing lessons and additional services.

Informal Recreation

The beauty of the reservation lies in its ability to enable visitors to shed their day-to-day burdens, while transforming themselves into what is best described as public art in motion. Observation is a most enjoyable form of informal recreation within Rocky River Reservation and on a typical day you can enjoy children and adults of all ages walking, fishing, sunbathing, picnicking, and feeding the squirrels. It is a mosaic of human interest on display everyday of the year (see Figure 8: Recreational Walker).

Formal Education

Most programs are held at the Rocky River Nature Center. Historical displays detail the rich history of the Rocky River Valley along the walls and take us on a journey spanning prehistoric times to the modern day. The annual North Coast Nature Festival takes place every April to celebrate the earth's reawaking from a long north-east Ohio winter. Organizational exhibits, "The Nature & Art Show," guest speakers, games and nature-minded vendors host over 4,000 people at the event. Other highlighted weekend events are held throughout the year at the center.

Informal Education

Budding naturalists, birdwatchers and observers of nature share in the value of a reservation visit.

5.4 EVALUATION OF ASSETS

A result of the reservation's popularity is the strain that increased traffic puts on an aged system. Valley Parkway, the main artery throughout the reservation, consists of more than 12 miles of paved roadway. Stretches of the roadway show significant deterioration. Increased funding and ongoing maintenance appear necessary to address repairs of this main route. Bridges, trails and picnic facilities also require constant upkeep not only aesthetically, but also to minimize safety concerns. Funding and staffing demands regarding reservation infrastructure will persist and most likely increase in future years.

Big Met, Little Met and Mastick Woods Golf Courses have a workforce separate from reservation maintenance and require a cadre of seasonal workers in addition to a full-time supervisory staff. All three courses are subsidized by the Cleveland Metroparks. Greens fees are lower than the majority of area courses in keeping with the recreational mission of the Metroparks. Big Met and Little Met are beau-

tiful courses and rival their competitors. The Mastick Woods course is in great condition, though the clubhouse is dated and due for replacement.

A Cleveland Metroparks User Survey assessed visitors regarding the quality of services within the reservation. Services included maintenance, cleanliness, safety, ease of movement, educational and entertainment programs, and restroom availability. The survey data resulted in a generally favorable response with the majority of the subjects citing the quality of services within the Rocky River Reservation as excellent or good (see Figure 9: Quality of Services). Further information on Cleveland Metroparks User Survey results is located in Appendix A.

The survey also asked visitors what facilities within the Rocky River Reservation they used most frequently. Trails topped the list at 57 percent, with the Nature Center a close second at a 54 percent response rate. Golf courses (19 percent) and picnic shelters (28 percent) rounded out the top four facilities used by survey respondents (see Figure 10: Facility Usage).

5.5 SERVICES VALUATION MODEL

Based on the services valuation model described previously, Rocky River Reserva-

tion has a social value of \$11,406,399. This value is based on 2009 figures that allow for the assumption that 45 percent of recreational visits (1,786,912) were by people who exercise at least three times a week on park property; 144,344 nine-hole golf course games were played on any of the three golf courses on the Rocky River Reservation; and there were 53 venue rentals. This value is a conservative estimate, but it is indeed illustrative of the economic impact of the reservation on nearby municipalities and throughout Cuyahoga County (see Table 1: Social Valuation).

5.6 THREATS TO BUILT ASSETS

The key to identifying potential stressors affecting the built environment of the Rocky River Reservation begins with site observations as well as discussions with reservation personnel. Rocky River Park Manager Keith Kessler identified the following as potential stressors within the reservation:

- Encroachment on park property by adjacent property owners.
- Bridle trails have become expensive to maintain, while demand for additional trails grows.
- Flooding, the frequency of which has increased since 2004.
- Commuter traffic has changed the at-

mosphere of the park. Particularly the Wooster Road entrance in Fairview Park.

Site observations revealed additional stressors including:

- Significant erosion along Valley Parkway may require the relocation of trails and roadways.
- Vehicle traffic competes with other uses as the park is predominately located in a narrow strip along the Valley Parkway.
- Several remaining fords across the river flood during periods of intense rainfall. While many of the older structures were replaced, three remaining fords exist along the parkway. Replacing the fords with bridges that do not flood is very expensive and is significantly higher than the current capital improvement budget allows. (See Figure 11: Homes on Hillside).

Perhaps the largest potential stressor on the physical reservation is its limited revenue stream. The reservation currently operates on a \$ 2.3 million annual budget. Annual salaries for reservation staff are nearly half of the total reservation allowance: \$1 million. For fiscal year 2010, Rocky River Reservation will receive capital improvement funding (separate budget



Figure 4: Fisherman



Figure 5: Golfers

line) for two projects totaling \$45,000.

5.7 RECOMMENDATIONS FOR BUILT ASSETS AND SERVICES

Overall Goal

To preserve what makes Rocky River Reservation beautiful and unique. To maintain the present level of services in order to retain the current level of visitors and attract new visitors to the Rocky River Reservation.

The following objectives are offered to provide suggestions for future goals within the reservations physical boundaries:

- Provide additional trail connectors into the park to minimize the vehicular traffic that reduces the quality of park visits.
- Promote the use of bicycles within the park by encouraging Cleveland RTA to provide bike racks on their bus routes that travel through adjacent communities (Routes 26 and 49). To reduce the necessities of automobile traffic within the reservation consider offering seasonal bicycle rentals at key locations including the Marina, Mastick Woods and the Nature Center.
- Guide the proposed renovation to Mastick Woods Golf Course around

design principles that incorporate the natural environment in construction and management techniques.

- Supplement the number of drinking fountains available along the all purpose trail system
- Install emergency call boxes in remote locations to increase security.
- Continue to upgrade existing portable toilets to permanent restroom facilities.

5.8 SOCIAL CONTEXT

Boundary Definition

The social context boundary surrounding the reservation includes the area within two miles of the reservation boundaries and is divided into three sections: north, south and central. The field surveys reveal that the majority of users live within five miles of the park location in which they were surveyed. The social context boundary was chosen to be within the immediate vicinity of that threshold.

Several barriers are included in the social context, including Cleveland Hopkins Airport and Interstate 71 to the east and Interstate 480 to the west. The Cleveland Metroparks Reservations of Big Creek and Mill Stream Run form a social barrier to the south.

5.9 NEIGHBORHOOD INVENTORY

Surrounding Land Use

The northern section of the social context boundary includes the cities of Lakewood, Rocky River and portions of Fairview Park and Cleveland. While the majority of the land usage is residential, there are major corridors of apartment buildings along Detroit and Wooster Road near the northern entrance of the reservation. Detroit Road, spanning Lakewood and Rocky River within the social context, is predominantly commercial retail with a limited amount of religious and governmental usage. Several schools are located within the social context boundaries as well (see Figure 12: Land Use Map – North).

The central section is predominantly residential and includes the cities of Cleveland, Fairview Park, and portions of Rocky River and North Olmsted. Several pockets of apartment housing exist within the social context boundaries. The NASA Lewis Research Center and Cleveland Hopkins Airport consume a significant amount of land in the central section. Sporadic commercial and office uses dot the area within the boundaries, with additional clusters located near the I-480 Bridge at Brookpark Road and the Lorain Avenue Bridge near

the railroad tracks (see Figure 13: Land Use Map – Central).

The southern section of the social boundary includes the cities of Cleveland, Berea, North Olmsted, Middleburg Heights, Brook Park and Olmsted Township. This portion includes the airport property south of Interstate 71 as well as Big Creek and Mill Stream Run Reservation. To the north are major commercial and industrial uses within Middleburg Heights. Retail commercial usage includes North Olmsted's Great Northern Mall, as well as Bagley Road in Berea. Baldwin Wallace College represents a majority of the land usage in the southeast. Commercial development is included on Front Street in Berea. Olmsted Township provides a considerable amount of agricultural usage with a high number of stables located near Columbia Road (see Figure 14: Land Use Map – South).

5.10 POPULATION AND HOUSING CHARACTERISTICS

Current Demographic Data

According to 2009 U.S. Census Bureau Block Group data assembled within 2-miles of the Rocky River Reservation boundary, the population of 116,424 includes 9.1 percent of Cuyahoga County's

total population (1,275,708). The median age of residents within the study area continues to mirror that of the State (36.2 years), but remains slightly lower than the 2008 median for Cuyahoga County (40 years).

As of 2009, 52,046 households averaging 2.2 persons were in the 2-mile boundary. Nearly 60 percent of these households are owner-occupied (see Figure 15: Housing Count). The communities surrounding the reservation continue to retain and attract residents with median household incomes that are well above the median for Cuyahoga County (\$44,199) and the state of Ohio (\$47,987) (see Figure 16: Median Household Income Map).

Racially, the area is predominately Caucasian, with 6.2 percent of the population being African-American. Twenty percent of the population aged 25 and above have Bachelor's degrees, which is slightly lower than the Cuyahoga County average of 25.1 percent (see Figures 17 and 18: Race and Education Maps).

Projected Demographics

The U.S. Census estimates project a significant decline in population for the block groups within the study area. Population estimates for 2014 population show a 6.4

percent decline from 2009. By 2019, estimates reflect a 15.6 percent decline from 2009 population data. Somewhat paradoxical is an increase in the number of households within the block group area during the same time period. Though increases are minimal through 2014, the number of households in a 2-mile radius of the reservation borders is estimated to increase by 56.4 percent.

Housing Characteristics

The average age of the housing stock within the eight communities lining the Rocky River Reservation of the Cleveland Metroparks is 59 years. The oldest homes are in the cities of Cleveland and Lakewood – 88 and 92 years respectively. The newest construction is found in Olmsted Township with an average age of 35 years. Rocky River and Fairview Park average 60 and 61 years of age (see Figure 19: Age of Housing Stock).

Maps that use Cuyahoga County Auditor's Office data from 2009, offer a view into the range of residential property values throughout the reservation's neighboring communities. The predominance of low property values in Cleveland may indicate aging housing stock, the foreclosure crisis, limited education and safety concerns. Olmsted Township reflects higher residential



Figure 6: Nature Center



Figure 8: Recreational Walker

property values most likely attributed to lower density development and a lack of commercial properties. Rocky River and the north end of Lakewood reflect high property values and benefit from their proximity to Lake Erie as well as quality school systems and neighborhood amenities (see figure 20: Housing Values and Figures 21, 22, 23: Residential Property Values [North, Central and South]).

5.11 HOUSING VALUATION MODEL

Based on Lutzenhiser and Netusil's (2001) hedonic analysis of the effect of open spaces on housing prices, value is added to the county base housing price by proximity to a reservation. These "buffers" are measured in feet and rely on the count of single-family homes in each zone. These values are inflated to 2009 values and normalized. The neighborhood area is divided into five different ranges of 200 feet buffers. Each buffer range is measured from the Rocky River Reservation.

Rocky River borders 8 municipalities and has an effect on 12 tax districts: Fairview Park, Fairview Park/Berea, Fairview Park/Rocky River, Berea, Brook Park, Cleveland, Cleveland/Brook Park, Cleveland/Berea, Lakewood, North Olmstead, Olmstead Township, and Rocky River. The average property tax rate for the tax districts

is 2.31 percent

The total property tax that is, in effect, created by the location of the Rocky River Reservation is estimated to be \$4,823,094 (see Table 2: Economic Valuation)

5.12 COMMUNITY GROUPS AND GOVERNMENT AGENCIES

"To manage resources in the public interest, agencies must expand their value base in order to understand the range of public groups: their concerns and how to reach them. To do this requires interaction with people of different values and cultures, which by definition means building bridges with the world outside agency walls."

- Julia M. Wondolleck and Steven L. Yaffee

-Making Collaboration Work: Lessons from Innovation in Natural Resource Management

The Cleveland Metroparks continues to focus on broadening their collaborative relationships by developing partnerships that bridge longstanding boundaries of organizational affiliations, personal interests and perceptions, geography and jurisdictions.

The Rocky River Watershed Council (RRWC) efforts concentrate on protect-

ing, restoring and perpetuating the Rocky River Watershed. Primary to their mission is public education, watershed planning and facilitating communication and cooperation between stakeholders. The recognition that it is increasingly important for local watershed groups to help local governments and residents understand the complexity of sound management techniques enables the RRWC to act as an intermediary between larger entities and localities.

The council assists in public education regarding flooding, erosion and storm water run-off. On site assistance is available for stream bank restoration, river cleanups and remediation efforts. Successfully identifying where council efforts are most effective is the greatest obstacle toward effective partnerships.

The Western Cuyahoga Audubon Society (WCAS) continues to survey forest breeding bird populations throughout the Rocky River watershed. WCAS volunteers take part in recording bird sightings at randomly selected points throughout the Rocky River Reservation to estimate population sizes relative to reservation size and plant composition. Ongoing efforts to collect vegetation data to correlate vegetative structure and composition with bird counts is also undertaken by the

group. Currently the organization is working with Metroparks personnel, environmental groups and governmental entities to establish a 2020 plan.

The Ohio Audubon Society has designated the Rocky River Watershed as an IBA (Important Bird Area), determining that the habitat within the Rocky River Reservation, among other Metropark holdings within the watershed, is critical for birds and other wildlife. The WCAS is important in providing data to assist the Metroparks in their ongoing mission to identify tracts of land prime for acquisition in order to protect wildlife and habitat. Through their Rocky River Important Bird Area Surveys, the support provided by the organization aids in grant applications for future Cleveland Metropark acquisitions. The group recently provided valuable survey data that was used in receiving grant funding for 62 acres in North Royalton, which protects nearly a half-mile of the Rocky River’s east branch. A portion of the application for grant money identified one species of bat and about two dozen bird species. The acquisition of this land by the Cleveland Metroparks will protect the habitat of these rare and endangered species.

Community Partnerships

Community partnerships within the so-

cial context boundary of the Rocky River Reservation include reservation staff establishing and maintaining contact with neighboring community service managers. The interconnectivity of the reservation and its neighbors is apparent during roadway repairs, utility infrastructure and future development goals within individual communities.

The opportunities presented when stakeholders are familiar with each other’s goals and limitations can expedite projects that otherwise may lay dormant. The potential development of new trail connectors along the reservation is an opportunity for all parties to combine their efforts to benefit residents. Large stakeholders such as the airport and Great Northern Mall include Cleveland Metroparks staff in planning meetings regarding expansions or improvements (see Figure 24: Berea).

Public-Private Partnerships

The efforts of corporate volunteers enhance the ability of reservation staff to maintain areas of the reservation that would not normally be included in day-to-day maintenance. Employees from Key-Bank, Ford Motor Company, Cargill and Aspen Dental routinely provide teams of volunteers for trail maintenance, litter clean up and additional necessary tasks.

Non-profit partnerships with local organizations also bolster staffing in many areas of park maintenance. For example, establishing Eagle Scout projects through the Boy Scouts of America achieves smaller project goals while also providing a learning experience for the scout. Other non-profit partners include: Cleveland Yacht Club, Valley Riding, North Olmsted Historical Society and 41 Degrees North Kayak Club.

5.13 THREATS TO SOCIAL CONTEXT

Cuyahoga County has been especially hard-hit by foreclosures during the recent economic downturn, and the social context area of the Rocky River Reservation has not missed the devastation. Even the relatively stable city of Rocky River saw a record high of 18 foreclosures adjacent to reservation border in 2008. Foreclosed Cleveland properties within the social context area remain the highest with an average of 47 annually from 2005 to 2009. While an overall decrease in home value has frightened homeowners, the park system also suffers due to anticipated decreases in property taxes. These reductions are partially attributed to an anticipated higher amount of delinquencies in 2010 (see Figures 25, 26, 27: Foreclosure Effects Maps [North, Central and South]).

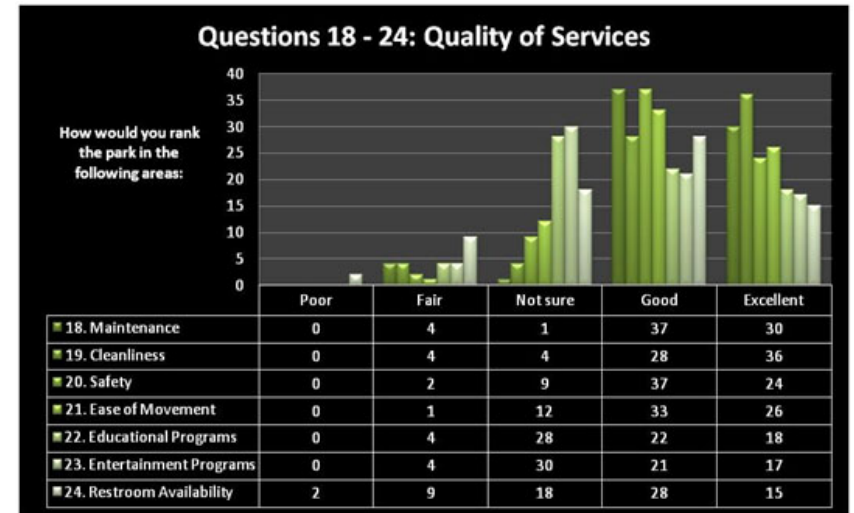


Figure 9: Quality of Services

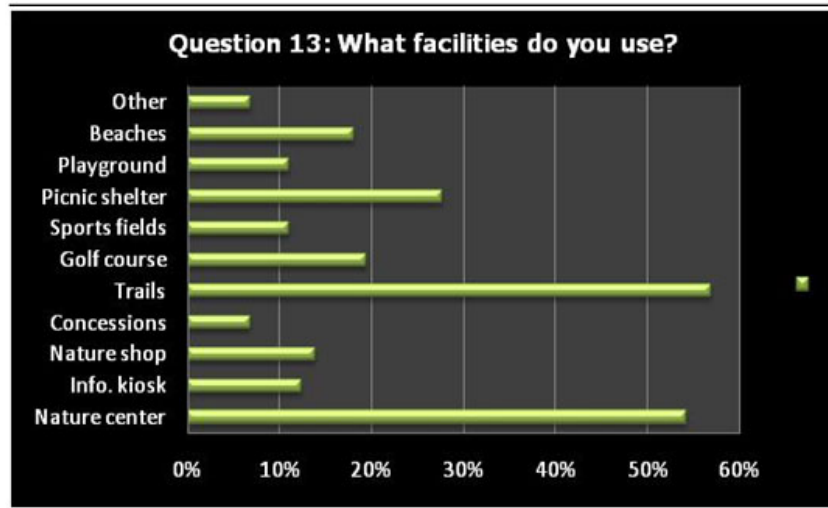


Figure 10: Facility Usage

Increasing development and urbanization have increased strains on the Rocky River Valley. The impacts of which contribute to erosion and a degradation of water quality. Construction sites are a major water quality problem, as sediment muddies the water and smothers the normally rocky bottom of the streams. Bare ground within new subdivisions makes soil vulnerable to erosion and phosphorus runoff.

Construction debris is a big problem as developers use the valley as a garbage dump. Thousands of homes are built too close to riparian areas, leading to ecological stresses on feeder streams. The alteration of topography and drainage patterns during construction can lead to channelization of waterways contributing further negative effects on an already fragile ecosystem.

Pollution in the form of storm water runoff from impervious surfaces such as roofs and driveways degrade water quality and failing home sewage systems compound the problem. Within the social context area, a number of sewage plants release inadequately treated waste into the river and its tributaries, severely degrading water quality. Continued commercial development near Great Northern Mall and Lorain Road may also impact the social context of the reservation.

Limited access into the reservation blocks opportunities for easy use. Access is especially difficult in the northern section of the reservation where several highway overpasses and the Lorain Avenue Bridge impede the ease of access. In a similar vein, the reservation is difficult to access unless one has an automobile. Severe grades and limited RTA service exclude those who may wish to frequent the reservation but lack an automobile.

5.14 RECOMMENDATIONS FOR SOCIAL CONTEXT

Overall Goal

To improve reservation accessibility through a number of methods including: partnerships with neighboring communities and agreements with public transportation services. These partnerships are also important to prevent further environmental degradation to the river valley by storm water runoff of inadequate sewage systems.

Objectives

The following objectives are offered to provide suggestions for future goals within the reservation's social context boundaries:

- Further analysis of collaborative best management practices may enable the Cleveland Metroparks to expand their list of stakeholders and further an increased sense of responsibility and value toward natural resource protection.
- Provide ongoing education with neighboring communities regarding land use regulations that reduce negative impact upon the Rocky River Reservation. Working with for-profit and non-profit partners can aid the Cleveland Metroparks in reaching a wide audience.
- In this time of high foreclosures and unemployment, investigate workforce development opportunities that share the professional talents of Cleveland Metroparks staff with community youths while instilling a sense of stewardship and appreciation for the natural environment.
- Partner with RTA in the provision of buses with bike racks to encourage visitation by those who rely on public transportation outside the social context boundaries.

5.15 ECOLOGICAL CONTEXT

Boundary Definition

Rocky River Reservation is part of the

Rocky River Watershed, encompassing a drainage area of 294 square miles. The watershed's headwaters are located in Summit and Medina Counties. The park includes two branches: the East and West which meet near Cedar Point Road to form the river's mainstem 12 miles from Lake Erie. The river has seven major tributary creeks: Plum, Blodgett, Baldwin, Abram, Baker, Mallet and Healey. Together these waterways consist of 664 stream miles. The watershed provides drinking water for Berea and Medina.

5.16 NATURAL RESOURCE INVENTORY

The entire watershed basin is designated as a warm water habitat by the Ohio Environmental Protection Agency (EPA) and is capable of supporting a balanced and relatively diverse community of warm water aquatic organisms. The last six miles of the mainstem are designated as Seasonal Salmonid and support the seasonal passage of salmonid species, such as trout, and large enough to support recreational fishing.

According to the Ohio EPA, the Rocky River Basin is located in the Erie/Ontario Lake Plain ecoregion, which is characterized by glacial plains interspersed with higher remnant beach ridges, drumlins,

glacial till ridges, till plains, and outwash terraces.

Persistent problems within the watershed include: organic enrichment from sewage and runoff, metals, ammonia and habitat alteration.

Forest

The forest canopy makes up 66 percent of the total reservation. Mature trees within the ecological context of the park include species such as sugar maple, beech, hickory, oak, tulip, sweet gum and ash. Understory trees such as amelanchier, dogwood, crabapple and cherry provide a valuable food source for the bird population (see Figures 28, 29, 30: Forest Cover [North, Central and South]).

Soil Condition, Infiltration and Erosion

More than 90 percent of the watershed is covered by Hydrologic Soil Types that are classified as 'C' and 'D' soils. These soils have the slowest infiltration rates and the highest runoff potential. This would seem to limit the effects of increasing impervious areas as the streams of the watershed are already sized to transport large storm flows. However, these stream channels are in a fragile state of balance in that they are capable of supporting warm water aquatic

habitats but have only a limited ability to accept change without degradation (see Figure 31: Rocky River Border).

The steep shale cliffs that line the valley are highly susceptible to erosion. This is exacerbated by development along the ridges. The identified problem areas for erosion tend to be found in the northern part of the reservation. The ridges along Riverside Drive, Puritas Avenue and Mastick Road are of particular concern.

Wetlands

Wetland areas comprise 1.85 percent of the Rocky River Watershed. Of the 3,462 wetland acres in the watershed, 3,118 are classified as woody wetlands and 344 are emergent herbaceous wetlands. Marshes are the most common form of wetlands and are characterized by low growing plants and reeds and a sense of open space. Other types of wetland include bogs, which have a highly acidic chemical balance, and fens, which are very alkaline. Swamps are wetlands which support trees and other large plants, often with limited visibility. Due to their soil saturation and pools of standing water, they are also classified as wetlands (see figure 32: Wetlands).

One of the most important functions of a wetland within the ecological border is



Figure 11: Homes on Hillside

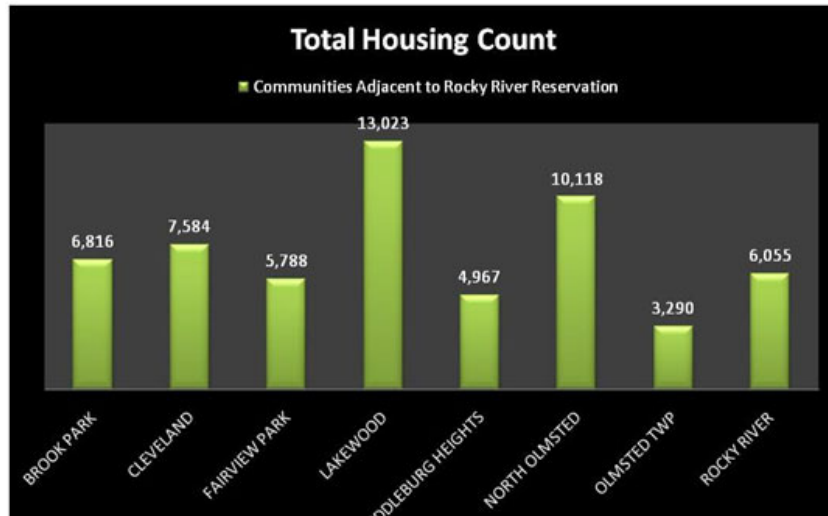


Figure 15: Housing Count

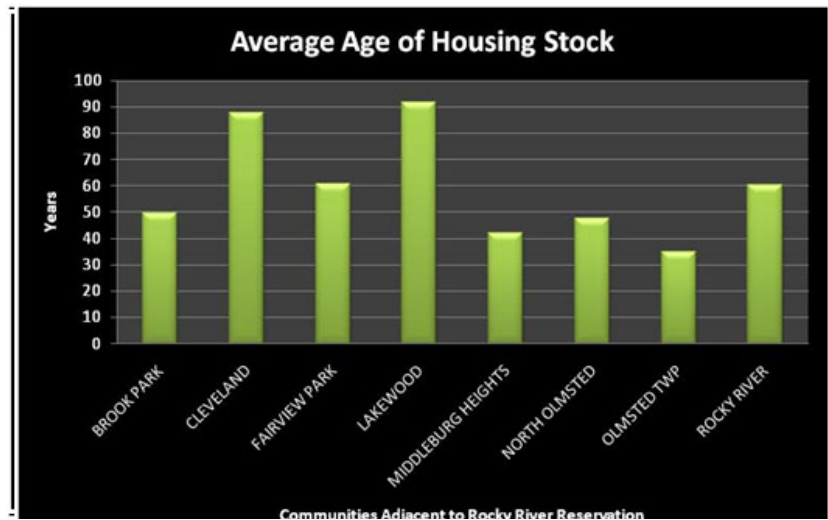


Figure 19: Age of Housing Stock

to act as a buffer zone between a river and dry land. Wetlands protect land from flooding and storm damage by absorbing the brunt of it. In addition, these wetlands help to prevent soil erosion, because the plants and trees that live in them form dense networks of roots that hold the soil in, preventing it from washing away. Many wetlands actually create accumulations of rich, nutritious soil upon which plants, animals, and birds can thrive.

Hydrology

The most important hydrologic characteristic affects storm water runoff from land surface that does not allow infiltration of runoff into the soil and is directly connected to the drainage system. Imperviousness correlates well with land cover and drainage system type. Highly urbanized areas - such as those within the ecological boundaries of the Rocky River Reservation - where much of the land surface is either paved or covered with buildings, are highly impervious. Hydrologic function improves in the southwest rural area of the boundary, which tends to have low imperviousness. In this case, runoff response is almost entirely a function of soil type.

As much as 95 percent of the area in the watershed is underlain with soils that

have severe limitations for septic systems. Therefore, alternative septic system designs are regularly used in the watershed. Local health departments already use county soil maps to insure that appropriate system designs are used on individual lots. Soil unsuitability is so widespread that it dictates the types of systems that are approved by local health departments (see Figures 33, 34, 35: Hydrography Map [North, Central and South]).

Animal Life

Wildlife thrives within the Rocky River Reservation, perhaps too much, as populations of whitetail deer and Canadian Geese delight park visitors, while confounding reservation staff. The river supports an active and productive fishery. Migrating waterfowl are plentiful. There is a diverse variety of small mammals and it is not unusual to regularly see rabbit, groundhog, red fox, mink, beaver, raccoon, skunk and opossum (See Figure 36: Beaver Dam near Nature Center).

Songbird populations have increased as their native habitats are reduced. Similar to the increased presence of whitetail deer, turkey populations are increasing. Coyote sightings have increased within park borders. While coyotes are generally shy and avoid humans, their presence may require

additional measures to educate park visitors about their habits.

Management of the whitetail deer population within the reservation has relied on culling the population periodically to maintain sustainable numbers for an ecological balance.

5.17 ECOLOGICAL VALUATION MODEL

Based on the valuation model, the ecological service that the 1,692 acres of forest in Rocky River Reservation provide is \$40,566,053. The highest service provided was carbon storage, which was \$26,766,067, followed by storm water control at \$11,465,464. Forested areas also support biodiversity and habitat, which has a value of \$1,820,901. Air quality, hydrologic services, and soil formation/retention added to the overall ecosystem services, and had a total of \$513,621 combined (see Table 3: Ecological Valuation).

5.18 THREATS TO ECOLOGY

Emerald Ash Borer

In 2008, the Cleveland Metroparks Forestry Division discovered its first confirmed Emerald Ash Borer infestation along Big

Creek Parkway south of Bagley Road. The Emerald Ash Borer, an ash tree-killing insect from Asia, was first discovered in Michigan in 2002. Nearly 3,000 square miles in southeastern Michigan are infested and more than 6 million ash trees are dead or dying from this insect.

The first confirmed Ohio case was identified in 2003. To date, infestations have been confirmed in 48 Ohio counties. The best method to prevent the spread of the Emerald Ash Borer is to not move infested wood. The Metroparks distinctly marks all pruned and felled ash wood to prevent its transport into other communities.

Invasive Species

Non-native, invasive species are a major threat to the integrity of natural plant and animal communities around the world. Without intervention, many invasive plants will spread rapidly and displace native plants, disrupt the natural plant succession and reduce the ecological integrity of the native habitat. It is estimated that nearly one-quarter (500 species) of all plants growing in the wild in Ohio are non-native. Several dozen of these are considered serious enough for the Cleveland Metroparks to develop an Invasive Plant Management Plan (IPMP) (see Figures 37 and 38: Environmental Stressors

Map [North and South]).

The IPMP focuses on those invasive species with the most invasive characteristic and have a significant presence in the park system. According to the IPMP, Rocky River Reservation has a high degree of infestation with greater than 300 acres of estimated primary and secondary invasive plant species.

- Primary: lesser celandine, garlic mustard, Norway maple and Japanese knotweed
- Secondary: Eurasian buckthorns, multiflora rose, barberry, phragmites, purple loosestrife and cattails

In 2010, the annual costs required to control invasive species within the Metroparks is determined to exceed \$200,000 (see Figure 39: Garlic Mustard and Invasive Species).

Deer Population

The impact of a large deer population can have a cumulative negative effect on natural areas, especially forested areas. Deer repeatedly browse new growth and tree seedlings often to the point where regeneration of native species stops. Plants not preferred by the deer increase and crowd out the weakened natives. Several areas

of the Metroparks have been browsed to the point where native trees, shrubs and wildflowers will need to be re-introduced into the landscape. While the mature forest trees are not affected by deer browsing, the lack of understory growth in the forest makes it difficult for small mammals to find shelter and birds to find food.

Storm Water Maintenance

A large portion of the pollution found in the watershed comes from non-point sources such as improper land use practices, home sewage treatment systems, construction, yard fertilizers and roadways. This type of pollution is best controlled through best management practices to protect water quality and economic, social and political interests.

In urban areas such as the Rocky River watershed, sources of non-point pollution include: oil and grease from highways, driveways and parking lots, excess fertilizers and pesticides, illegal dumping into storm sewers and creeks, erosion and sedimentation from construction sites, pet wastes and leaves and debris that clog storm sewer systems and creeks.

5.19 RECOMMENDATIONS FOR NATURAL RESOURCES



Figure 20: Average Housing Values



Figure 24: Berea



Figure 29: Rocky River Border

Increase the Stewardship of the Rocky River Watershed

Encouraging public involvement and providing residents and visitors with information on methods to improve water quality can aid in establishing a sense of ownership within the Rocky River Watershed. Educational opportunities such as rain garden and rain barrel demonstrations can be fun and informative. Methods to reduce the amount of impervious surface within the ecological boundaries can increase through local government reviewing their zoning requirements regarding parking facilities and driveways.

Many steps to protect water quality can occur at home through the establishment of riparian buffers, picking up and disposing of animal waste properly, septic tank maintenance and washing cars on lawns rather than driveways. Something as simple as raising the height of a mowing deck can improve the water quality for the residential user.

Invasive Species Removal

Organizing volunteers for an afternoon of invasive species removal can mentally and physically benefit participants. Working with local garden centers and horticulture professionals can educate the public adja-

cent to the reservation on plant varieties that may lead to costly headaches for the park system. Offering alternatives to invasive species and public information on identification and disposal can also aid in combating this persistent ecological threat.

5.20 POLICY RECOMMENDATIONS

Establish Mastick Woods Golf Course as a Leader in Eco-Friendly Recreation

Traditional golf course construction and maintenance impact the natural environment in a number of ways including: loss of habitat, water depletion; chemical contamination of soil, surface water and ground water, and excessive runoff and soil erosion. Golf courses, old and new, are responding to growing concerns about environmental degradation by focusing on designs that support and incorporate wildlife habitat into their planning efforts.

Currently, the park system has invested in designing the existing course to model the successful Washington Reservation's Washington Golf Learning Center and First Tee Course. The Washington Reservation facility currently participates in the Audubon International's GOLD signature program by promoting wildlife conservation, habitat enhancement resource management, energy efficiency and water con-

servation.

The Mastick Woods renovation offers the Cleveland Metroparks an opportunity to expand efforts to preserve plant, animal and ecosystem diversity on a large scale by providing habitat corridors appealing to birds and small mammals. Links-style management practices traditionally used in England are an example of establishing primary and secondary roughs of native vegetation along and within the fairways that attract wildlife that may otherwise avoid traditional mowed areas, while challenging golfers in an aesthetically pleasing environment. Operating costs are reduced due to less mowing, fertilization and watering.

Unique concepts such as elevated tee areas that require golfers to hit over wetlands and marshes, or an earth-sheltered clubhouse that double as a driving range or first tee, further serve as examples of innovative environmental recreational practices. Several sources of funding are available to aid non-profit organizations in establishing naturalistic golf courses including the federal Cooperative Endangered Species Fund (Section 6), providing nearly \$66 million in grant funding to local private landowners, conservation organizations and other partners to protect and conserve the habitat of threatened and

endangered species. Additional resources are the Wildlife Links program, a joint venture of the United States Golf Association (USGA) and the National Fish and Wildlife Foundation, and Audubon International's Wildlife Sanctuary program (see Figure 38: Mastick Woods Clubhouse).

Focusing on Community Partnerships to Enhance the Region

Sharing the wide-ranging talents of Cleveland Metroparks staff within a region may provide positive role models for young adults. The field of public resource management provides a future career training ground for these youngsters while offering a broader understanding of the value and shared responsibility of natural resource protection. Participants in the program receive mentoring and training and the park system received resources assisting in park maintenance and infrastructure projects.

The model for such a program remains depression-era public works programs like the Civilian Conservation Corp (CCC). During the 1930s and until 1942, the corps was instrumental in keeping the country's fledgling park system from falling victim to the economic depression, and in fact, projects within the national park system were accelerated by the influx of laborers. The national parks were not the only

ones to benefit. By 1936, more than 5,000 CCC workers were building roads, foot and bridle trails, shelters and clearing picnic and parking areas within the City of Cleveland's metropolitan park system, the current Emerald Necklace.

Though the CCC program was discontinued in 1942, programs to expose the nation's youth to national service have continued. The current national service program is AmeriCorps initiated by President Clinton in 1993. AmeriCorps combined two long-standing national service programs: VISTA (Volunteers in Service to America) in which new generations of environmental professionals continue as the AmeriCorps program and was created by President Lyndon Johnson in 1964, and the National Civilian Conservation Corps (NCCC). The goal of AmeriCorps is to engage Americans in intensive service to meet the nation's critical needs on education, public safety, health, and the environment.

