DRAFT
Alternatives Analysis

Chicago Street Widening and Reconstruction
Hammond, Lake County, Indiana
Des. No. 1297017

City of Hammond
5925 Calumet Avenue
Hammond, Indiana 46320

Indiana Department of Transportation
Office of Environmental Services
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100 North Senate Avenue
Indianapolis, Indiana 46204

Federal Highway Administration
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INDOT Approval

_________________________________________      _____________________________
Ken McMullen, Administrator                   Date

FHWA Approval

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Karen Bobo, Assistant Division Administrator   Date

April 29, 2013

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Table of Contents

Purpose and Need for the Proposed Action............................................................................................................1
  Purpose Statement:.............................................................................................................................................1
  Need Elements: ...................................................................................................................................................1
    Safety...............................................................................................................................................................1
    Congestion Mitigation.....................................................................................................................................1
    Mobility ...........................................................................................................................................................3
    Deteriorating Infrastructure ............................................................................................................................3
    Develop an east-west corridor ........................................................................................................................4

Existing Conditions and Project Description ........................................................................................................7

Description of Alternatives ......................................................................................................................................8
  No Build Alternative ............................................................................................................................................6
  Other Corridor Alternatives .................................................................................................................................8
    Corridor Alternative 1: I-80-94 ........................................................................................................................7
    Corridor Alternative 2: I-90 .............................................................................................................................7
  Chicago Street (Former SR 312) Corridor ...........................................................................................................8
    Segment 1: Gostlin Street from South Brainard Avenue to Sheffield Avenue................................................9
    Segment 2: Sheffield Avenue from Gostlin St. to Chicago St. and Chicago St. to Hohman Avenue .......... 15
    Segment 3: Chicago Street from Hohman Avenue to Baltimore Avenue .................................................... 18
    Segment 4: Chicago Street from Calumet Avenue to White Oak Avenue .................................................. 20
    Bridge Option between Brainard Avenue and Chicago Street ................................................................. 21

Appendices:

  Appendix 1 – Mapping
Purpose and Need for the Proposed Action

Purpose Statement:
The purpose of this proposed action is to improve safety, reduce congestion, enhance mobility, address the deteriorating infrastructure, and create a unified east-west corridor along Chicago Street (former SR 312) between South Brainard Avenue at the Indiana border with Illinois and White Oak Avenue at the city of Hammond’s border with the city of East Chicago.

Need Elements:
Safety
Safety issues along the corridor include substandard horizontal curvature, substandard intersection turning radii, lack of designated turning lanes, unrestricted access, and poorly defined lane configurations. Between 2010 and 2012, the 2.1 mile long project corridor has averaged nearly 80 crashes a year or almost one crash every 4.5 days, with roughly 20-percent of these crashes resulting in either an injury or fatality and the remaining 80 percent resulting in property damage. Approximately 29-percent of the crashes, annually, were rear end collisions which are often the result of vehicles stopping in the travel lane due to congestion at intersections or to turn into one of the numerous access points which line the project corridor.

In addition, Chicago Street is a designated truck route through Hammond with approximately 2,700 commercial vehicles (20-percent of the Annual Average Daily Traffic (AADT)) traveling this route daily. Given the existing variable lane widths; poor roadway geometry at Gostlin Street near the state line; the tight turning radius at the intersection of Gostlin Street and Sheffield Avenue; and the 90 degree turn and three-way stop at the intersection of Sheffield Avenue and Chicago Street, commercial vehicles maneuvering this corridor frequently experience difficulty. Vehicles, particularly semi-trailers, depart the pavement at these turns, traversing the sidewalks and residential property. These conditions result in the loss of loads; cause damage to curbs, sidewalks, and private property; and create a safety concern for pedestrians and bicyclist along the project corridor.

Congestion Mitigation
As part of the Northwestern Indiana Regional Planning Commission’s (NIRPC) Congestion Management Process (CMP), all regionally significant projects shall be evaluated for their potential impact on congestion relief prior to being amended into the Comprehensive Regional Plan. The goal of the CMP is to first relieve congestion through the implementation of demand management strategies; then growth management strategies; and finally transportation system strategies. If all recommended alternate strategies prove incapable of relieving congestion within the corridor, then capacity expansion may be considered. In September 2011, the proposed corridor was evaluated by NIRPC’s Congestion Management Committee (CMC), and found to be congested.

The resulting analysis identified traffic congestion issues at a number of locations along Chicago Street. Congestion along the corridor is a result of travel lane reduction, lack of designated left-turn lanes at certain intersections, and the operational level of service where the major traffic movement makes a 90-degree turn. As indicated above, commercial vehicle traffic accounts for approximately 20 percent of the traffic along the project corridor. Large semi-trucks have a difficult time maneuvering turns along the project corridor, especially at the intersection of Gostlin Street and Sheffield Avenue as well as the intersection of Sheffield Avenue and Chicago Street. Semi-trucks frequently encroach on the opposing travel lane and/or adjacent sidewalk through these turns and occasionally strike roadside barriers. The inability for large vehicles to easily maneuver through these intersections causes both traffic delays and safety concerns.
Another cause of congestion is the reduction of travel lanes along the Chicago Street corridor. Brainard Avenue approaching the state line from the west is comprised of two lanes in each direction; which is reduced to one lane in each direction at the state line. Similarly, Chicago Street approaching Calumet Avenue, from the east, is comprised of two lanes in each direction. West of Calumet Avenue, Chicago Street; Sheffield Avenue; and Gostlin Street are comprised of one lane in each direction. The aforementioned lane reductions result in a decrease in corridor capacity between Brainard Avenue and Calumet Avenue.

The NIRPC Congestion Management Evaluation Form for Capacity Adding TIP Projects for the Chicago Avenue Reconstruction and Widening Project indicates congestion and reduced level of service throughout the project corridor. Depicted below, in Table 1, is a summary of the 2008 traffic conditions along the Chicago Street corridor utilized in the Congestion Management Evaluation form.

