EASTERN WILL COUNTY
FREIGHT MOBILITY
CORRIDOR STUDY

Planning and Environmental Linkages Study

Alternatives Carried Forward

DRAFT

March 2023

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APPENDICES

1: INTRODUCTION

1.1 Purpose of Memorandum

The purpose of this memorandum for the Eastern Will County Freight Mobility Corridor Study and PEL (EWC Study) is to present study alternatives identified, developed, and screened, resulting in a group of Alternatives Carried Forward for the PEL.

1.2 Project Background

The EWC Study is a Planning and Environmental Linkages (PEL) study initiated due to community concerns regarding truck traffic growth from the influx of warehousing, distribution centers, and associated freight activity in Will County. Traffic analysis demonstrates that the county road network has gaps in continuous east-west movement between IL 394 and IL 50, with only short discrete segments designated as truck routes. Population and economic growth in Will County have continued steadily, with a sharp increase in transportation, warehousing, and intermodal facilities that have increased freight volumes in and through the county. In 2015, trucks carried $282 billion in goods through Will County. Multimodal freight volumes in Will County could reach nearly 600 million tons valued at about $1.2 trillion by 2040[1].

Will County's largest employer and freight mover is Amazon, which recently built fulfillment centers in Monee, University Park and Matteson, in or adjacent to this study area. The increased freight traffic in eastern Will County was introduced without accompanying improvements to the county transportation network or a supporting designated truck route network. This has led to uncontrolled freight movements on roads that were not designed to support significant truck travel, truck traffic occurring where it is incompatible with land uses, community safety, and freight mobility constraints in the local transportation network. These issues have become a decision factor in continued job growth, economic development, and population growth if transportation needs are left unaddressed.

The Will County Division of Transportation (WCDOT), the communities of eastern Will County (Crete, Monee, Beecher, Peotone, University Park, and Steger), and other stakeholders have been discussing the appropriate location for an east – west designated truck route for more than two decades, leading to the grassroots genesis of this study. These communities and the County identified existing potential routes for a freight corridor; however, these routes are not currently built to appropriate standards for heavy truck utilization.

[1] Will County Community Friendly Freight Mobility Plan https://www.willcountyfreight.org/

The EWC Study Area is defined as the Will/Cook County line to the north, the Indiana state line to the east, north of the SSA inaugural airport boundary on the south, and west of I-57 on the west. The logical western terminus of the project is I-57, and the logical eastern terminus of the project is the north-south IL 1/I-394 corridor. See Appendix A.

Will County Division of Transportation intends to carry forward the information, analysis, and decisions from the EWC PEL into the NEPA process.

1.3 Summary of Prior FHWA Coordination

The EWC Study has been presented at two prior FHWA coordination meetings:

- Meeting 1: September 15, 2020 (Project Introduction)
- Meeting 2: October 5, 2021 (Purpose and Need)

The Purpose and Need Statement for the EWC Study is included in Appendix A. The Purpose and Need was reviewed by IDOT and FHWA. FHWA had "no further comment" on the Purpose and Need on November 1, 2021, and BDE had no further comment on November 2, 2021.

This Alternatives Carried Forward package supplements the Meeting 3 presentation and discussion.

1.4 Summary of Prior Agency, Public, Stakeholder, and Tribal Coordination

A Stakeholder Involvement Plan (SIP) for the EWC study was developed to provide consistent and frequent opportunities for engagement as the PEL process progresses (See Appendix B). The SIP identifies stakeholders and the Project Study Group (PSG), establishes the timing and type of involvement activities with all stakeholders, and establishes stakeholder requirements for providing timely input to the project development process.

The SIP informed agency and public coordination during PEL development. The project team held group and one-on-one meetings with public officials, public agencies, organizations, utilities, and major economic stakeholders. These meetings allowed stakeholders to provide input about their freight transportation needs in the project area, other transportation needs, and how the project could benefit or impact the region.

Agency, Public, and Stakeholder Coordination

A public information meeting for the EWC Study took place on November 18, 2021 to introduce members of the public to the project, the PEL process, and included surveys to gather data on

stakeholders' context of the study area and its transportation system. Approximiately 30 people attended the meeting, including elected offiicals, stakeholders, and residents.

The project website, https://www.eastwillmobility.com/, allows visitors to subscribe to email updates, add comments to a map of the project to target areas of intervention, and submit general comments. The website is available in both Spanish and English. Four surveys through MetroQuest were made available on the website and also distributed via email, social media campaigns, and word-of-mouth.