AmeriCorps works with Governor-appointed State Service Commission to provide grants to non-state government and government entities that sponsor service programs. The grants can be used to engage AmeriCorps members in service projects to help meet critical community needs in education, public safety, health

and the environment. Sample activities include tutoring and mentoring youth and restoring parks. The organizations that received grant funding are responsible for the recruitment, selection and supervision of AmeriCorps members serving in their programs.

Ohio's Recovery Conservation Corps Initiative

Another example is Ohio's Recovery Conservation Corps Initiative, establishing "green" summer youth programs that provide work experience opportunities for young Ohioans. The work experiences are performed in state parks, forests, metropolitan parks and natural areas which would otherwise be neglected due to lack of funding.

The initiative is funded with \$2 million in statewide American Recovery and Reinvestment Act (ARRA) Workforce Development funding. Local Workforce Investment Boards use local workforce stimulus funds for the wages of the youth workers and also support the cost of tools, transportation and other needs.

A wide variety of work experiences within the Cleveland Metroparks reservations are appropriate for this target population which includes low-income youth who are ages 16 through 24. These opportunities include trail maintenance, invasive spe-



Figure 30: Wetlands



Figure 32: Beaver Dam near Nature Center



Figure 34: Garlic Mustard and Invasive Species



Figure 35: Mastick Woods Clubhouse

cies removal, facility maintenance repair and repair, and landscaping. Training in a variety of eco-management techniques may lead to certification and enhance participants' opportunities for future employment opportunities.

Recently, U.S. Senator Sherrod Brown (D-OH) introduced legislation that expands the range of Youth Corps programs. The Youth Corps Act of 2010, cosponsored by Sens. Kirsten Gillibrand (D-NY), Bernie Sanders (I-VT) and Tom Udall (D-NM) would amend the Workforce Investment Act (WIA) to establish a competitive grant program to assist states and local communities in establishing and expanding Youth Corps Programs.

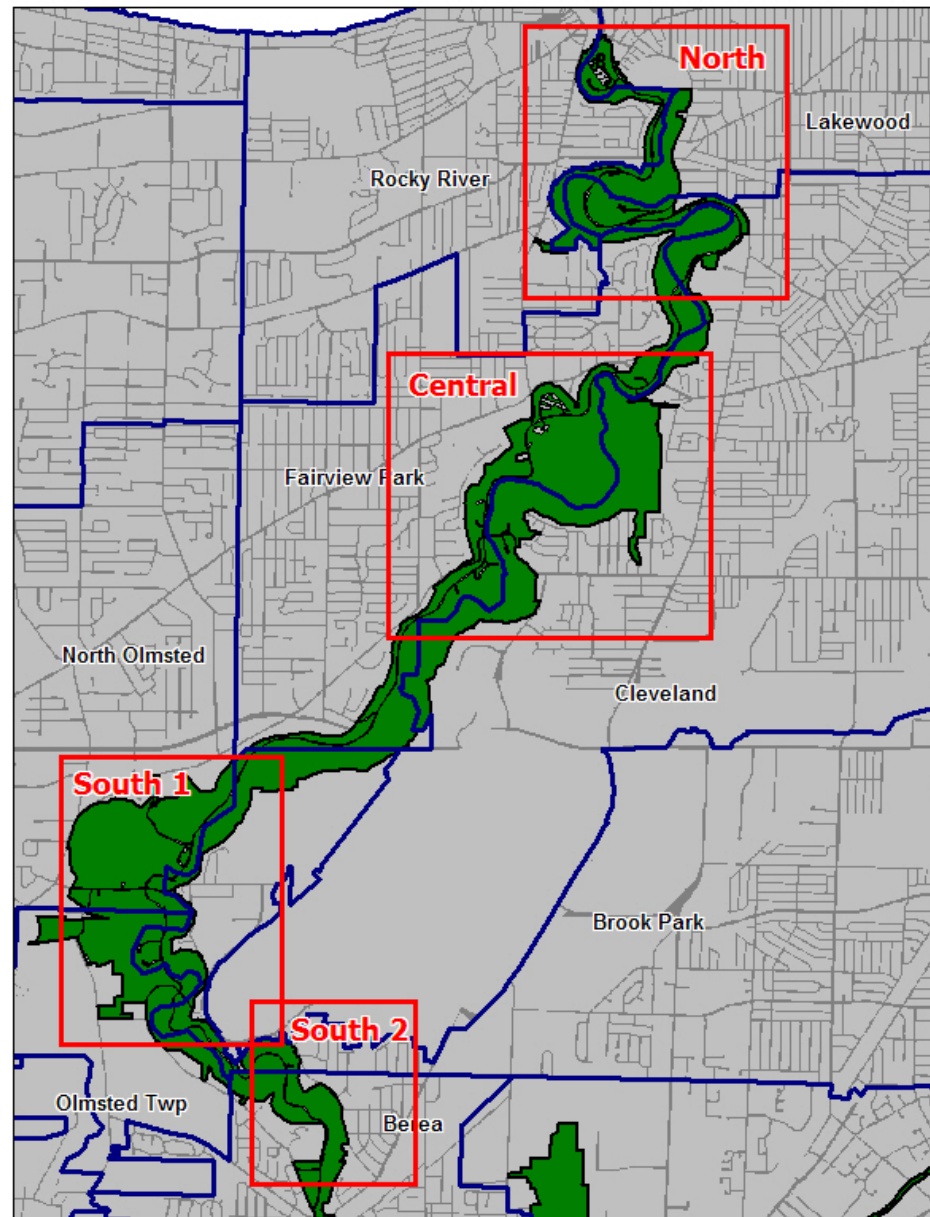
The proposed legislation addresses the estimated 3.5 to 5 million youth, ages 16 through 24, who are out-of-school or out-of-work. Additionally nearly a half-million young people drop out of school annually. The current unemployment rate for youth in this age group is approximately 25 percent. For youth who are in low-income or minority communities, this rate is even higher. Youth Service and Conservation Corps which descended from the CCC, prepares disadvantaged and disconnected youth for careers in resource conservation, environmental restoration and land management since the 1980s. To date, more

than 600,000 young people have found a new beginning through Youth Service and Conservation Corps.

The purpose of the proposed amendment to WIA is to utilize service, environmental stewardship, and the Youth Corps model to educate and train the next generation of workers to enable them to find meaningful employment in the 21st century economy, while instilling a sense of civic engagement and environmental stewardship.

The grants, awarded to eligible public or private nonprofit agencies, may be awarded for a period of three years with an option for renewal. In the Youth Corps model, adult leaders serve as mentors and guide crews of 8-12 Corps members as they gain the paid work experience and learn the skills that are essential to the development of a strong work ethic and success in the workplace. Corps members also receive a living allowance, classroom instruction to improve basic academic competencies, complete high school, and prepare for postsecondary education, and a wide range of supportive services. Additionally, they participate in technical skills training and leadership development.

Figures 7a-d



Rocky River Reservation Overview

Park Features

- ★ Natural Feature
- ▼ Sledding Area
- ◆ Fishing Area
- Ranger Office
- ★ Refreshments
- Picnic Area
- ▲ Shelter
- Playground
- All Purpose Field
- ◆ Ball Field
- ★ Golfing
- Trails
- Building Footprint
- Recreation Facility
- Parking
- Municipal Boundary

Sources:
 Cleveland Metroparks Facility Files-February 2010
 2008 Aerial Photos- Cuyahoga County

Planning Studio
 Cleveland State University
 Levin College of Urban Affairs
 Spring 2010



Figures 7a-d



Rocky River Reservation North

Park Features

- ★ Natural Feature
- ▼ Sledding Area
- ◆ Fishing Area
- Ranger Office
- ☆ Refreshments
- Picnic Area
- ▲ Shelter
- Playground
- All Purpose Field
- ◆ Ball Field
- ★ Golfing

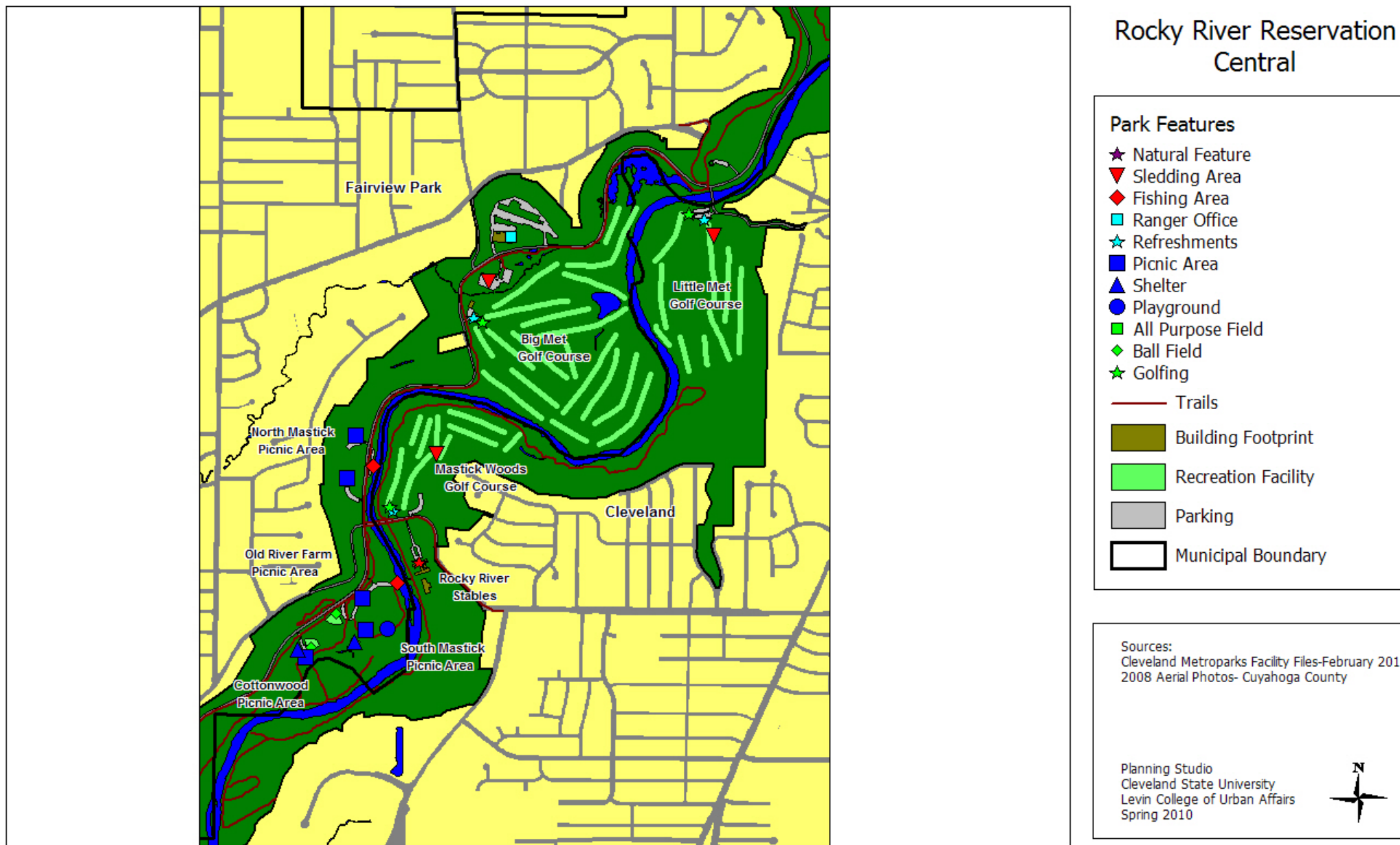
- Trails
- Building Footprint
- Recreation Facility
- Parking
- Municipal Boundary

Sources:
 Cleveland Metroparks Facility Files-February 2010
 2008 Aerial Photos- Cuyahoga County

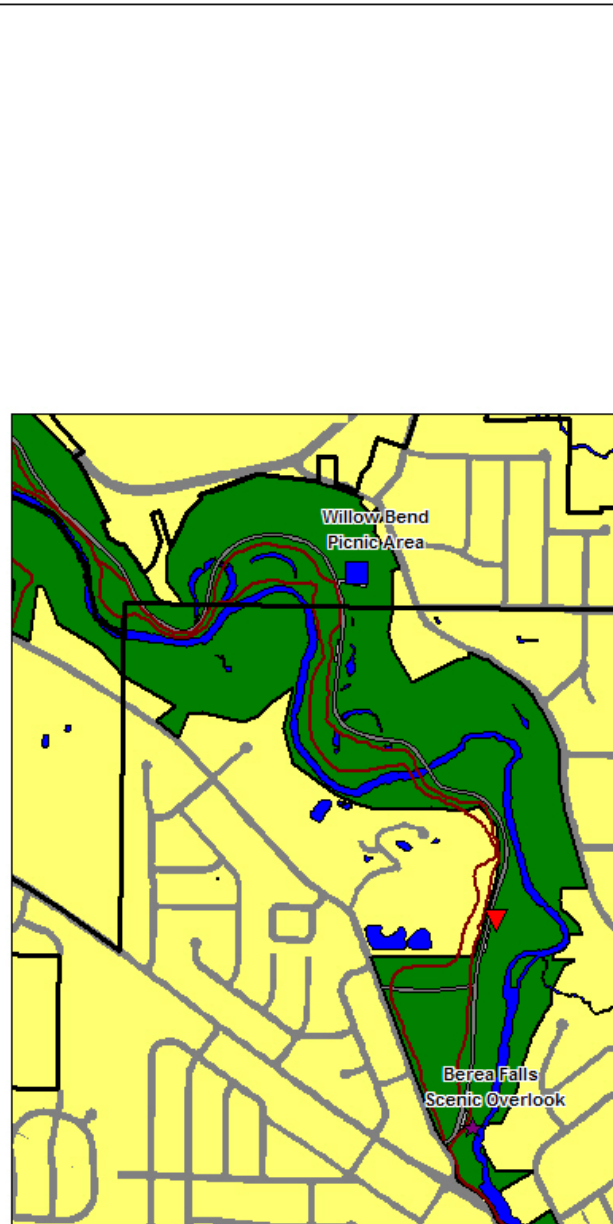
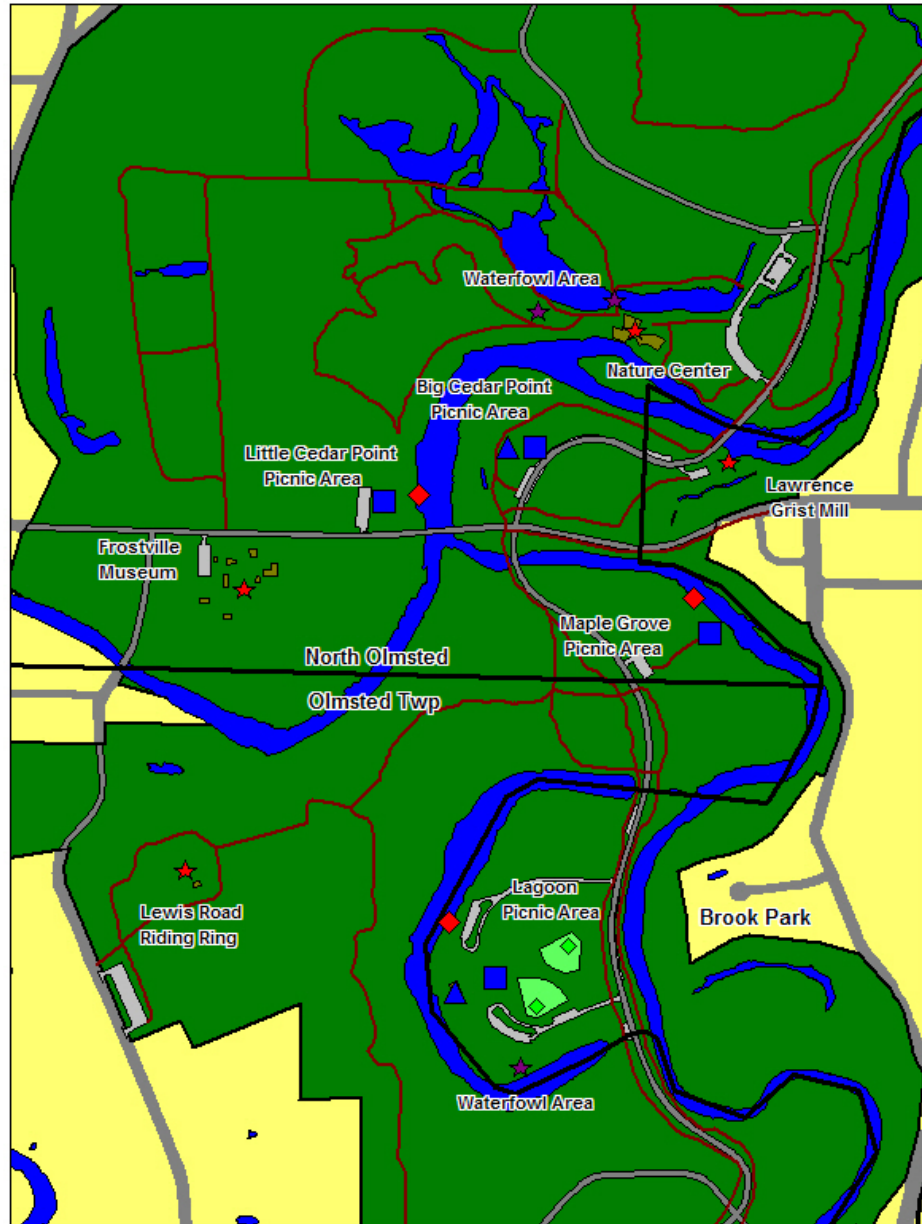
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 Cleveland State University
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 Spring 2010



Figures 7a-d



Figures 7a-d



Rocky River Reservation South

Park Features

- ★ Natural Feature
- ▼ Sledding Area
- ◆ Fishing Area
- Ranger Office
- ★ Refreshments
- Picnic Area
- ▲ Shelter
- Playground
- All Purpose Field
- ◆ Ball Field
- ★ Golfing
- Trails
- Building Footprint
- Recreation Facility
- Parking
- Municipal Boundary

Sources:
Cleveland Metroparks Facility Files-February 2010
2008 Aerial Photos- Cuyahoga County

