Appendix V
Biological Resources Technical Memorandum

RED AHEAD
Moving Ahead to a Better Red

Red Line Extension

Chicago Red Line Extension Project

Biological Resources
Technical Memorandum

May 6, 2013
Updated July 27, 2015

Prepared for:
Chicago Transit Authority
567 W. Lake Street
Chicago, IL 60661

Prepared by:
CWC Transit Group
125 S. Wacker Drive
Suite 600
Chicago, IL 60606

cta

Table of Contents

Section 1 Summary 1-1

Section 2 Project Description 2-1

Section 3 Methods for Impact Evaluation 3-1

3.1 Regulatory Framework 3-1
3.2 Impact Analysis Thresholds 3-5
3.3 Area of Potential Impact 3-6
3.4 Methods 3-6

Section 4 Affected Environment 4-1

4.1 Vegetation and Wildlife Habitat 4-1
4.2 Threatened and Endangered Species 4-10

Section 5 Impacts and Mitigations 5-1

5.1 No Build Alternative 5-1
5.2 Bus Rapid Transit Alternative 5-1
5.3 Union Pacific Railroad Rail Alternative - Right-of-Way Option 5-3
5.4 Union Pacific Railroad Rail Alternative - East Option 5-6
5.5 Union Pacific Railroad Rail Alternative - West Option 5-6
5.6 Halsted Rail Alternative 5-7

Section 6 Impacts Remaining After Mitigation 6-1

6.1 No Build Alternative 6-1
6.2 Bus Rapid Transit Alternative 6-1
6.3 Union Pacific Railroad Rail Alternative - Right-of-Way Option 6-1
6.4 Union Pacific Railroad Rail Alternative - East Option 6-1
6.5 Union Pacific Railroad Rail Alternative - West Option 6-1
6.6 Halsted Rail Alternative 6-1

Section 7 References Cited 7-1

Appendices

Appendix A: EcoCAT Report

Appendix B: Monk Parakeet Photographs

Appendix C: 2014-2015 Red Line Extension Project Update

Figures

Figure 2-1: Red Line Extension Project Alternatives 2-2

Figure 4-1: Nature Areas Identified in the *Chicago Nature & Wildlife Plan* within the Areas of Potential Impact 4-3

Figure 4-2: Project Area including Segments 4-8

Tables

Table 4-1: Potentially Affected Vegetation - Bus Rapid Transit Alternative 4-6

Table 4-2: Potentially Affected Vegetation - Union Pacific Railroad Rail Alternative (acres) 4-6

Table 4-3: Potentially Affected Vegetation - Halsted Rail Alternative 4-7

Table 4-4: Listed Species in Cook County 4-11

Abbreviations

API	area of potential impact
BGEPA	Bald and Golden Eagle Protection Act
BRT	Bus Rapid Transit
CN	Canadian National
CFR	Code of Federal Regulations
CTA	Chicago Transit Authority
EcoCAT	Illinois Ecological Compliance Assessment Tool
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FTA	Federal Transit Administration
IDNR	Illinois Department of Natural Resources
IESA	Illinois Endangered Species Act
ILCS	Illinois Compiled Statutes
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NWI	National Wetlands Inventory
RLE	Red Line Extension
ROW	right-of-way
UPRR	Union Pacific Railroad
USC	United States Code
USFWS	U.S. Fish and Wildlife Service

Section 1
Summary

This technical memorandum analyzes the potential impacts of the Red Line Extension (RLE) Project on biological resources, including threatened and endangered species and their habitats, vegetation, and other wildlife habitats.

The purpose of the vegetation and wildlife habitat investigation is to describe the existing biological resources (plants, animals, and fish) in the RLE Project vicinity and to evaluate potential impacts on vegetation and wildlife habitats. The area of potential impact (API) for the biological resources evaluation included an area ¼ mile on either side of the alternative centerlines; the API is different for each alternative and each alternative option. Vegetation that provides wildlife habitat occurs in portions of the API around each proposed alternative alignment, stations, and maintenance yards. Local regulations protect some trees and the investigation evaluated the potential impacts on trees as well as on wildlife habitats.

The purpose of the threatened and endangered species investigation is to describe threatened and endangered species that may occur in the project area and the existing habitat conditions including any designated critical habitats. The analysis evaluated potential impacts on species and the habitats of species listed as threatened or endangered by either the federal government or the State of Illinois. Threatened and endangered species or their habitats are found in some portions of the API around each proposed alternative alignment and around stations and maintenance yards. The species most likely to be present is the peregrine falcon and it may be found throughout all of the alternatives' APIs.

The Bus Rapid Transit (BRT) Alternative, Union Pacific Railroad (UPRR) Rail Alternative, and Halsted Rail Alternative each have the potential to require the removal of trees within the API. Most of the trees potentially affected under the BRT Alternative occur at the park & ride facility locations; trees along the UPRR Rail Alternative alignment occur in a narrow band immediately adjacent to the proposed rail line, in the vicinity of the proposed 120th Street yard and shop, and at properties along the corridor. The trees along the Halsted Rail Alternative alignment occur primarily in the median and the sidewalks of Halsted Street. These narrow bands of trees have a lower value to wildlife than blocks of habitat and thus reduce the potential for street tree removal to affect wildlife. Tree removal in any part of the API might affect birds protected under the Migratory Bird Treaty Act (MBTA) and, depending on what part of the API the trees are in, tree removal might also be regulated by local ordinances.

Tree removal has the potential to adversely affect vegetation and wildlife; however, with implementation of mitigation measures, potential impacts on vegetation and wildlife would be less than adverse. Operation of the Red Line following construction of any of the alternatives would have no measurable impact on vegetation and wildlife habitat.

There is a combined total of 114 federal- and state-listed species that potentially occur in Cook County. Listed species with a potential to occur within the API include one bird species (peregrine falcon) and two plant species (hairy white violet and spotted coral-root orchid). There are no known nesting pairs of peregrine falcons within the API, and none of the alternatives would adversely affect foraging habitat. A field visit in August 2012 confirmed no potential habitat for the two plant species.

The conclusion of this investigation is that none of the alternatives would have adverse impacts on listed animal and plant species and no mitigation measures for listed species would be required. Operation of the Red Line following construction of any of the alternatives would have no measurable impacts on listed species.

Development of the BRT Alternative, UPRR Rail Alternative, or Halsted Rail Alternative in combination with related renovation, new construction, and transportation projects identified in the vicinity of the proposed project would not contribute to substantial cumulative impacts on listed species.

The remainder of this memorandum discusses the methods used in the evaluation (Section 3), the affected environment (Section 4), potential impacts and mitigation measures (Section 5), and impacts (none anticipated) that may remain after mitigation (Section 6).

Updated July 27, 2015

In August 2014, based on the technical analysis and public input until then, CTA announced the NEPA Preferred Alternative—the UPRR Rail Alternative. CTA is considering two alignment (route) options of this alternative: the East Option and the West Option. At this time, CTA is also considering only the South Station Option of the 130th Street Station. In late 2014 and early 2015, CTA conducted additional engineering on the East and West Options to refine the East and West Option alignments. Appendix C of this technical memorandum summarizes the refined alignments and any additional or different impacts that would result. The information in Appendix C supersedes information presented in other chapters of this technical memorandum.

Section 2
Project Description

The Chicago Transit Authority (CTA) is proposing to extend the Red Line from the existing 95th Street Terminal to the vicinity of 130th Street, subject to the availability of funding. The proposed RLE would include four stations. Each station would include bus transfer and parking facilities. This project is one part of the Red Ahead Program to extend and enhance the entire Red Line. The CTA is also planning 95th Street Terminal improvements that are anticipated to be completed prior to the proposed RLE construction.

The project area is 11 miles south of the Chicago central business district (commonly referred to as the Loop) and encompasses approximately 20 square miles. The boundaries of the project area are 95th Street on the north, Ashland Avenue on the west, Stony Island Avenue on the east, and the Calumet-Sag Channel/Little Calumet River and 134th Street on the south. The I-57 Expressway and I-94 Bishop Ford Freeway cross the western and eastern edges of the project area, respectively. Lake Calumet is in the eastern portion of the project area. The project area encompasses parts of nine community areas in the City of Chicago and the eastern section of the Village of Calumet Park. Chicago community areas include Beverly, Washington Heights, Roseland, Morgan Park, Pullman, West Pullman, Riverdale, Hegewisch, and South Deering. The project area comprises residential (primarily single family), industrial (both existing and vacant), transportation (including freight), and commercial development.

The Draft Environmental Impact Statement (EIS) focuses on the following alternatives (shown in Figure 2-1), which emerged from the Alternatives Analysis and the National Environmental Policy Act (NEPA) scoping process:

- No Build Alternative
- BRT Alternative
- UPRR Rail Alternative
  - Right-of-Way (ROW) Option
  - East Option
  - West Option
- Halsted Rail Alternative

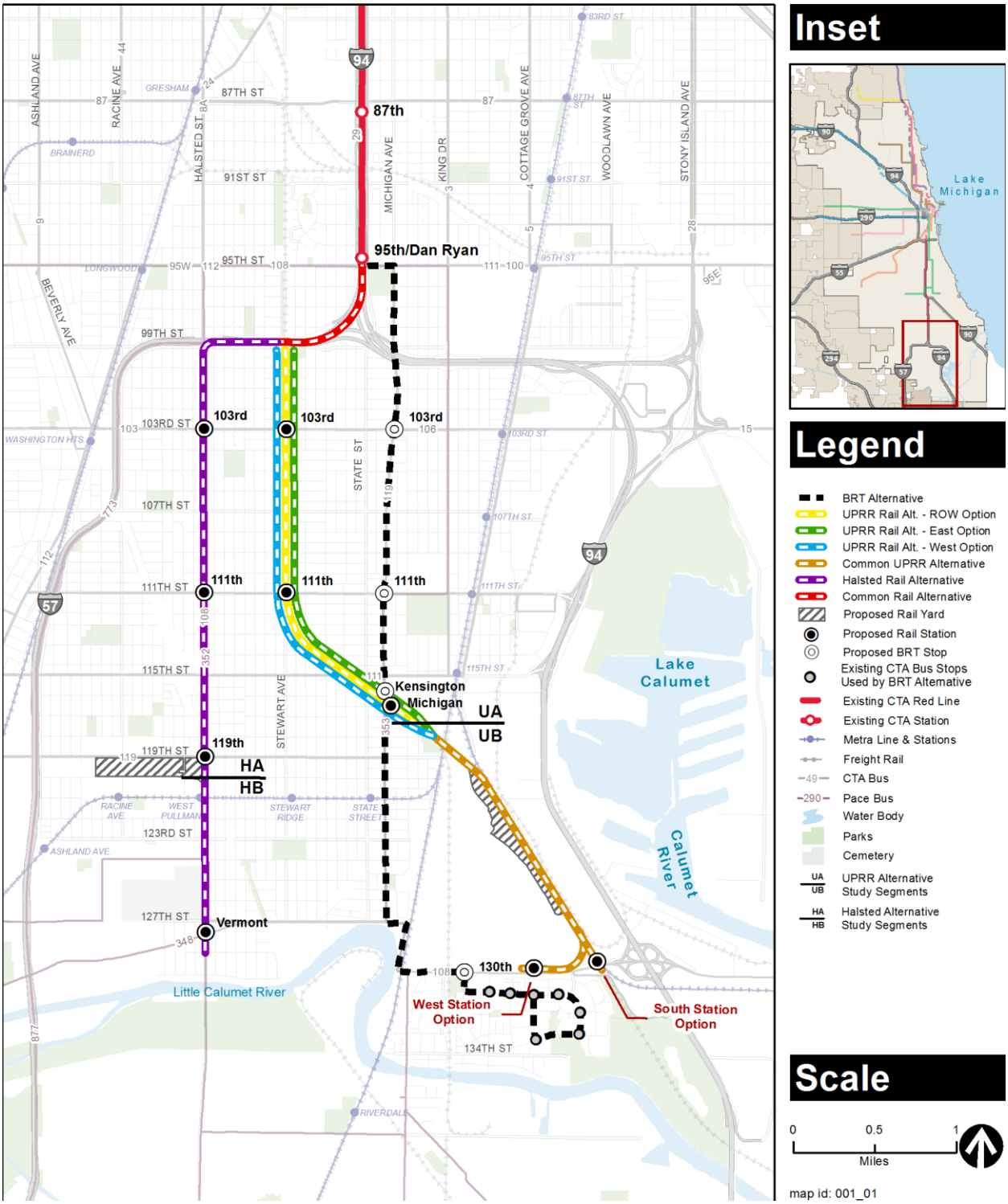


Figure 2-1: Red Line Extension Project Alternatives

The No Build Alternative is a required alternative as part of the NEPA environmental analysis and is used for comparison purposes to assess the relative benefits and impacts of extending the Red Line. The No Build Alternative is carried into the Draft EIS phase of the project development regardless of its performance versus the build alternatives under consideration. No new infrastructure would be constructed as part of the No Build Alternative other than committed transportation improvements that are already in the Chicago Metropolitan Agency for Planning Fiscal Year 2010–2015 Transportation Improvement Program and the improvements to 95th Street Terminal. The Transportation Improvement Program projects within the project area consist of four bridge reconstructions, several road improvement projects including resurfacing and coordination of signal timing on 95th Street, work on Metra's facilities, construction of a bicycle/pedestrian multi-use trail, and preservation of historic facilities. The No Build Alternative includes regular maintenance of existing track and structures, and bus transit service would be focused on the preservation of existing services and projects. All elements of the No Build Alternative are included in each of the other alternatives. Under this alternative, travel times would not improve from existing conditions.

