Appendix X
Environmental Justice Technical Memorandum

RED AHEAD
Moving Ahead to a Better Red

Red Line Extension

Chicago Red Line Extension Project

Environmental Justice
Technical Memorandum

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Abbreviations

API	area of potential impact
BRT	Bus Rapid Transit
CMAP	Chicago Metropolitan Agency for Planning
CO	carbon monoxide
CTA	Chicago Transit Authority
EIS	Environmental Impact Statement
EO	Executive Order
FSRRFS	Far South Railroad Relocation Feasibility Study
FTA	Federal Transit Administration
GHG	greenhouse gases
LEP	limited English proficiency
MSAT	mobile source air toxics
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
PM2.5	particulate matter smaller than 2.5 micrometers
RLE	Red Line Extension
ROW	right-of-way
Uniform Act	Uniform Relocation and Real Property Assistance Act of 1970
UPRR	Union Pacific Railroad
USDOT	United States Department of Transportation

Section 1
Summary

This technical memorandum analyzes the potential impacts of the Red Line Extension (RLE) Project on Environmental Justice. The Environmental Justice analysis and outreach process was undertaken to accomplish the following goals, consistent with Federal Transit Administration (FTA) Circular 4703.1, *Environmental Justice Policy Guidance for Federal Transit Administration* (August 2012), and Circular 4702.1B, *Title VI Requirements and Guidelines for Federal Transit Administration Recipients* (October 2012):

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The analysis and outreach process is also consistent with the legislation that defines requirements for Environmental Justice compliance: the February 1994 Executive Order (EO) 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations,* and the May 2012 U.S. Department of Transportation (USDOT) Order 5610.2, *Order to Address Environmental Justice in Minority Populations and Low-Income Populations*.

Although projects in areas comprising entirely Environmental Justice populations do not necessarily preclude disproportionately high and adverse effect findings, the following characteristics are true of the project area and the RLE alternatives:

- The entire project area comprises predominantly minority populations. No community in the project area contains less than 92.9 percent minority populations, and the project area as a whole contains 97.9 percent minority populations.
- All of the impacts and benefits of the alternatives would accrue to the same minority populations, and few project benefits would occur outside the project area.
- The purpose of this community-initiated project includes connecting disadvantaged communities to Chicago's major employment and activity centers in an effort to spur economic development and improve livability. The project would help remediate the geographic isolation and lack of employment and development opportunities that currently exist in the project area.

Given these findings, none of the alternatives would result in disproportionately high and adverse effects on Environmental Justice populations. Some alternatives would still have adverse impacts on Environmental Justice communities; however, these impacts would not be disproportionate. In some instances, impacts would remain adverse despite implementation of mitigation measures, as shown in Table 1-1 and described further in Section 5. These remaining adverse impacts would be associated with the change in community and visual character caused by locating an elevated rail structure and parking structures in low-density residential areas. In the case of the Halsted Rail Alternative, impacts would also stem from the proximity of the elevated rail structure to historic resources.

Table 1-1: Adverse Impacts Remaining After Mitigation by Alternative (Not Disproportionate)

Impact Category	No Build	BRT	UPRR ROW Option	UPRR East Option	UPRR West Option	Halsted
Displacements	No	No	No	No	No	No
Land Use and Economic Development	No	No	No	No	No	Yes
Noise and Vibration	No	No	No	No	No	No
Energy	No	No	No	No	No	No
Air Quality and Climate Change	No	No	No	No	No	No
Biological Resources	No	No	No	No	No	No
Hazardous Materials	No	No	No	No	No	No
Neighborhood and Community	No	No	No	Yes	Yes	Yes
Parklands and Community Facilities	No	No	No	No	No	No
Safety and Security	No	No	No	No	No	No
Visual and Aesthetic Conditions	No	No	No	Yes	Yes	Yes
Water Resources	No	No	No	No	No	No
Transportation	No	No	No	No	No	No
Historic and Cultural Resources	No	No	No	No	No	Yes
Geology and Soils	No	No	No	No	No	No
Cumulative	No	No	No	No	No	No

BRT = Bus Rapid Transit, UPRR = Union Pacific Railroad, ROW = Right-of-Way

Reference to the public involvement summary in Section 7 to be added following completion of the Environmental Justice outreach process.

Updated July 29, 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 B of this technical memorandum summarizes the refined alignments and any additional or different impacts that would result. The information in Appendix B 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
- Bus Rapid Transit (BRT) Alternative
- Union Pacific Railroad (UPRR) Rail Alternative
    - Right-of-Way (ROW) Option
    - East Option
    - West Option
- Halsted Rail Alternative

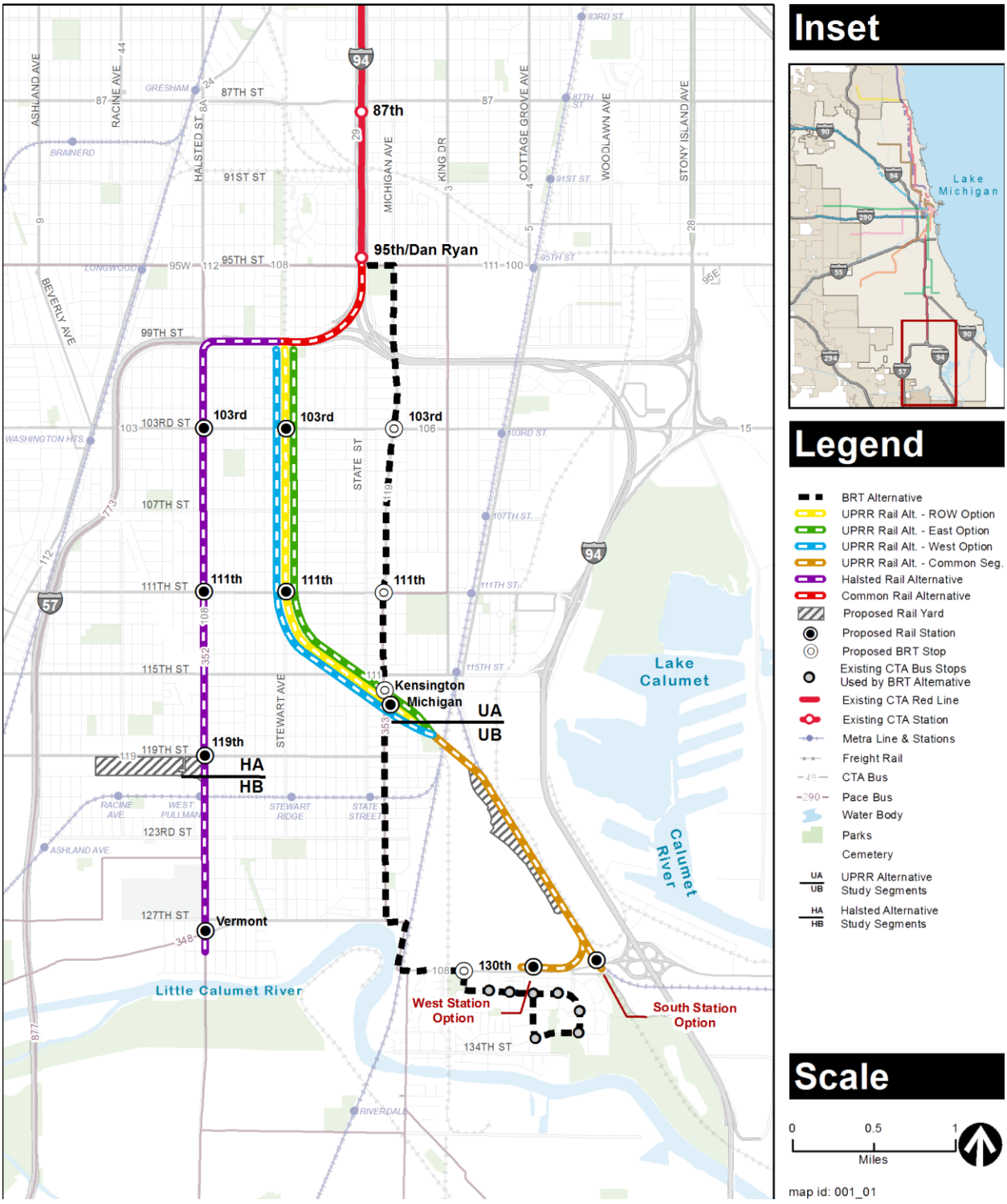

Figure 2-1: Red Line Extension Project Alternatives

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 (CMAP) Fiscal Year 2010–2015 Transportation Improvement Program, which includes 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

According to EO 12898 signed in February 1994 and the guidance provided in FTA Circular 4703.1, *Environmental Justice Policy Guidance for Federal Transit Administration* issued in August 2012, the Environmental Justice process and analysis developed for the RLE Project is designed to achieve the following:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The Environmental Justice analysis for the RLE Project is consistent with the August 2012 FTA Circular and is tailored to the unique characteristics and needs of the population in the area. Because the entire project area consists of predominantly African American populations with some Spanish-speaking groups, as discussed further in Section 4, all public outreach efforts were targeted to Environmental Justice populations. In addition to traditional public meetings and internet-based outreach, information about the project and opportunities for input were provided through newsletters, standing community group meetings, and individual stakeholder interviews to ensure full and fair participation. Information gathered during stakeholder interviews was used to plan focused, grassroots meetings to work through community concerns and identify appropriate mitigation measures. All outreach was conducted in both English and Spanish languages. Concerns about potential impacts raised during outreach were analyzed in conjunction with the impacts from the other RLE technical reports to determine whether disproportionately high and adverse effects would potentially occur. The results of the impact analysis are presented in detail in Section 5.

3.1 Regulatory Framework

The following subsections summarize the federal and related state laws that define Environmental Justice requirements for federally funded transit projects. The Environmental Justice analysis and outreach process for the RLE Project was conducted in accordance with these requirements. The methods outlined in the cited guidance documents were used to develop the methods for this analysis, as described in Sections 3.2 through 3.4 below.

3.1.1 Federal

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations* (1994), requires each federal agency "to make achieving Environmental Justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations" (Federal Register, Volume 59, No. 32, 7629-7633, February 16, 1994). Each federal agency must analyze the environmental impacts, including human health, economic, and social impacts, of federal actions including impacts on minority and low-income communities, when such analysis is required by NEPA. Federal agencies are also required to provide opportunities for community input in the NEPA process, identify potential impacts and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices (Council on Environmental Quality 1997).

As discussed above, FTA issued its most recent guidance for meeting the requirements of EO 12898 as Circular 4703.1 in August 2012. The circular provides recommendations for the following:

- Identifying low-income and minority populations using Census data, outreach, and field observations.
- Determining whether disproportionately high and adverse effects would occur as a result of the project.
- Implementing traditional and non-traditional public outreach methods to ensure effective engagement of minority and low-income communities in the planning and decision-making process.
- Incorporating Environmental Justice into the NEPA process.

These recommendations have been incorporated as guiding principles into the analysis and outreach performed for the RLE Project. More detailed information regarding the specific methods used to comply with these recommendations is provided in Section 3.4.

Executive Order 13166 (2000), *Improving Access to Services for Persons with Limited English Proficiency (LEP),* requires that people who are not proficient in the English language have access to meaningful communications about and participation in any program or activity receiving federal assistance. It requires federal agencies to examine the services they provide for persons who, as a result of national origin, have LEP. It calls for agencies to identify whether LEP populations are in need of their services, and to develop and implement a system to provide those services so LEP persons can have meaningful access to them. The LEP analysis for the RLE Project is attached to this technical memorandum as Appendix A. The LEP analysis states that outreach for the project should be conducted in both English and Spanish languages.

In May 2012, the USDOT issued Order 5610.2, *Order to Address Environmental Justice in Minority Populations and Low-Income Populations,* in compliance with the February 1994 EO 12898. It provides guidance for transportation agencies to achieve Environmental Justice and establishes a policy to promote the principles of Environmental Justice in all USDOT programs, policies, and activities. It also requires that Environmental Justice principles be fully considered throughout planning and decision-making processes. The Environmental Justice analysis for the RLE Project incorporates the direction from Order 5610.2 (May 2012) as referenced and interpreted in FTA Circular 4703.1 (August 2012).

Title VI, which is related to Environmental Justice, imposes a statutory obligation on FTA recipients to (1) ensure that the level and quality of public transportation service is provided equitably without regard to race, color, or national origin; (2) promote full and fair participation in public transportation decision-making without regard to race, color, or national origin; and (3) ensure meaningful access to transit-related programs and activities by persons with LEP. A separate Title VI analysis will be prepared for this project by CTA.

3.1.2 State

Article XI of the *Constitution of the State of Illinois* (Article XI) establishes the legislative responsibility of the state "to provide and maintain a healthful environment for the benefit of this and future generations" and provides each person with the individual right to a "healthful environment" (Illinois General Assembly, Constitution of the State of Illinois).

In furtherance of Article XI, State Bill 2193, referred to as the Environmental Justice Act, was enacted on August 16, 2011 and established the Commission on Environmental Justice in the state of Illinois. The Commission on Environmental Justice is charged with advising state entities on Environmental Justice issues, reviewing and analyzing current state laws and policies, and recommending options to rectify Environmental Justice concerns. This Act ensures that no segment of the population in the state of Illinois, "regardless of race, national origin, age, or income, should bear disproportionately high or adverse effects of environmental pollution" (Illinois General Assembly, Public Act 097-0391). Demographic analysis of elderly populations is included in Section 4 to address these goals.

3.1.3 Local

Local agencies are subject to the above federal and state laws, as applicable. Cook County, the City of Chicago, and the Village of Calumet Park do not have additional regulatory requirements pertaining to Environmental Justice.

3.2 Impact Analysis Thresholds

3.2.1 Environmental Justice Populations

The FTA's Circular 4703.1 (August 2012) recommends identifying minority and low-income populations using a combination of Census data analysis and non-traditional data gathering techniques such as outreach to community-based organizations. Census data was used to

preliminarily identify minority and low-income populations. Preliminary identifications were then supplemented with field visits (windshield and walking surveys conducted in 2012) and stakeholder outreach to confirm the presence of minority and low-income populations. Based on field observation and research, the Census tract and block-group boundaries used do not artificially dilute or inflate the affected minority population and/or low-income population findings, and allow for differentiation of impacts around the yard and shop locations versus those around the alternative alignments. A LEP analysis was also performed to identify populations in the project area who are linguistically isolated and do not speak English well. The LEP analysis results are included in this technical memorandum as Appendix A.

3.2.2 Disproportionately High and Adverse Effects

Once Environmental Justice populations were identified in all parts of the project area, analysis was performed to identify potentially adverse impacts and to verify that no disproportionately high and adverse effects would occur. The August 2012 FTA Circular 4701.3 cites USDOT Order 5610.2, issued in May 2012, to define adverse impacts. The topics comprising adverse impacts, ranging from community impacts to natural environment impacts, are analyzed in the RLE technical memoranda. Potentially adverse impacts are discussed in Section 5 of this report, as the entire project area consists of Environmental Justice communities. The circular also cites the USDOT order's definition of a disproportionately high and adverse effect on human health or the environment as one that would be predominantly borne by a minority population and/or a low-income population, or would be suffered by the minority population and/or low-income population and would be appreciably more severe or greater in magnitude than the adverse impact that would be suffered by the non-minority population and/or non-low-income population.

Disproportionately high and adverse effects would only be possible if the project area contained both Environmental Justice and non-Environmental Justice populations, and there would be unevenness in the level of impacts and benefits between the two. Because all of the populations that would benefit from and be affected by the project comprise predominantly minority and/or low-income persons, disproportionately high and adverse effects would not occur. Section 5 describes the analysis, which identified the adverse impacts that would occur in minority and low-income communities (i.e., all of the impacts of the alternatives, none of which would be disproportionately high and adverse), and addressed the concerns raised during the outreach process.

Identification of mitigation measures is required for any identified disproportionately high and adverse effects on Environmental Justice populations. Because no such impacts would result from any of the RLE alternatives, there is no requirement to identify mitigation measures beyond those presented in other RLE technical memoranda (and summarized in Section 5 of this report).

3.2.3 Receipt of Benefits

Similarly to the analysis of potentially adverse impacts described in Section 3.2.2, the RLE technical memoranda were also reviewed to identify the benefits of the project. Analysis was

performed to verify that the benefits of the alternatives would be distributed evenly throughout the project area, and that they would accrue simultaneously to all of the adversely affected communities.

3.3 Area of Potential Impact

The area of potential impact (API) for analyzing permanent, construction, and cumulative impacts was established based on FTA Circular 4703.1 (August 2012), which recommends the following:

- Identifying the presence of district minority and/or low-income communities residing both within and in proximity to the project or activity.
- Identifying those minority and/or low-income groups that utilize or are dependent on natural resources and the human environment that could be potentially affected by the proposed action.

The API is also based on the findings of the other RLE technical memoranda relevant to Environmental Justice, most of which are focused within a one-block radius of the proposed alignments. Potential benefits of the project, such as improved transit access, would accrue to the larger catchment areas around the station locations, roughly ½ mile. The combined area of potential benefits and impacts covers most of the project area designated in the *Purpose and Need Report*.

Identification of Environmental Justice populations affected by the RLE Project was conducted pursuant to NEPA guidance (40 Code of Federal Regulations 1508) and FTA Circular 4703.1 (August 2012). For the purposes of locating minority communities, the API includes blocks/block groups within the project area defined in the Purpose and Need Statement. This API results in an area of approximately ½ mile around the proposed ROW for the each of the alternatives, with some modifications to account for key geographic features such as waterways and major streets. Impacts are reported based on the API assumed for each resource in its technical memorandum.

3.4 Methods

The FTA's Circular 4703.1 (August 2012) outlines a process of analyzing demographic data to identify the presence of Environmental Justice populations, identifying adverse effects that may be disproportionately high and adverse, evaluating benefits, and achieving meaningful public engagement in the decision-making process. The RLE Project incorporated the guiding principles of the circular through the following analytical and outreach steps:

- Demographic Analysis and Initial Community Outreach - Socioeconomic data from the 2010 Census and the American Community Survey were used to describe the population in the project area. Income, ethnicity, employment, age, housing characteristics, and English proficiency were used in conjunction with field observations and stakeholder interviews to help identify the presence of Environmental Justice populations. Results of the data analysis

are provided in Section 4, and the LEP analysis is presented in Appendix A. The results show that the entire project area consists of predominantly minority populations, with some concentrations of low-income groups. Pockets of Spanish-speaking populations were also identified, indicating the need for outreach in both English and Spanish languages.

- Environmental Analysis to Identify Adverse Impacts and Benefits - All of the benefits and impacts of the projects would accrue to the same minority and low-income populations. As such, the RLE Project, as a community-initiated project intended to spur mobility and economic development in minority and low-income communities, would not have the potential for disproportionately high and adverse effects. The Environmental Justice-specific environmental analysis focused on identifying all adverse impacts and mitigations of the alternatives because they would all affect Environmental Justice populations. Benefits that offset the potential impacts were also identified and included in the analysis. Identification of additional mitigations specifically for Environmental Justice purposes would not be necessary for the RLE Project, because none of the effects would be disproportionately high and adverse. No additional mitigation measures—beyond those identified in the other RLE technical memoranda—would be needed to meet Environmental Justice requirements. Section 5 presents the results of the environmental analysis.

- Engagement with Environmental Justice Populations in the Public Outreach and Decision-Making Process - The stakeholder interview process and CTA's ongoing community relations efforts helped identify effective outreach methods. Traditional outreach methods such as public meetings and comment periods were augmented by non-traditional outreach. Non-traditional activities included website postings, presentations at standing meetings of local community groups, e-mail and direct mail newsletters, and one-on-one meetings with elected officials and community group leaders. Section 7 presents the results of the outreach process.

- Incorporation of Input from Environmental Justice Populations into the NEPA Process: - *To be filled in after outreach is completed.*

Section 4
Affected Environment

This section describes the low-income, minority, and LEP populations in the project area, which constitute the Environmental Justice populations for the purposes of this technical analysis. Elderly and disabled populations are also identified per state guidance. Demographic statistics were gathered at the most detailed level available from the U.S. Census Bureau for race, ethnicity, income, and age and were analyzed at the census block group level to define the Environmental Justice areas. Within the project area, all of the block groups were identified as Environmental Justice areas based on minority statues. Concentrations of block groups in the Roseland and Riverdale community areas were identified as Environmental Justice areas based on low-income as well as minority status. The Environmental Justice populations discussed in this report were identified through a combination of year 2010 U.S. Census data, American Community Survey data, public outreach, and field reconnaissance. Adverse impacts would be likely to occur within a ¼-mile radius of the project infrastructure, whereas beneficial impacts would accrue to a larger area of approximately ½ mile or more around the station locations. The area within ½ mile of station locations and within ¼ mile of the alternative alignments comprises the API for the Environmental Justice analysis. Census data is reported at the block group level. Based on field observation and research, these boundaries do not artificially dilute or inflate the affected minority population and/or low-income population findings, and allow for differentiation of impacts around the yard and shop locations versus those around the alternative alignments. The affected communities and concentrations of resources in the project area are shown in Figure 4-1 and Figure 4-2, respectively. The character of each community is described in greater detail in the *Neighborhood and Community Impacts Technical Memorandum*.