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Figure 12

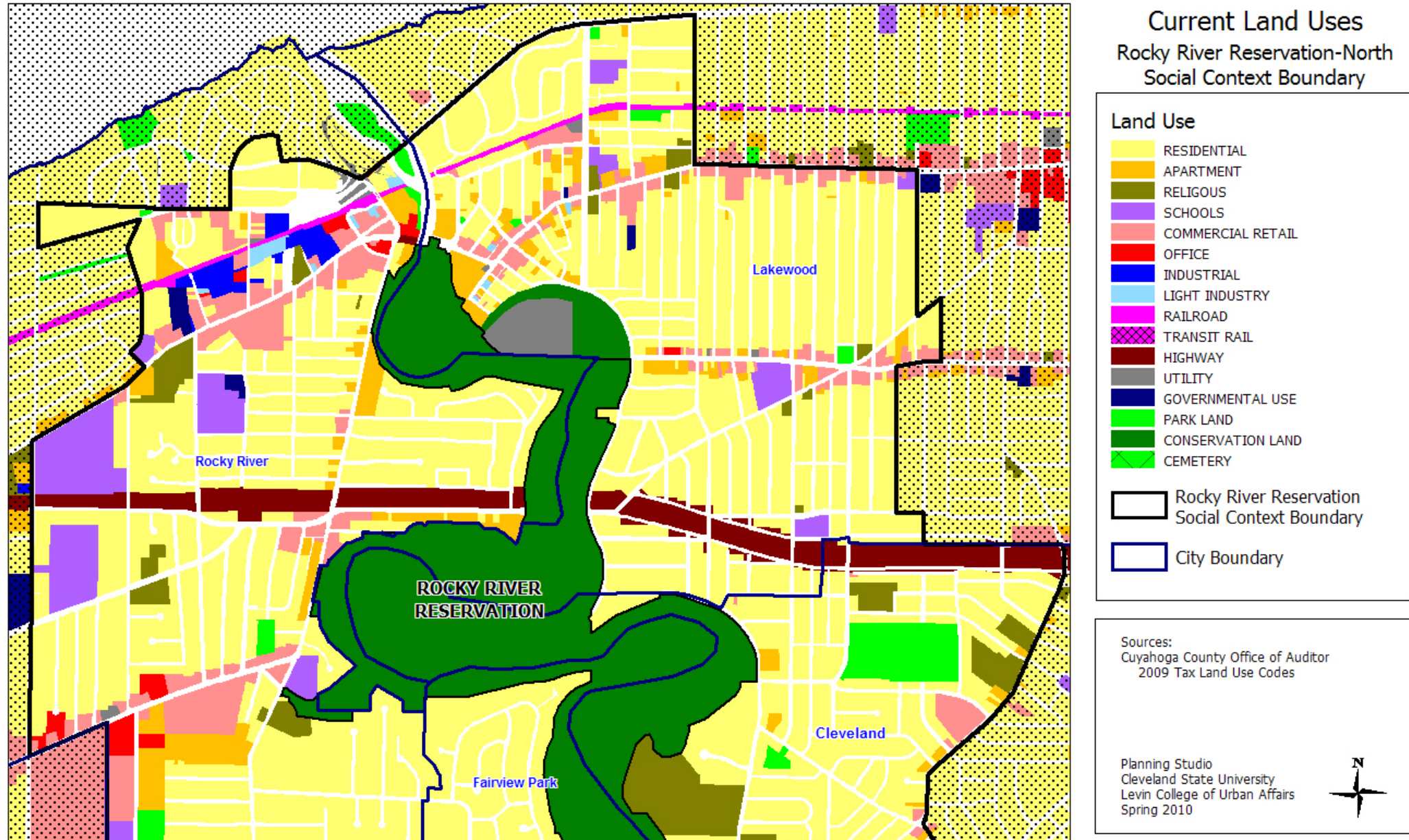


Figure 13

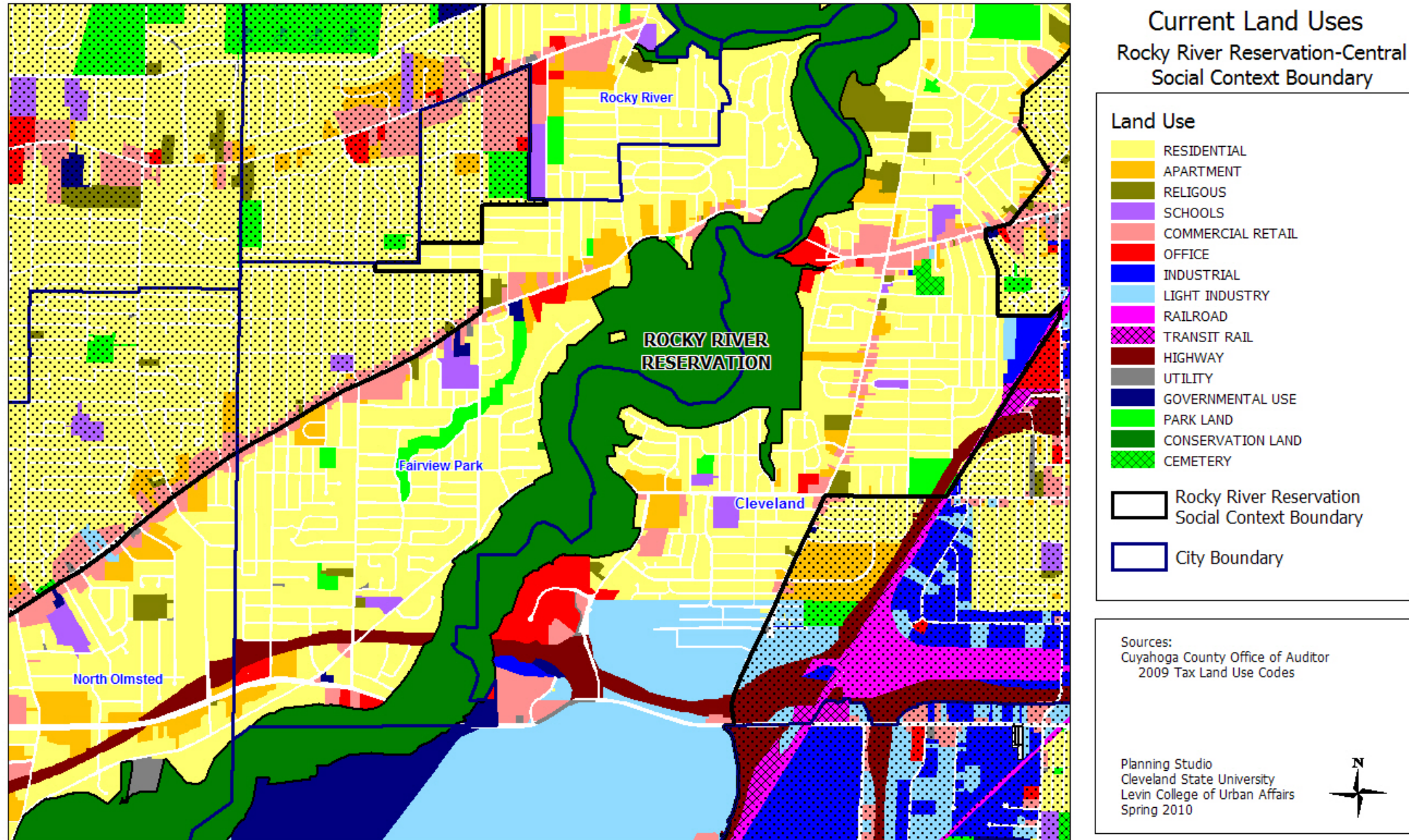


Figure 14

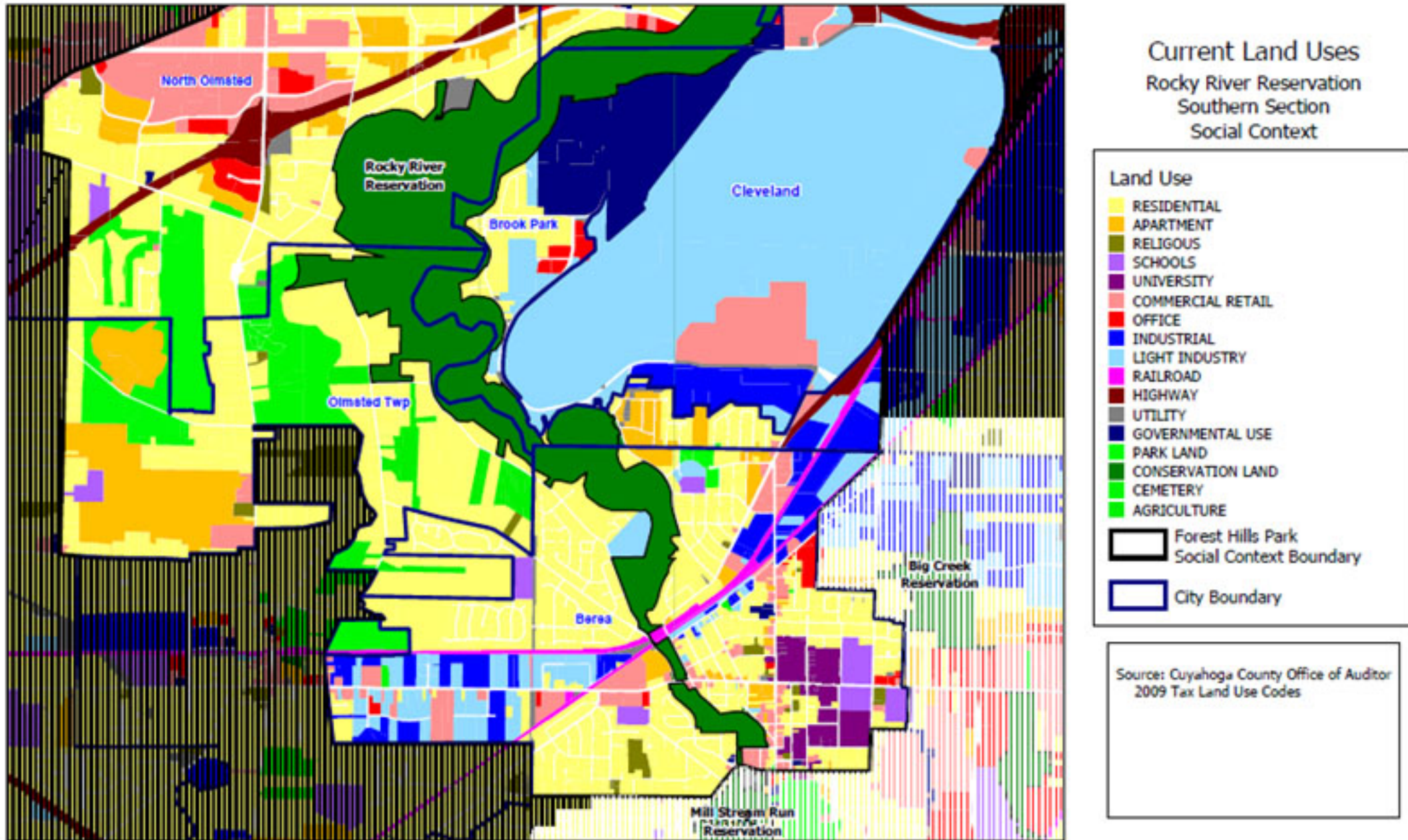


Figure 16

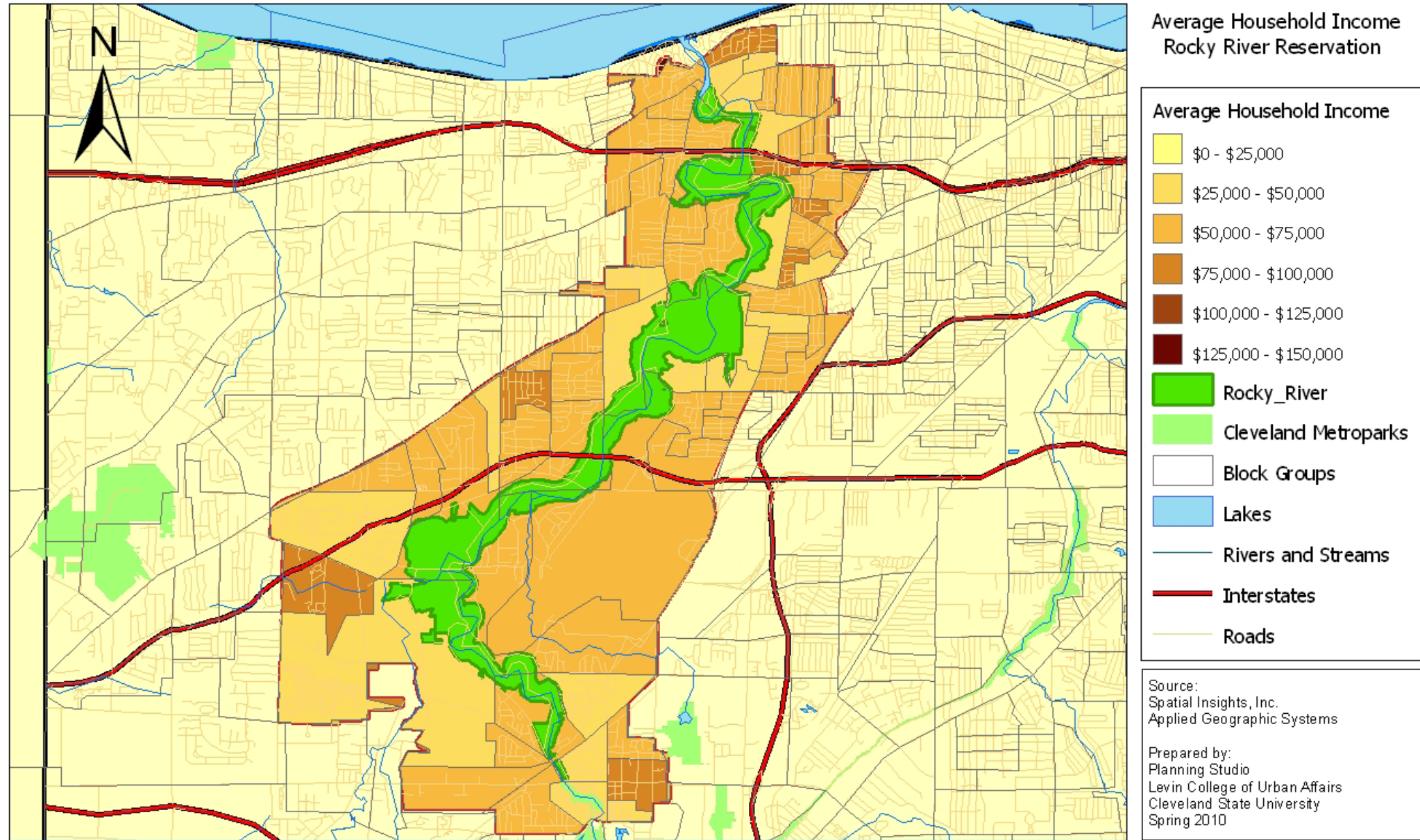


Figure 17

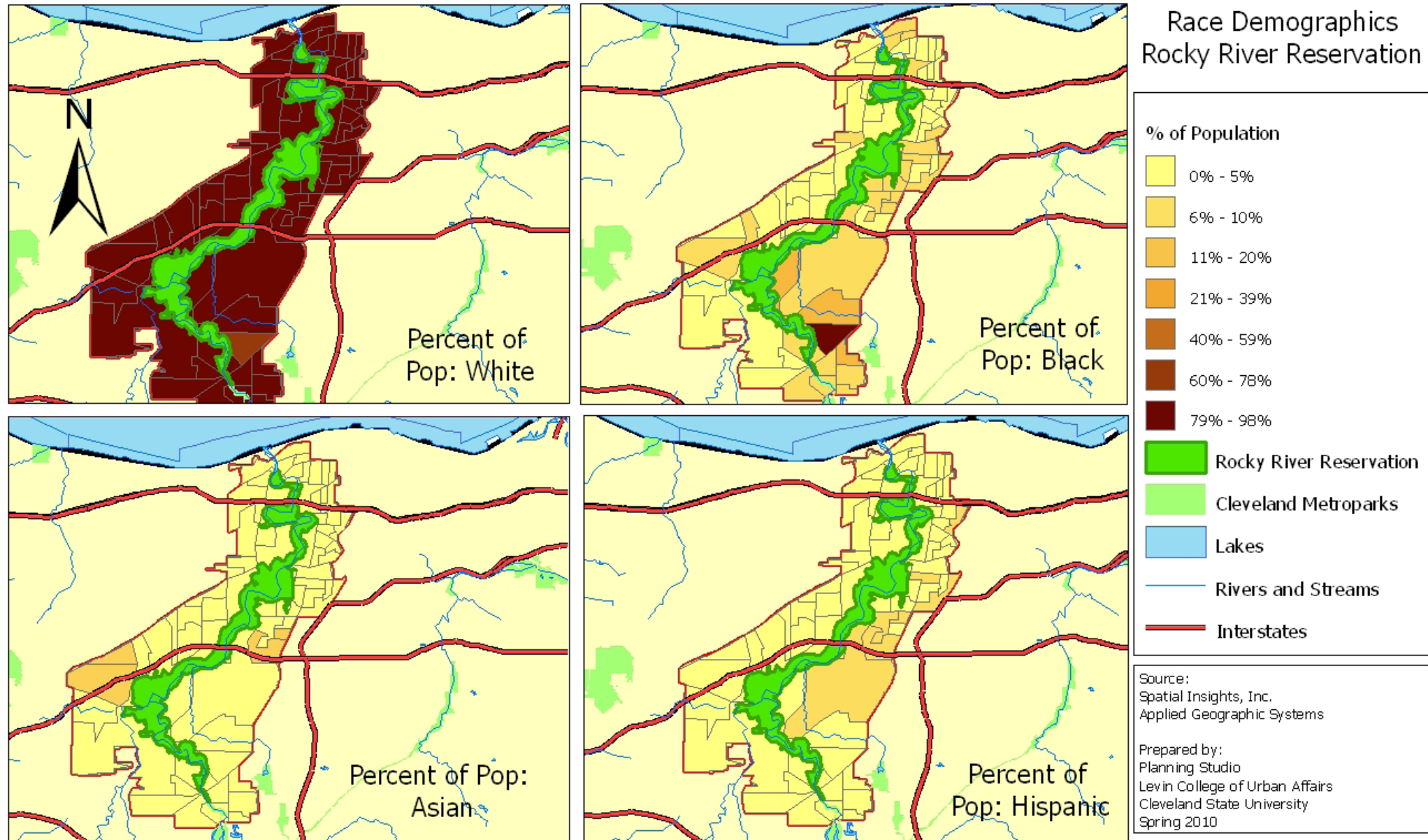


Figure 18

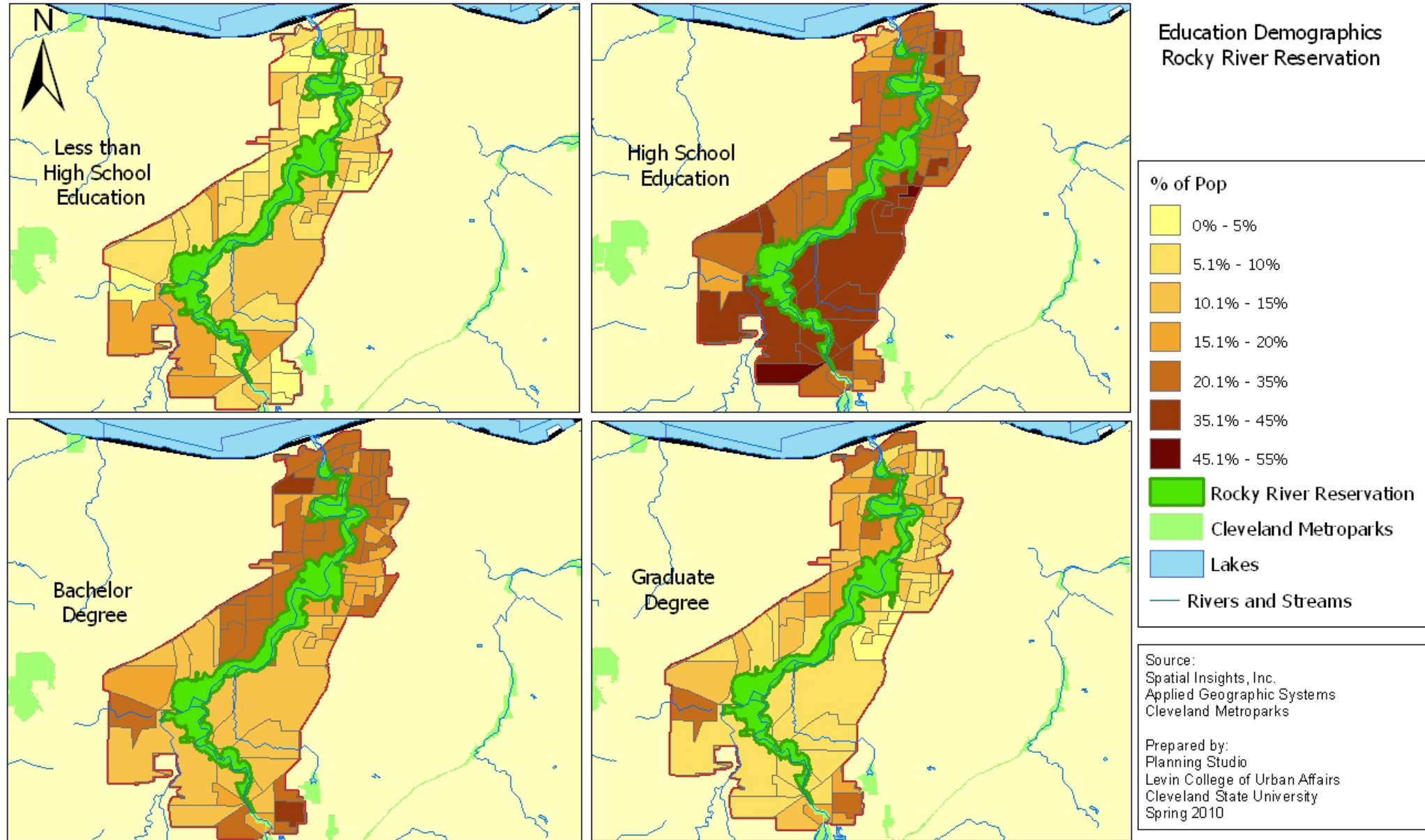


Figure 21

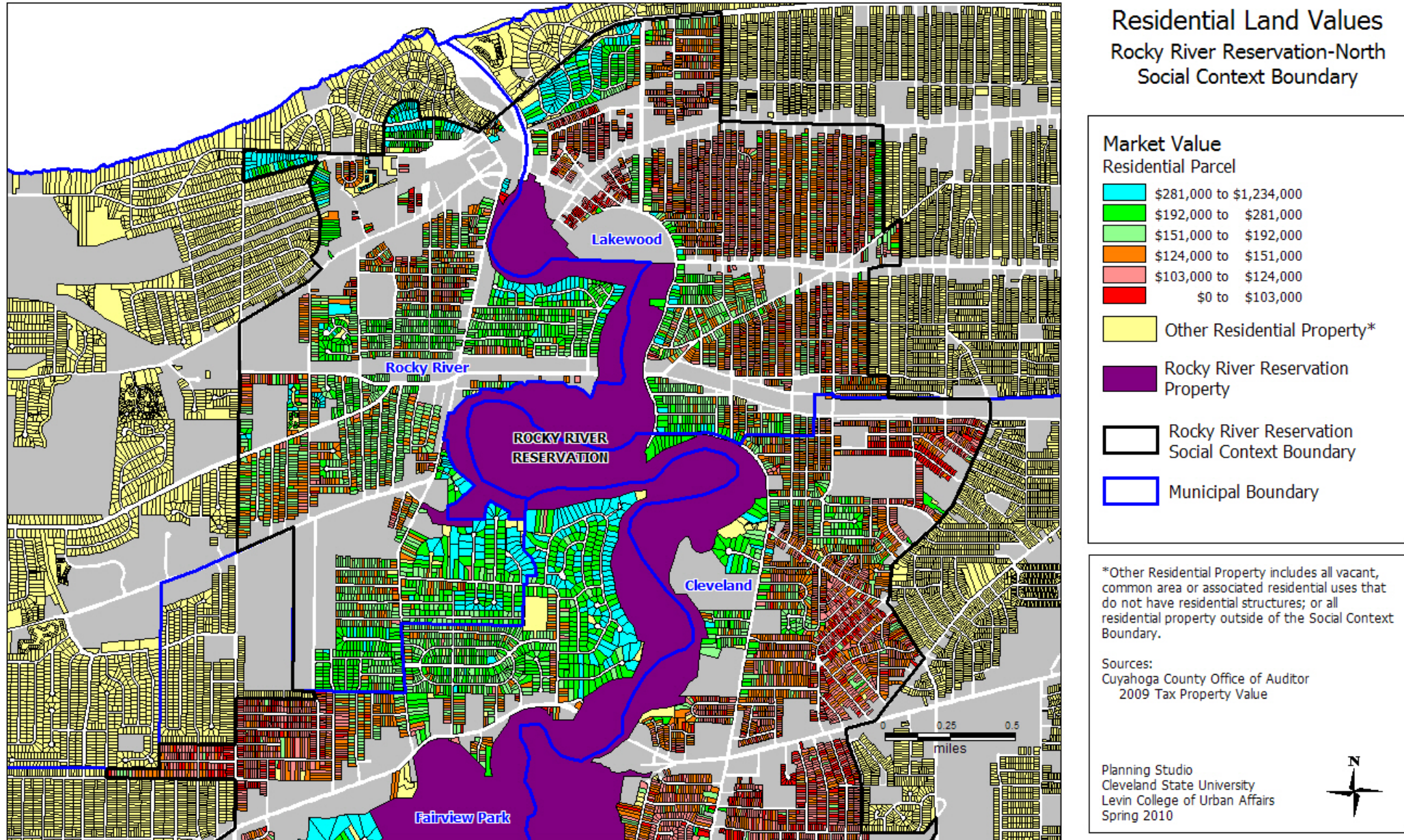


Figure 22

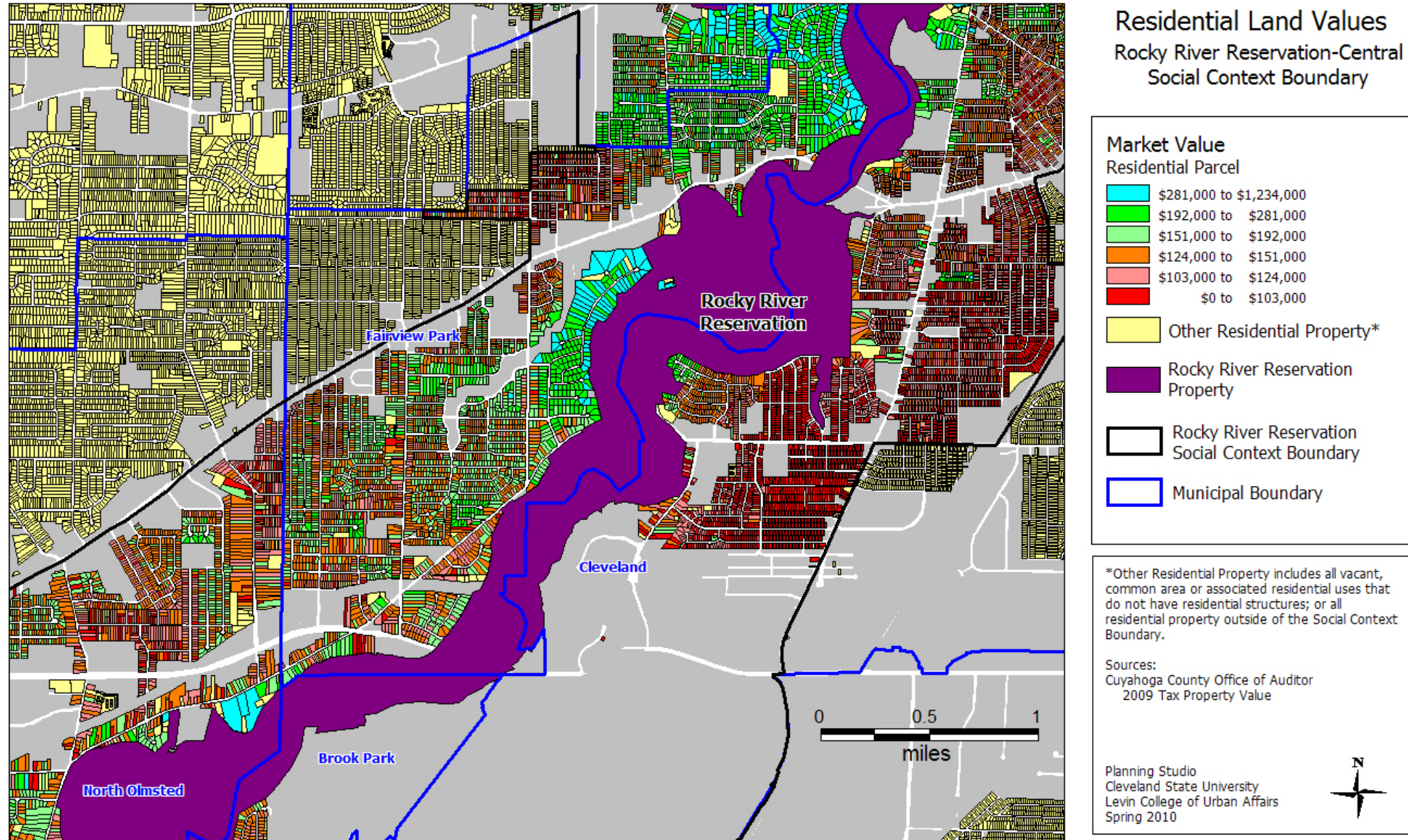


Figure 23

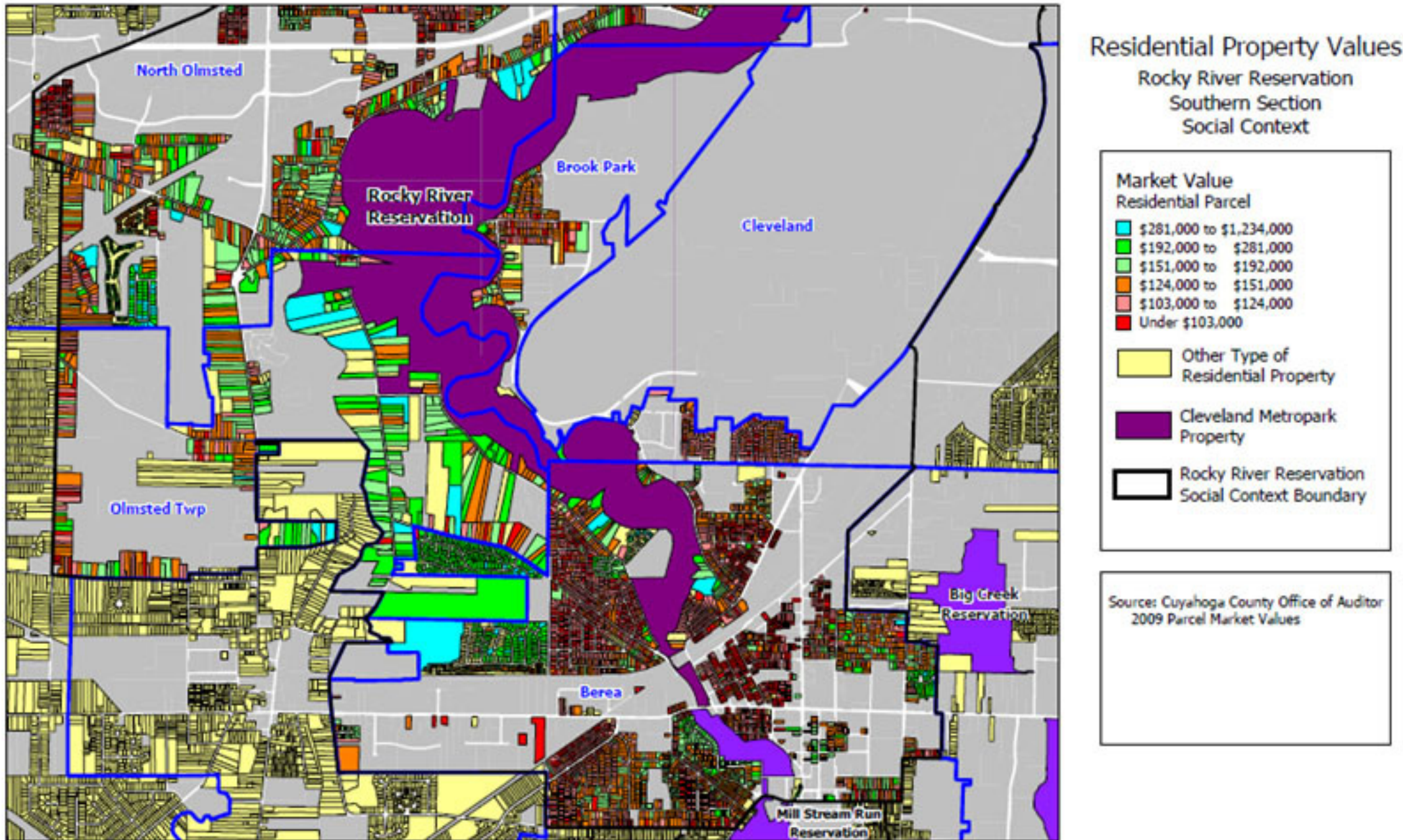
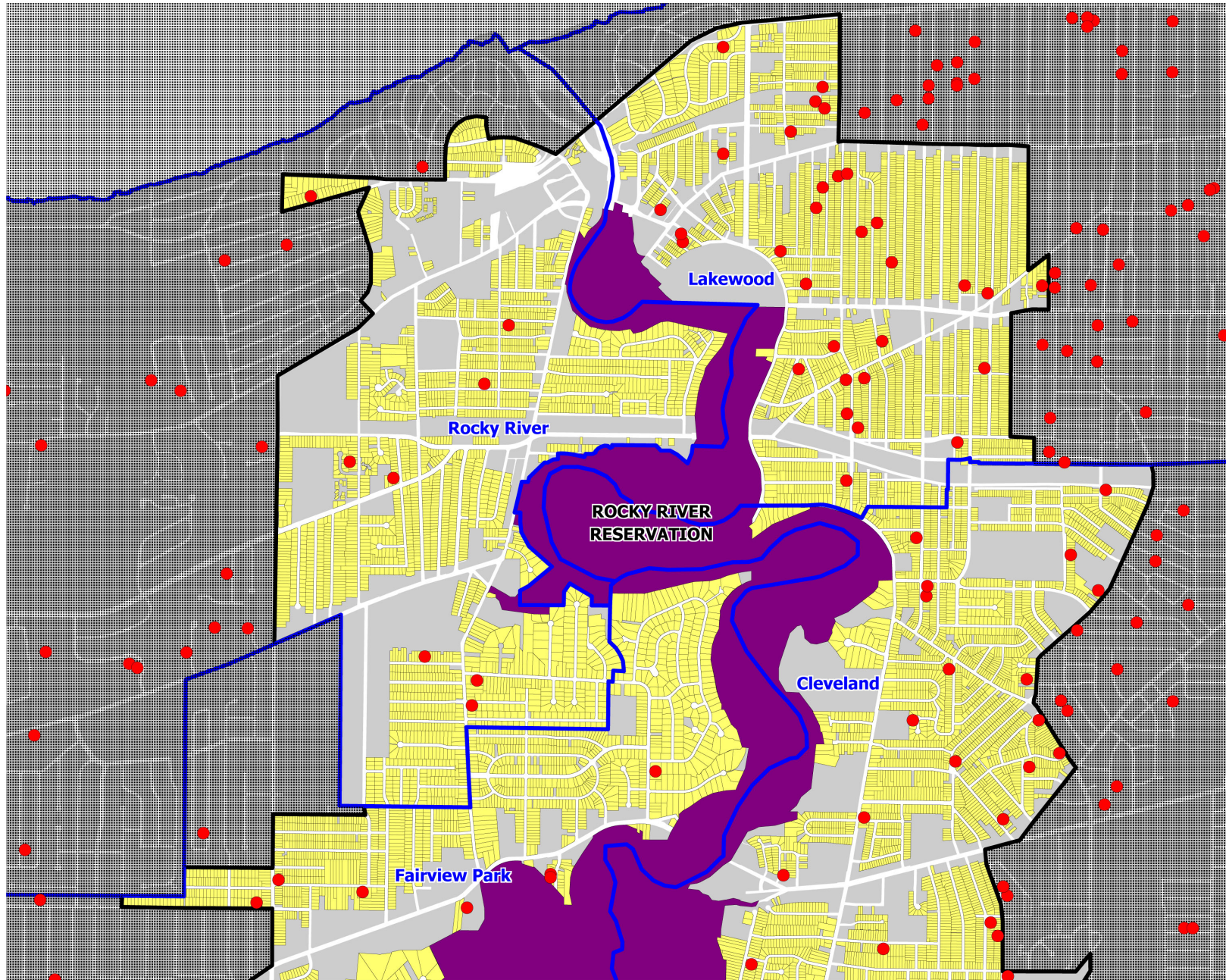


Figure 25



2009 Sheriff Sales
Rocky River Reservation
Northern Section
Social Context

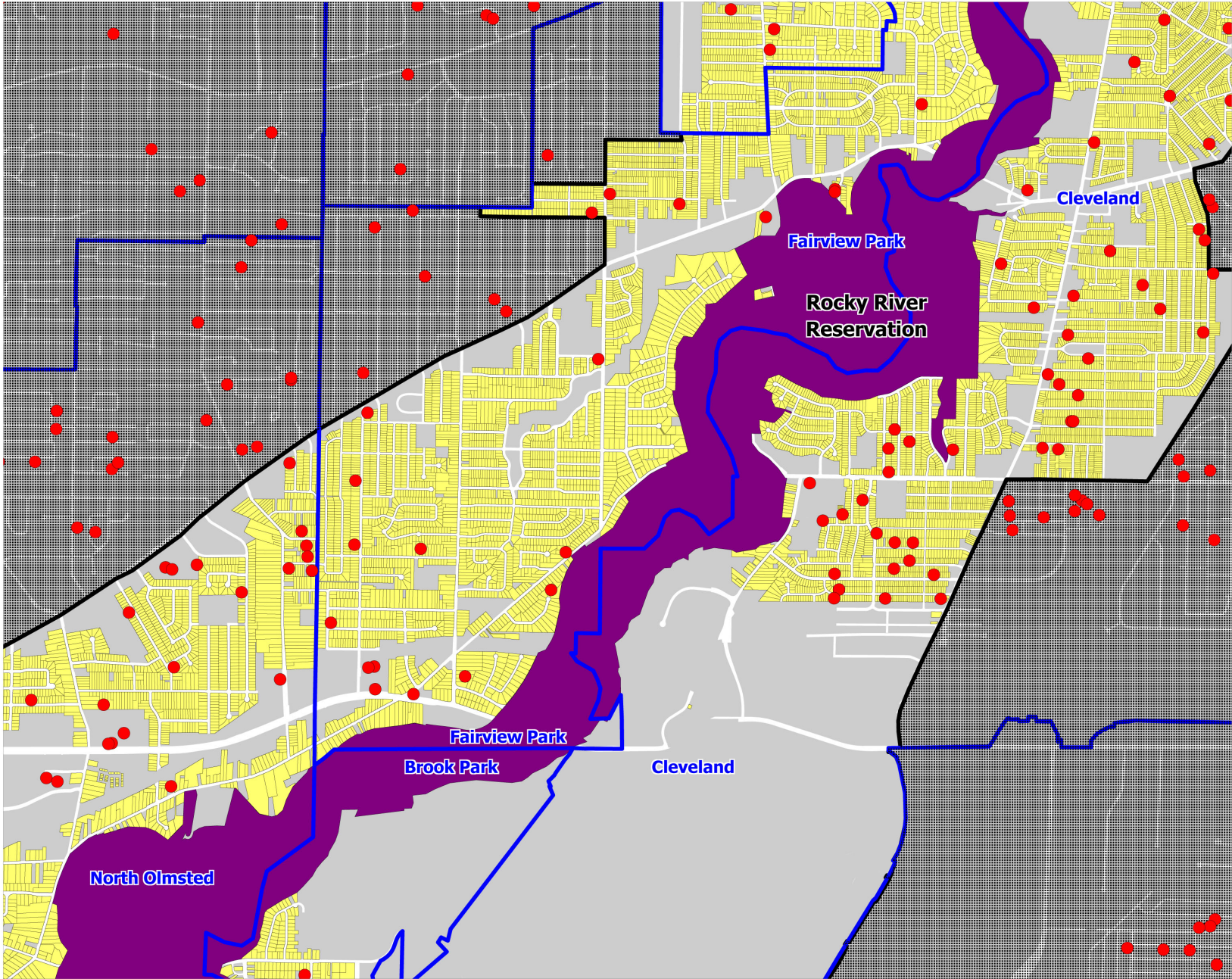
2009 Sheriff Sale

- Sheriff Sale Location
- Residential Parcel
- ▭ Rocky River Reservation Social Context Boundary
- Rocky River Reservation Property

Source: Cuyahoga County Office of Auditor Transfer Records

Sherrif Sales result from both bank and property tax foreclosures.

Figure 26



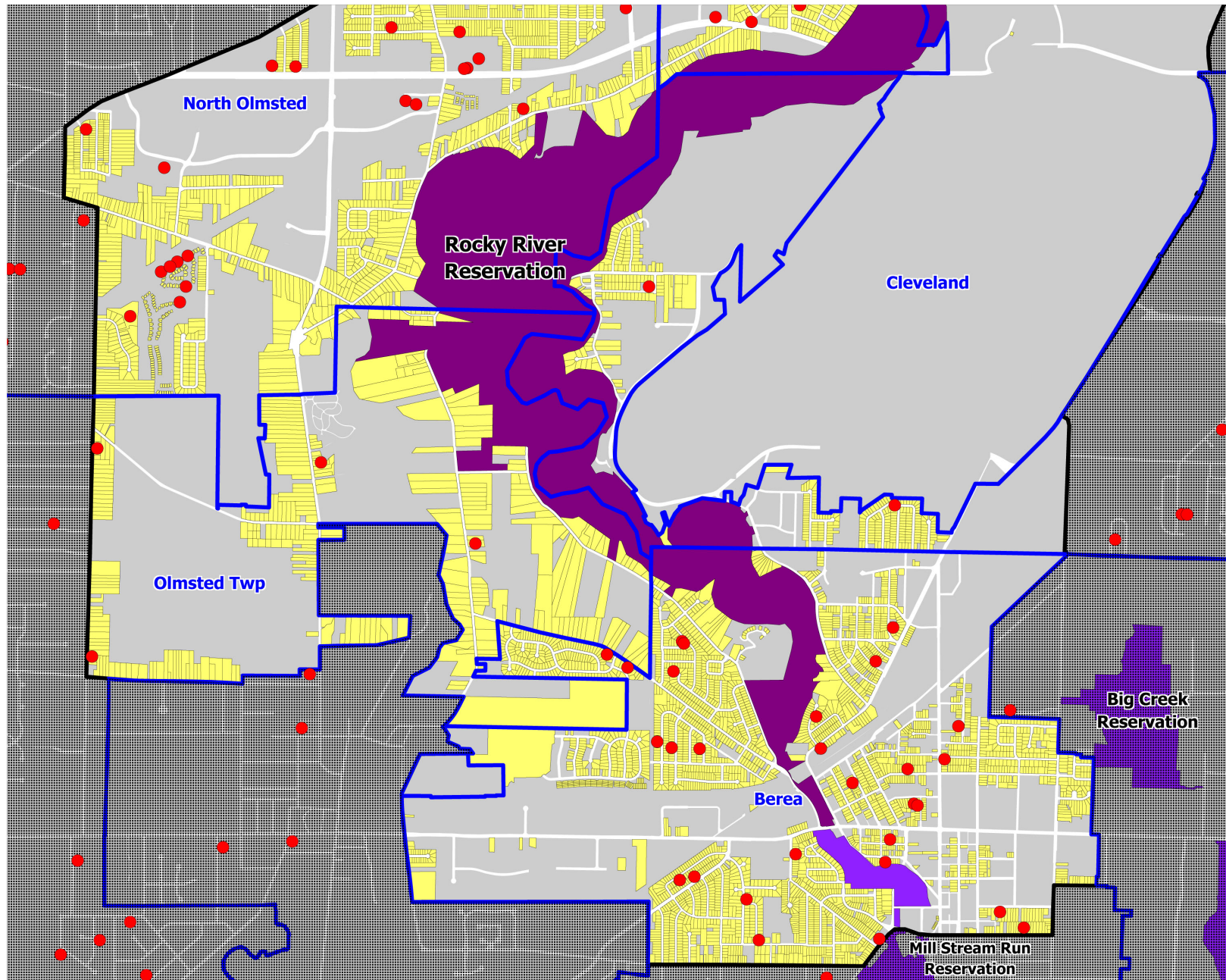
2009 Sheriff Sales
 Rocky River Reservation
 Middle Section
 Social Context

- 2009 Sheriff Sale**
- Sheriff Sale Location
 - Residential Parcel
 - Rocky River Reservation Social Context Boundary
 - Rocky River Reservation Property

Source: Cuyahoga County Office of Auditor Transfer Records

Sherrif Sales result from both bank and property tax foreclosures.

Figure 27



2009 Sheriff Sales Rocky River Reservation Southern Section Social Context

- 2009 Sheriff Sale
- Sheriff Sale Location
 - Residential Parcel
 - Rocky River Reservation Social Context Boundary
 - Rocky River Reservation Property

Source: Cuyahoga County Office of Auditor Transfer Records

Sherrif Sales result from both bank and property tax foreclosures.

Figure 28

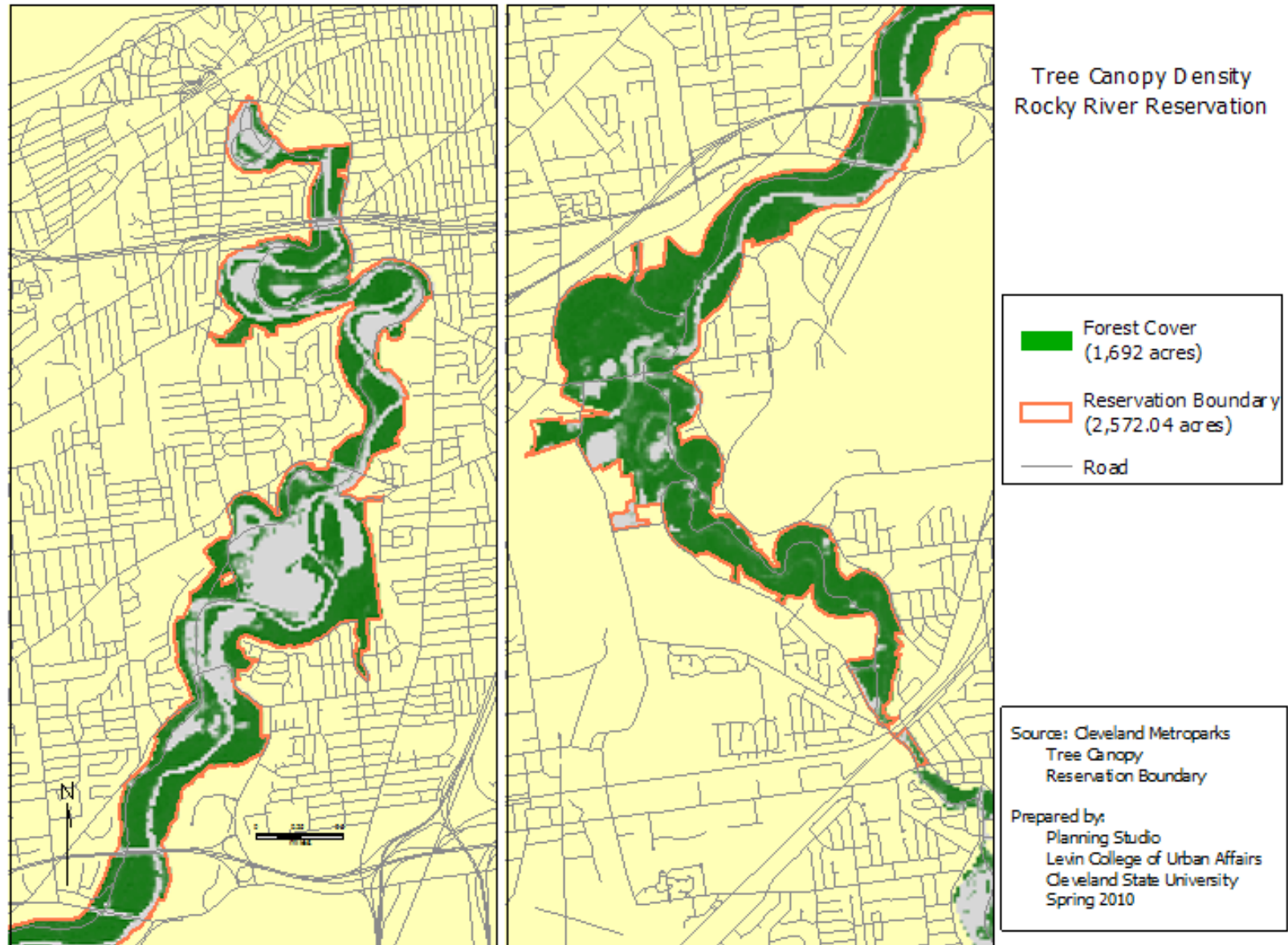


Figure 31

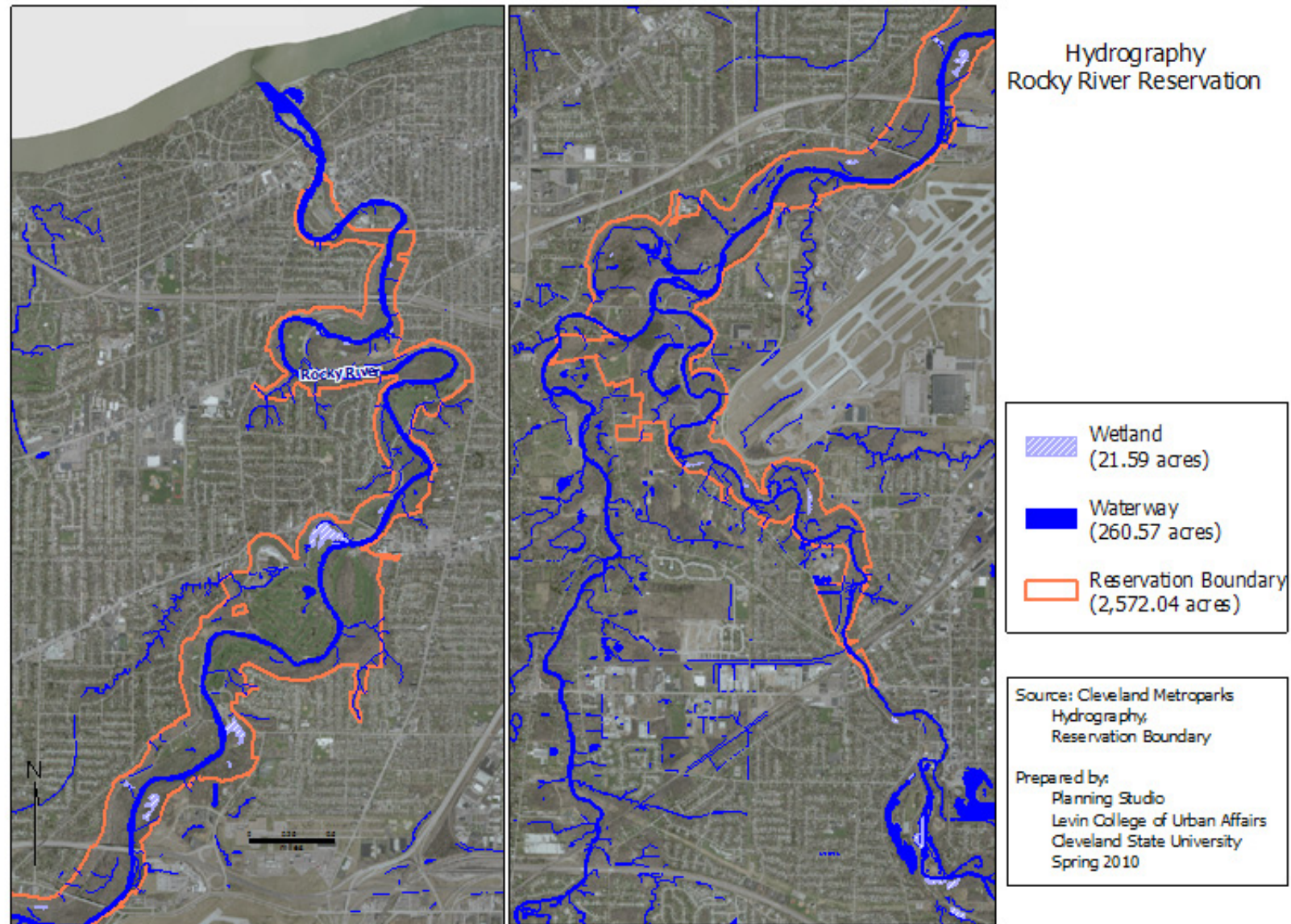
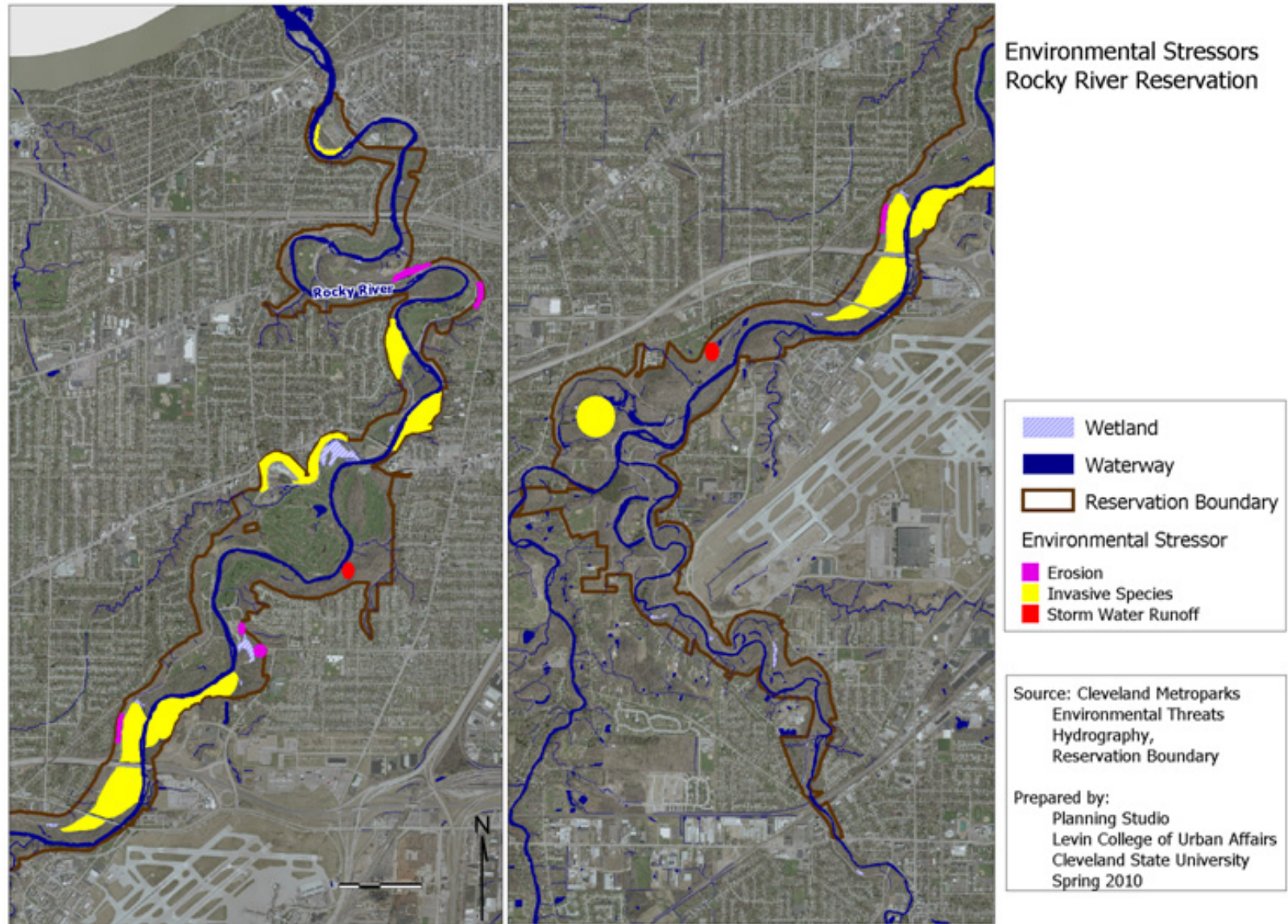


Figure 33



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Chapter 6.0

*FOREST
HILL
PARK*



Figure 1: Rockefeller Mansion

History

Originally the summer retreat for John D. Rockefeller and his family, Forest Hill Park has had a noteworthy history. Famous for the Standard Trust, Rockefeller and his family bought the estate in 1873. It was originally intended to be a sanitarium, but the site was converted to a summer home after the endeavor failed. A commanding Victorian mansion was built on the site, with vistas of the lake and of Cleveland (see Figure 1: Rockefeller Mansion). The estate featured a swimming hole, bridle paths and a nine-hole golf course, but was mostly forested land. Here, Rockefeller's son, John Jr., developed a lifelong love of nature while playing.

