

Black Metropolis National Heritage Area Feasibility Study

Chapter 4: Affected Environment

Draft

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The National Environmental Policy Act (NEPA) mandates that federal agencies analyze the impacts of major federal actions that have a significant effect on the environment. The National Park Service Director's Order 12 outlines options for meeting the requirements of NEPA depending on the severity of the environmental impacts of the alternatives.

This study is being undertaken by a local community-based coalition. The coalition is not proposing any physical changes to the study area. Therefore, it has been determined that a "categorical exclusion for which no formal documentation is necessary" is the most appropriate NEPA option for the study area. The categorical exclusion states that:

Legislative proposals of an administrative or technical nature — for example, changes in authorizations for appropriations; minor boundary changes and land transactions; proposals that would have primarily economic, social, individual, or institutional effects; and comments and reports on referrals of legislative proposals. (DO-12 Handbook, National Park Service 2005)

The study matches this exclusion because, at this time, no designation has been made. If Congress decides to designate the Black Metropolis as a NHA, then a comprehensive management plan would need to be developed for the area. Whether an environmental assessment will ultimately be required will depend on the types of projects, programs, and other actions proposed in the management plan. As of today, this study primarily focuses on economic and social activities for the proposed heritage area.

While there are not presently any proposals to change the physiology of the area, it is important to understand the local environment. This chapter was developed in partnership with IDNR, to better understand the physical environmental (including land, air, and water), as well as the local ecosystem (including vegetation, animals, and protected lands), and the opportunities there are to collaborate on protection and increased stewardship.

Land form and Physiography

The study area is located in the urban environment, within the city of Chicago. Located at an elevation of 600 feet above sea level, the area is generally flat (USGS 2012). The study area is also located in the Chicago Lake Plain. The Chicago Lake Plain is an extensive plain that was either completely or partially submerged in the geologic past. This submergence occurred during a series of phases of high water levels of ancestral Lake Michigan, and its predecessor glacial Lake Chicago.¹

¹ Illinois Department of Natural Resources (IDNR), 2011. Illinois Coastal Management Program. <http://www.dnr.illinois.gov/cmp/Pages/documentation.aspx>.



Water Resources

Rivers and Water Bodies

There are no rivers within the study area. The Chicago River is located 0.3 miles to the northwest corner of the study area. Since there are no rivers or streams within the study area, there are no impaired waterways.

The study area includes 3.82 miles of Lake Michigan shoreline that has been artificially hardened with step stone and rubblemound revetments. There are two beaches (31st Street beach and Oakwood Beach) and two harbors (Burnham Harbor and 31st Street Harbor) located in the study area.

There are six small ponds in the study area, covering a total of 43.27 acres. Two ponds are located in Washington Park while the other four ponds are located in Oak Woods Cemetery. Washington Park contains an irregularly-shaped lagoon and a smaller casting pond just north of the lagoon, comprising 32.76 acres of aquatic habitat. These water bodies are man-made features, with aquatic and wetland plants present along some of the shoreline.² Ponds at Oak Woods Cemetery contain large amount of algae vegetation and are lined by turf grass or narrow band of shoreline herbaceous vegetation. The Oak Wood Cemetery ponds comprise 10.51 acres of aquatic habitat.³ The ponds at Washington Park and Oakwood Cemetery are not connected to other waterways.

Water Quality

Along the shoreline, the 31st Street Beach has been identified by Illinois Environmental Protection Agency (IEPA) to have non-attainment status for primary contact recreation.⁴ In 2010 and 2011, closures and advisories at the beach were attributed to publicly owned treatment works, combined sewer overflows, and unknown sources.⁵

² City of Chicago 2005. Chicago Habitat Directory, Washington Park. See http://www.cityofchicago.org/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/Washington_Park_Lagoon_and_Casting_Pond.pdf.

³ City of Chicago 2005. Chicago Habitat Directory, Oak Woods Cemetery. See http://www.cityofchicago.org/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/Oak_Woods_Cemetery_Ponds.pdf.

⁴ The IEPA uses the number and duration of beach closures (i.e., swim bans) to assess whether the beaches are supporting use designations for primary contact recreation. Within Illinois, Lake Michigan Beaches are found to be “not supporting” of primary contact use when, on average over a three year period, (1) there is one bathing area closure (i.e., swim advisory where no swimming is advised or swim ban) per year of less than 1 week’s duration or (2) there is one bathing area closure per year of greater than 1 week’s duration or more than one bathing area closure per year. Based on IEPA’s methodology, 31st Street Beach was not supporting primary contact use (IEPA 2013).