The BRT Alternative (formerly referred to as the Transportation Systems Management Alternative) is a 5.0-mile, limited-stop, enhanced BRT route, which is assumed to operate 24 hours per day between the existing 95th Street Terminal and the intersection of 130th Street and Eberhart Avenue. No dedicated bus lanes would be provided for the BRT Alternative; however, parking lanes would be removed for some portions of the alignment and four stops with improved bus shelters and park & ride facilities would be created at 103rd Street and Michigan Avenue, 111th Street and Michigan Avenue, Kensington Avenue and Michigan Avenue, and 130th Street and Eberhart Avenue. Although BRT service elements would not continue south of the 130th Street stop, the bus route would continue through Altgeld Gardens along the existing route with six stops. The BRT Alternative would be consistent with bus routing changes that may occur as part of improvements to the 95th Street Terminal. Under this alternative, travel times between 130th Street and the Loop would improve over existing conditions.

The UPRR Rail Alternative is a 5.3-mile extension of the heavy rail transit Red Line from its existing 95th Street Terminal to 130th Street, just west of I-94. The Chicago Transit Board designated the UPRR Rail Alternative as the Locally Preferred Alternative at its August 12, 2009 board meeting. This alternative includes construction and operation of new heavy rail transit tracks, mostly in existing transportation corridors. The UPRR Rail Alternative has three options for alignment (ROW, East, and West), all of which would include operation on elevated structure from 95th Street to just past the Canadian National/Metra Electric District tracks near 119th Street. The alignment would then transition to at-grade through an industrial area with no public through streets, terminating at 130th Street in the vicinity of Altgeld Gardens. Four new stations would be constructed at 103rd Street, 111th Street, Michigan Avenue, and 130th Street. The 130th Street station would be the terminal station, with two options under evaluation: the South Station Option and the West Station Option. A new yard and shop facility would be sited near 120th Street and Cottage Grove Avenue. The bus routes in the vicinity of the UPRR Rail Alternative would be modified to enhance connectivity between the Red Line and the bus network. The hours of operation and service frequency for the UPRR Rail Alternative are assumed to be the same as

for the current Red Line. Under this alternative, travel times between 130th Street and the Loop would improve substantially over existing conditions.

The Halsted Rail Alternative is a 5.0-mile heavy rail transit extension of the existing Red Line. In this alternative, the Red Line would operate on an elevated structure running south from 95th Street along I-57 until Halsted Street. The alignment would then turn south and continue along Halsted Street to the intersection of Halsted Street and Vermont Avenue near 127th Street. This alternative would include four new stations at 103rd Street, 111th Street, 119th Street, and Vermont Avenue. The Vermont Avenue station would be the terminal station. A new yard and shop would be sited west of Halsted Street and between the 119th Street and Vermont Avenue stations. The bus routes in the vicinity of the Halsted Rail Alternative would be modified to enhance connectivity to the Red Line. The hours of operation and service frequency for the Halsted Rail Alternative are assumed to be the same as for the current Red Line. Under this alternative, travel times between 127th Street and the Loop would improve substantially over existing conditions. This alternative would not extend rail to Altgeld Gardens, which would be served by bus connecting to the Vermont terminal station.

Section 3
Methods for Impact Evaluation

This technical memorandum on biological resources includes consideration of threatened and endangered species, vegetation, and wildlife habitats.

3.1 Regulatory Framework

3.1.1 Federal

3.1.1.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires a discussion of environmental impacts of a proposal and of a reasonable range of alternatives including the No Build Alternative (40 Code of Federal Regulations [CFR] 1502.1). NEPA does not specify federal thresholds of significance for impacts on vegetation, wildlife habitats, and threatened and endangered species. However, NEPA requires considerations of both context and intensity in determining the significance of potential impacts on a resource. Context means that the significance of an action must be analyzed in the context of the affected region and the locality and not just from a federal perspective. Intensity means that the analysis must consider unique characteristics of the geographic area, such as proximity to ecologically critical areas and whether the action threatens a violation of federal, state, or local laws or requirements imposed for the protection of the environment (40 CFR 1508.27).

In addition, federal courts look to resource agencies such as the Illinois Department of Natural Resources (IDNR) as the public sector subject matter experts, and failure on the part of the lead agency to adequately respond to their comments or address their concerns can present problems during litigation. A NEPA document that does not adequately address the requirements of applicable state laws may be viewed as not legally sufficient (American Association of State Highway and Transportation Officials 2006).

Section 1502.25 of the NEPA regulations further requires that draft EISs be prepared concurrently and integrated with environmental analyses and related surveys and studies required by other federal statutes, including the Endangered Species Act (ESA, 16 United States Code [USC] 1531 et seq.), the MBTA, and others (40 CFR 1502.25).

3.1.1.2 Endangered Species Act

The ESA and subsequent amendments provide for the conservation of threatened and endangered species and the ecosystems upon which they depend. Threatened species are those that are likely to become endangered within all or most of their range in the near future. Endangered species are species that are present in such low numbers that they are in danger of becoming extinct. Section 7 of the ESA requires federal agencies to aid in the conservation of listed species, and to ensure that the activities of federal agencies will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. Critical habitat includes those areas determined to be essential to conservation of a listed species. At the federal level, the United States Fish and

Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) are responsible for administration of the ESA.

Section 7 of the ESA requires that all federal agencies consult with the Secretary of the Interior on any prospective agency action if an endangered species or a threatened species may be present in the area affected by the project and if implementation of such action will likely affect such species (16 USC 1531). As part of that consultation, the agency must determine whether any species that is listed or proposed to be listed may be present in the area of the proposed action (Section 7(c)). If any such species may be present, then the agency shall conduct a biological assessment for the purpose of identifying any endangered species or threatened species that are likely to be affected by the proposed action. Such assessment may be undertaken as part of a federal agency's compliance with the requirements of Section 102 of NEPA (42 USC 4332).

The ESA makes it unlawful for a person to take a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The USFWS regulations define harass as "to intentionally or negligently, through act or omission, create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, and sheltering." The threshold for an impact under the ESA is, therefore, very low. For example, any action that could cause an individual of a listed species to alter a breeding location (such as nesting in a different spot due to vegetation clearing) or alter feeding behavior, even for a short period of time (such as foraging in a different portion of an open space area due to construction noise), would be considered harassment.

Under the ESA, federal agencies must also determine whether a proposed project is likely to jeopardize the continued existence of listed species or adversely modify designated critical habitat. For the purpose of this EIS, an adverse impact would be one that would be likely to result in a take of a listed species, and/or jeopardize the continued existence of any endangered or threatened species, and/or destroy or adversely modify designated critical habitat.

There are at least seven federal-listed species in Cook County; none of these species is under the jurisdiction of NMFS. The ESA effects determinations for each listed species are provided in this technical memorandum where it is possible to make such a determination. If there may be an impact (either beneficial or adverse) on a listed species, then Federal Transit Administration (FTA) would initiate coordination with USFWS under Section 7 of the ESA to determine whether the project would jeopardize the continued existence of the species and to identify appropriate conservation measures to limit a take (50 CFR 402). This consultation process would occur during the preparation of a Final EIS. USFWS may develop conservation measures during the consultation process to offset potential impacts on federal-listed species. These conservation measures may be based on the mitigation measures developed through the NEPA process, as appropriate. An incidental take permit may also be issued through that process.

3.1.1.3 Migratory Bird Treaty Act

The MBTA decrees that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. Nearly all native North American bird species are protected by the MBTA. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Projects that are likely to result in taking of birds protected under the MBTA require the issuance of take permits from the USFWS. Activities that would require such a permit include destruction of migratory bird nesting habitat during the nesting season when eggs or young are likely to be present. Under the MBTA, surveys are required to determine whether nests would be disturbed and, if so, a buffer area with a specified radius around the nest would be established so that no disturbance or intrusion would be allowed until the young had fledged and left the nest. The size of the buffer area would vary depending on species and local conditions (e.g., presence of busy roads), and would be based on the professional judgment of a monitoring biologist.

3.1.1.4 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires consultation with USFWS and IDNR where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be … modified" by any agency under a federal permit or license. Consultation is to be undertaken for the purpose of preventing loss of and damage to wildlife resources (16 USC 662). The Fish and Wildlife Coordination Act applies to all fish and wildlife resources that may be present in the project area, if there are stream or wetland impacts.

3.1.1.5 Bald and Golden Eagle Protection Act

Bald eagles, delisted in 2007, are primarily protected under the Bald and Golden Eagle Protection Act (BGEPA). Administered by the USFWS, this law provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. The BGEPA prohibits unregulated take and makes it illegal to kill, wound, pursue, shoot, shoot at, poison, capture, trap, collect, molest, or disturb bald or golden eagles. If disturbance will occur in potential violation of the act, a permit to authorize take of eagles is required. This permit authorizes incidental take of bald and golden eagles, as well as bald eagle incidental take that complies with the terms and conditions of a previously granted Section 7 incidental take statement. Projects permitted under the BGEPA do not need a permit under the MBTA. Both bald and golden eagles occur in Illinois and would be found primarily along rivers and lakeshore areas with suitable habitat.

3.1.2 State

3.1.2.1 Illinois Endangered Species Act

The IDNR is responsible for administration of the Illinois Endangered Species Act (IESA, 520 Illinois Compiled Statutes [ILCS] 10). Like the federal ESA, the IESA contains procedures for consultation between the project proponent (in this case CTA) and IDNR. The agency proposing an action would prepare a Detailed Action Report to assist the consultation process with IDNR. In cases where there may be an adverse impact on listed species, IDNR will provide recommended

mitigation measures to avoid those impacts (Illinois Administrative Code Part 1075). There are approximately 114 species listed by the State of Illinois in Cook County (IDNR 2011).

3.1.2.2 Illinois Compiled Statutes

The IDNR has the authority to manage and regulate all fish and wildlife of the state. The 520 ILCS 5 Wildlife Code states that "the ownership of and title to all wild birds and wild mammals within the jurisdiction of the State are hereby declared to be in the State, and no wild birds or wild mammals shall be taken or killed, in any manner or at any time" without authorization of IDNR (520 ILCS 5/2.1). The 515 ILCS Fish and Aquatic Life Code provides similar authority over all fish and aquatic life, including reptiles and amphibians.

3.1.3 Local

The City of Chicago and the Village of Calumet Park do not have specific policies or regulations related to threatened or endangered species. In addition, the Village of Calumet Park does not have specific regulations related to vegetation or wildlife habitats.

3.1.3.1 City of Chicago

Administered by the Chicago Bureau of Forestry in the Department of Streets and Sanitation, the Chicago Landscape Ordinance prohibits the removal of landscape trees without a permit (Chicago No Date). This ordinance specifies tree replacement standards and protection measures to be employed during construction. No person other than the deputy commissioner shall plant, remove, trim, spray or chemically inject or treat, or in any way affect the general health or structure of a parkway tree or shrub (vegetation planted along streets) without first having obtained a permit to do so (Municipal Code of Chicago 10-32-060). There is no minimum size tree that is exempt from this regulation. The landscape ordinance requires the planting of trees along streets (parkway trees), parking lots, and principal buildings (principal buildings are undefined in the Municipal Code of Chicago). The ordinance does not require parkway trees to be installed or maintained when below or within 50 feet of an elevated rail line (Municipal Code of Chicago 17-11-0103-B).

Chicago's *Urban Forest Agenda* recognizes the value of urban forests to the city and sets a goal of increasing the urban forest canopy from 17 percent (the 2008 level) to 20 percent by 2020 (Chicago 2009). From 1991 through 2007 over 112,000 trees were planted within the City (Chicago 2009).

In February 2006, Chicago adopted the *Chicago Nature and Wildlife Plan*, a strategy to enhance the health and diversity of wildlife within the city. Developed by the Chicago Department of Planning and Development and the Mayor's Nature and Wildlife Committee with support from over 30 conservation organizations, this Plan, which was updated in 2011, is now part of the City of Chicago's formal planning and development initiatives. The Boards of Commissioners of the Chicago Park District and the Forest Preserve District of Cook County have also directed their staffs to work closely towards achieving the objectives of the *Chicago Nature and Wildlife Plan* (Chicago 2006b).

The southern edge of the project area is near the Calumet Industrial Corridor, which is governed by a special set of landscaping requirements that differ slightly from the standard City of Chicago requirements (Chicago Municipal Code 10-32-17-11-0401) (Chicago 2004). The Calumet Industrial Corridor is set within the Calumet Open Space Reserve and the landscaping requirements are intended to reflect the integration of the area with significant areas of natural wildlife habitats. While these regulations may not apply directly to the proposed project, a potential station at 130th Street may be required to conform to the standards that apply to projects immediately west of I-94. These requirements emphasize more naturalistic design standards, such as planting landscaping trees in clusters and the use of native plant species.

The project area is also very close to portions of the Calumet Open Space Reserve, which is governed by the adopted *Calumet Open Space Reserve Plan* (Chicago 2005a). This plan identifies 4,877 acres of open space and natural habitats that are protected or are planned to be protected in the Lake Calumet area.

3.2 Impact Analysis Thresholds

The NEPA regulations do not specify federal thresholds of significance for impacts on threatened and endangered species, vegetation, or wildlife habitats. However, Section 1502.25 of NEPA requires that draft EISs be prepared concurrently and integrated with environmental analyses and related surveys and studies required by other federal statutes including the ESA (16 USC 1531 et seq.) (40 CFR 1502.25). Therefore, for the purpose of this EIS, an impact on a threatened or endangered species would be adverse if it would

- Result in a take of a listed species,
- Jeopardize the continued existence of any listed species, or
- Destroy or adversely modify designated critical habitat.