In 1914, a tax dispute erupted when Rockefeller Sr.'s wife, Laura, fell ill and was unable to return to their winter home in New York. As the Rockefeller family was forced to stay on their property past the tax listing day, the Cuyahoga County tax commissioner tried to levy a tax on every Rockefeller property whether it was in Ohio or not. The Rockefellers won the tax dispute, and Laura recovered, but they rarely returned to the property after that. In 1917, the grand Victorian mansion burned down.

In 1923, Rockefeller Sr. transferred the

property to John Jr. for just under \$3 million, who then donated portions for local institutions such as Huron Hospital, the Masonic Temple and Kirk Junior High School. In 1938, he gifted 235 acres of the original estate to the two cities of East Cleveland and Cleveland Heights to be used as a park, and the rest became the Forest Hill subdivision, a small area of uniquely designed homes.

In the gift of the park, Rockefeller Jr. required that the plan for the park be completed by locally noted landscape architect Albert D. Taylor. Taylor designed the park in the principles of the pastoral style, with great meadows, forests, elegant stone bridges and a man-made lagoon with a boathouse. The park was opened to the public in 1942, and featured swimming areas, basketball courts, sports fields, tennis courts and picnic areas. The park was listed on the National Register of Historic Places on February 27, 1998.

6.1 PHYSICAL RESERVATION

Forest Hill Park is bounded by Mayfield Road to the south, Monticello Road to the southeast, Lee Road to the east, Terrace Road to the north and northwest and Superior Avenue to the west and southwest. Forest Hill Road runs Northwest through the middle of the park and physically di-

vides the park in two (see Figure 2: Park Facilities Map).

Previous Plans

The Pressley Associates Updated Plan for Forest Hill Park is the first updated plan of the park since the A.D. Taylor Master Plan of 1938. It was completed in 1999 and further revised in 2001, more than 60 years after the original Taylor plan was completed. It respects and preserves the spirit of conservation and passive recreation present in the Taylor Plan. Yet, Taylor recognized that the passing of time would catalyze change in the function and use of the park. This is why his plan provides strict guidelines for the types of use—active, passive—their proportionality and their location within the park. He noted that “one seldom finds an area of such size possessing such diversity of topography, abundance, and variety of existing vegetation, and many other natural advantages, located within the metropolitan area of a large city.” Forest Hill successfully became a unified “country park” surrounded by East Cleveland and Cleveland Heights.

Because a limited amount of the Pressley Plan was actually implemented, Forest Hill Park continues to show signs of age and change away from its original condition. The changes occurring in the natural

environment include aging trees, erosion, rapidly growing invasive plant species and silted ponds. Some of these are tied to natural change, deferred maintenance, benign neglect and abuse. Infrastructure changes have also occurred. The visible aging and failure of drainage systems, trails, picnic areas, benches, bridges, the accumulation of trash and litter are the result of years of deferred maintenance and benign neglect. Limited city budgets prevent attentive care of the park.

Existing conditions were catalogued in 1997 and 1998 as part of the background research, inventory and analysis of the Pressley Plan. Their inventory and analysis acknowledges a great variety of conditions including new and old facilities as well as deteriorating trails, waterways, soils and vegetation. Because of the extensive needs, Pressley advocated prioritizing the “most serious conditions which make Forest Hill Park uninviting, inaccessible and suggestive of danger and neglect.”

The 1999, the Pressley Plan played an important role in categorizing and recommending needed infrastructure and landscape improvements to the park. Specifically, the needed replacement of the Dugway Valley outfall (old utility system), erosion control on the steep slopes surrounding the Dugway Valley and con-

trolling the invasive plant species population were high priorities. The outfall was rebuilt and modernized, invasive species were sprayed with herbicides and erosion control mechanisms were put in place as a result of Clean Ohio Conservation Funds granted to the city of Cleveland Heights in October of 2001.

6.2 BUILT ASSETS

Previous and Existing General Land Uses

Tables 1, 2 and 3 quantify the types of land use in Forest Hill Park. The different types of land uses are protected passive, accessible passive, active, water and support. The tables are adapted from the Pressley Updated Plan and show land use ratios at three different times- Taylor Era, By 1950- As Built and 1998- Pressley Inventory. Protected passive and accessible passive use areas are clearly the largest areas. According to the 1998 Pressley Inventory, protected passive and accessible passive comprise 216.4 of the 259.9 acre park or 83 percent of the entire park. This is 2 percent lower than the originally planned proportion in the Taylor Plan.

The current structure and function of land uses in the park illustrates that active and passive uses can coexist well together. Active and passive users need to respect

each other and the park. Consistent users of the park are the first line of stewards and should act as such.

Accessibility and Parking

Vehicular and pedestrian entries are important for accessing the park. Having an inventory is important in assessing current and future needs. Table 4 provides data on vehicular entry, pedestrian entry and parking lots according to the Taylor Plan, As-Built by 1950 and according to the Pressley data from 1998. The parking lots are mostly in good condition. However, the Terrace Road entrance and parking area are in need of repair (see Figure 3: Terrace Road Parking Lot).

The function of certain parking lots needs reassessment by studying the traffic flow in and out of parking lots at different times during different days of the week. It should be noted that there is an oversupply of parking. The noise and smell of vehicles automatically throws the passive nature of the park into flux. Vehicles should have accessibility to the park but a reemphasis on pedestrian accessibility and the passive nature of the park questions the purpose that overly-large and under-occupied parking lots serve.



Figure 3: Terrace Road Parking Lot



Figure 4: Boathouse

Vehicular Access

The 1938 Taylor Master Plan indicated that vehicular access should be limited to parking lots. The Pressley Plan agrees with this and sets forth a series of guidelines that should be followed. They include:

- Parking lots should not allow vehicular access to citizens beyond the limits of the parking lot.
- Vehicular access should be clearly signed with times of use and detailed restrictions.
- Access by vehicle into the park should be restricted to maintenance, emergency or police use.
- Off-trail or off-path vehicular movement, even by authorized police and maintenance vehicles, should be discouraged unless it is an emergency.
- Development of a system of gated vehicular entries and bollards at pedestrian entrances should control vehicular access in the future.

These are all valid points. Bollards and gates have been put in place at some of the pedestrian access points. Signage is dilapidated, not uniform and needs updating. The presence of safety and parks maintenance officials would curtail unauthorized vehicular access. Site visits indicate a potential oversupply of parking on both the

east and west sides of the park.

Pedestrian Access

Pedestrian access can and should improve. Increased accessibility and increasing the number of passive users should have a positive effect on the general upkeep and condition of the park. Increased signage and maps of trails and amenities are important, informative tools to users. A map of Forest Hill Park and the other nearby trails and parks (Cumberland Park, Cain Park, Lake View Cemetery, Rockefeller Park and Lake Front Trail) could attract a wide variety of users. Signage along the route from park to park would create important multiuse (run, walk, and bike) linkages. Increased connectivity between parks could increase the appeal and use of existing trails in Forest Hill Park. A requirement here includes peaceful coexistence between vehicles, bicycles and pedestrians.

Buildings

Table 5, adapted from the Pressley Plan, provides a list detailing condition, concerns, updates and current use of park structures. There are a total of thirteen buildings including comfort stations, utility houses, shelters, a boathouse, a concession stand, the community center and others. While only three are maintenance/utility

structures, five are open to the public and a total of nine are boarded up and closed to the public due to lack of maintenance, benign neglect or disuse over time. These structures attract vandalism and vagrants. Because many are architecturally significant, assessing their future should include potential reuses as well as demolition (see Figure 4: Boathouse).

Bridges

There are two bridges in the park. The Rockefeller Bridge is in a secluded area while the Forest Hill Boulevard Footbridge is a consistently used bridge spanning over Forest Hill Boulevard. Both are in need of regular maintenance.

Active Recreation Structures

There are four clustered baseball diamonds, a soccer field and tennis courts located on the Cleveland Heights side of the park. Three baseball diamonds and tennis courts are located on the East Cleveland side of the park. All of the baseball diamonds with the exception of the two unfenced diamonds on the East Cleveland side are in good condition. The Cleveland Heights tennis courts are in excellent condition. The East Cleveland tennis courts are unusable in their current state (see Figure 5: East Cleveland Tennis Courts).

Passive Recreation Structures

A number of picnic sites border the Meadow Vista on the East Cleveland side of the park. They include park benches, tables and grills. Benign neglect has resulted in leaves and branches littered throughout these sites. Low cost maintenance of these sites will make them much more appealing.

Paths and Trails

The paved park paths are wonderful amenities for walkers, joggers and runners. However, lack of consistent maintenance has resulted in gradual decay of the paved trail system. Certain sections are in need of repair. A little-used wilderness trail begins on the Cleveland Heights side of the park and travels parallel to the Dugway Brook (See Figure 6: Dugway Trail). Trail signs and maps are needed. The trail functions primarily as a walking trail but the opportunity of turning it into a pedestrian-friendly mountain bike trail is intriguing.

6.3 SERVICES

A wide variety of organized sports teams and recreational groups use the baseball diamonds, soccer field and tennis courts throughout the year. They are a valuable asset for the active youth in Cleveland Heights and East Cleveland.

The open space and recreational amenities are available to community members and all visitors. Structured educational and recreational programs are available at the Cleveland Heights Community Center. The community center hosts a variety of educational and community oriented activities. These function independently of the park. Research indicates that community involvement centered on Forest Hill Park is inconsistent. The community center amenities include an Olympic-sized ice rink, athletic field house and fitness center, senior activity center, summer day camp and meeting and general recreation rooms.

6.4 EVALUATION OF ASSETS

As illustrated above, Forest Hill Park is endowed with many distinctive qualities and natural assets. The history, terrain and ecology of the park offer a unique park experience. The historic buildings, trails and recreational facilities present significant potential to become valued community assets. However, budget constraints and the consequent benign neglect limit the quality of current conditions. Furthermore, actual and perceived safety problems are exacerbated when built assets fall into disrepair.

6.5 SERVICES VALUATION MODEL

Facility rental data for athletic fields in the park and rooms at the community center were unavailable. Furthermore, despite best efforts, information regarding park usage for non-structured physical fitness (number of individuals using the park at least three times a week for physical fitness) was unavailable. Because of this, the social value of the park as calculated by the social valuation model is zero. However, site visits indicate that the park provides great social value to individuals and groups that use non-structured areas for recreation, clubs and teams that use baseball diamonds, soccer fields, and tennis courts for structured activities.

6.6 THREATS TO BUILT ASSETS

There are several types of contemporary uses that, to a certain extent, have changed the character of the park and the surrounding neighborhood. They include:

- **Adjacent Land Use:** There are several commercial land uses on Mayfield, Monticello, Lee and Terrace Roads and residential in the remaining areas. Ninety-four percent of the land surrounding the Dugway Brook watershed, which flows through the Park, is developed.
- **Structures,** most notably the active

- recreation baseball fields, are character changing.
- Automobiles are more noticeable. Empty parking lots infringe on the natural systems.
 - Organized and institutionalized sports have changed passive areas into active areas. Decaying active recreation areas are glaring examples of benign neglect.
 - Benign neglect has effected much including the condition of parking benches, buildings, trail condition, erosion, tree condition, and runoff.
 - Trash dumping occurs in the park and can visually devalue an otherwise nice area.

Joggers, sports teams and other recreation users can use the park amenities as long as they do not compromise the physical condition of the trail system and the existing natural systems. The active and passive accessible use areas provide patrons with the ability to enjoy the natural beauty and relieve the park provides from the urbanized surroundings.

6.7 RECOMMENDATIONS FOR BUILT ASSETS AND SERVICES

Further assessment of all physical assets is necessary. Benign neglect and “deferred maintenance” as a result of limited city resources in both East Cleveland and

Cleveland Heights is a problem. The overarching goal is to enhance safety and the user-friendly features of Forest Hill Park. These components include:

- Regular Park maintenance of physical infrastructure, which will enhance appearance and safety. Assessment, rehabilitation, replacement or removal of physically decayed structures including buildings, benches, paths, picnic areas and active recreation sites.
- Increased signage of park features and park maps at several points in the park.
- Increased signage between nearby parks which will enhance the connectivity and network of parks in the area, which could increase interest and usage.
- Parking lot analysis- Are they oversized and underused?
- Assessing pedestrian access points to determine their adequacy in relationship to population.
- Coordinated maintenance between East Cleveland and Cleveland Heights.

These goals are in line with the Taylor Plan preservation emphasis. They respect the historical heritage of the Park and the ecological systems vital to its survival.

The Cleveland Metroparks mission statement focuses on conservation, education

and recreation. All of the proposed goals respect these initiatives. Forest Hill Park is not a Cleveland Metroparks Reservation and does not have to adhere to their principles. However, with its limited maintenance budget, preservation and recreation are the main priorities. Given the current condition, respect for the history and natural assets of the park is quite evident.

6.8 SOCIAL CONTEXT

Boundary Definition

The social boundary for Forest Hill Park includes a large residential area and a few institutional and other types of land uses. The study area boundary is Mayfield Road on the south, North Taylor on the east, and the Norfolk-Southern/CSX railroad tracks on the north and west. The boundary encompasses all or part of three census block groups in the City of Cleveland, 11 census block groups in the City of Cleveland Heights, and 19 census block groups in the City of East Cleveland.

This boundary takes into consideration the vehicular and pedestrian access points to the park, as well as the surrounding public transportation infrastructure made available via the Greater Cleveland Rapid Transit Authority. GCRTA bus numbers 7, 9, 28, 37, 40, and 41 provide service

near the park, as does the RTA Healthline and Rapid Redline. Multiple RTA stations are within walking distance of the physical park boundaries. However, the hostile pedestrian conditions and a lack of supporting infrastructure such as crosswalks and pedestrian bridges discourage a large amount of foot traffic in and out of the park.

The Cleveland Heights Community Center sits just beyond Forest Hill Park at the southern end on Mayfield Road. Again, barriers to access along this busy street may discourage a large amount of foot traffic accessing the park from beyond Mayfield Road. A small commercial area on this portion of Mayfield Road includes two large auto dealerships, a coffee shop, and other small retail and service businesses.

6.9 NEIGHBORHOOD INVENTORY

Surrounding Land Use

Most of the land uses surrounding the park are residential or institutional. On the northwestern border of the park in East Cleveland is the recently completed Kirk School; Huron Hospital is located across Terrace Road from the park just beyond multiple high-rise apartment buildings. Park access is limited in these areas, and

pollution and safety also present issues. The McGregor Home, an adult rehabilitation center and assisted living community, is located at the northeast corner of the park in East Cleveland. Southwest of the park in Cleveland Heights is Lake View Cemetery. Beyond the park to the south, are the Cleveland Heights Recreation Center and a long standing commercial retail district along Mayfield and Lee Roads. The remainder of surrounding property is residential, with the bulk of the single family residential properties located in the Forest Hill subdivision (see Figure 7: Land Use Map).

6.10 POPULATION AND HOUSING CHARACTERISTICS

Current Demographic Data

Two-thirds of Forest Hill Park sits within East Cleveland, a city with a total population in 2000 of 27,217; 94.16 percent of the population is black, 5.21 percent is white, and the remaining two thirds of a percent are American Indian, Asian/Pacific Islander, Hispanic, or classified as 'other.' There were 11,222 households in East Cleveland in 2000. 64.46 percent of occupied housing units in 2000 were renter-occupied. East Cleveland is an economically depressed city that suffers from a high poverty rate and low levels of educa-

tional attainment beyond high school. East Cleveland's 1999 poverty rate was 31.97 percent, with a child poverty rate of 45.74 percent. 4.79 percent of the city's population have attained an associate's degree, 5.02 percent have attained a bachelor's degree, and 3.52 percent have attained a graduate degree or higher. Average home value in 2009 was \$64,370.

The remaining one third of Forest Hill Park is within the City of Cleveland Heights, which had a 2000 population of 49,958 living in 20,932 households. Cleveland Heights is more racially diverse than East Cleveland: 42.29 percent of the 2000 population is black, 54.25 percent is white, 2.16 percent is Asian/Pacific Islander, 1.58 percent is Hispanic, 0.17 percent is American Indian, and 0.68 percent is classified as 'other.' Renters live in 37.89 percent of the occupied housing units. The poverty rate in 1999 was 10.64 percent, and the child poverty rate was 10.93 percent. 5.14 percent of Cleveland Heights residents have an associate's degree, 24.68 percent have a bachelor's degree, and 25.32 percent of residents have a graduate or professional degree. Average home value in Cleveland Heights in 2009 was \$147,505.

The demographic characteristics of the social boundary around Forest Hill Park are fairly consistent with the demograph-



Figure 5: East Cleveland Tennis Courts



Figure 6: Dugway Trail

ics of East Cleveland. The median age for the 24,817 individuals living in the social boundary is 36. Average household size is 2.29 peoples. 10.75 percent of the population 25 years old and over has a bachelor's degree, and 13.61 percent are unemployed. 70.11 percent of housing units are renter-occupied, and average household income is \$43,341.52.

Projected Demographics

Future projections of demographic data show the area increasing slightly in population to 25,279 in 2014, then declining again to 22,779 in 2019. The rate of attainment of a bachelor's degree is expected to increase slightly to 11.52 percent by 2014, but unemployment is also anticipated to rise to 14.31 percent. The percentage of housing units occupied by renters is anticipated to increase to 77.57 percent. Tables 6 and 7 give detailed information about these demographic variables by city. Figures 8, 9, and 10 provide maps detailing education, race and population within the study area.

Housing Characteristics

The housing stock that surrounds Forest Hill Park is older, on average, than that of the surrounding Metroparks Eastern Planning Zone. The average age of a house is

94 in East Cleveland and 81 in Cleveland Heights; the average for the Eastern Zone is 61 years. Forest Hill subdivision to the east of the park is maintained in general good condition, but none of the neighborhoods surrounding the park have escaped the sharp decline in investment and population that has occurred in this area since the creation of the A.D. Taylor Plan.

Of East Cleveland's 1,659 acres (6.33 percent), 105 currently sit vacant, as do 82.35 of Cleveland Heights' 4,242 acres (1.94 percent). Both cities have been affected by the recent mortgage crisis and the number of foreclosures has risen steadily from 2003 to 2008. East Cleveland had 2,151 foreclosures and Cleveland Heights had 1,897 foreclosures from 2000 to 2010. 600 of the East Cleveland foreclosures and 113 of the Cleveland Heights foreclosures were within the social study boundary area. The City of Cleveland had 27,801 foreclosures from 2000 to 2010, 21 of which were within the study area. Figures 11, 12, and 13 show a twenty-year foreclosure trend in the demographic study area and the surrounding neighborhoods.

6.11 HOUSING VALUATION MODEL

By utilizing the economic value model, we can determine the effect that the proximity of the park has on the single family home

property tax revenue for the two separate communities. Many of the surrounding residential properties are not single family, and the non-residential adjacent land uses around the park (such as the school and cemetery) also reduce the number of single family households towards which this model can be applied. In addition, the model does not take into account the effect of foreclosures and vacancies on the property tax revenue. With these limitations in mind, we can estimate that the assumed increase in property tax revenue in Cleveland Heights due to increased property value in proximity to the park is \$231,350. In East Cleveland, this effect is estimated to be valued at \$496,736. Values are based upon the number of single-family homes located within 200-foot wide buffer zones surrounding the park.

The greatest increase in property tax revenue attributable to the park is between 400-800 feet away in East Cleveland and at 1,500 feet away in Cleveland Heights. The positive effect on property tax revenue attributable to the location of the park is smaller than expected for a park of this size for multiple reasons, most prominently the low number of single-family residences in the boundary area, and perceived and real safety issues related to crime in the park (see Figure 14: Property Tax Revenue).

6.12 COMMUNITY GROUPS AND GOVERNMENT AGENCIES

Friends of Forest Hill Park and the East Cleveland Park Association are the two community groups most invested in the maintenance and improvement of Forest Hill Park. Neither of these groups has a substantial budget nor supporting staff to invest in continued improvements of educational and recreational services in the park. In the past, Friends of Forest Hill Park has collaborated with ParkWorks to provide educational and recreational opportunities such as Arts Week and Health Walk 2000, but in recent years programming at the park has become virtually nonexistent. East Cleveland Parks Association is a non-profit organization with the three-fold mission: to 1) restore and preserve Forest Hill Park; 2) facilitate appropriate programming in the park; and 3) use the park for community renewal.

East Cleveland Parks and Recreation Department and Cleveland Heights Parks and Recreation Department manage the park. Cleveland Heights also manages the nearby Cleveland Heights Community Center, which offers recreational and fitness opportunities to Cleveland Heights residents. Currently, Cleveland Heights and East Cleveland do not collaborate efficiently regarding maintenance and programming in

the parks.

Investigating possible collaborations with East Cleveland City School District and Cleveland Heights/University Heights City School Districts may yield exciting educational and service learning opportunities. Both school districts have volunteer requirements for their students to graduate; utilizing high school students to conduct general park maintenance is an effective way to procure low-cost maintenance services and provide the students an opportunity to learn about forestry and environmental sciences.

6.13 THREATS TO SOCIAL CONTEXT

The largest threat facing Forest Hill Park is a perceived and real safety issue, particularly during after-hours in the park. Safety issues related to the park span from concerns for pedestrian and cyclist safety when accessing the park to problems related to drugs and violence. The installation of safety measures such as better lighting around recreational facilities and the installation of “Blue Phones,” which call 911 when picked up, would improve safety in the park. In addition, increased police, especially after dusk, will improve safety for park visitors. Assessing the function of unused buildings that house vagrants and other structures that present safety issues

is also important. Improved maintenance that creates a more welcoming visiting environment will have the effect of providing more eyes on the park to watch for criminal behavior.

6.14 RECOMMENDATIONS FOR SOCIAL CONTEXT

The area surrounding Forest Hill Park will likely continue to be low-income in future years, and considerations of the current abilities of the East Cleveland and Cleveland Heights governments to maintain the parks will affect future planning. Cleveland Heights currently has a greater ability to fund park maintenance than the City of East Cleveland, but both governments should seek to collaborate with each other and outside groups. Goals for future planning processes in the park should include:

- Collaboration between East Cleveland and Cleveland Heights Parks and Recreation Departments to streamline maintenance and provide consistency in signage and way-finding (see Figures 15 and 16: Non-Uniform Signage)
- Improved safety in the park, including provisions for safe pedestrian and cyclist access
- Improved maintenance of park facilities such as picnic areas and Dugway Brook

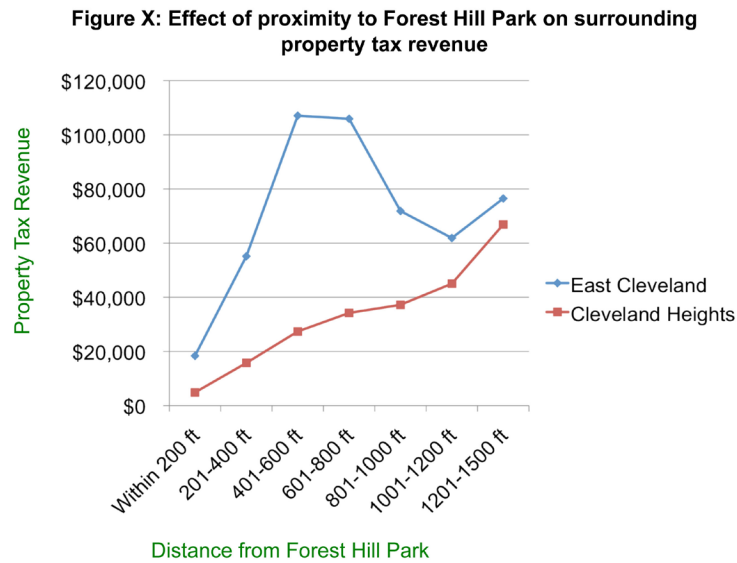


Figure 14

- Service-learning programs should be developed in collaboration with local school districts to provide educational opportunities to students and reduced costs of park maintenance

As Forest Hill Park is not part of the Cleveland Metroparks system, future planning goals need not adhere to the Metroparks three-fold mission of conservation, education, and recreation. However, improving access to and safety in the park will certainly improve recreational opportunities to area residents, and partnering with local school districts will allow for greater conservation and education to occur with the boundaries of Forest Hill Park.

6.15 ECOLOGICAL CONTEXT

Boundary Definition

The ecological boundary largely follows the physical boundary. Forest Hill Park is entirely surrounded by either residential or commercial properties. Cumberland Park is the closest natural space. It is directly south of Mayfield Road and the Cleveland Heights Community Center. Cain Park is a little further south and east of Forest Hill. Lake View and Mayfield Cemetery are to the southeast and Rockefeller Park is approximately three miles to the east. Invasive species are not subject to strict

boundaries. Varieties are known to grow throughout the park and the surrounding neighborhoods.

6.16 NATURAL RESOURCES INVENTORY

The Dugway Brook watershed extends beyond the park. It travels through several cities and enters Forest Hill from the south and travels northward to Lake Erie. Topologically diverse terrain effectively provides boundaries by type within the park. The Dugway Brook is located in a wooded, steep valley. Large open meadows exist as well as thickly forested areas. The park is approximately 40 percent forest and 45 percent meadow. The remainder is currently developed for recreational activities.”

The Davey Resource Group completed an Ecological Inventory Report in 2003 that yielded critical ecological data about the Dugway Valley on the Cleveland Heights side of the park. It not only provides detail regarding the physical condition of the land, but also the Dugway Brook and the aquatic and terrestrial animal communities around it and within the park.

Forest

A diverse variety of plant life exists. In the

forested sections, mature trees provide a healthy canopy. Sugar maple and beech trees line the edges of the Dugway ravines. Mature oak and chestnut trees also line the ravines, but are also plentiful in the plateau areas surrounding the meadows. Several rare and unique species exist in the park as well (see Figure 17: Trees in the Great Meadow).

Some of the rare species harmed by invasive species include Wavy Hair-grass (*Deschampsia flexuosa*), With-rod (*Viburnum cassinoides*), Dry Woods Sedge (*Carex artitecta*), Spikenard (*Aralia racemosa*), American Chestnut tree (*Castanea dentata*) and Matricary Grapefern (*Botrychium matricariaefolium*). Over 450 species of plants have been identified in the park. In addition, the Dugway Valley is within the range of the federally endangered Indiana bat (*Myotis sodalis*). The forest may be important to the migratory route of the bats. Figure 18 shows the total area of tree canopy cover in Forest Hill Park.

Wetlands

Technically, there are no wetlands in Forest Hill Park. However, several less than optimal drainage areas (specifically around the ball fields on the Cleveland Heights side) are challenges. However, they provide an opportunity to create wetland-centered so-

lutions.

Hydrology

The Dugway Brook is the main hydrologic feature. The Dugway Brook watershed consists of an East Branch and West Branch. The watershed starts at the eastern edge of University Heights and travels northwest through the city of Cleveland Heights, into the city of Cleveland and enters Lake Erie in Bratenahl. The watershed exists in and collects water drainage from seven municipalities covering an 8.7 mile area. The municipalities are: Bratenahl, Cleveland, Cleveland Heights, East Cleveland, Shaker Heights, South Euclid and University Heights. Forty-five percent of the watershed is in Cleveland Heights (see Figure 19: Dugway Brook Watershed).

In 2006, an estimated 94 percent of the land within the Dugway Brook Watershed is completely developed. The undeveloped land consists of Forest Hill Park and other undeveloped areas (may include forested, open green space and wetlands). Eighty-two percent of the developed land is medium density residential and the remaining twelve percent is devoted to commercial, industrial or institutional purposes.

Forest Hill Park is one of the few locations where Dugway Brook flows above

ground. The other locations include Lake View Cemetery in Cleveland Heights and Bratenahl. The majority of it, however, runs through storm sewers that are the result of a highly urbanized area. Although the Dugway Brook watershed is divided into an east and west branch, only the eastern branch runs through Forest Hill Park and consists of the main ancillary branch and a tributary culvert that travels from the lagoon area down a spillway and into a stream that connects to the Dugway Brook (see Figure 20: Dugway Brook).

Aquatic and Animal Life

The Davey Report catalogues a wide range of animal life present in the Dugway Valley and other areas of the park. Benthic Macroinvertebrates were studied along two study sites of the Dugway Brook in 2003. They are often studied to measure the health of a watershed ecosystem. No fish were seen or observed in the Dugway Brook. The lagoon; however, contains fish, ducks and geese.

Terrestrial vertebrates were also part of the report. Within the amphibian and reptile classification, two kinds of salamanders were observed: northern two-lined and northern dusky. They are commonly found in wooded areas adjacent to rocky streams. American toads and green frogs

were also observed. They are known to tolerate urban environments well.

Of the winged mammals, the bat population within Forest Hill Park is perhaps the most intriguing. Eastern red and big brown bats were caught and recorded. Big brown bats are known for their ability to tolerate urban conditions. Meanwhile, red bats prefer a solitary existence in wooded areas not normally close to urban areas. Rounding out the list of observed vertebrates are opossum, groundhogs, skunks, white-tailed deer, raccoon, eastern grey squirrel and chipmunk.

6.17 ECOLOGICAL VALUATION MODEL

The forested portion of the park offers environmental services that are often overlooked when assessing the value of a natural system. The ecological valuation model, based upon research conducted by the New Jersey Department of Environmental Protection, provides a method for determining the monetary value of these ecosystem services. Of the parks 259.9 acres, 109.2 are protected forests that provide \$832,038 annually in ecosystem services including air quality maintenance, stormwater control, biodiversity and habitat creation, and soil formation. Additionally, over their entire lives, these forested



Figure 15: Non-uniform Signage



Figure 16: Non-uniform Signage

acres will provide \$1,726,822 in carbon storage services and \$8,272 in hydrological services (see Table 8: Ecological Valuation).

6.18 THREATS TO ECOLOGY

Invasive Species

A variety of ecological stressors diminish the health of the entire park. Vegetation contends with a wide variety of fast spreading invasive species. Garlic mustard is a significant offender (see Figure 21: Garlic Mustard). Japanese knotweed, tree-of-heaven and knotweed threaten the unique and endangered plant species.

Deferred Maintenance

This includes the inability to take proper care of dead sticks and debris created from pruning shrubs and trees. One example of this is the large pile of cut down trees and branches placed in the middle of the Meadow Vista on the East Cleveland side (see Figure 22: Woodpile). The lagoon area has deteriorated as well.

Pollution

The negative externality of pollution is a constant threat. This applies to the entire park. Garbage dumping has occurred for

several years. There is a well-known dump site east of the picnic groves on the East Cleveland side of the park. Littering is noticeable in several areas of the park. The large and underutilized parking lots in the park increase the amount of impervious surface cover. This in turn may influence the levels of pollutants in and around the park because of surface runoff and stormwater issues (see Figure 23: Impervious Surfaces).

A Dugway Brook water quality analysis performed in 2003, yielded high fecal coliform results. The safety limit of fecal coliform levels appropriate for “primary contact recreation” (full body water recreation activities) is 1,000 bacteria/100mL. The sample sites measured at the southern (5,000 bacteria/100mL) and northern (3,000 bacteria/100mL) sections of the east branch are well above the safety limit. Potential for pathogenic bacteria, viruses and protozoa present in digestive tracts to contaminate the brook is high. In addition, this high level of sewage contamination reduces the levels of dissolved oxygen, which can have a toxic effect on organisms. Additional analyses evaluating the effect of this organic pollution on invertebrate organisms yielded a heavily disturbed invertebrate population. The absence of specific environmentally sensitive invertebrates (mayflies, stoneflies

and caddisflies) also indicates negative environmental influences. The lagoon also endures pollution.

Storm water management

Storm water runoff has created erosion problems in the past and continues to be a concern. Pollution affects the water quality of storm water, which affects the health of the aquatic habitat. Storm water runoff from parking lots and other paved areas in the park continues to cause erosion-related concerns.

A low benthic macroinvertebrate population and a lack of diversity within that population (as mentioned above) further indicate an unhealthy watershed.

6.19 RECOMMENDATIONS FOR NATURAL RESOURCES

Several steps can be taken to insure a healthier ecology in Forest Hill Park:

- Curb pollution, litter and garbage dumping is essential. It is important to address these concerns in a social context.
- Invasive species control and removal. The Clean Ohio Fund Cleveland Heights summary sheet describes the spraying of herbicides as an effective

way of controlling invasive species. The summary sheet states that this control program should last for seven years (no mention of daily, weekly or monthly frequency).

- If necessary, due to loss of habitat by the encroachment of invasive species, plant vegetation that is native and important to the plant and animal diversity in Forest Hill Park.
- Confront the various storm water management challenges and their effect on park habitat. The analysis should include assessing the condition and potential removal of underused parking lots and active and passive recreation structures.

Proper ecological control promotes the conservation and recreation mission important for the Cleveland Metroparks. Coordinated management and a commitment to conserving the unique physical and ecological qualities is a high priority for any natural park system.

6.20 POLICY RECOMMENDATIONS

Careful study of the park, its history and its context has resulted in policy recommendations for the future of Forest Hill Park. These are divided into three primary categories, although many accomplish more than one goal. The three categories are

physical/built environment, human/social context and ecological context. Each proposal strives to improve Forest Hill Park under one or more categories.