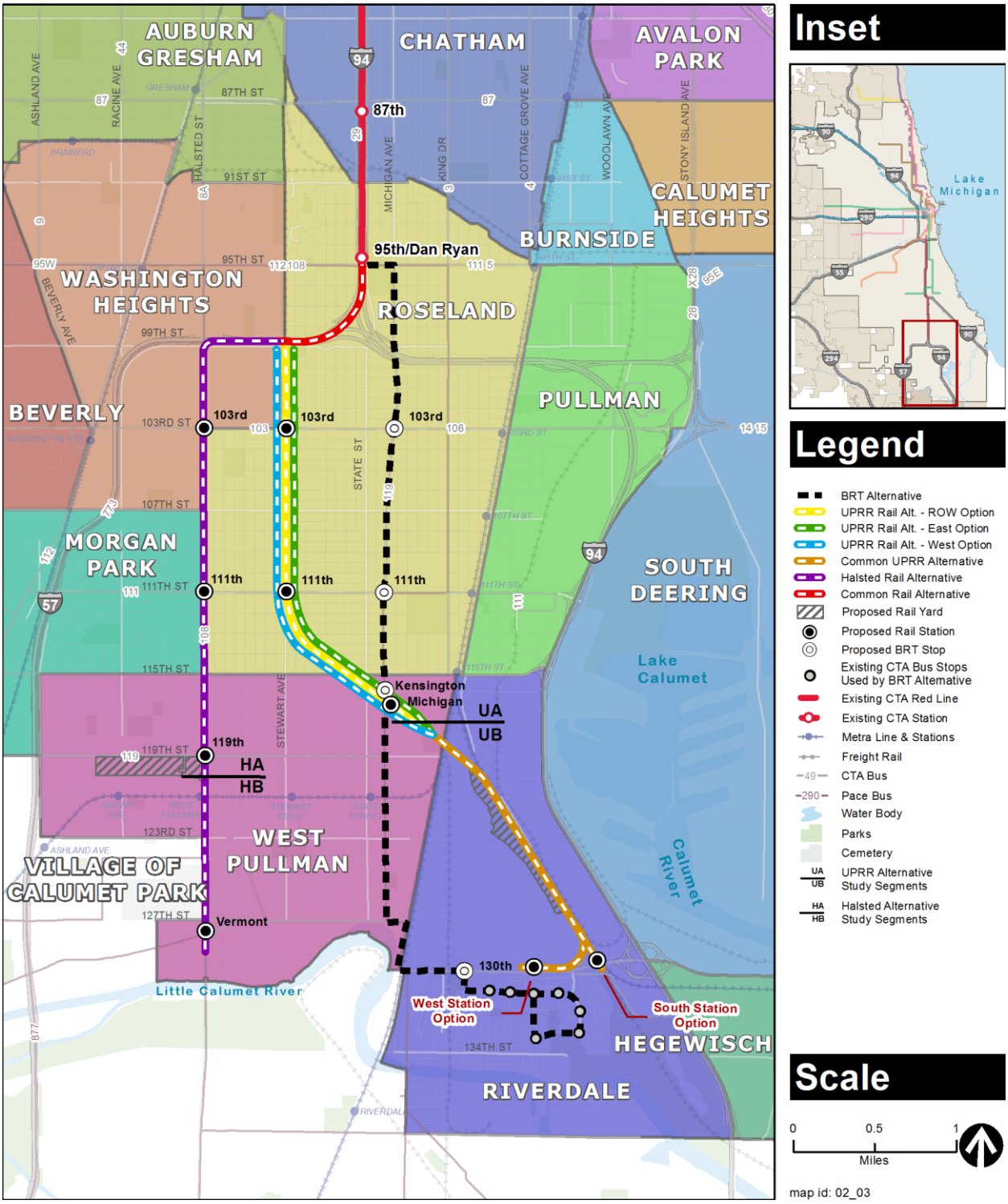

Figure 4-1: Community Areas

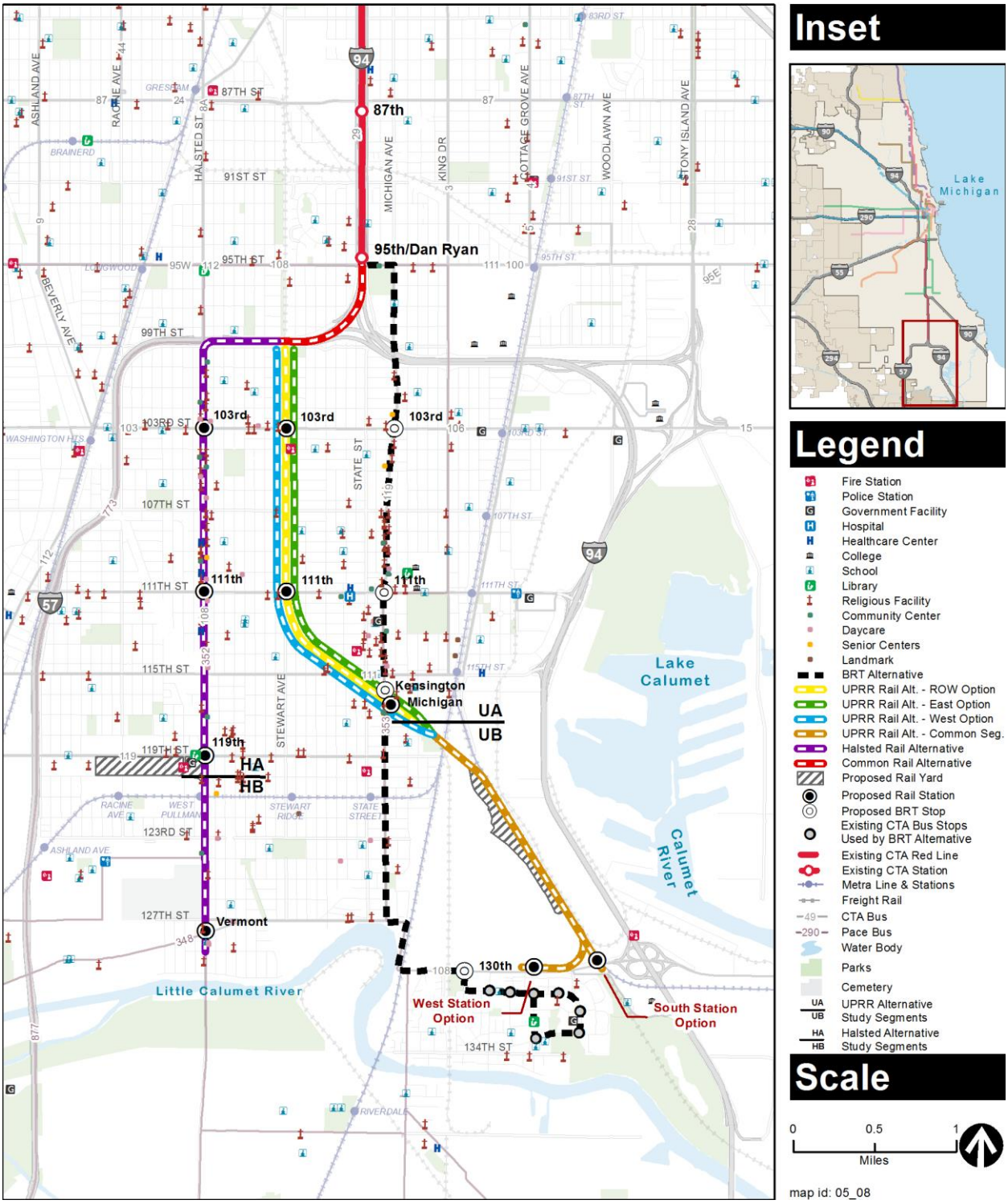

Figure 4-2: Concentrations of Community Resources

Key community resources include parks, schools, libraries, police facilities, fire department facilities, community centers, religious institutions, hospitals, and other places that serve as neighborhood focal points and contribute to community character and identity. The *Neighborhood and Community Impacts Technical Memorandum* provides additional detail on specific resources within ¼ mile of the proposed alignments.

4.1 Minority Groups

Minority persons include the following, as defined by the May 2012 USDOT Order 5610.2 and referenced in the August 2012 FTA Circular 4703.1:

- Black (a person having origins in any of the black racial groups of Africa).
- Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).
- Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands).
- American Indian and Alaskan Native (a person having origins in any of the original people of the Americas and who maintains cultural identification through tribal affiliation or community recognition).

This analysis defines a minority population as a population that meets one or both of the following descriptions:

- Any readily identifiable group of persons and/or a community who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans), who experience common conditions of exposure or impact.
- A group consisting of persons classified by the U.S. Census Bureau as minority, including those persons of two or more races.

As shown in Table 4-1, the 2010 U.S. Census was used to identify minority populations in the project area as a whole and the specific affected communities in the API. Most of the populated portions of the project area contain predominantly minority populations; the project area population consists of 97.9 percent minority persons. In the API, the communities with the highest percentage of minority persons are Roseland and Riverdale, followed closely by Washington Heights, West Pullman, and Morgan Park. The community with the smallest percentage of minority persons in the API is Pullman, which still has a high minority percentage of 92.9 percent. Figure 4-3 identifies the percent minority populations in the project area at the census block level. The large blocks in the southeastern portion of the API have low populations.

Table 4-1: Percent of Population that is Minority

Area	Minority Populations
City of Chicago	68.3%
Project Area	97.9%
Affected Communities	
Washington Heights	99.4%
Roseland	99.5%
Morgan Park	99.0%
West Pullman	99.4%
Pullman	92.9%
Riverdale	99.5%
Village of Calumet Park	96.4%

Source: U.S. Census Bureau, 2010 Census, Summary File 1, Table P5- Hispanic or Latino Origin by Race, by Block.

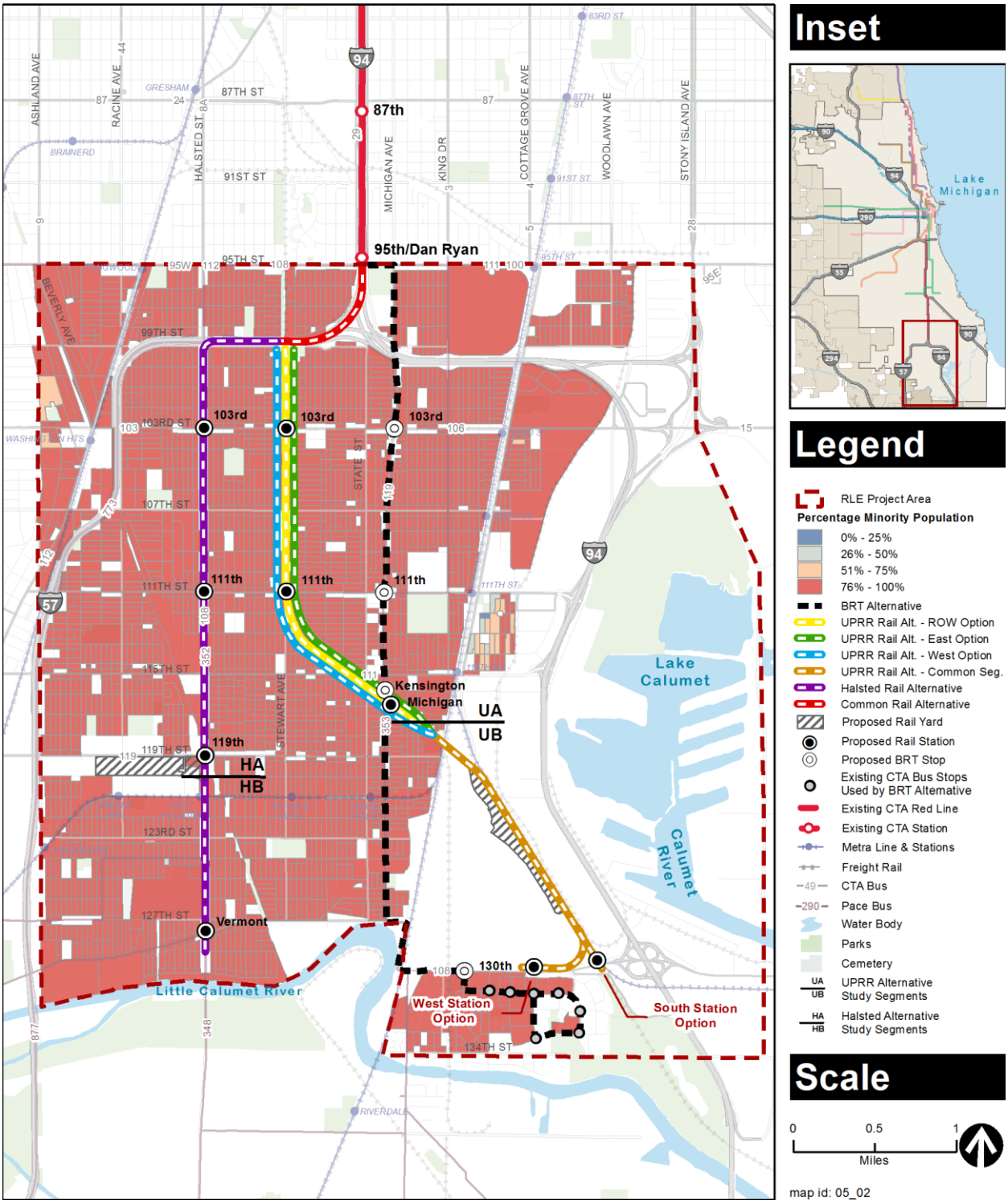

Figure 4-3: Minority Populations - Percentage

Source: U.S. Census Bureau, 2010 Census, Summary File 1, Table P5 - Hispanic or Latino Origin by Race, by Block

The racial composition of the project area is shown in Table 4-2. All communities in the project area have a majority Black or African American population, ranging from just above 89 percent in the Village of Calumet Park to approximately 97 percent in Roseland and Washington Heights. After Black or African American, the second largest ethnicity in the API is Hispanic at 4 percent. Of the communities in the API, Pullman has the highest percentage of Hispanic persons at 7.8 percent, followed by the Village of Calumet Park at 6.2 percent and West Pullman at 5.1 percent. Pullman also has the highest percentage of white persons at 7.1 percent, followed by the Village of Calumet Park at 3.6 percent.

Table 4-2: Racial Composition within the Area of Potential Impact as a Whole

Area	White Alone	Black or African-American Alone	American Indian/ Native Alaskan Alone	Asian Alone	Native Hawaiian and other Pacific Islander Alone	Some other Race Alone	Multiracial	Hispanic not Alone
City of Chicago	31.7%	32.4%	0.0%	5.4%	0.0%	0.0%	1.3%	28.9%
Project Area	2.1%	92.7%	0.2%	0.1%	0.0%	0.1%	1.0%	4.0%
Affected Communities								
Washington Heights	0.6%	96.9%	0.2%	0.0%	0.0%	0.1%	0.9%	1.3%
Roseland	0.5%	97.3%	0.2%	0.1%	0.0%	0.1%	0.9%	1.0%
Morgan Park	1.0%	96.3%	0.0%	0.3%	0.1%	0.1%	1.0%	1.2%
West Pullman	0.6%	93.1%	0.2%	0.0%	0.0%	0.0%	1.0%	5.1%
Pullman	7.1%	83.6%	0.1%	0.1%	0.0%	0.1%	1.2%	7.8%
Riverdale	0.5%	96.4%	0.1%	0.0%	0.0%	0.1%	0.8%	2.0%
Village of Calumet Park	3.6%	89.1%	0.1%	0.3%	0.0%	0.1%	0.6%	6.2%

Source: U.S. Census Bureau, 2010 Census, Summary File 1, Table P5 - Hispanic or Latino Origin by Race, by Block.
Note: Hispanic population includes persons who identify as white or some other race, or combination of races.

4.2 Low-Income Groups

The low-income classification applies to persons whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines (USDOT Order 5610.2(a), May 2012). Median household income data in the 2006–2010 American Community Survey is reported in 2010 dollars. In order to compare the 2012 poverty guidelines with data in 2010 dollars, the 2012 guidelines were adjusted to 2010 dollars using the Consumer Price Index Inflation Calculator used by the U.S. Department of Labor, Bureau of Labor Statistics (Table 4-3).

Table 4-3: U.S. Department of Health and Human Services 2012 Poverty Guideline

Persons in Household	2012 Poverty Guideline	Adjusted Poverty Guideline (2010 dollars)
1	$11,170	$10,586
2	$15,130	$14,339
3	$19,090	$18,092
4	$23,050	$21,845
5	$27,010	$25,598
6	$30,970	$29,351
7	$34,930	$33,104
8	$38,890	$36,857

Source: U.S. Department of Health and Human Services, 2012 http://aspe.hhs.gov/poverty/12poverty.shtml
United States Department of Labor, Bureau of Labor Statistics, 2012
http://www.bls.gov/data/inflation_calculator.htm

According to the 2006–2010 American Community Survey, the median household income in the project area was $41,710, which is less than the median household income ($46,877) for the City of Chicago (2006–2010 American Community Survey 5-Year Estimates). As shown in Table 4-4, the community with the lowest median household income in the API is Riverdale with $11,181, which is substantially lower than the median household income for the project area and the City of Chicago. The community with the highest median household income is the Village of Calumet ($53,785). Figure 4-4 shows median household income in the project area. The large blocks in the southeastern portion of the API have low populations.

Table 4-4: Median Household Income in Affected Communities

Area	Median Household Income
City of Chicago	$46,877
Project Area	$41,710
Affected Communities	
Washington Heights	$48,659
Roseland	$41,922
Morgan Park	$42,977
West Pullman	$38,963
Pullman	$43,647
Riverdale	$11,181
Village of Calumet Park	$53,785

Source: U.S. Census Bureau, 2006-2010 American Community Survey, Table B19001 - Household Income in the Past 12 Months (in 2010 Inflation-Adjusted Dollars), by Block Group

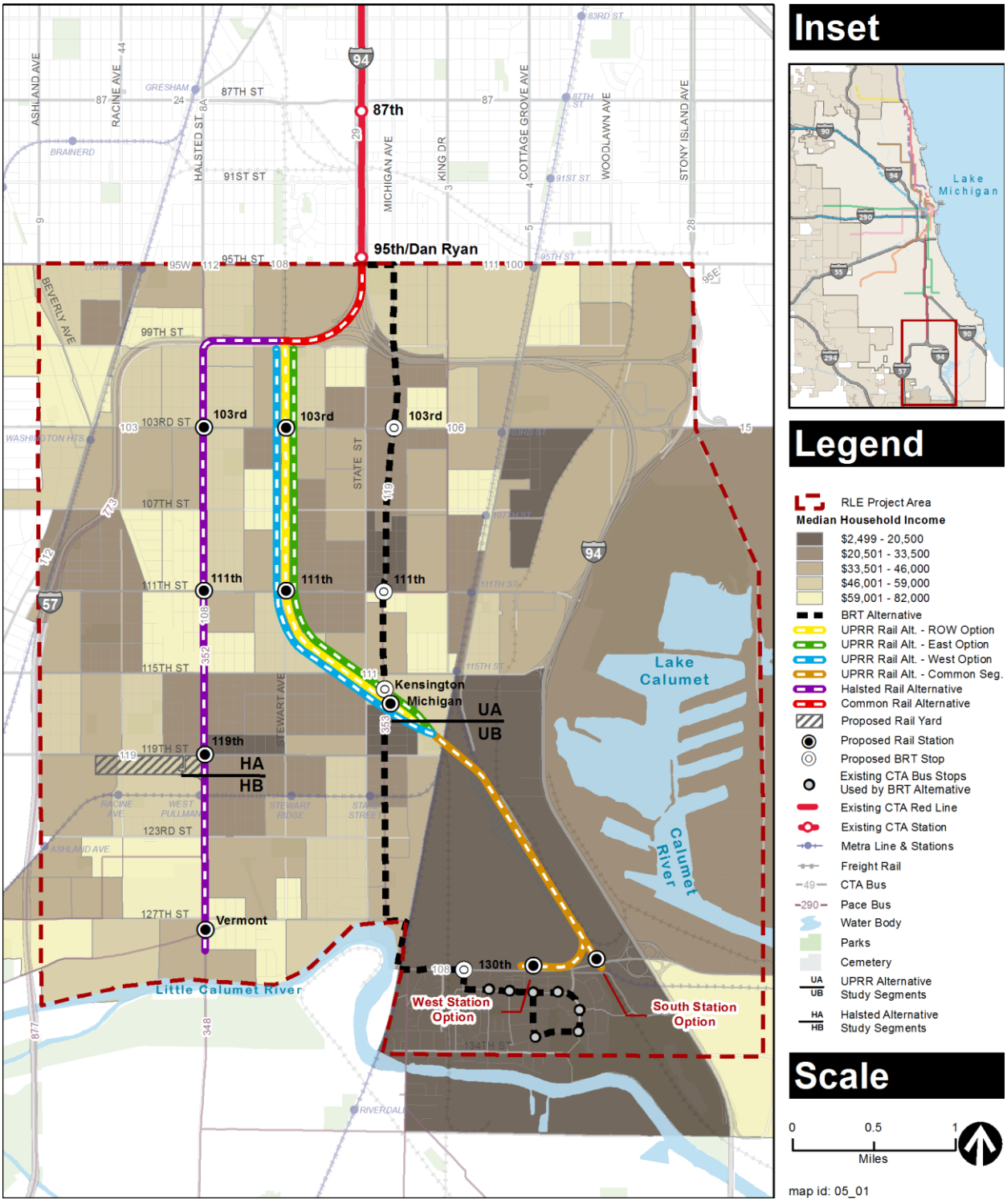

Figure 4-4: Median Household Income

Source: U.S. Census Bureau, 2006-2010 American Community Survey, Table B19001 - Household Income in the Past 12 Months (in 2010 Inflation-Adjusted Dollars), by Block Group

According to the U.S. Department of Health and Human Services 2012 Poverty Guidelines (see Table 3-1), only ten block groups in the project area have populations with median household income below poverty guidelines. As shown in Table 4-5, seven of the ten block groups are in Riverdale, two are in West Pullman, and one is in Roseland. Two block groups in Riverdale have a very low median household income of $2,499, and both of them are in the Altgeld Gardens public housing complex. Figure 4-5 shows the low-income population at the census block group level. The shaded area in the southeastern portion of the API has minimal population between 115th and 130th Streets. The majority of the population in this shaded area is south of 130th Street. Table 4-5 shows that the seven low-income block groups in Riverdale make up the entire community area, illustrating the substantial presence of poverty in Riverdale. Low-income status was determined by comparing the median household income of each block group and the average household size for its census tract with the poverty guidelines shown in Table 4-3. Low income is also a transit dependency factor because residents with limited income may not be able to afford access to an automobile.

Table 4-5: Block Groups with Populations Below Poverty Level in the Area of Potential Impact

Community Area	Median Household Income	Average Household Size	Block Group
Riverdale	$11,859	2.68	Block Group 1, Census Tract 5401.01
Riverdale	$17,788	2.68	Block Group 2, Census Tract 5401.01
Riverdale	$2,499	2.68	Block Group 3, Census Tract 5401.01
Riverdale	$2,499	2.68	Block Group 4, Census Tract 5401.01
Riverdale	$14,390	3.07	Block Group 1, Census Tract 5401.02
Riverdale	$13,713	3.07	Block Group 2, Census Tract 5401.02
Riverdale	$15,521	3.07	Block Group 3, Census Tract 5401.02
West Pullman	$14,522	2.68	Block Group 2, Census Tract 5301
West Pullman	$18,375	3.71	Block Group 3, Census Tract 5302
Roseland	$17,656	2.42	Block Group 2, Census Tract 4909.01

Household income poverty guidelines adjusted to 2010 dollars and average household size.

Sources: U.S. Census Bureau, 2006-2010 American Community Survey, Table B19001 - Household Income in the Past 12 Months (In 2010 Inflation-Adjusted Dollars), by Block Group;

U.S. Census Bureau, 2006-2010 American Community Survey, Table B25010 - Average Household Size of Occupied Housing Units by Tenure, by Census Tract.

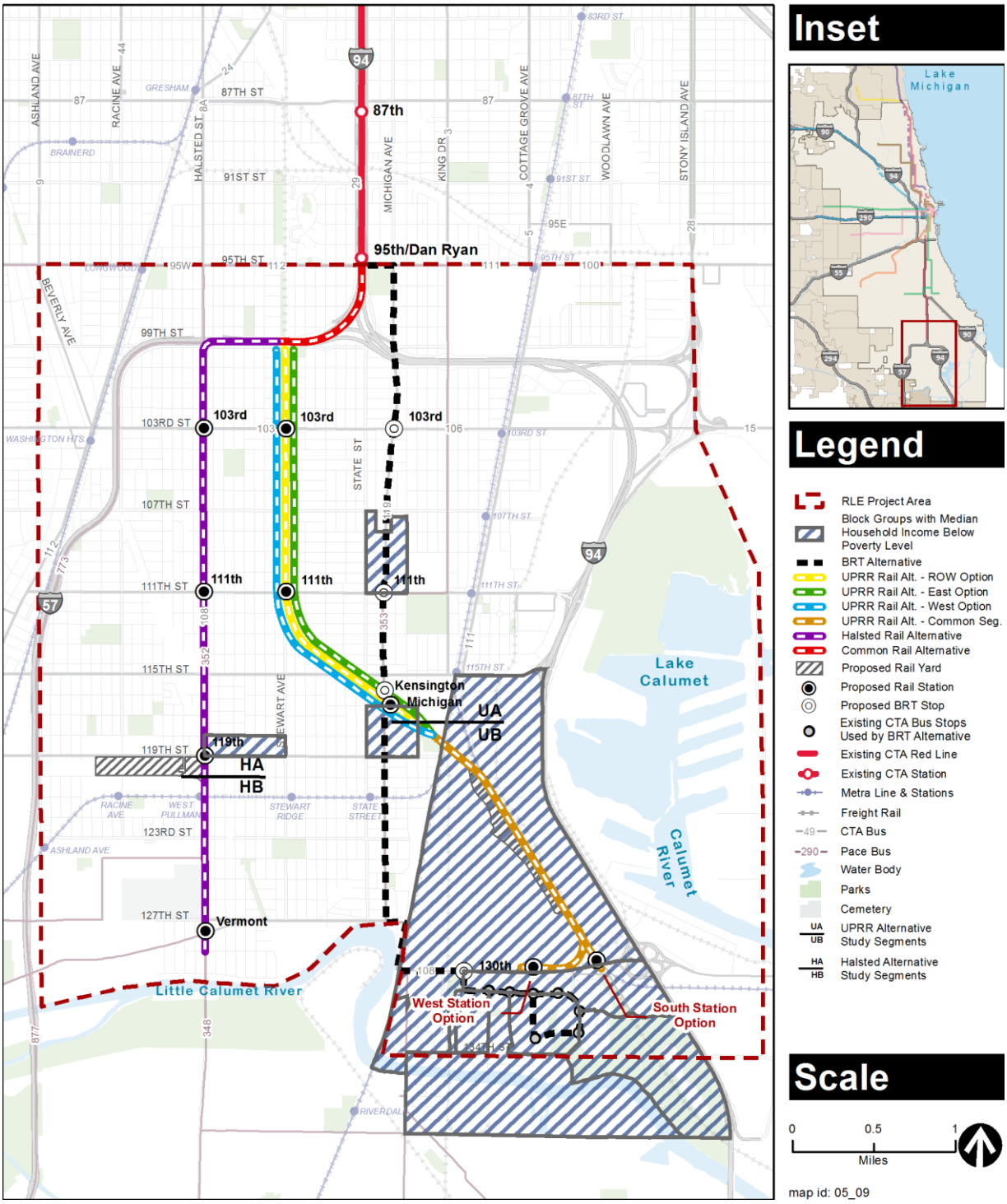

Figure 4-5: Low-Income Block Groups

Sources: U.S. Census Bureau, 2006-2010 American Community Survey, Table B19001 - Household Income in the Past 12 Months (In 2010 Inflation-Adjusted Dollars), by Block Group;

U.S. Census Bureau, 2006-2010 American Community Survey, Table B25010 - Average Household Size of Occupied Housing Units by Tenure, by Census Tract.