Table 1. NIRPC’s Congestion Management Evaluation Form

<table>
<thead>
<tr>
<th></th>
<th>Level of Service</th>
</tr>
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<tbody>
<tr>
<td>Project length</td>
<td>2.0 miles</td>
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<tr>
<td>Total Volume /Capacity (V/C) Ratio for Corridor</td>
<td>.57 C</td>
</tr>
<tr>
<td>AM V/C Ratio</td>
<td>.64 C</td>
</tr>
<tr>
<td>PM V/C Ratio</td>
<td>.58 C</td>
</tr>
<tr>
<td>OP V/C Ratio</td>
<td>.50 C</td>
</tr>
<tr>
<td>Projected Total V/C Ratio for 2040</td>
<td>1.03 F</td>
</tr>
<tr>
<td>Projected AM V/C Ratio for 2040</td>
<td>1.02 F</td>
</tr>
<tr>
<td>Projected PM V/C Ratio for 2040</td>
<td>1.01 F</td>
</tr>
<tr>
<td>Projected OP V/C Ratio for 2040</td>
<td>1.05 F</td>
</tr>
<tr>
<td>Average Speed/Posted Speed 2008</td>
<td>8.18/35 MPH = 23%</td>
</tr>
<tr>
<td>Average Speed/Posted Speed 2040</td>
<td>13.76/35 MPH= 39%</td>
</tr>
<tr>
<td>Crash Rate (2007)</td>
<td>40.12 F</td>
</tr>
<tr>
<td>Fatalities (2005-2009)</td>
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</tr>
<tr>
<td>Total VMT Change for Network</td>
<td>n/a</td>
</tr>
<tr>
<td>Total Level of Service</td>
<td>D</td>
</tr>
</tbody>
</table>

Table 2 provides a summary of the strategies and resulting service impacts on the service as considered by the CMP. The primary objective of the CMP is to identify the most feasible solution to reduce congestion and single-occupancy vehicle travel that is most feasible. Potential solutions which were evaluated both singularly and in combination include demand management, transportation management/access management, intelligent transportation systems, transit, growth management, and other strategies. Demand management strategies evaluated include: carpool promotion and school pool promotion. Transportation management/access management strategies evaluated include: courtesy patrols, roadway signage improvements, intersection turn lanes, roundabouts, new stop signs, sidewalks, and lane widening. Intelligent transportation systems evaluated include: new traffic signals, traffic signal timing and coordination, and traffic signal modernization. Transit strategies evaluated include expansion of existing transit systems. Growth management strategies evaluated include: promotion of more transit oriented development, promotion of more cargo oriented development, and improvements to land use patterns. Additionally traffic calming techniques and complete streets strategies were evaluated. As indicated below in Table 2, a combination of added travel lanes, demand management, and roadway improvements yields the greatest level of service improvement.
Demand management strategies are intended to reduce the amount of single-occupancy vehicle travelers. These strategies include promoting telecommuting, flexible work schedules, carpool, vanpool, and school transportation pooling along with incentivizing the utilization of alternative travel modes. While implementing these strategies will assist somewhat in reducing congestion and improving the level of service throughout the project corridor, these strategies alone will not be sufficient to raise the level of service of the corridor to an acceptable level (LOS C or above). To achieve an optimal level of service, NIRPC recommends that demand management strategies be incorporated in concert with the addition of travel lanes and other corridor improvements such as roadway signage improvements and roundabouts.

### Mobility

The vision for Northwest Indiana as indicated in NIRPC’s *2040 Comprehensive Regional Plan: A Vision for Northwest Indiana* (CRP) is one focused on new growth and development in existing core urban areas, where infrastructure and urban service are readily available. Increasing the mobility, accessibility, and transportation options for people and freight was identified as one of the primary transportation goals in the CRP. The objectives of this goal, as they relate to freight mobility, include the following: improving freight facilities connecting the region to national and global markets, reducing congestion on major freight routes, and integrating local, regional, and national transportation systems to facilitate the movement of freight between modes. The Plan further identifies the need for a direct route between industrial facilities located in Illinois and Indiana. As such the planned future growth of the former SR 312 corridor is a primary focus area and is expected to experience significant growth in the future.

Improving freight mobility through the project corridor is intended to reduce the negative impacts associated with freight movement, including traffic congestion, delays, safety concerns, and air quality issue; while ensuring the safety of the region’s residents and the livability of the community. The proposed project would assist NIRPC in meeting these objectives by improving this major east-west truck route to provide for a more efficient flow of freight through the project area to and from industrial and manufacturing facilities located both to the east of the project study area in Hammond, East Chicago, and Gary; as well as, to the west of the project study area in Illinois.

Traffic data collected by American Structurepoint is included in Table 3 and identifies the AADT for the major routes within the project area. Table 3 includes the vehicles per day (VPD) for each roadway segment for both 2012 and design year of 2034. The VPD for the design year of 2034 was calculated based upon a compound annual growth rate of 2.8 percent. Approximately 20 percent of the AADT along the corridor is commercial vehicle traffic.

### Table 2. NIRPC Transportation Strategies to Improve LOS

<table>
<thead>
<tr>
<th>LOS 2008</th>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS with Demand Management</td>
<td>D</td>
</tr>
<tr>
<td>LOS with Demand Management &amp; Improvements</td>
<td>C</td>
</tr>
<tr>
<td>LOS with Demand Management &amp; Added Travel Lanes</td>
<td>B</td>
</tr>
<tr>
<td>LOS with Added Travel Lanes, Demand Management, and Improvements</td>
<td>A</td>
</tr>
</tbody>
</table>

Demand management strategies are intended to reduce the amount of single-occupancy vehicle travelers. These strategies include promoting telecommuting, flexible work schedules, carpool, vanpool, and school transportation pooling along with incentivizing the utilization of alternative travel modes. While implementing these strategies will assist somewhat in reducing congestion and improving the level of service throughout the project corridor, these strategies alone will not be sufficient to raise the level of service of the corridor to an acceptable level (LOS C or above). To achieve an optimal level of service, NIRPC recommends that demand management strategies be incorporated in concert with the addition of travel lanes and other corridor improvements such as roadway signage improvements and roundabouts.

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### Table 3. Current and Projected AADT within Project Area

<table>
<thead>
<tr>
<th>Location</th>
<th>2012 VDP</th>
<th>2034 VPD*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gostlin Street <em>(between Brainard Avenue and Sheffield Avenue)</em></td>
<td>9,040 (1,808)</td>
<td>16,600 (3,320)</td>
</tr>
<tr>
<td>Sheffield Avenue <em>(between Gostlin Street and Chicago Street)</em></td>
<td>3,490 (698)</td>
<td>6,410 (1,282)</td>
</tr>
<tr>
<td>Chicago Street <em>(between Sheffield Avenue and Calumet Avenue)</em></td>
<td>8,110 (1,622)</td>
<td>14,890 (2,978)</td>
</tr>
<tr>
<td>Chicago Street <em>(between Calumet Avenue and White Oak Avenue)</em></td>
<td>13,680 (2,736)</td>
<td>25,120 (5,024)</td>
</tr>
</tbody>
</table>

*2034 VPD is based upon a compound annual growth rate of 2.8 percent.