Physical Context Recommendations

Forest Hill Park has an assortment of physical and built amenities in varying conditions. Some are worth saving; others need to be removed. Duplicity between the two sections of the park under each municipality, combined with neglect in maintenance and obsolescence of use provide strong arguments to assess each building, structure and use. For example, the tennis court in the East Cleveland is a likely candidate for removal.

Other structures in the park are dilapidated and unsafe. A professional should assess each to determine their health and cost of repair. The Pressley Plan provides improvement costs for several buildings. Some are historic from the days of John Rockefeller and deserve preservation.

The park features many parking lots. Conducting a parking lot study would determine if there is too much parking provided or if parking should be redistributed.

Social Context Recommendations

Soccer is a popular sport among children.

A high quality soccer facility could be a regional draw. The U.S. Soccer Foundation provides \$10,000 grants to design a facility, and up to \$200,000 for construction of an artificial turf field.

Mountain biking is a growing sport in Northeast Ohio with few opportunities for trail riding. A single track trail loop built around Dugway Brook on the Cleveland Heights side of the park is an exciting opportunity to meet the demand of mountain bikers in the area. Cleveland Area Mountain Bike Association could construct the trail and provide stewardship/maintenance of the trail.

The two street level crossings along Forest Hill Boulevard are inadequately marked. Highly visible crosswalks (stamped concrete in a color such as a green) and crosswalk signs to alert motorists will increase safety for pedestrians.

Forest Hill Park is located very close to other prominent green spaces and parks such as the Lakeview Cemetery, Rockefeller Park, Cumberland Park and Cain Park. Signage and way finding to direct travelers will help connect them to provide a network of open spaces.

For the human and social context, safety is one of the biggest issues facing Forest Hill



Figure 17: Trees in the Great Meadow



Figure 20: Dugway Brook

Park. Installation of blue light emergency phones throughout the entire park will provide users with a way to contact safety forces quickly. More police presence is also needed at the park.

Maintenance and upkeep of the park needs dramatic improvement. Community service projects for local high school students or with groups such as the Boy Scouts could help increase maintenance at a low cost.

Ecological Context Recommendations

The park is ecologically challenged. The stream needs clean up. Follow up testing from the 2003 ecological study would assess its current condition. The forest is overgrown in parts, and would need study by an arborist to determine the health of the forests. Parts of the forest could become research sites for scientists from the Cleveland Museum of Natural History or Case Western Reserve University. As the park is on a hill, erosion control is another area of concern. Controlling invasive species is important as well. Lastly, there are opportunities for stormwater management through installation of rain gardens and bioswales, especially around the baseball fields on the Cleveland Heights side.

Funding

Sufficient, dedicated sources of funding and management are essential to restore Forest Hill Park to its original glory. In its current form of management and funding under the two municipalities, the park struggles, and the neglect is visibly evident. As a result, it is imperative to explore new ways of providing stewardship.

One possibility is to create an official forum for coordination between East Cleveland and Cleveland Heights in the form of a council to govern the park. This group, titled the Council for the Historical Restoration of Forest Hill Park, would include representation from each city. Members would consist of City Council representatives, city staff from Parks & Recreation and Health, business community members, academics, families, community organizers and youth. The objectives of such a council would center on assisting with restoration efforts; promoting collaboration; promoting knowledge and understanding of conservation, education and recreation; and to emphasize the importance of the natural environment.

The council would manage the park and restore it in a way that recognizes its important historical and ecological significance to the region. To address safety concerns, East Cleveland and Cleveland Heights could partner with each other.

Another joint partnership would address maintenance. The collaboration would continue with regard to marketing, community activism and educational and recreational programming. To assist with funding through grant-writing and to provide staffing for the council, a part time project manager position would be created.

Local park advocates and organizations like Friends of Forest Hill Park and the East Cleveland Parks Association could unite under this organization and continue their advocacy work with more intellectual and political capital.

A second option for stewardship of Forest Hill Park would be in the form a non-profit conservancy organization. Formed as a 501(c)(3), the Forest Hill Park Conservancy would operate the park on behalf of the two municipalities using thirty-year leases. Based on the model of the Pittsburgh Parks Conservancy, the non-profit would realize capital and ecological restoration projects, as well as manage day-to-day activities and programming. The Pittsburgh Parks Conservancy was successful in raising \$28 million for the four parks under its jurisdiction in its first ten years of operation, and organized nearly 10,000 volunteer hours during that time.

Funding for the Forest Hill Park Con-

servancy would come from a variety of sources including state and local governments, corporations, foundations and individual donations. Staff for the Conservancy would include a grant-writer and development associate to coordinate fundraising activities, as well as a volunteer coordinator and a program coordinator. Other examples of park foundations that have been very successful with fundraising efforts are the Rocky River Parks Foundation, Friends of Boulder County Parks and Open Space and the Geauga Park District Foundation. Arts, sports and other recreational and educational programming can be provided to build excitement for the park. Trained experts in historic preservation and ecological restoration would also be retained to assist with refurbishing, and security forces could be hired to patrol the park. Public engagement would be a large part of the Conservancy's objective to ensure the park is currently serving and will serve its users, and to engage potential funders early on.

A third option for the future management of Forest Hill Park would be for it to come under the jurisdiction of the Cleveland Metroparks System: Forest Hill Reservation. This would entail selling the land at fair market value or gifting it to the Metroparks, who would then run it like any of their other parks. Table 9 in the appen-

dix details a variety of potential funding sources.



Figure 21: Garlic Mustard



Figure 22: Woodpile

Figure 7

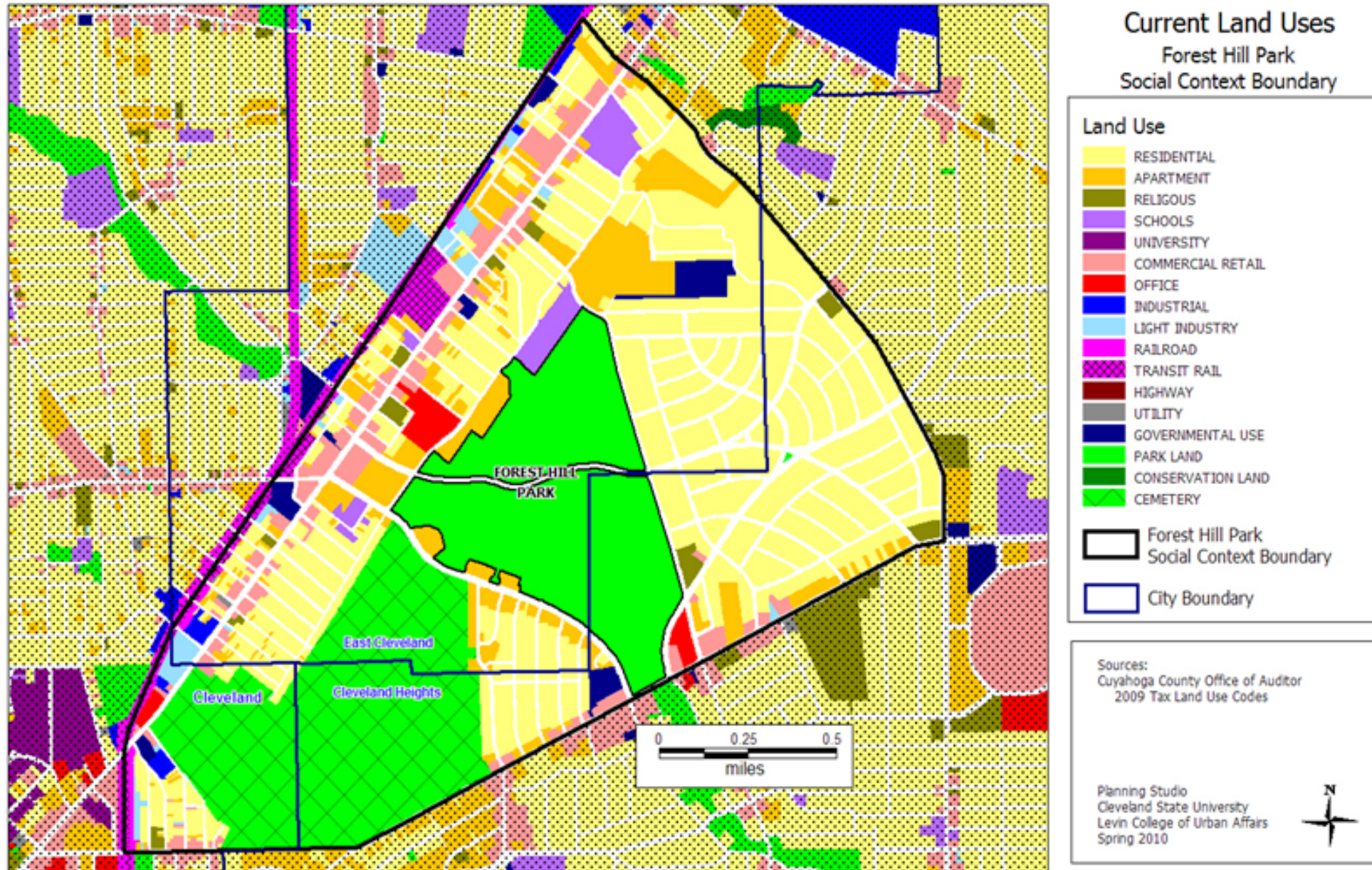


Figure 8

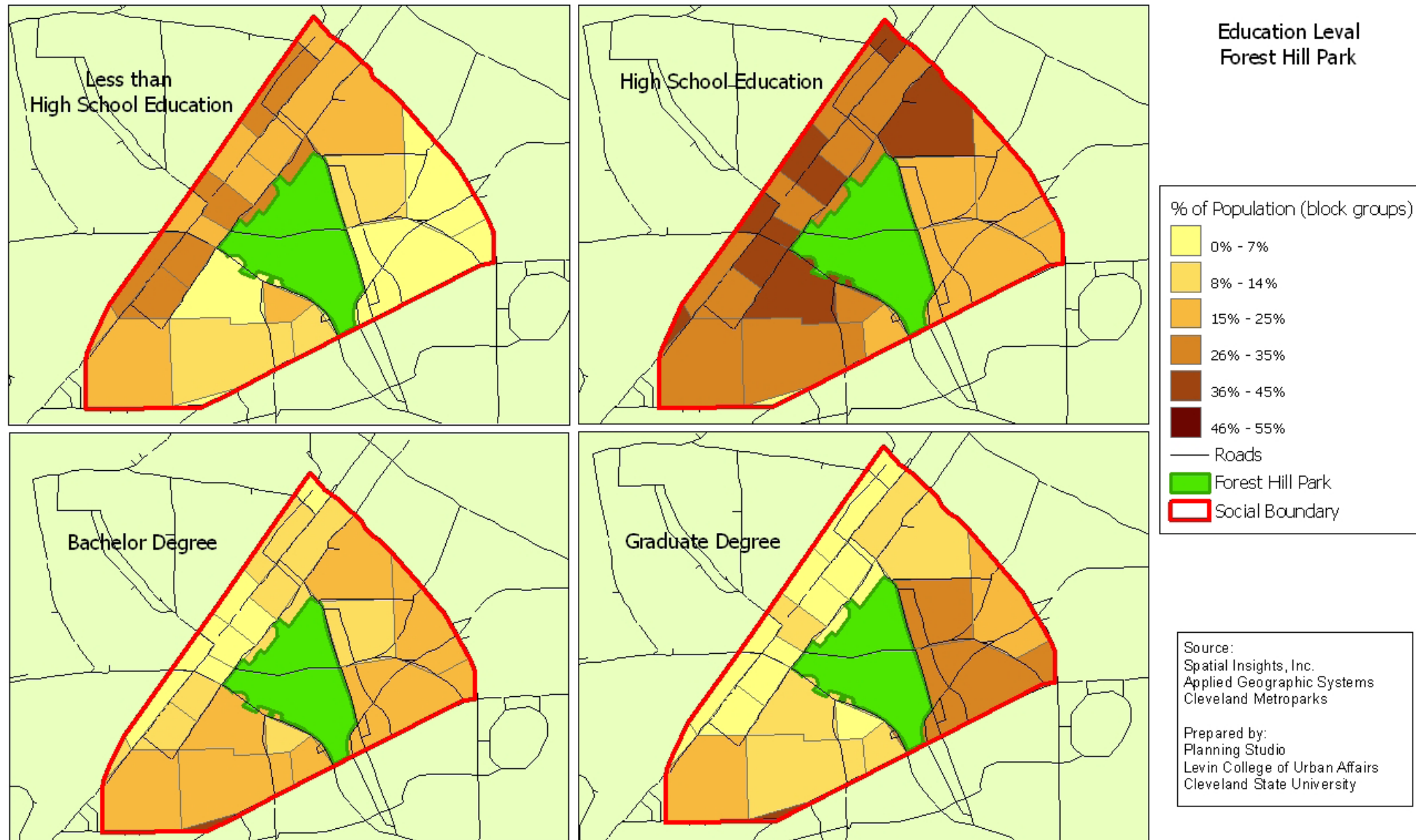


Figure 9

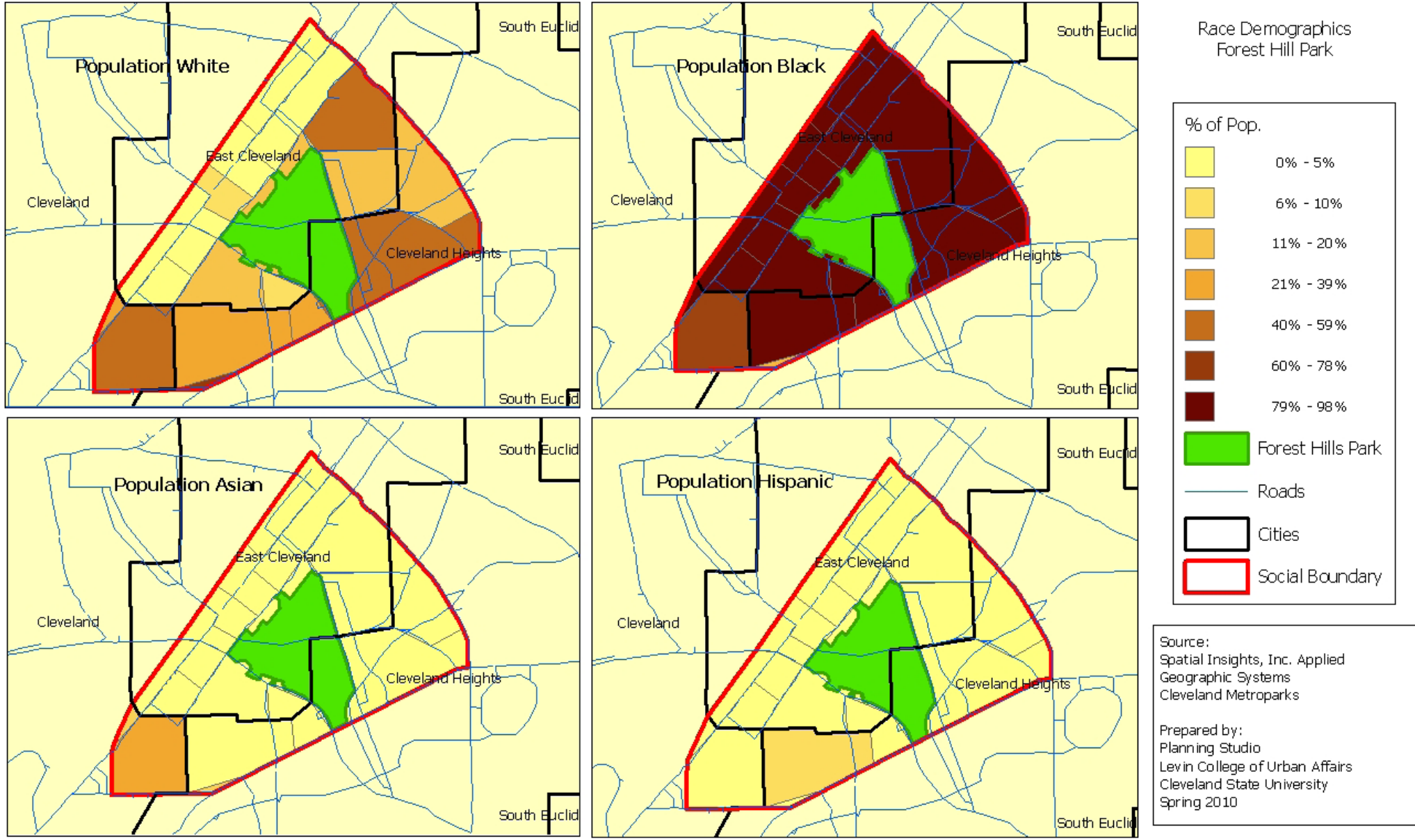


Figure 10

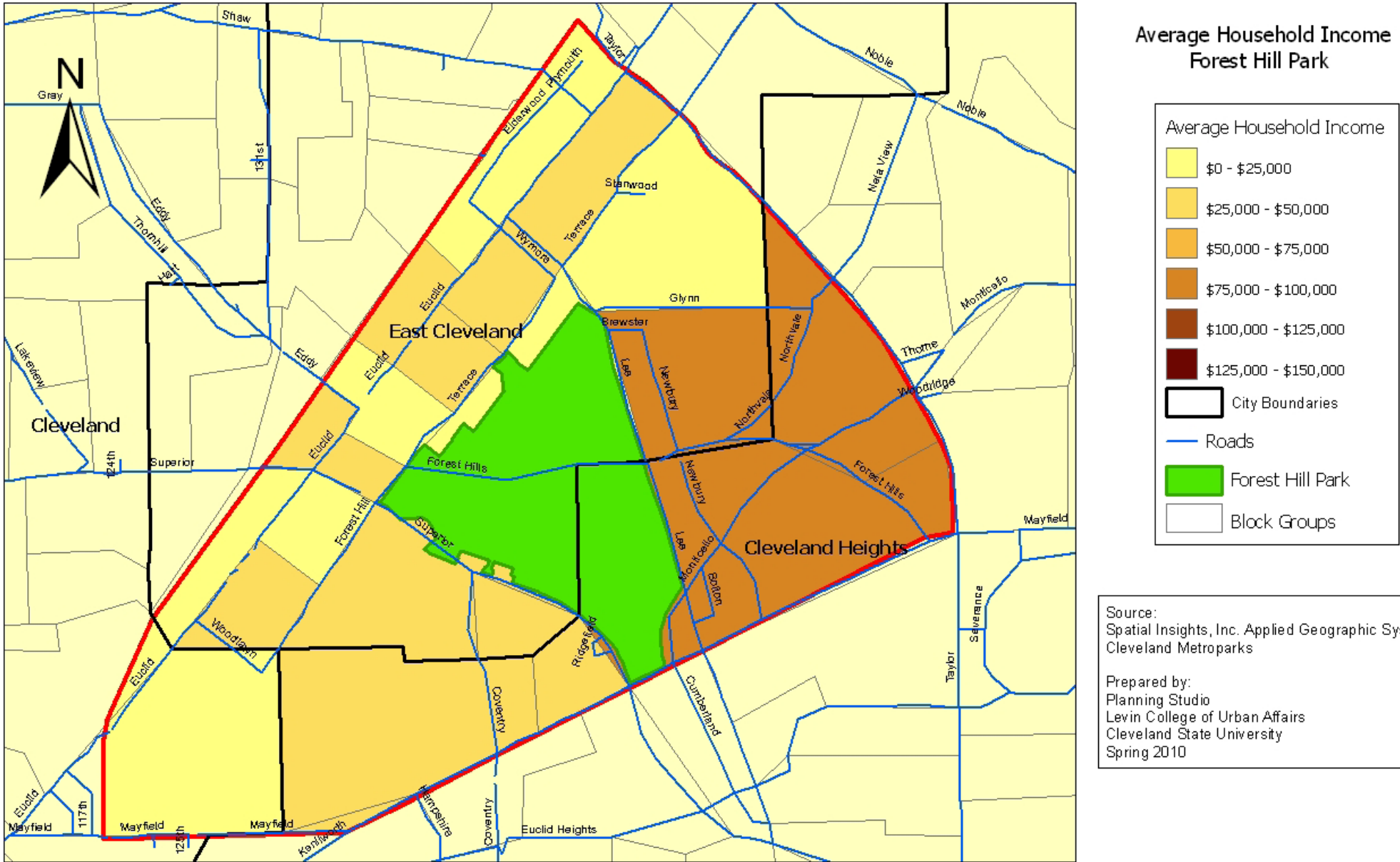
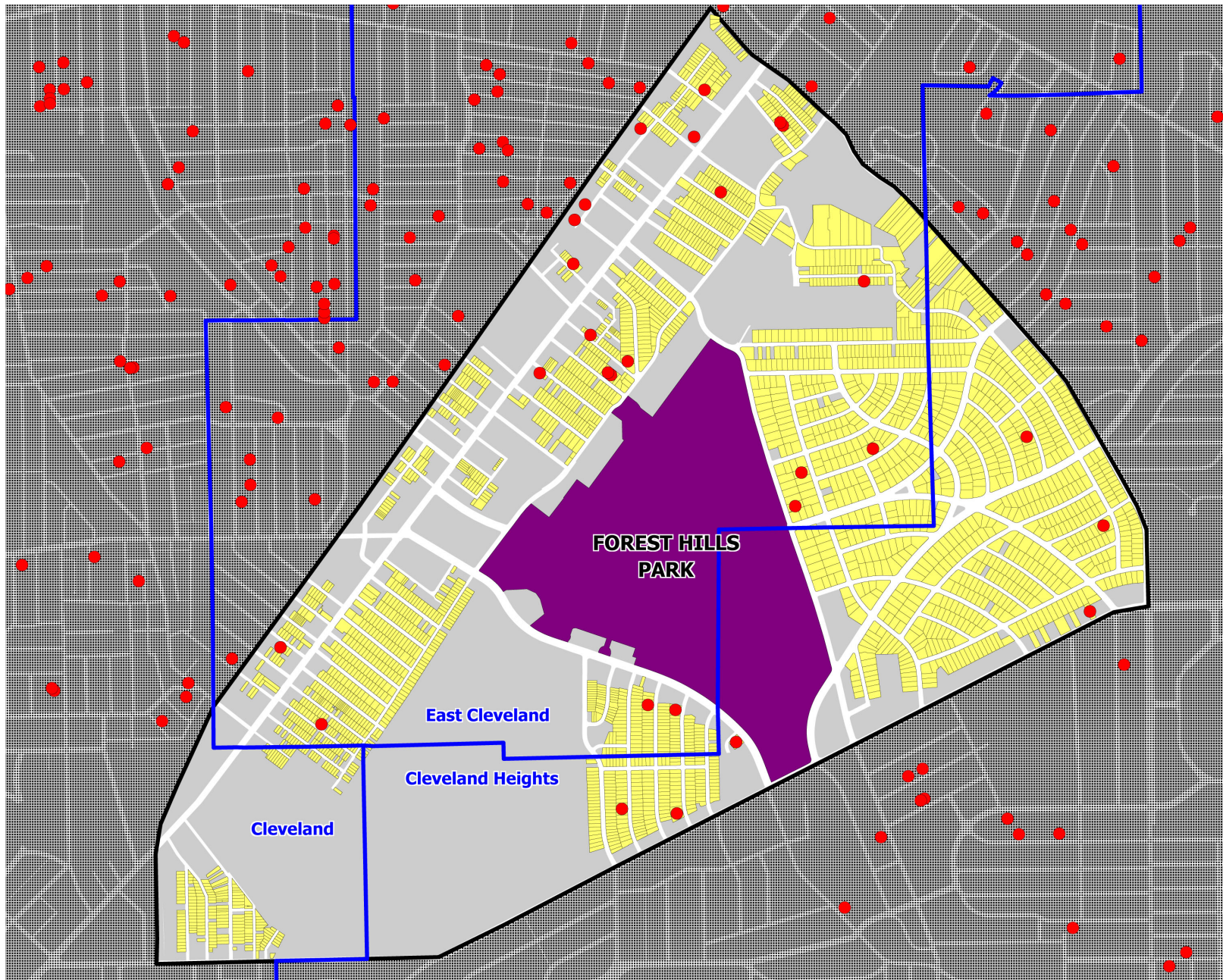
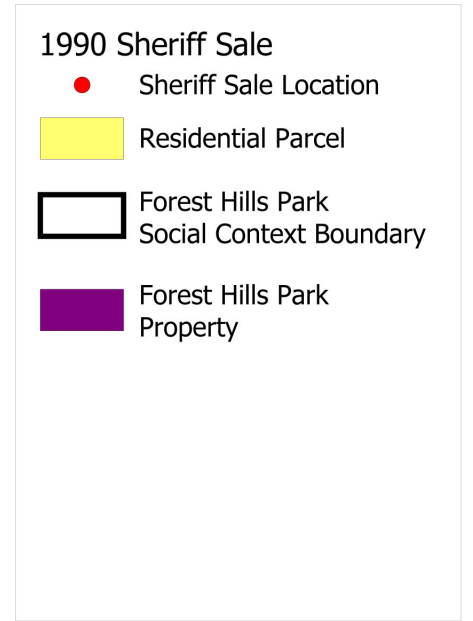


Figure 11



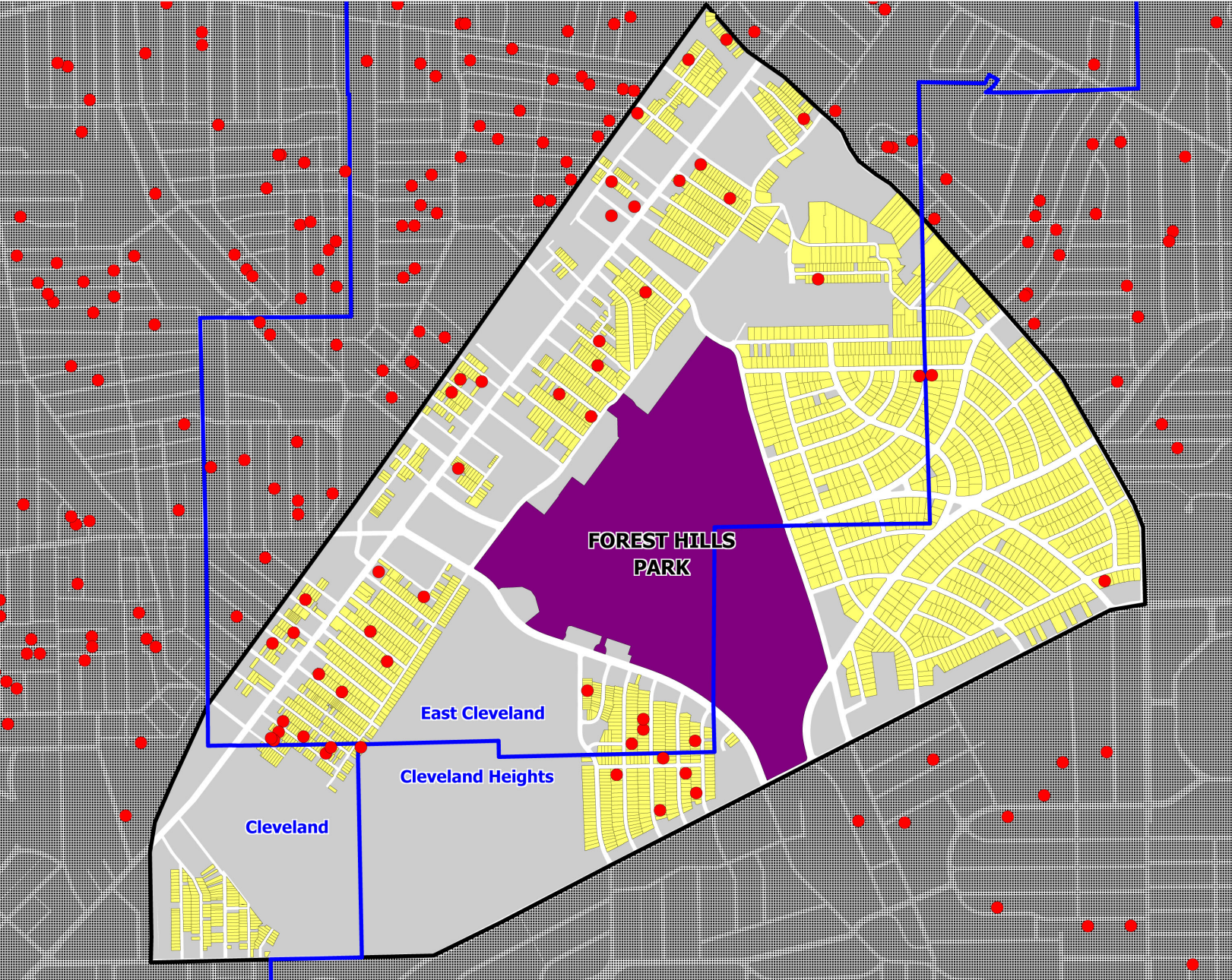
1990 Sheriff Sales Forest Hills Park Social Context



Source: Cuyahoga County Office of Auditor Transfer Records

Sheriff Sales result from both bank and property tax foreclosures.

Figure 12



2000 Sheriff Sales
 Forest Hills Park Social Context

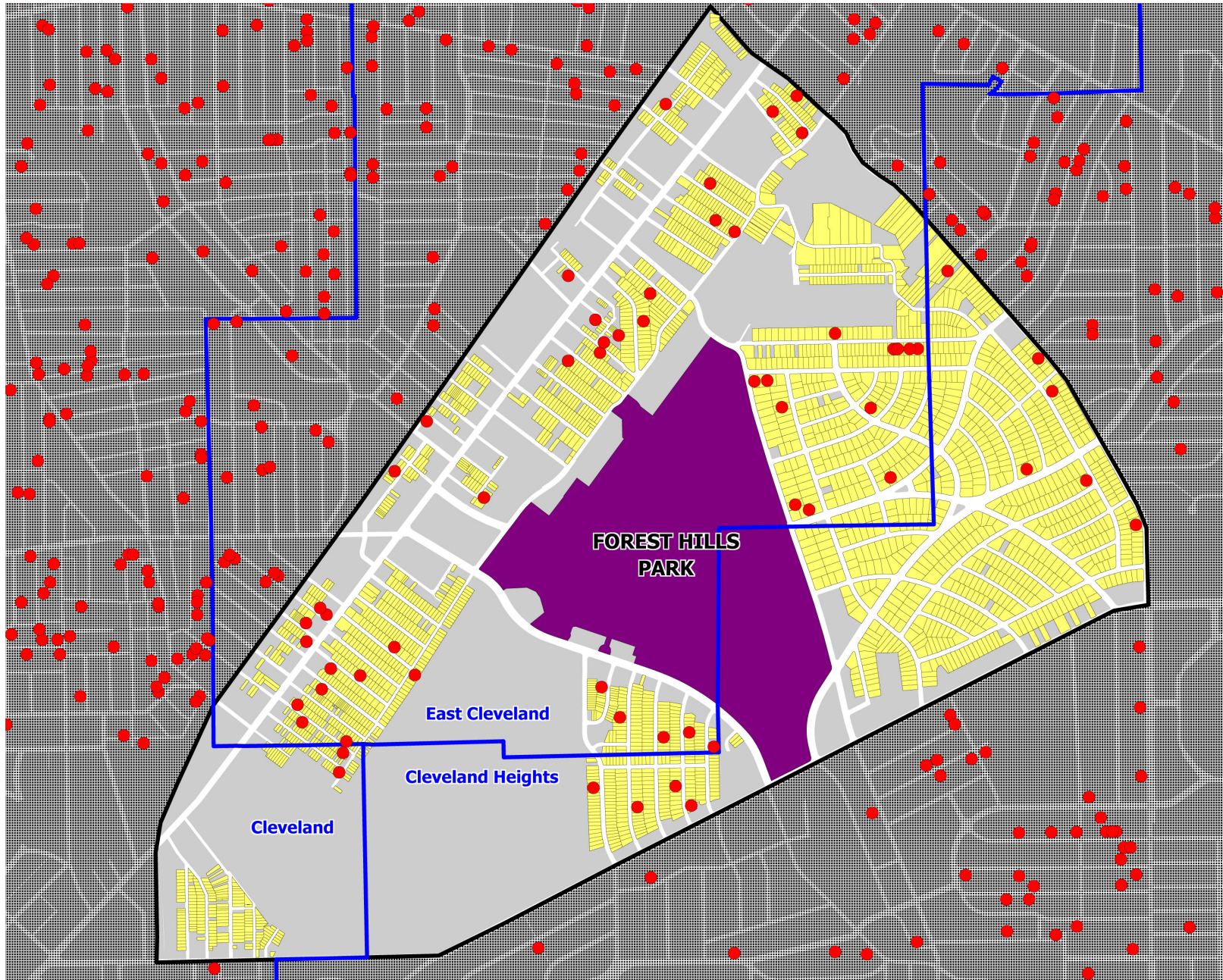
2000 Sheriff Sale

- Sheriff Sale Location
- Residential Parcel
- Forest Hills Park Social Context Boundary
- Forest Hills Park Property

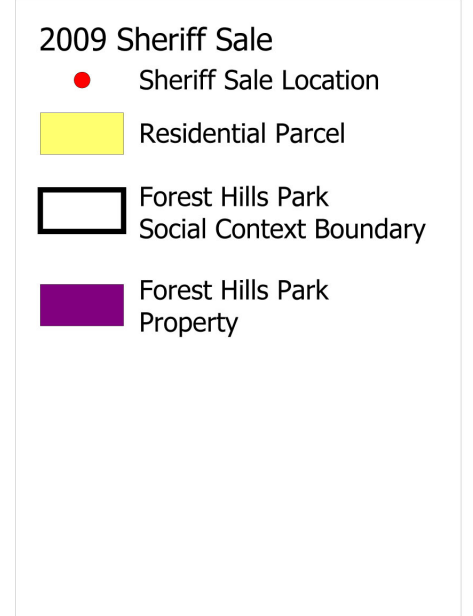
Source: Cuyahoga County Office of Auditor Transfer Records

Sherrif Sales result from both bank and property tax foreclosures.

Figure 13



2009 Sheriff Sales Forest Hills Park Social Context



Source: Cuyahoga County Office of Auditor Transfer Records

Sherrif Sales result from both bank and property tax foreclosures.