As shown in Table 4-6, the unemployment rate for the entire project area is 19.0 percent. The unemployment rates for the individual community areas range from a low of 17.0 percent in Morgan Park to a high of 34.8 percent in Riverdale. Unemployment in the project area is generally higher than in the rest of the City of Chicago, which has an overall unemployment rate of 12.0 percent.

Table 4-6: Unemployment Rates in Affected Communities

Area	Unemployment Rate
City of Chicago	12.0%
Project Area	19.0%
Affected Communities	
Washington Heights	18.8%
Roseland	21.2%
Morgan Park	17.0%
West Pullman	18.5%
Pullman	21.4%
Riverdale	34.8%
Village of Calumet Park	17.4%

Source: U.S. Census Bureau, U.S. 2010 Census, 2011 ACS 5-year estimates, Table S2301, All Census Tracts within Cook County
Note: Data not available at block group level

According to the real estate website zillow.com, the median Chicago home price in October 2012 was approximately $161,100, and the median rent was $1,501. Home and rental prices in the project area neighborhoods are 20 to 50 percent lower than the citywide median (Table 4-7). Compared to Chicago as a whole, the project area has lower median household income and home prices, and higher unemployment in most RLE community areas (see Tables 4-4, 4-6, and 4-7).

Table 4-7: October 2012 Average Home and Rental Prices in Affected Communities

Area	Average Home Price	Average Monthly Rental Price
City of Chicago	$161,100	$1,501
Affected Communities		
Washington Heights	$112,300	$1,257
Roseland	$85,200	$1,232
Morgan Park	$113,500	$1,277
West Pullman	$92,700	$1,228
Pullman	$91,500	$1,213
Riverdale	N/A	N/A
Village of Calumet Park	$75,200	$1,219

According to CMAP's *Red Line South Extension Livability Report* (CMAP and Developing Communities Project 2012), there is a shortage of jobs within the project area and a lack of transit access to jobs in neighboring communities. Distance to employment centers is greater in the project area than in many other parts of the city, so lack of convenient access to rail transit is a major barrier to employment. While there is CTA bus, Pace bus, and Metra rail service, there are limited options for connecting to the CTA rail system that ends at the 95th Street Terminal. There are also no stations with park & ride facilities along the Dan Ryan branch of the Red Line, which precludes residents from accessing the stations by car unless dropped off (kiss & ride). Residents often choose to use bus service instead of Metra service because Metra has a higher fare structure and more limited schedule than the bus system; however, only a limited number of buses provide 24-hour service. The *Red Line South Extension Livability Report* characterizes commute times in the project area as long and requiring multiple transfers. Traffic congestion, largely due to trip delays from at-grade freight railroad crossings, also impedes access to employment outside the project area.

4.3 Minority and Low-Income Groups

Figure 4-6 shows areas where low-income and minority populations overlap. These areas include the block groups that make up Altgeld Gardens, Golden Gate, and Eden Green in Riverdale; the majority of Block Group 2, Census Tract 5301 in West Pullman (east of Halsted Street and west of Stewart Avenue between 118th Street and 119th Street); the majority of Block Group 3, Census Tract 5302 in West Pullman (east of State Street and west of Prairie Avenue between 116th Street and 119th Street); and the majority of Block Group 2, Census Tract 4909.01 in Roseland (east of State Street and west of Michigan Avenue between 107th Street and 111th Street). The large blocks in the southeastern portion of the API have low populations.

As discussed above, there are limited transportation options for reaching to the Red Line's 95th Street Terminal from many project area communities. Nearly all of the identified low-income and minority areas are geographically and/or physically isolated from the 95th Street Terminal. The closest population (Block Group 2, Census Tract 4909.01 in Roseland) is 1.5 miles from the 95th Street Terminal; however, pedestrian access is impaired by the Interstate 94/Interstate 57 (I-94/I-57) interchange. Altgeld Gardens is approximately 6 miles from the 95th Street Terminal. In addition, bus service is limited and inconsistent. Only a limited number of buses provide 24-hour service. A section of CTA bus route #34 operates part-time between the Altgeld Gardens housing complex and the 95th Street Terminal.

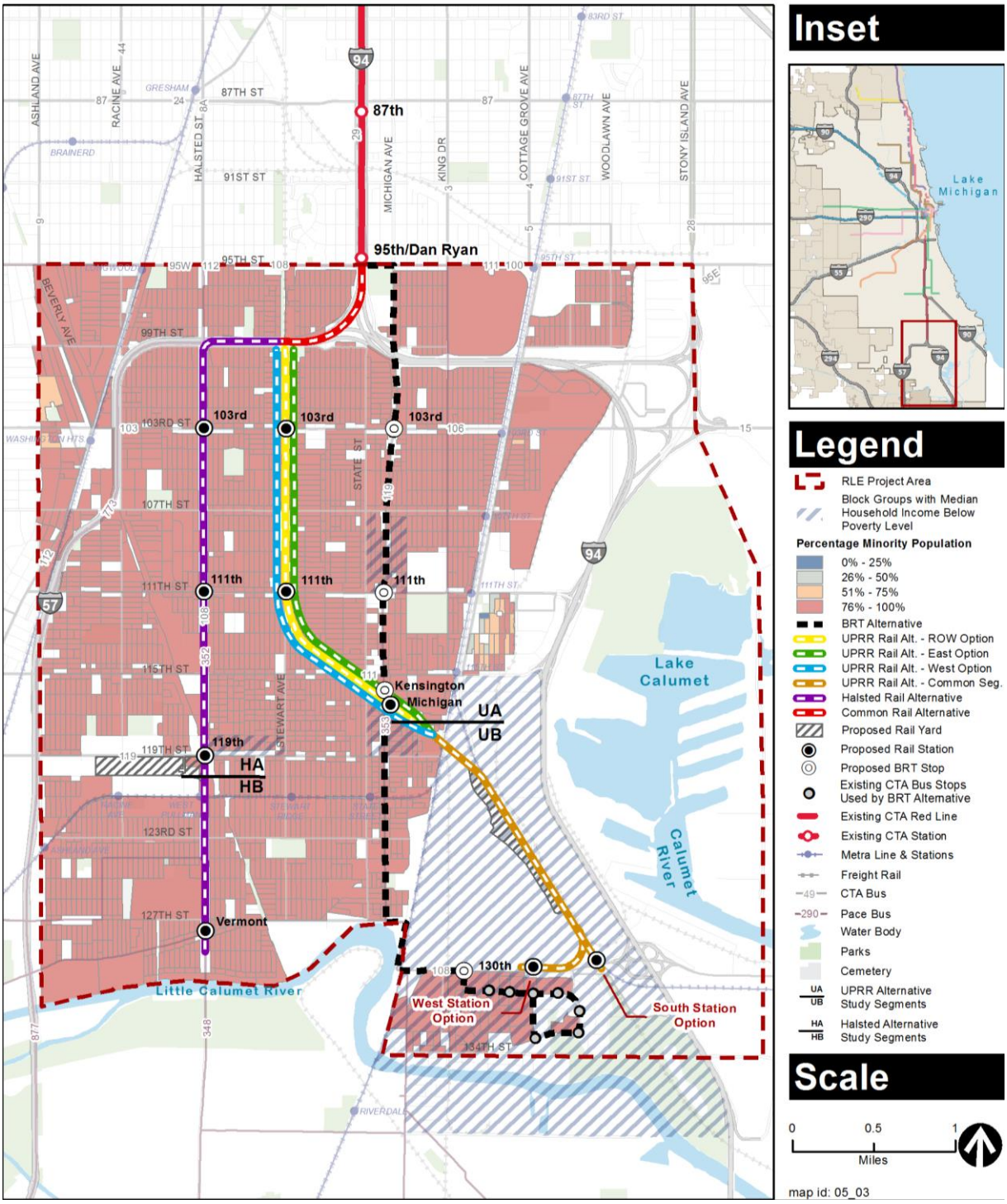

Figure 4-6: Low-Income and Minority Populations - Percentage

Sources: U.S. Census Bureau, 2006-2010 American Community Survey, Table B19001 - Household Income in the Past 12 Months (In 2010 Inflation-Adjusted Dollars), by Block Group;
U.S. Census Bureau, 2006-2010 American Community Survey, Table B25010 - Average Household Size of Occupied Housing Units by Tenure, by Census Tract;
U.S. Census Bureau, 2010 Census, Summary File 1, Table P5 - Hispanic or Latino Origin by Race, by Block.

4.4 Limited English Proficiency Groups

Limited English Proficiency (LEP) persons are defined as individuals for whom English is not their primary language and who have a limited ability to read, write, speak, or understand English. It includes people who reported to the U.S. Census Bureau that they speak English less than very well, not well, or not at all (Circular 4702.1B, October 2012).

The U.S. Census Bureau collects information about the ability of people to speak English and about those living in a linguistically isolated household. A linguistically isolated household is defined as one in which no member, 14 years of age or older, speaks only English or speaks a non-English language and speaks English very well. This definition means that all members of a linguistically isolated household 14 years old and over have at least some difficulty with English (U.S. Census Bureau).

According to the 2010 U.S. Census, English is the most spoken language at home in the project area, with 92.6 percent of households speaking English only. As shown in Table 4-8, Spanish is the second most spoken language at home, with over 6 percent of households speaking Spanish. The largest Spanish-speaking populations live in the Village of Calumet Park, where 15.5 percent of households speak Spanish. Pullman and West Pullman also have a large percentage of Spanish-speaking households with 10.4 percent and 6.7 percent of homes speaking Spanish, respectively. Specific census tracts in the West Pullman and South Deering neighborhoods and the Village of Calumet Park reported that over 30 percent of households speak Spanish.

A LEP assessment (Appendix A) was conducted for the project area in 2009. While the LEP assessment was based on year 2000 Census data, its findings remain consistent with current field observations and 2010 Census data. According to the LEP study, 1 percent of households within census tracts in the project area are linguistically isolated, meaning that all household members over the age of 14 had at least some difficulty speaking English.

Table 4-8: Languages Spoken at Home within the Affected Communities

Area	English Only	Spanish or Spanish Creole	Other Indo-European languages	Asian and Pacific Island languages	Other Languages
City of Chicago	64.7%	24.2%	6.4%	3.5%	1.3%
Project Area	92.6%	6.3%	0.6%	0.1%	0.4%
Affected Communities					
Washington Heights	97.0%	1.8%	0.2%	0%	1.1%
Roseland	98.5%	0.9%	0.5%	0.1%	0.1%
Morgan Park	95.7%	2.3%	1.5%	0.5%	0.1%
West Pullman	92.8%	6.7%	0.2%	0%	0.4%
Pullman	89.4%	10.4%	0.3%	0%	0%
Riverdale	96.2%	2.9%	0%	0.5%	0.5%
Village of Calumet Park	82.7%	15.5%	1.3%	0.1%	0.5%

Source: U.S. Census Bureau, 2010 American Community Survey 5-year estimates, Table S160, by Census Tract
Note: Data not available at block group level at the time of analysis

Figure 4-7 identifies the percentage of LEP populations in the project area. As illustrated in Figure 4-7, the highest percentages of LEP groups in the project area are in West Pullman, east of State Street between 115th Street and 119th Street; in Pullman east of the Metra Electric District line between 111th Street and 119th Street; and near Calumet Lake. The primary area where LEP populations are located is in West Pullman. The large tracts in the southeastern portion of the API have low populations. Due to the existence of LEP populations and because Spanish is the most frequently spoken non-English language in the project area, public outreach includes Spanish translation. The full LEP Assessment is attached as Appendix A.

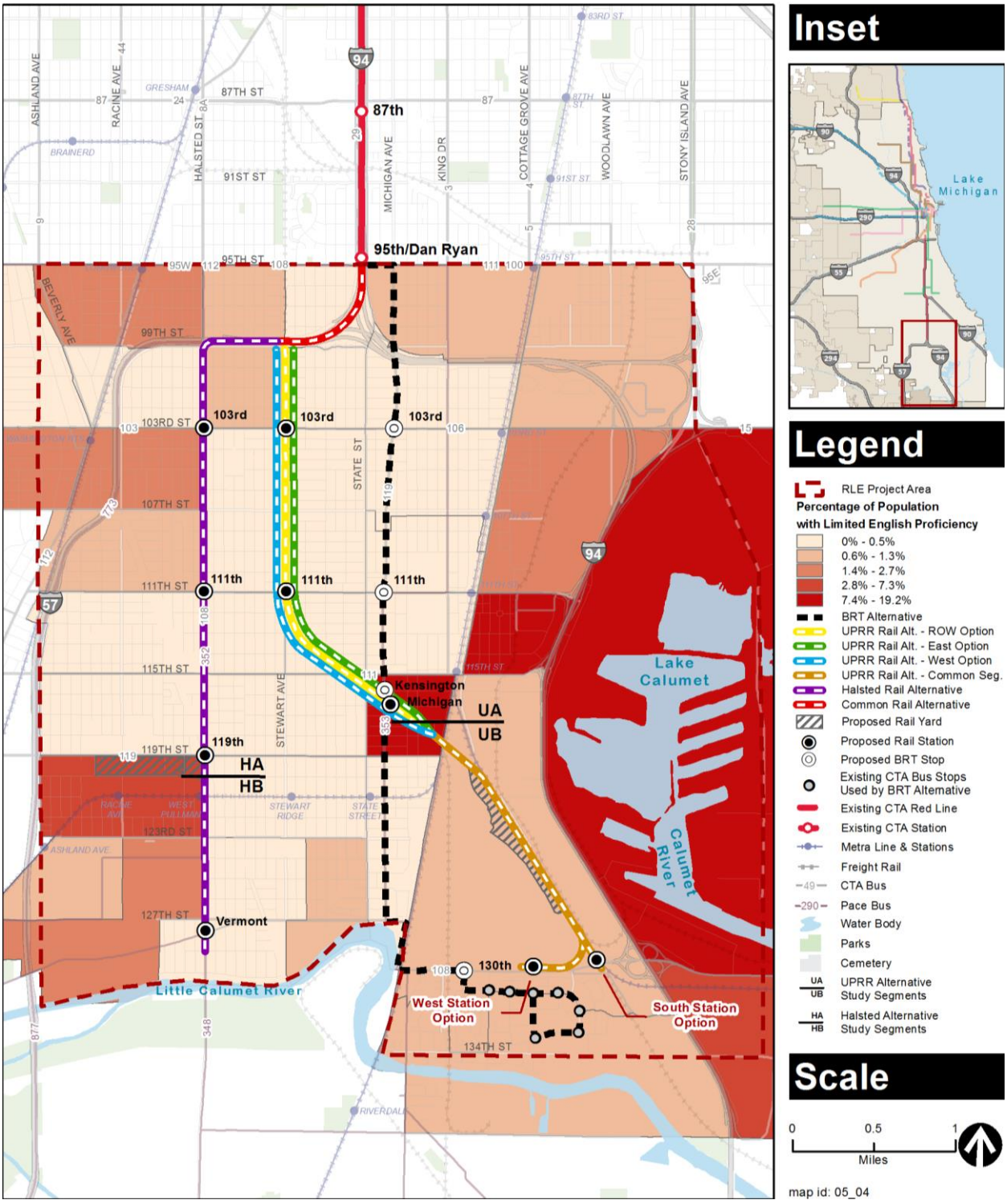

Figure 4-7: Population that has Limited English Proficiency - Percentage

Source: U.S. Census Bureau, 2010 American Community Survey 5-year estimates, Table S1601, by Census Tract
Note: Data not available at block group level at the time of analysis

4.5 Elderly Groups

According to the 2010 U.S. Census, 13.7 percent of the population in the project area is elderly, defined as 65 years and older. As shown in Table 4-9, the areas with the highest percentages of elderly persons are Washington Heights (16.7 percent) and Morgan Park (16.3 percent). The lowest percentage of elderly persons is in Riverdale (2.8 percent). Figure 4-8 shows the percentages of persons that are elderly by block group. The block with the highest percentage of elderly persons is in West Pullman. The large blocks in the southeastern portion of the API have low populations. Elderly groups can have higher levels of transit dependency than the rest of the population because some elderly people are no longer able to operate automobiles.

There are several senior housing facilities throughout the project area. A representative list includes the following:

- Senior Suites of Washington Heights, 848 W. 103rd Street in Roseland
- Victory Centre of Roseland, 10450 S. Michigan Avenue in Roseland
- Emil Jones Jr. Senior Housing, 19 E. 110th Place in Roseland
- Roseland Manor, 11717 S. State Street in West Pullman
- Bridge of Hope Inc., 11909 S. State Street in West Pullman
- Calumet Township Senior Citizen, 12633 S. Ashland Avenue in the Village of Calumet Park
- Golden Community Living Center, 12730 Aberdeen Street in the Village of Calumet Park

Table 4-9: Percentage of Population 65 Years and Older in Affected Communities

Area	Percentage of Population 65 Years and Older
City of Chicago	10.3%
Project Area	13.7%
Affected Communities	
Washington Heights	16.7%
Roseland	15.4%
Morgan Park	16.3%
West Pullman	13.0%
Pullman	11.2%
Riverdale	2.8%
Village of Calumet Park	11.4%

Source: U.S. Census Bureau, 2010 Census, Table P12 - Age by Sex, by Block

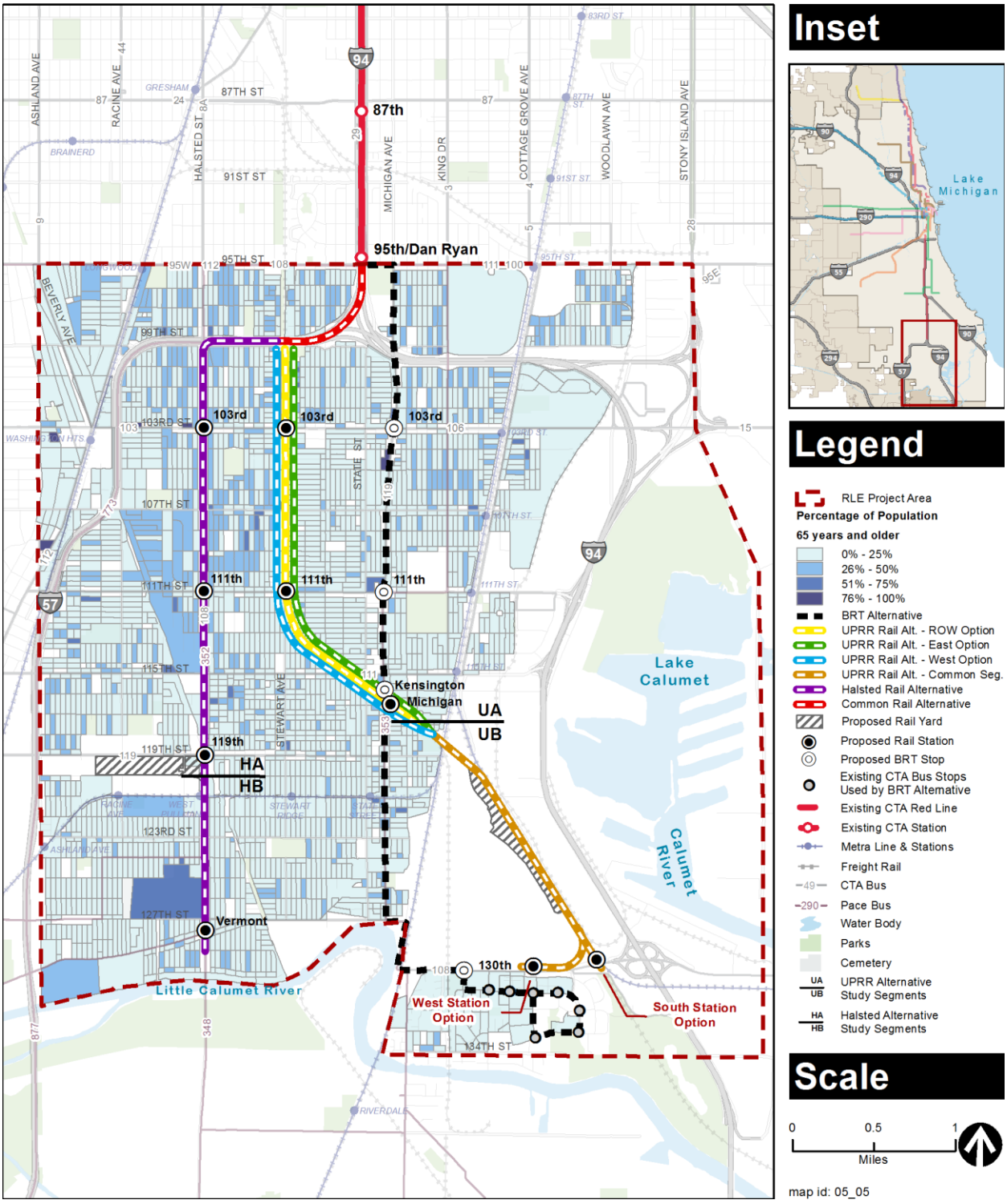

Figure 4-8: Elderly Populations - Percentage

Source: U.S. Census Bureau, 2010 Census, Table P12 - Age by Sex, by Block

4.6 People with Disabilities

According to the 2000 U.S. Census (data was not yet available for the 2010 U.S. Census), nearly one quarter of the population in the API (24.8 percent) is disabled. As shown in Table 4-10, 10.8 percent of the disabled population is male, and 14.0 percent is female.

Table 4-10: Percentage of Population with Disabilities within the Area of Potential Impact as a Whole

Area	Percentage of Population with Disabilities	Percent of Disabled Population that is Male	Percent of Disabled Population that is Female
Area of Potential Impact	24.8%	10.8%	14.0%

Source: U.S. Census Bureau, 2000 Census, Table P21- Disability Status by Sex, by Block Group

Limited transit access in the project area is of particular concern for seniors and people with disabilities. In addition, a lack of park & ride facilities precludes residents from accessing transit stops by car unless dropped off (kiss & ride), requiring seniors and people with disabilities to depend on others for transportation. People with disabilities can frequently be transit dependent if they have a disability that prevents them from driving. Figure 4-9 shows the percentages of populations with disabilities. The large blocks in the southeastern portion of the API have low populations.

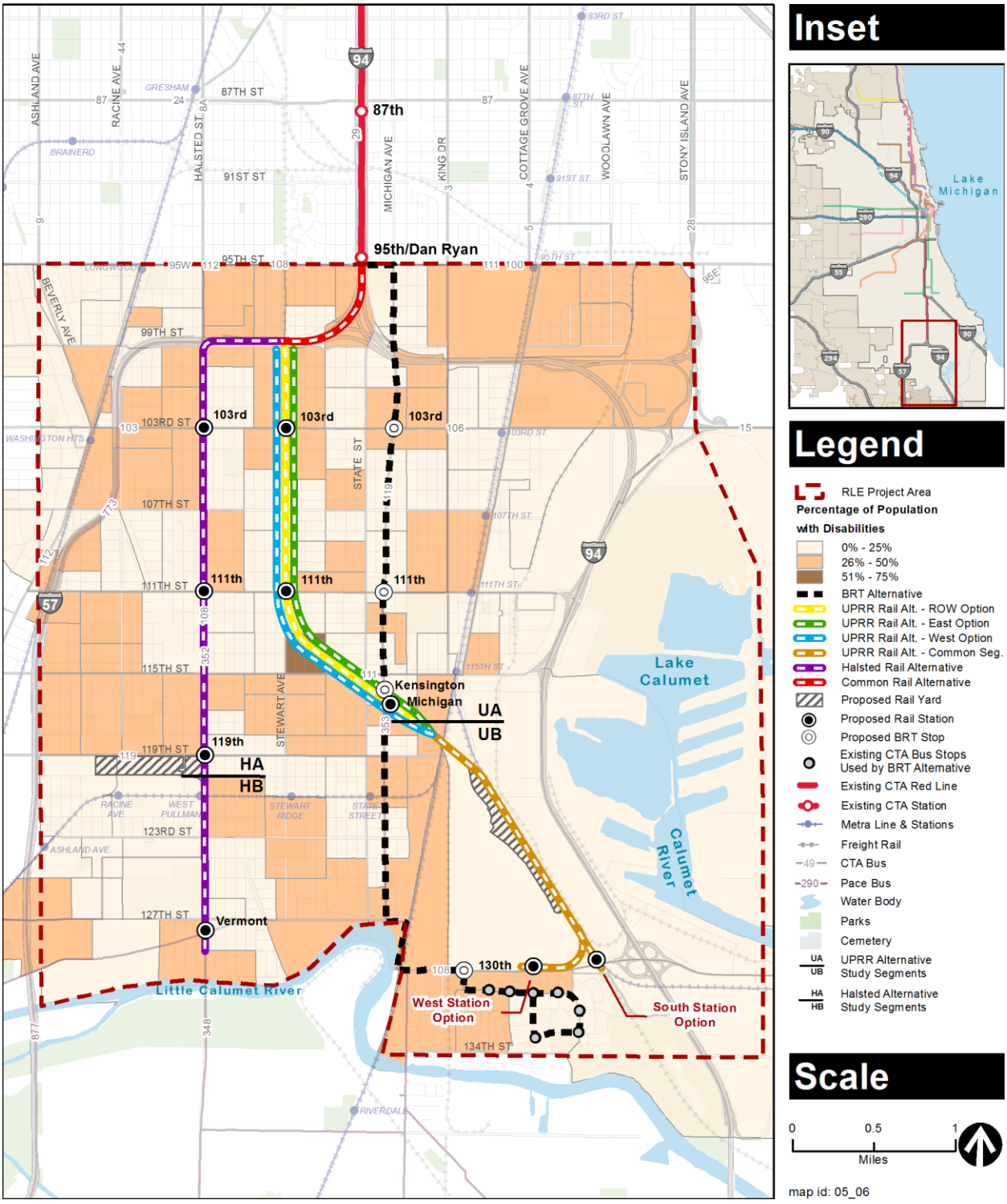

Figure 4-9: Population with Disabilities - Percentage

Source: U.S. Census Bureau, 2000 Census, Table P21 - Disability Status by Sex, by Block Group

4.7 Identification of Environmental Justice Populations

The project area was evaluated in the above subsections using census tract and block group level data. Based on field observation and research, these geographic boundaries do not artificially dilute or inflate the affected minority population and/or low-income population findings. Every community area in the project area comprises mostly minority populations, ranging from Pullman with an 83.6 percent minority population to Roseland with a 97.3 percent minority population. The project area has an average median household income ($41,710 annually) that is lower than the citywide average ($46,877 annually) and has substantial pockets of low-income populations in community areas such as Riverdale ($11,181 annually). As such, the analyzed demographic data indicates that the entire project area and API are made up solely of Environmental Justice communities.

