



Appendix B Socioeconomics and Environmental Justice

This appendix contains social and economic data that was used to document existing conditions within the study area contained in Section 3.2 of the Final Environmental Impact Statement (FEIS). Additionally, a Technical Memorandum was prepared to assess the Environmental Justice mitigation measures, offsetting benefits and enhancement options. This Technical Memorandum is included at the end of this appendix.

The information provided below details key employment industries and public facilities and services within the study area. Economic development initiatives applicable to the study area are also described. A summary description of community areas is also included. The appendix is presented in four sections: Employment and Industry; Economic Development Planning; Community Areas; and Community Facilities and Services.

Employment and Industry in the Study Area

A complete list of industries within the demographic study area relative to the City of Chicago is provided below. As seen in Table 1, the greatest number of jobs within the demographic study area in 2010 was in the retail trade industry with health care and social assistance, and public administration fields as other notable sources of employment. The manufacturing industry saw the greatest numerical change in employment within the demographic study area between 2002 and 2010 (a loss of 1,323 jobs).

Table 1: Employment and Industry Sectors

Industry Sector	Demographic Study Area			City of Chicago		
	Employment		% Change	Employment		% Change
	2002	2010	2002-2010	2002	2010	2002-2010
Agriculture, Forestry, Fishing and Hunting	1	0	-100.0%	228	92	-59.7%
Mining, Quarrying, and Oil and Gas Extraction	0	0	0.0%	356	169	-52.5%
Utilities	1	23	2200.0%	4,849	4,295	-11.4%
Construction	507	424	-16.4%	29,880	20,628	-30.9%
Manufacturing	3,266	1,943	-40.5%	101,909	64,752	-36.5%
Wholesale Trade	490	491	0.2%	43,086	37,503	-13.0%
Retail Trade	2,721	3,219	18.3%	88,401	93,325	5.6%
Transportation and Warehousing	756	1,200	58.7%	64,930	65,419	0.8%
Information	332	202	-39.2%	44,151	34,723	-21.4%
Finance and Insurance	212	314	48.1%	128,487	114,011	-11.3%
Real Estate and Rental and Leasing	178	127	-28.7%	30,813	26,269	-14.8%
Professional, Scientific, and Technical Services	129	235	82.2%	131,083	135,207	3.2%
Management of Companies and Enterprises	1	10	900.0%	14,396	15,818	9.8%



Industry Sector	Demographic Study Area			City of Chicago		
	Employment		% Change	Employment		% Change
	2002	2010	2002-2010	2002	2010	2002-2010
Administration & Support, Waste Management and Remediation	622	480	-22.8%	95,014	93,137	-1.9%
Educational Services	697	957	37.3%	90,187	131,997	46.4%
Health Care and Social Assistance	1,965	2,907	47.9%	144,985	158,129	9.1%
Arts, Entertainment, and Recreation	43	106	146.5%	20,329	19,169	-5.7%
Accommodation and Food Services	981	998	1.7%	88,107	104,156	18.2%
Other Services (excluding Public Administration)	1,026	482	-53.0%	53,996	54,780	1.5%
Public Administration	89	2,525	2,737.1%	43,466	64,245	47.8%
Total	14,017	16,643	18.7%	1,218,653	1,237,824	1.6%

Source: US Census Bureau, LEHD OnTheMap Origin Destination Database (Beginning of Quarter Employment, 2nd Quarter 2002, 2010). <http://onthemap.ces.census.gov/>

Economic Development Planning

The following section summarizes economic development initiatives relating to industrial investment, neighborhood development, zoning initiatives, as well as special tax districts and funding mechanisms that are applicable on both a city-wide level and within the project study area.

Economic Development Planning Programs

Tax Increment Financing (TIF). TIF is utilized by the City of Chicago to generate money for economic development in specific geographic areas. New property taxes are collected from specifically designated TIF districts and directly re-invested into the neighborhoods from which they were collected. The tax money is used for building renovation and rehabilitation, planning studies, financing and interest subsidies for developers, infrastructure improvements as well as park and school improvements. Currently, the boundaries of ten TIF districts extend into the study area and are listed below:¹

- 79th Street/Southwest Highway
- Greater Southwest Industrial Corridor (East)
- 79th Street Corridor
- 79th Street Vincennes
- 73rd Street/Kedzie Avenue
- Englewood Neighborhood
- 83rd Street/Stewart Avenue
- 67th Street/Wentworth Avenue
- 89th Street/State Street
- Chatham Ridge

Enterprise Zone Program. The program designates specific geographic areas or zones within the City of Chicago to receive tax incentives and other benefits in order to help local businesses expand and create employment opportunities. Existing businesses or businesses

relocating to the enterprise zones are entitled to various incentives such as sales tax exemptions, investment tax credits and jobs tax credits. The southern boundary of Enterprise Zone 6 extends into the study area.

Special Service Area Designation Program. The program utilizes local tax levies to fund enhanced services and programs in specific areas of the City of Chicago. The program designates special taxing districts where tax funds are used for maintenance and beautification projects, business retention, marketing and advertising and small scale capital improvements. Portions of Special Service Areas 14 (Marquette Park) and 32 (Auburn Gresham/79th Street) extend into the study area.

City of Chicago Industrial Corridors. As previously mentioned, the City of Chicago designated 24 industrial corridors throughout the city as priority areas for business retention and development.² The eastern portion of the Greater Southwest Industrial Corridor (GSIC) extends into the study area. The GSIC encompasses an area of approximately 737 acres and follows the Belt Railway from Leavitt Street on the east to Cicero Avenue on the west.

Neighborhood Stabilization Program. The program is funded by the Housing and Economic Recovery Act and implemented by the City of Chicago's Department of Housing and Economic Development. The purpose of this program is to address foreclosed and abandoned properties in local communities by establishing funding mechanisms for the purchase and redevelopment of these properties. There are 29 community areas eligible for funding in the City of Chicago, including seven community areas whose boundaries extend into the study area. These include Chicago Lawn, West Englewood, Englewood, Greater Grand Crossing, Auburn Gresham, Chatham and Roseland.³

Planned Manufacturing District (PMD). PMD is a zoning initiative designed to limit the displacement of industrial land by non-industrial uses. Designation of a PMD limits the type of development that can occur within a specified geographic area in order to preserve industrial activity. A portion of the Greater Southwest PMD Number 13 extends into the study area. The Greater Southwest PMD was established in order to encourage industrial investment, modernize and expand the industrial base, strengthen the existing manufacturing area and limit encroachment of non-industrial uses within the industrial corridor.⁴

Community Areas

The City of Chicago is sub-divided into 77 community areas. There are nine community areas within the City of Chicago that fall within the project study area. Generally, these communities were established after the railroads were in place and developed in part due to their proximity to the railroads. These community areas in addition to the City of Hometown are described as follows:⁵



Ashburn. This approximately 5-square-mile South Side neighborhood is located in the western limits of the project area. This neighborhood, once sparsely populated, functioned as a repository for the city's ashes in the early 1900s. In addition, this area was formerly home to the city's first airport, Ashburn Flying Field, opened in 1916. Considerable population growth occurred in Ashburn after World War II, when returning veterans moved to the community. Currently, Ashburn is a racially diverse community with predominantly single-family homes.

Chicago Lawn. This area is also referred to as Marquette Park due to the public parkland located in the southern quadrant of this neighborhood. This 323-acre resource, under the jurisdiction of the Chicago Park District, was designed by the Olmsted Brothers in 1903 as a component of a 14-park system. Marquette Park is the largest park on the southwest side of Chicago and includes recreational amenities including a driving range, soccer fields, bicycle and walking paths, and an auditorium.⁶ This neighborhood, once predominantly Lithuanian, is now a diverse residential community.

West Englewood. This community area was first settled primarily by German and Swedish farmers in the 1840s. As the railroad tracks were laid and service was provided, residents settled in this area looking for employment with the railroad companies as well as the stockyards to the north. The population of West Englewood increased following the Great Chicago Fire as the concentration of transportation and open space were an attractive alternative to the city's dense urban center. The local economy in this area started to decline in the 1970s with the loss of stockyard and transportation-related jobs.

Englewood. Initially, this area developed with the construction of several railroad lines that crossed through this neighborhood in 1852. In 1960, the population of this neighborhood peaked at 97,000 residents. However, housing abandonment and retail decline contributed to a population decrease to 40,222 residents in 2000.⁷ As a result of the loss in housing stock, the neighborhood has many redevelopment opportunities and vacant lots. Recently, some development has occurred in Englewood, including new housing construction, and the newly-opened campus of Kennedy-King College at the intersection of Halsted Street and 63rd Street.⁸

Greater Grand Crossing. The northeastern portion of the study area extends through this approximately 3.6-square-mile neighborhood. Greater Grand Crossing received its name as a result of a train collision that occurred in 1853 near 75th Street and South Chicago Avenue. Consequently, trains were required to come to a full stop at the intersection. The proximity of the railroad and the World's Columbian Exposition in 1893 were catalysts for the development of industry and neighborhood growth. The residential population of this largely African American neighborhood has declined considerably from over 63,000 residents in 1960 to 38,644 in 2000.

Auburn Gresham. This neighborhood, located in the central portion of the project area, is a predominantly African-American community. Historically, Auburn Gresham appealed to stockyard workers, construction and railroad workers, and city employees due to the area's proximity to transportation. Residential uses in this neighborhood include bungalows, as well as two- and three-flat apartment buildings. Recently, this community area has been revitalized with new residential development and commercial development along the 79th Street retail strip.⁹

Chatham. The eastern portion of the study area extends in a north-south direction through this approximately 3-square-mile neighborhood. The eastern edge of the 75th St CIP study area represents the western boundary of this community area. Chatham developed from a European American middle class community into one composed of African-Americans.¹⁰ Residential uses in this community include a mix of two-flat apartment buildings, as well as older and newer bungalows.

Washington Heights. This 2.8-square-mile community is located west of Roseland, described below. Washington Heights is a predominantly residential community that is characterized by bungalow-style homes.