Figure 18

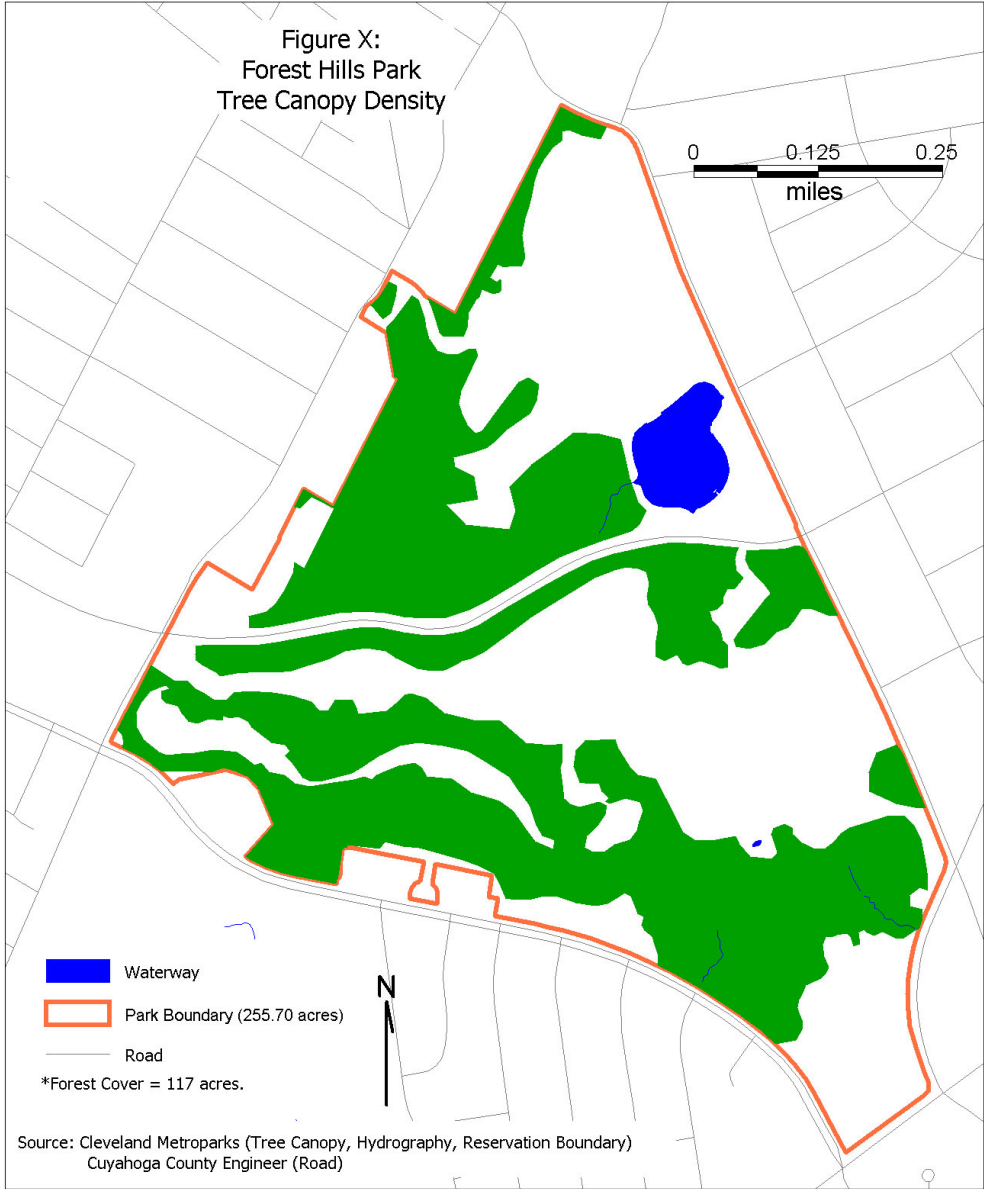


Figure 19



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Chapter 7.0
CONCLUSION



The Capstone course has examined various elements of park planning by focusing on a diverse selection of Cleveland Metroparks Reservations and one urban park outside of the Metroparks umbrage. Research has focused on social, physical and ecological quantitative and qualitative data. This has allowed for a better understanding of each park including the assets, challenges and associated economic value. Specific policy recommendations were made with respect to this research and the budgetary constraints facing each park. Overcoming financial constraints is the largest challenge each of these parks face. Restrictive budgets make maintaining the current level or previous level of service a challenge. As a result, many of the park groups in the class have included possible funding sources and collaborative ideas designed to prevent or limit additional financial costs.

The conservation, recreation and education mission-focus of the Cleveland Metroparks provides a logical outline within which our cross-group general park recommendations fit:

7.1 CONSERVATION

Each park has focused and continues to focus on conserving and enhancing natural ecosystems. The Cleveland Metroparks

has been able to create unique, exciting reservations in Garfield Park, Hinckley and Rocky River Reservations. Limited Parks and Recreation budgets in Cleveland Heights and East Cleveland have prevented long term conservation improvements at Forest Hill. However, the consequent benign neglect is preferable to developing conserved areas for other purposes.

Ecological

Ecological stressors make the need for conservation plans and strategies essential. Invasive species, erosion, pollution and stormwater management are a few of the discussed stressors that continue to impact all of the park systems.

Maintaining the current ecological level of health and upgrading when possible is essential for their short and long term futures. Additionally, the health of the communities surrounding the parks is clearly affected in economic terms. The valuation models quantify the positive effects - carbon storage services and hydrological services - that the parks provide to surrounding communities. This information should provide community and city officials with an economic incentive to secure the ecological wellbeing of the parks. Park ecosystems rely on responsible stewardship and collaboration between the responsible

parties.

Physical

Conserving important park structures and access points can elevate the appearance and interest in these parks. Well-constructed and maintained visitor centers provide a welcoming educational environment to accompany the natural outdoor amenities visitors seek. Assessing historically important structures and their current and potential value to the park is an important consideration.

Conservation of existing trails, paths, benches and other recreation sites requires regular maintenance and a commitment to balancing the built environment with the natural environment.

Social

Enhancing service-learning opportunities is a great way to educate young adults about the natural environment and the importance of conservation. Increasing the overall safety will enhance the overall positive experience of park visitors. Increased collaboration between nonprofit entities (watershed, greenspace and community organizations) and city officials could pave the way for increased funding opportunities through a variety of grants and con-

servancies. This pooled intellectual capital would debatably enhance the quality and diversity of philanthropic, innovative ideas.

7.2 EDUCATION

The Cleveland Metroparks organizes a variety of indoor and outdoor learning programs as well as community events that serve the same purpose. Some of these include camps, tours and festivals that educate visitors about the birds, animals and plants that make up an important part of the ecological health of the Metroparks Reservations.

Continuing these programs and creating additional service learning programs targeting grade and high school students is important. These programs would serve the purpose of not only educating young adults about the importance of conservation, the natural environment and ecology; but also lessening the burden of parks maintenance staffs that struggle to accomplish all of the necessary tasks.

7.3 RECREATION

Proper maintenance of trails and physical amenities like baseball diamonds, benches, golf courses, picnic areas, recreation fields and other amenities increases the attrac-

tiveness of each park and ideally creates a balance between active and passive recreational opportunities that respect the ecological condition of the park.

Connectivity in and out of the parks is essential to recreation. Increased signage and “you are here” maps would provide visitors with ease of movement and points of interest. Opportunities exist to connect some of the parks to other nearby parks and trails. Connecting these trails through signage and maps will elevate the level of recreation in and out of the park. This could increase park visitor numbers and interest in stewardship by these visitors.







Chapter 8.0
APPENDICES

CHAPTER 2.0 REGIONAL LANDSCAPE APPENDIX

Foreclosures in Metroparks Southeast Zone 1980 - 2009

	ZONE	HOUSING COUNT	1980 - 1989	1990 - 1999	2000 - 2009
BEDFORD	Southeast	4,200	8	17	74
BEDFORD HEIGHTS	Southeast	2,602	19	10	71
BRECKSVILLE	Southeast	4,330	4	2	9
HIGHLAND HILLS	Southeast	152	2	2	1
INDEPENDENCE	Southeast	2,810	0	3	5
MAPLE HEIGHTS	Southeast	9,480	14	61	285
NORTH RANDALL	Southeast	140	0	0	2
OAKWOOD	Southeast	1,285	5	19	31
VALLEY VIEW	Southeast	752	1	0	1
WALTON HILLS	Southeast	966	0	0	5
WARRENSVILLE HEIGHTS	Southeast	3,105	44	32	88
Total		29,822	853	1,159	3,758

Source: Cuyahoga County Auditor
Prepared by: Karen Copeland

Foreclosures in Metroparks West Zone 1980 - 2009

	ZONE	HOUSING COUNT	1980 - 1989	1990 - 1999	2000 - 2009
BAY VILLAGE	West	6,119	1	2	27
BROOK PARK	West	6,816	10	6	67
CLEVELAND 15.84%	West	7,579	71	83	202
FAIRVIEW HEIGHTS	West	5,790	4	6	27
LAKESWOOD	West	13,017	52	22	157
MIDDLEBURG HEIGHTS	West	4,970	4	1	13
NORTH OLMSTED	West	10,126	4	8	79
OLMSTED FALLS	West	2,491	1	4	24
OLMSTED TWP	West	3,289	4	4	27
ROCKY RIVER	West	6,075	5	3	27
WESTLAKE	West	8,382	5	6	44
Total		74,654	1,582	1,869	4,511

Source: Cuyahoga County Auditor

Prepared by: Karen Copeland

CHAPTER 3.0 GARFIELD PARK APPENDIX

GARFIELD PARK RESERVATION			
Economic Variables			
	CLEVELAND CITY	GARFIELD CITY	
Prop Tax Rate	2.08%	2.90%	
Residential Properties			
Distance (ft)	Within 200	92	149
	201 - 400	123	233
	401 - 600	118	236
	601 - 800	158	207
	801 - 1,000	168	216
	1,001 - 1,200	126	236
	1,201 - 1,500	211	293
Economic Value	\$ 331,892	\$ 732,652	
TOTAL ECONOMIC VALUE:		\$ 1,064,544	

Social and Recreational Value of Cleveland Metroparks

Service Provided	Reservation Name	Hours/Quantity of Service per year	Number of Participants per Year	Value per service (dollars)	Units	Cost to User per unit in previous column (Dollars)	Consumer Surplus	Total economic value for this service (dollars)	Notes
Educational Programming / School Groups	Garfield	0	N/A	62.52	per hour		62.52	0	1
Educational Programming / Non-school Grp	Garfield	1	26533	11.79	per hour	0	11.79	312824.07	2
Non-structured physical fitness (adult) - count only those who exercise at least 3 days per week	Garfield	N/A	3348	458.67	per year	0	458.67	1535627.16	3
Golf (weekend green fees)	Garfield	N/A	0	30.18	per round		30.18	0	4
Venue rental	Garfield	65	N/A	435	per event	150	285	18525	5
TOTAL:								\$ 1,866,976.23	

Notes

1. Average teacher salary in Cuyahoga County is \$62,575 (from City of Cleveland). Minimum hours per school year, grades 7-12 is 1001 (from Ohio School Boards Association). 62575/1001=
2. School expenditure per student per year in Cuyahoga County is \$11,803 (from Ohio Department of Development). Minimum hours per school year, grades 7-12 is 1001 (from Ohio School
3. Average YMCA membership fee for Cuyahoga County is 458.67 per year for an individual adult (from the YMCA)
4. Average weekend green fee for the top 25 public golf courses in Northeast Ohio is 30.18 (from Ohio Golf Guide)
5. The average cost to rent a venue for a wedding is \$435 (Bridal Association of America).

CHAPTER 4.0 HINCKLEY RESERVATION APPENDIX

Trails	Length (miles)	Description
Hinckley Hill Loop	2.5	This rugged trail crosses ravines and streams and follows sections of the Buckeye and bridle trails.
Hinckley Lake Loop	3.4	This trail provides many opportunities for viewing wading birds and waterfowl as it winds around Hinckley Lake.
Ledge Lake Loop	2.5	Starting from Ledge Lake or Worden's Homestead, this dirt trail meanders along creeks and out into open fields.
Whipp's Ledges Loop	1.25	Connecting Whipp's Ledges and Top O' Ledges picnic areas, this hilly trail loops through the spectacular 350 ft. Sharon Conglomerate ledges.
Wordens Ledges Loop	1.0	This wooded trail winds through moss and fern covered ledges to reveal carvings made by Noble Stuart in the 1940s.
Buckeye Trail	6.0	A hilly and rugged portion of the 578-mile Buckeye Trail travels through Hinckley Reservation. The trail continues in a large loop around the state.
Bridle Trail	6.0	Bicycles and motorized vehicles are prohibited.
All Purpose Trail	3.3	Paved trail for activities like cycling, walking and in-line skating. Around Hinckley Lake, along West Drive, State Road, East Drive and Bellus Road with entrances off Bellus and State roads.

Picnic Area	Reservable	Non-reservable	Electricity	Tables	Shelter	Enclosed Building	Parking	Grills	Restrooms	Ball Field	Playground	Drinking Water	Refreshment	Changing Rooms	Campfire Ring
Indian Point Area	X			X			X	X	X						
Johnson Picnic Area	X			X	X		X	X	X						
Rising Valley Picnic Area	X	X			X					X	X				
Spillway Pool Picnic Area	X			X			X	X	X			X	X	X	
Top O'Ledges Picnic Area	X			X	X		X	X	X			X			
Whipp's Ledges Picnic Area	X			X	X		X								
Redwing Picnic Area	X		X	X		X	X	X	X		X	X			
Kiwanis Picnic Area	X	X	X				X		X						X
Ledge Lake Building	X		X	X		X	X	X	X		X	X			
Ledge Lake Shelters	X		X	X			X	X	X		X	X			

Service Provided	Reservation Name	Hours/Quantity of Service per year	Number of Participants per Year	Value per service (dollars)	Units	Cost to User	Consumer Surplus	Total economic value (dollars)	Notes
Educational Programming	Hinckley	2	57029	\$62.52	per hour	N/A	N/A	\$7,185,654	1
Non-structured physical fitness (adult) - count only those who exercise at least 3 days per week	Hinckley	N/A	8715	\$10	per year	\$5	\$5	\$87,150	2
Venue rental	Hinckley	43	N/A	\$435	per event	\$150	\$285	\$18,705	3

\$7,291,509

*ECOLOGICAL VALUATION TABLE
HINCKLEY RESERVATION*

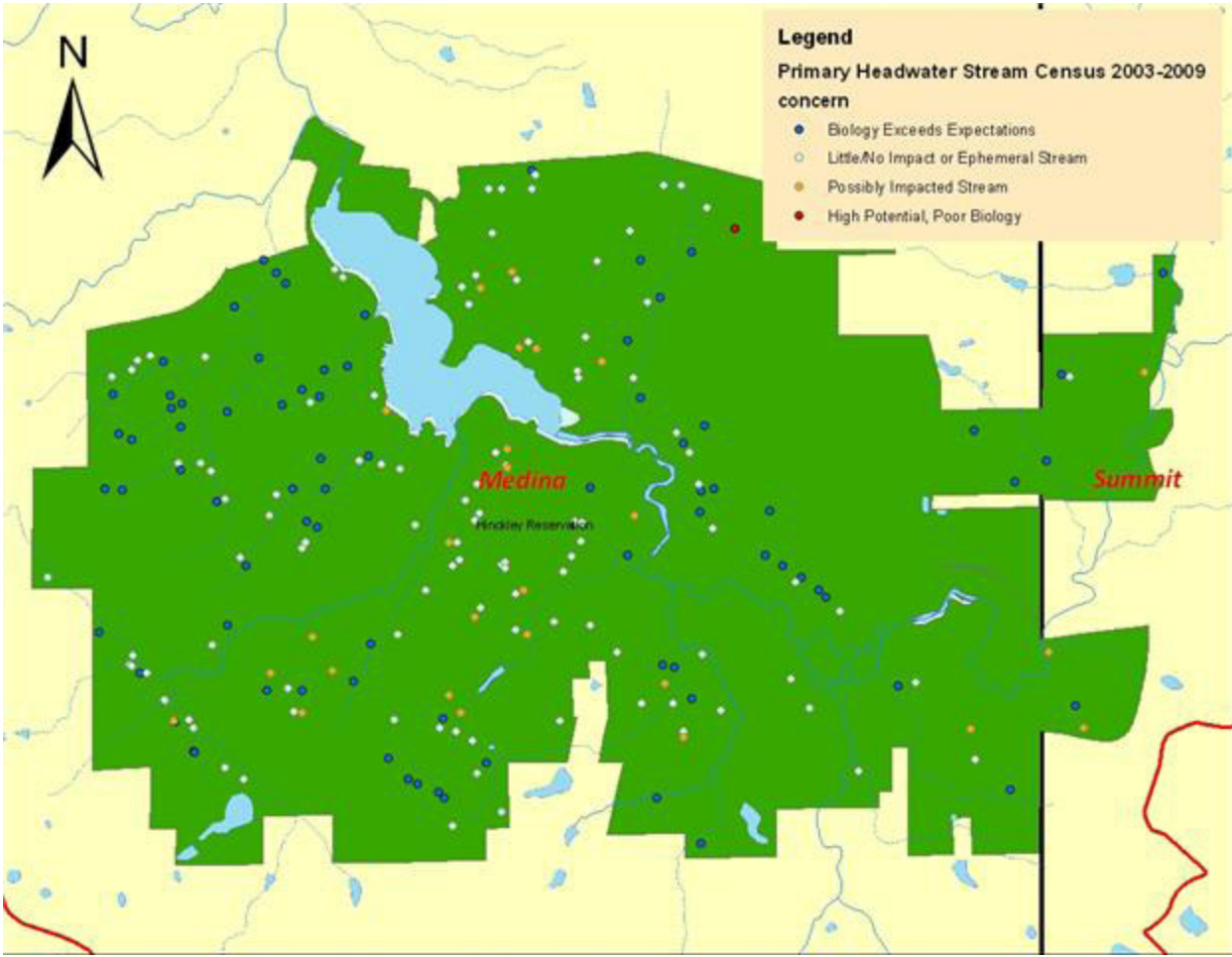
Value of Ecosystem Services offered by Cleveland Metroparks					
Ecosystem Type	Service Provided	Reservation Name	Number of acres of Ecosystem type	Value per acre of service	Total economic value of service
Forest	Hydrologic services	Hinckley	2178	\$73/acre	\$158,994
Forest	Carbon storage		2178	112 ST/acre at \$64 ST carbon	\$15,611,904
Forest	Air quality maintenance		2178	81 lb/ac/yr at \$2.66/lb	\$469,272
Forest	Stormwater Control		2178	2,835 cu ft/ac at \$2.33/cu ft	\$14,412
Forest	Biodiversity/Habitat		2178	\$923/ac/yr	\$2,343,528
Forest	Soil formation/retention		2178	\$5/ac/yr	\$12,698
Total:					\$18,610,808

Values per acre are taken from the New Jersey Department of Environmental Protection's *Economic Value of New Jersey State Parks and Forests*.

Mates, W., and Reyes, J. *The Economic Value of New Jersey State Parks and Forests*. New Jersey Department of Environmental Protection Division of Science, Research, and Technology. June 2004, Revised November 2006.

The value of hydrologic and carbon storage services are for the entire life of the ecosystem. The economic benefits of air quality maintenance, stormwater control, biodiversity protection, and soil formation and retention, however, are realized annually.

All values have been inflated to 2009 dollars.



CHAPTER 5.0 APPENDIX

Social and Recreational Value of Cleveland Metroparks									
Service Provided	Hours/Quantity of Service per year	Number of Participants per Year	Value per service (dollars)	Units	Cost to User per unit in previous column (Dollars)	Consumer Surplus	Total economic value (dollars)	Notes	
Non-structured physical fitness (adult) - count only those who exercise at least 3 days per week	N/A	1,786,912	\$10.00	per visit	\$5.00	\$5.00	\$8,934,559	1	
Golf (weekend green fees)	N/A	144,344	\$30.18	per round	\$13.16	\$17.02	\$2,456,735	2	
Venue rental	53	N/A	\$435.00	per event	\$150	\$285	\$15,105	3	
Total Economic Impact							\$11,406,399		

Value of Ecosystem Services offered by Cleveland Metroparks					
Ecosystem Type	Service Provided	Reservation Name	Number of acres of Ecosystem type	Value per acre of service	Total economic value of service
Forest	Hydrologic services	Rocky River	1,692	\$65/acre	\$128,233
Forest	Carbon storage	Rocky River	1,692	250 ST/acre at \$54.27/ST carbon	\$26,766,067
Forest	Air quality maintenance	Rocky River	1,692	81 lb/ac/yr at \$2.35/lb	\$375,524
Forest	Stormwater Control	Rocky River	1,692	2,835 cu ft/ac at \$2.05/cu ft	\$11,465,464
Forest	Biodiversity/Habitat	Rocky River	1,692	\$923/ac/yr	\$1,820,901
Forest	Soil formation/retention	Rocky River	1,692	\$5/ac/yr	\$9,864
Annual Value:					\$13,671,753
Total:					\$40,566,053

	1990\$	2008\$	Normalizer	TOTAL	CALC	Prop Tax	
Distance (ft)	Within 200	\$ 11,210	\$ 18,466	0.95	\$17,543	\$ 19,384,684	\$ 447,786
	201 - 400	\$ 10,216	\$ 16,829	0.95	\$15,988	\$ 28,649,690	\$ 661,808
	401 - 600	\$ 12,621	\$ 20,791	0.95	\$19,751	\$ 36,717,946	\$ 848,185
	601 - 800	\$ 11,269	\$ 18,564	0.95	\$17,636	\$ 33,419,841	\$ 771,998
	801 - 1,000	\$ 8,981	\$ 14,794	0.95	\$14,054	\$ 26,843,713	\$ 620,090
	1,001 - 1,200	\$ 8,126	\$ 13,386	0.95	\$12,717	\$ 24,746,698	\$ 571,649
	1,201 - 1,500	\$ 9,980	\$ 16,440	0.95	\$15,618	\$ 39,029,382	\$ 901,579
Total					\$ 208,791,953	\$ 4,823,094	

CHAPTER 6.0 FOREST HILL PARK APPENDIX

Table 6: Population projections within Forest Hill Park boundary

	Population (2009)	Population (2014)	Population (2019)	Number of Households (2009)	Number of Households (2014)	Number of Households (2019)
Cleveland	3,624	4,132	46,20	2,077	2,553	3,970
Cleveland Heights	8,938	8,190	7,147	4,442	4,382	6,813
East Cleveland	12,255	12,957	11,012	5,153	5,948	9,244
Entire boundary area	24,817	25,279	22,779	11,672	12,883	20,027

Table 7: Key demographic information for Forest Hill Park social boundary by city (2009)

	Population	Average household size	Median Age	Percent black population	Percent of population 25+ with bachelors	Unemployment Rate	Average household income	Percent of households renter occupied
Cleveland	3,624	1.76	31.48	32.53%	10.93%	11.28%	\$26,604	84.02%
Cleveland Heights	8,938	2.22	37.60	41.90%	17.32%	5.60%	\$66,721	63.30%
East Cleveland	12,255	2.41	36.33	91.46%	5.92%	18.62%	\$32,448	70.37%
Entire boundary area	24,817	2.29	35.80	65%	10.75%	13.61%	\$43,341	70.11%

Table 8: Value of ecosystem services offered by Forest Hill Park

Ecosystem Type	Service provided	Location	Acres of ecosystem	Value per acre of service	Total economic value of service
Forest	Hydrologic services	Forest Hill Park	109.16	\$65/acre	\$8,272.50
Forest	Carbon storage	Forest Hill Park	109.16	250 ST/acre at \$54.27/ST carbon	\$1,726,822.65
Forest	Air quality maintenance	Forest Hill Park	109.16	81 lb/ac/yr at \$2.35/lb	\$24,227.07
Forest	Stormwater Control	Forest Hill Park	109.16	2,835 cu ft/ac at \$2.05/cu ft	\$739,698.66
Forest	Biodiversity/Habitat	Forest Hill Park	109.16	\$923/ac/yr	\$117,476.12
Forest	Soil formation/retention	Forest Hill Park	109.16	\$5/ac/yr	\$636.38
Annual Value:					\$882,038.23
Additional Value:					\$2,617,133.85

Source:

Mates, W., and Reyes, J. The Economic Value of New Jersey State Parks and Forests. New Jersey Department of Environmental Protection Division of Science, Research, and Technology. June 2004, Revised November 2006.

Notes:

Values per acre are taken from the New Jersey Department of Environmental Protections Economic Value of New Jersey State Parks and Forests. The value of hydrologic and carbon storage services are for the entire life of the ecosystem. The economic benefits of air quality maintenance, stormwater control, biodiversity protection, and soil formation and retention, however, are realized annually. All values have been inflated to 2009 dollars.



APPENDIX: OTHER MATERIALS

SHERIFF SALES WITHIN CUYAHOGA COUNTY MUNICIPALITIES OVER TIME

CITY	HOUSING COUNT	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	
BAY VILLAGE	6,119	10	2	9	21	6	7	8	6	10	1	3	4	10	8	4	7	5	5	2	2	5	1	6	4	11	11	18	31	36	27	
BEACHWOOD	3,142	0	3	5	3	5	2	7	3	3	2	1	2	6	4	4	2	4	2	1	1	3	2	3	5	3	3	8	14	7	14	
BEDFORD	4,200	5	21	3	1	3	4	5	8	4	8	5	4	11	11	17	8	13	20	11	17	15	12	16	21	32	42	59	112	94	74	
BEDFORD HEIGHTS	2,602	6	11	19	14	12	17	10	13	19	19	13	16	10	13	10	16	11	9	10	10	10	16	18	13	13	29	35	85	69	71	
BENTLEYVILLE	321	0	1	1	2	1	1	0	0	1	3	0	0	1	0	0	1	1	0	1	0	0	0	0	0	1	0	1	0	2	0	
BEREA	5,985	12	2	9	9	25	8	13	17	9	9	4	1	8	22	4	4	5	6	8	12	10	10	16	22	16	33	47	60	72	49	
BRATENAHL	453	0	0	0	1	1	3	2	0	0	0	1	1	0	0	0	0	0	1	3	4	1	1	3	2	4	0	3	1	6	10	7
BRECKSVILLE	4,330	3	0	24	15	4	2	2	0	3	4	0	2	4	2	1	10	3	3	1	2	4	1	6	3	5	11	5	27	21	9	
BROADVIEW HEIGHTS	5,552	4	0	0	1	5	4	1	1	2	1	1	2	2	0	3	5	1	4	7	6	0	2	4	5	3	5	8	30	20	22	
BROOK PARK	6,816	27	7	16	9	7	6	11	9	5	10	9	11	3	7	2	11	16	9	9	6	13	11	9	13	15	33	46	58	59	67	
BROOKLYN	3,617	8	0	0	1	3	5	2	1	1	0	2	5	2	6	4	2	1	4	1	4	4	3	3	3	4	12	18	27	29	16	
BROOKLYN HTS	603	0	0	1	0	0	2	0	0	0	1	0	3	0	1	0	2	1	1	1	0	0	1	1	1	0	0	2	3	3	1	
CHAGRIN FALLS	1,316	4	3	1	0	4	0	1	2	0	3	0	0	1	2	0	3	2	1	2	0	1	0	2	0	1	1	0	8	5	8	
CHAGRIN FALLS TWP	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
CLEVELAND	120,048	680	879	701	713	832	772	784	866	895	1119	1350	1858	2127	1615	1464	1362	961	1111	1427	1310	1358	1490	1409	1578	1722	2894	3302	6114	4731	3203	
CLEVELAND HEIGHTS	14,529	35	42	36	56	62	73	73	64	77	71	68	81	98	83	61	76	55	67	79	78	65	91	74	79	123	166	243	441	365	250	
CUYAHOGA HEIGHTS	219	0	0	0	0	0	1	0	2	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	2	0	0	0	1	0	
EAST CLEVELAND	5,548	73	45	59	62	90	76	80	82	78	85	75	103	123	120	111	139	98	118	108	130	131	130	141	131	151	245	268	508	325	121	
EUCLID	15,346	59	6	6	20	15	19	21	25	28	28	46	38	44	54	53	64	34	38	66	67	55	69	77	84	92	179	225	436	453	336	
FAIRVIEW HEIGHTS	5,790	3	2	4	0	4	2	3	6	2	4	4	2	6	8	6	4	2	1	8	6	8	10	10	9	16	16	29	35	40	27	
GARFIELD HEIGHTS	10,929	33	13	19	23	31	30	19	25	30	33	37	43	45	28	34	70	30	47	47	34	42	35	50	51	62	123	175	290	296	208	
GATES MILLS	970	0	2	1	7	2	1	0	1	0	1	0	1	0	0	0	1	2	3	1	0	1	0	2	1	0	3	5	4	3	2	
GLENWILLOW	209	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	11	6	
HIGHLAND HEIGHTS	3,148	0	1	0	2	0	1	2	0	1	0	1	3	2	1	1	3	1	4	0	1	2	2	2	2	0	5	4	8	9	17	
HIGHLAND HILLS	152	1	0	0	3	0	0	2	0	1	2	0	1	0	0	2	0	2	1	0	2	0	2	0	0	4	1	4	6	4	1	
HUNTING VALLEY	204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
INDEPENDENCE	2,810	9	0	0	0	0	0	2	0	0	0	1	1	1	4	3	4	3	1	1	3	0	3	0	2	0	0	3	6	9	5	
LAKEWOOD	13,017	13	9	21	29	36	41	52	38	47	52	67	48	69	46	40	22	17	19	32	22	30	40	28	31	42	82	94	208	193	157	
LINNDALE	36	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	
LYNDHURST	5,752	6	1	1	6	4	2	2	2	0	1	1	14	3	3	8	2	4	7	2	3	3	9	9	2	6	10	23	29	33	35	
MAPLE HEIGHTS	9,480	11	43	15	15	13	13	21	17	16	14	18	36	37	50	58	54	33	36	53	61	67	82	89	61	90	162	214	456	374	285	
MAYFIELD	1,169	0	6	1	0	0	0	0	1	1	1	0	0	1	2	0	0	0	0	0	1	1	0	1	0	1	1	3	4	3	2	
MAYFIELD HEIGHTS	5,201	0	4	1	4	0	2	5	2	0	4	2	3	2	1	2	4	1	2	6	5	3	2	6	6	9	21	16	44	33	29	
MIDDLEBURG HEIGHTS	4,970	7	2	5	5	25	3	2	1	1	4	4	5	5	16	6	10	4	2	2	1	2	5	3	6	5	6	11	17	32	13	
MORELAND HILLS	1,315	0	0	1	1	5	1	3	1	0	2	0	2	3	1	0	1	2	1	4	2	1	2	0	1	0	0	3	9	18	8	
NEWBURGH HEIGHTS	783	0	0	1	0	3	1	1	1	5	1	4	3	3	4	3	3	5	4	2	2	0	5	4	6	6	13	7	19	20	12	
NORTH OLMSTED	10,126	32	9	118	14	14	18	6	11	10	4	7	16	15	25	17	12	11	12	13	8	17	20	13	16	12	36	44	77	83	79	
NORTH RANDALL	140	0	0	0	1	0	0	1	0	0	0	0	1	0	2	1	2	1	0	0	0	1	1	0	1	1	2	0	9	1	2	
NORTH ROYALTON	8,437	3	4	17	13	14	7	5	8	10	4	6	9	5	13	9	5	5	13	9	1	11	13	16	12	19	25	24	54	51	55	
OAKWOOD	1,285	3	3	21	8	2	6	4	4	10	5	4	6	2	10	7	4	26	9	7	19	5	13	1	7	13	22	20	26	28	31	
OLMSTED FALLS	2,491	11	0	0	4	4	4	2	5	2	1	1	4	4	4	2	2	3	1	2	4	2	7	6	4	7	18	30	41	50	24	
OLMSTED TWP	3,289	5	2	6	2	3	2	3	3	0	4	0	4	1	3	2	0	3	3	2	4	3	3	1	7	5	10	18	25	32	27	
ORANGE	1,089	1	1	0	3	2	3	2	3	0	1	0	1	2	2	0	1	0	1	1	3	0	0	2	2	2	4	9	9	11	13	
PARMA	28,843	35	21	13	30	17	16	9	11	15	25	16	7	26	27	14	21	18	21	23	34	30	33	42	35	58	116	149	241	264	199	
PARMA HEIGHTS	6,159	4	2	3	8	7	2	3	6	1	3	2	1	5	3	6	1	1	3	6	6	11	5	3	11	15	22	28	60	54	52	
PEPPER PIKE	2,321	0	1	0	1	2	2	3	0	0	2	6	0	6	3	4	3	0	0	0	1	2	1	2	4	3	6	5	12	13	15	

SOURCE: CUYAHOGA COUNTY OFFICE OF AUDITOR PROPERTY TRANSFER DATABASE

SHERIFF SALES WITHIN SOCIAL CONTEXT BOUNDARIES OVER TIME

CITY	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
FOREST HILL PARK															
CLEVELAND	1	1	0	1	4	0	1	2	2	0	1	1	3	2	3
CLEVELAND HEIGHTS	0	2	2	6	5	4	6	4	2	3	7	2	8	5	3
EAST CLEVELAND	26	23	18	20	36	25	24	31	25	25	22	39	40	43	31
TOTAL WITHIN FOREST HILLS SOCIAL CONTEXT BOUNDARY	27	26	20	27	45	29	31	37	29	28	30	42	51	50	37
TOTAL HOUSING COUNTS	2,843														
GARFIELD PARK RESERVATION															
CLEVELAND	37	43	38	48	45	37	48	41	58	67	64	86	101	70	86
GARFIELD HEIGHTS	25	9	16	22	30	29	18	24	29	33	34	41	39	27	31
TOTAL GARFIELD SOCIAL CONTEXT BOUNDARY	62	52	54	70	75	66	66	65	87	100	98	127	140	97	117
TOTAL HOUSING COUNTS	11,051														
ROCKY RIVER RESERVATION															
BEREA	6	1	1	5	10	5	7	4	5	5	3	1	4	18	3
BROOK PARK	3	1	7	2	3	2	2	3	3	2	5	2	0	0	1
CLEVELAND	3	10	9	9	6	11	8	15	8	15	13	11	7	14	9
FAIRVIEW PARK	3	2	2	0	4	1	3	4	1	3	2	1	5	7	4
LAKEWOOD	2	1	6	4	4	9	4	6	8	7	4	5	3	8	5
NORTH OLMSTED	5	3	9	4	3	12	3	1	0	1	1	8	5	4	7
OLMSTED TWP	1	0	3	0	0	0	1	1	0	0	0	0	0	0	0
ROCKY RIVER	7	0	2	1	0	3	3	1	0	0	4	4	4	7	5
TOTAL RR SOCIAL CONTEXT BOUNDARY	30	18	39	25	30	43	31	35	25	33	32	32	28	58	34
TOTAL HOUSING COUNTS	23,337														

SOURCE: CUYAHOGA COUNTY OFFICE OF AUDITOR PROPERTY TRANSFER DATABASE

PHASE 1: ORGANIZATIONAL LANDSCAPE

GREENSPACE ORGANIZATIONS AND INITIATIVES

EAST ZONE

Euclid Beach Now

Address: P.O. Box 19535 Cleveland, OH 44119-0535

Phone: 440-946-6539

Email: epbn@bex.net

Location: none

Type: 501(c)3 non-profit

Director: n/a

Volunteers/Membership: Can join by paying \$12.00 annual dues.

Mission: "Our mission is to support the education of the public as to the history of Euclid Beach Park through lectures, exhibits, displays, memorabilia shows, television and radio appearances and any other available form. We also support the preservation of physical items from Euclid Beach Park that may be owned by other organizations, private individuals, or any other entity."

Action Plan: see Mission

Initiatives: Euclid Beach Arch Restoration and Dedication, 2007

Funding: Members

Partners: Cleveland Landmark Commission, Cleveland Building Department, Associated Estates Realty Corporation, Northeast Shores Development Corporation, City of Cleveland Councilman Polensek, Ward 11 (<http://www.euclidbeach.com/id2.html>)

Future Heights

Address: 2163 Lee Road, Cleveland Heights, Ohio 44118

Phone: 216-320-1423

Type: 501(c)3 nonprofit

Volunteers: yes

Mission: "Future Heights promotes a vibrant and sustainable future for Cleveland Heights and University Heights, Ohio, through innovative ideas and civic engagement."

Core Values: Active and informed citizen participation in community decision making

Innovative ideas in addressing the challenges of inner-ring suburbs

Open and effective communication and partnerships among community stakeholders

A thriving local economy

Historic neighborhoods and commercial districts

High quality and sustainable design

A regional approach to innovative planning and development

Initiatives: Publishes the Heights Observer, encourages volunteerism and active citizenship, Clean and Green efforts, education and "citizen planners"

Funding: Grants and memberships- Annual Report

Holden Arboretum

Address: 9500 Sperry Road, Kirtland, Ohio 44094

Phone: 440.946.4400

Type: 501 (c)3 nonprofit

President and CEO: Clem Hamilton

Volunteers: yes

Mission: "The Holden Arboretum envisions a Northeast Ohio in which trees, forests, and gardens provide maximum ecological and social benefits to the region's people and communities."

- Growing Trees and Communities: Interconnected networks of trees and wooded environments – from street trees to home gardens to green spaces – sustain the ecological health of the communities where we live and work.

- Conserving Native Forests: The diversity, health, function, and ecological services of forested ecosystems in human-impacted landscapes are conserved for future generations

- Engaging Children with Plants: Children have an appreciation for and knowledge of regional plants and their environments, and will be able to apply their understanding to real-life situations.

- Place and Purpose: People value Holden as an enjoyable and enriching place to visit and as an important institution that inspires popular support for improving trees, forests, and communities of the region.

"The Holden Arboretum connects people with nature for inspiration and enjoyment, fosters learning and promotes conservation."

Initiatives: Education, Special Events, Conservation, Horticulture, Police (trail patrol), Research

Funding: Donations, Ohio EPA, Revenue, Holden Arboretum Trust/Endowment. For the 2009 Financial Report click here.

Partners: For a complete list click here.