(xx) calculated volume of truck traffic/20 percent of AADT

### Deteriorating Infrastructure

The deteriorating roadway infrastructure is a result of the age of the facility and traffic volumes along the corridor associated with its status as an arterial roadway. The existing asphalt pavement is severely deteriorated with cracking, including numerous locations of severe transverse cracking, and block and edge cracking with patching visible throughout the entire corridor. The pavement rating of “poor” or “structural improvements required” was assigned based on Pavement Surface Evaluation and Rating (PASER) Manual (Transportation Information Center, 2002). Curbing along the corridor has been significantly deteriorated due to numerous resurfacings and being struck by vehicles both making tight radius turns and parallel parking in unmarked areas along the side of the roadway. Sidewalks are similarly deteriorated due to age and vehicles running wide and going up on the sidewalks further contributing to their deterioration. Also, many sidewalks directly line the roadway and as such are often impacted by vehicles along the roadway.

The existing 15- to 72-inch combined storm and sanitary sewer is in poor condition and has exceeded its expected service life. The sewers through the project area are mostly brick sewers and, according to the Superintendent of the Hammond Sewer District in a letter dated January 9, 2013, are “in critical condition and could collapse at any time.”

### Develop an east-west corridor

Currently there is no other east-west corridor in the vicinity of the project corridor, particularly for commercial vehicle traffic, and there is the need for maintenance of an east-west corridor that connects the industrial areas which lie west of the project area with the manufacturing and commercial areas which lie east of the project area. As previously indicated, commercial vehicle traffic accounts for approximately 20 percent of the traffic through the project corridor. This combination of large truck volumes coupled with the existing conditions results in congestion and unsafe conditions for other motorists, pedestrians, and bicyclists along the corridor due to the current conditions of the project corridor.

The project corridor is used by many facilities which depend upon reaching both ends of the corridor for the sale, manufacturing, and distribution of their goods and services. Among these is the Lear Corporation located at 1401 165th Street in Hammond that manufactures seats, which it then transports via truck along the project corridor to the Ford manufacturing plant located at 12600 South Torrance Avenue across the border in Illinois. Another example is Scrap Metal Services located at 13830 Brainard Avenue across the border in Burnham, Illinois which uses the project corridor to transport scrap metal from steel mills and petroleum facilities located in the cities of Hammond and East Chicago, Indiana. In addition, the following industrial sites are located along
or near the project corridor and utilize the designated truck route for transportation. These include Arrow Terminals – Kindermorgen, LZ Lamforder Company, Dakota System, American Sweetener Corporation, Lafarge North America, Chicago Enterprise Center, Calumet Lubricants, Calumet Container, Cargill, and Atlas Tube.

Furthermore, as the primary arterial for traffic entering the state of Indiana and the city of Hammond from Illinois and the primary arterial from traffic entering Hammond from East Chicago, the Chicago Street corridor (former SR 312) is a gateway into Hammond from both the east and the west. Currently, very little signage or infrastructure such as sidewalks, landscaping, and curb and gutters are in place along the corridor which would define a urban “complete” street. A secondary goal of the City of Hammond is to provide a gateway corridor into their community and to include appropriate sidewalks, curb and gutters, lighting, and other infrastructure which would make the corridor a complete street.

Existing Conditions and Project Description
The proposed action is located in Hammond, North Township, Lake County, Indiana and will involve roadway reconstruction and widening of the former SR 312 for approximately 2.1 miles as it crosses the city of Hammond between South Brainard Avenue at the Indiana border with Illinois and White Oak Avenue in the city of East Chicago. Former SR 312 coincided with three separate streets as it crossed through the project corridor: Gostlin Street, Sheffield Avenue, and Chicago Street. The project limits, from west to east, will extend from the intersection of Gostlin Street and Brainard Avenue at the Indiana border with Illinois and continue east along Gostlin Street to the intersection of Gostlin Street and Sheffield Avenue. The project study area will then continue south along Sheffield Avenue to the intersection of Sheffield Avenue and Chicago Street where it will turn east along Chicago Street to reach its eastern terminus at the intersection of Chicago Street and White Oak Avenue.

Former SR 312 is classified as a Minor Arterial on Gostlin Street, between Brainard Avenue and Sheffield Avenue; on Sheffield Avenue, between Chicago Street and Gostlin Street; and on Chicago Street between Sheffield Avenue and Calumet Avenue. East of Calumet Avenue, Chicago Street (former SR 312) is classified as a Principal Arterial. The posted speed limit within the project limits is 35 mph. Located in Illinois, Brainard Avenue is a four lane Minor Arterial with a posted speed limit of 45 mph.

In 2009, the City of Hammond initiated discussions with the Indiana Department of Transportation regarding relinquishment of the SR 312 corridor to the city. The City requested relinquishment of this roadway due to the city’s desire to upgrade the project corridor to an urban gateway to the city and to utilize available funding for enhancement and beautification of the project corridor. The Indiana Department of Transportation relinquished SR 312 to the City of Hammond in 2011.

The project is located in an urban section of Hammond. The surrounding land use is a mix of residential, institutional, commercial, and light industrial, with many of the buildings abutting to the existing right-of-way line. Irving Park is a public-use facility containing athletic fields, open field grasslands, and trees, located south of Chicago Street between Columbia Avenue and the Indiana Toll Road.

CSX Transportation operates and maintains a double track at-grade crossing within the project limits, located approximately 690-feet north of the Chicago Street and Sheffield Avenue intersection. The Northern Indiana Commuter Transportation District (NICTD) crosses Chicago Street with an overpassing 3-span bridge, located approximately 500-feet east of the Chicago Street and Columbia Avenue intersection. Additionally, NICTD also crosses Sheffield Street with a double track at-grade crossing, located approximately 305-feet south of the Gostlin Street intersection. The Indiana Harbor Belt bisects Gostlin Street with a single track crossing, just west
of the Illinois/Indiana State Line. The Indiana Toll Road crosses Chicago Street with two overpassing 3-span bridges, located approximately 600-feet east of the Chicago Street and Columbia Avenue intersection.