Section 5
Impacts and Mitigations

The August 2012 FTA Circular 4703.1 *Environmental Justice Policy Guidance for Federal Transit Administration* and subsequent FTA webinar presentations indicate that projects in areas consisting entirely of Environmental Justice populations do not necessarily preclude disproportionately high and adverse effect findings; however, the following characteristics are true of the project area and the alternatives:

- The entire project area is predominantly minority populations. No community in the project area contains less than 92.9 percent minority populations, and the project area as a whole contains 97.9 percent minority populations.
- All of the impacts and benefits of the alternatives would accrue to the same minority populations, and few project benefits would occur outside the project area.
- The purpose of this community-initiated project includes connecting disadvantaged communities to Chicago's major employment and activity centers in an effort to spur economic development and improve livability. The project would help remediate the geographic isolation and lack of employment and development opportunities that currently exist in the project area.

Given these findings, none of the alternatives would result in disproportionately high and adverse effects on Environmental Justice populations. Some alternatives would still have adverse impacts on Environmental Justice communities; however, these impacts would not be disproportionate. In some instances, impacts would remain adverse despite implementation of mitigation measures. To provide a complete picture of how the RLE Project would affect Environmental Justice populations, this section summarizes the adverse impacts that would occur in Environmental Justice communities and the associated candidate mitigation measures. The mitigation measures identified in this section are preliminary, and are intended for public review. They will be finalized during the Final EIS process, after the NEPA Preferred Alternative has been designated.

5.1 No Build Alternative

The No Build Alternative would not involve any new construction for the RLE Project. There would be no major service improvements or new transportation infrastructure beyond projects that are listed in CMAP's *GO TO 2040* plan and Transportation Improvement Program. The transit network within the project area would remain largely the same as it is now.

5.1.1 Permanent Impacts and Mitigations - No Build Alternative

The No Build Alternative would not have any adverse impacts within Environmental Justice communities. The communities in the project area are, however, currently underserved by the CTA rail system compared to many other parts of Chicago, and the No Build Alternative would

lack the beneficial increase in economic development and livability that the build alternatives would provide.

5.1.2 Construction Impacts and Mitigations - No Build Alternative

No construction would occur as part of the No Build Alternative.

5.2 Bus Rapid Transit Alternative

In addition to the provisions of the No Build Alternative, the BRT Alternative would provide enhanced bus service and stops from the existing 95th Street Terminal southward along Michigan Avenue to Altgeld Gardens in the Riverdale community. Surface parking lots would be added at the 103rd Street and 111th Street stops, and three-story parking garages would be added at the Kensington Avenue and 130th Street stops to accommodate park & ride customers.

5.2.1 Permanent Impacts and Mitigations - Bus Rapid Transit Alternative

5.2.1.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from carbon monoxide (CO), greenhouse gases (GHG), particulate matter smaller than 2.5 micrometers ($PM_{2.5}$), or mobile source air toxics (MSAT) emissions are anticipated.

- Hazardous Materials: Operating BRT service and park & ride facilities would not change the existing types of hazardous materials used, stored, or transported. There would be no adverse permanent impacts related to hazardous materials.

- Historic and Cultural Resources: Three resources near the BRT alignment have been identified as eligible for listing on the National Register of Historic Places (NRHP). No adverse effects on historic resources are anticipated to occur.

- Land Use and Economic Development: Although BRT can spur economic development, the BRT Alternative would lack exclusive ROW, station facilities, and other rail-like features that are typically needed to generate development interests. With just compensation per the Uniform Relocation and Real Property Assistance Act of 1970 (Uniform Act), the impact of displacements on surrounding commercial and residential land uses not be adverse, and associated economic development impacts would be beneficial. There would be no adverse permanent impacts on land use or on economic development.

- Neighborhood and Community Impacts: The BRT Alternative would be an overall beneficial change in the character and cohesion of the affected communities, but not to the same extent as the rail alternatives. The BRT Alternative would slightly shorten travel times for people who access community resources and activity centers near the stop locations by transit. This benefit would be minor because the BRT Alternative would lack rail-like features to further enhance bus service and attract new riders. No adverse impacts on community resources would occur. Impacts would be beneficial overall; no mitigation measures would be required.

- Energy: Based on the assumptions for vehicles needed for operation of the BRT Alternative, the amount of fuel consumed would not affect local or regional fuel availability, or require the development of new energy sources. No adverse impacts would occur.

- Geology and Soils: Operation of the BRT Alternative is not expected to affect the geology or soil resources in the project area.

- Cumulative: No adverse cumulative impacts are expected.

5.2.1.2 Topics with No Adverse Permanent Impacts After Mitigation

- Biological Resources: Impacts on vegetation at the 130th Street park & ride would not be adverse with compliance with local tree protection ordinances, including tree replacement. No other biological resources impacts would be adverse.

- Displacements: The BRT Alternative would require fewer permanent acquisitions and displacements than the other build alternatives. Three buildings would be displaced, of which one would be a single-family residence and one would be a commercial property. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse.

- Safety and Security: There would be no adverse permanent impacts resulting from the BRT Alternative with the inclusion of mitigation measures to enhance safety, which would include installation of new traffic signals and/or other pedestrian crossing treatments, and location of stops in Altgeld Gardens in visible and well-populated areas.

- Visual and Aesthetic Conditions: The implementation of the BRT Alternative overall would have minimal impact on the visual and aesthetic conditions in the project area other than the addition of a three-story parking garage at the Kensington Avenue stop and at the 130th Street stop. Mitigation to reduce visual impacts would include shielding exterior lighting and providing special consideration for lighting placement adjacent to sensitive areas such as residential communities; providing landscaping and/or visual screening at park & ride locations where possible; designing the parking structure to match the character of the surrounding fabric; and using urban design techniques to reduce massing. The permanent visual impacts would not be adverse after mitigation.

- Water Resources: There would be no adverse permanent impacts on groundwater. There would be no adverse permanent impacts on stormwater drainage or water quality after mitigation. Stormwater drainage mitigation measures would include incorporating new stormwater management structures and establishing an erosion control plan, particularly at the locations of garages and park & ride lots. Water quality mitigation measures would include installation of properly designed and maintained biological oil and grease removal systems; proper storage of hazardous materials, development and maintenance of an effective monitoring and cleanup program for spills and leaks of hazardous materials, proper storage and maintenance of equipment, installation of detention basins to remove suspended solids,

and regular monitoring of runoff water quality. Following compensatory mitigation, either through creation, restoration, enhancement, or preservation of wetlands, there would be no adverse permanent impacts on wetlands.

- Transportation: There would be seven intersections during the weekday AM peak and 10 intersections during the PM peak where the BRT Alternative would increase traffic congestion beyond applicable thresholds. Mitigation measures such as optimization of signal cycles, removal of segments of on-street parking near BRT stops, and restriping through lanes and turn lanes would render traffic conditions no worse than under the No Build Alternative. The alternative would not affect freight transportation or bicycle facilities. Adequate park & ride capacity would be provided at BRT stops to prevent spillover parking into surrounding neighborhoods. Beneficial pedestrian impacts would result from upgrading intersections with ADA-compliant curb ramps, replacing deteriorated sections of sidewalk, and improving bus shelters.

5.2.1.3 Topics with Adverse Permanent Impacts After Mitigation

- Noise and Vibration: Residential receptors, as well as 35 community facilities that are noise-sensitive receptors, would be subject to moderate noise impacts after mitigation. These noise impacts would not be mitigated, because noise barriers are not feasible along the route. Buses already operate along the proposed route, and the BRT Alternative would not substantially change the character of the existing noise. No disproportionate impacts due to noise and vibration are anticipated.

- Parklands and Community Facilities: The BRT Alternative would not pass through any parklands and would not displace any community facilities. There are 35 community facilities that are noise-sensitive receptors that would have moderate noise impacts after mitigation. These community facilities are already situated along major streets with buses under existing conditions. By improving travel time, BRT Alternative operation would improve access to parklands and community facilities within walking distance (½ mile) of the BRT stop locations when compared to the No Build Alternative. No disproportionate impacts on parklands and community facilities are anticipated.

5.2.2 Construction Impacts and Mitigations - Bus Rapid Transit Alternative

5.2.2.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the park & ride facilities, there would be no temporary displacement or relocation construction impacts.

- Historic and Cultural Resources: There would be no adverse construction effects on historic resources.

- Land Use and Economic Development: There would be no adverse construction impacts on land use or economic development.

- Noise and Vibration: Construction noise is expected to consist of parking structure construction and minor activity at the bus stop areas. Construction noise levels are not expected to exceed the FTA construction noise limits.

- Energy: Construction of the BRT Alternative is not expected to require an amount of fuel and other energy resources that would affect local or regional fuel and energy sources, or require the development of new sources.

- Geology and Soils: The BRT Alternative would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the alignment. Excavation would be primarily needed at park & ride facilities, and is not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.2.2.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: Compared with the other build alternatives, construction activities for the BRT Alternative would be noticeably fewer and smaller in scale. Proper traffic management during the construction period would mitigate any potential adverse impacts. A Dust Control Plan would address in detail how dust would be controlled at all times at the construction sites, the staging areas, and the access and egress routes. With appropriate mitigation measures in place, no adverse air quality impacts due to construction activities are anticipated.

- Biological Resources: Compliance with local tree protection ordinances would result in less than adverse impacts on the human environment from tree removal. Mitigation measures may be required to reduce potential impacts on wildlife habitat, including preparing a detailed tree inventory, timing tree removal to occur outside the migratory bird nesting season, performing biological surveys if construction must occur during the nesting season, and replanting trees as required by applicable local codes and ordinances. There would be no adverse construction impacts on biological resources after mitigation.

- Hazardous Materials: Construction of the BRT Alternative would result in generation of a large quantity of soil that could contain contaminated materials requiring off-site disposal. Contaminated materials potentially encountered could include heavy metals, asbestos-containing material, and lead-based paint. Mitigation measures would include compliance with federal, state, and local laws and regulations regarding hazardous materials; focused site assessments for areas where earthmoving activities would occur; asbestos, lead-based paint, and hazardous material surveys of building or structures; a Contaminated Material Management Plan; Health and Safety Plans for construction activities; Spill Prevention, Control, and Countermeasure Plans; and Construction Stormwater Pollution Prevention

Plans. There would be no adverse construction impacts relating to hazardous materials after mitigation.

- Neighborhood and Community Impacts: Impacts on the West Pullman community would not be adverse provided that best management practices are employed and nighttime construction near residences is limited to the extent practicable. Construction-related community impacts would be minimal for the 130th Street park & ride given the site's isolated location north of 130th Street. Construction of bus shelters, traffic signal control systems, and parking structures would be temporary, and could be scheduled so as not to conflict with community events. Construction impacts on community resources would not be adverse, and no mitigation measures would be required. Construction activities would not impede mobility to the extent that they would cause adverse impacts. The BRT Alternative would create temporary construction jobs, which could have a beneficial impact on community development; however, the employment increase would be greater for the rail alternatives. Impacts would not be adverse overall, and no mitigation measures would be required.

- Parklands and Community Facilities: Impacts on parklands and community facilities would include temporary air quality and noise impacts and temporary changes in access. Mitigation measures would include using construction best management practices, alerting park and community facility users of construction activities, providing safe and clearly marked detour routes, and designating alternate parking. There would be no adverse construction impacts on parklands or community facilities after mitigation.

- Safety and Security: The limited scope of work compared to other alternatives would minimize the risk of incidents resulting in fatalities, injuries, or criminal acts such as vandalism or theft on construction sites. To mitigate risks, contractors would be expected to develop a Construction Safety and Security Plan, perform job safety analysis, monitor safety and security activities, and comply with any other manuals and policies. The contractor would take prompt and decisive corrective action on safety deficiencies identified at the work site. Access for emergency services would not be restricted, and the impacts would not be adverse.

- Visual and Aesthetic Conditions: At locations where park & ride structures and lots would be created, impacts might include construction fencing, demolition of existing buildings or clearing of vacant lots, temporary street closures and related signage, or temporary lighting or entrances. The CTA would attempt to maintain as much existing vegetation as practical during construction, and minimize temporary construction impacts on the neighborhood with measures such as limiting light trespassing from night lighting. Best management practices and debris-free construction areas would mitigate temporary visual impacts from the construction sites. There would be no adverse construction impacts after mitigation.

- Water Resources: There would be no adverse construction impacts on water resources after mitigation. Stormwater drainage mitigation measures would include incorporating new stormwater management structures and establishing an erosion control plan, including for construction activities at the locations of garages and park & ride lots. Water quality

mitigation measures would include installing properly designed and maintained biological oil and grease removal systems, proper storage of hazardous materials, development and maintenance of an effective monitoring and cleanup program for spills and leaks of hazardous materials, proper storage and maintenance of equipment, periodic removal of landscape and construction debris, installation of detention basins to remove suspended solids, and regular monitoring of runoff water quality. Following compensatory mitigation, either through creation, restoration, enhancement, or preservation of wetlands, there would be no adverse permanent impacts on wetlands.

- Transportation: Construction of parking structures, park & ride lots, and bus shelters could result in temporary intermittent disruption of traffic, existing transit service, movement of freight vehicles, on-street parking availability, and pedestrian and bicycle circulation. Temporary lane and sidewalk closures would occur with detours provided to maintain access. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur.

5.2.2.3 Topics with Adverse Construction Impacts After Mitigation

No adverse construction impacts would remain after mitigation.

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

The UPRR Rail Alternative ROW Option would involve an extension of the Red Line from its current terminus at the 95th Street Terminal southward to 130th Street in the vicinity of Altgeld Gardens via existing highway medians and railroad corridors. The three options for the UPRR Rail Alternative are analyzed in two geographic segments:

- Segment UA: from the 95th Street Terminal to the Michigan Avenue station area, including the communities of Roseland, Washington Heights, and West Pullman
- Segment UB: south of the Michigan Avenue station area, in the Riverdale community

New stations would be constructed at 103rd Street on the boundary between the Roseland and Washington Heights communities, at 111th Street in Roseland, at Michigan Avenue in West Pullman, and at 130th Street in Riverdale. All stations would have bus turnarounds and park & ride facilities. The park & ride facilities would be primarily surface parking lots, but multi-level parking structures would be constructed at the Michigan Avenue and 130th Street stations.

The Chicago Department of Transportation is preparing the Far South Railroad Relocation Feasibility Study (FSRRFS). The study examines a possible project to move the existing freight operations out of the UPRR corridor, leaving the corridor vacant. The CTA would implement the ROW Option only if this separate project occurs prior to RLE. If the relocation project does not occur, then the CTA would need to choose either the East Option or West Option in order to pursue the UPRR Rail Alternative. Of the three options under consideration, the ROW Option would have the fewest adverse impacts. The East and West Options would have greater impacts due to the UPRR's requirement that the RLE tracks be located at least 50 feet from the active

freight tracks, which would push the CTA elevated structure into the residential communities adjacent to the UPRR ROW.

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

5.3.1.1 Segment UA

5.3.1.1.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.

- Historic and Cultural Resources: Six resources in Segment UA have been identified as eligible for listing on the NRHP. No adverse effects on historic resources are anticipated to occur.

- Noise and Vibration: Because of the reduction in noise level due to replacing the freight operations with the rail transit operations, noise mitigation would not be required. By using continuously welded rail, vibration levels would be below the FTA impact criterion, requiring no mitigation measures. No adverse noise or vibration impacts are anticipated.

- Energy: Energy consumption would increase due to the addition of new tracks and stations to the rail system; however, this increase in energy would not be adverse, as it is not expected to affect local or regional energy availability or require the development of new sources. Some beneficial reduction in fuel consumption would occur if the RLE Project were to cause motorists to begin using transit for some trips.

- Geology and Soils: Operation of the ROW Option would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.3.1.1.2 Topics with No Adverse Permanent Impacts After Mitigation

- Biological Resources: Of the UPRR Rail Alternative options, the ROW Option would have the least impact on existing vegetation. With compliance with local tree protection ordinances, potential impacts would not be adverse.

- Displacements: The ROW Option would have the fewest displacement impacts of the UPRR Rail Alternative options. In Segment UA, 20 buildings would need to be displaced, of which 2 would be commercial properties, 1 would be a multi-family residential property, and 15 would be single-family homes. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse.

- Hazardous Materials: Operation of ROW Option has the potential to result in the release of hazardous materials and/or petroleum products into the environment from accidental spills or from maintenance activities that require earthmoving in contaminated areas. Measures to avoid such occurrences would include adherence to applicable federal, state, and local

regulations, as well as CTA's existing system-wide hazardous material usage, storage, and disposal plans and procedures. There would be no adverse permanent impacts related to hazardous materials after mitigation.

- Land Use and Economic Development: The travel time savings for all UPRR Rail Alternative Options would support existing land uses and economic development. The park & ride lots at the 103rd Street, 111th Street, and Michigan Avenue stations, the substation just north of Michigan Avenue station, and the parking garage at the Michigan Avenue station would be inconsistent with adjacent land uses. These land uses consist of primarily single-family residential neighborhoods, with occasional commercial and apartment buildings. Mitigations include zoning variances, screening, landscaping, lighting appropriate for adjacent land uses, and appropriate architectural design and massing. Property displacements would be mitigated through just compensation and relocation assistance as required by the Uniform Act. There would be no adverse permanent impacts on land use following proposed mitigation measures. The overall impact on local economic development would be beneficial.

- Neighborhood and Community Impacts: Adverse visual character impacts on the community surrounding Wendell Smith Park could be avoided if the area beneath the elevated structure remained open for park use and new trees were planted to shield views of the elevated structure from homes fronting the park. If the potential UPRR relocation project being studied in the FSRRFS is implemented, it would be possible to allow for more crossing locations along the former freight ROW to enhance the connection between communities on both sides of the tracks. The 103rd Street and 111th Street stations would create transit hubs and would help revive the neighborhood with pedestrian activity. At the Michigan Avenue station, despite the concentration of residential displacements, the overall impacts of the station would be beneficial, and would contribute to a potential new activity center that could enhance the connection between the communities. There would be no adverse permanent neighborhood and community impacts after mitigation. The ROW Option would substantially reduce travel times between neighborhoods in the project area, and would enhance their connection with major job and activity centers to the north. The new transit service and the subsequent increase in pedestrian traffic could attract new businesses to the area and support the growth and enhancement of these neighborhood retail and service nodes. The station would serve as a transit hub that brings additional commuters and visitors to the area, which could further boost economic development. The result would be an overall increase in community livability. The mobility and development impacts of the ROW Option would be beneficial.

- Parklands and Community Facilities: The ROW Option alignment would pass through Wendell Smith Park but would not displace any community facilities; this impact would largely leave the functional and recreational use of the park intact and impacts would not be adverse after mitigation. By improving travel time, operation of the ROW Option would improve access to parklands and community facilities within walking distance (½ mile) of the station locations. The parking garage at the Michigan Avenue station would provide space for retail and community facilities, which would result in a benefit to the community overall.

- Safety and Security: The impact of the ROW Option would not be adverse with mitigation. A large volume of pedestrians would be expected to cross the major streets near the stations without positive traffic control. This impact would be mitigated through the installation of traffic signals, median refuge islands, and/or other pedestrian crossing treatments as applicable, resulting in no adverse permanent impacts after mitigation. Impacts on security at parking facilities would be mitigated by implementing open design and would not be adverse after mitigation. New train stations would be unlikely to have much, if any, impact on neighborhood crime. Suggested mitigation measures would be security surveillance cameras and sidewalk lighting along commercial streets within approximately one block of train station entrances.

- Visual and Aesthetic Conditions: Views near Michigan Avenue station and park & ride would substantially change due to the addition of a multi-story garage, but would not be adverse impacts after mitigation. Mitigation to reduce visual impacts would include shielding exterior lighting and providing special consideration for lighting placement adjacent to sensitive areas such as residential communities; providing landscaping and/or visual screening at park & ride locations where possible; designing the parking structure to match the character of the surrounding fabric; and using urban design techniques to reduce massing.

- Water Resources: There would be no adverse permanent impacts on groundwater. There are no wetlands in Segment UA. Pervious area is anticipated to decrease in some areas; the decrease in pervious area could be mitigated by incorporating new stormwater management structures and establishing an erosion control plan. Major underground pipes and structures could be affected by the ROW Option; stormwater drainage and water structures would need to be designed to accommodate the pump station and other underground utilities. The rail service would replace automobile trips; there would be an associated reduction in runoff contaminants that collect on streets. For this reason, the ROW Option is anticipated to have a minor but positive water quality impact. Due to the predominance of impervious surfaces throughout the project area, minimal percolation to the underlying groundwater occurs in the API; therefore, any potential increases in contaminated surface water runoff would have no adverse impact on groundwater quality. There would be no adverse permanent impacts on stormwater after mitigation.

- Transportation: There would be four intersections in the AM peak and six intersections in the PM peak in Segment UA where the ROW Option would increase traffic congestion beyond applicable thresholds, largely due to cars accessing the park & ride facilities at stations. Mitigation measures such as optimization of signal cycles and removal of some on-street parking near stations would render traffic conditions no worse than under the No Build Alternative. The park & ride facilities may also draw some motorists away from nearby highways, thereby improving traffic flow for automobiles and freight trucks. It is assumed for the ROW Option that existing UPRR freight operations would be relocated away from the existing corridor as a separate project prior to RLE implementation. The ROW Option would therefore have no impact on freight rail operations. Existing bus routes would be adjusted to interface better with the RLE stations and service. New pedestrian and bicycle facilities would

also be included near stations to provide safe access, which would improve transit connections. Transit access to the project area would substantially improve, particularly for low-income residents who do not have access to automobiles. The overall transportation impacts would be beneficial.

5.3.1.1.3 Topics with Adverse Permanent Impacts After Mitigation

No adverse impacts would remain after mitigation.

5.3.1.2 Segment UB

5.3.1.2.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.

- Historic and Cultural Resources: One resource in Segment UB has been identified as eligible for listing on the NRHP. No adverse effects on historic resources are anticipated to occur.

- Neighborhood and Community Impacts: No communities or neighborhoods exist in Segment UB north of 130th Street, because the area is industrial. As such, there would be no impacts north of 130th Street. Impacts from the South Station Option and West Station Option would be beneficial overall. The RLE would allow residents to easily access community resources in other neighborhoods, and perhaps serve as a focal point for the development of additional community resources in Riverdale. The UPRR Rail Alternative would substantially reduce travel times between the Washington Heights, Roseland, West Pullman, and Riverdale communities, and would enhance their connection with major job and activity centers north of the project area. The UPRR Rail Alternative would improve transit accessibility and provide residents with fast, reliable transit service to job centers to the north and areas where more services are available. Riverdale residents who do have automobiles would also benefit from having a new transit alternative to driving.