South Euclid Citizens for Land Conservation

Contact: Barb Holtz

Phone: 216-382-3595

Open Membership for South Euclid residents

Mission: "SECLC promotes the conservation of eco-valued green space and sustainability in South Euclid for the benefit of its citizens, business community and the natural world."

Core Values: "We believe that eco-valued green space will benefit South Euclid economically and aesthetically. We believe the City of South Euclid should actively embrace sustainability initiatives that promote a healthy community. We believe South Euclid residents should have a voice in city planning. We educate and inspire residents to be stewards of the natural world in their home landscapes and beyond our city borders. South Euclid is a good neighbor to surrounding communities recognizing others live down-

stream."

Initiatives: Inclusion of a Green Space Plan in the revision of the South Euclid Master Plan. Prioritize target properties for conservation. Review city ordinances to suggest revisions that support balanced growth. Learn more about conservation development initiatives. Presented proposed plan to city council in early December, 2009

Partners: City of Euclid

The Nature Center at Shaker Lakes

Address: 2600 South Park Blvd., Cleveland, OH 44120

Phone: 216-321-5935

Email: naturecenter@shakerlakes.org

Type: 501(c)3 nonprofit

Executive Director: Kay Carlson

Volunteers: yes

Mission: "The Nature Center at Shaker Lakes conserves a natural area, connects people with nature and inspires environmental stewardship."

Initiatives: Education, Conservation, Advocacy

Funding: Shaker Lakes Regional Nature Center Endowment Foundation, Nature Fund, Planned Gifts and Bequests

Partners: Click here for a complete list

Western Reserve Land Conservancy

Address: P.O. Box 314, Novelty, OH 44072

Phone: 440.729.9621

Email: info@wrlc.cc

Type: Nonprofit

President and CEO: Rich Cochran

Volunteers: yes

Mission: "Western Reserve Land Conservancy seeks to preserve the scenic beauty, rural character, and natural resources of Northeast Ohio." (Vision Statement)

Action Plan: Six program areas that include: The Land Protection Planning Program, The Conservation Educa-

tion Program, The Conservation by Donation Program, The Public Land Program, The Conservation Buyer Program, and The Stewardship Program. (Click here for in depth explanations)

Initiatives: To protect land utilizing Conservation Easements, Farmland Protection, Public Land, Donated Property, Bargain Sales, Conservation Buyer and through Stewardship in A 14-county region including Ashtabula, Trumbull, Mahoning, Lake, Geauga, Portage, Stark, Summit, Cuyahoga, Medina, Wayne, Lorain, Huron and Erie. (Click here for recent news)

Funding: Donations, fundraisers

Partners: Chapters

WEST ZONE

Cleveland Waterfront Coalition

Address: 3105 Bridge Avenue, Cleveland, Ohio 44113

Phone: 216-281-8703

Email: contact@clevelandwaterfrontcoalition.org

Type: 501(c)3 nonprofit

Program Director: Lynn Garrity

Membership: Levels range from \$10 to \$200

Mission: "The Cleveland Waterfront Coalition was recognized as a nonprofit 501c3 membership organization in 1981. Our mission is to increase public awareness of Cleveland's waterfront as a public resource and promote comprehensive waterfront planning and development that provides public access to a waterfront that is inspired by excellence in social, economic and environmental best practices."

Action Plan: Proposing a Lakefront Parks Conservancy Plan that addresses Future Management, Capital Improvements, Ecological Restoration/Natural Resource Management, Implementation of City's Lakefront Plan, Maintenance Endowment (infrastructure support) Marketing/Outreach and Program Expansion.

Initiatives and Timeline for the Planning Process:
Timeline- The project will begin upon receipt of the funding in April 2009 and commence by April, 2010.

Program Start-up April 2009- June 2009
Establish Program Staff and Agreements with Partner Organizations

Establish Subsidiary (this will already be underway)

Form Community Executive Advisory Committee

Finalize Work Plan and Scope of RFP
Hire Consultants/Develop Timeline and Deliverables with Consultants

Assemble Community Executive Advisory Committee – Conduct initial meeting – Goals & Objectives, Expectations and Outcomes

Inventory and Assembly – July 2009 – November 2009

Inventory park operations, park units, budgets
Conduct financial portfolio assessment.

Inventory and visit park conservancy models.
Identify program and marketing opportunities.

Inventory Natural Resource Management Component

Identify future park management entities and develop initial assessment criteria.

Conduct Community Advisory Executive Advisory Committee – Report initial assessment work

Development of Operational and Park Management Plan December 2009 – February, 2010

Assemble work tasks to determine short term and long term strategies.

Assemble draft plans for various aspects of Plan
Present to Community Advisory Executive Committee

Presentation of Final Report & Implementation Schedule April 2010

Present work to Executive Committee
Establish Partnership Agreements

Conduct work plans for years 1-2" (<http://www.clevelandwaterfrontcoalition.org/>)

[clevelandwaterfrontcoalition.org/](http://www.clevelandwaterfrontcoalition.org/))

Funding: fundraising analysis, revenue- generating ventures and potentially the Cleveland Metroparks Levy 2014 (Still in the planning face)

Partners: Notable political figures supporting this initiative

Cuyahoga River Community Planning Organization

Web: <http://www.cuyahogariverrap.org/>

Type: Cuyahoga River Community Planning Organization (CRCPO) is a 501(c)(3) not-for-profit organization that operates the RAP (Cuyahoga River Remedial Action Plan,) the Cuyahoga American Heritage River Initiative (AHR,) and CLEERTEC (Cuyahoga/Lake Erie Environmental Restoration Technology Enterprise Center.)

Director: Joseph Koncelik
Area: Cuyahoga River Communities

Mission: is to restore and protect the environmental quality of the Cuyahoga River and selected watersheds that affect the aquatic ecosystems of the immediate Lake Erie shoreline.

Core Skills:

- PLANNING- support planning and implementation of remediation and restoration projects including habitat restoration, riparian zone restoration and repair, balanced growth land use planning and best management practices.

- ORGANIZATIONAL SUPPORT- assist in the development of local watershed stewardship groups, and in some cases acting as fiscal agent and support staff where needed.

- TECHNICAL ASSISTANCE- provide maps, data and technical assistance focused on watershed and wetland functions, with decades of expertise in technical and scientific research and reporting, GIS/RS mapping and data inventory.

- EDUCATION- write, design and publish educational and outreach materials to support watershed stewardship, addressing specific locales as well as general concepts.

We train local officials in watershed protection, and agency personnel in communicating about storm water management and stream stewardship.

Initiatives:
HABITAT FOR HARD PLACES...restoring natural areas and creating new habitat for larval fish along the navigation channel. -Summer, 2008 saw the first prototypes of the Cuyahoga Habitat Underwater Basket (CHUB) installed for on site testing along the Cuyahoga's shipping channel. New initiatives are planned for five sites, from removing toxic sediment in the old river channel and restoring natural habitat near the lake to creating access for fish and people along the Scranton Peninsula.

• BIG CREEK WATERSHED ACTION PLAN- We have developed a plan for Big Creek that will serve as a basis for land use decisions in the watershed.

• FURNACE RUN WATERSHED PLAN -We have received a grant from the Lake Erie Commission to develop a Balanced Growth Plan for Furnace Run. We'll be organizing the local community leadership, presenting workshops and setting the stage for land use planning in this rapidly urbanizing watershed.

• BRANDYWINE CREEK WATERSHED PLANNING -The Partnership is in place. Now we are working with communities in "The Brandywine," as well as Summit County planners, engineers and soil and water conservation district, and the Cuyahoga Valley National Park, on a Balanced Growth watershed management plan.

Action Plans: - The Cuyahoga/Lake Erie Environmental Resource Technology Center's first project will be to design and develop a prototype "green bulkhead" to replace aging steel bulkheads along the Cuyahoga River ship channel at the mouth of the river. The goal is to create environmentally-friendly structures that maintain the integrity of the riverbanks and allow for navigation of large ships, yet provide habitat for aquatic organisms and support fish as they migrate to and from the lake and the upper reaches of the river and its tributaries.

Friends of Big Creek

Address: P.O. Box 609272, Cleveland, Ohio 44109

Phone: 216.269-6472

Web: <http://www.friendsofbigcreek.org/index.html>

Type: 501(c)(3) organization

Director: Mary Ellen Stasek, Chair, Bob Gardin, Project Manager bgardin@friendsofbigcreek.org
Area: Together they drain nearly 38 square miles from 8 municipalities — Cleveland, Brooklyn, Linndale, Parma, Parma Heights, Brook Park, Middleburg Heights, and North Royalton.

Mission: "To conserve, enhance, and bring recognition to the natural and historic resources of the Big Creek Watershed and develop a recreational trail network that joins these resources to each other and the community."

Initiatives:

- The connection of existing greenways such as the CanalWay Towpath Trail west and south to the Big Creek Reservation at Brookpark Road.
- Improved conditions of Big Creek and the natural environment throughout the watershed
- Improved, safe and convenient access to the natural environment throughout the Big Creek watershed with increased educational and recreational opportunities
- Successful promotion of the benefits of a healthy watershed, as well as important historical events, structures and sites within the watershed.

Action Plans:

- Friends of Big Creek and the CRCPO's Cuyahoga River Remedial Action Plan (RAP), with local funding matches from the watershed communities, were awarded an Ohio Coastal Management Assistance Grant for a Big Creek Balanced Growth Watershed Management Plan. Community based watershed planning helps reduce flood damage, decrease the loss of greenspace, reduce soil erosion and improve water quality. The plan, managed by the RAP with assistance from the Cuyahoga County Planning Commission, is due for completion in March 2009.

- Friends of Big Creek, Cleveland Metroparks, and the cities of Cleveland and Parma joined the City of Brooklyn as co-sponsors for funding from a NOACA Transportation for Livable Communities Initiative grant for the Big Creek Greenway Trail Alignment & Neighborhood Connector Plan. The study, lead by the Floyd Browne Group, seeks to connect the Metroparks Big Creek and Brookside Reservations through the City of Brooklyn while identifying opportunities for interpretive exhibits and ecological restoration. This plan was completed in March 2009.

- Big Creek Greenway Trail Alignment and Neighborhood Connector Plan <http://www.friendsofbigcreek.org/newsletter09Spring.pdf>

Friends of Chippewa Creek

Address: 3855 Wallings Road, North Royalton, OH 44133

Web: <http://www.northroyalton.net/friendsofchippewacreek/default.asp>

Area: CCWP represents a coalition of members in a three-city area comprised of North Royalton, Broadview Heights, Brecksville, Cuyahoga County, Cuyahoga River Remedial Action Plan, Cuyahoga Soil and Water Conservation District, Cuyahoga Valley National Park, and Cleveland Metroparks.

Volunteers: Yes

Mission: "Chippewa Creek Land Conservancy seeks to preserve the scenic beauty, rural character, and natural resources of the Chippewa Creek watershed through direct land protection and promotion of the responsible use of land and water resources."

Partners: City of North Royalton (Master Plan)

- Cities of North Royalton, Broadview Heights, and Brecksville (Balanced Growth Initiative)
- Cuyahoga River Remedial Action Plan (Balanced Growth Initiative)
- Cuyahoga Soil and Water Conservation District (Balanced Growth Initiative)
- Cuyahoga Valley National Park District (Balanced Growth Initiative)

anced Growth Initiative)

- Cleveland MetroParks (Balanced Growth Initiative)
- Cuyahoga County Planning Commission (Greenspace Plan)
- Ohio EPA (Clean Ohio Fund)

Green City Blue Lake (Formerly EcoCity Cleveland)

Address: Cleveland Museum of Natural History
1 Wade Oval Drive Cleveland, OH 44106
Cuyahoga Bioregion

Phone: 216-231-4600

Web: <http://www.gubl.org/about/contact>

Type: 501(c)(3)

Director: David Beach

Rocky River Watershed Council

Address: 6100 West Canal Rd. Valley View, OH 44125

Phone: 216-524-6580 x14

Web: <http://www.myrockyriver.org/index.htm>

Type: 501(c)(3)

Director: Jared Bartley

Mission: "To protect, restore, and perpetuate a healthy watershed through public education, watershed planning, communication and cooperation among stakeholders."

Initiatives: Work is complete on the \$100,000 capital improvement project at Rocky River Park. Improvements include erosion control with a series of four stone retaining walls, creating a terrace and amphitheater effect; a paver walkway with benches offering a wonderful lake view from the top of the park; and new landscaping. The project received an "Outstanding" award from Ohio Parks and Recreation (OPRA).

Action Plans: Ecosystem Management Plan for the Lake-to-Trail 2008 (Cleveland Metroparks)

http://www.clemetparks.com/Naturalresources/documents/LakeAbram_EMP.pdf

Rocky River Upper West Branch Watershed Balanced Growth Plan

<http://www.medinaswcd.org/state%20endorsed%20plan.pdf>

Prioritization of Sites for Permanent Protection: Western Reserve Land Conservancy and Cleveland Metroparks are actively seeking to acquire both land and conservation easements in the Rocky River Watershed. While the RRWC strongly supports these efforts, there are certain categories of sites that are a high RRWC priority that do not fit the priorities established by these organizations. These sites are usually smaller, address headwater stream systems, and/or are located in urban areas. The objective is to identify and prioritize intact riparian and wetland habitats for preservation via conservation easement.

East Branch Conservation Easement Acquisition: Western Reserve Land Conservancy, in partnership with Cleveland Metroparks, received a grant to fund land acquisition and restoration projects within the East Branch of the Rocky River watershed from the Ohio Environmental Protection Agency's 319 Program. This program will protect 135 acres of open space with conservation easements -Protect 4,500 linear feet of high-quality streams -Protect 5 acres of wetlands-Restore 1 acre of land to a healthy riparian buffer.

Soil and Water Conservancy

Address: 6100 West Canal Road Valley View, OH 44125

Phone: 216-524-6580

Web: <http://www.cuyahogawcd.org/>

Type: 501(c)(3)

Mission: "To promote conservation of land and aquatic resources in a developed environment through stewardship, education, and technical assistance."

Wendy Park Foundation

Address: 127 Public Square #2700 Cleveland,

Ohio 44114

Phone: Phone 216.904.9456

Web: <http://006ccbc.netsolhost.com/index.html>

Type: 501(C)3

Director: Dan T. Moore, III- Chair

Area: Whiskey Island, Wendy Park

Volunteers: Yes

Mission: "Develop and restore the natural environment at Wendy Park to National Park standards of excellence, facilitate the restoration of the historic Coast Guard Station, integrate Whiskey Island Marina into Wendy Park and to provide public access to Lake Erie through connecting Wendy Park to the Towpath Trail. Further, to create programs and activities that educate the public on Great Lakes ecology, Eco-system sustainability, Maritime heritage, safety and youth training."

Initiatives: "Cuyahoga County purchased the land including Whiskey Island Marina in December, 2004. The County plans to return the park land to its natural state by eliminating invasive weeds, flowers and grasses, planting species indigenous to the area and planting shrubs that will provide food and habitats for wildlife thusly creating a sustainable natural environment. Visitors will be able to enjoy a natural shoreline with direct access to Lake Erie, walk on trails through trees and meadows while enjoying stunning views of Lake Erie, the Flats and the downtown Cleveland skyline.

The Wendy Park Foundation will assist in efforts to restore the natural environment and to provide an enhanced park space with natural shoreline by raising funds and awareness for projects. Our first corporate donor was Cargill Salt. Cargill, through its Cargill Cares program granted monies to restore native prairie grasses and plant a flower garden. Further, Eco-system sustainability, educating the public on Great Lakes ecology and creating environmental education programs are also very important components to the mission of the Wendy Park Foundation."

CENTRAL ZONE

Building Cleveland by Design

Address: 1422 Euclid Avenue, Suite 733 Cleveland, OH 44115

Phone: 216-696-2122 ext. 126

Email: jglanville@parkworks.org

Type: 501 (c)3 nonprofit

Program Director: Justin Glanville

Volunteers: n/a

Mission: "Building Cleveland by Design aims to change the way Cleveland is built. It envisions a city where developers make design a first consideration, where citizens demand the best available design ideas, and where buildings exist in harmony with the environment."

Action Plan: see mission

Initiatives: Lake Link Trail- "BCbD has been coordinating a wide-ranging collaborative of public and private stakeholders to create public trails and green spaces that lead to the region's defining natural resources: Lake Erie and the Cuyahoga River. The centerpiece of the plan is the 1.5-mile Cleveland & Mahoning Railroad Trail, which will run through an abandoned rail right-of-way traversing the Flats. The trail will connect to the Towpath Trail on Scranton Peninsula, then skirt the Cuyahoga River at Irishtown Bend below the West Side Market before running north through the West Bank of the Flats. The trail would connect with the existing Willow Street Bridge, which will have widened sidewalks, and then siphon users onto a new pedestrian and Bicycle Bridge that would cross the lakefront railroad tracks to Lake Erie at Wendy Park. The trail will not only give Clevelanders and visitors new access to the river and lake, but promote alternative transportation by providing a non-motorized connection between the neighborhoods of Tremont, Ohio City and the Flats. It will also serve as a stormwater demonstration project. Part of the trail right-of-way is a depressed former rail bed that will retain water, allowing particulates to settle out before being directed to the river." See NOACA Greenway Corridor Main Avenue Park- "Another part of BCbD's Flats Connection Plan is to reinvent asphalt lots underneath the

Main Avenue (Shoreway) Bridge as a park serving residents of the Flats, Downtown and adjacent neighborhoods. The dominant feature of the park will be water. The Main Avenue Park will hold and treat the large amounts of stormwater flowing off the bridge, in a series of pools cascading down to the Cuyahoga River. The park would also provide habitat for birds and other species, and a boardwalk would be constructed across the pools to allow people to get an up-close experience of this new natural area. The well-known blue Main Avenue Bridge overhead would provide a dramatic, cathedral-like "ceiling" for the park."

Wendy Park Plan- "Although it is adjacent to downtown Cleveland, Wendy Park is currently accessible only by traveling several miles west to Edgewater Park and then backtracking. The park, owned by Cuyahoga County, preserves 22 acres at the confluence of the Cuyahoga River and Lake Erie. In recent years, the park has seen soaring attendance: from 15,000 in 2006 to 35,000 in 2008. The City of Cleveland owns the landmark, vacant Coast Guard Station inside the park and has led an effort to reopen it for public use."

BCbD is partnering with the Cuyahoga County Planning Commission to complete a management and master plan for the park. (Cuyahoga County is the current owner of the park.) The plan will chart a course for protecting Wendy Park's natural resources while increasing accessibility. Resource protection is particularly important given the County's oft-stated desire to turn the property over to Cleveland MetroParks. MetroParks has made clear that it will consider owning and managing the park if it 1) is connected to the rest of its park system via a Towpath Trail connector (a role the Lake Link Trail will serve); and 2) remains a natural resources area that provides habitat for native plant and animal species."

Parent Organizations- Park Works, Cleveland Public Art

Partners: AIA Cleveland, City of Cleveland Sustainability Program, Cleveland Metroparks, Cleveland Urban Design Collaborative, Entrepreneurs for Sustainability, Northeast Ohio Chapter of USGBC, Northeast Ohio Regional Sewer District, Ohio City Near West, Wendy Park Foundation,

NOACA

Cleveland Lakefront State Park

8701 Lakeshore Blvd., Cleveland, OH 44108

Phone: 216-881-8141

Email: Cleveland.Parks@dnr.state.oh.us

Manager: Jim Seikel

-Ohio Department of Natural Resources also describes the Cleveland Lakefront State Parks in terms of resources, activities, boating and winter activities here.

Cleveland Museum of Natural History

Address: 1 Wade Oval Drive University Circle Cleveland, OH 44106

Phone: 216-231-4600

Email: naturalareas@cmnh.org

Type: 501(c)3 nonprofit

Department of Conservation: Jim Bissell, Curator of Botany

Volunteers: yes

Mission: To inspire, through science and education, a passion for nature, the protection of natural diversity, the fostering of health, and leadership to a sustainable future.

Conservation Mission: The Center for Conservation & Biodiversity unites the Museum's conservation-related activities to further the protection and stewardship of the region's native biodiversity.

Action Plan: The Center conducts extensive fieldwork, identifies and protects rare natural communities in Northern Ohio and provides conservation information to the community. Education, Conservation and Sustainability

Initiatives: The Conservation Outreach Program enables private landowners, state agencies, park managers or conservation organizations to request field inventories of natural lands. Once a request has been made to the program, a Conservation Outreach Specialist arranges a visit to the property. During that visit, and additional visits if needed, that staff member conducts an environmental assessment

of the site.

Funding: Endowment income, operating income and annual fund contributions

Partners: Corporate partners.

Dike 14 Environmental Education Collaborative

Contact Info: (several)

Location: The Collaborative has no official location, but Dike 14 is located at the north end of MLK Jr. Blvd. and North Marginal Road.

Mission: "The Dike 14 Environmental Education Collaborative was formed in 2003 and is comprised of local environmental education organizations who recognize the unique resources that Dike 14 offers for environmental education purposes. The goal of this unique Collaborative is to provide exemplary multi-interdisciplinary environmental education for students, teachers and families, and to promote environmental stewardship of Dike 14." (<http://www.cuyahogawcd.org/grantfunded-dike14.htm>) "Dike 14 Nature Preserve is an existing 88-acre former dredge disposal site that has become an extraordinary wildlife haven adjacent to Gordon State Park/Cleveland Lakefront State Park at the northern end of Martin Luther King Jr. Boulevard in the heart of Cleveland, Ohio. Over the years, Dike 14 Nature Preserve has become naturalized and provides a exceptional opportunity for access to Lake Erie as well as access to a remarkable diversity of birds that either make their home in or use the area as a rest stop during migration, plants and other wildlife. From 1979 to 1999 sediments dredged from the Cuyahoga River and Cleveland Harbor filled the dike. Closed since 1999 as a disposal site. Citizen scientists have identified over 280 species of birds, numerous butterflies, 16 species of mammals (red fox, coyote, mink, deer) 2 species of reptiles, 26 Ohio plant species (wildflowers, grasses) and 9 species of trees and shrubs!" (<http://www.dike14.org/>)

Action Plan: see Mission

Initiatives: Creating the Nature Preserve- Level 1 Eco-

logical Risk Assessment, 11/07; Level 2 Ecological Risk Assessment, 11/07; Property Specific Human Health Risk Assessment, 11/07; Limited VAP Phase 2 Property Assessment, 10/07; Spring Open House tour of the Cleveland Lakefront Nature Preserve, 5/22/10. For more information on these Assessments see the Cuyahoga Soil and Water Conservation District Dike 14 Page.

Funding: USEPA Brownfield Assessment Grant to assess hazardous substances- \$200,000

Partners/Members: Cleveland Botanical Garden, Cleveland Metroparks, Cleveland Museum of Natural History, Cuyahoga Soil and Conservation District, Cuyahoga Valley National Park Association, Earth Day Coalition, Lake Erie Nature and Science Center, Ohio Department of Natural Resources- Cleveland Lakefront State Park, The Ohio Lepidopterists, Western Cuyahoga Audubon Society.

Park Works

Address: 1422 Euclid Avenue, Ste. 733 Cleveland, OH 44115

Phone: 216.696.2122

Web: <http://www.parkworks.org/>

Mission: "To lead, promote and facilitate creative programs and convene civic partners around projects which enhance the economic strength and quality of life of the Cleveland community through: park rehabilitation, recreation opportunities for all citizens, downtown beautification and green space development, environmental awareness, citizen engagement and stewardship."

Initiatives: ParkWorks has become a recognized strategic partner leading projects and programs that have significant impact on Cleveland's economic development. Through our expertise and our collaboration with partners such as the Downtown Cleveland Alliance; Neighborhood Progress, Inc.; University Circle Inc. and Cleveland Public Art, ParkWorks develops and expands the use of public space to promote neighborhood and downtown revitalization. We continue to build our reputation as results-driven and to use our depth of resources, expertise and passion to

deliver tangible results.

Action Plans: Perk Park Renovation, Public Square Redesign, Local Foods Assessment Program

West Creek Preservation Committee

Address: PO Box 347113 | Parma, OH 44134

Phone: 216.749.3720

Web: <http://www.westcreek.org/>

Type: non-profit 501(c)(3)

Director: David M. Lincheck

Area: West Creek is a 9-mile creek flowing through the cities of Parma, Seven Hills, Brooklyn Heights and Independence. It is a 500-acre natural park and regional recreational trail network.

Volunteers: Yes

Mission: "To conserve, protect and enhance the natural, historical and recreational resources of the West Creek watershed and vicinity through the protection and restoration of natural lands and the development of a greenway and recreational trail network, providing an enhanced quality of life for present and future generations."

Initiatives: To resurrect the historic significance of the creek and the potential for a recreational trail linkage to the Ohio and Erie Canal Towpath Trail.

Busch Family dedicates 55 acres to the WCPC along Big Creek: The Busch Family Conservation Area, also known as Snake Hill at Big Creek. The ceremony marked the culmination of a multi-year effort to preserve this special area located on Ridge Road near Pleasant Valley Road in Parma. Recognizing the opportunity to conserve and restore a significant natural area, and its potential benefits for Big Creek, one of West Creek's neighboring watersheds, WCPC committed to the project. The Busch Family agreed to sell just under fourteen acres to the project, and the City of Parma agreed to place over 40 adjacent acres under a conservation easement.

Soon after, WCPC successfully applied for a \$148,000 grant from the Clean Ohio Conservation Fund. Parma and WCPC obtained a \$50,000 grant from the Land and

Water Conservation Fund. In 2009, additional grant funds from Clean Ohio brought the total to \$346,000 allowing for completion of this project.

As of October 2009, WCPC holds a conservation easement on the entire Busch / Snake Hill natural area, while the City of Parma has ownership of the land restricted by the easement. This ensures that the property will be permanently managed for conservation, stream protection, and low impact recreation. WCPC looks forward to working with the City, community members, and other partners, such as the Friends of Big Creek and NEORS, to explore potential stream/wetland restoration and other enhancements at Snake Hill. Benefits of this project include protection of over 2500 linear feet of Big Creek and one of its tributary streams, which have been threatened by runoff, increased storm flows, erosion and sedimentation from developments upstream. The natural area includes wetlands and floodplain, which helps absorb and slow stormwater, reducing problems downstream. The natural park protects fish and wildlife habitat. Just as important, it provides for access to green and open space for area residents.

Brooklyn Heights Resident Donates 5 Acre Natural Area to WCPC: Thanks to a Brooklyn Heights resident, a five acre wooded ravine, through which a tributary of West Creek flows, is now a protected natural area. Charles Novy donated this property to West Creek Preservation Committee in the Fall of 2009. The property is adjacent to and visible from the south side of I-480, just west of the Lancaster Road Bridge in Brooklyn Heights. Due to the steep terrain and difficult, limited access to the site, WCPC intends to manage this area for natural riparian habitat and stream protection purposes only. No trails nor any other amenities are planned for this property.

New Trail Constructed in the West Creek Reservation: The new trail exists along Ridgewood Drive, bringing the start of the all-purpose trail through the West Creek Reservation. A portion of the completed trail opens up a vista of deep woods, where no one was able to travel into before. Wetlands and the densely wooded area prohibited any kind of trail, but now it is open to the public.

West creek was very cautious and creative when planning this trail; to reduce the amount of impervious surface created by the trail, innovative paving materials have been used. A portion of the trail uses pervious concrete. This allows water to percolate into the ground. The concrete is double the depth, eight inches instead of four, with aggregate under the eight inches. Because of its porous nature, the trail with this surface will need to be vacuumed to keep its “pores” open. Just a short distance beyond the trail, a new entrance to West Creek Reservation will be constructed. A picnic area and limited parking will be available in the coming years at this site. The current entrance near the bend in Ridgewood Drive will be closed. Plans indicate that the trail will then extend along the new entrance drive to Stewardship Center, which will have a larger parking area.

Action Plans:

- West Creek Green Way
- Greenway trail <http://www.westcreek.org/WCG%20Description.pdf>
- Sterns Farm Connector <http://www.westcreek.org/SFC%20Description.pdf>
- West Creek Reservation Trail <http://www.westcreek.org/WCR%20Description.pdf>
- Neighborhood Connector Trail <http://www.westcreek.org/WCN%20Description.pdf>
- West Creek Confluence Project <http://www.westcreek.org/Confluence.html>

Funding: Clean Ohio Funds, Donations

Partners: Ohio Department of Natural Resources, Ohio Environmental Protection Agency, US EPA, Ohio & Erie Canalway, Great Lakes Commission, Lake Erie Commission, Cyrus Eaton Foundation, Cleveland Foundation, George Gund Foundation, Wal-Mart, Ohio Historical Society (Ohio Preservation Office), National Park Service, Great Lakes Aquatic Habitat Network, State of Ohio – Ohio Public Works Commission, Northeast Ohio Area-wide Coordinating Agency

SOUTHEAST ZONE

Cuyahoga Valley National Park

Address: 15610 Vaughn Road, Brecksville, OH 44141

Phone: 216-524-1497

Email: [Email page](#)

Type: Public- The National Park Service is a bureau in the Department of the Interior.

Acting Superintendent: Paul J. Stoehr

Volunteers: Yes- At Cuyahoga Valley National Park, volunteers perform a wide variety of duties during every season of the year. In 2008, over 2,300 volunteers donated almost 80,000 hours to the park. Our volunteers assist at special events, provide information at visitor centers, and lead nature and history tours. They help build trails, monitor plant and animal populations, and provide administrative assistance. We rely on these dedicated volunteers to provide the highest level of quality services to our visitors and to help us protect our valuable resources. Cuyahoga Valley National Park Volunteer Program is co-managed by the National Park Service and our friends group, the Cuyahoga Valley National Park Association (CVNPA).

Mission: “To preserve and protect for public use and enjoyment the historic, scenic, natural, and recreational values of the Cuyahoga River Valley and to maintain the open space necessary to the urban environment.”

What does this mean? It means that we are here to protect park resources so that you and future generations can experience, enjoy, and appreciate the Cuyahoga Valley National Park you know and love today. Explore this section of the website to find out how we are working to accomplish this mission.

Initiatives: For current plans and initiatives click here.

Action Plan: For localized current plans and initiatives click here.

Partners: Cuyahoga Valley National Park Association, Cuyahoga Valley Scenic Railroad, Cuyahoga Valley Countryside Conservancy, Cleveland Metroparks, Metro Parks-

Serving Summit County, Eastern National, Ohio and Erie Canalway Association, Inn at Brandywine Falls. For more about the partner organizations: [click here](#).

Related to the Tow Path

Towpath Trail Partnership Committee (main page of websites): Board of Commissioners of Cuyahoga County, City of Cleveland, Cleveland Metroparks, Cuyahoga County Engineer, Cuyahoga County Planning Commission, National Park Service, Northeast Ohio Area-wide Coordinating Agency, Ohio Canal Corridor, and the Ohio Department of Transportation.

Webpages specific to Tow Path:

- NPS (Cuyahoga Valley National Park)
- Ohio Canal Corridor
- Lake Link Trail (Building Cleveland by Design and Park Works)
- NOACA
- Cuyahoga County Tow Path and Greenway Extension
- Cleveland Bikeway Masterplan
- DLZ
- Ohio and Erie Canalway

“Land Protected for Cleveland’s Link to the Lake Trail, 12/29/09”-

“The only remaining intact corridor available for a new trail in downtown Cleveland has been protected, The Trust for Public Land, ParkWorks Inc., the City of Cleveland, and Cuyahoga County announced today. This purchase includes over 1.3 miles of continuous property that will serve as the backbone of the future Link to the Lake Trail.” (TPL)

Summit Metroparks
Camba?

OTHER USEFUL RESOURCES

General

- Cleveland Metroparks
- Cleveland Urban Design Collaborative
- Cuyahoga County Greenspace Plan, Greenprint, Existing Funding Sources

- Cleveland Urban Core Projects
- City of Shaker Heights Planning
- Horseshoe Lake Masterplan
- Gates Mills Land Conservancy

Trails and Connectors

- Hiking Ohio Parks
- Cleveland Bikeway Masterplan.

Funding Sources

Existing Funding Sources (Greenprint)
National Scenic Byways Program Grants Funded -Includes Ohio and Erie Canalway: Signage- Phase 2, Land for Ecological Restoration and Recreation Trail; The Mill Creek Connector Trail: Phase 2- Ohio and Erie Canalway and more

Ohio Department of Development Clean Ohio Fund: includes information on Trail Funding (see below), Green Space Conservation (click here for funded projects), Farmland Preservation and Brownfield Revitalization
Ohio Department of Natural Resources Grants
2009 Clean Ohio Trails Grant awards here

Metroparks and Public Transit

- Accessibility and barriers to access? GIS example □ Jason Russell, Spring '09
- Trailway connectors and greenways?
- Traffic counts? NOACA Traffic Counts

PHASE I: REGIONAL COLLABORATION LANDSCAPE

Methodology

Our study of the Regional Collaboration Landscape is broken down into four sections. Each section offers a series of strategies, examples, information and best practices outlining partnership efforts from outside the Cleveland area.

Each team member focused on an individual component within the regional collaborative landscape of the United States. Benchmarks of excellence in parks and open space were divided into two sections; planning efforts and the research of management strategies within successful systems.

Acquisition mechanisms focusing on public and private options are explored in Part III with a reliance on legal tools to assist broader conservation goals. Finally, Part IV focuses on collaborative best practice within the framework of the regional, local and environmental landscape. A number of resources were utilized in order to assemble the data within this analysis including classroom lectures and required readings. On-line resource materials, many available through the Cleveland State University Library, are listed within their particular section.

BENCHMARKS OF EXCELLENCE IN OPEN SPACE AND PARK PLANNING

"Parks strengthen communities. They increase community cohesion by providing a place for people to get together."
-- Peter Harnik, director of the Green City program for the Trust for Public Lands

Planning is an important element to ensure a quality park and open space system. Not just the physical plan for the park, planning must include a comprehensive and cohesive

process with community involvement to help ensure the park will be used and loved by its community. For each of our four parks – Rocky River, Hinckley, Garfield and Forest Hills – it will be relevant to look at successful examples of the same type of park around the country as well as understanding how the parks are currently used by the local community and what their needs and desires are. The data we collect will help us understand our parks, but it is also important for site visits to observe how the park is used but also to experience and use the parks ourselves.

Guidance from the American Planning Association's Great Public Places award program, the national initiatives of the National Recreation and Parks Association, the eleven principles for creating great community places from the Project for Public Spaces and the parks, recreation and open space planning process available from Washington State will provide guidance for helping us ensure the four parks we are studying receive the best physical plan and go through the best process.

APA's characteristics to determine a Great Public Place & Guidelines for Great Public Spaces:

- Promotes human contact and social activities
- Is safe, welcoming, and accommodating for all users
- Has design and architectural features that are visually interesting
- Promotes community involvement
- Reflects the local culture or history
- Relates well to bordering uses
- Is well maintained
- Has a unique or special character

Features and Elements (not all may apply)

- What landscape and hardscape features are present? How do they contribute to the unique or special nature of the space?

- How does the space accommodate pedestrians or others whose access to the space is by transit, bicycles, or other means? Is the space welcoming to those with physical disabilities or others with special needs?
- Does the space accommodate multiple activities?
- What purpose does it serve for the surrounding community?
- How does the space utilize existing topography, vistas, or geography? Does it provide interesting visual experiences, vistas, or other qualities?
- How are murals or other public art incorporated into the space?

Activities and Sociability

- What activities make the space attractive to people and encourage social interaction? (Commerce, entertainment or performances, recreational or sporting, cultural, markets or vending, exhibits, fairs, festivals, special events, etc.)
- Does the space provide a sense of comfort and safety to people gathering and using the space? Does the space provide a friendly and welcoming atmosphere?
- How do people interact with one another? Does the space encourage communication or interaction between strangers?

Unique Qualities, Traits, and Characteristics

- What makes this public space stand out? What makes it extraordinary or memorable?
- Is there variety, a sense of whimsy, or an atmosphere of discovery or pleasant surprise?
- Is there commitment to maintain the space and to keep it a usable space over time? Does the public have a sense of ownership about the space? How has it changed over time?
- Is there a sense of importance about the space? What characteristics or qualities contribute to this?
- What is the history of the space, and how is it re-

membered or passed on from one generation to the next?