Washington Irving Elementary School is located south of Chicago Street between Pine Avenue and Oak Avenue. Bishop Noll Institute is also located south of Chicago Street, between the Indiana Toll Road and White Oak Avenue.

From Brainard Avenue to Sheffield Avenue (0.37 mile), the existing roadway along Gostlin Street (former SR 312) consists of two (2) 20-foot travel lanes, one in each direction, with curb sporadically located along this corridor. West of Wabash Avenue, sidewalk is present on both sides of the roadway and offset approximately 12-feet behind the back of curb. Between Wabash Avenue and Sheffield Avenue, the sidewalk is located adjacent to the travel lane.

The existing roadway along Sheffield Avenue, between Chicago Street and Gostlin Street (0.25 mile), consists of two 17-foot travel lanes, one in each direction, with a 12-parking lane located adjacent to the northbound lane. No curb is present along this segment of roadway. Sidewalk is present on both sides of the roadway and is located adjacent to the travel lane.

The existing roadway along Chicago Street from Sheffield Avenue to Calumet Avenue (0.51 mile) consists of two (2) 12-foot travel lanes, one in each direction, with a 9-foot parking lane adjacent to both travel lanes. Curb is sporadic through this corridor. Sidewalk is present on both sides of the roadway, located adjacent to the parking lane.

The existing roadway along Chicago Street between Calumet Avenue and White Oak Avenue (0.95 mile) consists of four (4) 12-foot travel lanes, two in each direction, with a 9-foot wide unimproved shoulder. No curb is present along the majority of this segment of roadway. Curb is present at some intersections and along the south side of the roadway between I-90 and White Oak Avenue. Sidewalk is present on both sides of the roadway, adjacent to the shoulder. Adjacent residents often park their vehicles on the unimproved shoulder.

The existing storm water infrastructure consists of roadway inlets that lead to an enclosed storm sewer system, which outlets into the Grand Calumet River.

The proposed action was added to the Northwestern Indiana Regional Planning Commission’s (NIRPC’s) 2040 Comprehensive Regional Plan: A Vision for Northwest Indiana (CRP) in December 2011 as an amendment to the plan. In August 2012, the proposed action was amended into NIRPC’s Transportation Improvement Plan (TIP) for Lake, Porter, and LaPorte Counties, Indiana for 2012-2015.

**Description of Alternatives**
As the proposed project has been developed, several different alternatives have been investigated. Below is a summary of alternatives investigated.

**No Build Alternative**
This alternative would leave the existing corridor as it currently exists and would not include any safety improvements to the existing infrastructure. This alternative includes pavement reconstruction and/or resurfacing as appropriate to maintain a functional roadway. This alternative is feasible and would avoid impacts to environmental justice communities and other resources along the project corridor. However, this alternative would not be prudent as it does not meet the purpose and need for the proposed project. The geometrics of the existing roadway does not meet the current design standards resulting in continued safety
concerns. Additionally, this alternative does not address congestion management or enhancement of the east-west travel corridor through Hammond.

**Other Corridor Alternatives**

As part of the proposed project, several different east-west project corridors that could accommodate commercial vehicle traffic and connect Indiana to Illinois were reviewed. It should be noted that within Lake County, Indiana the designated heavy duty truck routes are SR 912 from 169th Street in Hammond north to Indiana Steel and the East Chicago Harbor in East Chicago; Chicago Street through Hammond from SR 912 East to Calumet Avenue; and Calumet Avenue through Hammond from Chicago Street north to US 41. As Chicago Street is one of three designated heavy truck routes in Lake County, only corridor alternatives that were part of the highway system were investigated, as these roadways could accommodate commercial vehicle and heavy truck traffic. Alternative corridors within the highway system include the following which are part of the northwest Indiana freight facilities as identified in the NIRPC Freight Study (2010).

Furthermore, there are numerous manmade and natural barriers limiting east-west travel in the vicinity of the project corridor. The Grand Calumet River runs south of the project area, limiting access to the south. West of the project area the Calumet River, Burnham Woods, Powderhorn Lake Forest Preserve, large industrial areas, and numerous rail lines limit access. Access north of the project area is again limited by large industrial facilities and Wolf Lake. These barriers essentially limit the project corridor as being the only existing route for commercial vehicles to travel between Hammond, East Chicago, and Gary Indiana and Burnham, Illinois

**Corridor Alternative 1: I-80-94**

I-80/94 is an interstate freeway that runs east-west across Lake County. This roadway is approximately 3.75 miles south of the Chicago Street corridor. According to the NIRPC CRP the I-80/94 corridor had a level of services of D and F in 2008 which is expected to continue. This roadway currently carries up to 35,000 commercial vehicles per day and is a major through road for freight. According to INDOT Average Daily Traffic and Commercial Vehicles Interactive data the average daily traffic on this roadway is greater than 90,000 vehicle per day.

I-80/94 extends west into Illinois and east across the northern part of Indiana. Traffic traveling from the East Chicago/Hammond border to the State Line/Hammond border which are the termini for the Chicago Street project would have to travel an additional 19.2 miles via SR 152, I-80/94, and Brainard Avenue instead of the 2.2 miles via the existing project corridor. It should also be noted that SR 152 is not part of the heavy truck route and therefore heavy trucks would have to travel even further taking SR 912, I-80-94, and Brainard Avenue adding an additional 1.5 miles.

This alternative is feasible; however, this alternative is not prudent as it does not meet the project purpose and need to improve safety and infrastructure along the existing project corridor. Additionally, this alternative does not address congestion management or enhancement of the east-west travel corridor through Hammond. Given the additional travel distances and travel times associated with this project corridor; area congestion and environmental impacts such as air quality would be anticipated to increase with this alternative.

**Corridor Alternative 2: I-90**

I-90 is an interstate toll road that extends east-west across the eastern portion of Lake County, Indiana and then turns north and extends north-south across Hammond, Indiana towards Chicago, Illinois. This roadway crosses the existing project corridor; however, there are no exits at Chicago Street. The closest existing exists
are at US 41 approximately 2 miles north of the project corridor and at SR 912 approximately 4.5 miles southeast for the project corridor. This roadway crosses into Illinois approximately 4.8 miles north of the existing project corridor.