With respect to impacts on vegetation and wildlife habitats, the significance of potential impacts may also be related to the degree to which a proposal is consistent with federal, state, and local regulations and policies. Potential impacts on vegetation and wildlife habitat are evaluated qualitatively based on whether each alternative would result in the following:

- An adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species by USFWS or IDNR.
- An adverse impact on any riparian, wetland, or aquatic habitat or other sensitive natural community.
- Substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedance of the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Potential adverse impacts are further evaluated based on their location and potential duration and intensity.

3.3 Area of Potential Impact

For potential impacts on threatened and endangered species, designated critical habitats, vegetation, and other wildlife habitats an area within ¼ mile of the proposed alignments, stations, park & ride lots, and maintenance yards for each of the project alternatives was evaluated. The selection of a ¼-mile radius as the API represents a conservative approach for evaluating potential impacts on biological resources from changes to existing habitats and the introduction of noise, light, and construction impacts. The ¼-mile radius is intended to identify sensitive wildlife species and their habitats that may be subject to impacts that may travel larger distances (e.g., light and noise). Given that the project is in a highly urbanized environment with high existing levels of noise, light, and human activity, the impacts of construction and operation on available habitats and associated wildlife would not be expected to extend beyond ¼ mile. Because the potential alignments differ among alternatives, the API also varies. Identified construction areas (including staging areas) were included in the API.

Under ESA an "action area" would be identified that corresponds to the API for the NEPA preferred alternative specified in the Final EIS. If there would be an impact on a listed species, then FTA would consult with USFWS about proposed activities within the action area. The action area would be described in the Final EIS. Under IESA, if there would be an adverse impact on a state-listed species, FTA and CTA would consult with IDNR to develop a conservation plan and measures to minimize and/or mitigate adverse impacts on listed species.

3.4 Methods

The purpose of this biological resources investigation is to describe the existing resources in the RLE Project vicinity and to evaluate potential impacts on listed species and their habitats. Biological resources, including listed species, vegetation, and wildlife habitats within the project area, would be protected by federal, state, and local laws and policies, depending on the specific resources, their location, and applicable federal, state, or local laws. Resources within ¼ mile of each proposed alternative alignment, stations, and maintenance yards were evaluated.

Objectives of this study included the following:

- Identify any federal- or state-listed species reported to potentially occur within the project area and other important biological resources.

- Describe potential threatened and endangered species habitats, fish and wildlife habitat conditions, and plant communities that may be affected by the project.
- Describe potential impacts on biological resources that may result from the project alternatives, including short-term construction impacts, long-term operational impacts, and cumulative impacts.
- Propose mitigation measures to avoid, minimize, and compensate for any adverse impacts.

The methods used to evaluate potential impacts on biological resources included several steps:

- A review of existing data sources.
- Reconnaissance-level field review to establish the presence and existing condition of resources within the project area.
- An evaluation of the potential impacts of construction and operation of each alternative on any of the identified resources.
- Development of proposed mitigation measures for identified impacts, as appropriate.

Each step is described below.

3.4.1 Review Existing Data

The Illinois Ecological Compliance Assessment Tool (EcoCAT) and IDNR lists of species of concern within Cook County were reviewed to identify listed plants and animals with the potential to occur in the project area (IDNR 2012). The USFWS database for species likely to occur in Cook County was also consulted (USFWS 2012). This step included the identification and description of habitat requirements of each listed species that has the potential to occur in Cook County.

Habitats that are potentially present in the project area were identified through existing data sources such as the USFWS National Wetlands Inventory (NWI), the updated NWI mapping created by Ducks Unlimited under contract with the USFWS, the most current available aerial photography, and other data sources that were available from entities such as the City of Chicago.

Habitat areas with the potential to support listed species or other important biological resources were highlighted for field verification in a subsequent step. Wetlands and riparian areas (habitats along the banks of a water course that provide both water and land resources) are important habitat features.

3.4.2 Field Review

Reconnaissance level field verification of identified habitat areas was conducted to confirm the existing condition of each area. Field reviews were conducted on May 15, 16, and 17, 2012; August 13, 2012; and October 15, 2012. The field review included parks and other public open spaces within

¼ mile of either side of the proposed alignments and within ¼ mile of proposed construction staging areas, stations, park & ride lots, and maintenance yards. Undeveloped areas that appear to provide habitat were also investigated to assess their condition and value for wildlife.

Any area of potential habitat for listed species within the API was field verified. The field review consisted of visual observation and photographic documentation of all parks and open space areas. These areas were assessed for their potential to support listed species and/or migratory birds during the breeding season. The condition of each area was noted, including factors such as understory vegetation and levels of human activity that may affect the suitability of each area for use by wildlife.

The existing conditions were used to describe the environmental baseline under the ESA. The environmental baseline represents a basal set of conditions to which the impacts of the proposed action were added. The environmental baseline conditions are specific for each species.

3.4.3 Impact Analysis Methods

The results of the field review were used to determine whether listed species, vegetation and wildlife habitats, including sensitive ecological areas, wetlands, wildlife migratory corridors, and/or habitat conservation areas, occur within the project area. With respect to listed species, the impact evaluation included an assessment of the potential for listed species to be present in the project area, an assessment of existing habitat conditions, the potential impacts of construction and operation of each alternative, and the importance of the existing environment with respect to maintaining each listed species. With respect to vegetation and other wildlife habitats, the impact evaluation included an assessment of whether the project could potentially have direct or indirect impacts, through impacts on individuals or their habitat. If there would be a potential for either direct or indirect impacts, mitigation measures would be required to address those impacts.

3.4.3.1 Threatened and Endangered Species Effects Determination

The USFWS and IDNR identify which listed species occur in Cook County. Those species do not occur uniformly throughout the County and may not occur within the project area. During the field reconnaissance, a qualified biologist determined whether suitable habitat is present for many species. If suitable habitat is not present, the species would not occur within the project area and there would be "*no effect*" on that species from proposed activities within the project area. For those species for which there may be suitable habitat present and which are likely to be present, an effects determination is made based on the following criteria:

- The relevance of the environmental baseline to the species' current status.
- Whether the proposed action would restore, maintain, or degrade the existing baseline conditions.
- The potential impacts of the proposed alternatives on each listed species.

- A determination of whether the species could be expected to survive with an adequate potential for recovery given the impacts of the project, the environmental baseline and any cumulative impacts, and considering measures for survival and recovery specific to all life stages.

If the project could have impacts on threatened or endangered species, by affecting either individuals or habitat, there would be a potential for adverse impacts. If federal-listed species could be affected, FTA would coordinate with USFWS to develop conservation measures to address those impacts. For state-listed species, IDNR would be consulted and mitigation measures would be developed.

If either the Record of Decision or construction occurs more than two years after the consultation on impacts on listed species, then the conclusions of this impact analysis would be reviewed to confirm the results are still valid. This review would include confirmation that the list of species potentially affected has not changed and that there has not been a significant change in the existing condition that would affect the impact analysis conclusions. If the impact analysis review shows that there would be an impact on a new listed species or on one that was not previously affected, then the consultation would need to be re-initiated.

3.4.3.2 Vegetation and Wildlife Habitats Impact Analysis

The results of the field review were used to determine whether valuable vegetation and wildlife habitats occur within the project area. For the build alternatives, the evaluation of potential impacts on vegetation included potential disturbance of protected vegetation, including street trees. Street trees were counted and are tabulated in Section 4. The evaluation of potential impacts on wildlife habitat included a review of areas where mature trees that may provide potential nesting sites for raptors and other birds might be disturbed. These mature trees may be found in parks, cemeteries, and in undeveloped vegetated parcels along the proposed alignments, and around proposed stations, park & ride lots, and maintenance yards. For the analysis of potential impacts on wildlife habitat, these areas were noted as areas of potential habitat and did not include individual tree counts. Removal or disturbance of trees during the nesting season could affect habitat or individuals of special-status species; therefore, an evaluation of these potential impacts for all proposed alternatives was performed.

Areas of potentially sensitive habitats, such as riparian or wetland areas, were identified and assessed for their condition and value for wildlife. Recommendations for avoiding and minimizing impacts on vegetation and wildlife habitats, as well as potential mitigation activities, were developed.

Section 4
Affected Environment

4.1 Vegetation and Wildlife Habitat

Vegetation in the API consists primarily of parkway trees and landscaping around buildings. The API has some remnants of natural vegetation left in small pockets or nature preserves and there may be areas where vegetation has re-established itself following disturbance. Urban wildlife is adapted to this mix of conventional landscaping and remnant patches that comprises the urban vegetative community. When patches of natural vegetation or nature preserves are of a significant size or are connected to other natural areas, a greater diversity of wildlife may be present. Migratory birds may use a wide variety of vegetation types during migration and may be found even in very urbanized landscapes, such as those found in the API. Section 4.2 discusses the listed species identified as potentially occurring within the project area.

In addition to providing wildlife habitat, vegetation in the urban landscape provides a variety of benefits to the human community, including the following:

- Improved air quality
- Reduction of greenhouse gases
- Reduction of the urban heat island effect
- Shade for houses, reducing energy use
- Increased psychological well-being
- Improved aesthetics
- Increased property values
- Stormwater attenuation

In 1837, the City of Chicago incorporated with *Urbs in Horto* (City in a Garden) as its motto (Chicago 2009). Today, Chicago's urban forest comprises over 3.6 million trees, the value of which exceeds $7 million for carbon sequestration and air pollution reduction, not including the carbon storage value of $14.8 million dollars and structural value of $2.3 billion (Chicago 2011). Further value can be seen in the stormwater management, noise abatement, and public health benefits of trees. As described in Section 3.1.3.1, the Chicago Trees Initiative has committed to increasing Chicago's tree canopy (Chicago 2011).

Based on an inventory of city land, the *Chicago Nature and Wildlife Plan* identifies over 4,800 acres of existing prairies, savannas, dunes, woodlands, wetlands, and riparian edges and 920 acres

potentially suitable for restoration (Chicago 2006b). That plan identifies the following habitat types:

- Woodland/Forest (1,772 acres in Chicago) - An area with more than 50 percent tree cover.
- Wetland (535 acres in Chicago) - An area saturated with water for a sufficient part of the year that supports emergent reeds, grasses and other aquatic plants.
- Riparian/Water Edge (290 acres in Chicago) - A transitional area between dry and wet environments.
- Beach/Dune (22 acres in Chicago) - A hill or ridge of sand piled by the wind that supports plant life.
- Prairie/Grassland (170 acres in Chicago) - An area dominated by grasses or one possessing less than 10 percent tree cover.
- Savannas (36 acres in Chicago) - An area with 10 to 50 percent tree cover and a native grass and wildflower understory.
- City neighborhoods: Parks, yards, city streets.

The natural habitats of Chicago and its adjacent suburbs support more than 400 species of mammals, birds, reptiles, amphibians, and fish (Chicago 2006b). Of those 400 species, about 300 are birds. Chicago is on the Mississippi Flyway, which is part of a larger bird migration route that extends from the Mackenzie Valley in northwest Canada, along the Great Lakes, and down the Mississippi River Valley. Each year, more than 250 species of migratory birds use this flyway to travel between their winter homes in the southern United States and Central and South America, and their summer homes in North America. With Lake Michigan to the east and farmland to the far west, Chicago's green spaces, especially those with native plants and trees, provide a variety of plant life and habitat for resting and refueling. About 50 species of resident native birds also find a range of suitable habitats in Chicago (Chicago 2006a).

Based on the habitat types described in the *Chicago Nature and Wildlife Plan*, woodland forest and city neighborhoods habitat types are present within the API. "Woodland forest" occurs primarily in the area near the 120th Street yard and shop, but there are also a number of patches along the UPRR Rail Alternative alignment between 107th Street and 111th Street and around Kensington Park. All other portions of the API would be considered "city neighborhoods." Nature areas within the API that are designated in the *Chicago Nature and Wildlife Plan* (Chicago 2006b) are shown in relation to the API on Figure 4-1 and include the following:

- West Pullman Park Savanna - 401 W. 123rd Street, west of Princeton Street between 123rd and 124th Street. This site of an ancient river bluff remnant is host to a grove of over 60 white, red, and black oak and hickory trees (Chicago 2005e).