- Does the space serve as a place of inspiration or contemplation, or is it considered sacred?
- What is it about the space that contributes to a sense of community?
- What makes this space special and worthy of designation as a Great Space?

NATIONAL RECREATION AND PARKS ASSOCIATION'S NATIONAL INITIATIVES

[<http://www.nrpa.org/partnerprograms/>]

1. Play

In response to a variety of social and environmental factors that have influenced the creation of the "Sedentary Generation" and the resulting necessity to prevent resulting chronic diseases and ensure the health of all Americans, NRPA has launched a variety of initiatives to bolster the value of play to ensure the public adopts lifelong habits that contribute to healthy lifestyles. Through NRPA's vast network of parks and recreation agencies, play is the cornerstone to achieving personal and community health. Play not only resonates with all people, stimulating creativity and inspiration, it also strengthens intergenerational ties, solidifies a direct connection to nature, and promotes physical activity. Of particular focus for NRPA is play and America's youth. Enabling outdoor play for America's youth in a safe, enjoyable play area is an NRPA priority. In addition to supporting the association's responsibility for promoting children's rights to play in challenging, but safe environment, NRPA also commits to advocating for the health and social value that play provides to a child's physical and emotional development.

2. Health

Through grants from the Centers for Disease Control and Prevention and numerous funding entities, NRPA's com-

mitment to improving the nation's health, combating obesity, diabetes, and other chronic diseases, starts in public parks. NRPA is dedicated to advancing programs, throughout its Park and Recreation system, that:

- Promote healthy and active lifestyles for all Americans, regardless of age
- Develop relevant and timely health education and research for both the field and the public
- Advocate on the importance of well-being and fitness Federally and locally

3. Environmental Stewardship and Conservation

In light of growing urban populations and decreasing natural resources, the importance of early-life outdoor experience is one of the most important factors influencing young people's life-long appreciation for and protection of nature. NRPA's support of Park and Recreation Agency's work on behalf of environmental conservation is multifaceted:

- Development of sustainable conservation solutions that emphasize the integration of economic and environmental goals
- Programs that connect children to nature
- Advocacy on behalf of environmental issues, both Federally and locally
- Environmental stewardship ethics for communities
- Promoting green agendas for Park & Recreation Agencies nation-wide

Project for Public Spaces – Eleven Principals for Creating Great Community Places:

- The community is the expert – identify talents & assets within community, community is source of information.
- Create a place, not a design – a design is not

enough to create a place, physical elements such as seating & new landscaping must be introduced, ensuring management is within the pedestrian circulation patterns, develop effective relationship between park and surrounding area, strive for sense of community and comfortable image.

- Look for partners – for support and information, local institutions, museums, schools, etc. may be good sources.
- You can see a lot just by observing – look at how people are using (or not using) public spaces and find out what they like/don't like; once spaces are built, continuing to observe them will help you ascertain how they need to evolve.
- Have a vision – not just activities that might take place there or that the place is comfortable, but that the space should inspire a sense of pride.
- Start with the petunias: experiment, experiment, experiment – the best spaces will experiment with short term improvements that can be tested and refined over time: short term pilot projects; things like new seating, outdoor cafes, public art, community gardens, murals, etc.
- Triangulate – “triangulation is the process by which some external stimulus provides a linkage between people and prompts strangers to talk to other strangers as if they knew each other” (Holly Whyte); putting different elements in relation to each other to stimulate the triangulation process: for example, putting a children's reading room in a library near a children's playground outside and food kiosk nearby, these are going to be used more than if located independent of each other. (Heather's notes- on the other hand, part of the allure of a Metropark, to me at least, is the opportunity for solitude and quiet reflection)
- They always say “it can't be done” – starting with small-scale community-nurturing improvements can demonstrate the importance of ‘places’ and help overcome obstacles.
- Form supports function – need to understand how the space functions; design is important, but the use of the place tells you what ‘form’ needs to be accomplished.

• Money is not the issue – if the community and other partners are involved in programming, etc. this can help reduce costs; more important is to build enthusiasm for the project that the cost is viewed as less than the benefits.

• You are never finished – good public spaces respond to the needs, opinions and ongoing changes of the community; need to be flexible in management and open to change to ensure that a great public space stays a great public place.

Washington State Department of Community, Trade and Economic Development – Parks, Recreation and Open Space Planning Process:

- Consider goals and overall planning framework
- Initiate community visioning and ongoing citizen participation
- Inventory existing conditions, trends and resources/Identify problems and opportunities
- Develop Goals and priorities to guide parks, recreation and open space measures
- Enlist the support of other local groups, jurisdictions and departments
- Assess parks/open space/recreation needs and demands
- Develop site selection criteria and priorities, based on community goals
- Evaluate plan alternatives, select and adopt the preferred plan
- Prepare the parks, recreation and open space element
- Develop tools to implement your parks, recreation and open space strategy
- Adopt and transmit the element

BENCHMARKS OF EXCELLENCE IN OPEN SPACE AND PARK MANAGEMENT

Wikipedia defines park as “a protected area, in its natural

or semi-natural state, or planted, and set aside for human recreation and enjoyment, or for the protection of wildlife or natural habitats”. Every park has its own management system, in order to protect and conserve park land and wild life, as well as to enforce state laws and park regulations, and assist park visitors.

BEST PRACTICES

Yellowstone National Park

As the first National Park in the United States, Yellowstone is known as the flagship of the National Parks due to the large numbers of visitors, even those who live in other countries. Factors that contribute to Yellowstone's elevated status include:

- Wildlife - 7 species of ungulates (bison, moose, elk, pronghorn), 2 species of bear and 67 other mammals, 322 species of birds, 16 species of fish and, of course, the gray wolf
- Plants - There are over 1,100 species of native plants
- Yellowstone Lake is the largest (132 sq. mi.) high altitude (7,732') lake in north America
- 9 visitor centers
- 12 campgrounds

This Park is a major destination for all members of the family. For the active visitor, the park has thousands of miles of trails from day hikes to backcountry explorations. The main attractions are all located on the Grand Loop Road.

• Environmentalists and administration are focusing on implementing all of the components of conservation biology in the Greater Yellowstone Ecosystem, by setting ecosystem management strategies, they are assisted by NEPA and the World Heritage Committee

• The U.S. Government and the World Wildlife

Fund ran a program in 1994, called “Save British Columbia’s Forests.”

- On July 7, 1995 the World Heritage Committee informed the Department of the Interior that it would send a delegation to comply with requests from the National Park Service and by the Assistant Secretary of Fish & Wildlife.

Put-in-Bay

Compared with Yellowstone National Park, is another park: Put-in-Bay located in Ohio. It emphasizes the value of history and education rather than the ecosystem.

Management of the park is simplified by adopting proper design strategies and separating the 8-mile island into different area - Perry’s Monument and the International Peace Memorial Theme Park. Resident area, entertainment area, camping, bars, shopping stores, fishing are also separated. The theme park is a classroom that helps people understand and appreciate the complexities of the natural world and of the historic events that have shaped the island. The DOI youth programs initiative offers a tremendous opportunity to engage young and diverse audiences in their parks through jobs and I&E efforts. In 2012-2015 there will be a Peace Celebration at Put-in-Bay.

Cuyahoga Valley and Cleveland Metroparks

Cuyahoga Valley National Park encompasses nearly 33,000 acres and receives more than 2.8 million recreational visits each year, making it one of the most-visited National Parks in the United States.

How do the National Park Services operate and plan for the park? One of the biggest programs presently is the Trail Management Plan (TMP). In order to identify issues, assess its existing trail system, establish objectives, and develop alternatives for the park’s future trail network. National Park Service has adopted a trail management plan in cooperation with the Cleveland Metroparks, Serv-

ing Summit County, and is developing a Comprehensive Trail Management Plan (TMP) and Environmental Impact Statement (EIS) for the Cuyahoga Valley National Park (CVNP). This plan is needed to guide the future course of trail management and development in Ohio’s only National Park.

Washington State Park Growth Management Services

The GMA(Growth Management Act) promotes wide use of limited land and resources which helps conserve open space in Washington communities. In order to enhance the communities, the GMA calls for the development of parks and recreation facilities. The park service organization collects the survey data and analyzes the participation rates of the area and which facilities will receive the most use and the require the most maintenance. Details are provided outlining information about community preferences and needs. (See Table 2.4)

Table 2.4

ACQUISITION MECHANISMS FOR GREENSPACE

Acquisition and management of resource lands can be combined with regulatory measures to broaden the effectiveness of a conservation program. If land regulation is temporal, then acquisition of greenspace is permanent. For conserving greenspaces and their functions, acquisition is the strongest and surest means of protection. Acquisition methods can be divided into two strategic categories: those methods where landowners retain ownership of the land and preserve a resource through an easement or other mutual agreement, and those methods involving a transfer of title from the owner to a conservation agency. (Note: Conservation agency refers to a park system, local government, land trust, or other conservation organization that holds easement or title on the land and is involved in its conservation management.)

ACQUISITION OF GREENSPACE

Purchase of Development Rights (PDR)

The owner’s rights to develop a parcel of land are sold to the local government or to a land trust. Most PDR programs are voluntary and offer a viable financial option to interested landowners.

Benefits: This is a proven technique for local communities with strong support to acquire lands for preservation. Owners who sell development rights receive an income and continue to use their land while retaining all other rights and property taxes should be reduced.

Drawbacks: Purchasing development rights can be expensive and this method rarely protects enough land to relieve development pressure on resource land. Available funding may not meet demand for easement purchases and since it is a voluntary program this means some resource areas may be lost.

Purchase of Rights and Other Easements

In addition to purchasing development rights, other rights, such as the right to timber or extract minerals, could also be purchased. Other ‘customized’ easements could be developed as needed depending upon the resource in question. Trail easements, such as those recently purchased for in the Flats in Cleveland, are an example of this type of easement.

Benefits: This method provides for the protection of scenic viewshed or forested buffer. It is less expensive than fee simple acquisition or PDR and provides desired income to owner while keeping resource intact.

Drawbacks: Mineral rights or timber rights management issues must be resolved and offers limited applicability for protecting greenspace.

Conservation Easement

This is a legal agreement between a landowner and a qualified conservation organization or government agency to voluntarily restrict the use and development of the property. Easement grantee (i.e. local government) would hold a partial interest or some specified right in a parcel of land. A conservation, historic preservation, greenspace, or scenic easement is designed to protect a specific sensitive natural, historic, or cultural resource. An easement may be in effect for a specified period of time but is usually perpetual.

Benefits: This method can be effective in preserving greenspace if it meets mutual goals of landowner and agency. Easement provisions are tailored to needs of landowner and site preservation goals. Landowner retains ownership and use of the land. There are potential property, income, and estate tax benefits for donation or bargain sale of an easement. Easements run with the land, despite changes in ownership. Reduces costs for site protection when easements are acquired at less than fair market value for the protected area.

Drawbacks: A potentially costly baseline survey is required to identify the extent of natural, historic, or cultural resources within the easement. This method offers less protection than outright acquisition. The easement purchase may be costly, like the one conducted to protect the hillside along the canal in Garfield Reservation. In this technique agreement terms must be carefully and clearly outlined. The method is also management intensive: easements must be monitored and enforced; grantee agency must work closely with landowners. Easement grantee must possess technical expertise and financial wherewithal to monitor and enforce easement. Easement restrictions may limit property resale opportunities. Tax benefits may not be sufficient motivation for landowner to donate or sell easement.

Lease

An agreement between an agency and landowner to rent the land in order to protect and manage a sensitive resource.

Benefits: This is a relatively low cost approach to site protection. The landowner receives income and retains control of property. This can present an alternative for preservation minded landowners not ready to commit to sale of easement. Restrictions can be included in the lease to direct the activities of the conservation agency on the land.

Drawbacks: This is only a short-term protection strategy and the leases are not permanent.

Fee Simple Acquisition

Usually the sale of land at full market value. Ownership and responsibilities are transferred completely to the buyer.

Benefits: This is the most straight forward acquisition method and provides agency with full control over future of property.

Drawbacks: Of all of the techniques this is typically the most expensive. Buyer assumes full responsibility for care and management of property. There is a potential for the impacted municipality to lose revenue when land is removed from tax rolls. Since it is an outright sale there may be capital gains issues for seller.

Bargain Sale

Land is purchased at less than fair market value. The difference between the bargain sale price and the land's fair market value becomes a donation.

Benefits: This method reduces acquisition costs. Seller may

qualify for tax benefits for charitable donation which may offset capital gains tax implications.

Drawbacks: This technique can be difficult and time-consuming to negotiate and depending on the overall value of the property, it may still be costly to acquire the land.

Installment Sale

A percentage of the purchase price is deferred and paid over successive years.

Benefits: This method may provide possible capital gains tax advantages for seller.

Drawbacks: Complicates budgeting and financing of acquisitions.

Right of First Refusal

Agreement giving conservation agency the option to match an offer and acquire the property if the landowner is approached by another buyer.

Benefits: Agency can gain extra time to acquire funds for purchase.

Drawbacks: Resource may be lost if offer can't be matched by conservation agency. Some landowners are unwilling to enter into this kind of binding agreement.

Undivided Interest

Several parties share ownership in a parcel of land, with each owner's interest extending over the entire parcel.

Benefits: Changes to property cannot be made unless all owners agree.

Drawbacks: Property management can be complicated.

Land Banking

Land is purchased and reserved for later use or development. Land could be leased for immediate use (i.e. agriculture or athletic field) or held for eventual resale with restrictions. Local government functions as a land trust. Many programs are funded through real estate transfer taxes.

Benefits: Local government proactively identifies and purchases resource land. This method lowers future preservation costs by working as a defense against future increases in land prices, speculation, and inappropriate development.

Drawbacks: While this method can be expensive, with careful research and identification of potential inner-city parcels, relatively inexpensive neighboring parcels could be acquired. Public agency must have staff to handle land trust functions of acquisition, management, lease, or resale. Real estate transfer tax for land acquisition would require local enabling legislation.

Acquisition & Saleback or Leaseback

Agency or private organization acquires land, places protective restrictions or covenants on the land, then resells or leases land.

Benefits: Proceeds from sale or lease can offset acquisition costs. Land may be more attractive to buyer due to lower sale price resulting from restrictions. Management responsibilities assumed by new owner or tenant.

Drawbacks: This can be a complicated procedure. Owner retains responsibility for the land but may have less control over the property. Leases may not be suitable on some protected lands.

Nonprofit Acquisition and Conveyance to Public Agency

Nonprofit organization (such as land trust) buys a parcel of land and resells it to a local government or other public agency. This is the typical method for organizations such as the Trust for Public Land.

Benefits: Nonprofits can often move more quickly to purchase and hold land until the public agency is able to buy it. This method could reduce acquisition costs for public agency.

Drawbacks: Local government must be willing to purchase land and assume management responsibilities.

DONATION OF GREENSPACE

Outright Donation

Owner grants full title and ownership to conservation agency.

Benefits: Obviously, resources can be acquired at very low costs to the agency. As part of donation, the receiving agency may receive an endowment for long-term land stewardship. Donor may qualify for income tax deductions, estate tax relief, and property tax breaks.

Drawbacks: In this method the landowner loses potential income from sale of land and the receiving agency must accept responsibility and long-term costs of land management. Stewardship endowments may make donations cost prohibitive for landowner.

Donation via Bequest

Land is donated to a conservation agency at the owner's death through a will.

Benefits: If the grantee has a large estate this method can reduce estate taxes and may benefit heirs with reduced in-



heritance taxes. It also allows owner to retain full use and control over land while alive, while at the same time ensuring its protection after death.

Drawbacks: This technique allows no income tax deduction for donation of land through a will and requires careful estate planning by the landowner.

Donation with Reserved Life Estate

In this method the owner retains rights to use all or part of the donated land for his or her remaining lifetime and the lifetimes of designated family members.

Benefits: This method allows owner to continue living on and using the property during his or her lifetime while ensuring the land's protection and allows the designation of family members to remain on land.

Drawbacks: The tax benefits for this technique may be limited and some types of open space may not qualify. This method can delay transfer of the land to the conservation agency for a long period of time.

Conclusions/Recommendations

As is evident by the above list, there are numerous methods for acquiring land for conservation purposes. Each technique has benefits and drawbacks with multiple implications for a variety of issues. Any park system evaluating methods for obtaining land must base decisions on a careful consideration of the circumstances involved in each particular case. Guiding principles for land acquisition by the Cleveland Metroparks should be Conservation, Education and Recreation. If land is available for a donated conservation easement, then this would fit within financing issues and the Conservation principle. If land is available at a bargain price with no restrictions, then this could be used for any of the above principles. Land from a recently

demolished school building could be donated by a local school system and converted to a park with an education component. Finally, with the current vacant land situation in Cuyahoga County, an inventory system should be created to identify neighboring parcels that may be available for incorporation into existing Metroparks reservations

COLLABORATIVE PARTNERSHIPS

“To manage resources in the public interest, agencies must expand their value base in order to understand the range of public groups: their concerns and how to reach them. To do this requires interaction with people of different values and cultures, which by definition means building bridges with the world outside agency walls.”

- Julia M. Wondolleck and Steven L. Yaffee
- Making Collaboration Work: Lessons from Innovation in Natural Resource Management

Collaborative relationships are essential in solving problems which neither party can solve individually. Agencies can no longer exist within a silo and must build links with outside interests and like agencies that share common interests. A focus on broadening the tradition notion of collaborative relationships while developing partnerships that bridge long-standing boundaries of organizational affiliations, personal interests and perceptions, geography and jurisdictions is the scope of this analysis.

By presenting a series of best management practices across several themes, it is the intent to provide alternative scenarios whereby stakeholders expand their sense of value and responsibility toward natural resource protection.

LOCAL CONSERVATION FINANCE MEASURES

Anderson Township, Ohio

In 1989, trustee candidates in Anderson Township, located near Cincinnati, ran for election on a platform focusing on a free-market approach to preservation of greenspace

within their community. Subsequently two of the candidates were elected and responded quickly to address the rapid loss of existing greenspace within the Township. Trustees obtained support in the Ohio House of Representatives through the Passage of House Bill 717, effective June 28, 1990, which permitted Ohio townships to acquire — without exercise of the power of eminent domain — ownership interests in land, water or wetlands, and to restore and maintain land, water or wetlands, all for the purposes of preservation and protection. House Bill 717 also permits townships to submit to the voters a real estate tax levy of up to five years to finance such activities.

Shortly after the passage of the legislation a grassroots effort was undertaken in Anderson to convince township voters to approve a ballot initiative to forward the objectives outlined in the legislation. At the November 6, 1990 general election a 9/10 of a mill five-year greenspace levy was approved. Shortly thereafter a Greenspace Advisory Committee of citizens and one township trustee was formed to recommend to the Board of Township Trustees of Anderson Township appropriate parcels for acquisition using monies derived from the passage of the levy. The levy was subsequently renewed by the voters in November, 1995.

Guiding the committee in this process has been the establishment of criteria in the evaluation of parcels considered for acquisition and the value of the parcel to the Township's overall greenspace program. The criteria include visual and natural quality, susceptibility of the parcel to development, the potential to provide a buffer or greenway to existing open space, geographical balance and of course, cost and long-term maintenance. To date over 72 parcels encompassing 686.39 acres have been preserved within the Township.

Granville Township, Ohio

Granville Township is another one of the few townships

in Ohio to have passed Open Space levies for the purpose of raising money to preserve open space. Threatened by increasing annexation pressures from the city of Columbus, township residents have approved two levies to fund acquisitions as well as appropriating general fund money towards this purpose.

The Township Trustees have established committees consisting of both the Village of Granville and Granville Township to collaborate on the recommendation of possible acquisitions. To date, the Township has purchased parcels totaling approximately 536 acres, conservation easements, designed to limit development, have been purchased on an additional 232 acres.

Hinckley Township, Ohio

In 2006, newly elected trustee Ron Garapick followed in the footsteps of Anderson Township and initiated a similar ballot measure in Hinckley. A committee including Garapick and three residents forwarded the initiative to area residents. The 0.9 mill, five year levy as proposed would have raised approximately a quarter of a million dollars annually, opening the door to a wide variety of acquisition options, including grants, easements and land donations. Voters turned down the levy at the November 7, 2006 general election by a vote of 1506 to 659.

Resources: www.tpl.org Local Greenprinting for Growth: Volume III: Securing Conservation Funding.

<http://www.andersontownship.org/>, <http://www.granvilletownship.org/>
ECOSYSTEM MANAGEMENT

Looking beyond the confines of local governments to forge partnerships with other governmental entities, non-profit land trusts, the business community, farmers and ranchers, developers, and volunteers provide an avenue to broaden the scope of individual ecosystem management strategies. This section will offer several examples of Best

Practice in Ecosystem Management.

The Applegate Partnership

The Applegate Partnership was founded in 1992 to provide a community-based approach to working with the ecological and economic issues that affected the members of the Applegate River watershed region. The Applegate River watershed encompasses an area of 500,000 acres in Jackson and Josephine counties in southern Oregon and Siskiyou County in California. Sixty-one percent of the land is publicly owned and thirty-one percent is held in private ownership.

The partnership's mission was formulated to address the ongoing conflict over the management of the region's public forest lands. Environmentalists, timber industry representatives, federal agency land managers ranchers, farmers and community representatives came together to forge a mutual agreement that would address both the ecological and economic issues over which they had been fighting.

The Applegate Partnership's mission statement clearly defines its participants, its ecological and economic mission and its methods for carrying it out:

“The Applegate Partnership is a community-based project involving industry, conservation groups, natural resource agencies and residents cooperating to encourage and facilitate the use of natural resource principles that promote ecosystem health and diversity.

Through community involvement and education, this partnership supports management of all land within the [Applegate] watershed in a manner that sustains natural resources and that will, in turn, contribute to the economic and community well-being within the Applegate Valley.”

The mission statement is an example of why the partnership has continued to build local cooperation and was cited by the Department of the Interior as a model for other forest-based communities. From its inception, the

idea was to provide a setting in which people, who usually fought with one another, could work together.

Several elements unique to the partnership separate itself from many other regional collaborative efforts, including:

- The group meets four times a month to ensure that as many people as possible have an opportunity to participate and share their concerns and ideas.
- There exist no hierarchical structure so all participants have equal status, an important consideration in maintain relationships between people with opposing views.
- The Partnership provides ongoing educational and outreach efforts that include local households and absentee land owners.

Through their shared concern of maintaining a healthy resilient forest ecosystem, dialogue has been fostered offering participants equal opportunities to discuss problems and forward negotiations. a result of the partnership is that former enemies now regard each other as decent people and the ongoing health and sustainability of the watershed region.

Resources: Su Rolle, Measures of Progress for: Case Study of the Applegate Partnership. US Department of Agriculture Forest Service Pacific Northwest Research Station General Technical Report PNW-GTR-565, October 2002. <http://www.fs.fed.us/pnw/pubs/gtr565.pdf>
http://www.reo.gov/ama/applegate_info/applegate_partnership.htm
http://www.sustainable.org/casestudies/SIA_PDFs/SIA_Oregon.pdf

Ohio Balanced Growth Program

This program is a voluntary, incentive-based strategy developed through the efforts of the Rocky River Upper West

Branch Watershed Planning Partnerships. The program approved state-wide in 2009, focuses on regional land-use policies and is structured to align state policies, incentives, funding and other resources to support watershed balance growth planning and implementation. This partnership combines representatives from the conservation, development and agricultural communities as well as individuals from local and regional infrastructure and planning agencies to further the shared priority of protecting and restoring Lake Erie, the Ohio River, and Ohio's watersheds to assure long-term economic competitiveness, ecological health, and quality of life.

The program is provided support from the Ohio Lake Erie Commission. The Lake Erie Commission's role is to preserve and protect Lake Erie's natural resources, protect the ecological quality of its watershed, and promote economic development of Ohio's North Coast and includes representation from the Ohio Environmental Protection Agency, Ohio Department of Agriculture, Ohio Department of Development, Ohio Department of Natural Resources and the Ohio Department of Transportation. Additional local support of the program is provided by county commissioners, county agencies and local communities within the various watersheds.

Integral to the program is the identification and designation of specific areas within the watersheds including: Priority Conservation Areas (PCAs); Priority Development Areas (PDAs); and Priority Agricultural Areas (PAAs). The definition of specific areas provide participating political jurisdictions a guide for implementing land-use policies and best management practices that achieve the goals and objectives identified in the Rocky River Watershed Action plan such as the protection of riparian corridors along the Rocky River as well as a guide for future development.

Key components of the program include:

- State Incentives for Local Governments

- State Program Inventory
- Financial and Technical Special Incentives
- The implementation of recommended model regulations to help promote best local land use practices that minimize impacts of water quality and provide for well planned development that reduces urban sprawl, protects natural resources and encourages development in urban areas.

The Chicago Wilderness Project

Chicago Wilderness is a regional nature preserve encompassing more than 250,000 acres across portion of three states – southeastern Wisconsin, northeastern Illinois and northwestern Indiana. This region is one of the few metropolitan areas remaining that offer a high concentration of globally significant natural communities, including tall-grass prairies, oak woodlands, marshes and bogs.

In the 1990s a collaborative effort to save these remaining natural communities and their inhabitants was formed, area conservation groups created an alliance of more than 175 public and private organizations and formed the Chicago Wilderness consortium. Together these groups work toward protecting, restoring, studying and managing the natural ecosystems of the Chicago region, enriching the quality of life for area residents and contributing to the preservation of global biodiversity. The group considers itself to be a network of partnerships and a facilitator of collaboration. The choice to not define itself as an individual entity reduces competition between Chicago Wilderness and its member organizations.

Membership in the Chicago Wilderness varies greatly and consists of federal, state and local governments; municipalities and park districts; large nongovernmental conservation organizations; small volunteer groups; educational and research organizations; cultural institutions; and more. Recognizing that business corporations play an important role in promoting community vitality and quality of life

membership was expanded in 2002 to include for-profit organizations. To date over 25 for-profit organizations have pledged their support towards the mission of Chicago Wilderness.

Guided by principles realizing that nature does not recognize political or institutional boundaries a collaborative approach toward resource management is protecting thousands of species of native plants and animals living peacefully among the more than nine million people who also call the region home.

Resources: <http://www.chicagowilderness.org>.

COMMUNITY PARTNERSHIPS THAT ENHANCE THE REGION

Sharing the wide-ranging talents of agency staff within a region may provide positive role models for residents in urban environments. The field of public resource management also provides a training ground for youngsters at risk while offering interactive exposure to science education and a broader understanding of the value and shared responsibility of our natural resources.

Minnesota Green Corps

Minnesota Green Corps is a statewide initiative to help preserve and protect Minnesota's environment while training a new generation of environmental professionals. Established in 2009 and coordinated by the Minnesota Pollution Control Agency the program aims to:

- Respond to higher energy costs by local governments
- Assist community members to take eco friendly actions
- Reduce greenhouse gases and other air pollutants
- Transition to a green economy
- Train new environmental professionals

This environmentally focused offshoot of the AmeriCorps program provides opportunities for recent college graduates to improve Minnesota's environment, while gaining experience and learning valuable job skills. Members are working on projects in areas such as the Three Rivers Park District located in the western suburbs of the Minneapolis/St. Paul Metro area of Minnesota is a 2009-2010 host site for the Minnesota GreenCorp program.

This 27,000 acre park is hosting a Local Government Energy Conservation project through the GreenCorps program. Project participants will establish baselines for greenhouse gas emission and water consumption for district facilities and fleets, and will identify and recommend areas for energy and water conservation as well as fuel use. This information will then be shared with like entities.

Resources: <http://www.threeriversparks.org>
<http://www.nextstep.state.mn.us/download/mngreen-corps-projects.pdf>

Philadelphia's Horticultural Society (PHS) – Philadelphia Green

This program is referred to as "The nation's largest urban greening program". PHS's Green City Strategy promotes a comprehensive approach to revitalizing and maintaining the city's green infrastructure as a key element in urban renewal. Philadelphia Green puts this approach into action by collaborating with local residents, community groups, government, and businesses and includes the following goals:

- Develop and preserve community green space
- Revitalize parks and public spaces
- Reclaim abandoned land
- Support open space planning
- Build community capacity

From the nurturing of community gardens and tree canopies within the city to Green Initiatives including storm water management education and green roofs. Philadelphia Green is an all-encompassing integration of resource management and community development within the urban framework. Additional contributions include providing ongoing maintenance support and programming to works with existing park facilities and local governments to provide connect city residents with the natural world, vacant lot revitalization and economic initiatives.

Philadelphia Green continues to expand its strength and capacity with new partnerships and community-based initiatives, helping lead the city toward a "sustainable" future by partnering with the city of Philadelphia on a broad-based planning process known as GreenPlan Philadelphia. This collaboration was created in 2006 to research and develop open space planning issues and implement the recommendations into the organizational structure of the city's departments.

Resources: <http://www.pennsylvaniahorticulturalsociety.org/phlgreen/index.html>
<http://philadelphiagreen.wordpress.com/>

<http://www.greenplanphiladelphia.com/>

CONCLUSION

As the evidence listed above presents, the concept of building supportive networks of people, ideas and institutions has been proven to effectively enhance resource management. While the importance of the leadership that provides a framework from which all success radiates cannot be underestimated, nor can the importance of successful collaborations on a regional scale that involves broad participation.

METHODOLOGY – DATA AND MONITORING

Demographic Data Sources

2000 US Census Block Group
2009 Estimate and 2014 Projection Spatial Insights, Inc

Buffer Maps and Data

The source of the data for this component was provided by Spatial Insights, Inc., a firm that offers estimated and projected census block group data for population and housing. The data provided was for years 2009, 2014, and 2019. To gather data related to predetermined distances from the Cleveland Metroparks, the first step was to identify the relevant buffers or distances. In order to support the economic valuation process discussed above, distances of 0-200 feet, 201-400 feet, 401-600 feet, 601-800 feet, 801-1000 feet, 1001-1200 feet, and 1201-1500 feet were chosen.

It was further determined that the following data was required for a comprehensive analysis of the surrounding communities: total housing units (2009); units occupied (2009); units vacant (2009); total population (2009); population age 0-9; population age 10-19; population age 20-24; population age 25-39; population age 40-64; population age 65+; total family households; average household size; total population male; total population female; total population white; total population African-American; total population Asian; total population Hispanic; population with education less than high school; population with a high school diploma; total population with an associates degree; total population with a bachelor's degree; total population with graduate or professional degree; total households; average family size; households with no vehicles; households with one vehicle; households with two or more vehicles; population in residence for ten years; median household income; median family income; median discretionary income; average home equity; average home mortgage; and

average household net income.

The buffer distances and data were then entered into ArcGIS where they were joined, producing a layer with relevant census block group data. A Cleveland Metroparks layer was proved by the Cleveland Metroparks. A map of the seven-county region of northeast Ohio, including the Metroparks layer was produced, and the seven buffer distances and the corresponding block group data were added to the map. The data was then exported in Excel format, where the data could be manipulated and charted for a regional overview.

Before charting the data, a calculation was run to establish an average home value, which was not provided by the Spatial Insights, Inc. However, average home equity and average mortgage values were provided by Spatial Insights. Therefore, these two values were added together to reach an average home value. Graphs were then produced for 2009 income relative to distance from the Metroparks, education level in 2009 relative to distance, and average 2009 home value relative to distance.

Land Use Data

Land use data was created using four sources: The Cuyahoga County Office of the Auditor (2009 tax land use codes); Cuyahoga County Government (2008 aerial photography), Bing.com (circa 2007 oblique photography); and field research.

Foreclosure Data

The foreclosure data primarily used in the illustrative examples were gathered from transfer records of Sheriff sales within Cuyahoga County (source: Cuyahoga County Auditor). This data source is more desirable than foreclosure filings because Sheriff sales is available back several years with a higher degree of reliability. Sheriff sales include both tax and mortgage foreclosure procedures. The vast majority of tax foreclosures occurred within the City

of Cleveland. Of all the foreclosures in Cleveland, less than ten percent were tax foreclosures.

Additional sources include:

http://planning.city.cleveland.oh.us/cwp/pop_trend.php
<http://www.realtytrac.com>
<http://hdl.handle.net/10161/322>
http://www.obm.cuyahogacounty.us/pdf_obm/en-US/MoodysRatingRpt.pdf

GIS Library

A library of Geographic Information Services (GIS) layers (files) were collected to undertake analytical efforts and produce figures for illustrative purposes. Sources include:

Cleveland Metroparks
Hydrology Layers
Watershed Layers
Forest Cover
Impervious Surfaces
Cleveland Metropark Facilities
Cleveland Metropark Boundaries
Cuyahoga County Auditor
Parcel Layer
County Streets
County Rail Lines
Municipal Boundaries
Medina County Auditor
Parcel Layer
County Streets
County Rail Lines
Municipal Boundaries

The following layers were created by the participants of the project:

All Forest Hill Layers
Forest Cover Polygon
Conflated US Census TIGER Census Block Layer
Sensitive Areas within Cleveland Metroparks
Social Context Boundaries
Cleveland Metropark Planning Region Polygon

METHODOLOGY – USER SURVEY

The purpose of the survey was to obtain data regarding the demographic composition of Cleveland Metroparks visitors; satisfaction of park resources, facilities and programming; and overall value of the Metroparks mission of conservation, education and recreation.

The data gathered in the research process will aid in determining future planning objectives of the Cleveland Metroparks. The survey process consisted of both a face-to-face user survey and a web-based survey. Teams were assembled to administer the survey within three Metroparks reservations: Garfield; Hinckley and Rocky River. The Cleveland Metroparks face-to-face survey was conducted over the week of March 24th to March 31st, 2010. All observations that were recorded as part of the process were carried out on one or more days during this time period. Each student was assigned a location within the primary research areas and partnered with a classmate to administer the survey face-to-face with Cleveland Metroparks users. Each student was provided a badge clearly identifying them as a Cleveland State University student. In order to assure a broad sample of users within the three Metroparks reservations, surveys were conducted in two-hour shifts that encompassed both weekday and weekend use, as well as morning, afternoon and evening times. Subjects were surveyed individually, requiring one survey sheet each.

The face to face survey included 29 questions regarding the Cleveland Metroparks and nine regarding research subject demographics. Several questions were open-ended. This survey generated 213 responses.

A condensed (ten question) survey was posted online between the dates of April 15th and April 26th, 2010. The survey was distributed via social media and consisted of student contact lists and Facebook accounts. The survey was also available on the Hinckley Township webpage. This survey generated 363 responses.



CLEVELAND METROPARKS USER SURVEY

CSU Cleveland Metroparks User Survey

As a member of the Cleveland Metroparks community, we would like to offer the opportunity to provide us with valuable input that will help with potential recommendations for the operations of the park.

Your participation in the survey is anonymous; we will not ask for any identifying information. Your participation is completely voluntary and you may discontinue participation at any time.

Please verify that you are 18 years or over and are willing to answer a few questions about your use of the Cleveland Metroparks?

1. YES NO

2. What other Cleveland Metroparks reservations do you use? (Check)

Table with 10 columns: Bedford, Big Creek, Brecksville, Bradley Woods, Brookside, CM Zoo, Euclid Creek, Garfield Park, Hinckley, Huntington, Mill Stream, North Chagrin, Ohio & Erie Canal, Rocky River, South Chagrin, Washington, West Creek, NONE

3. What is your main reason for using a Cleveland Metroparks reservation(s)?

Close to home/work, Activity, Relaxation/solitude, Other

4. How often do you use the reservation(s)?

Daily, Once a Week, Once a Month, Once a Year, Never/Almost Never

5. What are your sources for Cleveland Metroparks information?

Newspaper, Social Media, Word of Mouth, Radio, In-Park Displays, Television, Emerald Necklace Magazine, Other

6. Are there any recreational, educational or open space opportunities/facilities you would like to see in the reservation(s)?

7. The Cleveland Metroparks has three main priorities when conducting planning, they are Conservation, Education and Recreation. Please rank your personal order of priority?

Conservation, Education, Recreation

8. How important are the Cleveland Metroparks to your personal well-being?

Not Important, Slightly Important, Neutral/Not Sure, Important, Very

9. In what activities do you participate at other park facilities? (Select up to three)

Education Programs, Dog Walking, Just Relaxing, Hiking, Golfing, Frisbee, Walking, Sledding, Bird Watching, Running, Fishing, Boating, Biking, Other

10. Home ZIP code:

ZIP code field, NR