According to the NIRPC CRP the I-90 corridor had a level of services of B or better in 2008 which decreases to D in 2040. According to INDOT Average Daily Traffic and Commercial Vehicles Interactive data the average daily traffic on this roadway ranges from 23,000 to 59,999 vehicles per day. Truck traffic along I-90 is generally less than 5 percent of the traffic volumes. Traffic traveling from the East Chicago/ Hammond border to the State Line/ Hammond border which are the termini for the Chicago Street project would have to travel over 20 additional miles along I-90 depending on which access to I-90 is utilized. Commercial traffic utilizing only truck routes could travel over 36 additional miles.

This alternative is feasible; however, this alternative is not prudent as it does not meet the project purpose and need to improve safety and infrastructure along the existing project corridor. Additionally, this alternative does not address congestion management or enhancement of the east-west travel corridor through Hammond as I-90 extends predominately northwest-southeast across Hammond. Given the additional travel distances and travel times associated with this project corridor; area congestion and environmental impacts such as air quality would be anticipated to increase with this alternative.

**Corridor Alternative 3: SR 912/US 41/US 12/US 20**

Several State and US roadways form the local roadway network crossing Lake County Indiana. These include SR 912, US 41, US 12, and US 20. SR 912 is a state freeway and extends north-south through Lake County from I-80 north to Indiana Steel and the East Chicago Harbor then extends west to US 41 in Hammond. It should be noted that currently the bridge structure carrying SR 912 over the Indiana Harbor Canal has been removed and traffic has been diverted onto local streets. The portion of SR 912 which extends east-west across Hammond is approximately 2 miles north of the project corridor. US 41 is a state roadway and extends north-south across Hammond along Calumet Avenue. This roadway crosses the project corridor. US 12 is a state roadway extending northwest-southeast across the Hammond lake shore and extending south to Columbus Street in East Chicago and extending west across Lake County rejoining with US 20 in Lake Station, Indiana. US 20 extends from Columbus Avenue in East Chicago south to Carrol Street in East Chicago and then extends east across Lake County Indiana. US 20 is the designated heavy truck route across most of northern Indiana Traffic traveling from the East Chicago/ Hammond border to the State Line/ Hammond border which are the termini for the Chicago Street project would have to travel over 20 additional miles depending on which route is utilized.

This alternative is feasible. This alternative is not prudent as it does not meet the project purpose and need to improve safety and infrastructure along the existing project corridor. Additionally, this alternative does not address congestion management or maintenance of the east-west travel corridor through Hammond as these roadways predominately extend northwest-southeast across Hammond. Given the additional travel distances and travel times associated with this project corridor; area congestion and environmental impacts such as air quality would be anticipated to increase with this alternative.

**Chicago Street (Former SR 312) Corridor**

The existing Chicago Street (former SR 312) corridor traverse three separate roadways including Gostlin Street, Sheffield Avenue, and Chicago Street as it extends through Hammond from South Brainard Avenue, on the Indiana border with Illinois, to White Oak Avenue, at the eastern limits of the City of Hammond. Various alternatives are being examined for each of these roadways along the project corridor and therefore the project is broken into four segments for study. These include the following.
Chicago Street Widening and Reconstruction
Designation Number: 1297017
Alternatives Analysis

- Segment 1: Gostlin Street from South Brainard Avenue to Sheffield Avenue
- Segment 2: Sheffield Avenue from Gostlin Street to Chicago Street and Chicago Street to Hohman Avenue
- Segment 3: Chicago Street from Hohman Avenue to Baltimore Avenue
- Segment 4: Chicago Street from Calumet Avenue to White Oak Avenue

All alternatives under evaluation propose to widen Gostlin Street from one lane in each direction to two lanes in direction between the project’s western terminus at Brainard Avenue and the intersection of Gostlin Street and Sheffield Avenue. In order to meet the city’s goal of having a gateway into Hammond, a center median would also be included along Gostlin Street. All alternatives would also modify the existing configuration along Sheffield Avenue keeping current configuration of one travel lane in each direction, while adding a continuous center left-turn lane. Finally, from its intersection with Hohman Avenue to its intersection with Baltimore Avenue, Chicago Street would be widened to two lanes in each direction. Chicago Street will also be widened at the intersections with Johnson Avenue and Dearborn Avenue to accommodate left-turn lanes. Proposed improvements throughout the corridor also include new pavement, curb and gutter, sidewalks, storm sewers, roadway lighting, and traffic signals.

Preliminary design alternatives have been prepared for the project corridor and are summarized below. Exhibits featuring these alternatives are also included in the Appendix. It should be noted that the alternative alignments prepared and anticipated impacts and property acquisition estimates are preliminary in nature.

**Segment 1: Gostlin Street from South Brainard Avenue to Sheffield Avenue**

Along Segment 1: Gostlin Street from South Brainard Avenue to Sheffield Avenue four separate alternatives are being evaluated and are summarized below. Each alternative evaluated along Segment 1 addresses safety issues at the existing curve at the state line and Gostlin Street, improves the existing roadway, and reconfigures the intersection of Gostlin Street and Sheffield Avenue.

Alternatives along Segment 1, beginning from west to east, would correct the horizontal alignment of the existing curve at the state line and Gostlin Street. This would improve the curve’s design speed from its existing 20 mph to a design speed of at least 40 mph and bring the curve up to the standards in the Indiana Design Manual for a low-speed urban street. Correcting the curve’s geometric deficiencies would both improve travel times within the corridor and improve safety by eliminating the need for vehicles travelling the corridor to slow excessively for this curve. Alternatives to correct this curve involve shifting the roadway either to the north or south of the existing alignment.

Gostlin Street between the state line and Sheffield Avenue would be widened from one travel lane in each direction to two travel lanes in each direction with a center median and turn lanes as appropriate. Proposed improvements would also include new pavement, curb and gutter, sidewalks, storm sewers, and roadway lighting.