- Noise and Vibration: The alignment in Segment UB would be located primarily in vacant and industrial areas, which do not contain noise-sensitive land uses. Some residences are present near the Michigan Avenue and 130th Street station areas. By using continuously welded rail, vibration levels would be below the FTA impact criterion, requiring no mitigation measures. No adverse noise or vibration impacts are anticipated.

- Parklands and Community Facilities: The ROW Option alignment would not pass through any parkland and would not displace any community facilities in Segment UB. By improving travel time, operations in Segment UB would improve access to parklands and community facilities within walking distance (½ mile) of the station location when compared to the No Build Alternative. No adverse impacts on parklands or community facilities are anticipated.

- Energy: Compared to existing conditions, energy consumption would increase due to the addition of new tracks and stations to the rail system; however, this increase in energy would not be adverse, as it is not expected to affect local or regional energy availability, or require

the development of new sources. Some beneficial reduction in fuel consumption would occur if the RLE Project were to cause motorists to begin using transit for some trips.

- Geology and Soils: Operation of the ROW Option would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.3.1.2.2 Topics with No Adverse Permanent Impacts After Mitigation

- Biological Resources: Some removal of vegetation would be needed. Given the non-mature forest cover and the surrounding industrial land uses, impacts on biological resources would not be adverse with compliance with local tree protection ordinances.

- Displacements: One non-residential building would be displaced. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse, because there is available vacant land in the project area.

- Hazardous Materials: Given the proximity of Segment UB to an adjacent active railroad, there is the potential for impacts due to releases of hazardous materials potentially being transported and from hazardous materials used in the routine operation and maintenance of the railroad. These materials potentially exist along the railroad currently, but the UPRR Rail Alternative would bring transit vehicles closer to them. Measures to avoid such occurrences would include adherence to applicable federal, state, and local regulations, as well as CTA's existing system-wide hazardous material usage, storage, and disposal plans and procedures. There would be no adverse permanent impacts related to hazardous materials after mitigation.

- Land Use and Economic Development: The limited impact of displacements on project area land use in Segment UB would not be adverse, and associated economic development impacts would be beneficial. Facilities would be designed to be compatible with surrounding uses, which are primarily industrial and include some residences near the 130th Street station location. Due to improved access for residents, commuters, employees, and visitors, the overall land use and economic development impacts would be beneficial.

- Safety and Security: The impact on major incidents would not be adverse. For potential impacts on pedestrian safety at the 130th Street station, a traffic signal, sidewalks, curb ramps, and marked crosswalks are included in the design, so there would be no adverse impact given these improvements. Impacts on security at parking facilities would be mitigated by implementing open design and would not be adverse after mitigation. Because the 130th Street station would not be centered in a neighborhood, the impacts on neighborhood security would not be adverse. Overall safety and security impacts would not be adverse after mitigation.

- Visual and Aesthetic Conditions: Permanent visual impacts would not be adverse after mitigation. Minimal visual changes would occur, and would mostly pertain to the addition of

a multi-story parking structure at the 130th Street station. Mitigations to reduce visual impacts would include shielding exterior lighting and providing special consideration for lighting placement adjacent to sensitive areas such as residential communities; providing landscaping and/or visual screening at park & ride locations where possible; designing the parking structure to match the character of the surrounding fabric; and using urban design techniques to reduce massing.

- Water Resources: Pervious area is anticipated to decrease in some areas; the decrease in pervious area could be mitigated by incorporating new stormwater management structures and establishing an erosion control plan. The RLE Project would replace automobile trips; there would be an associated reduction in runoff contaminants that collect on streets. For this reason, the alternative is anticipated to have a minor but positive water quality impact. Due to the predominance of impervious surfaces throughout the project area, minimal percolation to the underlying groundwater occurs in the API. There would be no adverse permanent impacts on groundwater quality. There would be no permanent adverse impacts on stormwater drainage, water quality, or wetlands.

- Transportation: There would be seven intersections in the AM peak and nine intersections in the PM peak in Segment UB where the ROW Option would increase traffic congestion beyond applicable thresholds, largely due to cars accessing the park & ride facilities at stations. Mitigation measures such as optimization of signal cycles, adding turn lanes, restricting turns at some intersections, and restriping existing lanes would render traffic conditions no worse than under the No Build Alternative. The park & ride facilities may also draw some motorists away from nearby highways, thereby improving traffic flow for automobiles and freight trucks. The UPRR Rail Alternative would not affect Canadian National and Indiana Harbor Belt operations, and would therefore have no impact on freight rail. Existing bus routes would be adjusted to interface better with the RLE stations and service. New pedestrian and bicycle facilities would also be included near stations to provide safe access, which would improve transit connections. Transit access to the project area would substantially improve, particularly for low-income residents who do not have access to automobiles. The overall transportation impacts would be beneficial.

5.3.1.2.3 Topics with Adverse Permanent Impacts After Mitigation

No adverse impacts would remain after mitigation.

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

5.3.2.1 Segment UA

5.3.2.1.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation construction impacts.

- Historic and Cultural Resources: There would be no adverse construction effects on historic resources.

- Noise and Vibration: Based on the types of construction equipment and activities identified in the *Description of Construction and Phasing for Environmental Impact Statement Build Alternatives* (Description of Construction), construction noise levels are not expected to exceed the FTA construction noise limits.

- Energy: The construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: The ROW Option would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the alignment. Excavation would be primarily needed for the elevated structure supports, at-grade trackbeds, and park & ride facilities. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.3.2.1.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Proper traffic management during the construction period would mitigate any potential adverse effects. A Dust Control Plan would address in detail how dust would be controlled at all times at the construction site, the staging areas, and the access and egress routes.

- Biological Resources: There would be no adverse construction impacts on biological resources after mitigation. Compliance with local tree protection ordinances would mitigate the impacts of tree removal. As needed, mitigation measures to reduce potential impacts on wildlife habitat would be performed, including preparing a detailed tree inventory, timing tree removal to occur outside the migratory bird nesting season, performing biological surveys if construction must occur during the nesting season, and replanting trees as required by applicable local codes and ordinances.

- Hazardous Materials: There would be no adverse construction impacts relating to hazardous materials after mitigation. Construction would result in generation of a large quantity of soil that could contain contaminated materials requiring off-site disposal. Contaminated materials potentially encountered could include heavy metals, asbestos-containing material, and lead-based paint. Mitigation measures would include compliance with federal, state, and local laws and regulations regarding hazardous materials; focused site assessments for areas where

earthmoving activities would occur; hazardous materials surveys of buildings; a Contaminated Material Management Plan; Health and Safety Plans for construction activities; Spill Prevention, Control, and Countermeasure Plans; and Construction Stormwater Pollution Prevention Plans.

- Land Use and Economic Development: Construction would take up to 3 years and would cause temporary impacts on adjacent residential neighborhoods due to noise, vibration, fugitive dust, truck traffic, and roadway detours. Mitigation methods would include focusing construction activities primarily during the least impactful times of day and other best management practices. There would be short-term beneficial economic impacts from construction jobs. The land use impacts from construction would not be adverse after mitigation. The overall economic development impact from construction would be beneficial.

- Neighborhood and Community Impacts: Community disruption would occur while construction activities are performed for the UPRR Rail Alternative, with intensive construction occurring over a period of approximately 3 years. Storage of materials, equipment, and trucks would introduce temporary intermittent visual impacts within communities, but these impacts would not be adverse given their temporary nature and CTA's use of best management practices. Temporary dust, noise, and visual impacts would occur. Construction would be temporary, and major activities would be scheduled so as not to conflict with community events to the extent possible. Businesses around the alignment and parking structure could be affected by construction activities, construction-related traffic, and road and sidewalk closures. This potentially adverse impact would be mitigated through early notification of construction activities, provision of temporary alternate access routes, and advertising programs to increase the visibility of affected businesses during construction.

- Parklands and Community Facilities: Construction activities would occur in Wendell Smith Park and would temporarily affect this park. The elevated structure would pass through the northwest corner of the park property. The temporary inaccessibility of part of the park would not adversely affect park function, and impacts would be mitigated through best management practices and coordination with community members and the Chicago Park District. Construction activities would generate temporary noise and air quality impacts, and/or change access to or parking around the parks. These impacts would be temporary in nature and would be mitigated through the use of construction best management practices; by alerting parkland users of construction activities; and by providing clearly marked detour routes and alternate parking. Coordination with the Chicago Park District would result in options to mitigate impacts on any of the organized park activities; for example, the recreational activities could be temporarily relocated to a nearby park while construction was underway. After mitigation, construction of the ROW Option would not adversely affect the parks in Segment UA. Construction of the ROW Option would temporarily affect New Christian Joy Missionary Baptist Church because it is adjacent to the proposed ROW. After mitigations similar to those for parks, this church would not have adverse impacts.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site would not be adverse after mitigation, which would include minimizing detour lengths.

- Visual and Aesthetic Conditions: The visual impacts related to construction would not be adverse after mitigation. At locations where park & ride structures and lots would be created, impacts would include construction fencing, demolition of existing buildings or clearing of vacant lots, temporary street closures and related signage, or temporary lighting or entrances. The CTA would attempt to maintain as much existing vegetation as practical during construction, and would minimize temporary construction impacts on the neighborhood with measures such as limiting light trespassing from night lighting. Best management practices and debris-free construction areas would mitigate temporary visual impacts from the construction sites.

- Water Resources: There would be no adverse construction impacts on drainage, groundwater, or water quality after mitigation. There would be no adverse construction impacts on water resources after mitigation. Stormwater drainage mitigation measures would include incorporating new stormwater management structures and establishing an erosion control plan, including for construction activities at the locations of garages and park & ride lots. Water quality mitigation measures would include installing properly designed and maintained biological oil and grease removal systems, proper storage of hazardous materials, development and maintenance of an effective monitoring and cleanup program for spills and leaks of hazardous materials, proper storage and maintenance of equipment, periodic removal of landscape and construction debris, installation of detention basins to remove suspended solids, and regular monitoring of runoff water quality. Care would need to be taken during construction in the vicinity of the Roseland Pump Station at 104th Street, as well as other underground utilities identified, in order to not damage existing structures. There are no wetlands in Segment UA.

- Transportation: Construction of rail facilities, parking structures, and park & ride lots would require lane and sidewalk closures that would temporarily reduce roadway capacity. These closures may lead to temporarily increased travel times for both motorists and transit riders, and bus stop locations may be temporarily relocated. Bicycles and pedestrians would need to be rerouted around work areas. Detours would be provided to maintain access. Lanes on I-57 may also need to be temporarily closed to accommodate rail construction in the median, which would affect automobiles and freight trucks. Temporary closure of full sections of I-57 may also be needed. Closures would be scheduled during low-traffic periods to the extent feasible to minimize impacts. It is assumed for the ROW Option that existing UPRR freight operations would be relocated away from the existing corridor as part of a separate project prior to RLE implementation. The ROW Option construction would therefore have no impact on freight rail operations. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur after mitigation.

5.3.2.1.3 Topics with Adverse Construction Impacts After Mitigation

No adverse impacts would remain after mitigation.

5.3.2.2 Segment UB

5.3.2.2.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation impacts associated solely with the construction phase.

- Historic and Cultural Resources: There would be no adverse construction effects on historic resources.

- Noise and Vibration: Based on the types of construction equipment and activities identified in the Description of Construction, construction noise levels are not expected to exceed the FTA construction noise limits.

- Energy: The construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: The ROW Option would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the alignment. Excavation would be primarily needed for the elevated structure supports, at-grade trackbeds, and park & ride facilities. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.3.2.2.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Proper traffic management during the construction period would mitigate any potential adverse effects. A Dust Control Plan would address in detail how dust would be controlled at all times at the construction site, the staging areas, and the access and egress routes.

- Biological Resources: There would be no adverse construction impacts on biological resources after mitigation. Compliance with local tree protection ordinances would mitigate the impacts of tree removal. As needed, mitigation measures to reduce potential impacts on wildlife habitat would be performed, including preparing a detailed tree inventory, timing tree removal to occur outside the migratory bird nesting season, performing biological surveys if

construction must occur during the nesting season, and replanting trees as required by applicable local codes and ordinances.

- Hazardous Materials: There would be no adverse construction impacts relating to hazardous materials after mitigation. Construction would result in generation of a large quantity of soil that could contain contaminated materials requiring off-site disposal. Contaminated materials potentially encountered could include heavy metals, asbestos-containing material, and lead-based paint. Mitigation measures would include compliance with federal, state, and local laws and regulations regarding hazardous materials; focused site assessments for areas where earthmoving activities would occur; hazardous materials surveys of buildings; a Contaminated Material Management Plan; Health and Safety Plans for construction activities; Spill Prevention, Control, and Countermeasure Plans; and Construction Stormwater Pollution Prevention Plans.

- Land Use and Economic Development: Construction would take up to 3 years and would cause temporary impacts on adjacent residential neighborhoods due to noise, vibration, fugitive dust, truck traffic, and roadway detours. Mitigation methods would include focusing construction activities primarily during the least impactful times of day and other best management practices. There would be short-term beneficial economic impacts from construction jobs. The land use impacts from construction would not be adverse after mitigation. The overall economic development impact from construction would be beneficial.

- Neighborhood and Community Impacts: Impacts on the Riverdale community would not be adverse provided that best management practices were employed and nighttime construction near residences was limited to the extent practicable. Community disruption would occur during construction activities for the UPRR Rail Alternative, with intensive construction occurring over a period of approximately 3 years. Overall there are few residences and businesses along Segment UB north of 130th Street. Storage of materials, equipment, and trucks would introduce temporary intermittent visual impacts within communities, but these impacts would not be adverse given their temporary nature and CTA's use of best management practices. Temporary dust, noise, and visual impacts would occur. Construction would be temporary, and major activities would be scheduled so as not to conflict with community events to the extent possible. This potentially adverse impact would be mitigated through early notification of construction activities, provision of temporary alternate access routes, and advertising programs to increase the visibility of affected businesses during construction.

- Parklands and Community Facilities: No parklands would be displaced in Segment UB. Aldridge Elementary School is near the 130th Street West Station Option site and would have impacts associated with construction activities. The adverse impacts would be mitigated using construction best management practices, clearly marked detour routes, and notification to the school regarding the construction schedule.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site, would not be adverse after mitigation, which would include minimizing detour lengths.

- Visual and Aesthetic Conditions: At locations where park & ride structures and lots would be created, impacts might include construction fencing, demolition of existing buildings or clearing of vacant lots, temporary street closures and related signage, or temporary lighting or entrances. The CTA would attempt to maintain as much existing vegetation as practical during construction, and minimize temporary construction impacts on the neighborhood with measures such as limiting light trespassing from night lighting. Best management practices and debris-free construction areas would mitigate temporary visual impacts from the construction sites. There would be no adverse construction impacts after mitigation.

- Water Resources: There would be no adverse construction impacts on water resources after mitigation. Stormwater drainage mitigation measures would include incorporating new stormwater management structures and establishing an erosion control plan, including for construction activities at the locations of garages and park & ride lots. Water quality mitigation measures would include installing properly designed and maintained biological oil and grease removal systems, proper storage of hazardous materials, development and maintenance of an effective monitoring and cleanup program for spills and leaks of hazardous materials, proper storage and maintenance of equipment, periodic removal of landscape and construction debris, installation of detention basins to remove suspended solids, and regular monitoring of runoff water quality. After compensatory mitigation, either through creation, restoration, enhancement, or preservation of wetlands, there would be no adverse permanent impacts on wetlands.

- Transportation: Construction of rail facilities, parking structures, and park & ride lots would require lane and sidewalk closures that would temporarily reduce roadway capacity. These closures may lead to temporarily increased travel times for both motorists and transit riders, and bus stop locations may be temporarily relocated. Bicycles and pedestrians would need to be rerouted around work areas. Detours would be provided to maintain access, and closures would be scheduled during low-traffic periods to the extent feasible to minimize impacts. Construction would also be phased to minimize disruption to passenger and freight rail services. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur after mitigation.

5.3.2.2.3 Topics with Adverse Construction Impacts After Mitigation

No adverse impacts would remain after mitigation.

5.3.3 120th Street Yard and Shop

5.3.3.1 Permanent Impacts and Mitigations

5.3.3.1.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.

- Historic and Cultural Resources: No properties identified as eligible for listing on the NRHP lie in the vicinity of the yard and shop location; therefore, no effects are anticipated.

- Neighborhood and Community Impacts: The 120th Street yard and shop would be located in industrial and vacant areas, away from residences and community-oriented businesses and resources. As such, no community impacts would result from operation of the facility.

- Noise and Vibration: Because there are no sensitive receptors in the vicinity of the 120th Street yard and shop, and because of the much lower amount of train activity in and out of the facility and the lower train speeds compared to other parts of the project corridor, the noise levels generated in this area would be substantially lower than the noise levels generated along other parts of the project corridor. As a result, the noise generated at the 120th Street yard and shop would not exceed the FTA impact criteria at the nearest sensitive receptors.

- Parklands and Community Facilities: There are no parklands or community facilities in, adjacent to, or within 500 feet of the proposed ROW for the 120th Street yard and shop. As such, there would be no impacts on parklands or community facilities as a result of the operation and/or construction of the 120th Street yard and shop.

- Transportation: Under the ROW Option, there would be no permanent impacts on bicycle or pedestrians, because the existing site is a combination of industrial and vacant land. Pedestrian access by the general public would be restricted and discouraged. Because of the location of the yard, no public transportation or parking facilities would be affected by this alternative. Some parking would be provided for yard employees.

- Energy: Yard and shop operation would require additional fuel and energy resources, but not to the extent that it would affect local or regional fuel and energy availability, or require development of new energy sources. As such, no adverse impacts would occur.

- Geology and Soils: Operation of the 120th Street yard and shop would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.3.3.1.2 Topics with No Adverse Permanent Impacts After Mitigation

- Biological Resources: Given the non-mature forest cover and the surrounding industrial land uses, impacts on biological resources would not be adverse with compliance with local tree protection ordinances.

- Displacements: The permanent envelope for the yard and shop would displace three buildings within the Riverdale neighborhood, of which none contain residences or commercial businesses. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse, because there is available vacant land in the project area.

- Hazardous Materials: There would be no adverse permanent impacts related to hazardous materials after mitigation. Operation of yard and shop would have the potential to result in the release of hazardous materials and/or petroleum products into the environment from accidental spills or from maintenance activities that require earthmoving in contaminated areas. Measures to avoid such occurrences would include adherence to applicable federal, state, and local regulations, as well as CTA's existing system-wide hazardous material usage, storage, and disposal plans and procedures.

- Land Use and Economic Development: The yard and shop would be located within an industrial area; the facilities would be designed to be consistent with existing land uses. The land use and economic impacts would not be adverse.

- Safety and Security: Impacts on security at the 120th Street yard and shop would not be adverse after mitigation. Mitigation measures would include complying with relevant design standards to minimize intrusion and prevent graffiti.

- Visual and Aesthetic Conditions: Due to the location in a low-density light industrial area, impacts would be minimal. Additional measures for the 120th Street yard and shop would include designing the shop facility structure to be aesthetically compatible with surrounding uses and screening the yard through fencing, walls, or vegetation wherever necessary and possible.

- Water Resources: There would be no adverse permanent impacts on groundwater. There would be no adverse permanent impacts on stormwater drainage or water quality associated with the 120th Street yard and shop after mitigation. Pervious area is anticipated to decrease in some areas; the decrease in pervious area could be mitigated by incorporating new stormwater management structures and establishing an erosion control plan. The introduction of new impervious surfaces would have the potential to increase the concentration and accumulation of runoff contaminants. Following compensatory mitigation, there would be no adverse permanent impacts on wetlands.

5.3.3.1.3 Topics with Adverse Permanent Impacts After Mitigation

No adverse impacts would remain after mitigation.

5.3.3.2 Construction Impacts and Mitigations

5.3.3.2.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation construction impacts.

- Historic and Cultural Resources: No properties identified as eligible for listing on the NRHP lie in the vicinity of the yard and shop location; therefore, no effects are anticipated.

- Land Use and Economic Development: Because the yard and shop would be located in a heavy industrial area, the construction activities would not be adverse for land use or economic development.

- Neighborhood and Community Impacts: The 120th Street yard and shop would be located in industrial and vacant areas, away from residences and community-oriented businesses and resources. Construction activities would be far enough from established communities that no impacts would occur.

- Noise and Vibration: Based on the construction activities and equipment identified in the Description of Construction, and with noise-reducing construction practices, construction noise levels are not expected to exceed the FTA construction noise limits. No sensitive receptors are near the yard and shop site.

- Parklands and Community Facilities: There are no parklands or community facilities in, adjacent to, or within 500 feet of the proposed ROW for the 120th Street yard and shop. As such, there would be no impacts on parklands or community facilities as a result of the operation and/or construction of the 120th Street yard and shop.

- Energy: Yard and shop construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: Construction of the 120th Street yard and shop would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the site. Excavation would be primarily needed for the at-grade trackbeds and shop buildings. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.3.3.2.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Proper traffic management during the construction period would mitigate any potential adverse effects. A Dust Control Plan would address in detail how dust would be controlled at all times at the construction site, the staging areas, and the access and egress routes.

- Biological Resources: There would be no adverse construction impacts on biological resources after mitigation. Compliance with local tree protection ordinances would mitigate the impacts of tree removal. As needed, mitigation measures to reduce potential impacts on wildlife habitat would be performed, including preparing a detailed tree inventory, timing tree

removal to occur outside the migratory bird nesting season, performing biological surveys if construction must occur during the nesting season, and replanting trees as required by applicable local codes and ordinances.

- Hazardous Materials: There would be no adverse construction impacts relating to hazardous materials after mitigation. Construction would result in generation of a large quantity of soil that could contain contaminated materials requiring off-site disposal. Contaminated materials potentially encountered could include heavy metals, asbestos-containing material, and lead-based paint. Mitigation measures would include compliance with federal, state, and local laws and regulations regarding hazardous materials; focused site assessments for areas where earthmoving activities would occur; hazardous materials surveys of buildings; a Contaminated Material Management Plan; Health and Safety Plans for construction activities; Spill Prevention, Control, and Countermeasure Plans; and Construction Stormwater Pollution Prevention Plans.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site, would not be adverse after mitigation, which would include minimizing detour lengths.

- Visual and Aesthetic Conditions: Construction impacts would be minor and not adverse after mitigation for the 120th Street yard and shop, due to its location in a low-density area and the nature of at-grade construction. Impacts might include construction fencing, demolition of existing buildings or clearing of vacant lots, temporary street closures and related signage, or temporary lighting or entrances. The CTA would attempt to maintain as much existing vegetation as practical during construction, and minimize temporary construction impacts on the neighborhood with measures such as limiting light trespassing from night lighting. Best management practices and debris-free construction areas would mitigate temporary visual impacts from the construction sites.

- Water Resources: There would be no adverse construction impacts on water resources in the vicinity of the 120th Street yard and shop after mitigation. Stormwater drainage mitigation measures would include incorporating new stormwater management structures and establishing an erosion control plan. Water quality mitigation measures would include installing properly designed and maintained biological oil and grease removal systems, proper storage of hazardous materials, development and maintenance of an effective monitoring and cleanup program for spills and leaks of hazardous materials, proper storage and maintenance of equipment, periodic removal of landscape and construction debris, installation of detention basins to remove suspended solids, and regular monitoring of runoff water quality.

- Transportation: During new track roadbed construction for the 120th Street yard and shop and the new access road for the existing Metropolitan Water Reclamation District facility, construction over and adjacent to the Northern Indiana Commuter Transit District/Chicago South Shore & South Bend Railroad would occur. During these construction activities, flagging operations and scheduled track closures would occur. Construction would be phased

to minimize impacts on operations of the Metropolitan Water Reclamation District and Northern Indiana Commuter Transit District/Chicago South Shore & South Bend Railroad.

5.3.3.2.3 Topics with Adverse Construction Impacts After Mitigation

No adverse impacts would remain after mitigation.

5.4 Union Pacific Railroad Rail Alternative - East Option

The UPRR Rail Alternative East Option would involve an extension of the Red Line from its current terminus at the 95th Street Terminal southward to 130th Street in the vicinity of Altgeld Gardens via existing highway medians and railroad corridors. The three options for the UPRR Rail Alternative are analyzed in two geographic segments, as described above in Section 5.3 for the ROW Option. The East Option alignment would run along the eastern side of the UPRR ROW in Segment UA. The alignment in Segment UB is the same for all three options.