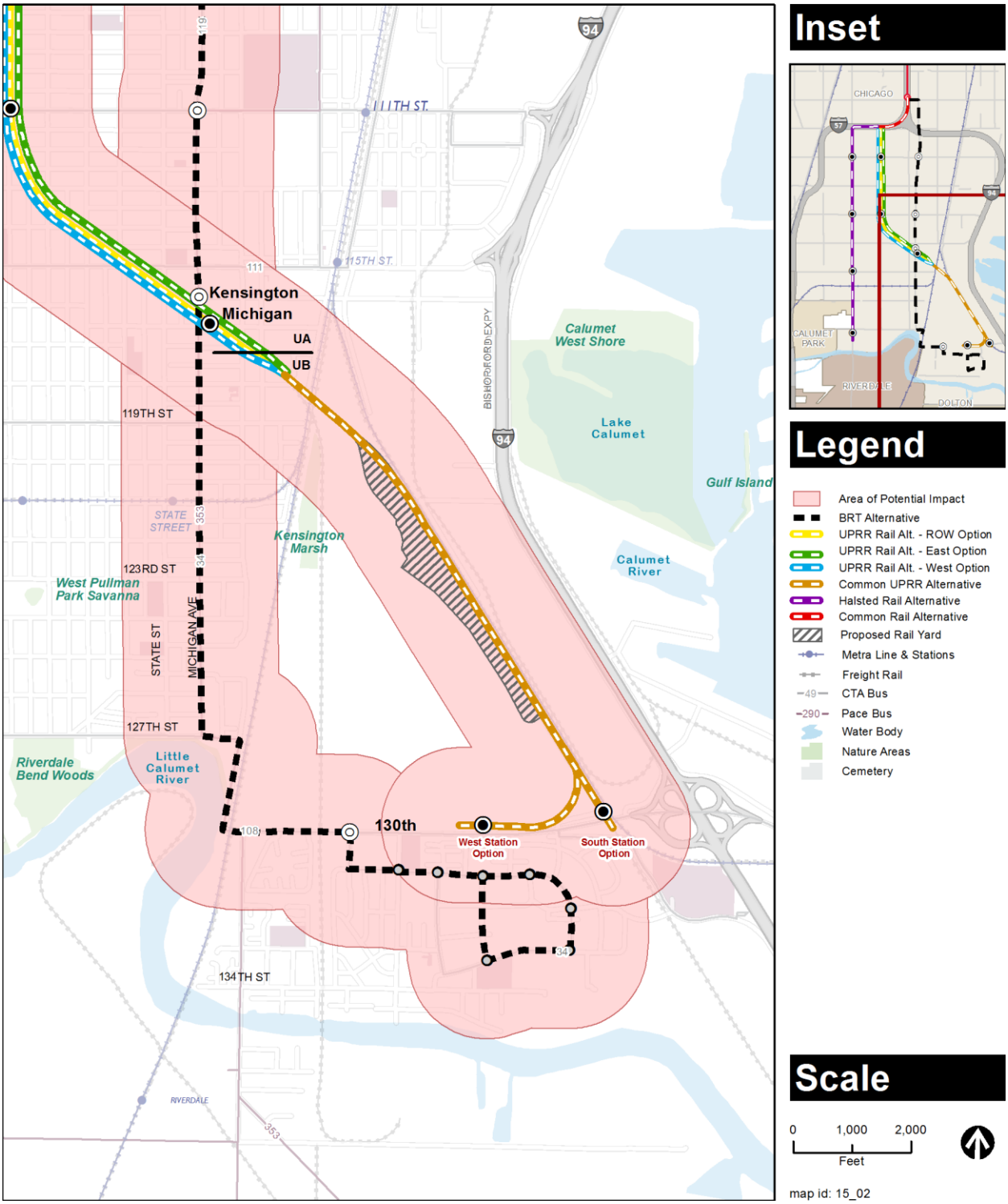


Figure 4-1: Nature Areas Identified in the *Chicago Nature & Wildlife Plan* within the Areas of Potential Impact

- Riverdale Bend Woods - 12700 S. Stewart Avenue, near 127th Street along the Little Calumet River. This site is part of the Calumet Open Space Reserve (Chicago 2005d).

- Kensington Marsh - 12400 S. Indiana Avenue, north of the Metropolitan Water Reclamation District's Calumet Plant on 130th Street. This marsh was built in 1986 as part of United States Army Corps of Engineers mitigation project, consisting of open water, wetlands, and upland habitat (Chicago 2005c).

- Outside of the project area but just to the east of the UPRR Rail Alternative is Calumet West Shore and Gull Island site, at 11500 Doty Avenue, with over 228 acres of wooded areas, meadows, wetlands, and mud flats on the western shore of Lake Calumet (Chicago 2005b). This site is approximately 0.9 mile to the east of the project, as shown in Figure 4-1.

The IDNR EcoCAT database, which records information based on historical records within the nearest Section/Township/Range, was reviewed. A review of the IDNR EcoCAT database identified the Lake Calumet Illinois Natural Areas Inventory Sites near Lake Calumet west of the UPRR Rail Alternative alignment and the Riverdale Marsh Site beyond the southern end of the Halsted Rail Alternative alignment at the intersection of 138th Street and Halsted Street. The IDNR EcoCAT database recorded occurrences of seven listed species within the sections that encompass the project area, including black-crowned night heron (*Nycticorax nycticorax*), Blanding's turtle (*Emydoidea blandingii*), common moorhen (*Gallinule chloropus*), little blue heron (*Egretta caerulea*), peregrine falcon (*Falco peregrinus*), yellow-crowned night heron (*Nyctanassa violacea*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*).

These historic records are not necessarily for locations within the API, so even with this more focused data, it is necessary to compare each species' habitat requirements with the existing habitats within the project area. It is also important to understand that this historical data does not provide proof of absence. Results from the IDNR EcoCAT database review are presented in Appendix A.

A review of the NWI information identified wetland areas within the API. See the *Water Resources Technical Memorandum* for more information about wetlands.

Based on inspection of aerial photography, all areas within ¼ mile of the proposed project alignments that appeared to contain approximately ½ acre or more of contiguous habitat cover were identified. In a heavily urbanized area, this area provides a minimum amount of cover where wildlife not generally found in residential yards might be found. During the field investigation, all of these areas were visited and evaluated. With the exception of the forested habitats in the vicinity of the 120th Street yard and shop (approximately 14 acres), none of these areas would support wildlife communities that are significantly different from the surrounding residential and commercial areas.

Trees within the proposed construction footprint of each alternative were counted. Trees may provide nesting and foraging sites for migratory birds and certain trees may be protected by local ordinances. Field surveys were conducted in May and August 2012. An inventory of the number of

trees was developed. The City of Chicago landscape ordinance does not apply to trees within 50 feet of a railroad; however, for the purposes of this evaluation, such trees were included as they provide an indicator of the habitat values that might be affected by each alternative.

When applications for local construction permits are filed, it may be necessary to prepare more detailed tree inventories and to update the results of this investigation as some trees would have been removed and others may have been planted.

Tables 4-1, 4-2, and 4-3 show the amount of vegetation or potential wildlife habitat that would be potentially affected by each alternative. The data is shown by vegetation segment. Trees are not evenly distributed along the project corridor, and work in some areas could have greater impacts on vegetation and wildlife than in other segments. In addition, some portions of the UPRR Rail and Halsted Rail Alternative alignments would follow similar routes; therefore, the data is presented by sub-segments to better identify the differences between alternatives.

Portions of the BRT and Halsted Rail Alternative alignments would be within street ROWs and would have the potential to affect street trees; therefore, the data presents the number of trees potentially affected by each alternative. The UPRR Rail Alternative would have the potential to affect blocks of habitat rather than individual street trees; therefore, acres of potentially affected habitat are provided in Table 4-2. As described below, blocks of habitat may provide greater wildlife benefits than street trees, while street trees may be protected by local ordinance.

Figure 4-2 shows the project area including the vegetation segments for which the data in Tables 4-1, 4-2, and 4-3 are presented. The vegetation segments for each alternative are defined as follows:

- BRT Alternative - from the 95th Street Terminal to the 130th Street stop
- UPRR Rail Alternative:
    - Vegetation Segment UA-1: From the 95th Street Terminal to the beginning of the horizontal curve at the UPRR crossing
    - Vegetation Segment UA-2: The horizontal curve at the UPRR crossing
    - Vegetation Segment UA-3: From the end of the horizontal curve at the UPRR crossing to the Canadian National (CN)/Metra Electric crossing
    - Vegetation Segment UB: From the CN/Metra Electric crossing to the beginning of the 130th Street station sites
    - South Station Option
    - West Station Option
    - 120th Street Yard and Shop

- Halsted Rail Alternative:
  - Vegetation Segment HA-1: From the 95th Street Terminal along the I-57 corridor to the beginning of the horizontal curve at the I-57 crossing
  - Vegetation Segment HA-2: The horizontal curve at the I-57 crossing
  - Vegetation Segment HA-3: From the end of the horizontal curve at the I-57 crossing to the 119th Street station
  - Vegetation Segment HB: From the 119th Street station to Vermont Avenue
  - 119th Street Yard and Shop

Table 4-1: Potentially Affected Vegetation - Bus Rapid Transit Alternative

Vegetation Segment	Number of Street/Landscape Trees
BRT Alternative	90
Total	**90**

Table 4-2: Potentially Affected Vegetation - Union Pacific Railroad Rail Alternative (acres)

Alignment Segment	Vegetation Segment	Right-of-Way Option	East Option	West Option
UA	Segment UA-1	1.1	1.1	1.1
	Segment UA-2	0.1	0.2	0.2
	Segment UA-3	2.8	7.5	13.3
UB	Segment UB	9.5	9.3	9.3
	South Station Option	1.0	1.0	1.0
	West Station Option	9.2	9.2	9.2
	120th Street Yard and Shop	41.9	41.9	41.9
Total		**65.6**	**70.2**	**76.0**

Table 4-3: Potentially Affected Vegetation - Halsted Rail Alternative

Alignment Segment	Vegetation Segment	Number of Street/Landscape Trees	Acres of Urban Habitat
HA	Segment HA-1	54	n/a
	Segment HA-2	2	n/a
	Segment HA-3	350	n/a
HB	Segment HB	114	n/a
	119th Street Yard and Shop	n/a	7.0
Total		**516**	**7.0**

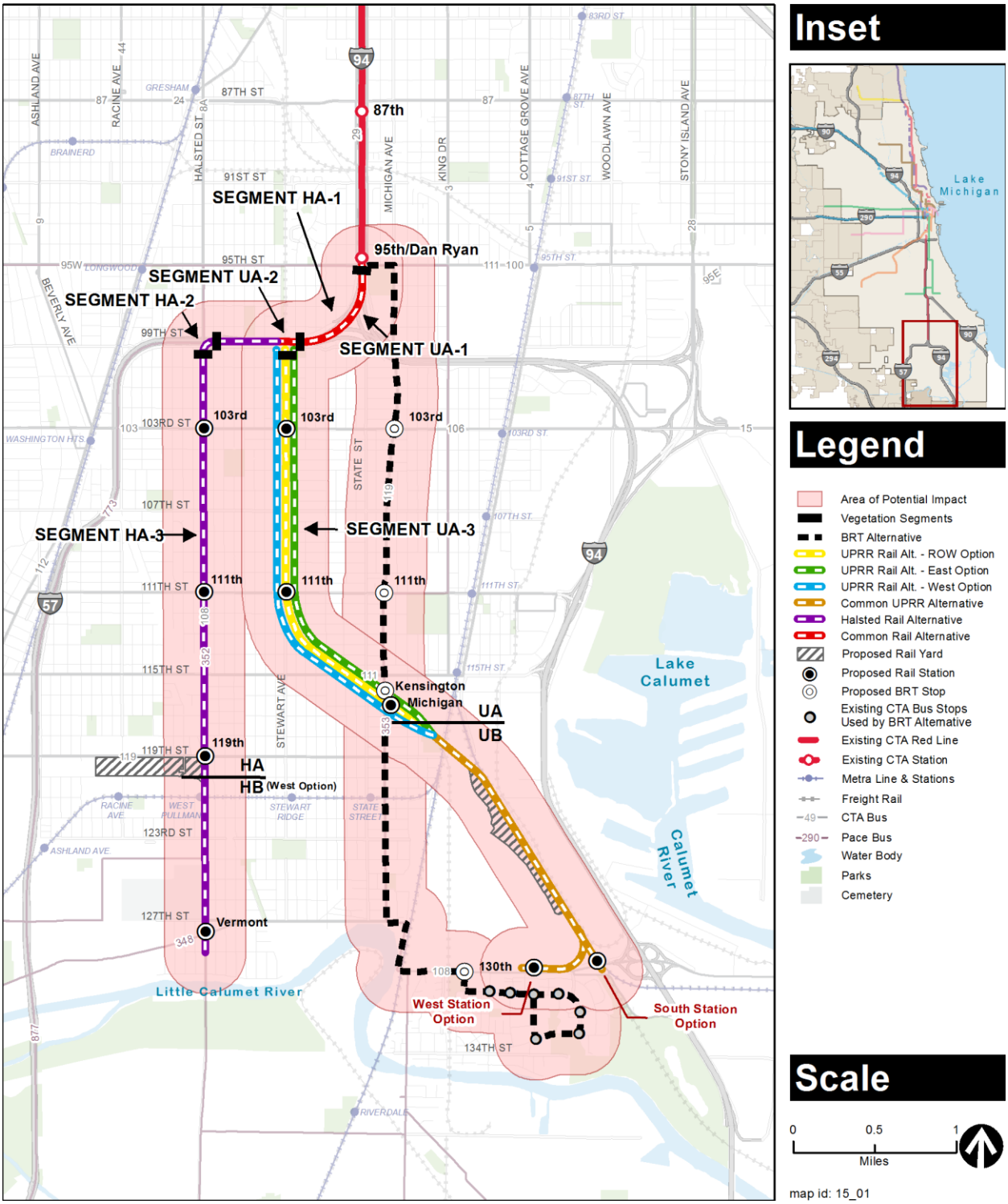


Figure 4-2: Project Area including Segments

The trees potentially affected by the BRT Alternative (Table 4-1) are in the park & ride sites; some of these trees are parkway trees along streets in sidewalks and some are landscape trees on private lands around buildings.

The trees potentially affected by the UPRR Rail Alternative (Table 4-2) are in backyards and abandoned industrial parcels and along the railroad embankment. West of the UPRR tracks between 108th and 111th Streets, several abandoned industrial parcels have regrown with a mix of native and non-native trees, small trees, and shrubs. These patches of habitat are disconnected from other larger habitat patches, but they have developed several vegetative layers and have a good understory of shrubs, small trees and herbaceous cover. This provides a variety of habitats for urban adapted species. These areas are likely to support a greater variety and number of urban wildlife species than the narrow bands of trees along the railroad embankment further to the south. These areas would be more valuable for wildlife than most street trees or isolated specimen trees in backyards.

Many of the trees along the UPRR Rail Alternative alignment are in narrow bands along the existing rail corridor. Some of the trees included are parkway trees planted along streets in sidewalks and some are landscape trees on private lands around buildings. Narrow rows of trees provide many of the benefits identified by the Chicago Urban Forest Agenda (Chicago 2009). However, they provide fewer wildlife benefits than if the same number of trees were organized into a clump. Due to their mobility, some migratory bird species may utilize these trees during migration. In addition, there is the potential for migratory birds to use existing mature trees within the project area for breeding. The frequent passing of trains and the associated noise and vibration would reduce the value of narrow bands of trees for bird use.