Additionally, the intersection of Gostlin Street and Sheffield Avenue would be reconstructed to allow for the free flow of traffic through the project corridor. The free flow traffic would improve travel times through the corridor and would improve safety by eliminating the need for semi tractor trailers to either run up on the inside curbing or swing out into oncoming traffic when travelling eastbound on Gostlin Street to southbound on Sheffield Avenue.
1.1 On-alignment, shifted north, roundabout

The curve on Gostlin Street at the state line would be upgraded to a 40 mph design speed and turning radius resulting in a realignment to the north. The realignment of this curve would cut across two commercial properties located north of the roadway. Acquiring right-of-way from these two properties may require the total acquisition of each property depending on access and limitations to the property resulting from the proposed roadway. This alternative would likely limit access to these properties by eliminating partial access to these properties from Gostlin Street. Additionally, the higher rates of speed of vehicles along Gostlin Street would make ingress and egress from these establishments more difficult.

Gostlin Street between the state line and Sheffield Avenue would be widened from one travel lane in each direction to two travel lanes in each direction. Proposed improvements would include new pavement, curb and gutter, sidewalks, storm sewers, and roadway lighting. It is anticipated that this work would be conducted within the existing right-of-way. Improvements would be made to Wabash Avenue south of Gostlin Street to provide improved access to the alley behind the homes on the south side of Gostlin Street between the state line and Sheffield Avenue. Two residential parcels may be acquired for the intersection improvement of Gostlin Street and Dearborn Avenue.

The intersection of Gostlin Street and Sheffield Avenue would be reconstructed to include a one-lane roundabout. This roundabout would be located southwest of the existing intersection. This roundabout would eliminate the existing signalized intersection and would allow for the free flow of traffic through the project corridor. The free flow traffic would improve travel times through the corridor and would improve safety by eliminating the need for large semi trailers to either run up on the inside curbing or swing out into oncoming traffic when travelling eastbound on Gostlin Street to southbound on Sheffield Avenue.

The construction of the roundabout at this location would eliminate access to Sheffield Avenue from Brunswick Street. Because of this, Brunswick Street would be cut off west of its intersection with the Northern Indiana Commuter Transportation District (NICTD) South Shore rail line and a cul-de-sac would be created to provide room for vehicles to turn around. This would eliminate the railroad crossing of Brunswick Street and the NICTD South Shore line, which would improve safety particularly as this crossing was not at the preferred 90 degree angle. The construction of the roundabout at this location would require the partial or total acquisition of properties on all four corners including the Polish Army Veterans’ Post No. 40 located at 241 Gostlin Street. This structure has been determined to be eligible for inclusion on the National Register of Historic Places.

This alternative is feasible. This alternative is not prudent due to acquisition of property from the Polish Army Veterans’ Post No. 40 located at 241 Gostlin Street.
1.2 On-alignment, shifted north and south, roundabout
The curve on Gostlin Street at the state line would be upgraded to a 45 mph design speed and turning radius resulting in a realignment to the north and south of the existing roadway. The realignment of this curve would cut across two commercial properties located north of the roadway. Acquiring right-of-way from these two properties may require the total acquisition of each property depending on access and limitations to the property resulting from the proposed roadway. This alternative would likely limit access to these properties by eliminating partial access to these properties from Gostlin Street. Additionally, the higher rates of speed of vehicles along Gostlin Street would make ingress and egress from these establishments more difficult. Acquiring right-of-way from the south side of the roadway would require the acquisition of 11 residential parcels between 1st Street and Wabash Avenue.

Gostlin Street between the state line and Sheffield Avenue would be widened from one travel lane in each direction to two travel lanes in each direction. Proposed improvements would also include new pavement, curb and gutter, sidewalks, storm sewers, and roadway lighting. Improvements would be made to Wabash Avenue south of Gostlin Street to provide improved access to the alley behind the homes on the south side of Gostlin Street between the state line and Sheffield Avenue.

The intersection of Gostlin Street and Sheffield Avenue would be reconstructed to include a one-lane roundabout. This roundabout would be located southwest of the existing intersection. This roundabout would eliminate the existing signalized intersection and would allow for the free flow of traffic through the project corridor. The free flow traffic would improve travel times through the corridor and would improve safety by eliminating the need for large semi trailers to either run up on the inside curbing or swing out into oncoming traffic when travelling eastbound on Gostlin Street to southbound on Sheffield Avenue.
The construction of the roundabout at this location would eliminate access to Sheffield Avenue from Brunswick Street. Because of this, Brunswick Street would be cut off west of its intersection with the Northern Indiana Commuter Transportation District (NICTD) South Shore rail line and a cul-de-sac would be created to provide room for vehicles to turn around. This would eliminate the railroad crossing of Brunswick Street and the NICTD South Shore line, which would improve safety particularly as this crossing was not at the preferred 90 degree angle. The construction of the roundabout at this location would require the partial or total acquisition of properties on all four corners including the Polish Army Veterans’ Post No. 40 located at 241 Gostlin Street. This structure has been determined to be eligible for inclusion on the National Register of Historic Places.

This alternative is feasible but is not prudent due to acquisition of property from the Polish Army Veterans’ Post No. 40 located at 241 Gostlin Street. This property has been recommended as eligible for inclusion on the National Register of Historic Places. Acquisition of property from this parcel should be avoided if another feasible and prudent alternative exists.

1.3 Off-alignment, turning movement
The curve on Gostlin Street at the state line would be upgraded to a 45 mph design speed and turning radius resulting in a realignment of the roadway south of Gostlin Street. The existing Gostlin Street would be improved and would be connect to Clark Avenue and Wabash Avenue and Gostlin Street would no longer connect to either Brainard Avenue or Sheffield Avenue. Dearborn Avenue would be used as a gateway entrance to the neighborhood north of Gostlin Street. Traffic from the streets in this neighborhood (Clark Avenue, Dearborn Avenue, Grover Avenue, and Wabash Avenue) would use Dearborn Avenue to connect to
the new realigned roadway. This would limit the number of access points to the project corridor in this area, thereby improving safety along the roadway. This would improve travel times along the corridor and would correct existing geometric deficiencies at the curve near the state line to meet the geometric standards in the *Indiana Design Manual* for a low-speed urban street. The realigned roadway would include two travel lanes in each direction. The additional travel lane will accommodate the anticipated growth in ADT throughout the corridor and will allow for faster moving traffic to maneuver past slower travelling or turning vehicles. The development of this alternative would require the acquisition of approximately 32 properties on the south side of Gostlin Street between First Avenue and Sheffield Avenue and potentially affect commercial properties located along Gostlin Street. Proposed improvements would also include new pavement, curb and gutter, sidewalks, storm sewers, and roadway lighting. The intersection of Gostlin Street and Sheffield Avenue would be reconstructed as a signalized intersection and with a free flow turn lane for eastbound to southbound traffic. This intersection would be located southwest of the existing intersection.