New stations would be constructed at 103rd Street on the boundary between the Roseland and Washington Heights communities, at 111th Street in Roseland, at Michigan Avenue in West Pullman, and at 130th Street in Riverdale. All stations would have bus turnarounds and park & ride facilities. The park & ride facilities would be primarily surface parking lots, but multi-level parking structures would be constructed at the Michigan Avenue and 130th Street stations. To ensure analysis of the maximum foreseeable impacts, it is assumed for the East and West Options that the possible project being studied in the FSRRFS would not have occurred prior to RLE construction and UPRR would continue freight operations in its existing ROW. Compared to the ROW Option, the East and West Options would have greater impacts due to the UPRR's requirement that the CTA tracks be located at least 50 feet from the active freight tracks. Particularly for the East Option, which would have the greatest number of building displacements, this requirement would push the elevated structure into the residential communities adjacent to the UPRR ROW.

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

5.4.1.1 Segment UA

5.4.1.1.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.

- Historic and Cultural Resources: Six resources in Segment UA have been identified as eligible for listing on the NRHP. No adverse effects on historic resources are anticipated to occur as a result of the East Option.

- Energy: Energy consumption would increase due to the addition of new tracks and stations to the rail system; however, this increase in energy would not be adverse, as it is not expected to affect local or regional energy availability or require the development of new sources. Some

beneficial reduction in fuel consumption would occur if the RLE Project were to cause motorists to begin using transit for some trips.

- Geology and Soils: Operation of the East Option would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.4.1.1.2 Topics with No Adverse Permanent Impacts After Mitigation

- Biological Resources: The East Option would affect a larger amount of vegetation than the ROW Option. With compliance with local tree protection ordinances, potential impacts would not be adverse.

- Displacements: The East Option would have the most impacts of the UPRR Rail Alternative options. In Segment UA, 107 buildings would be displaced, of which 81 would be single-family residences, 13 would be multi-family buildings, 3 would be commercial structures, and 1 would be a place of worship. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse, because there is available vacant land in the project area.

- Hazardous Materials: Given the proximity of the UPRR track to the alignment for the East Option, there would be the potential for impacts due to releases of hazardous materials being transported and from hazardous materials used in the routine operation and maintenance of the UPRR. These materials potentially exist along the railroad currently, but the UPRR Rail Alternative would bring transit vehicles closer to them. There would be no adverse permanent impacts related to hazardous materials after mitigation. The impacts and mitigation measures would be similar to those for the ROW Option, as discussed above in Section 5.3.1.1.

- Land Use and Economic Development: The park & ride lots at the 103rd Street and 111th Street stations, and the parking garage at the Michigan Avenue station would be inconsistent with adjacent land uses due to the primarily residential and commercial nature of the areas around the proposed stations. These land uses consist of primarily single-family residential neighborhoods, with occasional commercial and apartment buildings. There would be no adverse permanent impacts on land use after proposed mitigation measures, as there could be new development spurred by the new station. The overall impact on local economic development would be beneficial. These impacts and mitigation measures would be similar to those for the ROW Option, as discussed above in Section 5.3.1.1.

- Noise and Vibration: There would be a substantial number of affected receptors where the train speeds reach 55 mph. Noise-affected residential receptors along the project corridor would require mitigation. A 3- to 4-foot-high noise barrier installed along the outer tracks of the aerial structure would reduce the wheel/rail noise that would propagate into the surrounding community. There would be no adverse noise impacts after mitigation. No adverse vibration impacts are anticipated.

- Parklands and Community Facilities: In segment UA, the East Option alignment would pass through the corner of Wendell Smith Park and the western portion of Block Park, and would displace Now Faith Church of God Holiness. The church could be relocated within the neighborhood. The East Option would largely leave the functional and recreational use of the parks intact and impacts would not be adverse after mitigation. By improving travel time, operation of the East Option would improve access to parklands and community facilities within walking distance (½ mile) of the station locations. The parking garage at the Michigan Avenue station would provide space for retail and community facilities; this space would result in a benefit to the community overall.

- Safety and Security: The impact on major incidents would not be adverse. A large volume of pedestrians would be expected to cross the major streets near the stations without positive traffic control. This impact would be mitigated through the installation of traffic signals, median refuge islands, and/or other pedestrian crossing treatments, resulting in no adverse permanent impacts after mitigation. Traffic signals would need to be interconnected with the railroad crossing warning devices. Impacts on security at parking facilities would be mitigated by implementing open design and would not be adverse after mitigation. New train stations would be unlikely to have much, if any, impact on neighborhood crime. Suggested mitigation measures would be security surveillance cameras and sidewalk lighting along commercial streets within approximately one block of train station entrances. Impacts on neighborhood security would not be adverse after mitigation. Overall safety and security impacts would not be adverse after mitigation. The East Option would directly increase the number of vehicles (mostly buses) and pedestrians crossing the UPRR tracks at 103rd Street and 111th Street compared to the No Build Alternative, and could indirectly induce land development that would further increase traffic volumes. The risk of vehicle crashes would be mitigated by installing safety protection technologies for vehicles and pedestrians. Given that transit passengers are often in a hurry, and given the likely delays to pedestrians due to the expected increase in freight volumes over existing conditions, it is reasonable to assume that some pedestrians may choose to take unacceptable safety risks by crossing the tracks while the signals are flashing. This adverse impact could be mitigated by incorporating a grade separation structure or providing pedestrian crossing gates at sidewalks.

- Water Resources: The East Option alignment would be closer to the Roseland Pump Station than the ROW Option alignment; consequently, it would be more complex from a drainage standpoint. There would be no adverse permanent impacts on water resources in Segment UA of the East Option. The impacts and mitigation measures would be similar to those for the ROW Option, described above in Section 5.3.1.1.2.

- Transportation: There would be four intersections in the AM peak and six intersections in the PM peak in Segment UA where the East Option would increase traffic congestion beyond applicable thresholds, largely due to cars accessing the park & ride facilities at stations. Mitigation measures such as optimization of signal cycles and removal of some on-street parking near stations would render traffic conditions no worse than under the No Build Alternative. The park & ride facilities may also draw some motorists away from nearby

highways, thereby improving traffic flow for automobiles and freight trucks. The East Option would therefore have no impact on freight rail operations, because the rail line would be elevated above the UPRR ROW and no new grade crossings would be added. Existing bus routes would be adjusted to interface better with the RLE stations and service. New pedestrian and bicycle facilities would also be included near stations to provide safe access, including across the existing freight tracks, which would improve transit connections. Transit access to the project area would substantially improve, particularly for low-income residents who do not have access to automobiles. The overall transportation impacts would be beneficial.

5.4.1.1.3 Topics with Adverse Permanent Impacts After Mitigation

- Visual and Aesthetic Conditions: The elevated structure would cause adverse visual impacts at 117th Street and Prairie Avenue. Mitigation measures would reduce the impacts, but due to the proximity of the elevated structure to residential areas, the impacts would remain adverse despite mitigation. Mitigation measures to reduce visual impacts would include landscaping, using urban design techniques to reduce massing, and creating pedestrian-friendly surroundings.

- Neighborhood and Community Impacts: The East Option would have permanent adverse impacts on community character and cohesion that could not be mitigated due to the visual encroachment of the elevated structure into the neighborhood at 117th Street and Prairie Avenue in West Pullman. Mitigation measures for impacts on community character, including planting additional landscaping, would not be sufficient to offset this permanent impact. The East Option alignment would pass through the northwestern corner of Wendell Smith Park and the western portion of Block Park, and would displace Now Faith Church of God Holiness. The church could be relocated within the neighborhood. The East Option would largely leave the functional and recreational use of the parks intact and impacts would not be adverse after mitigation. Other impacts, benefits, and mitigation measures would be similar to those for the ROW Option, as discussed above in Section 5.3.1.1.2.

5.4.1.2 Segment UB

Impacts in Segment UB would be the same for all of the UPRR Rail Alternative options. Impacts and mitigation measures for Segment UB are discussed above in 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

5.4.2.1.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation construction impacts.

- Historic and Cultural Resources: There would be no adverse construction effects on historic resources.

- Noise and Vibration: Based on the construction activities and equipment described in the Description of Construction, construction noise levels are not expected to exceed the FTA construction noise limits using noise-reducing construction practices.

- Energy: The construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: The East Option would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the alignment. Excavation would be primarily needed for the elevated structure supports, at-grade trackbeds, and park & ride facilities. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.4.2.1.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Biological Resources: Although the East Option would affect a larger amount of vegetation than the ROW Option, there would be no adverse construction impacts on biological resources after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Hazardous Materials: There would be no adverse construction impacts relating to hazardous materials after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Land Use and Economic Development: Land use impacts from construction would not be adverse. Economic development impacts from construction would be beneficial. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Neighborhood and Community Impacts: There would be no adverse construction impacts relating to neighborhood and community impacts after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Parklands and Community Facilities: No parkland or community facilities would have adverse construction impacts after mitigations. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site, would not be adverse after mitigations, which include minimizing detour lengths.

- Visual and Aesthetic Conditions: The visual impacts related to construction would not be adverse after mitigation. The impacts and mitigation measures would be the similar to those for the ROW Option, discussed above in Section 5.3.2.1.

- Water Resources: The East Option alignment would be closer to the Roseland Pump Station than the ROW Option; consequently, additional care would need to be taken in the vicinity of the Roseland Pump Station and near the other underground utilities during construction. There would be no adverse construction impacts on water resources in Segment UA of the East Option. The impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Transportation: Construction of rail facilities, parking structures, and park & ride lots would require lane and sidewalk closures that would temporarily reduce roadway capacity. These closures may lead to temporarily increased travel times for both motorists and transit riders, and bus stop locations may be temporarily relocated. Bicycles and pedestrians would need to be rerouted around work areas. Detours would be provided to maintain access. Lanes on I-57 may also need to be temporarily closed to accommodate rail construction in the median, which would affect automobiles and freight trucks. Temporary closure of full sections of I-57 may also be needed. Closures would be scheduled during low-traffic periods to the extent feasible to minimize impacts. The UPRR freight tracks would remain active during construction. Temporary intermittent track closures may be needed; however, construction would be staged to minimize disruption. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur after mitigation.

5.4.2.1.3 Topics with Adverse Construction Impacts After Mitigation

No adverse impacts would remain after mitigation.

5.4.2.2 Segment UB

Impacts in Segment UB would be the same for all of the UPRR Rail Alternative options. Construction impacts and mitigation measures for Segment UB are discussed above in Section 5.3.2.2.

5.4.3 120th Street Yard and Shop

Impacts of the 120th Street yard and shop would be the same for all of the UPRR Rail Alternative options. Impacts and mitigation measures for 120th Street yard and shop are discussed above in Section 5.3.3.

5.5 Union Pacific Railroad Rail Alternative - West Option

The UPRR Rail Alternative West Option would include extension of the Red Line from its current terminus at 95th Street Terminal southward to 130th Street in the vicinity of Altgeld Gardens via existing highway medians and railroad corridors. The three options for the UPRR Rail Alternative are analyzed in two geographic segments, as described above in Section 5.3 for the ROW Option. The West Option alignment would run along the western side of the UPRR ROW in Segment UA. The alignment in Segment UB is the same for all three options.

New stations would be constructed at 103rd Street on the boundary between the Roseland and Washington Heights communities, at 111th Street in Roseland, at Michigan Avenue in West Pullman, and at 130th Street in Riverdale. All stations would have bus turnarounds and park & ride facilities. The park & ride facilities would be primarily surface parking lots, but multi-level parking structures would be constructed at the Michigan Avenue and 130th Street stations. To ensure analysis of the maximum foreseeable impacts, it is assumed for the East and West Options that the possible project being studied in the FSRRFS would not have occurred prior to RLE construction and UPRR would continue freight operations in its existing ROW. Compared to the ROW Option, the East and West Options would have greater displacement impacts due to the UPRR's requirement that the CTA tracks be located at least 50 feet from the active freight tracks. The West Option would require fewer displacements than the East Option, and a greater proportion of the displacements would be industrial instead of residential.

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

5.5.1.1 Segment UA

5.5.1.1.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.

- Historic and Cultural Resources: Six resources in Segment UA have been identified as eligible for listing on the NRHP. No adverse effects on historic resources are anticipated to occur.

- Energy: Energy consumption would increase due to the addition of new tracks and stations to the rail system; however, this increase in energy would not be adverse, as it is not expected to affect local or regional energy availability or require the development of new sources. Some beneficial reduction in fuel consumption would occur if the RLE Project were to cause motorists to begin using transit for some trips.

- Geology and Soils: Operation of the West Option would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.5.1.1.2 Topics with No Adverse Permanent Impacts After Mitigation

- Biological Resources: The West Option would affect the greatest amount of vegetation compared to the other UPRR Rail Alternative options. With compliance with local tree protection ordinances, potential impacts would not be adverse.

- Displacements: The West Option would have fewer impacts than the East Option, but more than the ROW Option. In Segment UA, 47 buildings would be removed, of which 22 would be single-family residences, 8 would be commercial properties, 2 would be mixed-use properties, and 1 would be a place of worship. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse, because there is available vacant land in the project area.

- Hazardous Materials: Given the proximity of the UPRR track to the alignment for the West Option, there would be the potential for impacts due to releases of hazardous materials being transported and from hazardous materials used in the routine operation and maintenance of the UPRR. These materials potentially exist along the railroad currently, but the UPRR Rail Alternative would bring transit vehicles closer to them. There would be no adverse permanent impacts related to hazardous materials after mitigation. These impacts and mitigation measures would be similar to those for the ROW Option, as described above in Section 5.3.1.1.

- Land Use and Economic Development: The West Option would affect the adjacent land uses along Fernwood Parkway, because it would be incompatible with the existing single-family residential development. Mitigation would include additional street trees along the west side of Eggleston Avenue and an evergreen tree buffer along the east side of Eggleston Avenue. The park & ride lots at the 103rd Street and 111th Street stations, the substation at 105th Street, and the parking garage at the Michigan Avenue Station would be inconsistent with adjacent land uses. These land uses consist of primarily single-family residential neighborhoods, with occasional commercial and apartment buildings. The West Option would displace the most commercial structures of any of the UPRR Rail Alternative Options; however, some are not fully utilized. The overall impact on land uses would not be adverse after mitigation. The overall impact on local economic development would be beneficial. The impacts and mitigation measures would be similar to those for the ROW Option, as discussed above in Section 5.3.1.1.

- Noise and Vibration: There would be no adverse noise impacts after mitigation. No adverse vibration impacts are anticipated. Impacts and mitigation measures would be similar to those for the East Option, as discussed above in Section 5.4.1.1.

- Parklands and Community Facilities: In segment UA, the West Option alignment would pass through the corner of Wendell Smith Park and most of Fernwood Parkway. No community facilities would be displaced. The West Option would largely leave the functional and recreational use of the parks intact and impacts would not be adverse after mitigation. Mitigation measures would include replacement parkland elsewhere in the surrounding neighborhoods, or improvement of existing park facilities. By improving travel time, operation

of the West Option would improve access to parklands and community facilities within walking distance (½ mile) of the station locations. The parking garage at the Michigan Avenue station would provide space for retail and community facilities; this space would result in a benefit to the community overall.

- Safety and Security: The impact on major incidents would not be adverse. A large volume of pedestrians would be expected to cross the major streets near the stations without positive traffic control. This impact would be mitigated through the installation of traffic signals, median refuge islands, and/or other pedestrian crossing treatments as applicable in coordination with the results of traffic studies completed during the final design phase, resulting in no adverse permanent impacts after mitigation. The West Option would directly increase the number of vehicles (mostly buses) and pedestrians crossing the UPRR tracks at 103rd Street and 111th Street compared to the No Build Alternative, and could indirectly induce land development that would further increase traffic volumes. The risk of vehicle crashes would be mitigated by installing safety protection technologies for vehicles and pedestrians. Given that transit passengers are often in a hurry, and given the likely delays to pedestrians due to the expected increase in freight volumes over existing conditions, it is reasonable to assume that some pedestrians may choose to take unacceptable safety risks by crossing the tracks while the signals are flashing. Compared to the East Option, the volume of pedestrians crossing the tracks would be lower for the West Option because the parking lots would be located on the same side of the tracks as the stations. This adverse impact could be mitigated by incorporating a grade separation structure or providing pedestrian crossing gates at sidewalks. Traffic signals would need to be interconnected with the railroad crossing warning devices. Impacts on security at parking facilities would be mitigated by implementing open design and would not be adverse after mitigation. New train stations would be unlikely to have much, if any, impact on neighborhood crime. Suggested mitigation measures would be security surveillance cameras and sidewalk lighting along commercial streets within approximately one block of train station entrances. Impacts on neighborhood security would not be adverse after mitigation. Overall safety and security impacts would not be adverse after mitigation.

- Water Resources: Of the UPRR Rail Alternative option alignments, the West Option alignment would be furthest from the Roseland Pump Station and would have the least potential impact on underground pipes and structures around the pump station. There would be no adverse permanent impacts on water resources in Segment UA of the West Option. The impacts and mitigation measures would be similar to those for the ROW Option, described above in Section 5.3.1.1.2.

- Transportation: There would be four intersections in the AM peak and six intersections in the PM peak in Segment UA where the West Option would increase traffic congestion beyond applicable thresholds, largely due to cars accessing the park & ride facilities at stations. Mitigation measures such as optimization of signal cycles and removal of some on-street parking near stations would render traffic conditions no worse than under the No Build Alternative. The park & ride facilities may also draw some motorists away from nearby

highways, thereby improving traffic flow for automobiles and freight trucks. The West Option would therefore have no impact on freight rail operations, because the rail line would be elevated above the UPRR ROW and no new grade crossings would be added. Existing bus routes would be adjusted to interface better with the RLE stations and service. New pedestrian and bicycle facilities would also be included near stations to provide safe access, including across the existing freight tracks, which would improve transit connections. Transit access to the project area would substantially improve, particularly for low-income residents who do not have access to automobiles. The overall transportation impacts would be beneficial.

5.5.1.1.3 Topics with Adverse Permanent Impacts After Mitigation

- Visual and Aesthetic Conditions: The elevated structure would cause adverse visual impacts between 99th Street and 103rd Street, near the 103rd Street station, and near the Michigan Avenue station park & ride facility. Mitigation measures to reduce visual impacts would include providing landscaping and replanting vegetation where possible, designing the park & ride facility to match the character of the surrounding neighborhood, using urban design techniques to reduce massing, and creating pedestrian-friendly surroundings. Exterior lighting would be shielded and carefully placed when adjacent to sensitive areas such as residential communities. The impacts would remain adverse after mitigation.

- Neighborhood and Community Impacts: The West Option would have permanent adverse impacts on community character and cohesion that could not be mitigated due to the visual encroachment of the elevated structure into the neighborhood between 99th and 103rd Streets in Washington Heights. The 103rd Street station in Roseland and Washington Heights and the Michigan Avenue station park & ride in West Pullman would also cause adverse visual impacts because they would change the scale, density, and character of the local community. Mitigation measures for impacts on community character, including planting additional landscaping, would not be sufficient to offset this permanent impact. The West Option alignment would pass through Fernwood Parkway, and would displace the Grace Temple Church of God Established in Christ. The church could be relocated within the neighborhood. CTA would keep the area beneath the track structure in Fernwood Parkway open for use, and improve park space elsewhere in the neighborhood. Mitigation measures, including screening the structure with additional landscaping, would not be sufficient to offset this impact.

5.5.1.2 Segment UB

Impacts in Segment UB would be the same for all of the UPRR Rail Alternative options. Impacts and mitigation measures for Segment UB are discussed above in 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

5.5.2.1.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation construction impacts.

- Historic and Cultural Resources: There would be no adverse construction effects on historic resources.

- Noise and Vibration: Based on the construction activities and equipment described in the Description of Construction, construction noise levels are not expected to exceed the FTA construction noise limits using noise-reducing construction practices.

- Energy: The construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: The West Option would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the alignment. Excavation would be primarily needed for the elevated structure supports, at-grade trackbeds, and park & ride facilities. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.5.2.1.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Biological Resources: Although the West Option would affect the greatest amount of vegetation compared to the other UPRR Rail Alternative options, there would be no adverse construction impacts on biological resources after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Hazardous Materials: There would be no adverse construction impacts relating to hazardous materials after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Land Use and Economic Development: The land use impacts from construction would not be adverse after mitigation. The economic development impacts from construction would be beneficial. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Neighborhood and Community Impacts: There would be no adverse construction impacts relating to neighborhood and community impacts after mitigation. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Parklands and Community Facilities: No parkland or community facilities would have adverse construction impacts after mitigations. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site would not be adverse after mitigations, which include minimizing detour lengths.

- Visual and Aesthetic Conditions: The visual impacts related to construction would not be adverse after mitigation. The impacts and mitigation measures would be similar to those for the ROW Option, discussed above in Section 5.3.2.1.

- Water Resources: Of the UPRR Rail Alternative option alignments, the West Option alignment would be furthest from the Roseland Pump Station and have the least potential impact on the underground pipes and structures around the pump station. There would be no adverse construction impacts on water resources in Segment UA of the West Option. Impacts and mitigation measures would be the same as those for the ROW Option, discussed above in Section 5.3.2.1.

- Transportation: Construction of rail facilities, parking structures, and park & ride lots would require lane and sidewalk closures that would temporarily reduce roadway capacity. These closures may lead to temporarily increased travel times for both motorists and transit riders, and bus stop locations may be temporarily relocated. Bicycles and pedestrians would need to be rerouted around work areas. Detours would be provided to maintain access. Lanes on I-57 may also need to be temporarily closed to accommodate rail construction in the median, which would affect automobiles and freight trucks. Temporary closure of full sections of I-57 may also be needed. Closures would be scheduled during low-traffic periods to the extent feasible to minimize impacts. The UPRR freight tracks would remain active during construction. Temporary intermittent track closures may be needed; however, construction would be staged to minimize disruption. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur after mitigation.

5.5.2.1.3 Topics with Adverse Construction Impacts After Mitigation

No adverse impacts would remain after mitigation

5.5.2.2 Segment UB

Impacts in Segment UB would be the same for all of the UPRR Rail Alternative options. Construction impacts and mitigation measures for Segment UB are discussed above in Section 5.3.2.2.

5.5.3 120th Street Yard and Shop

Impacts of the 120th Street yard and shop would be the same for all of the UPRR Rail Alternative options. Impacts and mitigation measures for 120th Street yard and shop are discussed above in Section 5.3.3.

5.6 Halsted Rail Alternative

The Halsted Rail Alternative would involve extension of the Red Line from its current terminus at the 95th Street Terminal southward to Vermont Avenue via existing highway medians and the median of Halsted Street. The Halsted Rail Alternative is analyzed in two geographic segments:

- Segment HA: From the 95th Street Terminal to the 119th Street yard and shop area, including the communities of Roseland, Washington Heights, Morgan Park, and part of West Pullman
- Segment HB: south of the 119th Street yard and shop area, in the West Pullman community and the Village of Calumet Park

New stations would be constructed at 103rd Street on the boundary between the Roseland and Washington Heights community areas, at 111th Street on the boundary between the Roseland and Morgan Park community areas, at 119th Street in the West Pullman area, and at Vermont Avenue in West Pullman. All stations would have bus turnarounds and park & ride facilities. The park & ride facilities would be primarily surface parking lots; however, a multi-level parking structure would be constructed at the Vermont Avenue station.

5.6.1 Permanent Impacts and Mitigations - Halsted Rail Alternative

5.6.1.1 Segment HA

5.6.1.1.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.
- Biological Resources: Halsted Street is currently developed with commercial land uses. The introduction of an elevated rail line would have no impact on vegetation and wildlife habitats along this route.
- Energy: Energy consumption would increase due to the addition of new tracks and stations to the rail system; however, this increase in energy would not be adverse, as it is not expected to affect local or regional energy availability, or require the development of new sources. Some beneficial reduction in fuel consumption would occur if the RLE Project were to cause motorists to begin using transit for some trips.

- Geology and Soils: Operation of the Halsted Rail Alternative would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.6.1.1.2 Topics with No Adverse Permanent Impacts After Mitigation

- Displacements: The Halsted Rail Alternative would have the fewest displaced residences and the most displaced commercial buildings of the rail alternatives. A total of 17 buildings would be displaced in Segment HA, of which 11 would be commercial buildings and 4 would be mixed-use buildings. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse, because there is available vacant land in the project area.