Most of these areas are isolated from other parks or patches of habitat and thus would not be as valuable as might be expected based on the number of trees alone. The forested areas are affected by human disturbances and urban influences, such as traffic and rail noise, trash, and light pollution. The forested areas that are becoming established at the south end of the UPRR Rail Alternative alignment represent the best habitat within the entire API, followed closely by the patches along the West Option between 108th and 111th Streets.

Minimal habitat exists along the Halsted Rail Alternative alignment (Table 4-3); trees are primarily in the median and sidewalks of Halsted Street. The habitat within the proposed maintenance yard for the Halsted Rail Alternative is composed of vegetation that has re-established in several patches following abandonment of previous urban uses. It is not as well developed as similar patches found along the UPRR Rail Alternative West Option alignment.

Large birds such as herons, hawks, and eagles make large nests that persist through the winter months. These birds will return to the same nesting territory year after year and reuse the same nests. Their nests can be very visible in the winter when the leaves are off the trees. No large nests indicating the presence of herons, hawks, or eagles were observed in the API during the May, August, or October 2012 field visits. Eagles perch on tall trees near water or open spaces or on the ground in more open areas. There do not appear to be suitable perching areas for eagles within the API.

During a field visit on October 15, 2012, monk parakeet (*Myiopsitta monachus*) nests were identified in and around a cell phone tower at the northeast corner of 119th Street and Halsted Street. Approximately six nests were identified within the cell phone tower, and green monk parakeets were seen entering and exiting the nests. Photos of the nests are included in Appendix B.

The Cedar Park Cemetery at 12540 South Halsted Street in Calumet Park is home to a small herd of non-native Japanese Sika deer (*Cervus nippon*). The herd has been living in the cemetery since the 1920s and they graze off the land. The deer do not leave the confines of the cemetery. The Cedar Park Cemetery also contains several patches of habitat where there is an understory layer under the mature tree canopy. Areas with an understory layer of shrubs and small trees are more valuable for wildlife than areas that only contain mature trees with maintained grass underneath. These habitat areas are not in areas that would be affected by any of the alternatives.

4.2 Threatened and Endangered Species

There are 114 federal- and state-listed species that potentially occur within Cook County. Listed species include those listed as threatened, endangered, or candidates for listing as threatened or endangered. The entire API is within Cook County. Table 4-4 lists each species, its status (e.g., federally threatened, state endangered), a brief description of its habitat requirements, and an assessment of whether the species has the potential to occur within the API. Each species' habitat requirements were compared against the existing habitats within the API to determine the likelihood that a species could occur within the project area. Only those species that could potentially occur within the project area are considered further. The shaded row in Table 4-4 indicates the species with the potential to occur within the API.

The IDNR EcoCAT database was consulted for information about known occurrences of listed species within the project area. The IDNR EcoCAT database identified seven species within the sections that encompass the project area, as discussed in Section 4.0 (Appendix A). These species are most likely included due to the proximity of the API to the Little Calumet River and natural areas next to the river and do not occur within the API. Other than the peregrine falcon (discussed below), there is no suitable habitat for the other six species in the API.