Many small group meetings were held with local stakeholders to gather information about transportation needs, existing and planned conditions, resources, and project alternatives. The project team and Will County DOT met with the following groups:

- Villages of Monee, Crete, Peotone, Beecher, Frankfort and University Park
- Forest Preserve District of Will County
- Will County Center for Economic Development
- Will County Farm Bureau
- Will County Government League
- Will County Historic Preservation Commission
- Crete Township
- South Suburban Mayors and Managers Association
- Chicago Southland Economic Development Corporation
- Amazon
- Will County Planning and Zoning Commission
- CenterPoint
- Midwest Truckers Association
- Pace Surburban Bus

METROQUEST SURVEY 1: SOLICIT FEEDBACK, CREATE AWARENESS, DETERMINE NEED (WINTER 2020)

Survey 1 asked participants thirteen (13) questions focused on the topics of study area transportation needs, current conditions, safety, and truck traffic. Two hundred fifty-two (252) stakeholders responded to Survey 1 during the winter 2020 period. Ninety percent (90%) of respondents were residents of the study area, while 5% were business owners and 5% were elected officials.

The top three needs to address according to participants were truck congestion, air quality, and car congestion. Agriculture, wetlands/streams, and forest preserves/parks were considered the least important needs.

Nearly half (forty-nine percent (49%)) of respondents believed the roadways in the study area to be in "average" condition, while 36% believed the roadways to be in either "bad" or "very bad" condition. Only 15% of respondents believed the roadways to be in "good" or "very good" condition.

The majority of respondents (sixty-eight percent (68%)) stated they use a car or light truck when traveling the study area routes. Walking (12%) and bicycling (8%) scored second and third place. Four percent (4%) of respondents indicated using a semitruck, and 3% indicated they used public transportation on the project routes, representing the lowest response rates (5% of respondents selected "other").

Survey participants also responded to questions pertaining to truck traffic congestion along various routes in the study area. In order of highest percentage of respondents indicating a congestion issue, these routes are I 57, including Monee and Stuenkel Road exits (74%), I 394/IL 1 (66%), Crete-Monee Road (44%), and Pauling-Goodenow Road (30%).

METROQUEST SURVEY 2: FREIGHT GENERATORS (SPRING 2021)

Participants for Survey 2 were directly connected to the local or regional freight industry. Survey 2 asked participants to provide input on existing conditions in the area, and how this project can address freight generators' needs. Eleven (11) survey participants worked for a public agency, four (4) were local or regional business employees, one (1) worked in trucking or logistics, 1 worked in intermodal freight, and seven (7) stated that they were connected to freight via "other." Eight (8) respondents indicated their involvement in freight-generating land development in the area, and six (6) indicated they are not involved.

The most widely used freight transportation modes used by participants are car or light truck (used by nine participants) as modes of freight transportation. Eight (8) use a truckload (TL) truck, six (6) use a medium or box truck, five (5) use less than a TL truck, three (3) use rail, and five (5) participants selected that this question was not applicable. Eight (8) respondents indicated making local/regional trips (beginning and ending in northeastern Illinois), five (5) make multistate/national trips, and three (3) indicated other. Thirteen (13) respondents indicated that they believe the general condition of the roadways in the study area is average, while one (1) indicated poor and 1 indicated very poor.

Highway connectivity ranked highest among priorities among respondents. Avoiding towns/residential areas and improving road design were tied for the second-highest scoring priorities. Business connectivity ranked lowest amont priorities, followed by weight restrictions and safety improvements.

METROQUEST SURVEY 3: RANGE OF ALTERNATIVES (JULY 2022)

Survey 3 asked participants to rank nineteen (19) proposed alternatives (all alternatives considered at the time of survey) and their general impacts to communities and the natural environment. Alternatives were ranked from 1 star (low) to 5 stars (high), and an average rating was used to determine overall rank. One hundred ninety-two (192) stakeholders responded to Survey 3. Eighty-five percent (85%) of respondents were residents of the study area, while 6% were business owners, 3% were elected officials, and 2% were members of the trucking industry.

Alternatives receiving the highest rankings include Alternatives 1, 4A, 5, 6, and 6A. Alternatives receiving the lowest rankings include Alternatives 2, 2A, 7, 7A, 9, and 9A.

Survey participants provided additional comments, including but not limited to:

- Turning trucks at unsignalized intersections are safety concerns
- The existing road network in the study area
- A Pauling-Goodenow alternative will require widening and raising the existing rail bridge across Pauling-Goodenow Road.
- Several comments did not support an alternative on S. Nacke Road, as they did not believe it would attract trips.
- Comments noted that alternatives using new alignment near Monee Elementary School and on Egyptian Trail have problems because the new alignment extends between two subdivisions and the existing roads here cannot accomodate the additional demand.

Additional public and stakeholder coordination will be conducted following the current FHWA and IDOT consistency determination to solicit input on the Alternatives Carried Forward.

Public involvement is an early and continuous requirement throughout the NEPA process. When the project enters the NEPA process, the public will continue to be engaged through the design of a preferred alternative and environmental clearance.

Tribal Coordination

Per the IDOT PEL procedures, Will County Division of Transportation initiated coordination with the following tribes on April 12, 2022:

- Ho-Chunk Nation
- Kickapoo Traditional Tribe of Kansas
- Kickapoo Traditional Tribe of Oklahoma
- Kickapoo Traditional Tribe of Texas
- Miami Tribe of Oklahoma
- Peoria Tribe of Indians of Oklahoma
- Citizen Potawotamie Nation
- Forest County Potwotamie Community
- Potawatomi Nation-Hannahville Indian Community
- Sac & Fox Nation of the Mississippi in Iowa
- Sac & Fox Nation of Missouri
- Sac & Fox Nation of Oklahoma

At the time of the development of the PEL, no tribes had responded.