Roseland. This 4.8-square-mile neighborhood was settled by the Dutch in the mid-1800s. The development of this neighborhood was influenced by its proximity to the Pullman Car Works located to the east. Roseland became an ethnically diverse residential and retail community surrounded by a number of large industries. However, the local economy started to decline in the 1960s as steel plants closed and production at the Pullman factory diminished and then ceased in the 1980s.

City of Hometown. This 0.5-square-mile municipality is located in the southwest portion of the study area, adjacent to the City of Chicago. Hometown was founded in 1954 in an effort to provide affordable housing for returning World War II veterans.¹¹ Many of the residences in Hometown are of post-World War II construction featuring mostly one-story with some two-story ranch style construction. Commercial development is found along Southwest Highway, a major roadway within the municipality that transitions to West Columbus Avenue, north of 87th Street in the City of Chicago.



Community Services and Facilities

Community facilities are important resources that promote the health, safety, and general welfare of the communities within which they are located. Community facilities within or immediately adjacent to the study area including public and private schools, religious institutions, and park and recreational facilities are identified below.

Table 2: Schools within Study Area

Name	Address	Facility Type	Student Enrollment
Public Schools			
William A. Hinton Elementary School	644 W. 71 st St.	Elementary	384 students
Phillip Randolph Elementary School	7316 S. Hoyne Ave.	Elementary	680 students
Richard J. Oglesby Elementary School	7646 S. Green St.	Elementary	521 students
Clara Barton Elementary School	7650 S. Wolcott Ave.	Elementary	630 students
Owen Scholastic Academy	8247 S. Christiana Ave.	Elementary	250 students
Ashburn Community Elementary School	8300 S. Saint Louis Ave.	Elementary	514 students
Garrett A Morgan Elementary School	8407 S. Kerfoot Ave.	Elementary	300 students
Oliver S. Westcott Elementary School	409 W. 80 th St.	Elementary	532 students
Turner-Drew Elementary Language Academy	9300 S. Princeton Ave.	Elementary	364 students
Yale Elementary School	7025 S. Princeton Ave.	Elementary	250 students
Amos Alonzo Stagg Elementary School	7424 S. Morgan St.	Elementary	561 students
Parker Elementary Community Academy	6800 S. Stewart Ave.	Elementary	686 students
Parker Child Parent Center	328 W. 69 th St.	Pre-School	N/A
Robeson High School	6835 S. Normal Blvd.	High School	1,265 students
Simeon Career Academy High School	8147 S. Vincennes Ave.	High School	1,557 students
Southside Occupational Academy High School	7342 S. Hoyne Ave.	Special Education High School	183 students
Hometown School	8870 South Duffy Avenue	Elementary School	400 students
Private Schools			
Liberty Temple Academy	2255 W. 79 th St.	K through 1	N/A
Westwood Englewood Christian Community	7326 S. Racine Ave.	Elementary School	N/A
St. Benedict the African	6547 S. Stewart Ave.	Elementary School	N/A
Community Youth Development Institute	7832 S. Union Ave.	High School	N/A
St. Rita High School	7740 Western Ave.	High School	710 students

Source: Chicago Public Schools; Field Inspection; Oak Lawn-Hometown School District 123

Table 3: Worship Centers within Study Area

Name	Location
Abundant Life Missionary Baptist Church	2300 West 69th St.
Monument of Love Church of God in Christ	Marquette Rd. & S. Hamilton Ave.
Freedom Temple Church of God	1459 West 74th St.
Holy Miracle House of Prayer	7334 South Racine Ave.
New Jericho Missionary Baptist Church	7438 South Racine Ave.
New Found Faith Ministries	1209 West 74th St.
Zion Temple Missionary Baptist Church	7010 South Union Ave.

Name	Location
New Mt. Olivet Baptist Church	West 71st St. between S. Union & S. Lowe Aves.
Divine Solid Rock Missionary Baptist Church	7334 South Halsted St.
Liberty Temple Full Gospel Church	2233 West 79th St.
First Church of Love and Faith	2140 West 79th St.
2nd Mt. Vernon Baptist Church	2109 West 79th St.
Rock of Love Missionary Baptist Church	7620 South Ashland Ave.
First Corinthian Baptist Church	7500 South Halsted St.
New Joy Divine Church	7625 South Halsted St.
First Greater Bethlehem Baptist Church	7814 South Lowe Ave.
Prayer Band of Faith Deliverance Church	522 West 87th St.
Pleasant Hill Baptist Church	7950 South Normal Ave.
Mt. Herman Missionary Baptist Church	7848 South Normal Ave.
Faith United Methodist Church	335 West 75th St.
Joshua's Prayer House - Coptic Temple	West 71 st St. between Parnell Ave. & Normal Blvd.
Antioch Missionary Baptist Church South	6953 South Stewart Ave.
Calvary Light Pentecostal Church	7020 South Yale Ave.
Mt. Nebo Baptist Church	354 West 71st St.
Christ Center of Truth Ministries	71 st St. between Eggleston & Stewart Aves.
Temple - The Living Word Missionary Baptist Church	401 West 69th St.
True Zion Spiritual Church	6915 South Wentworth Ave.
Union Tabernacle Baptist Church	6623 South Stewart Ave.
Canaan Baptist Church	6659 South Harvard Ave.
St. Benedict the African - East	340 West 66th St.
Ashburn United Methodist Church	3801 West 83rd Pl.
Ashburn Baptist Church	3647 West 83rd St.
St. Denis Church	8301 S Saint Louis Ave.
The Monument of Faith Evangelistic Church	2750 West Columbus Ave.
2nd Mt. Calvary Missionary Baptist Church	7401 South Western Ave.
Gifts from God Ministry	1818 West 74th St.
Grace Fellowship Bible Church	1720 West 75th Pl.
New Israelite Missionary Baptist Church	1625 West 75th Pl.
God's Way Apostolic Faith Church	7435 South Ashland Ave.
Church of Christ	1514 West 74th St.
Rose of Light Missionary Baptist Church	1302 West 74th St.
Christian Hope Missionary Baptist Church	7559 South Aberdeen St.
New Light Evangelical Baptist Church	7426 South Halsted St.
Mt. Ararat Community Church	7541 South Halsted St.
I Care Christian Center Ministries	7500 South Parnell Ave.
Cluster Baptist Church	W. 72nd St. between S. Emerald & S. Union Aves.



Name	Location
Greater Salem Baptist Church	215 West 71st St.
True Foundation Baptist Church	8801 South Normal Ave.
Beacon Light Baptist Church	8803 South Harvard Ave.
Wordfire Christian Center	8857 South State St.
Trinity United Church of Christ	421 West 95th St.
Bibleway Church of Chicago	502 West 95th St.
St. Thaddeus Catholic Church	9540 South Harvard Ave.
Prayer Center Missionary Baptist Church	79th Street & Union Ave.

Table 4: Parks and Open Space within Study Area

Name	Address	Features	Acreage
Dawes Park	8040 S. Damen Ave.	Athletic fields, basketball court, playground, fieldhouse, 0.47-mile walking path, parks programming including basketball, floor hockey, and afterschool homework	16.1
Dr. Martin Luther King, Jr. Park & Entertainment Center	1219 W. 76 th St.	Athletic fields, playground, 40,000 s.f. skating rink, bowling alley and special event facility	1.2
Murray Park	1743 W. 73 rd St.	Athletic fields, basketball court, spray ground, 0.23-mile walking trail; recreational facility; parks programming	3.6
Periwinkle Park	100 W. 66 th St.	Playground created in 1973 as part of Expressway Property Development Plan. Adjacent to Dan Ryan Expressway	0.5
Lily Gardens	632 W 71 st St.	Adjacent to rail right-of-way, park named after lily ponds that have since been removed and replaced with a playground	2.7
Hamilton Park	513 W. 72 nd St.	Created in 1904 as part of a neighborhood parks system; contains athletic fields, playground, pool, tennis courts, a 0.39-mile walking trail, basketball and soccer programming	29.9
Leland Giants Park	7526 S Lowe Ave.	Park is adjacent to rail right-of-way and contains open space and an outdoor basketball court	1.4
Lyle Park	7700 S. Wallace St.	Named after John Lyle, a former alderman and municipal court judge, on former railroad right-of-way between 76 th and 78 th Sts. Greenspace buffer contains playground equipment near 77 th St.	1.6
Auburn Park	406 W. Winneconna Parkway	Lagoon, pedestrian walking paths	8.4
Mahalia Jackson Park	8385 S. Birkhoff Ave.	This resource, formerly known as Park No. 386, was named after the famous gospel singer and civil rights activist. Park contains basketball courts, athletic fields; tennis courts; recreational programming for children, basketball clinics, and aerobics classes held at park	2.6
West Chatam Park	8223 S. Princeton Ave.	Adjacent to Simeon Vocational High School. Amenities include athletic fields, basketball and tennis courts, spray ground	15.0
Robichaux Park	9247 S. Eggleston Ave.	Named after Joseph Robichaux, a community organizer and local businessman. Located adjacent to rail right-of-way; amenities include basketball and tennis courts, an athletic field, a playground, and a brick fieldhouse.	13.3
Fernwood Parkway	9501 S. Eggleston Ave.	Functions as landscaped green buffer adjacent to rail right-of-way	8.6
Smith Playlot Park	9912 S. Princeton Ave.	Named after journalist and former WGN sports reporter Wendell Smith. Park contains recreation building, athletic field, 0.33-acre walking trail, basketball courts and playground.	4.2

Name	Address	Features	Acreage
Marquette Park*	6734 S. Kedzie Ave.	Recreational amenities including a lagoon, auditorium, golf course, tennis courts, 2.27 mile walking path, natural areas, athletic fields including a synthetic turf soccer field, basketball courts, and playgrounds. Afterschool program as well as recreational sports, fitness and cultural programming.	320.9
Patterson Park	S. Main St. and S. Pulaski Rd.	Facility contains two baseball fields, a playground, and surface parking lot, located in Hometown	3.6
Dan Ryan Woods	8300 South Western Ave.	This resource is under the jurisdiction of the Cook County Forest Preserve District and features picnic groves, forested preserves, paved trails and a bicycle path.	234.1

*Note: * Located outside of study area*

Source: Chicago Park District Parks and Facilities

<http://www.chicagoparkdistrict.com/index.cfm/fuseaction/parks.home.cfm>; *City of Hometown*