⁵ Illinois Environmental Protection Agency (IEPA) 2013. Total Maximum Daily Load. Shoreline Segments in Chicago, Cook County, Illinois. See <http://illinoisgreenfleets.org/water/tmdl/report/lake-michigan-beaches/final-draft-chicago.pdf>.



According to the U.S. Environmental Protection Agency Toxic Release Inventory database, there are no known industrial discharges into the area's water. There are two permitted National Pollution Discharge Elimination System sources in the study area, both of which are at the northern end and discharge into Lake Michigan. The Metropolitan Pier and Exposition Authority discharges non-contact cooling water and monitors for flow and pH only, while McCormick Place West Hall discharges treated groundwater and monitors for flow, solids, pH, and offensive conditions.⁶ The other expected sources of water pollution are typical urban nonpoint sources, roads, lawns, and harbors.

Stormwater in the majority of the study area is collected in the City's stormwater conveyance system and discharged through the treatment plant into waterways flowing away from Lake Michigan. Parts of Burnham Park, located along the shoreline, as well as the water from roadways and walkways in the Park, drain to the lake.⁷

The Illinois Lake Michigan Implementation Plan (ILMIP) is a collaborative effort of the Illinois Department of Natural Resources (IDNR), Alliance for the Great Lakes, Chicago Wilderness, and the Biodiversity Project to create an agenda for the restoration and protection of Lake Michigan coastal resources in Illinois. The ILMIP informs funding decisions for coastal initiatives, including federal (e.g. Great Lakes Restoration Initiative), state (e.g. Illinois Coastal Zone Management Program), and local environmental projects within the Illinois Lake Michigan watershed.

Air Quality

The IEPA is the state agency responsible for ensuring clean air in Illinois. IEPA tests air quality, and develops and implements policies and plans to reduce air pollution and improve air quality. Chicago air quality has improved significantly over the past decade and continued improvement is expected in the future. The City meets air quality standards for most pollutants regulated under the Clean Air Act; however, ozone and particulate matter (specifically lead) continue to be a health and environmental concern in the study area. In 2011, the IEPA recommended that parts of Chicago be designated as non-attainment for the National Ambient Air Quality Standards (NAAQS) based on monitored air quality data collected in Cook County between 2008 and 2010.

Chicago is classified as 'Marginal' under the 8-hour 2008 national standards for Ozone and as 'nonattainment' for both PM-2.5 and Lead. According to the 2011 IEPA Air Quality Report, one of the four state monitoring stations in the City of Chicago, located at Perez Elementary School (1241 W. 19th Street, AQS ID 17310110), is failing to meet the NAAQS lead standards. Perez Elementary is located in close proximity to the study area. This can be directly attributed to the

⁶ Ibid.

⁷ Ibid.



location of industrial facilities like H. Kramer & Company, which primarily manufactures brass and copper products. In 2012, EPA identified six leading stationary sources of lead emissions in the City based on 2008 national emissions inventory that emit 0.1 tpy or greater of lead. The total emissions included emissions from airport facilities that use leaded aviation fuel.

In order to meet NAAQS, Illinois, Cook County, and the City of Chicago are actively pursuing a variety of approaches including; clean school bus programs, climate change initiatives, strict emission standards, promotion of public transportation, and clean car regulations. Chicago has developed a number of plans including the Chicago Climate Action Plan and the 2015 Sustainable Chicago Action Agenda to improve air quality, among other sustainability-related goals.

Within the study area, air quality concerns are dominated by local sources of pollution including concerns about emissions from the adjacent Dan Ryan Expressway and particulates from the demolition of high-rise public housing buildings. The lack of adequate information and data on such emissions limits the community's ability to advocate for improvements. As a result, the Bronzeville community created a coalition called the Bronzeville Air Quality and Public Health Partnership to address concerns of air pollution and negative respiratory health impacts through a combination of community health education and community-driven research on air pollution and related health effects. The partnership is made of environmental researchers, residents, activists, public agencies, medical professionals, and community leaders.

Ecosystems

Watershed

The study area is primarily located in the Chicago River watershed (Hydrologic Unit Code [HUC] 07120003), South Branch subwatershed (HUC 071200030107). Historically, water from the watershed flowed into Lake Michigan. Construction of the Chicago Sanitary and Ship Canal in 1900 linked the South Branch of the Chicago River to the Des Plaines River and allowed for gravity-driven reversed flow away from Lake Michigan.⁸

A small section of the study area located along Lake Michigan's shoreline is in the Pike-Root watershed (HUC 04040002), Oak Woods Cemetery-Frontal Lake Michigan subwatershed (HUC 040400020503), with water in the watershed flowing towards Lake Michigan. There is no floodplain within the study area.