Table 4-4: Listed Species in Cook County

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Invertebrates			
Slippershell (freshwater mussel) *Alasmidonta viridis*	ST	Creeks and headwaters of rivers in sand or gravel substrates with high gradients or riffles. Occasionally in larger rivers and lakes and in mud substrates.	Unlikely, habitat does not occur in the project area.
Elfin Skimmer (dragonfly) *Nannothemis bella*	ST	Bogs and occasionally in calcareous fens with sedge meadows and marl deposits.	Unlikely, habitat does not occur in the project area.
Eryngium Stem Borer (moth) *Papaipema eryngii*	SE	Mesic and wet-mesic prairie. In Illinois, associated with moderately disturbed to relatively undisturbed prairie.	Unlikely, habitat does not occur in the project area.
Hine's Emerald Dragonfly *Somatochlora hineana*	FE, CH, SE	Spring fed wetlands, wet meadows, and marshes. Project area is not within designated critical habitat.	Unlikely, habitat does not occur in the project area.
Amphibians			
Mudpuppy (salamander) *Necturus maculosus*	ST	Rivers, lakes, and other permanent water sources with hard cover such as rocks, logs, and overhangs. Will also utilize debris, reeds, mud, stream banks, and other areas.	Unlikely, habitat does not occur in the project area.
Reptiles			
Blanding's Turtle *Emydoidea blandingii*	SE	Quiet waters in marshes, prairie wetlands, wet sedge meadows, and shallow, vegetated portions of lakes.	Unlikely, habitat does not occur in the project area.
Kirtland's Snake *Clonophis kirtlandi*	ST	Prairie wetlands, wet meadows, and grassy edges of creeks, ditches, and ponds, usually in association with crayfish burrows. Has been found in damp habitat remnants in vacant lots of urban settings.	Unlikely, habitat does not occur in the project area.
Eastern Massasauga *Sistrurus catenatus catenatus*	FC, SE	Wet areas including wet prairies, marshes, and low areas along rivers and lakes. Also uses adjacent uplands during part of the year. Often hibernates in crayfish burrows but may also be found under logs and tree roots or in small mammal burrows.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Fish			
Longnose Sucker *Catostomus catostomus*	ST	Cool, spring-fed creeks, lakes and their tributary streams.	Unlikely, habitat does not occur in the project area.
Iowa Darter *Etheostoma exile*	ST	Cool, clear to slightly turbid, slow moving vegetated brooks and weedy portions of glacial lakes, marshes and ponds.	Unlikely, habitat does not occur in the project area.
Banded Killifish *Fundulus diaphanus*	ST	Shallow, clear and quiet water streams, rivers, ponds and lakes with sand, gravel or mud substrates. Often found near submerged aquatic vegetation.	Unlikely, habitat does not occur in the project area.
Blackchin Shiner *Notropis heterodon*	ST	Very clear waters of glacial lakes and marshes with an abundance of submerged aquatic vegetation.	Unlikely, habitat does not occur in the project area.
Birds*			
Least Bittern *Ixobrychus exilis*	ST	Emergent vegetation in freshwater marshes and occasionally saltwater or brackish marshes.	Unlikely, habitat does not occur in the project area.
Snowy Egret *Egretta thula*	SE	Emergent wetlands associated with freshwater marshes and along the periphery of large water bodies.	Unlikely, habitat does not occur in the project area.
Little Blue Heron *Egretta caerulea*	SE	Swamps, estuaries, rivers, ponds, and lakes.	Unlikely, habitat does not occur in the project area.
Black-crowned Night Heron *Nycticorax nycticorax*	SE	Forests, scrub/shrub, marshes, and ponds serve as nesting, roosting, and foraging habitats. Colonies may be located in wooded swamps, coastal dune forests, vegetated dredge spoil islands, scrub thickets, or marshes in close proximity to water. Migratory.	Unlikely, habitat does not occur in the project area.
Yellow-crowned Night Heron *Nyctanassa violacea*	SE	Nest on barrier islands, dredge spoil islands, and bay islands that contain forested wetlands or scrub/shrub thickets. Colonies may be located in dense shrubby thickets, forests with an open understory or suburban parks and yards that offer suitable habitat. Migratory.	Unlikely, habitat does not occur in the project area.
Osprey *Pandion haliaetus*	SE	Nests in all forested vegetation types with large trees near water, as well as on platforms erected in less optimal habitat. Migratory.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Peregrine Falcon *Falco peregrinus*	ST	Nests on cliff ledges above or near open water including lakes, ponds, rivers, and seas. Uses a wide variety of foraging habitats, including croplands and riparian areas along rivers, ponds, marshes, and meadows, and open areas where avian prey are vulnerable, including pastures, grasslands, mountain valleys, and gorges. Migratory.	Potential to occur in suitable habitat within the project area.
King Rail *Rallus elegans*	SE	Emergent vegetation in freshwater marshes and brackish tidal marshes.	Unlikely, habitat does not occur in the project area.
Common Moorhen *Gallinula chloropus*	SE	Freshwater and brackish marshes, lakes, canals and ponds with cattails and other aquatic vegetation.	Unlikely, habitat does not occur in the project area.
Piping Plover *Charadrius melodus*	FE	Wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands.	Unlikely, habitat does not occur in the project area.
Upland Sandpiper *Bartramia longicauda*	SE	Open prairies, grasslands, pastures, wet meadows and hayfields.	Unlikely, habitat does not occur in the project area.
Wilson's Phalarope *Phalaropus tricolor*	SE	Nests in shallow, prairie wetlands. During migration, inhabits shallow ponds, flooded fields, and sometimes mudflats.	Unlikely, habitat does not occur in the project area.
Black Tern *Chlidonias niger*	SE	Nests in emergent vegetation along the shoreline periphery of freshwater lakes, wetlands, and marshes along rivers and ponds. Forages in wet meadows, pastures, agricultural fields, and water.	Unlikely, habitat does not occur in the project area.
Yellow-headed Blackbird *Xanthocephalus xanthocephalus*	SE	Nests in deep-water marshes, sloughs, forested wetlands, and along lake edges. Can sometimes be found in huge flocks in open fields and pastures during migration and in winter.	Unlikely, habitat does not occur in the project area.
Mammals			
Franklin's Ground Squirrel *Spermophilus franklinii*	ST	Tall grass and mid-grass prairies. Also uses riparian areas (marsh edges), forest-field edges, fields, hedgerows, and unmowed strips along railroad rights-of-way and roadsides. Generally avoids short grass habitats. Nests are in underground burrows.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Plants			
Shadbush *Amelanchier interior*	ST	Dry woods, bluffs above rivers, rocky areas and slopes, banks of streams, fields, thickets, and sandy areas; less often in wetlands.	Unlikely, habitat does not occur in the project area. Field survey did not detect.
Shadbush Amelanchier sanguinea	SE	Margins of woods, river ledges, shorelines, rocky slopes, crevices of open rock faces and cliffs, non-calcareous to slightly calcareous sites.	Unlikely, habitat does not occur in the project area.
Marram Grass *Ammophila breviligulata*	SE	Drier areas of sandy beaches and unstabilized or partially stabilized sand dunes along coastal areas including the Great Lakes.	Unlikely, habitat does not occur in the project area.
Wooly Milkweed *Asclepias lanuginosa*	SE	Dry, sandy, or gravelly hillside prairies.	Unlikely, habitat does not occur in the project area.
Mead's Milkweed *Asclepias meadii*	FT	Moderately wet (mesic) to moderately dry (dry mesic) upland tallgrass prairie or glade/barren habitat characterized by vegetation adapted for drought and fire. Persists in stable late-successional prairie.	Unlikely, habitat does not occur in the project area.
Oval Milkweed *Asclepias ovalifolia*	SE	Hill prairies and dry sand prairies, typical savannas and sandy savannas, and openings in upland oak woodlands.	Unlikely, habitat does not occur in the project area.
Forked Aster *Aster furcatus*	ST	Glacial moraines, sedge meadows or woodland ponds.	Unlikely, habitat does not occur in the project area.
American Slough Grass *Beckmannia syzigachne*	SE	Marshes, low wet ground or “sloughs,” floodplains, pond shores, lakes, streams, ditches, and other types of open wetland habitats.	Unlikely, habitat does not occur in the project area.
Kittentails *Besseya bullii*	ST	Dry sand prairies, dry gravel prairies, hill prairies, barren savannas, thinly wooded bluffs, and sandy or gravelly riverbanks.	Unlikely, habitat does not occur in the project area.
Northern Grape Fern *Botrychium multifidum*	SE	Old pastures, meadows, woodland margins, riverbanks, and bottomlands in subacid soil.	Unlikely, habitat does not occur in the project area.
Dwarf Grape Fern *Botrychium simplex*	SE	Meadows, barrens, and woods, usually in subacid soil.	Unlikely, habitat does not occur in the project area.
Sea Rocket *Cakile edentula*	ST	Sand shores and low dunes, often found on the ridge of wind-blown sand behind the high-tide line of beaches.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Grass Pink Orchid *Calopogon tuberosus*	SE	Moist prairie and acid-soiled boggy areas, typically growing in sphagnum.	Unlikely, habitat does not occur in the project area.
Golden Sedge *Carex aurea*	ST	Moist, open or shaded habitats, especially meadows and seepage slopes, usually on basic soils.	Unlikely, habitat does not occur in the project area.
Sedge *Carex bromoides*	ST	Soggy deciduous woodlands, muddy margins and shallow water of vernal pools in wooded areas, hardwood swamps, typical seeps and gravelly seeps in wooded areas, bogs, edges of marshes, and sedge meadows. Found in higher quality natural areas.	Unlikely, habitat does not occur in the project area.
Sedge *Carex echinata*	SE	Bogs, swamps, peaty or sandy shores of streams or lakes, wet meadows, usually in acidic soils.	Unlikely, habitat does not occur in the project area.
Sedge *Carex formosa*	SE	Mesic to dry deciduous forests and ravines, moist meadows, usually associated with calcareous soils.	Unlikely, habitat does not occur in the project area.
Sedge *Carex garberi*	SE	Moist shores, meadows, fens, on base-rich soils.	Unlikely, habitat does not occur in the project area.
Swollen Sedge *Carex intumescens*	ST	Dry-mesic to wet coniferous, mixed, and deciduous forests, forest openings, thickets, wet meadows, ditches.	Unlikely, habitat does not occur in the project area.
Tuckerman's Sedge *Carex tuckermanii*	SE	Deciduous swamp forests, thickets, often along streams or pond shores, wet meadows.	Unlikely, habitat does not occur in the project area.
Little Green Sedge *Carex viridula*	ST	Sandy to rocky, often marly, open or marshy shores, beach pools, and interdunal swales; often in early successional habitats with bare soil.	Unlikely, habitat does not occur in the project area.
Pretty Sedge *Carex woodii*	ST	Usually dry, calcareous woodlands.	Unlikely, habitat does not occur in the project area.
Leatherleaf *Chamaedaphne calyculata*	ST	Boreal and subarctic peatlands, margins of boggy swamps and streams in coniferous forests, pocosins in coastal plain, often forming dense thickets.	Unlikely, habitat does not occur in the project area.
Seaside Spurge *Chamaesyce polygonifolia*	SE	Sandy beaches and dunes along Lake Michigan.	Unlikely, habitat does not occur in the project area.
Spotted Wintergreen *Chimaphila maculata*	SE	Coniferous, mixed, and deciduous forests, xeric sand communities.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Pitcher's (Dune) Thistle *Cirsium pitcheri*	ST	Beach and dune habitats around lakes Huron, Michigan, and Superior. Was extirpated from portions of its former range at the southern end of Lake Michigan.	Unlikely, habitat does not occur in the project area.
Sweetfern *Comptonia peregrina*	SE	Dry, sterile, sandy to rocky soils in pinelands or pine barrens, clearings, or edges of woodlots.	Unlikely, habitat does not occur in the project area.
Spotted Coral-root Orchid *Corallorhiza maculata*	ST	Habitats vary from deciduous forests and mixed coniferous/deciduous forests to predominantly coniferous forests.	Unlikely, habitat does not occur in the project area. Field survey did not detect.
White Lady's Slipper *Cypripedium candidum*	ST	Mesic to wet prairies and fen meadows, very rarely open wooded slopes.	Unlikely, habitat does not occur in the project area.
Leafy-prairie Clover *Dalea foliosa*	FE, SE	Prairie remnants along the Des Plains River in Illinois, in thin soils over limestone substrate.	Unlikely, habitat does not occur in the project area.
Hairgrass Deschampsia flexuosa	SE	Oak savanna and woodland habitat.	Unlikely, habitat does not occur in the project area.
Northern Panic Grass *Dichanthelium boreale*	SE	Semi-open areas in damp or sandy woodlands, thickets, or on banks.	Unlikely, habitat does not occur in the project area.
Narrow-leaved Sundew *Drosera intermedia*	ST	Constantly moist to wet bogs, fens, and marshes. It prefers nutrient free soils, such as sphagnum peat moss or sandy ground, and open, sunny habitats.	Unlikely, habitat does not occur in the project area.
Round-leaved Sundew *Drosera rotundifolia*	SE	Most often bogs, but also swamps, rotting logs, mossy crevices in rocks, or damp sand along stream, lake, or pond margins.	Unlikely, habitat does not occur in the project area.
Capitate Spikerush *Eleocharis olivacea*	SE	A variety of wet, open situations: shores, pond margins, bog mats, fields; often in deeper water than many other spike-rushes.	Unlikely, habitat does not occur in the project area.
Few-flowered Spikerush *Eleocharis pauciflora*	SE	Damp calcareous shores, ledges and swamps.	Unlikely, habitat does not occur in the project area.
Spike Rush *Eleocharis rostellata*	ST	Very wet calcareous or brackish fens, springs, shores.	Unlikely, habitat does not occur in the project area.
Bearded Wheat Grass *Elymus trachycaulus*	ST	Adapted to a wide range of soils and climates. Grows in very dry to very boggy habitats. In Illinois, found in mesic prairies and wet dolomite outcrops.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Queen-of-the-prairie *Filipendula rubra*	SE	Fens, calcium-rich peat producing wetlands.	Unlikely, habitat does not occur in the project area.
Northern Cranesbill *Geranium bicknellii*	SE	Woodland openings, sandy Black Oak woodlands, typical and sandy savannas, and rocky outcrops.	Unlikely, habitat does not occur in the project area.
Tall Sunflower *Helianthus giganteus*	SE	Thickets, swamps, and meadows.	Unlikely, habitat does not occur in the project area.
Kalm's St. John's Wort *Hypericum kalmianum*	SE	Moist; dunes, shores; in rocky, sandy soil.	Unlikely, habitat does not occur in the project area.
Richardson's Rush *Juncus alpinus*	SE	Wet, open to semi-open situations; in sandy, usually calcareous soil: shores of lakes and ponds, marshes, ditches, wet meadows, and wet areas of abandoned limestone quarries.	Unlikely, habitat does not occur in the project area.
Ground Juniper *Juniperus communis*	ST	Dry, open, rocky, wooded hillsides, sand terraces, maritime escarpments, and on exposed slopes and plateaus. It is found on dunes or dune heath in coastal areas, on isolated mountains, and may spread into fields and pastures.	Unlikely, habitat does not occur in the project area.
Pale Vetchling *Lathyrus ochroleucus*	ST	Open woods, thickets, and clearings on well drained, usually calcareous substrate.	Unlikely, habitat does not occur in the project area.
Prairie Bush Clover *Lespedeza leptostachya*	FT, SE	Dry to mesic prairies with gravelly soil.	Unlikely, habitat does not occur in the project area.
Blazing Star *Liatris scariosa* var. *nieuwlandii*	ST	Savannas and prairies or at woodland edges or forest openings, primarily on aged glacial till or loess soils.	Unlikely, habitat does not occur in the project area.
Indian Cucumber Root *Medeola virginiana*	SE	Moist slopes, mesic woods.	Unlikely, habitat does not occur in the project area.
Slender Sandwort *Minuartia patula*	ST	Prairies, meadows, limestone barrens, and rocky outcrops in sandy, clayey, or gravelly soils.	Unlikely, habitat does not occur in the project area.
Small Sundrops *Oenothera perennis*	ST	Dry to moist open ground, open woods, fields, and meadows.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Heart-leaved Plantain *Plantago cordata*	SE	Wet woods, sloughs, rocky streambeds, springs.	Unlikely, habitat does not occur in the project area.
Orange Fringed Orchid *Platanthera ciliaris*	SE	Moist sandy and peaty meadows, marshes, prairies, pine savannas, open woods, wet wooded flats, seeping slopes, roadsides, dry wooded slopes, sphagnum bogs.	Unlikely, habitat does not occur in the project area.
Wood Orchid *Platanthera clavellata*	SE	Sphagnum bogs, sphagnous seeps and meadows, wet sandy and peaty meadows, marshes, low woods, wet prairies, and roadsides.	Unlikely, habitat does not occur in the project area.
Tubercled Orchid *Platanthera flava* var. *herbiola*	ST	Alluvial forests, riparian thickets, wet meadows, wet prairies, seeps, salt marshes.	Unlikely, habitat does not occur in the project area.
Eastern Prairie Fringed Orchid *Platanthera leucophaea*	FT, SE	Moist to mesic black soil prairies, sand prairies, thickets, pothole marshes, and fens.	Unlikely, habitat does not occur in the project area.
Purple Fringed Orchid *Platanthera psycodes*	SE	Alluvial and swamp forests, stream banks, riparian meadows, moist and seeping slopes, marshes, roadside banks, ditches, old fields.	Unlikely, habitat does not occur in the project area.
Weak Bluegrass *Poa languida*	SE	Along the edges of wetlands on gravelly, well drained, calcareous substrates.	Unlikely, habitat does not occur in the project area.
Snake-mouth *Pogonia ophioglossoides*	SE	Sphagnum bogs, poor fens, moist acidic sandy meadows and prairies, open wet woods, wet pine flatwoods, pine savannas, cypress swamps, sandy-peaty stream banks, seepage slopes, ditches, roadcuts, rarely calcareous fens.	Unlikely, habitat does not occur in the project area.
Downy Solomon's Seal *Polygonatum pubescens*	SE	Rich, moist, wooded slopes and coves.	Unlikely, habitat does not occur in the project area.
Carey's Heartsease *Polygonum careyi*	SE	Moist, open to semi-open areas, often in sandy soil: swamps, thickets, riverbeds, sand prairies, and disturbed areas such as fields, meadows, clearings, recent barns, and cultivated ground.	Unlikely, habitat does not occur in the project area.
Balsam Poplar *Populus balsamifera*	SE	Open, rich, low woods, cool, seasonally wet soils, bog margins in boreal forests, aspen parklands, montane streamsides, rocky slopes, gallery forests within tundra.	Unlikely, habitat does not occur in the project area.
Grass-leaved Pondweed Potamogeton gramineus	ST	Ponds, lakes, streams, and rivers.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Fern Pondweed *Potamogeton robbinsii*	SE	Shallow to deep water of ponds, lakes, and slow-flowing rivers.	Unlikely, habitat does not occur in the project area.
Beaked Rush *Rhynchospora alba*	ST	Acid, sphagnous, boggy, open sites, poor fens, often on floating mats or peaty interstices of rocky shores.	Unlikely, habitat does not occur in the project area.
Purple-flowering Raspberry *Rubus odoratus*	SE	Moist, shady places; woodland edges.	Unlikely, habitat does not occur in the project area.
Dwarf Raspberry *Rubus pubescens*	ST	Rich, moist mixed woodland and boreal forests, bog hummocks, thickets, and stream margins.	Unlikely, habitat does not occur in the project area.
Bristly Blackberry *Rubus schneideri*	ST	Wet, open habitats; often occurs on sand prairies or shrub prairies.	Unlikely, habitat does not occur in the project area.
Bulrush *Scirpus hattorianus*	SE	Moist meadows, marshes, and ditches.	Unlikely, habitat does not occur in the project area.
Royal Catchfly *Silene regia*	SE	Dry, mesic barrens and prairies.	Unlikely, habitat does not occur in the project area.
Mountain Blue-eyed Grass *Sisyrinchium montanum*	SE	Moist, sandy meadows and open woods.	Unlikely, habitat does not occur in the project area.
Green-fruited Burreed *Sparganium emersum*	SE	Still to flowing eutrophic and mesotrophic, circumneutral to somewhat alkaline waters.	Unlikely, habitat does not occur in the project area.
Yellow-lipped Ladies' Tresses *Spiranthes lucida*	SE	Rocky and sandy riverbanks, calcareous seeps, fens.	Unlikely, habitat does not occur in the project area.
Great Chickweed *Stellaria pubera*	SE	Rich deciduous woods, alluvial bottomlands.	Unlikely, habitat does not occur in the project area.
Lakeside Daisy *Tetraneuris herbacea*	SE	Alvars (limestone flats), openings in woods.	Unlikely, habitat does not occur in the project area.
False Asphodel *Tofieldia glutinosa*	ST	Open, calcareous fens and sedge meadows.	Unlikely, habitat does not occur in the project area.
Ear-leafed Foxglove *Tomanthera auriculata*	ST	Disturbed prairies and savannas, thickets containing grasses and occasional shrubs, woodland borders, abandoned fields.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Star-flower *Trientalis borealis*	SE	Moist to wet coniferous forest, open heath lands, mature northern hardwood forests.	Unlikely, habitat does not occur in the project area.
Slender Bog Arrow Grass *Triglochin palustris*	ST	Coastal and mountain marsh areas and moist alkaline meadows.	Unlikely, habitat does not occur in the project area.
Nodding Trillium *Trillium cernuum*	SE	Rich, mostly deciduous forest southward, mixed deciduous-coniferous forests, swamps, moist coniferous forests northward.	Unlikely, habitat does not occur in the project area.
Flat-leaved Bladderwort *Utricularia intermedia*	ST	Shallow ponds, slow-moving streams, and wet sedge or rush meadows.	Unlikely, habitat does not occur in the project area.
Small Bladderwort *Utricularia minor*	SE	Shallow waters or sometimes emergent on the wet margins of pools.	Unlikely, habitat does not occur in the project area.
Large Cranberry *Vaccinium macrocarpon*	SE	Bogs, swamps, mires, wet shores and headlands.	Unlikely, habitat does not occur in the project area.
Small Cranberry *Vaccinium oxycoccos*	SE	Half buried in sphagnum hummocks in bogs, fens, muskeg, arctic-alpine tundra.	Unlikely, habitat does not occur in the project area.
Marsh Speedwell *Veronica scutellata*	ST	Marshes, wet meadows, low areas along springs, low muddy areas along ponds, and swamps.	Unlikely, habitat does not occur in the project area.
Hairy White Violet *Viola blanda*	SE	Dry to very moist woods, thickets, clearings, forested fens and mesic forests on river bluffs.	Unlikely, habitat does not occur in the project area. Field survey did not detect.
Canada Violet *Viola canadensis*	SE	Moist, open, wooded areas.	Unlikely, habitat does not occur in the project area.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Cook County, Illinois Federal- and State-Listed Species			
Species	Status	Habitat Requirements	Likelihood of Occurrence
Dog Violet *Viola conspersa*	ST	Moist woodlands, meadows.	Unlikely, habitat does not occur in the project area.

Sources
Species lists from
USFWS, Midwest Region, Federally Endangered, Threatened, Proposed, and Candidate Species, revised March 2012, Accessed at:
http://www.fws.gov/midwest/endangered/lists/illinois-cty.html
Illinois Natural Heritage Database, Threatened and Endangered Species by County as of September 12, 2011, Accessed at:
http://www.dnr.illinois.gov/ESPB/Documents/ETListCounty2011.pdf
Species Accounts from:
Herkert and Ebinger 2002, IDNR 2012, Minnesota Department of Natural Resources 2012, NatureServe Explorer 2012, Northern Ontario Plant Database 2012, Nyboer and Ebinger 2004, Robert W. Freckmann Herbarium 2012, USFWS 2012
* Birds receive additional federal protection through the Migratory Bird Treaty Act (excludes house sparrows, rock pigeons, European starlings) and the Bald and Golden Eagle Protection Act.