The construction of this intersection would eliminate access to Sheffield Avenue from Brunswick Street. Because of this, Brunswick Street would be cut off west of its intersection with the Northern Indiana Commuter Transportation District (NICTD) South Shore rail line and a cul-de-sac would be created to provide room for vehicles to turn around. This would eliminate the railroad crossing of Brunswick Street and the NICTD South Shore line, which would improve safety particularly as this crossing was not at the preferred 90 degree angle. The construction of this intersection would require the acquisition of properties on the southwest corner of the existing intersection only.

This alternative is not feasible as the proposed roadway and right-of-way extends too far to the south conflicting with the NICTD rail line located just south of Gostlin Street.
1.4 Off-alignment, roundabout
The curve on Gostlin Street at the state line would be upgraded to a 40 mph design speed and turning radius resulting in a realignment of the roadway south of Gostlin Street. The existing Gostlin Street would be improved and would be connect to Clark Avenue and Wabash Avenue and Gostlin Street would no longer connect to either Brainard Avenue or Sheffield Avenue. Dearborn Avenue would be used as a gateway entrance to the neighborhood north of Gostlin Street. Traffic from the streets in this neighborhood (Clark Avenue, Dearborn Avenue, Grover Avenue, and Wabash Avenue) would use Dearborn Avenue to connect to the new realigned roadway. This would limit the number of access points to the project corridor in this area, thereby improving safety along the roadway. This would improve travel times along the corridor and would correct existing geometric deficiencies at the curve near the state line to meet the geometric standards in the Indiana Design Manual for a low-speed urban street. The realigned roadway would include two travel lanes in each direction. The additional travel lane will accommodate the anticipated growth in ADT throughout the corridor and will allow for faster moving traffic to maneuver past slower travelling or turning vehicles. The development of this alternative would require the acquisition of approximately 32 properties on the south side of Gostlin Street between First Avenue and Sheffield Avenue. Proposed improvements would also include new pavement, curb and gutter, sidewalks, storm sewers, and roadway lighting.

The intersection of Gostlin Street and Sheffield Avenue would be reconstructed to include a one-lane roundabout. This roundabout would be located southwest of the existing intersection. This roundabout would eliminate the existing signalized intersection and would allow for the free flow of traffic through the project corridor. The free flow traffic would improve travel times through the corridor and would improve safety by eliminating the need for large semi trailers to either run up on the inside curbing or swing out into oncoming traffic when travelling eastbound on Gostlin Street to southbound on Sheffield Avenue.

The construction of the roundabout at this location would eliminate access to Sheffield Avenue from Brunswick Street. Because of this, Brunswick Street would be cut off west of its intersection with the Northern Indiana Commuter Transportation District (NICTD) South Shore rail line and a cul-de-sac would be created to provide room for vehicles to turn around. This would eliminate the railroad crossing of Brunswick Street and the NICTD South Shore line, which would improve safety particularly as this crossing was not at the preferred 90 degree angle. The construction of the roundabout at this location would require the acquisition of properties on the northeast, southeast, and southwest corners of the intersection.

This alternative is both feasible and prudent. This alternative meets the project purpose and need.
Segment 2: Sheffield Avenue from Gostlin St. to Chicago St. and Chicago St. to Hohman Avenue
Along Segment 2: Sheffield Avenue from Gostlin Street to Chicago Street and Chicago Street to Hohman Avenue three alternatives are being evaluated. Each of these alternatives establishes safe free flow of traffic through the intersection of Sheffield Avenue and Chicago Street.

Between Gostlin Avenue and Chicago Street, Sheffield Avenue would be reconstructed and widened to accommodate one travel lane in each direction and a continuous center left turn lane. Proposed improvements would also include new pavement, curb and gutter, sidewalks, storm sewers, roadway lighting, improved traffic signals, and a multi-use path along the east side of the roadway.

2.1 Turning Movement
The three-way stop intersection at Sheffield Avenue and Chicago Street would be reconstructed with a two-lane turning lane for vehicles travelling westbound on Chicago Street and turning north on Sheffield Avenue. This would allow for the free flow of traffic heading north on Sheffield Avenue from Chicago Street, and would therefore improve travel times through the project corridor for vehicles heading in this direction. This would also improve safety as this alternative would eliminate the 90 degree right turn from Chicago Street westbound to Sheffield Avenue northbound. The existing 90 degree turn is difficult for large semi trailers to navigate causing them to often either run over the inside curb or swing out into the oncoming traffic in southbound Sheffield Avenue to make the turn.

This alternative would also leave in place a required stop and a 90 degree turn for vehicles travelling south on Sheffield Avenue and turning left onto eastbound Chicago Street. The elimination of vehicles having to make right turns to access northbound Sheffield Avenue at this intersection and the addition of an island in the
roadway would alleviate some of the safety concerns for large semi trailers making the left turn from Sheffield Avenue onto Chicago Street. This alternative would require the partial or total acquisition of four residential properties and three commercial properties.

This alternative is feasible. This alternative does not meet the project purpose and need by establishing free flow of traffic in both directions and is therefore not prudent.

2.2 Free Flow with Traffic Light
The three-way stop intersection at Sheffield Avenue and Chicago Street would be eliminated and replaced with a continuous flow curve with a design speed of 35 mph. The new curve would allow traffic travelling in both directions between Sheffield Avenue north of Chicago Street and Chicago Street to flow freely, avoiding the stops currently required at the existing intersection. This realignment would improve travel times and improve safety by eliminating the existing 90 degree turn. The existing turn creates safety concerns as large semi trailers are often forced to either travel up and over the curbs or swing out into oncoming traffic to make this turn, particularly when making the right turn from westbound Chicago Street to northbound Sheffield Avenue. As part of the new curve, Sheffield Avenue, south of Chicago Street would be realigned to tie into the realigned curve north of Chicago Street. Marble Street would continue to access Sheffield Avenue.

The intersection of Chicago Street and Hohman Avenue, which is one block east of the existing intersection of Chicago Street and Sheffield Avenue would be improved and realigned to meet current design standards while tying into the new realigned curve. This intersection would remain as a signalized intersection which would continue to cause travel delays in the corridor. This alternative would require the partial or total acquisition of four residential properties and four commercial properties.
This alternative is both feasible and prudent. This alternative meets the project purpose and need.