Unique Resources

The study area is located along the Mississippi River flyway system. Each year, more than 250 species of migratory birds use this flyway to travel between wintering grounds in the south and

⁸ Ibid.



breeding grounds in the north. In the study area, birds travel along the shoreline of Lake Michigan and use the open spaces as stopover points to rest and feed (City of Chicago 2006). Based on records maintained by the Audubon Society and the Cornell Lab of Ornithology, in 2012 there were 137 species of birds observed in Burnham Park and Washington Park, with most species observed during spring and fall migration season.⁹

A small population of gray foxes (*Urocyon cinereoargenteus*) has been documented in Oak Woods Cemetery (Chicago Wilderness 2005; Willingham 2008). The fox resembles a small dog, weighing between 5 and 14 pounds, and is the only North American canine that climbs trees (IDNR 2006). The animals are most common in west-central and southern Illinois and are rare throughout the Chicago region (Willingham 2008). Washington Park ponds are used by wood ducks (*Aix sponsa*), a particularly colorful species of duck that was almost extinct in the early 1900's but that has since recovered (City of Chicago 2005a).

Morgan Shoal is a shallow limestone formation in Lake Michigan that extends along the shoreline between 45th Street and 51st Street. Only partially located in the study area (study area extends to 47th Street), the formation includes a rich aquatic system and a shipwreck off of 49th Street.

Vegetation and Endangered Plant Species

Endangered Species

Illinois Department of Natural Resources (IDNR) database was checked for presence of protected species in May 2013. There are no federally or state listed endangered or threatened plant species in the study area.

Native or Common Plant Species

The most common woody species growing along Chicago's street and boulevards include white ash (*Fraxinus Americana*), mulberry (*Morus* spp), green ash (*Fraxinus pennsylvanica*), tree of heaven (*Ailanthus altissima*), and silver maple (*Acer saccharinum*). In Chicago parks, the most common woody species include green ash, European buckthorn (*Rhamnus cathartica*), hawthorn (*Crataegus* spp), sugar maple (*Acer saccharum*), and buckthorn (*Rhamnus* spp) (USDA 2010). Tree species data specific to the study area was not obtained but the study area is expected to have a similar composition of woody vegetation as the rest of the city. In addition to the above-mentioned common tree species, large white and burr oaks are found in the Oak Woods Cemetery (City of Chicago 2005b).

⁹ eBird 2013. Audubon and Cornell Lab of Ornithology. Custom report for Burnham Park and Washington Park, Chicago. Date range: Jan 1, 2012 – Dec 31, 2012. See <http://ebird.org/ebird/summaryLocation.form>.



Invasive Species

Invasive plant species can dominate, disrupt and threaten native plant systems, thereby causing economic and environmental harm. Most common invasive plants species occurring in the study area include buckthorn, honeysuckle (*Lonicera* spp), common reed (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), and garlic mustard (*Alliaria petiolata*). Chicago Park District is actively managing these species within the parks. In addition to CPD, the Washington Park Conservancy group organizes stewardship activities in the park, including workdays to increase native plantings.

Wildlife and Endangered Animal Species

Endangered Species

Illinois Department of Natural Resources (IDNR) database was checked for presence of protected species in May 2013. There are no federally or state listed endangered or threatened wildlife species in the study area.

Native or Common Wildlife Species

The area contains resident mammal species typically associated with an urban environment: rodents (mice and rats), gray squirrel (*Sciurus carolinensis*), rabbit, raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*), and coyote (*Canis latrans*). Among songbirds nesting in the City, the common ones include northern cardinal (*Cardinalis cardinalis*), house wren (*Troglodytes aedon*), and mourning doves (*Zenaida macroura*) (Pollock, nd). Canada geese (*Branta Canadensis*) are commonly seen waterfowl. During the migratory season, the area supports large numbers of migrating passerine and waterfowl birds. Washington Park lagoon is stocked with fish by Illinois Department of Natural Resources as part of its Urban Fishing Program. Fish species in the lagoon (stocked and non-stocked) include largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis machrochirus*), sunfish (*Lepomis* spp), crappie (*Pomoxis* spp), carp (*Cyprinus carpio*), and catfish (*Ictalurus punctatus*).