Status Legend
Federally protected:
FE - Federal Endangered (listed)
FT - Federal Threatened (listed)
FC - Federal Candidate
CH - Critical habitat has been designated (federal) in Cook County.

State Protected:
SE - State Endangered
ST - State Threatened

Peregrine falcons are large falcons that are specialized for capturing smaller birds in the air. They typically nest on cliff ledges and in urban areas they have been found nesting on ledges of tall buildings and high bridges. The EcoCAT database returned several records for peregrine falcons within the sections/townships/ranges that encompass the project area. There are no known nesting pairs within the API. Tall buildings that would be likely to be attractive to nesting falcons do not appear to occur within the API. Falcons could be expected to forage for small birds and pigeons throughout the project area. They would be found flying high above the project area and perched on buildings and other structures within the project area. Although peregrine falcons are migratory, falcons have been observed in the Chicago area in the winter in recent years. With the exception of the 120th Street yard and shop site, the project area is characterized by dense residential, multifamily, and commercial uses that contain a wide variety of structures and activity levels. There is no part of the API that would be expected to provide unique or particularly rich foraging habitat for peregrine falcons. However, the semi-natural habitats in the vicinity of the 120th Street yard and shop site, and large parks and open spaces (such as large cemeteries) might be expected to provide slightly greater foraging opportunities for falcons. In addition, the API represents a small proportion of a falcon's foraging territory.

Section 5
Impacts and Mitigations

The BRT Alternative, UPRR Rail Alternative, and Halsted Rail Alternative would all have the potential to adversely affect vegetation and wildlife habitat during construction; however, with the implementation of the proposed mitigation measures, potential impacts would be less than adverse. Operation of the Red Line following construction of any of the alternatives would have no measurable impact on listed species.

Development of the BRT Alternative, UPRR Rail Alternative, or Halsted Rail Alternative in combination with related renovation, new construction, and transportation projects identified in the vicinity of the proposed project would not contribute to substantial cumulative impacts on listed species.

5.1 No Build Alternative

The No Build Alternative represents existing conditions for biological resources in the project area.

5.1.1 Permanent Impacts and Mitigations - No Build Alternative

There would be no permanent impacts anticipated on biological resources as a result of the No Build Alternative.

5.1.2 Construction Impacts and Mitigations - No Build Alternative

There would be no construction impacts anticipated on biological resources as a result of the No Build Alternative.

5.2 Bus Rapid Transit Alternative

The BRT Alternative API has existing bus service, and there would be minimal change in activity levels.

5.2.1 Permanent Impacts and Mitigations - Bus Rapid Transit Alternative

There would be some loss of vegetation at the 130th Street park & ride lot. However, this area is isolated from other habitats by 130th Street and the Metropolitan Water Reclamation District treatment plant. The area has some trees, but they do not appear to be mature. The area would provide minimal potential for migratory bird use. Therefore, with compliance with local tree protection ordinances, potential impacts would not be adverse. After mitigation, there would be no measurable impacts on biological resources remaining.

5.2.2 Construction Impacts and Mitigations - Bus Rapid Transit Alternative

A small number of trees would likely be removed as a result of construction activities under the BRT Alternative. Most of the removal would likely occur at the park & ride facilities.

Local tree protection ordinances address the values that trees provide to the human environment. Removal of trees may have adverse impacts on the human environment as well as wildlife habitat. Compliance with local tree protection ordinances would result in less than adverse impacts on the human environment from tree removal. Additional mitigation measures may be required to reduce potential impacts on wildlife habitat.

During project permitting, a detailed tree inventory would need to be prepared for each work zone. Compliance with local tree protection ordinances would be required to address potential impacts on trees.

If construction occurs at night, then the necessary lighting would generate a temporary adverse impact on wildlife. Throughout much of the corridor, there is considerable night lighting close to the proposed alignments. Light impacts would not be expected to affect birds during the spring or fall migration because migrating birds would experience greater light impacts from the surrounding urban areas. With the implementation of mitigation measures to avoid impacts on nesting migratory birds (described below), potential light impacts during construction would not be adverse.

In summary, construction impacts under the BRT Alternative would include potential adverse impacts on the following vegetation and wildlife habitat resources:

- The urban tree inventory, due to tree removal. This impact would be reduced to a less than adverse level by compliance with local tree protection regulations.
- Migratory birds wherever tree clearing occurs. This impact would be reduced to a less than adverse level by the implementation of mitigation measures.

Mitigation measures would be required for compliance with the MBTA, with local tree protection ordinances, and to reduce potential impacts on wildlife habitat. Bird species that may utilize trees that could be removed or disturbed during construction could be affected. Potential mitigation measures that would reduce adverse impacts would include the following:

- Tree removal would be timed as much as possible to occur outside the migratory bird nesting season, which occurs generally from April 1–September 15 and as early as March 1 for some species.
- If construction must occur during the nesting season, two biological surveys would be conducted: one 15 days prior and a second 72 hours prior to the construction that would remove or disturb suitable nesting habitat. The surveys would be performed by a biologist with experience conducting breeding bird surveys. The biologist would prepare survey reports

documenting the presence or absence of any protected bird in the habitat to be removed and any other such habitat within 300 feet of the construction work area. If a protected bird is found, surveys would be continued in order to locate any nests. If an active nest is located, construction within 300 feet of the nest would be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting.

- Avoidance measures would be incorporated into the design of the project during preliminary engineering where feasible. However, if construction of the project requires removal of a protected tree, a permit would be required in accordance with applicable local codes and ordinances of the city in which the affected tree is located. Tree removal permits may require replanting of protected trees within the project area or at another location to mitigate for the removal of these trees. Replanting would be done according to the ratios required by tree removal permits and in a size that is appropriate for the species and setting as determined by an arborist. In addition, planted trees would be maintained such that ninety percent are in good condition after six months and irrigation would be carried out until the tree is established.

After mitigation, there would be no measurable impacts on biological resources remaining.

5.3 Union Pacific Railroad Rail Alternative - Right-of-Way Option

5.3.1 Permanent Impacts and Mitigations - Union Pacific Railroad Rail Alternative - Right-of-Way Option

5.3.1.1 Segment UA (Vegetation Segments UA-1 to UA-3)

Vegetation segments UA-1 to UA-3 from the 95th Street Terminal to approximately 119th Street are in areas with existing rail service and urban levels of activity. Although the number of trains through the corridor would increase under the UPRR Rail Alternative, the noise and lighting levels would not increase appreciably from the existing condition.

Of all the alternatives, the ROW Option would have the least impact on existing vegetation, primarily removing young trees from the I-57 median. However, this area is isolated from other habitats by the freeways. In addition, these trees do not appear to be mature. The area would provide minimal potential for migratory bird use. Therefore, with compliance with local tree protection ordinances, potential impacts would not be adverse.

In addition, the largest block of habitat between 110th and 111th Streets would be affected by the proposed park & ride. This area has multiple vegetation layers and relatively mature trees, providing a relatively good patch of habitat for urban adapted species. The area would be used by migratory birds. Mitigation measures would be implemented during construction to avoid potential impacts (Section 5.2.2). After mitigation, there would be no measurable impacts on biological resources remaining.

5.3.1.2 Segment UB (Vegetation Segments UB and Station Options)

While a relatively large amount of habitat would be affected in Vegetation Segment UB, the area is dominated by young cottonwood trees and invasive, non-native species and represents low quality habitat. It is fragmented and somewhat isolated by the surrounding industrial and transportation land uses. The area provides habitat for migratory birds and may be somewhat more valuable than other areas due to its proximity to designated natural areas near Lake Calumet and the Calumet River. However, this added value would only be useful to more mobile species such as birds that can overcome the industrial and land use barriers between the API and other more natural areas.

Operations in Vegetation Segment UB would further fragment the existing habitats and introduce new activity levels into the area. Because the forest cover is not mature, the vegetation is dominated by early successional and invasive, non-native species. Because the area is surrounded by heavy industrial and transportation land uses, the area likely only provides habitat for urban-adapted species. Therefore, the potential impacts would not likely be adverse.

The 130th Street station South and West option sites of the UPRR Rail Alternative are in areas with existing rail service and urban levels of activity.

After mitigation, there would be no measurable impacts on biological resources remaining.

5.3.2 Construction Impacts and Mitigations - Union Pacific Railroad Rail Alternative - Right-of-Way Option

5.3.2.1 Segment UA (Vegetation Segments UA-1 to UA-3)

A small number of trees would likely be removed as a result of construction activities in Segments UA-1 to UA-3 of the ROW Option. Most of the removal would likely occur at the park & ride facilities, and in the median of the freeway just south of the 95th Street Terminal.

As described for the BRT Alternative, compliance with local tree protection ordinances would result in less than adverse impacts on the human environment from tree removal. Additional mitigation measures may be required to reduce potential impacts on wildlife habitat. As it would be for the BRT Alternative, a detailed tree inventory would need to be prepared for each work zone during project permitting.

Night construction would generate a temporary adverse impact on wildlife, as described for the BRT Alternative. With the implementation of mitigation measures to avoid impacts on nesting migratory birds, potential light impacts during construction would not be adverse (See Section 5.2.2).

In summary, construction impacts under the UPRR Rail Alternative would include potential adverse impacts on the following vegetation and wildlife habitat resources:

- The urban tree inventory, due to tree removal. This impact would be reduced to a less than adverse level by compliance with local tree protection regulations.

- Migratory birds wherever tree clearing occurs. This impact would be reduced to a less than adverse level by the implementation of mitigation measures.

Potential mitigation measures that would reduce adverse impacts are discussed in Section 5.2.2. After mitigation, there would be no measurable impacts on biological resources remaining.

5.3.2.2 Segment UB (Vegetation Segments UB and Station Options)

Trees would be removed as a result of construction activities in UPRR Rail Alternative Segment UB. Some additional trees and low quality habitat, dominated by non-native invasive species, would be affected in the South and West Station Option locations.

As described for the BRT Alternative, compliance with local tree protection ordinances would result in less than adverse impacts on the human environment from tree removal. Additional mitigation measures may be required to reduce potential impacts on wildlife habitat. As it would be for the BRT Alternative, a detailed tree inventory would need to be prepared for each work zone during project permitting.

Night construction would generate a temporary adverse impact on wildlife, as described for the BRT Alternative. With the implementation of mitigation measures to avoid impacts on nesting migratory birds, potential light impacts during construction would not be adverse (See Section 5.2.2).

In summary, construction impacts under the UPRR Rail Alternative would include potential adverse impacts on the following vegetation and wildlife habitat resources:

- The urban tree inventory, due to tree removal. This impact would be reduced to a less than adverse level by compliance with local tree protection regulations.
- Migratory birds wherever tree clearing occurs. This impact would be reduced to a less than adverse level by the implementation of mitigation measures.

Potential mitigation measures that would reduce adverse impacts are discussed in Section 5.2.2. After mitigation, there would be no measurable impacts on biological resources remaining.

5.3.3 120th Street Yard and Shop

5.3.3.1 Permanent Impacts and Mitigations

See Section 5.3.1.2.

5.3.3.2 Construction Impacts and Mitigations

See Section 5.3.2.2.

Potential mitigation measures that would reduce adverse impacts are discussed in Section 5.2.2.

5.4 Union Pacific Railroad Rail Alternative - East Option

5.4.1 Permanent Impacts and Mitigations - Union Pacific Railroad Rail Alternative - East Option

5.4.1.1 Segment UA (Vegetation Segments UA-1 to UA-3)

See Section 5.3.1.1. Although the East Option would affect a larger amount of vegetation than the ROW Option, the potential impacts would be similar to those described in Section 5.3.1.

5.4.1.2 Segment UB (Vegetation Segments UB and Station Options)

See Section 5.3.1.2.

5.4.2 Construction Impacts and Mitigations - Union Pacific Railroad Rail Alternative - East Option

5.4.2.1 Segment UA (Vegetation Segments UA-1 to UA-3)

See Section 5.3.2.1. Although the East Option would affect a larger amount of vegetation than the ROW Option, the potential impacts would be similar to those described in Section 5.3.2.1.

5.4.2.2 Segment UB (Vegetation Segments UB and Station Options)

See Section 5.3.2.2.

5.4.3 120th Street Yard and Shop

See Section 5.3.4.

5.5 Union Pacific Railroad Rail Alternative - West Option

5.5.1 Permanent Impacts and Mitigations - Union Pacific Railroad Rail Alternative - West Option

5.5.1.1 Segment UA (Vegetation Segments UA-1 to UA-3)

See Section 5.3.1.1. Of the UPRR options, the West Option would affect the greatest amount of vegetation, including several patches with relatively diverse vegetation regenerating in abandoned industrial sites between 108th and 111th Streets. The potential impacts would be similar to those described in Section 5.3.1.1.

5.5.1.2 Segment UB (Vegetation Segments UB and Station Options)

See Section 5.3.1.2.

5.5.2 Construction Impacts and Mitigations - Union Pacific Railroad Rail Alternative - West Option

5.5.2.1 Segment UA (Vegetation Segments UA-1 to UA-3)

See Section 5.3.2.1.

5.5.2.2 Segment UB (Vegetation Segments UB and Station Options)

See Section 5.3.2.2.

5.5.3 120th Street Yard and Shop

See Section 5.3.4.

5.6 Halsted Rail Alternative

5.6.1 Permanent Impacts and Mitigations - Halsted Rail Alternative

5.6.1.1 Segment HA (Vegetation Segments HA-1 to HA-3)

Halsted Street is currently developed with commercial land uses. The operation of an elevated rail line would have no impact on vegetation and wildlife habitats along this route.

5.6.1.2 Segment HB (Vegetation Segment HB)

Halsted Street is currently developed with commercial land uses. The operation of an elevated rail line would have no impact on vegetation and wildlife habitats along this route.