Endnotes:

- ¹ Cook County Clerk. Real Estate and Tax Services: Tax Increment Financing. <http://www.cookcountyclerk.com/tsd/tifs/Pages/TIFs101.aspx>, accessed on November 11, 2010.
- ² City of Chicago. Boundaries - Industrial Corridors. [http://www.cityofchicago.org/city/en/depts/doiit/dataset/boundaries - industrialcooridors.html](http://www.cityofchicago.org/city/en/depts/doiit/dataset/boundaries_-_industrialcooridors.html), accessed on August 8, 2013.
- ³ Chicago Neighborhood Stabilization Program. List of Eligible Neighborhoods. http://www.chicagosp.org/uploads/chicagosp/documents/nsp_29_neighborhoods.pdf, accessed on August 8, 2013.
- ⁴ City of Chicago, Chicago Zoning Ordinance 17-1-011 PMD.
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- ⁷ Chicago History Museum; The Newberry Library; Northwestern University. *Encyclopedia of Chicago*. <http://www.encyclopedia.chicagohistory.org/pages/426.html>, accessed November 11, 2010.
- ⁸ City of Chicago. *Explore Chicago's Neighborhoods*. <http://www.explorechicago.org/city/en/neighborhoods.html>, accessed November 10, 2010.
- ⁹ Greater Auburn-Gresham Development Corporation. *About Auburn Gresham*. <http://www.gagdc.org/Our-community/About-Auburn-Gresham/index.html>, accessed on November 11, 2010.
- ¹⁰ Chicago History Museum; The Newberry Library; Northwestern University. *Encyclopedia of Chicago*. <http://www.encyclopedia.chicagohistory.org/pages/232.html>, accessed on November 11, 2010.
- ¹¹ City of Hometown. *Message from the Mayor*. <http://www.cityofhometown.com/>, accessed on March 9, 2011.



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Environmental Justice Mitigation Measures,
Offsetting Benefits and Enhancement Options
Technical Memorandum

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1. Project Background

The 75th Street Corridor Improvement Project (75th Street CIP) is part of the Chicago Region Environmental and Transportation Efficiency (CREATE) Program. A program of regional and national significance, CREATE was developed to increase the efficiency of the region's rail infrastructure. The 75th Street CIP was initiated to solve transportation problems in the Chicago neighborhoods of Ashburn, Englewood, Auburn Gresham, and West Chatham. Tracks serving four major freight railroads and two passenger rail lines pass through these neighborhoods, with multiple at-grade rail-rail crossings and four major at-grade crossings of local roads. These crossings result in train and road traffic backups and delays. The study is being conducted by the Illinois Department of Transportation (IDOT) and the Federal Highway Administration (FHWA), in coordination with the City of Chicago Department of Transportation (CDOT) and the American Association of Railroads (AAR).

The project is being conducted under IDOT's Context Sensitive Solutions (CSS) process, an interdisciplinary approach that seeks effective, multimodal transportation solutions by working with stakeholders to develop, build and maintain cost-effective transportation facilities which fit into and reflect the project's surroundings – its "context." IDOT has included stakeholders in the process from the beginning of the 75th Street CIP, and has formed two Community Advisory Groups, one for the east and one for the west side of the project area. In addition to the study area residents and business owners, approximately 46 different community groups were invited to participate as members of the Community Advisory Groups (CAGs). The current membership includes representatives from block clubs, churches, schools, housing organizations, community development corporations, community resource centers, advocacy groups, police and fire departments, and the Chicago Park District. To date, five (5) Community Advisory Group meetings have been held. IDOT has also held three public meetings to engage the general public in the study process.

The Study Team, with the help of the local community and the two CAGs, developed the project's Purpose and Need statement by first identifying the rail and roadway traffic problems in the study area. We presented the Purpose and Need statement at two public meetings in the project area and solicited input on transportation issues in the area. We evaluated the causes of these problems and developed potential solutions to address them. We then analyzed how well these potential solutions met the Purpose and Need and the extent and nature of potential impacts projected to result from each of the alternatives.

The Study Team also presented these solutions to the two CAGs to obtain their input. Based on our analysis and the feedback received from the CAGs, we combined the best potential solutions into a Build Alternative. In the Hamilton Park area, we developed three solutions that all met the Purpose and Need for the project, but would have different potential impacts to the community. We presented them as "Alignment Alternates" within the Build Alternative, and asked the public to evaluate them at the Range of Alternatives public meeting. We also presented a No Build Alternative to the public for consideration.

After incorporating input received at the Range of Alternatives public meeting, we presented the Preferred Alternative at a joint meeting of the CAGs. The CAGs did not express any objections to the Preferred Alternative.

Improvements associated with the Preferred Alternative for the 75th Street CIP include eliminating rail line at-grade conflicts with rail-rail flyovers, eliminating the highway-rail crossing conflicts at 71st Street with a rail-highway grade separation; reducing rail conflicts by rerouting Metra commuter trains from the SouthWest Service (SWS) line to the Rock Island District (RID) line via a rail flyover, and improving



local mobility by upgrading 36 viaducts. The majority of this work, with the exception of the Metra rail flyover, will be constructed within the existing rail right-of-way. In many of these areas, the existing railroad tracks are located on an elevated embankment.

According to preliminary analysis, the Preferred Alternative for 75th Street CIP would have disproportionate adverse noise, vibration, and visual impacts on Title VI and Environmental Justice populations as defined by Title VI of the Civil Rights Act of 1964 and Executive Order (EO) 12898. This determination was based on the fact that the project impacts would be predominantly borne by minority and low-income populations. To mitigate these impacts, a full range of measures under the IDOT/CREATE Program policies¹ were investigated. Some of these measures were found to be effective, and those have been incorporated into the project. Even with these mitigation measures, however, disproportionate impacts to minority and low-income populations would remain.

To address this situation, IDOT and HNTB met on May 8, 2013 with FHWA district and headquarters staff. At that meeting, FHWA indicated that additional measures to mitigate project impacts may be warranted based on the guiding principles established under EO 12898 and Title VI of the Civil Rights Act of 1964. FHWA noted that there is no specific threshold or guidance identified in Executive Order 12898 or the Title VI regulations to help determine whether a mitigation measure is practicable. Therefore, there is flexibility built into the regulations and guidance. For example, FHWA noted that the concerns over environmental justice and Title VI could provide the impetus to implement noise mitigation measures that were determined to be not cost-effective using the CREATE Noise and Vibration Assessment (N&V) Methodology. They also indicated that the Study Team should be creative and thorough in exploring and documenting their consideration of mitigation measures, and in discussing them with the affected communities.

2. Purpose of This Memorandum

This document identifies potential measures to mitigate the disproportionately high and adverse impacts to minority and low income populations associated with the project. Since fully mitigating the impacts is not practicable under existing policies, the document also presents additional measures the Study Team has identified to provide offsetting benefits to the impacted populations.

The purpose of this document is to present to the CREATE Partners a broad program of mitigation measures and other project actions to provide offsetting benefits to the adversely impacted communities, thereby allowing the Partners to form a consensus on a set of specific measures and an appropriate level of investment commensurate with the disproportionate impacts. These would then be taken to the Elected Officials, Community Advisory Groups, and other local stakeholders for their review, comment and endorsement.

Due to the time required to develop these options and discuss them with the CREATE Partners, the Community Advisory Groups, and other stakeholders, not all of these options may be fully refined to be included in the Draft Environmental Impact Statement (DEIS) as environmental commitments. Those that are practicable and sufficiently developed at the time will be included in the DEIS, while further practicable measures with merit and support could be included in the Final Environmental Impact Statement (FEIS) or Record of Decision (ROD). Some options must be further refined during Phase II of

¹ *Bureau of Design and Environment Manual, 2010 Edition*, Illinois Department of Transportation, Chapter 22, General Environmental Procedures, revised June 2012, and *CREATE Noise and Vibration Assessment Methodology*, June 2013.



the project. Other options are primarily funding commitments intended to provide other public agencies such as the City of Chicago or the Chicago Transit Authority (CTA) with additional funding to implement ongoing plans and programs. An important part of the process to evaluate these options will be to determine feasible funding sources for construction and/or maintenance activities. In all cases, the CREATE Partners would have to make commitments in order to include these measures in the FEIS or ROD.

In the following sections, this document first identifies the mitigation measures and offsetting benefits that are recommended under the current CREATE Program policies, and then discusses additional measures that are recommended under the provisions of EO 12898 and FHWA Order 6640.23A (June 14, 2012) to provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by USDOT programs.

3. Mitigation and Offsetting Benefits under Existing IDOT/CREATE Program Policies

During the CSS process, community members identified noise and vibration as existing concerns. The 75th Street CIP Build Alternative would cause noise and vibration impacts in parts of the project study area, as well as visual impacts in some areas. These predicted impacts and potential measures recommended to mitigate these impacts are discussed in the following paragraphs. Through the CSS process, local residents also expressed concerns regarding transportation infrastructure, particularly conditions at railroad viaducts such as poor lighting, drainage deficiencies, and deteriorated roadway surfaces. As a result of this local coordination, the poor condition of railroad viaducts, was included in the Purpose and Need for the project. Viaduct improvements proposed as a part of the project to address these concerns are also described in the following paragraphs.

3.1. Noise

The Build Alternative for the 75th Street CIP would cause an increase in train volumes over the No Build Alternative. This increase results in moderate noise impacts to 1,092 receptors (i.e., residential households or institutional uses) and severe noise impacts to 267 receptors. A total of 9,676 noise sensitive receptors were identified within the noise screening area; 12 percent of those would be impacted. The areas where these impacts would occur are shown in Figure 1. Additionally, 58 receptors would be temporarily impacted during construction only.

To mitigate noise impacts, noise barriers were analyzed. To be feasible under the CREATE N&V Methodology, each barrier must reduce the noise levels by 5 dBA or more. Table 1 lists the barriers that were determined to be feasible, along with the costs associated with each barrier, the number of benefited receptors (broken down by moderately impacted receptors and severely impacted receptors), and the economic reasonability value or maximum allowable cost for each barrier. The economic reasonability value is calculated by determining the level of impact at each benefited receptor, ranging from \$5,000 to \$30,000 for moderately impacted receptors, and \$30,000 for severely impacted receptors, then totaling the values for each receptor benefited by the barrier. Per the CREATE N&V methodology, a barrier would be reasonable if the barrier cost is less than the economic reasonability value.