2.3 Free Flow with Roundabout

The three-way stop intersection at Sheffield Avenue and Chicago Street would be eliminated and replaced with a continuous flow curve with a design speed of 35 mph. The new curve would allow traffic travelling in both directions between Sheffield Avenue north of Chicago Street and Chicago Street to flow freely, avoiding the stops currently required at the existing intersection. This realignment would improve travel times and improve safety by eliminating the existing 90 degree turn. The existing turn creates safety concerns as large semi trailers are often forced to either travel up and over the curbs or swing out into oncoming traffic to make this turn, particularly when making the right turn from westbound Chicago Street to northbound Sheffield Avenue. As part of the new curve, Sheffield Avenue, south of Chicago Street would be realigned to tie into the realigned curve north of Chicago Street. Marble Street would continue to access Sheffield Avenue.

A one-lane roundabout would be constructed at the existing intersection of Chicago Street and Hohman Avenue, which is one block east of the existing intersection of Chicago Street and Sheffield Avenue. The roundabout would allow for free flow traffic and would reduce travel times through the corridor by eliminated signalized intersection. The proposed roundabout would require the partial or total acquisition of two residential properties and four commercial properties.

This alternative is both feasible and prudent. This alternative meets the project purpose and need.
Segment 3: Chicago Street from Hohman Avenue to Baltimore Avenue
Along Segment 3: Chicago Street from Hohman Avenue to Calumet Avenue two alternatives are being evaluated. Each of these alternatives establishes safe free flow of traffic between Hohman Avenue and Baltimore Avenue on Chicago Street. Each alternative would include widening the roadway from 2 lanes to 4 lanes including pavement reconstruction, curb and gutter, sidewalks, storm sewers, roadway lighting, and traffic signals.

3.1 Widening along existing Centerline
This alternative would widen Chicago Street equally along the existing centerline. This alternative would require the partial or total acquisition of six residential properties. This alternative is both feasible and prudent. This alternative meets the project purpose and need.
3.2 Widening with curves
This alternative would widen Chicago Street along the existing centerline including the addition of five slight curves. Introduction of slight curves along Chicago Street allows for avoidance of residential acquisitions. This alternative would require the partial or total acquisition of three residential properties. This alternative is both feasible and prudent. This alternative meets the project purpose and need.
Segment 4: Chicago Street from Calumet Avenue to White Oak Avenue

Along Segment 4: Chicago Street from Calumet Avenue to White Oak Avenue two alternatives are being evaluated. Each of these alternatives establishes safe free flow of traffic between Calumet Avenue and White Oak Avenue on Chicago Street. This segment of Chicago Street is four lanes, partial curb and gutter and sidewalk. As this portion of the roadway is already widened, the two alternatives examined were re-surfacing and reconstruction. With either alternative, minimal right-of-way is anticipated to be acquired. Right-of-way would be limited to minor strip acquisition for reconstruction of sidewalks, curb and gutter, and drives.
4.1 Resurfacing
This alternative would resurface the existing roadway but would not include reconstruction or construction of curb and gutter, sidewalks, storm sewers, roadway lighting, or traffic signals. Given the current condition of the roadway and the lack of curb and gutter and sidewalks which are ADA compliant, this alternative was not considered feasible. Inclusion of ADA compliant pedestrian facilities as well as reconstruction of the roadway and other infrastructure is necessary to receive federal funding and to properly maintain the roadway. Additionally, this alternative would not replace any underground infrastructure potential resulting in failure of the sanitary pipes located in the street and collapse of the roadway.

This alternative is feasible. This alternative is not prudent as it would not correct the existing infrastructure deficiencies along the project corridor nor does it meet the project purpose and need.

4.2 Reconstruction
This alternative would reconstruct the existing roadway including curb and gutter, sidewalks, storm sewers, roadway lighting, or traffic signals. Reconstruction of the existing roadway would require the acquisition of minor amounts of strip right-of-way and temporary right-of-way for reconstruction of the sidewalks, curb and gutter, and drive entrances. This alternative is both feasible and prudent. This alternative meets the project purpose and need.

Bridge Option between Brainard Avenue and Chicago Street
During preliminary project development, a bridge option was examined to relocate the roadway along Segments 1 and 2 from Brainard Avenue to Chicago Street. This alternative would use two bridges to connect Brainard Avenue directly to Chicago Street near the intersection of Chicago Street with Sheffield Avenue. The
two bridges would be constructed to span the three railroad lines, the NICTD South Shore line and the CSX rail line, which runs just south of the NICTD line and the Indiana Harbor Belt (IHB) rail line that runs north/south along the state line. Bridges over these three rail lines would be required as opposed to at-grade crossings due to the proximity of other rail crossings in the project area and the angle at which the roadway would intersect with the rail lines for an at-grade crossing. To meet the roadway grade clearance while still meeting the required clearance of the three railroads, the westernmost bridge would need to begin approximately 550 feet across the border into Illinois and Brainard Avenue would need to start reconstruction approximately 2,500 feet across the border into Illinois.

This alternative would allow traffic in the project corridor to avoid the three railroad crossings Brainard Avenue at the state line, along Sheffield Avenue as well as the intersections of Sheffield Avenue and Chicago Street and Sheffield Avenue and Gostlin Street. This would meet the project’s Purpose and Need elements of improving the travel time through the corridor and improving safety within the corridor as through traffic would have fewer stops and fewer intersections to navigate. This alternative would require more than 30 relocations due to the construction of the two bridges between Brainard Avenue and Chicago Street.

The remainder of the project from Hohman Avenue to White Oak Avenue would be the same as Segments 3 and 4. This alternative is feasible. This alternative is not prudent due to the anticipated project cost and property acquisition requirements.
Appendix 1 – Mapping
USGS Topographic Map
Aerial Photography
Alternatives
Chicago St. Widening & Reconstruction Project

Alternate #1.2
Chicago St. Widening & Reconstruction Project
Alternate #1.4
Chicago St. Widening & Reconstruction Project
Alternate #2.3

CURVE DATA
Design Speed = 30 mph
R = 300.00'
L = 426.68'
H = 334.00'

MATCHLINE

**NOTE:** This diagram is for illustrative purposes only and may not be to scale.

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*For more information, please refer to the attached PDF document.*
Chicago St. Widening & Reconstruction Project
Alternate #3.1