- Hazardous Materials: Operation of the Halsted Rail Alternative would have the potential to result in the release of hazardous materials and/or petroleum products into the environment from accidental spills. Spills are most likely to occur during activities such as equipment and grounds maintenance. Materials typically used for these activities include fuel, oil, paints, solvents, cleaning agents, herbicides, and pesticides. Adherence to applicable federal, state, and local regulations, as well as CTA's existing system-wide hazardous material usage, storage, and disposal plans and procedures, would minimize the potential for impacts.

- Land Use and Economic Development: The substations at 101st Street, 110th Street, and 118th Street, and the park & ride lots at the 103rd Street and 111th Street stations would be inconsistent with adjacent land uses. These uses consist primarily of street-facing commercial developments along Halsted Street, with single-family residential on surrounding blocks. The Halsted Rail Alternative would require the most commercial building displacements of the alternatives under consideration for the RLE Project; however, some of the lost commercial space would be replaced on the ground floor of the station parking facilities or in new development incentivized by the new transit line. Mitigations include zoning variances, screening, landscaping, lighting appropriate for adjacent land uses, and appropriate architectural design and massing. Property displacements would be mitigated through just compensation and relocation assistance as required by the Uniform Act. There would be no adverse permanent impacts on land use following proposed mitigation measures. The overall impact on local economic development would be beneficial.

- Noise and Vibration: There would be a substantial number of affected receptors in areas where the train speeds would reach 55 mph. Noise-affected residential receptors along the project corridor would require mitigation. A 3- to 4-foot-high noise barrier installed along the outer tracks of the aerial structure would reduce the wheel-rail noise that would propagate into the surrounding community. There would be moderate (not adverse) noise impacts after mitigation. No adverse vibration impacts are anticipated.

- Parklands and Community Facilities: The Halsted Rail Alternative Segment HA would not pass through any parkland; however, the alternative would displace one community facility,

the Illinois Department of Employment Security office, which could be relocated nearby. After mitigation, the operation of the Halsted Rail Alternative would not result in adverse impacts. By improving travel time, operation of the ROW Option would improve access to community facilities within walking distance (½ mile) of the station locations.

- Neighborhood and Community Impacts: The overall community character impact of adding the elevated structure to the neighborhood would be negative, but not adverse. The Halsted Rail Alternative would displace one community resource in Segment HA: the Illinois Department of Employment Security office, which would be moved to another location nearby to avoid adverse impacts. See Section 5.3.1.1.2 for proposed mitigation measures.

- Safety and Security: The impact on major incidents would not be adverse. A large volume of pedestrians would be expected to cross the major streets near the stations without positive traffic control. This impact would be mitigated through the installation of traffic signals, median refuge islands, and/or other pedestrian crossing treatments as applicable in coordination with the results of traffic studies completed during the final design phase, resulting in no adverse permanent impacts after mitigation. Impacts on security at parking facilities would be mitigated by implementing open design and would not be adverse after mitigation. New train stations would be unlikely to have much, if any, impact on neighborhood crime. Overall safety and security impacts would not be adverse after mitigation.

- Water Resources: There would be no adverse permanent impacts on water resources in Segment HA after mitigation. Pervious area is anticipated to decrease in some areas; the decrease in pervious area could be mitigated by incorporating new stormwater management structures and establishing an erosion control plan. The rail service would replace automobile trips; there would be an associated reduction in runoff contaminants that collect on streets. For this reason, the Halsted Rail Alternative is anticipated to have a minor but positive water quality impact. Due to the predominance of impervious surfaces throughout the project area, minimal percolation to the underlying groundwater occurs in the API; therefore, any potential increases in contaminated surface water runoff would have no adverse impact on groundwater quality. There would be no adverse permanent impacts on stormwater after mitigation.

- Transportation: There would be four intersections in the AM peak and six intersections in the PM peak in Segment HA where the Halsted Rail Alternative would increase traffic congestion beyond applicable thresholds, largely due to cars accessing the park & ride facilities at stations. Mitigation measures such as optimization of signal cycles would render traffic conditions no worse than under the No Build Alternative. The park & ride facilities may also draw some motorists away from nearby highways, thereby improving traffic flow for automobiles and freight trucks. The Halsted Rail Alternative would have no impact on freight rail operations, because it would only cross above the UPRR ROW in the median of I-57. Existing bus routes would be adjusted to interface better with the RLE stations and service. New pedestrian and bicycle facilities would also be included near stations to provide safe access, which would improve transit connections. The Halsted Rail Alternative would also

provide a convenient point for bicyclists to access the Major Taylor Trail at 119th Street. Transit access to the project area would substantially improve, particularly for low-income residents who do not have access to automobiles. The overall transportation impacts would be beneficial.

5.6.1.1.3 Topics with Adverse Permanent Impacts After Mitigation

- Historic and Cultural Resources: Three resources and one district in Segment HA have been identified as eligible for listing on the NRHP. One of the resources would be adversely affected due to alteration of setting: the substation at 10227 S. Halsted Street.

- Visual and Aesthetic Conditions: The Halsted Rail Alternative would have adverse impacts at the transition from the I-57 ROW to Halsted Street. The visual impact due to the height of the elevated structure could not be mitigated.

5.6.1.2 Segment HB

5.6.1.2.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.

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

- Energy: Energy consumption would increase due to the addition of new tracks and stations to the rail system; however, this increase in energy would not be adverse, as it is not expected to affect local or regional energy availability, or require the development of new sources. Some beneficial reduction in fuel consumption would occur if the RLE Project were to cause motorists to begin using transit for some trips.

- Geology and Soils: Operation of the Halsted Rail Alternative would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.6.1.2.2 Topics with No Adverse Permanent Impacts After Mitigation

- Displacements: The Halsted Rail Alternative would have the fewest displaced single-family residences and the most displaced commercial buildings of the rail alternatives. A total of 15 buildings would be displaced in Segment HB, of which 11 would be single-family residences and 4 would be commercial properties. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse, because there is available vacant land in the project area.

- Hazardous Materials: There would be no adverse permanent impacts related to hazardous materials after mitigation. Impacts and mitigation measures for Segment HB would be the same as those for Segment HA, as discussed above in Section 5.6.1.1.

- Noise and Vibration: No severe noise impacts would remain after mitigation. No adverse vibration impacts are anticipated. Impacts and mitigation measures for Segment HB would be the same as those for Segment HA, as discussed above in Section 5.6.1.1.

- Parklands and Community Facilities: The Halsted Rail Alternative Segment HB alignment would not pass through any parkland or displace any community facilities. By improving travel time, operation of the alternative would improve access to community facilities within walking distance (½ mile) of the station locations.

- Safety and Security: The impact on major incidents would not be adverse. A large volume of pedestrians would be expected to cross the major streets near the stations without positive traffic control. This impact would be mitigated through the installation of traffic signals, median refuge islands, and/or other pedestrian crossing treatments as applicable in coordination with the results of traffic studies completed during the final design phase, resulting in no adverse permanent impacts after mitigation. Impacts on security at parking facilities would be mitigated by implementing open design and would not be adverse after mitigation. New train stations would be unlikely to have much, if any, impact on neighborhood crime. Overall safety and security impacts would not be adverse after mitigation.

- Water Resources: There would be no adverse permanent impacts on water resources in Segment HB after mitigation. Impacts and mitigation measures for Segment HB would be the same as those for Segment HA, as discussed above in Section 5.6.1.1.

- Transportation: There would be nine intersections in the AM peak and nine intersections in the PM peak in Segment HB where the Halsted Rail Alternative would increase traffic congestion beyond applicable thresholds, largely due to cars accessing the park & ride facilities at stations. Mitigation measures such as optimization of signal cycles, addition of turn lanes, and restriping of through and turn lanes would render traffic conditions no worse than under the No Build Alternative. The park & ride facilities may also draw some motorists away from nearby highways, thereby improving traffic flow for automobiles and freight trucks. There are no freight rail tracks in the area, and the Halsted Rail Alternative would have no impact on passenger rail operations, because it would only cross above the Metra Electric District tracks at Halsted Street. Existing bus routes would be adjusted to interface better with the RLE stations and service. New pedestrian and bicycle facilities would also be included near stations to provide safe access, which would improve transit connections. Transit access to the project area would substantially improve, particularly for low-income residents who do not have access to automobiles. Unlike the BRT and UPRR Rail Alternatives, the Halsted Rail Alternative would not serve the Altgeld Gardens public housing project. The overall transportation impacts would be beneficial.

5.6.1.2.3 Topics with Adverse Permanent Impacts After Mitigation

- Historic and Cultural Resources: Two resources in Segment HB have been identified as eligible for listing on the NRHP, and both are anticipated to be adversely affected due to

change in setting: the church at 12433-12439 S. Halsted Street and the cemetery gatehouse at 12540 S. Halsted Street.

- Land Use and Economic Development: The substation at 126th Street would be inconsistent with adjacent land uses, which are primarily single-story homes. Due to the large size of the garage at the Vermont Avenue station, the impact on existing land use character would be adverse. Some commercial displacements would be necessary; however, some of the lost commercial space could be replaced on the ground floor of the station parking facilities or in new development incentivized by the new transit line. Mitigations include zoning variances, screening, landscaping, lighting appropriate for adjacent land uses, and appropriate architectural design and massing. Property displacements would be mitigated through just compensation and relocation assistance as required by the Uniform Act. There would be no adverse permanent impacts on land use following proposed mitigation measures other than the garage at the Vermont Avenue station. The overall impact on local economic development would be beneficial.

- Neighborhood and Community Impacts: The Halsted Rail Alternative would have an adverse impact on visual character that cannot be mitigated in the West Pullman community along Green Street between Vermont Avenue and 128th Place. The single-family homes on the east side of the block would be acquired and removed to construct a seven-story park & ride garage. The garage would be out of scale and inconsistent with the single-story residential character of the neighborhood. No available mitigation measures would effectively offset this adverse impact.

- Visual and Aesthetic Conditions: The Vermont Street station would have adverse impacts after mitigation. Mitigations to reduce visual impacts would include shielding exterior lighting and providing special consideration for lighting placement adjacent to sensitive areas such as residential communities; providing landscaping and/or visual screening at park & ride locations where possible; designing the parking structure to match the character of the surrounding fabric; and using urban design techniques to reduce massing. The height of the park & ride structure at Vermont Station and its proximity to residences would cause an adverse visual impact despite mitigation.

5.6.2 Construction Impacts and Mitigations - Halsted Rail Alternative

5.6.2.1 Segment HA

5.6.2.1.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation construction impacts.

- Noise and Vibration: Based on the types of construction equipment and activities identified in the Description of Construction, construction noise levels are not expected to exceed the FTA construction noise limits.

- Energy: The construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: The Halsted Rail Alternative would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the alignment. Excavation would be primarily needed for the elevated structure supports, at-grade trackbeds, and park & ride facilities. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.6.2.1.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Impacts and mitigation measures would be similar to those for the UPRR Rail Alternative, as described above in Section 5.3.2.1.

- Biological Resources: There would be no adverse construction impacts on biological resources after mitigation. Impacts and mitigation measures would be similar to those for the UPRR Rail Alternative, as described above in Section 5.3.2.1.

- Hazardous Materials: There would be no adverse construction impacts related to hazardous materials after mitigation. Impacts and mitigation measures would be similar to those for the UPRR Rail Alternative, as described above in Section 5.3.2.1.

- Land Use and Economic Development: The land use impacts from construction would not be adverse after mitigation. Due to the nature and size of the small businesses along Halsted Street, some businesses might not be able to maintain their customer base and could potentially lose business from construction-related disruptions. Mitigation methods would include focusing construction activities primarily during the least impactful times of day and other best management practices. There would be short-term beneficial economic impacts from construction jobs. Due to the short-term nature of construction activities, these impacts would not be adverse.

- Parklands and Community Facilities: After mitigation, no parkland or community facilities would have adverse construction impacts. Construction activities would generate temporary noise and air quality impacts, and change access to parks and community facilities. These impacts would be temporary in nature and would be mitigated through the use of construction best management practices; by alerting users of construction activities; and by providing clearly marked detour routes and alternate parking.

- Neighborhood and Community Impacts: Construction activities would be more disruptive than they would be under the UPRR Rail Alternative, because the Halsted Rail Alternative elevated structure would be built in the median of a major commercial street instead of on private, off-street ROW. Community disruption would occur during construction activities, with intensive construction occurring over a period of approximately 3 years. Storage of materials, equipment, and trucks would introduce temporary intermittent visual impacts within communities, but these impacts would not be adverse given their temporary nature and CTA's use of best management practices. Temporary dust, noise, and visual impacts would occur. Construction would be temporary, and major activities would be scheduled so as not to conflict with community events to the extent possible. Businesses around the alignment and parking structure could be affected by construction activities, construction-related traffic, and road and sidewalk closures. This potentially adverse impact would be mitigated through early notification of construction activities, provision of temporary alternate access routes, and advertising programs to increase the visibility of affected businesses during construction.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site, would not be adverse after mitigation, which includes minimizing detour lengths.

- Visual and Aesthetic Conditions: The visual impacts related to construction would not be adverse after mitigation. At locations where park & ride facilities would be created, impacts would include construction fencing, demolition of existing buildings or clearing of vacant lots, temporary street closures and related signage, or temporary lighting or entrances. The CTA would attempt to maintain as much existing vegetation as practical during construction, and would minimize temporary construction impacts on the neighborhood with measures such as limiting light trespassing from night lighting. Best management practices and debris-free construction areas would mitigate temporary visual impacts from the construction sites.

- Water Resources: There would be no adverse construction impacts on drainage, groundwater, or water quality after mitigation. There would be no adverse construction impacts on water resources after mitigation. Stormwater drainage mitigation measures would include incorporating new stormwater management structures and establishing an erosion control plan, including for construction activities at the locations of garages and park & ride lots. Water quality mitigation measures would include installing properly designed and maintained biological oil and grease removal systems, proper storage of hazardous materials, development and maintenance of an effective monitoring and cleanup program for spills and leaks of hazardous materials, proper storage and maintenance of equipment, periodic removal of landscape and construction debris, installation of detention basins to remove suspended solids, and regular monitoring of runoff water quality.

- Transportation: Construction of rail facilities, parking structures, and park & ride lots would require lane and sidewalk closures that would temporarily reduce roadway capacity. Temporary full closures of sections of Halsted Street would be needed for superstructure

placement. These closures would cause temporarily increased travel times for both motorists and transit riders, and bus stop locations may be temporarily relocated. Bicycles and pedestrians would need to be rerouted around work areas. Detours would be provided to maintain access. Lanes on I-57 may also need to be temporarily closed to accommodate rail construction in the median, which would affect automobiles and freight trucks. Temporary full closure of sections of I-57 may also be needed. Closures would be scheduled during low-traffic periods to the extent feasible to minimize impacts. The UPRR freight tracks would remain active during construction. Temporary intermittent track closures may be needed to construct the elevated track in the median of I-57; however, construction would be staged to minimize disruption. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur after mitigation.

5.6.2.1.3 Topics with Adverse Construction Impacts After Mitigation

- Historic and Cultural Resources: Three resources and one district in Segment HA have been identified as eligible for listing on the NRHP. One of the resources would be adversely affected due to alteration of setting: the substation at 10227 S. Halsted Street.

5.6.2.2 Segment HB

5.6.2.2.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation construction impacts.

- Noise and Vibration: Based on the types of construction equipment and activities identified in the Description of Construction, construction noise levels are not expected to exceed the FTA construction noise limits.

- Energy: The construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: The Halsted Rail Alternative would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the alignment. Excavation would be primarily needed for the elevated structure supports and park & ride facilities. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.6.2.2.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Impacts and mitigation measures would be similar to those for the UPRR Rail Alternative, as described above in Section 5.3.2.1.

- Biological Resources: There would be no adverse construction impacts on biological resources after mitigation. Impacts and mitigation measures would be similar to those for the UPRR Rail Alternative, as described above in Section 5.3.2.1.

- Hazardous Materials: There would be no adverse construction impacts related to hazardous materials after mitigation. Impacts and mitigation measures would be similar to those for the UPRR Rail Alternative, as described above in Section 5.3.2.1.

- Neighborhood and Community Impacts: There would be no adverse construction impacts on neighborhoods and communities after mitigation. Impacts and mitigation measures would be similar to those for Segment HA, as described above in Section 5.6.2.1.

- Parklands and Community Facilities: After mitigation, no parkland or community facilities would have adverse construction impacts. Impacts and mitigation measures would be similar to those for Segment HA, as described above in Section 5.6.2.1.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site, would not be adverse after mitigation, which includes minimizing detour lengths.

- Visual and Aesthetic Conditions: Construction impacts would be longer in nature at the Vermont Avenue station than at others along the RLE due to the need to construct a multi-level parking structure. Otherwise, impacts and mitigations would be similar to those for Segment HA, as described above in Section 5.6.2.1.

- Land Use and Economic Development: The land use impacts from construction would not be adverse after mitigation. Due to the nature and size of the small businesses along Halsted Street, some businesses might not be able to maintain their customer base and could potentially lose business from construction-related disruptions. This effect would be less pronounced in Segment HB because there are fewer businesses along this portion of Halsted Street than in Segment HA. Mitigation methods would include focusing construction activities primarily during the least impactful times of day and other best management practices. There would be short-term beneficial economic impacts from construction jobs. Due to the short-term nature of construction activities, these impacts would not be adverse.

- Water Resources: There would be no adverse construction impacts on water resources after mitigation. Impacts and mitigation measures would be similar to those for the UPRR Rail Alternative, as discussed above in Section 5.3.2.1.

- Transportation: Construction of rail facilities, parking structures, and park & ride lots would require lane and sidewalk closures that would temporarily reduce roadway capacity. Temporary full closures of sections of Halsted Street would be needed for superstructure placement. These closures would cause temporarily increased travel times for both motorists and transit riders, and bus stop locations may be temporarily relocated. Bicycles and pedestrians would need to be rerouted around work areas. Closures would be scheduled during low-traffic periods to the extent feasible to minimize impacts. The Metra Electric District passenger rail tracks would remain active during construction. Temporary intermittent track closures may be needed to construct the elevated track in the median of Halsted Street; however, construction would be staged to minimize disruption. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur after mitigation.

5.6.2.2.3 Topics with Adverse Construction Impacts After Mitigation

- Historic and Cultural Resources: Two resources in Segment HB have been identified as eligible for listing on the NRHP, and both are anticipated to be adversely affected due to change in setting: the church at 12433-12439 S. Halsted Street and the cemetery gatehouse at 12540 S. Halsted Street.

5.6.3 119th Street Yard and Shop

5.6.3.1 Permanent Impacts and Mitigations

5.6.3.1.1 Topics with No Adverse Permanent Impacts

- Air Quality and Climate Change: No adverse air quality impacts from CO, GHG, $PM_{2.5}$, or MSAT emissions are anticipated.

- Noise and Vibration: The noise generated at the 119th Street yard and shop would not exceed the FTA impact criteria at the residential receptors along 119th Street. As a result, noise mitigation would not be required for the 119th Street yard and shop. No adverse vibration impacts are anticipated.

- Transportation There would be no permanent adverse impacts on bicycle or pedestrian access resulting from the 119th Street yard and shop. Pedestrian access by the general public would be restricted and discouraged. Existing sidewalk near the yard along 119th, 120th, and Peoria Streets would remain. Because of the location of the yard, no public transportation would be affected. Existing on-street parking on Peoria Street would not be affected. Some parking would be provided for yard employees.

- Energy: Yard and shop operation would require additional fuel and energy resources, but not to the extent that it would affect local or regional fuel and energy availability, or require development of new energy sources. As such, no adverse impacts would occur.

- Geology and Soils: Operation of the 119th Street yard and shop would not cause adverse changes to geology or soil resources.

- Cumulative: No cumulative adverse impacts are expected.

5.6.3.1.2 Topics with No Adverse Permanent Impacts After Mitigation

- Biological Resources: There are a few relatively small patches of regenerating vegetation within the yard and shop area that could be used by migratory birds. Mitigation measures would be implemented during construction to avoid potential impacts. Mitigation measures may be required to reduce potential impacts on wildlife habitat, including preparing a detailed tree inventory, timing tree removal to occur outside the migratory bird nesting season, performing biological surveys if construction must occur during the nesting season, and replanting trees as required by applicable local codes and ordinances. There would be no adverse construction impacts on biological resources after mitigation.

- Displacements: The permanent envelope would affect six buildings within the West Pullman neighborhood, of which two would be mixed-use buildings and one would be a place of worship. With just compensation and relocation assistance per the Uniform Act, the permanent impacts would not be adverse, because there is available vacant land in the project area for relocation purposes.

- Hazardous Materials: There would be no adverse permanent impacts related to hazardous materials after mitigation. Operation of yard and shop would have the potential to result in the release of hazardous materials and/or petroleum products into the environment from accidental spills or from maintenance activities that require earthmoving in contaminated areas, which potentially exist on site. Additional information regarding such locations is provided in Section 4 of the *Hazardous Materials Technical Memorandum*. Measures to avoid such occurrences would include adherence to applicable federal, state, and local regulations, as well as CTA's existing system-wide hazardous material usage, storage, and disposal plans and procedures.

- Land Use and Economic Development: The yard and shop, as well as adjacent substation, would be located within an industrial area; therefore, these facilities would be consistent with existing land uses. The impact on existing land uses would not be adverse. The overall economic development impact would be beneficial.

- Neighborhood and Community Impacts: Neither the park & ride lot or the yard and shop facility would contribute to the growth and development of the community, which would reduce the overall potential of the Halsted Rail Alternative to encourage new development in the 119th Street station area; however, development could still occur in the remainder of the station area. Removal of the church and other property along Halsted Street would not be adverse after compliance with the Uniform Act. Other buildings in the area could be upgraded and adapted as replacements. There would be no adverse permanent impacts on neighborhoods and communities after mitigation.

- Parklands and Community Facilities: The 119th Street yard and shop would not pass through any parkland; however, the ROW would displace a place of worship, as discussed above under Neighborhood and Community Impacts.

- Safety and Security: Impacts on security at the 119th Street yard and shop would not be adverse after mitigation. Mitigation measures would include complying with relevant design standards to minimize intrusion and prevent graffiti.

- Visual and Aesthetic Conditions: The yard and shop would dramatically change the character and scale of the surrounding area, which includes light commercial and residential neighborhoods. Mitigations to reduce visual impacts would include shielding exterior lighting and providing special consideration for lighting placement adjacent to sensitive areas such as residential communities and providing landscaping and/or visual screening around the yard and shop where possible. Additional measures for the yard and shop would include designing the shop facility to be aesthetically compatible with surrounding structures and screening the yard through fencing, walls, or vegetation wherever necessary and possible. The permanent visual impacts would not be adverse after mitigation.

- Water Resources: There would be no adverse permanent impacts on water resources at the 119th Street yard and shop property after mitigation. Impacts and mitigation measures would be similar to those described for the UPRR Rail Alternative's 120th Street yard and shop above in Section 5.3.3.1.

5.6.3.1.3 Topics with Adverse Permanent Impacts After Mitigation

- Historic and Cultural Resources: One resource in the vicinity of the 119th Street yard and shop has been identified as eligible for listing on the NRHP, and is anticipated to be adversely affected due to alteration of setting: the Fire Department house at 931 W. 120th Street.

5.6.3.2 Construction Impacts and Mitigations

5.6.3.2.1 Topics with No Adverse Construction Impacts

- Displacements: Because all construction activities would occur on land acquired for the permanent ROW, there would be no temporary displacement or relocation construction impacts.

- Land Use and Economic Development: Because the yard and shop would be located in an industrial area, the construction activities would not be adverse for land use or economic development.

- Noise and Vibration: Based on the construction activities and equipment identified in the Description of Construction, construction noise levels are not expected to exceed the FTA construction noise limits using noise-reducing construction practices.

- Energy: Yard and shop construction activities identified in the Description of Construction would not require fuel consumption and energy use at a scale that would adversely affect

energy availability, and would not require development of new energy sources. No adverse impacts would occur.

- Geology and Soils: Construction of the 119th Street yard and shop would require few changes to surficial geology and soils, which have been affected by prior development in all parts of the site. Excavation would be primarily needed for the at-grade trackbeds and shop buildings. Excavation activities are not expected to have adverse impacts.

- Cumulative: No adverse cumulative impacts are expected to occur. There are not currently any foreseeable nearby projects of sufficient magnitude to cause impacts that would be under construction at the same time as RLE. Should such a project occur, CTA would coordinate construction activities to minimize impacts.

5.6.3.2.2 Topics with No Adverse Construction Impacts After Mitigation

- Air Quality and Climate Change: No adverse air quality impacts due to construction activities are anticipated after mitigation. Proper traffic management during the construction period would mitigate any potential adverse effects. A Dust Control Plan would address in detail how dust would be controlled at all times at the construction site, the staging areas, and the access and egress routes.