Preliminary evaluation has shown that four noise barriers (Barriers G, H, M, and N in Table 1) are feasible and meet the CREATE N&V Methodology economic reasonability criteria. These four barriers are recommended to be included as mitigation measures as part of the 75th Street CIP. The final decision on implementing noise mitigation measures will be made upon the completion of the project



design and public involvement process. The total cost of the four reasonable barriers is approximately \$3,455,000. (All costs are expressed in Year 2013 dollars.)

Table 1: Noise Barrier Analysis Summary

A Noise Barrier	B Benefited Receptors		C Minimum Barrier Cost	D CREATE Policy Economic Reasonability Value (Max Allowable Cost)
	Moderate Impact	Severe Impact		
A	17	10	\$2,390,625	\$465,000
C	19	0	\$364,000	\$155,000
D	16	0	\$801,563	\$105,000
E*	102	0	\$1,259,550	\$610,000
F*	30	0	\$1,507,500	\$300,000
G**	33	30	\$1,174,181	\$1,230,000
H**	16	35	\$650,850	\$1,290,000
J	0	17	\$2,590,000	\$510,000
K	27***	0	\$1,280,000	\$215,000
L	13	0	\$300,000	\$65,000
M**	18	38	\$1,091,049	\$1,230,000
N**	0	20	\$539,250	\$600,000
O	0	57	\$2,025,450	\$1,710,000
P	32	0	\$1,175,625	\$320,000
Q	1***	0	\$258,375	\$10,000
R	67	0	\$844,125	\$560,000
S	40	0	\$770,625	\$200,000
T	44***	0	\$796,875	\$405,000
U	1	0	\$442,875	\$5,000
V	22	0	\$438,750	\$215,000
W	2**	0	\$809,585	\$0
Temp 1	19	25	\$1,005,750	\$915,000
Temp 2	12	0	\$632,415	\$60,000
All Barriers	531	232	\$23,149,018	\$11,175,000
Recommended Barriers	67	123	\$3,455,330	\$4,350,000

(See Figure 1 at the end of this memo for location of recommended noise barriers)

*Whistle noise associated with the BRC yard has not been included in this analysis. Barriers at these locations may not mitigate the whistle noise associated with the yard.

Noise barriers shown in **bold and **highlighted** are feasible and meet the economic reasonability criteria and are therefore recommended under the CREATE N&V methodology.

*** The CREATE N&V methodology does not differentiate interior noise impacts between moderate and severe. They have all been classified as moderate for reporting in this memo.

Note: An additional barrier opposite Barrier J, on the north side of the proposed rail flyover, was also evaluated. However, this barrier was eliminated due to safety and operational concerns.

For the evaluation of temporary noise barriers for noise impacts during construction, IDOT and FHWA directed Jacobs to use the CREATE N&V Methodology that was used to evaluate the permanent noise barriers. Using these procedures, two temporary noise barriers were evaluated.

Temporary Barrier 1 would be located east of the CSX railroad tracks from Forest Hill Junction (75th Street) north to 71st Street. This barrier would benefit 19 receptors with moderate noise impacts



and 25 receptors with severe noise impacts, but only for approximately one year during the construction period when temporary tracks will be used. The permanent tracks would be constructed farther from the residences, and would result in no predicted noise impacts associated with the Build Alternative in the area near Temporary Barrier 1. Temporary Barrier 1 does not meet the CREATE N&V Methodology economic reasonability value.

Temporary Barrier 2 would also be located along the east side of the CSX tracks, but would be just south of Forest Hill Junction. It would only provide benefits to 12 residences, would cost more than 10 times the cost-effectiveness criteria, and would not be needed once the approximately one-year construction period was completed. As a result, Temporary Barrier 2 is not recommended.

The acquisition of additional properties for the purpose of establishing buffer zones was also considered as a mitigation strategy per the CREATE N&V Methodology. However, this mitigation measure would create additional community impacts and local elected officials expressed great concern that the project should minimize residential relocations. This measure was therefore not considered a feasible option.

Since it is not possible to mitigate all predicted noise impacts under the CREATE N&V methodology, the project would result in causing unmitigated noise impacts to minority and low-income populations.

3.2. Vibration

As shown in Figure 2, there are vibration impacts associated with the Build Alternative throughout the study area. The Build Alternative is predicted to create ground-borne vibration (GBV) impacts at 749 residential properties and six institutional land uses in the study area, and ground-borne noise (GBN) impacts at 77 residential properties. The mitigation strategies evaluated for vibration impacts included buffer zones, planning and design of special track work, and maintenance practices. The acquisition of additional properties for the purpose of establishing buffer zones would create additional community impacts and was therefore not considered a feasible mitigation measure. The Study Team coordinated with the rail industry CREATE Partners regarding the feasibility of “special trackwork,” including the following:

- ◆ Flange bearing frogs – The crossing point of two rails is known as a “frog,” and is a source of noise and vibration where train wheels cross the gap between rail heads. Flange bearing frogs can be used at crossing diamonds to allow the weight of a train to rest on the wheel flange instead of the tread and pass over a flat surface with no gap between the rail heads (i.e., no flangeway), thereby reducing noise and vibration. There are three crossing diamonds in the study area. One is being removed at Forest Hill Junction, which will eliminate the noise and vibration caused by that diamond. Two will remain, one at Oakdale Junction near 90th Street & Eggleston Avenue, and another where the Metra SWS tracks along Columbus Avenue cross the north-south CN tracks near the intersection of 83rd Street & Central Park Avenue (3600 W). While some railroads are currently testing the use of flange bearing frogs, they are not currently an accepted design standard by the railroads in the study area.
- ◆ Movable point frogs at turnouts – These types of frogs operate by using a separate switch machine to move a small portion of rail that eliminates the flangeway gap in the rail. This frog does reduce noise and vibration, but its use is typically limited to areas with higher speeds, usually in excess of 60 miles per hour. Trains in the study area seldom reach this speed. Movable point frogs are also three to four times more expensive than conventional turnouts, require a different stock of maintenance materials, and require special training for employees in the maintenance process. Moveable point frogs are not considered a viable mitigation measure for the 75th Street CIP.



- ◆ Spring frogs – This type of special trackwork is typically used for passenger rail applications at turnouts where there is very little divergent traffic. Spring frogs can reduce component wear, but require more maintenance than conventional frogs. Due to the high amount of divergent train movements in the 75th Street CIP study area and the higher maintenance costs, spring frogs are not considered a viable mitigation measure.
- ◆ Welded rail joints – Rail joints are a source of noise and vibration. It is already the policy of all the railroads in the study area to eliminate most rail joints in mainline track by welding the joints. Rail joints are only used on a temporary basis during construction or after a rail failure, or on a permanent basis as a part of the signal system in the form of insulated joints.
- ◆ Ballast mats – An elastic mat can be placed under railroad ballast to reduce vibration. However, such mats are typically used only in lighter rail transit applications because the loading from heavier diesel locomotives may cause them to wear out quickly and lose effectiveness. Ballast mats are not considered a viable mitigation measure for the 75th Street CIP.

With the exception of welded rail joints, which are standard railroad policy, the measures discussed above are not considered viable for vibration mitigation in the 75th Street CIP study area. Therefore, maintenance programs are the primary vibration mitigation approach available. Maintenance programs include regularly-scheduled rail grinding, wheel truing, vehicle reconditioning, and use of wheel-flat detectors. The railroads generally already perform these measures as part of their normal maintenance procedures. These measures, however, would not eliminate the predicted vibration impacts of the project.

3.3. Visual Impacts

The analysis of potential visual impacts identified two project elements in particular that would have adverse visual impacts: the proposed Metra Rock Island connection flyover bridge in the area south of Hamilton Park, and the proposed Forest Hill Junction flyover bridge along the CSX tracks from approximately 69th Street to 77th Street.

The Metra Rock Island connection flyover bridge would require the acquisition of 20 residential parcels and one church building in the area south of Hamilton Park, but the permanent right-of-way would not require the full use of all of these parcels. Based on the Phase I (preliminary) design, there would be a total of 1.39 acres of parcel remnants in the area south of Hamilton Park (see Figure 3). Jacobs recommends landscaping of these parcel remnants to help minimize the visual impacts of the rail flyover. The parcels could be landscaped by a public or private organization using project funds, transferred to the City of Chicago or to an adjacent property owner through the City of Chicago's adjacent neighbors program, or used for other community purposes. Details of this proposal could be determined through the CSS process in Phase II (final) design. Based on recent landscape architects' experience on large institutional, commercial and public projects, an approximate unit cost of \$50,000 per acre for landscaping and other site work is assumed. This measure is therefore estimated to cost approximately \$70,000.

Landscaping is also recommended as an appropriate minimization measure along the CSX right-of-way where the new rail flyover would be constructed. Trees could be planted along the eastern side of the CSX right-of-way or on adjacent City of Chicago property parallel to the new flyover structure to partially screen it from the adjoining residences. A total length of approximately 3,900 feet could be planted, with an assumed spacing of 20 ft. Based on escalated 2012 City of Chicago Bid Tabs, trees could be



planted for an average cost of about \$700 per tree, yielding an estimated cost for the tree plantings along the CSX of \$136,500.