Connectivity for Wildlife

The urban environment fragments habitat and provides many obstacles for wildlife moving through the area. Burnham Park and Lake Michigan provide habitat connectivity along the lakefront. Washington Park attracts and provides habitat for migrating birds due to its large green space in the urban environment. Washington Park habitat is further significant since a wide green boulevard, Midway Plaisance, connects the southeast side of Washington Park to Jackson Park and the lakeshore, thus providing opportunity for movement of terrestrial wildlife. There are no aquatic connections to Oakwood Cemetery ponds or Washington Park lagoons.

Invasive Species



Asian carp (*Hypophthalmichthys* spp) and zebra and quagga mussels (*Dreissena* spp) are a cause for concern throughout the Great Lakes, including the shoreline within the study area. Illinois Department of Natural Resources has a program in place working to keep Asian carp from reaching Lake Michigan through the Ship and Sanitary Canal. Emerald ash borer (*Agrilus planipennis*) is one invasive insect that threatens the ash tree population in Chicago. The ash borer was discovered in Chicago in 2008. Starting in 2013, City of Chicago is planning to treat parkway ash trees with an insecticide in an effort to save ash trees in the city (Levy 2013). As noted above, ashes have been commonly planted as both street trees and in Chicago parks.

Protected Lands

Open Space and Green Space

There are approximately 992 acres of green space in the study area. Chicago Park District (CPD) owns 807 acres in the study area.

Washington Park, the largest green space within the study area, consists of 367 acres. The original plans for the Park were developed in 1871. The Park converted open prairie-wetland space into a meadow-like open pasture, accented by connecting lagoons. Today, the open pasture in the north section of the Park has been converted to baseball diamonds and open fields, with trees along the periphery. The southern section contains natural areas comprised of marsh, pond, woodland, grassland, and savannah habitat.

The second largest park within the study area is Burnham Park, with 327 acres inside the study area boundaries. Burnham Park extends along the lakefront beyond the study area for a total of 609 acres. The Park contains McCormick Bird Sanctuary, located at 2400 S. Lake Shore Drive, and Burnham Nature Sanctuary, located at 4700 S. Lake Shore Drive. These two natural areas within Burnham Park have been restored to provide important native habitat to wildlife. McCormick Bird Sanctuary was built in 2003 and this 6-acre plot was designed to attract birds and includes a mix of native prairie, shrub, and woodland plants. The Burnham Nature Sanctuary is a 10-acre site that contains prairie, grassland, oak savanna, and a butterfly garden. Restoration at the site began in 1998 and management is ongoing.

Burnham Centennial Prairie is an ongoing restoration effort within Burnham Park. Once complete, the prairie will span 56 acres, extending from the McCormick Bird Sanctuary to Burnham Nature Sanctuary. As of June 2013, restoration has been completed from Bird Sanctuary to 35th Street.

Additional ongoing restoration efforts within Burnham Park include establishment of Burnham Wildlife Corridor, a 40-acre restoration of prairie and woodland habitat between the railroad tracks and Lake Shore Drive. The Burnham Wildlife Corridor will stretch from 31st Street to 47th Street and will be located entirely within the study area. Planned restoration includes removal



of existing woody species and planting of 125,000 oak trees in fall 2013. Oaks and fruit-bearing shrubs will provide food and resting spots to migrating birds, and some species expected to use the habitat include woodcocks, warblers, hawks, and owls. It is estimated that numbers of birds landing along the corridor could be in the thousands (Rotenberk 2013).

Trails

There are multiple walking and multi-use trails located within Washington Park. Chicago Lakefront Trail is located along the shore in the study area, in Burnham Park. The 18-mile-long Lakefront Trail extends from Hollywood Avenue several miles north of the study area, to 71st Street on the south, with approximately four miles of the Lakefront Trail are located in the study area.

Entities Engaged in Protection of Resources

The Chicago Park District (CPD) is the major landowner of open space in the study area. CPD actively engages in protection, preservation, and mitigation efforts on park lands. In the study area, current CPD efforts include installation of Burnham Centennial Prairie and planned restoration as part of Burnham Wildlife Corridor. Volunteer groups, such as the Washington Park Conservancy group, have been assisting the CPD in conservation and stewardship efforts.

The study area is also part of Millennium Reserve: Calumet Core Initiative; with a focus on improving the ecology, community, and economy of the region. The Millennium Reserve's goal is to catalyze innovative partnerships and action in the Calumet region. Governor Pat Quinn and the Illinois Department of Natural Resources launched Millennium Reserve in late 2011. It is part of President Obama's America's Great Outdoors initiative, which aims to align federal programs with locally-developed conservation and recreation goals.