- Biological Resources: There would be no adverse construction impacts on biological resources after mitigation. Impacts and mitigation measures would be similar to those described for the UPRR Rail Alternative's 120th Street yard and shop above in Section 5.3.3.2.

- Hazardous Materials: There would be no adverse construction impacts relating to hazardous materials after mitigation. Construction would result in generation of a large quantity of soil that could contain contaminated materials requiring off-site disposal. Such soils potentially exist on-site, and additional information regarding such locations is provided in Section 4 of the *Hazardous Materials Technical Memorandum*. Contaminated materials potentially encountered could include heavy metals, asbestos-containing material, and lead-based paint. Mitigation measures would include compliance with federal, state, and local laws and regulations regarding hazardous materials; focused site assessments for areas where earthmoving activities would occur; hazardous materials surveys of buildings; a Contaminated Material Management Plan; Health and Safety Plans for construction activities; Spill Prevention, Control, and Countermeasure Plans; and Construction Stormwater Pollution Prevention Plans.

- Neighborhood and Community Impacts: Temporary dust, noise, and visual impacts would occur on an intermittent basis, but impacts would not be adverse provided that best management practices were employed and nighttime construction near residences were limited to the extent practicable.

- Parklands and Community Facilities: After mitigation, no parkland or community facilities would have adverse construction impacts. Mitigation would include relocation of the displaced church, as described under operation impacts above in Section 5.6.3.1.

- Safety and Security: Impacts on emergency services, including access to the construction site and travel around the site, would not be adverse after mitigation, which includes minimizing detour lengths.

- Visual and Aesthetic Conditions: The construction of the yard and shop would last 1 to 3 years and would have high visual impacts. The removal of existing buildings and parking lots, including associated debris, would be more substantial than other locations along the project corridor. The visual impacts related to construction would not be adverse after mitigation. The CTA would attempt to maintain as much existing vegetation as practical during construction, and minimize temporary construction impacts on the neighborhood with measures such as limiting light trespassing from night lighting. Best management practices and debris-free construction areas would mitigate temporary visual impacts from the construction sites.

- Water Resources: There would be no adverse construction impacts on water resources at the 119th Street yard and shop property after mitigation. Impacts and mitigation measures would be similar to those described for the UPRR Rail Alternative's 120th Street yard and shop above in Section 5.3.3.2.

- Transportation: The construction associated with the 119th Street yard and shop would temporarily affect the physical capacity of roadways and intersections requiring detours at 120th Street and Halsted Street. Superstructure erection would require temporary closure of all traffic along sections of Halsted Street. This may cause increased travel times for automobiles and transit users, and possibly shift traffic volumes to other streets. Bus stop locations may be temporarily closed or relocated during construction activities, and detours would be necessary. Temporary lane closures on portions of 119th Street and 120th Street may occur due to maintenance of traffic activities during construction. With adherence to established construction management guidelines for rerouting traffic and transit service, no adverse construction impacts would occur after mitigation.

5.6.3.2.3 Topics with Adverse Construction Impacts After Mitigation

- Historic and Cultural Resources: One resource in the vicinity of the 119th Street yard and shop has been identified as eligible for listing on the NRHP, and is anticipated to be adversely affected due to alteration of setting: the Fire Department house at 931 W. 120th Street.

Section 6
Impacts Remaining After Mitigation

As discussed above in Section 5, none of the alternatives would have disproportionately high and adverse effects on Environmental Justice populations. The entire project area comprises predominantly minority populations. All of the impacts and benefits of the alternatives would accrue to the same minority populations, and few project benefits would occur outside the project area. Some of the alternatives would, however, still result in non-disproportionate adverse impacts that cannot be mitigated, as summarized in the following subsections and in Table 6-1. Construction and cumulative impacts are discussed under each of the other impact categories where applicable.

Table 6-1: Adverse Impacts Remaining After Mitigation by Alternative (Not Disproportionate)

Impact Category	No Build	BRT	UPRR ROW Option	UPRR East Option	UPRR West Option	Halsted
Displacements	No	No	No	No	No	No
Land Use and Economic Development	No	No	No	No	No	Yes
Noise and Vibration	No	No	No	No	No	No
Energy	No	No	No	No	No	No
Air Quality and Climate Change	No	No	No	No	No	No
Biological Resources	No	No	No	No	No	No
Hazardous Materials	No	No	No	No	No	No
Neighborhood and Community	No	No	No	Yes	Yes	Yes
Parklands and Community Facilities	No	No	No	No	No	No
Safety and Security	No	No	No	No	No	No
Visual and Aesthetic Conditions	No	No	No	Yes	Yes	Yes
Water Resources	No	No	No	No	No	No
Transportation	No	No	No	No	No	No
Historic and Cultural Resources	No	No	No	No	No	Yes
Geology and Soils	No	No	No	No	No	No
Cumulative	No	No	No	No	No	No

BRT = Bus Rapid Transit, UPRR = Union Pacific Railroad, ROW = Right-of-Way

6.1 No Build Alternative

No adverse impacts would occur as a result of the No Build Alternative. As such, there would be no disproportionately high and adverse effects on low-income and minority populations. The communities in the project area are, however, currently underserved by the CTA rail system compared to many other parts of Chicago, and the No Build Alternative would lack the beneficial increase in economic development and livability that the build alternatives would provide.

6.2 Bus Rapid Transit Alternative

The BRT Alternative would result in permanent noise and vibration impacts that would affect both residences and community facilities along the alignment. Impacts would not disproportionately affect minority or low-income populations.

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

6.3.1 Segment UA

The ROW Option would have no adverse impacts after mitigation. As such, there would be no disproportionately high and adverse effects on low-income and minority populations.

6.3.2 Segment UB

The ROW Option would have no adverse impacts after mitigation. As such, there would be no disproportionately high and adverse effects on low-income and minority populations.

6.3.3 120th Street Yard and Shop

The 120th Street yard and shop would have no adverse impacts after mitigation. As such, there would be no disproportionately high and adverse effects on low-income and minority populations.

6.4 Union Pacific Railroad Rail Alternative - East Option

6.4.1 Segment UA

The East Option would have adverse impacts remaining after mitigation in Segment UA in the following categories:

- Visual and Aesthetic Conditions (related to community visual character north of I-57 and at 117th Street and Prairie Avenue)
- Neighborhood and Community Impacts (related to community visual character north of I-57 and at 117th Street and Prairie Avenue)

Impacts and benefits would occur entirely within the same minority and low-income communities. As such, no disproportionately high and adverse effects on minority or low-income communities would occur.

6.4.2 Segment UB

The East Option would have no adverse impacts after mitigation in Segment UB. As such, there would be no disproportionately high and adverse effects on low-income and minority populations.

6.4.3 120th Street Yard and Shop

The 120th Street yard and shop would have no adverse impacts after mitigation. As such, there would be no disproportionately high and adverse effects on low-income and minority populations.

6.5 Union Pacific Railroad Rail Alternative - West Option

6.5.1 Segment UA

The West Option would have adverse impacts remaining after mitigation in Segment UA in the following categories:

- Visual and Aesthetic Conditions (related to community visual character north of I-57, between 99th and 103rd Streets, near 103rd Street station, and near Michigan Avenue station)
- Neighborhood and Community Impacts (related to community visual character north of I-57, between 99th and 103rd Streets, near 103rd Street station, and near Michigan Avenue station)

Impacts and benefits would occur entirely within the same minority and low-income communities. As such, no disproportionately high and adverse effects on minority or low-income communities would occur.

6.5.2 Segment UB

The West Option would have no adverse impacts after mitigation in Segment UB. As such, there would be no disproportionately high and adverse effects on low-income and minority populations.

6.5.3 120th Street Yard and Shop

The 120th Street yard and shop would have no adverse impacts after mitigation. As such, there would be no disproportionately high and adverse effects on low-income and minority populations.

6.6 Halsted Rail Alternative

6.6.1 Segment HA

The Halsted Rail Alternative would have adverse impacts remaining after mitigation in Segment HA in the following categories:

- Historic and Cultural Resources
- Visual and Aesthetic Conditions (related to community visual character at the transition from I-57 to Halsted Street)

Impacts and benefits would occur entirely within the same minority and low-income communities. As such, no disproportionately high and adverse effects on minority or low-income communities would occur.

6.6.2 Segment HB

The Halsted Rail Alternative would have adverse impacts remaining after mitigation in Segment HB in the following categories:

- Historic and Cultural Resources
- Land Use and Economic Development
- Neighborhood and Community Impacts (related to community visual character at Vermont Station)
- Visual and Aesthetic Conditions (related to community visual character at Vermont Station)

Impacts and benefits would occur entirely within the same minority and low-income communities. As such, no disproportionately high and adverse effects on minority or low-income communities would occur.

6.6.3 119th Street Yard and Shop

The 119th Street yard and shop would have adverse impacts remaining after mitigation in the category of Historic and Cultural Resources. Impacts and benefits would occur entirely within the same minority and low-income communities. As such, no disproportionately high and adverse effects on minority or low-income communities would occur.

Section 7
Environmental Justice Public Involvement

Public involvement summary to be added following completion of the Environmental Justice outreach process.

Section 8
References Cited

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Appendix A
Limited English Proficiency (LEP) Assessment

Memorandum

To: *CTA*

From: *CWC Transit Group*

Date: *July 13, 2009*

Subject: *Red Line Extension Limited English Proficiency Assessment*

Upon further analysis of the Limited English Proficiency (LEP) needs of the CTA Red Line Extension Project Area, we have determined that public outreach materials should be prepared in both English and Spanish.

Looking at census data within each tract adjacent to the Locally Preferred Alternative (LPA) we see that there are several tracts where over 35% of the citizens speak Spanish/Spanish Creole. Construction of the Red Line Extension Project can have large impacts on the community, even more so on the properties adjacent to the LPA. The CTA needs to ensure that every citizen potentially affected by this project is made aware of possible impacts on their neighborhood.

Analysis was conducted at the tract level by specifically selecting those tracts adjacent to the LPA Right of Way (ROW). Refer to the attached LEP Baseline Report (Enclosure 1) and the corresponding Census Tract map (Enclosure 2) for detailed data on the specific tracts and languages used within each.

Enclosures:

1. ***LEP Baseline Report***
2. ***Map of Census Tracts along LPA ROW***

cc: ***Melissa Peters***

Limited English Proficiency (LEP) Baseline Report

CTA Red Line

Executive Order 13166 "Improving Access to Services for Persons with Limited English Proficiency" requires all recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The United States (U.S.) Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English" (67 FR 41459). Data about LEP populations was gathered in the U.S. Census 2000. For data analysis purposes, the Census divides the states of the United States into counties and divides counties into tracts.

Within area tracts, Census data record the presence of persons who describe their ability to speak English as less than "Very Well." The table below shows the percentages of adults who speak English less than "Very Well" by language category. Additionally, 175 households or 1.0% of households within area tracts reported to the Census that their household was linguistically isolated, meaning that all household members over the age of fourteen had at least some difficulty with English. Thus, Census data indicate the presence of LEP populations.

Table. Census Data: Percent of Adult Speakers Who Speak English Less than Very Well*

Census Geographies	Total Adult Population	Percent of Adult Speakers Who Speak English Less than Very Well			
		Spanish Language Speakers	Other Indo European Language Speakers	Asian and Pacific Island Language Speakers	Other Language Speakers
Tracts					
Tract 4906.00 Cook County	1,331	0.6%	0.0%	0.5%	0.0%
Tract 4907.00 Cook County	2,709	0.6%	0.3%	0.0%	0.2%
Tract 4910.00 Cook County	4,356	0.7%	0.4%	0.4%	0.0%
Tract 4911.00 Cook County	3,986	0.7%	0.0%	0.0%	0.0%
Tract 4912.00 Cook County	1,949	0.3%	0.3%	0.0%	0.0%
Tract 4913.00 Cook County	2,470	1.5%	0.3%	0.0%	0.0%
Tract 5104.00 Cook County	33	15.2%	0.0%	0.0%	0.0%
Tract 5301.00 Cook County	1,993	21.9%	0.0%	0.0%	0.0%
Tract 5302.00 Cook County	4,577	1.0%	0.0%	0.7%	0.0%

Tract 5305.00 Cook County	10,336	0.6%	0.7%	0.0%	0.3%
Tract 5306.00 Cook County	2,699	0.7%	1.2%	0.0%	0.0%
Tract 5401.00 Cook County	5,305	2.8%	0.0%	0.0%	0.0%

Data Source: United States Census 2000 (Table P19) as of February 9, 2008 for persons age 18 and older.
* The data on ability to speak English represent the Census respondent's own perception about his ability to speak English (United States Census 2000 Metadata).

Since LEP is partially defined as a limited ability to read and write English, literacy data were also consulted. Indirect literacy estimates for adults were calculated by the National Center for Education Statistics based on 2003 survey data for states and counties. None of the geographies in study area meet the requirements to be included in the National Institute for Literacy study; thus, literacy data is not available. In conclusion, the data indicate the likelihood of LEP populations in the area.

To determine the languages of the LEP populations, Census data were consulted for project area tracts. The table below details the top five languages spoken by the total adult population (LEP and non-LEP) for each tract.

Table. Census Data: Top Five Languages Spoken by the Adult Population

Census Geographies	Language 1	Language 2	Language 3	Language 4	Language 5
Tracts					
Tract 4906.00 Cook County	English 93.2%	Spanish/Spanish Creole 2.3%	Tagalog 2.3%	French (Patois, Cajun) 1.8%	Korean 0.4%
Tract 4907.00 Cook County	English 96.4%	Spanish/Spanish Creole 2.1%	German 0.6%	Hebrew 0.5%	Korean 0.4%
Tract 4910.00 Cook County	English 96.9%	Spanish/Spanish Creole 2.2%	Tagalog 0.4%	French (Patois, Cajun) 0.4%	Korean 0.2%
Tract 4911.00 Cook County	English 97.7%	Spanish/Spanish Creole 1.3%	Japanese 0.4%	German 0.3%	Italian 0.2%
Tract 4912.00 Cook County	English 96.8%	French (Patois, Cajun) 1.0%	Spanish/Spanish Creole 0.9%	Tagalog 0.8%	German 0.3%
Tract 4913.00 Cook County	English 96.8%	Spanish/Spanish Creole 2.1%	French Creole 0.9%	French (Patois, Cajun) 0.3%	-
Tract 5104.00 Cook County	English 60.6%	Spanish/Spanish Creole 39.4%	-	-	-
Tract 5301.00 Cook County	English 59.5%	Spanish/Spanish Creole	Other Slavic languages	German 0.6%	Italian 0.4%

		38.9%	0.7%		
Tract 5302.00 Cook County	English 96.2%	Spanish/Spanish Creole 2.6%	Tagalog 0.7%	German 0.2%	Other Pacific Island languages 0.2%
Tract 5305.00 Cook County	English 94.3%	Spanish/Spanish Creole 2.1%	French (Patois, Cajun) 1.1%	Arabic 0.8%	German 0.6%
Tract 5306.00 Cook County	English 96.6%	Spanish/Spanish Creole 1.7%	Polish 1.0%	Russian 0.3%	French (Patois, Cajun) 0.3%
Tract 5401.00 Cook County	English 95.1%	Spanish/Spanish Creole 4.8%	Italian 0.1%	-	-
Data Source: United States Census 2000 (Table PCT10) as of February 9, 2008.					

Therefore, the tracts data does not indicate the presence of LEP language groups that exceed the Department of Justice's Safe Harbor threshold of 5% or 1,000 persons. [However, the following measures will be taken to ensure LEP persons meaningful access: enter any measures to be taken to ensure meaningful access if applicable]. Thus, the requirements of Executive Order 13166 appear to be satisfied.

Citations

- "Improving Access to Services for Persons with Limited English Proficiency," 3 Code of Federal Regulations 13166. 2001 ed.
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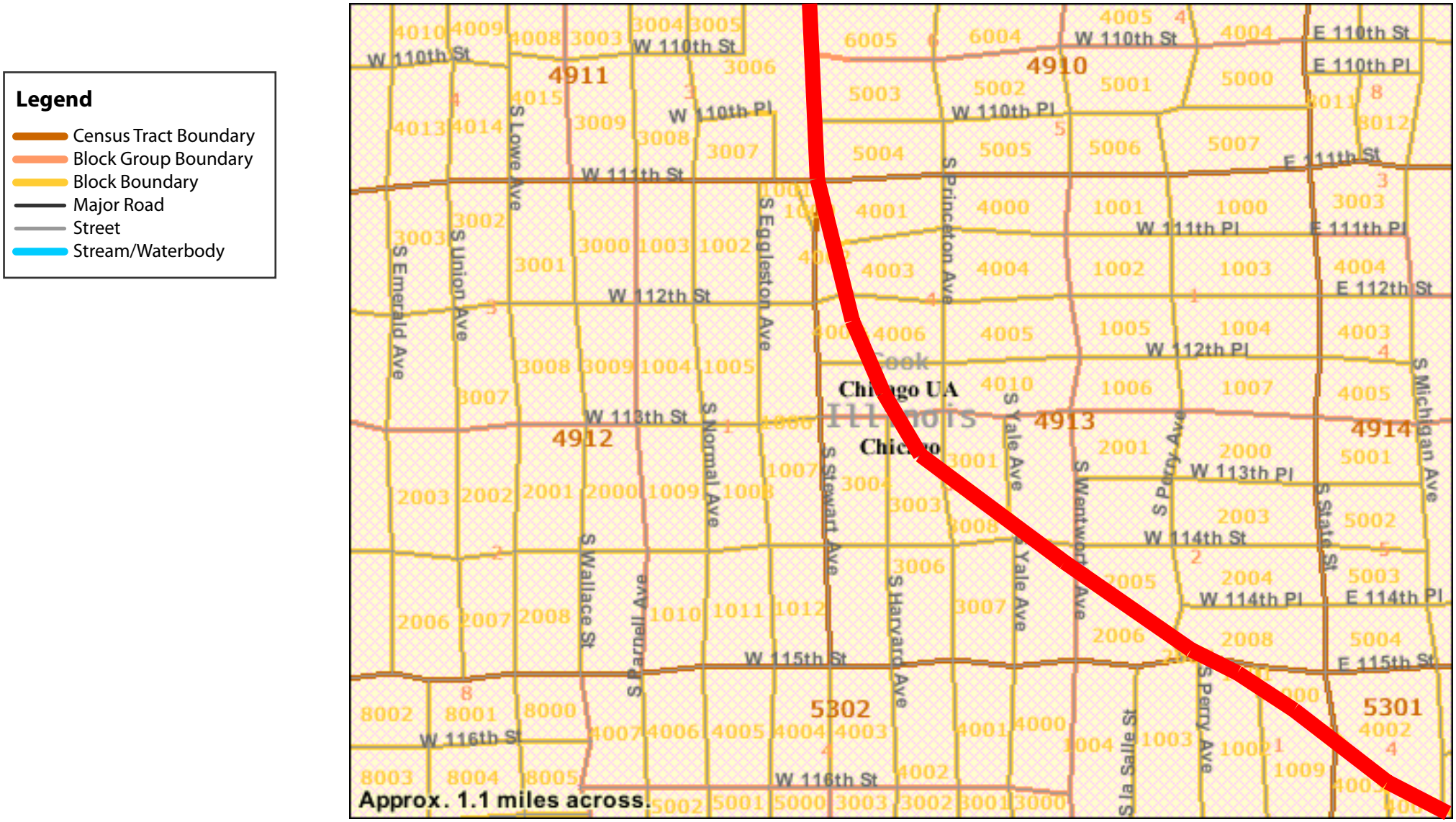
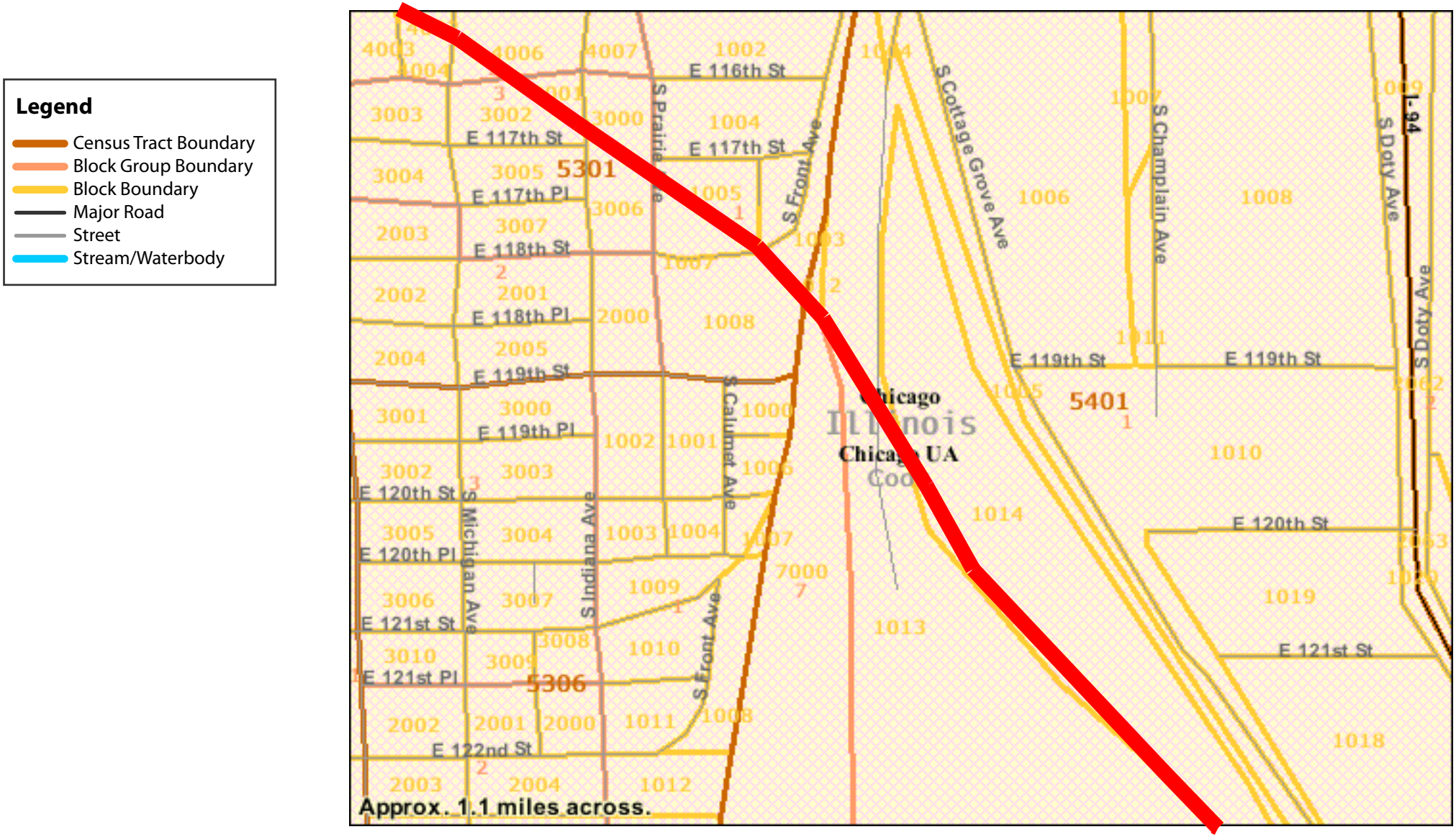
Census Tract, Block Group, and Block Location Map

Census Tract, Block Group, and Block Location Map



Census Tract, Block Group, and Block Location Map



Census Tract, Block Group, and Block Location Map

Census Tract, Block Group, and Block Location Map

Appendix B
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

Environmental Justice

The refined East and West Option alignments would result in additional adverse impacts which were not discussed in this technical memorandum. These adverse impacts, which are summarized below, were reviewed to determine their effect on EJ communities.

The refined alignment along the I-57 corridor in the Roseland community area would result in adverse visual impacts and adverse impacts related to community character and cohesion for both the East and West Option. The elevated track structure along the I-57 corridor would cause adverse visual impacts because of the change in the visual setting in the highway right-of-way along the north side of I-57 in Roseland.

Considering the impacts, mitigation measures, and benefits, the East and West Options' permanent impact on community character and permanent visual impact would not be appreciably more severe or greater in magnitude than similar effects elsewhere in CTA's rail system. The mitigation measures proposed are similar in nature to those for other CTA projects and have been proposed by CTA consistently in EJ and non-EJ communities alike. The project offers substantial benefits that would accrue to the resident EJ populations. Although the alternative would still have adverse impacts on EJ communities, these impacts would not be disproportionately high or adverse. As such, no EJ-specific mitigation measures beyond those identified in the other technical memoranda would be required.