Jacobs also recommends working with the Community Advisory Groups throughout Phase II (final) design to identify other potential aesthetic treatments for rail flyover structures, noise barriers and retaining walls. These could include simple, distinctive aesthetic features for viaducts that are being improved to help create a visual identity for the neighborhoods. The CSX has begun to do this with the new 59th Street Intermodal Facility. The proposed flyover structures and any of the viaducts to be reconstructed could also include decorative facing, such as simulated stone work, created by using form-liners, as could all of the noise barriers. Typical costs for detailed form liners for concrete noise walls are approximately \$5 per square foot (sf), so with approximately 96,000 sf of noise walls in the four recommended barriers, this treatment could cost approximately \$500,000. Colored surface sealers could also be used to improve the appearance of concrete structures. Form liners and other aesthetic treatments could also be used for the flyover structures and the viaduct improvements. Such treatments for the two large flyover structures could also cost on the order of \$500,000, and another \$500,000 could be allocated to the several viaduct structures with substantial reconstruction. The location and extent of these changes can be developed in an outreach program bringing together the community and the railroads operating within the study area as a part of the CSS program during Phase II (final) design. For purposes of developing a rough estimate of the overall cost of the recommended mitigation program, Jacobs proposes that a total of approximately \$1,500,000 be allocated for the project improvements listed above, based on our recent experience with aesthetic treatments for other major public infrastructure projects across the country. The number of locations and extent of treatments could of course vary widely based on local input from the CAGs, with corresponding changes to the estimated cost.

The 75th Street CIP could also make an early commitment to include public art in the project. Murals, community gateway identifiers, or other public art installations could be used to improve the appearance of railroad viaducts, retaining walls, or other public spaces in the study area, as further developed during the CSS process in Phase II (final) design. As an example, for a minimal cost through the Gateway Green Program, the murals on the Dan Ryan Project were developed and manufactured by local community artists. Based on prior experience with public art installations in major urban infrastructure projects, it is proposed that \$100,000 of project funding be allocated to this measure. This total is based on an approximately 1% of the estimated viaduct construction costs, a typical percentage for enhanced aesthetic treatments in major urban infrastructure projects. The total could vary substantially based on local input through the CSS process.

Total project funding assumed to be committed to mitigation of visual impacts, including landscaping of remnant parcels, tree replacement, aesthetic treatment of new structures, and public art, would therefore be approximately \$1,806,500.

3.4. Viaduct Improvements

A total of 36 viaducts in the project study area would be improved as a part of the Build Alternative to address community concerns related to safety and physical condition of traveling under railroad viaducts. The work would include street resurfacing, drainage improvements, lighting replacement, sidewalk repair, and ADA-compliant curb ramps. These viaduct improvements would help to alleviate a number of issues which limit mobility for residents within the community and would also provide substantial improvements to the visual aesthetics throughout much of the study area. As presented in the 75th Street CIP Preliminary Draft EIS, the viaduct improvements are estimated to cost approximately



\$11 million. This cost estimate is based on a detailed engineering field review conducted in 2010 and 2011 at each of the 36 viaducts, and includes, wherever needed, roadway reconstruction or resurfacing, reconstruction of sidewalks, addition of sidewalk ramps, replacement of all lighting systems, reconstruction of drainage systems, waterproofing of bridge decks, reconstruction of bridge abutments, and reconstruction of underdrains. Details of the viaduct improvements are presented in Appendix A of the DEIS.

3.5. Summary of Mitigation Costs and Offsetting Benefits under Existing IDOT/CREATE Program Policies

Table 2 presents a summary of the mitigation measures and offsetting benefits proposed for the 75th Street CIP as provided for under the standard IDOT/CREATE Program policies, along with their estimated costs.

Table 2: Summary of Mitigation Measures and Offsetting Benefits Under Existing IDOT/CREATE Program Policies

Mitigation Measures and/or Offsetting Benefits	Estimated Cost
Noise Barriers (Reasonable and Feasible)	\$3,455,330
Vibration Mitigation	\$0
Visual Impact Screening	\$1,806,500
Viaduct Improvements	\$11,000,000
Total Cost of Mitigation and Offsetting Benefits	\$16,261,830

4. Other Measures to Provide Additional Mitigation and Offsetting Benefits

As discussed above, some adverse impacts of the project can be mitigated or offset under the current IDOT or CREATE Program policies, but some impacts would remain unmitigated. To address the intent of Executive Order (EO) 12898 and Title VI of the Civil Rights Act of 1964, FHWA indicated that the Study Team should identify and evaluate additional measures that would provide offsetting benefits to the affected communities. Some of these measures would not be considered cost-effective or appropriate under the current IDOT or CREATE Program policies, but are proposed here under the flexibility provided by FHWA Order 6640.23A in order to address concerns for equity and in consideration of the disproportionate impacts of the project. The following sections present the additional measures considered and Jacobs' recommendations regarding implementation. The Study Team used stakeholder input gathered through the CSS process to develop these measures and will continue to interact with the CAGs to refine these measures further.

4.1. Additional Noise Barriers

Noise was cited as a community concern by the CAG and attendees at public meetings, and was included in the Problem Statement for the 75th Street CIP. Four noise barriers were identified previously that met the CREATE N&V Methodology criteria for cost-effectiveness and are recommended for implementation. There are also 19 other noise barriers that would provide noise level reductions of at least 5 dBA, the CREATE N&V Methodology minimum reduction criteria, but which do not meet the CREATE N&V Methodology economic reasonability criteria (see Table 3 below).



Table 3: Additional Noise Barrier Analysis

A	B	C	D	E	F
Noise Barrier	Benefited Receptors	Minimum Barrier Cost	CREATE Policy Economic Reasonability Value (Max Allowable Cost)	CREATE Policy Cost per Benefited Receptor (D/B)	Total Cost per Benefited Receptor (C/B)
Noise Barriers Recommended Under CREATE N&V Methodology					
G*	63	\$1,174,181	\$1,230,000	\$18,938	\$18,638
H*	51	\$650,850	\$1,290,000	\$25,294	\$12,762
M*	56	\$1,091,049	\$1,230,000	\$21,964	\$19,483
N*	20	\$539,250	\$600,000	\$30,000	\$26,963
Other Noise Barriers Considered as Additional Mitigation					
A	27	\$2,390,625	\$465,000	\$17,222	\$88,542
C	19	\$364,000	\$155,000	\$8,158	\$19,158
D	16	\$801,563	\$105,000	\$6,563	\$50,098
E**	102	\$1,259,550	\$610,000	\$5,980	\$12,349
F**	30	\$1,507,500	\$300,000	\$10,000	\$50,250
J	17	\$2,590,000	\$510,000	\$30,000	\$152,353
K	27	\$1,280,000	\$215,000	\$7,963	\$47,407
L	13	\$300,000	\$65,000	\$5,000	\$23,077
O	57	\$2,025,450	\$1,710,000	\$30,000	\$35,534
P	32	\$1,175,625	\$320,000	\$10,000	\$36,738
Q	1	\$258,375	\$10,000	\$10,000	\$258,375
R	67	\$844,125	\$560,000	\$8,358	\$12,599
S	40	\$770,625	\$200,000	\$5,000	\$19,266
T	44	\$796,875	\$405,000	\$9,205	\$18,111
U	1	\$442,875	\$5,000	\$5,000	\$442,875
V	22	\$438,750	\$215,000	\$9,773	\$19,943
W	2	\$809,585	\$0	\$0	\$404,792
Temp 1	44	\$1,005,750	\$915,000	\$20,795	\$22,858
Temp 2	12	\$632,415	\$60,000	\$5,000	\$61,453
All Barriers	763	\$23,149,018	\$11,175,000	\$14,646	\$30,339
Recommended Barriers	190	\$3,455,330	\$4,350,000	\$22,895	\$18,186

*Noise barriers shown with a single asterisk are feasible and meet the CREATE Program economic reasonability criteria and are therefore recommended.

** As noted in Table 1, whistle noise associated with the BRC yard has not been included in this analysis. Barriers at these locations may not mitigate the whistle noise associated with the adjacent BRC yard.

Based on guidance contained FHWA Order 6640.23A, if unmitigated impacts have the potential to result in disproportionately high and adverse impacts to low-income or minority populations, the analysis should evaluate other practicable mitigation measures and enhancements with merit and support to provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals. In the case of predicted noise impacts, IDOT and FHWA evaluated other potential mitigation measures—such as noise attenuating measures for residential structures (e.g., insulation, windows, doors, air conditioning, etc.)—to address predicted noise impacts. After careful consideration, these measures were determined to be not practicable due to unpredictable factors such as: physical condition of the residential structure which could make feasible noise reduction difficult to predict or possibly achieve; access to residential structures to assess before and after noise levels and to install recommended mitigation measures; varying presence or condition of existing items (e.g., insulation, windows, doors,



air conditioning, etc.) that might require installation or replacement. These factors create high levels of uncertainty with regard to feasible, uniform and practicable implementation. Therefore, IDOT and FHWA have determined that feasible noise barriers up to approximately double the economic reasonability criteria contained in the CREATE N&V Methodology are the only practicable mitigation measures to address disproportionately high and adverse noise impacts to low-income and minority populations. The analysis of additional noise barriers is summarized below:

- ◆ Barriers E and C: While Barrier E would provide some benefit to a large number of residences (102) for a low cost per benefited receptor (\$12,349), a barrier is not recommended at this location because a barrier may not mitigate the whistle noise associated with train operation in the adjacent BRC railroad yard. Additionally, as a separate part of the CREATE program, CDOT is currently evaluating proposals to complete the Phase I preliminary engineering and environmental (NEPA) documentation for a grade separation at the Columbus Avenue/BRC crossing (CREATE Project GS 11) that would mitigate the normal train operations noise that Barrier E was designed to mitigate. The Phase I study is anticipated to be complete in late 2014 or early 2015. Barrier C would also be located near the planned Columbus Avenue grade separation structure, which would also eliminate the need for the barrier. Additionally, Barrier C may not mitigate the whistle noise associated with train operations in the adjacent NS Landers Yard. Therefore, for these reasons, Barrier C is not recommended for implementation.
- ◆ Barrier O: Barrier O would be located along the north side of the BRC railroad tracks near the southeast limits of the project east of the Dan Ryan Expressway (I-94). This barrier would benefit 50 moderately impacted receptors and 34 severely impacted receptors. The total estimated cost of the barrier would be \$2,025,450. This equates to approximately \$35,534 per receptor, which is \$5,534 more per receptor than would be allowed under the CREATE N&V Methodology. Jacobs recommends including Barrier O as part of the 75th Street CIP for noise mitigation because of its benefit to 57 receptors and its cost per benefited receptor is less than twice as much as the CREATE policy cost per benefited receptor.
- ◆ Barriers R, T, and V: Barrier R would be located along the east side of the Union Pacific railroad north of 95th Street. This barrier would benefit 67 receptors, all with moderate noise impacts, mostly due to train horn noise. The City of Chicago is pursuing a quiet zone along the Union Pacific railroad tracks in this area (discussed below) that would be more effective than a barrier wall at addressing train horn noise. Additionally, the CREATE Program includes a proposed highway-rail grade separation at 95th Street and the Union Pacific railroad tracks (CREATE Project GS- 21a). Implementation of this grade separation would eliminate the need for trains to sound their horns at this grade crossing, thereby eliminating the project-related noise impacts. For these reasons, Jacobs does not recommend including Barrier R as part of the noise mitigation for the 75th Street CIP. Due to similar reasoning, Jacobs also does not recommend other barriers that would be located along the UP rail line and are approximately double the economic reasonability value contained in the CREATE N&V Methodology. This recommendation includes Barrier T and V.
- ◆ Temporary Barrier 1 is less than approximately double the economic reasonability criteria contained in the CREATE N&V Methodology. However, Jacobs recommends not including Temporary Barrier 1 as part of the 75th Street CIP since it would not be needed in the build condition and would provide benefits to impacted residential receptors for only one year.