5.6.2 Construction Impacts and Mitigations - Halsted Rail Alternative

5.6.2.1 Segment HA (Vegetation Segments HA-1 to HA-3)

A number of trees would likely be removed as a result of construction activities under the Halsted Rail Alternative. Most of the removal would likely affect trees from the Halsted Street median and sidewalks.

Compliance with local tree protection ordinances would result in less than adverse impacts on the human environment from tree removal. Additional mitigation measures, such as the measures to protect migratory birds as described in Section 5.2.2, may be required to reduce potential impacts on wildlife habitat. As it would be for the BRT Alternative and UPRR Rail Alternative, a detailed tree inventory would need to be prepared for each work zone during project permitting.

Night construction would generate a temporary adverse impact on wildlife, as described for the BRT Alternative. With the implementation of mitigation measures to avoid impacts on nesting migratory birds, potential light impacts during construction would not be adverse (See Section 5.2.2).

In summary, construction impacts under the Halsted Rail Alternative would include potential adverse impacts on the following vegetation and wildlife habitat resources:

- The urban tree inventory, due to tree removal. This impact would be reduced to a less than adverse level by compliance with local tree protection regulations.
- Migratory birds wherever tree clearing occurs. This impact would be reduced to a less than adverse level by the implementation of mitigation measures.

Suitable habitat for listed plant species does not appear to be present in the API.

Potential mitigation measures that would reduce adverse impacts are discussed in Section 5.2.2. After mitigation, there would be no measurable impacts on biological resources remaining.

5.6.2.2 Segment HB (Vegetation Segment HB)

See Section 5.6.2.1.

5.6.3 119th Street Yard and Shop

5.6.3.1 Permanent Impacts and Mitigations

There are a few relatively small patches of regenerating vegetation within the proposed yard and shop area that would be used by migratory birds. Mitigation measures would be implemented during construction to avoid potential impacts.

5.6.3.2 Construction Impacts and Mitigations

See Section 5.6.2.

Section 6
Impacts Remaining After Mitigation

6.1 No Build Alternative

After mitigation, no measurable impacts on biological resources would remain.

6.2 Bus Rapid Transit Alternative

After mitigation, no measurable impacts on biological resources would remain.

6.3 Union Pacific Railroad Rail Alternative - Right-of-Way Option

After mitigation, no measurable impacts on biological resources would remain.

6.4 Union Pacific Railroad Rail Alternative - East Option

After mitigation, no measurable impacts on biological resources would remain.

6.5 Union Pacific Railroad Rail Alternative - West Option

After mitigation, no measurable impacts on biological resources would remain.

6.6 Halsted Rail Alternative

After mitigation, no measurable impacts on biological resources would remain.

Section 7
References Cited

American Association of State Highway and Transportation Officials. 2006. Improving the Quality of Environmental Documents: A Report of the Joint AASHTO/ACEC Committee in Cooperation with the Federal Highway Administration. Publication Code IQED-1.

City of Chicago. 2004. Calumet Industrial Corridor Design Guidelines. Available at: http://www.csu.edu/cerc/documents/CalumetIndustrialCorridorDesignGuidelines.pdf. Accessed on November 28, 2012.

City of Chicago. 2005a. Calumet Open Space Reserve Plan. Available at: http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Calumet_Open_Space_Reserve/COSR_plan.pdf. Accessed on November 28, 2012.

City of Chicago. 2005b. Chicago Habitat Directory: Calumet West Shore and Gull Island. Available at: http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/Calumet_West_Shore_and_Gull_Island.pdf. Accessed on: November 15, 2012.

City of Chicago. 2005c. Chicago Habitat Directory: Kensington Marsh. Available at: http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/Kensington_Marsh.pdf. Accessed on: November 15, 2012.

City of Chicago. 2005d. Chicago Habitat Directory: Riverdale Bend Woods. Available at: http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/Riverdale_Bend_Woods.pdf. Accessed on: November 15, 2012.

City of Chicago. 2005e. Chicago Habitat Directory: West Pullman Park Savanna. Available at: http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/West_Pullman_Park_Savanna.pdf. Accessed on: November 15, 2012.

City of Chicago. 2006a. Chicago's Bird Agenda. Available at: http://www.csu.edu/CERC/researchreports/documents/ChicagosBirdAgenda2006.pdf. Accessed on November 28, 2012.

City of Chicago. 2006b. Nature and Wildlife Plan. Available at: http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/Wildlife_Plan.pdf. Accessed on November 15, 2012.

City of Chicago. 2009. Chicago's Urban Forest Agenda. Available at: http://www.cityofchicago.org/dam/city/depts/doe/general/NaturalResourcesAndWaterConservation_PDFs/UrbanForestAgenda/ChicagosUrbanForestAgenda2009.pdf. Accessed on November 28, 2012.

City of Chicago. 2011. Chicago's Nature and Wildlife Plan Update. Available at: http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Chicago_Nature_and_Wildlife_Plan/Nature_Wildlife_Update_2MB.pdf. Accessed on November 28, 2012.

Herkert, J.R. and J.E. Ebinger, editors. 2002. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 1 - Plants. Illinois Endangered Species Protection Board, Springfield, IL. 161 pp. Available at: http://www.dnr.state.il.us/publications/pdf/00000593.pdf. Accessed on November 28, 2012.

Illinois Department of Natural Resources (IDNR). 2012. Ecological Compliance Assessment Tool (EcoCAT), IDNR Project Numbers 1304095, 1304096, 1304098, 1304099, and 1304295. Available at: http://dnrecocat.state.il.us/ecopublic/. Accessed on September 18, 2012.

U.S. Fish and Wildlife Service (USFWS). 2012. Midwest Region, Federally Endangered, Threatened, Proposed, and Candidate Species, revised October 2012. Available at: http://www.fws.gov/midwest/endangered/lists/illinois-cty.html. Accessed on November 28, 2012.

Appendix A
EcoCAT Report

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	CDM Smith	*IDNR Project #:*	1304095
Contact:	Claudia Lea	Date:	09/12/2012
Address:	125 S Wacker Drive Suite 600 Chicago, IL 60606		

Project: CTA Red Line Extension Project
Address: 95th Street Terminal, Chicago

Description: The Chicago Transit Authority (CTA) is proposing to extend the Red Line from the 95th Street Station to the vicinity of 130th Street.

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:

37N, 14E, 3	37N, 14E, 4
37N, 14E, 9	37N, 14E, 10
37N, 14E, 15	37N, 14E, 22

IL Department of Natural Resources Contact
Impact Assessment Section
217-785-5500
Division of Ecosystems & Environment

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EcoCAT
Ecological Compliance Assessment Tool

Applicant: CDM Smith
Contact: Claudia Lea
Address: 125 S Wacker Drive
Suite 600
Chicago, IL 60606

IDNR Project #: 1304098
Date: 09/12/2012

Project: CTA Red Line Extension
Address: 95th Street Terminal, Chicago

Description: The Chicago Transit Authority (CTA) is proposing to extend the Red Line from the 95th Street Station to the vicinity of 130th Street.

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:

37N, 14E, 3 37N, 14E, 4
37N, 14E, 8 37N, 14E, 9
37N, 14E, 10

IL Department of Natural Resources Contact

Impact Assessment Section
217-785-5500
Division of Ecosystems & Environment

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	CDM Smith	*IDNR Project #:*	1304099
Contact:	Claudia Lea	Date:	09/12/2012
Address:	125 S Wacker Drive Suite 600 Chicago, IL 60606		

Project: CTA Red Line Extension
Address: 95th Street Terminal, Chicago

Description: The Chicago Transit Authority (CTA) is proposing to extend the Red Line from the 95th Street Station to the vicinity of 130th Street.

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Riverdale Marsh INAI Site
Black-Crowned Night Heron *(Nycticorax nycticorax)*
Little Blue Heron *(Egretta caerulea)*
Yellow-Crowned Night Heron *(Nyctanassa violacea)*
Yellow-Headed Blackbird *(Xanthocephalus xanthocephalus)*

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:

37N, 14E, 8	37N, 14E, 9
37N, 14E, 16	37N, 14E, 17
37N, 14E, 20	37N, 14E, 21
37N, 14E, 22	37N, 14E, 28
37N, 14E, 29	37N, 14E, 32
37N, 14E, 33	

IL Department of Natural Resources Contact
Impact Assessment Section
217-785-5500
Division of Ecosystems & Environment

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	CDM Smith	*IDNR Project #:*	1304096
Contact:	Claudia Lea	Date:	09/12/2012
Address:	125 S Wacker Drive Suite 600 Chicago, IL 60606		

Project: CTA Red Line Extension
Address: 95th Street Terminal, Chicago

Description: The Chicago Transit Authority (CTA) is proposing to extend the Red Line from the 95th Street Station to the vicinity of 130th Street.

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Lake Calumet INAI Site
Blanding'S Turtle *(Emydoidea blandingii)*
Common Moorhen *(Gallinula chloropus)*
Little Blue Heron *(Egretta caerulea)*
Peregrine Falcon *(Falco peregrinus)*
Yellow-Crowned Night Heron *(Nyctanassa violacea)*
Yellow-Headed Blackbird *(Xanthocephalus xanthocephalus)*

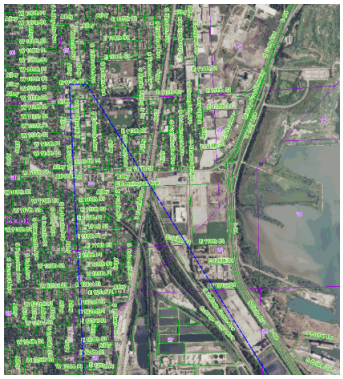
Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:

37N, 14E, 15	37N, 14E, 22
37N, 14E, 26	37N, 14E, 27
37N, 14E, 28	37N, 14E, 33
37N, 14E, 34	37N, 14E, 35



IL Department of Natural Resources Contact
Impact Assessment Section
217-785-5500
Division of Ecosystems & Environment

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

EcoCAT
Ecological Compliance Assessment Tool

Applicant:	CDM Smith	*IDNR Project #:*	1304295
Contact:	Claudia Lea	Date:	09/18/2012
Address:	125 S Wacker Drive Suite 600 Chicago, IL 60606		

Project: CTA Red Line Extension Project
Address: 95th Street Terminal, Chicago

Description: The Chicago Transit Authority (CTA) is proposing to extend the Red Line from the 95th Street Station to the vicinity of 130th Street.

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Riverdale Marsh INAI Site
Black-Crowned Night Heron *(Nycticorax nycticorax)*

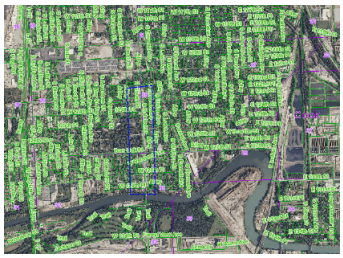
Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

Township, Range, Section:

37N, 14E, 28	37N, 14E, 29
37N, 14E, 32	37N, 14E, 33



IL Department of Natural Resources Contact
Impact Assessment Section
217-785-5500
Division of Ecosystems & Environment

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

Appendix B
Monk Parakeet Photographs

Cell phone tower at the northwest corner of 119th Street and Emerald Avenue with monk parakeet nests

Appendix C
2014–2015 Red Line Extension Project Update

2014–2015 Red Line Extension Project Update

From 2012–2014, CTA evaluated benefits and impacts of four alternatives: the No Build Alternative, the Bus Rapid Transit Alternative (along Michigan Avenue), the Union Pacific Railroad (UPRR) Rail Alternative, and the Halsted Alternative. CTA evaluated three options of the UPRR Rail Alternative: Right-of-Way Option, East Option, and West Option. CTA also evaluated two options of the UPRR Rail Alternative 130th Street station: a South Station Option and a West Station Option. Based on the project description provided in Section 2 of this technical memorandum, CTA analyzed the impacts of these alternatives and station options. The benefits and impacts are included in the technical memoranda prepared in 2012–2014.

In August 2014, based on the technical analysis and public input, CTA announced the NEPA Preferred Alternative—the UPRR Rail Alternative. Additional conceptual engineering was conducted on the UPRR Rail Alternative to refine the East and West Option alignments. In addition, CTA is considering only the South Station Option of the 130th Street Station.

In late 2014 and early 2015, CTA conducted additional engineering and revised assumptions on the East and West Options to refine the alignments. The refinement of the East and West Options consisted of the following items:

- For the segment of the alignment along I-57, CTA shifted the proposed alignment from the median of I-57 to the north side of I-57 within the existing expressway right-of-way. The construction would be less complex, safer for construction workers, and have a shorter duration. The shift would also allow for fewer impacts to Wendell Smith Park for the East Option, and would allow for no permanent impacts to Wendell Smith Park for the West Option.

- CTA modified the curve speeds as the alignment heads south from I-57 along the UPRR tracks. The curve speed for both the East and West Options would be 35 mph.

- CTA shifted the East Option alignment near 103rd Street station to minimize impacts to Block Park and the Roseland Pumping Station.

- CTA modified the curves south of 103rd Street for both the East and West Options to 55 mph to maximize the train speed.

- CTA refined the layout of the 120th Street yard and shop to optimize yard operations. The refined layout of the yard would accommodate 340 train cars.

The refinement of the East and West Option alignments minimizes potential impacts to parks while providing flexibility for future design phases. The Draft Environmental Impact Statement contains the benefits and impacts of the refined East and West Option alignments and supersedes information presented in other chapters of this technical memorandum.

The refined East and West Option alignments would have no additional or different impacts from those described in the technical memoranda for the following resource areas: construction, transportation, land use and economic development, historic and cultural resources, safety and security, hazardous materials, indirect and cumulative, air quality, floodplains, vegetation and wildlife habitat, threatened and endangered species, and geology and soils.