Table 4 summarizes the number of moderate and severe noise impacts mitigated by each barrier and the total number of noise impacts that would be mitigated through implementation of the feasible and reasonable barriers, as well as the additional recommended noise barriers. The total cost of the additional barrier recommended here is \$2,025,450. As with barriers recommended under the CREATE N&V Methodology, the final decision on implementing Barrier O will be made upon completion of the project design and public involvement process. Due to the fact that impacts of the project would be predominantly borne by low-income and minority populations, IDOT and FHWA have determined that viewpoints of benefited receptors will be solicited for all recommended noise barriers (Barriers G, H, M, N, and O) as part of the public involvement process to help determine if there is merit and support for implementation of these recommended noise mitigation measures. It should be noted that the noise analysis area for the 75th Street CIP overlaps with the noise analysis area for the CREATE EW3 Project. Due to this overlap and the consistency in the noise analysis results, noise abatement is currently recommended for both projects to mitigate predicted impacts to low-income and minority populations. The EW3 project, however, is fully funded for construction. Therefore, it is likely that the EW3 project would implement noise abatement in this area. For this reason, IDOT and FHWA intend to solicit viewpoints of benefited receptors in the area of Barrier O as part of the EW3 Project.

Table 4: Noise Impact Mitigation Summary

	Impacted Noise Receptors		Minimum Barrier Cost	Total Cost per Benefited Receptor
	Moderate	Severe		
Impacts Before Mitigation	1,359	267		
Barrier G	33	30	\$1,174,181	\$18,638
Barrier H	16	35	\$650,850	\$12,762
Barrier M	18	38	\$1,091,049	\$19,483
Barrier N	0	20	\$539,250	\$26,963
Impacts Mitigated by Feasible and Reasonable Barriers	67	123	\$3,455,330	\$18,186
Barrier O	0	57	\$2,025,450	\$35,534
Impacts Mitigated by Additional Barriers	0	57	\$2,025,450	\$35,534
Total Impacts Mitigated with All Recommended Noise Barriers	67	180	\$5,480,780	\$22,189

Even with the implementation of an additional barrier (Barrier O), there would still be unmitigated moderate and severe noise impacts which could result in disproportionately high and adverse impacts on minority and low-income populations. Due to this consideration, additional measures to provide offsetting benefits are considered for implementation as part of the project. The evaluation of these additional measures is discussed in the following sections.

4.2. Funding of Quiet Zone Project

As noted above, train horn noise was cited as a community concern by both CAG members and attendees at public meetings, and was included in an addendum to the Problem Statement for the 75th Street CIP. As a result of ongoing coordination between the 75th Street CIP study team and the CREATE Partners, CDOT evaluated the feasibility of Quiet Zones in several corridors within the 75th Street CIP study area. These studies indicated that a Quiet Zone was feasible in only one corridor, along the UP Villa Grove subdivision from 95th Street to 130th Street. A portion of this corridor, from 95th



Street to 101st Street, overlaps with the 75th Street CIP study area. CDOT continues to pursue a quiet zone along the UP Villa Grove subdivision. The implementation of this quiet zone would benefit 175 moderately impacted residents in this corridor by reducing the need for trains to sound their horns. (Noise studies for the 75th Street CIP indicated that horn noise was the principal cause of train noise impacts in this area.) Quiet Zones were found to not be feasible in other corridors.

If the City's ongoing study results in a recommendation for implementation and approval is granted by the Federal Railroad Administration, Jacobs recommends that the 75th St CIP commit to funding the capital costs of Quiet Zone implementation by the City of Chicago for the three crossings within the study area: 95th Street, 97th Street, and 101st Street. Based on recent preliminary cost estimates developed by CDOT's consultant, the total capital costs for these three crossings are estimated to be approximately \$590,000. Costs for implementation of the other crossings within the Quiet Zone but outside the 75th Street CIP study area are estimated at approximately \$2.2 million, and would have to be provided by the City or other parties.

4.3. Noise Insulation and Central Air Conditioning for Schools

Noise was cited as a community concern by the CAG and attendees at public meetings. Noise was included in the Problem Statement for the 75th Street CIP. Interior noise impacts are predicted at seven institutional facilities (three schools and four religious facilities) in areas where noise barriers were not found to be cost-effective based on the CREATE N&V methodology. Thirty-one interior receptors have been identified within the screening area, but only seven of those would be impacted. Three receptors - two religious facilities and a school - would benefit from the implementation of a Quiet Zone along the Union Pacific railroad tracks as discussed above. Two other religious facilities appear to have air conditioning although they have operable windows. If the two religious facilities close the windows, and use the air conditioning (when appropriate) during times of noise-sensitive use, the noise impacts would be eliminated. The remaining two facilities are schools with operable windows and no central air-conditioning, as described below:

- Parker Elementary Community Academy and Amandla Charter School share a building along the west side of the Metra Rock Island District Line at 6800 S. Stewart Avenue. The schools have 27 classrooms that would benefit from noise reductions associated with Barrier K, but the barrier was not found to be cost-effective (cost of \$1,280,000 to benefit 27 receptors). In lieu of the noise barrier, Jacobs evaluated the installation of noise insulation and central air conditioning for this facility as part of the 75th Street CIP. The overall cost could be on the order of \$3 million.
- Ashburn Community Elementary School (8300 S. St. Louis Avenue) is located southeast of the Metra SouthWest Service Line and NS railroad tracks. Although near the area that could be benefited by Barrier A, which was not found to be cost-effective (cost of \$2.4 million to benefit 27 receptors), since there are three grade crossings so close in proximity to the school, Barrier A would not mitigate the noise at the school. Jacobs also evaluated the installation of noise insulation and central air conditioning for this facility as part of the 75th Street CIP. The overall costs are estimated to be on the order of \$3 million.

In both cases, providing noise insulation and air conditioning to the schools would provide some targeted noise abatement benefits. Classrooms and other indoor spaces would receive relief from railway and other noise impacts, but outdoor areas and other receptors would not receive any benefit. For both cases, it was determined that the costs to implement these measures substantially exceeded the benefits to be obtained, and Jacobs does not recommend their implementation.



4.4. Bus Stop Improvements

Several CAG members cited a need for improved transit service in the project study area. Options to enhance existing transit services in the study area were identified. These improvements would be coordinated with the appropriate agencies, including CDOT and the Chicago Transit Authority (CTA), and with local officials and stakeholders during the completion of Phase I (preliminary) design for the 75th Street CIP. Funding for implementation of the recommended improvements would then be included as a commitment of the 75th Street CIP, with implementation and long-term maintenance to be provided by the specific lead agency (i.e., CDOT or CTA).

Upgrading existing bus stops within the study area would be one such improvement that would contribute to improved transit facilities within the community. Jacobs recommends upgrading the 20 bus stops within walking distance (i.e., one-half mile) of the project limits with the highest average weekday boardings by installing bus shelters (where they are feasible and do not already exist) and by installing electronic signs with real-time bus arrival information. Table 5 shows the 20 bus stops in the study area (rail stations excluded) with the highest number of daily boardings according to recent CTA ridership data, the CTA bus routes serving those stops, and whether or not a shelter is present.

Table 5: Bus Ridership at Study Area Intersections

Bus Stop Location	Bus Routes Served	Average Weekday Boardings	Existing Shelter?
79th & Western Terminal, Westbound, Terminal	49, 79	2,617	No
95th Street & Wentworth, Westbound, Far Side	N9,95W,108,112	1,320	Yes
Halsted & 79th Street, Northbound, Far Side	8	1,215	No
Western & 69th Street, Northbound, Near Side	49,67	802	Yes
79th Street & Halsted, Eastbound, Near Side	79	778	No
79th Street & Halsted, Westbound, Far Side	79	671	No
Ashland & 79th Street, Southbound, Near Side	9	643	Yes
63rd Street & Wentworth, Eastbound, Far Side	63	537	No
Halsted & 79th Street Terminal	8,8A	533	No
69th Street & Halsted, Eastbound, Near Side	67	441	No
Ashland & 74th Street, Northbound, Near Side	9	439	Yes
Halsted & 69th Street, Northbound, Far Side	8	434	Yes
79th Street & Vincennes, Westbound, Near Side	8A,24,79	393	Yes
74th Street & Ashland, Eastbound, Near Side	75	319	No
79th Street & Vincennes, Eastbound, Far Side	8A,79	317	No
Ashland & 74th Street, Southbound, Far Side	9	312	Yes
Halsted & 95th Street, Northbound, Near Side	8A,108	310	Yes
69th Street & Halsted, Westbound, Near Side	67	309	No
95th Street & Halsted, Eastbound, Far Side	N9,95W,112	290	Yes
Halsted & 74th Street, Northbound, Near Side	8	287	Yes
Source: CTA	Total Daily Boardings	12,967	



Based on the data in Table 5, 10 bus shelters would be provided at those stops not having an existing shelter and it is assumed that all 20 stops would need to be equipped with electronic displays showing real-time bus arrival information. Unit costs from FTA planning documents for Bus Rapid Transit² show that new bus shelters are estimated at \$20,000 each, and electronic display signs at \$10,000 each. The total cost would therefore be \$400,000, including \$200,000 for the bus shelters benefiting 7,737 average riders per weekday and \$200,000 for the electronic display signs benefiting 12,967 average daily riders.

4.5. Sidewalk Improvements

The 75th Street CIP could enhance the community and improve local mobility on sidewalks connecting to schools, community centers, and churches by providing funding to the City for implementation of planned sidewalk improvements. This would be in addition to the proposed improvements to sidewalks, ADA ramps, and crosswalks already included in the project as part of the improvements to viaducts.

One specific area that could be investigated for such improvements is the vicinity of the proposed closure of the Union Avenue viaduct, where some residents will be faced with longer walk distances to some destinations now accessed using Union Avenue. The number of other locations where this improvement could be considered, and the distance around each school or other neighborhood facility where sidewalk improvements would be constructed allows a great range in the potential cost of this type of mobility improvement. These details would be determined in coordination with the community and the City of Chicago. The cost of sidewalk reconstruction, per the Chicago Department of Transportation, is \$75,000 per block for improvements on both sides of the street.

It is recommended that this measure be discussed with local officials and the CAGs, and incorporated into the project to provide offsetting benefits, if appropriate and desired by the local stakeholders.

4.6. Bicycle Improvements

The community context audit for the project identified a desire for more bike lanes in the project area, particularly connecting east towards the Lakefront Trail. Jacobs recommends that the project enhance the community by providing funding to the City of Chicago to construct two elements of the City of Chicago's Streets for Cycling Plan 2020. The Streets for Cycling Plan 2020 identifies a 645 mile network of innovative bicycle facilities such as buffered bike lanes, protected bike lanes, and neighborhood greenways. The routes included in the Streets for Cycling Plan were identified in coordination with local community advisory groups, and through input received at public meetings and online webinars.

The first route recommended is the 6.2-mile long 76th Street "Crosstown Bike Route" from Damen Avenue to Rainbow Beach Park along the lakefront. Construction cost for this on-street bikeway is estimated at approximately \$700,000³.

Additionally, Jacobs recommends creating a connection to another trail, the Major Taylor Trail, by funding the construction of a 750-foot long off-street path through Dawes Park near the intersection of

² *Characteristics of Bus Rapid Transit for Decision-Making*, Federal Transit Administration, FTA-FL-26-7109-2009.1, February, 2009.

³ The CDOT Bicycle Program estimates the cost of buffer-protected and barrier-protected bike lanes at approximately \$100,000 to \$150,000 per mile. The \$700,000 estimate assumes a cost of \$100,000 per mile for the 6.2 mile route, rounded up to the nearest \$100,000.



Damen Avenue & 81st Street. This would enhance the local community by helping area residents take advantage of an existing recreational facility that is geographically close to their neighborhood, but currently difficult to access. Based on a cost of \$250,000 per mile for off-street paths⁴, the estimated cost for this bikeway is \$50,000. Total costs for the two recommended bicycle improvements would total approximately \$750,000.

4.7. Remnant and Vacant Parcel Improvements

Elected officials have expressed concern about the disposition of remnant land parcels left after the construction of the 75th Street CIP. The 75th Street CIP could identify potential uses for project remnant parcels that would enhance the surrounding community, such as community gardens or parks. The 75th Street CIP could work with the City of Chicago, local elected official(s) and the East CAG to evaluate financial feasibility and identify preferred uses for the 1.39 acres of remnant parcels just south of Hamilton Park. This program could also be used to improve other City-owned vacant properties across the study area. Improvements could range from basic clean-up and trash removal to special landscaping, irrigation and drainage improvements, and facilities to enhance neighborhood gardening. The 75th Street CIP, the community, and potentially other private partners could work together using the CSS process to design plans and identify parties that would be responsible for cost and long-term maintenance of the improved parcels, particularly since the Chicago Park District is reluctant to take on any further maintenance responsibilities due to budget constraints. The project could also help some homeowners use the City of Chicago's Adjacent Neighbors Land Acquisition Program to purchase remnant parcels left after construction⁵. Costs for these improvements could vary widely based on community input. Considering that this initiative could involve professional design, program administration, and construction costs, a cost of \$1,500,000 is estimated. The actual level of effort would be developed in coordination with the CAGs through the CSS process.

4.8. Streetscape Improvements

The 75th Street CIP could make an early commitment to develop a program to enhance the streetscape in the project study area by adding trees, benches, wayfinding, decorative pavement at prominent crosswalks, bike racks, and other amenities. These aesthetic items are relatively minor in cost, but have developed community identity and generated significant community pride. Examples of outreach between a major land use (McCormick Place) and the Bronzeville community can be seen along Dr. Martin Luther King Jr. Drive.

Jacobs recommends that the project offer to provide funding for streetscape planning and design to CDOT's Streetscape and Sustainable Design Program (with subsequent construction/implementation to be funded by the City). At present CDOT has no streetscape projects planned within the 75th Street CIP study area, but there may be several viable locations, such as Halsted Street from 75th Street to 81st Street, or Racine Avenue from 74th Street to 81st Street. Jacobs recommends further coordination with CDOT, local officials, and the CAGs to determine the viability of such a program. Based on recent work with the Chicago Department of Transportation, the estimated costs for basic streetscape planning and design are approximately \$400,000 per mile. It is recommended that the 75th Street CIP provide funding for the planning and design of three miles of study area streets, at an estimated cost of

⁴ http://www.bicyclinginfo.org/bikesafe/countermeasure.cfm?CM_NUM=31

⁵ http://www.cityofchicago.org/city/en/depts/dcd/supp_info/adjacent_neighborslandacquisitionprogramanlap.html



\$1,200,000, if further coordination indicates that construction of the projects can be incorporated into and funded by CDOT's Streetscape program.

4.9. Maintenance of Railroad Property and Infrastructure

During meetings with the CAGs, they identified a number of concerns in addition to the transportation problems. One of these concerns, which were raised at every CAG and public meeting and most meetings with elected officials and other community groups, was about the poor management of railroad right-of-ways. The public cited dumping, badly-maintained fencing, poor viaduct lighting, overgrown vegetation and rodents as examples, and stressed the need for beautification.

This public concern will be partially addressed by the viaduct improvements, but many sites where people had issues with railroad property were not near the viaducts. Residents are encouraged to call 311 to report maintenance needs on railroad property and to call 911 to report emergencies. The City of Chicago Department of Streets and Sanitation has a staff member who coordinates with railroads to address the reported issues. The Study Team has provided residents and other stakeholders with a one-page sheet containing contact information for the City of Chicago and the railroads in the study area, as well as small refrigerator magnets reminding residents to call 311 or 911 as appropriate. The contact information sheet is also posted on the 75th Street CIP project website. Landscaping measures discussed in Section 4.7, above, could be developed and refined as part of the Phase II CSS process, and would provide some visual screening benefits for the affected neighborhoods.

4.10. Job Training Programs

The 75th Street CIP could consider the following additional measures at the project level:

- a. Job training: The 75th Street CIP could commit to providing some funding existing programs to help interested individuals obtain the required qualifications for these jobs. The 75th Street CIP could utilize existing resources such as IDOT's Resource Center, the IDOT Highway Construction Careers Training Program to fulfill this commitment. If needed, this non-traditional approach could be funded under a local grant or with state-only funds.
- b. Educational programs: The 75th Street CIP or the CREATE Partners can make commitments for donations, volunteer service, or other assistance to Science, Technology, Engineering and Math (STEM) curriculum in area elementary schools. This program could bring project engineers into classrooms near the project to talk about their work on various aspects of the project to increase the interest of students in engineering and technical fields. This could be done at little or no direct cost to the project.
- c. Young workers: Consideration was given to possible measures to develop, fund, and manage a program to hire local youths during the summer for landscaping maintenance. Several people at the preliminary CAG meetings pointed out that hiring youth to do this work would achieve two goals: helping youth find work and improving the appearance of railroad property. Due to restrictions associated with the federal aid transportation programs that will fund construction of the project, such a program was not considered viable, and was not considered further.

For purposes of providing an estimate for the overall job training mitigation program, Jacobs assumes that \$750,000 of project funding could be devoted to these efforts.



4.11. Mortgage Assistance

Some property owners were concerned about the value they would receive for their property, especially if they owe more money on their mortgage than the fair market value of their property (i.e., negative equity). The 75th Street CIP could commit to assisting some residential property owners that would be displaced because of the project to settle their mortgage balance. This commitment would be funded by project funds and opportunities to assist home owners would be evaluated on a case-by-case basis when appropriately justified. While no information is available on outstanding mortgages, with fewer than 20 residential parcels to be acquired, only some of which would be mortgaged, with balances likely less than \$100,000, costs for this commitment would likely be less than \$800,000.

4.12 Summary of Other Measures to Provide Additional Mitigation and Offsetting Benefits

The specific measures presented above provide a wide range of possible steps to offset the impacts to the affected communities within the 75th Street CIP study area. Each of these measures will require further discussion and development with the CREATE Partners, the involved agencies, the CAGs, local officials, and residents of the study area. In cases where the project would provide funding to the City of Chicago or its sister agencies for implementation, this coordination would become the responsibility of the lead agency. In cases where the commitment is the responsibility of IDOT, FHWA and the railroads, this coordination may occur prior to the publication of the Final EIS or during Phase II of the project. As input is obtained, greater or lesser emphasis may be placed on any of these measures, with resulting changes to overall estimated costs for each measure. Table 6 presents a summary of the mitigation and offsetting benefits recommended under existing IDOT/CREATE Program policies and the further measures under consideration as additional mitigation and offsetting benefits.

Table 6: Summary of Recommended Mitigation and Offsetting Benefits

Mitigation Measure/ Offsetting Benefit	Project Funding	Potential Implementing Agency
Existing IDOT/CREATE Program Policies		
Noise Barriers (Feasible and Reasonable)	\$3,455,330	IDOT/FHWA
Vibration Mitigation	\$0	AAR
Visual Impact Screening	\$1,806,500	IDOT/FHWA
Viaduct Improvements	\$11,000,000	IDOT/FHWA/CDOT
Subtotal	\$16,261,830	
Additional Mitigation and Offsetting Benefits Under Consideration		
Additional Noise Barriers	\$2,025,450	IDOT/FHWA
Quiet Zone Funding	\$590,000	CDOT
Bus Stop Improvements	\$400,000	Chicago Transit Authority
Sidewalk Improvements	To be determined	City of Chicago
Bicycle Improvements	\$750,000	CDOT
Remnant Parcel Improvements	\$1,500,000	City of Chicago
Streetscape Improvements	\$1,200,000	CDOT
Maintenance of Railroad Property	\$0	AAR/City of Chicago
Job Training Programs	\$750,000	IDOT/FHWA/AAR
Mortgage Assistance	\$800,000	IDOT/FHWA
Subtotal	\$8,015,450	
Total Recommended Mitigation Cost	\$24,277,280	



5. Next Steps

These mitigation recommendations and additional measures under consideration have been reviewed by FHWA, IDOT, CDOT, as well as the AAR and its member railroads. These additional measures were also presented to the local elected officials, the Community Advisory Groups, and other stakeholders through the ongoing CSS process before the publication of the Draft EIS document. Feedback received to date from these groups has been incorporated to the extent possible. The recommendations and other measures under consideration will be incorporated into the Draft EIS document prior to publication, with appropriate language regarding the current status of each of the recommendations. Upon receipt of comments on the Draft EIS, the study team will further refine the mitigation recommendations, and continue to work with elected officials, the CAGs and other stakeholders to arrive at a consensus on the final definition of the measures to be incorporated into the project. Final commitments from the NEPA process will be incorporated into the FEIS document and ROD. Where necessary, interagency agreements will be developed and executed to ensure implementation of all selected mitigation measures and offsetting benefits. Although development of the interagency agreements may continue into Phase II (final), IDOT and FHWA will require general concurrence from each of the CREATE partners in the form of environmental commitments in the final NEPA document to issue Phase I Design Approval. During Phase II (final) design, following completion of the NEPA process, the CSS program will continue to work with the local stakeholders to refine details of the commitments which will be the responsibility of FHWA, IDOT, the CREATE rail partners, or other potential implementing agencies as listed in Table 6.



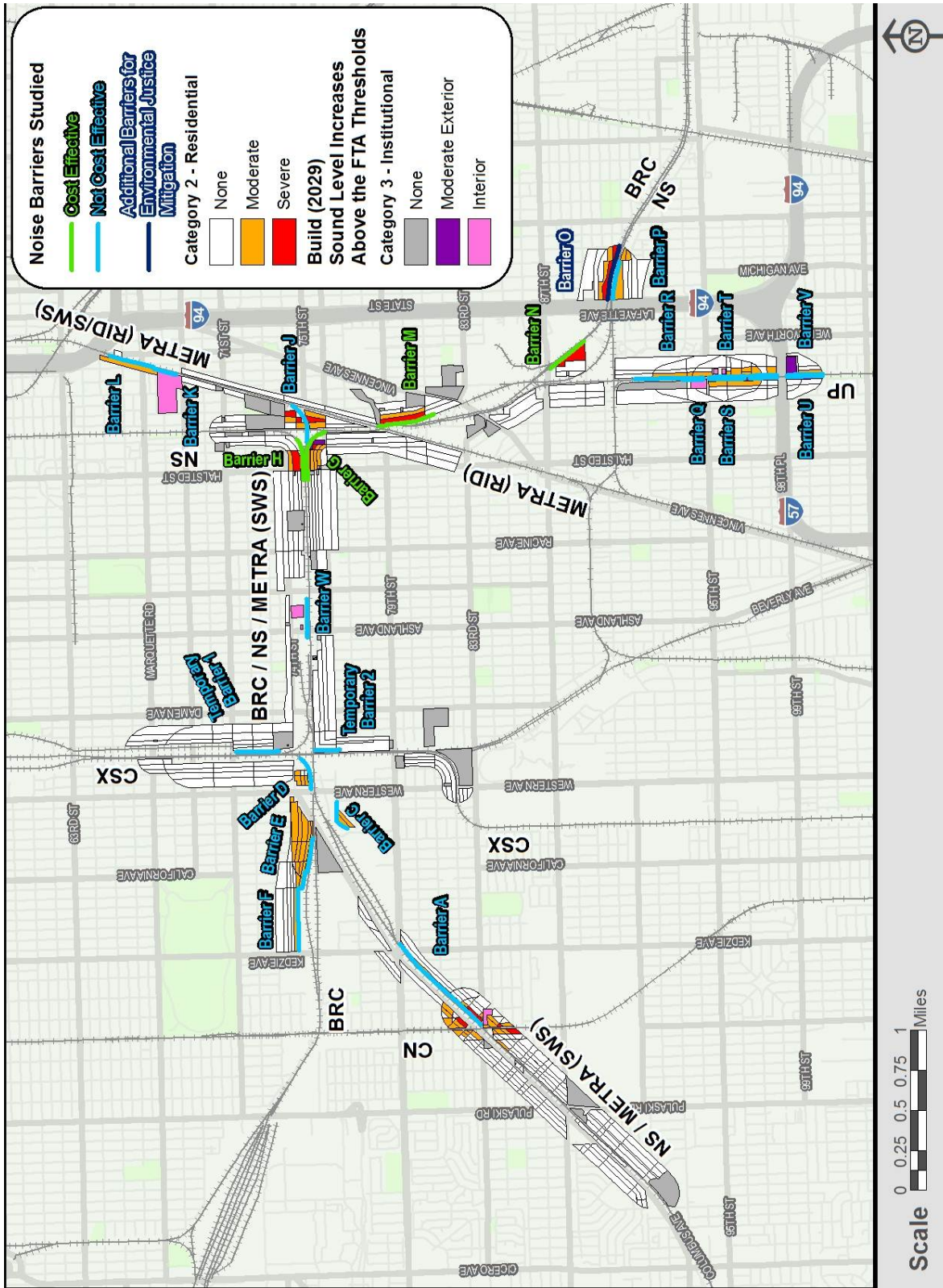
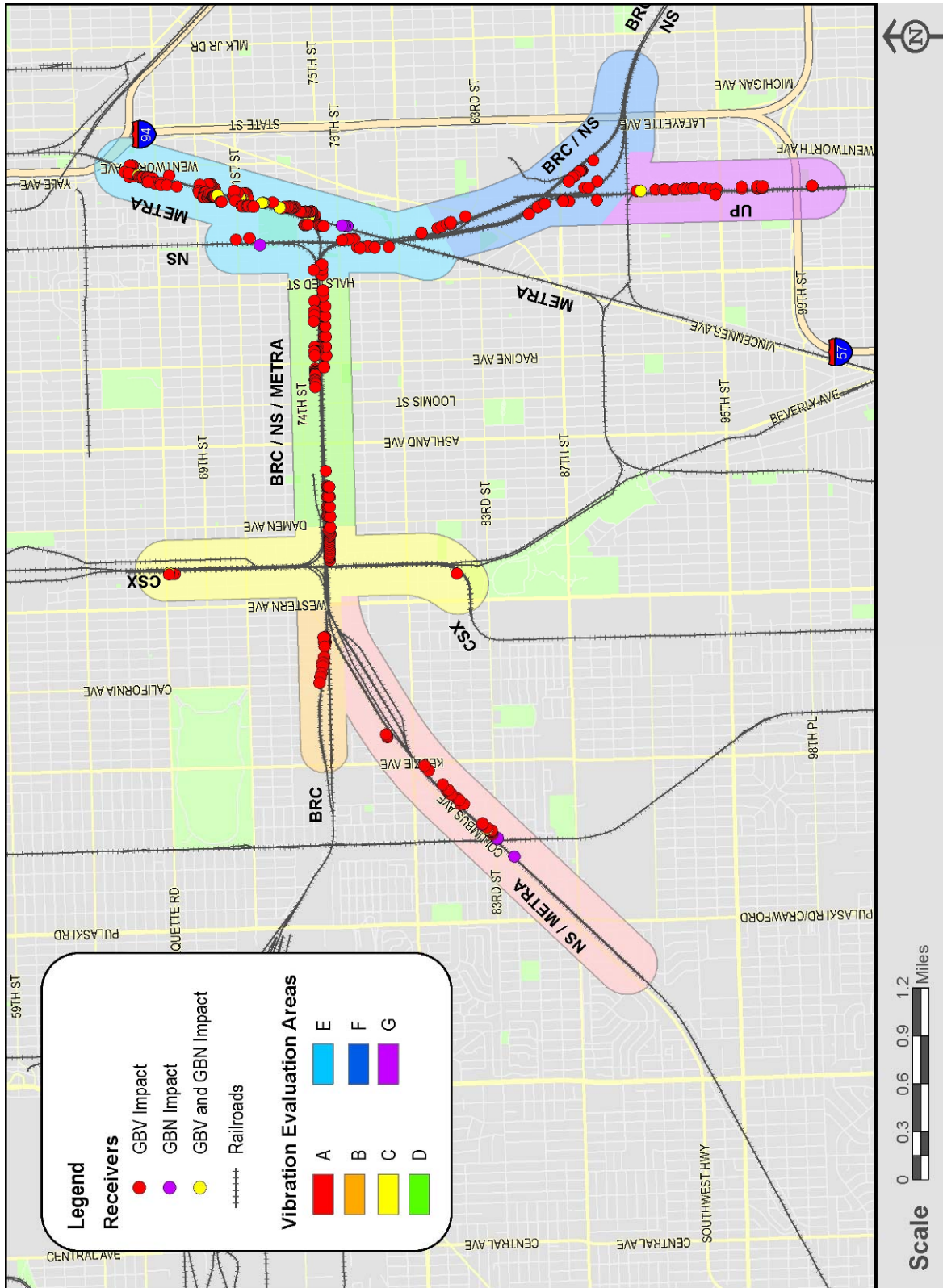


Figure 1: Noise Impacts and Evaluated Barriers





Source: Harris Miller Miller & Hanson Inc., 2011

Figure 2: Build Alternative Vibration Impact Locations





Figure 3: Parcel Remnants in Area south of Hamilton Park