FHWA is directed to "(e)nsure that during the transportation planning and FHWA NEPA processes, tribes are consulted and tribal concerns are considered for federally funded State

transportation projects that affect tribal trust resources, tribal communities, or Indian interests." The tribes listed above will be reengaged for the project through FHWA during NEPA.

2: RANGE OF ALTERNATIVES

This section provides information on the alternatives development and evaluation process used for the reasonable range of alternatives for the EWC project. The range of alternatives were developed through engineering analysis, as well as agency and stakeholder engagement and input opportunities. The alternatives were evaluated against the Purpose and Need and other evaluation criteria to illustrate how each alternative would impact community and natural environments.

2.1 No-Build Alternative

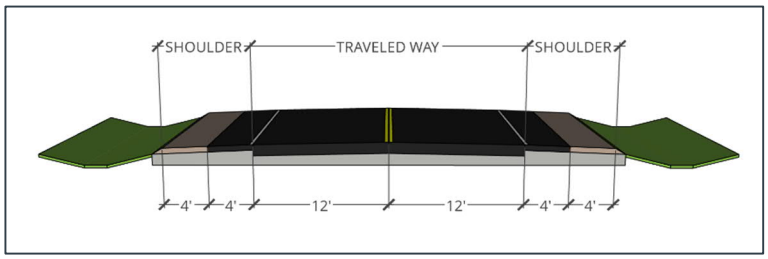
The No-Build Alternative would not construct the proposed action of a continuous east-west truck route through eastern Will County. Freight trucks would continue to use the local roadway network, as is evidenced by the INRIX data collected, or would travel to the north or south of the project area to find designated east-west truck routes as they do in the existing condition. The continued expansion of freight generators in eastern Will County is expected to increase the volume of multi-unit trucks traveling in the study area, and under the No-Build condition these trucks would continue to travel on local or county roads that are not designated or designed for trucks. The No-Build Alternative will continue deterioration of local roads and inconvenience to residents and businesses. The No-Build Alternative includes regular maintenance activities to the existing transportation network to maintain functional service. Maintainance work could consist of resurfacing, minor patching, and shoulder and drainage improvements, but does not include geometric, safety, or capacity improvements.

The No-Build Alternative does not require any additional right-of-way (ROW) and generally avoids impacts to the natural and human environment. However, there will be continued impacts to the communities. As noted above, truck volumes will continue to increase on the local roadways causing accelerated deterioration of roadways that are not meant to carry heavy trucks, safety concerns as these large vehicles travel through neighborhoods and adjacent to schools, and increased conflicts between pedestrians and bicycles. The No-Build Alternative does not provide the necessary connection to satisfy the Purpose and Need. As part of the requirements for PEL and ultimately NEPA, this alternative will be carried through as a basis for comparison for impacts and benefits of the Build Alternatives.

2.2 Build Alternatives

Build Alternatives were developed based on review and analysis of the existing roadway network, traffic volumes, safety data, and community factors, along with input from project stakeholders and public engagement opportunities. Nineteen (19) alternatives were originally developed and presented to the public as part of the public meeting and virtual engagement. These alternatives included two potential connections to IL 394, along IL 1 or an extension of State Street south to IL 394. Eight (8) alternatives were added at the request of Will County to provide a direct connection to IL 394 for all routes that were along Crete-Monee Road. These additions will be coordinated with the public when the Alternatives to be Carried Forward are presented at the next public engagement opportunity.

Figure 1: BUILD ALTERNATIVES TYPICAL SECTION, EXISTING ROADWAY



All twenty-seven (27) Build Alternatives assume the same regular maintenance activities included in the No-Build Alternative, but differ from the No-Build in that each of the Build Alternatives would provide a designated and continuous east-west truck route between I-57 to IL 394, and also include necessary roadway improvements to accommodate heavier trucks. All alternatives that use existing roadways assume intersection widening and channelization as needed, drainage improvements, shoulder improvements, or other necessary updates to accommodate trucks along existing alignments. No additional through lanes are proposed.

The Build Alternatives will meet current IDOT Bureau of Local Roads and Streets (BLRS) Manual design standards and include the construction of 12-foot wide travel lanes, one in each direction.

On existing alignments where improvements are being made to rehabilitate the roadway, outside shoulders will be widened to 8-foot wide (a combination of 4-foot paved and 4-foot aggregate shoulder) per BLRS Manual Figure 33-3A (see Figure 1). For areas of new alignment and therefore new construction, the outside shoulders will be constructed to be 10-foot (a combination of 4-foot paved and 6-foot aggregate shoulder) per BLRS Manual Figure 32-2A (see Figure 2).

Figure 2: BUILD ALTERNATIVES TYPICAL SECTION, NEW Alignment

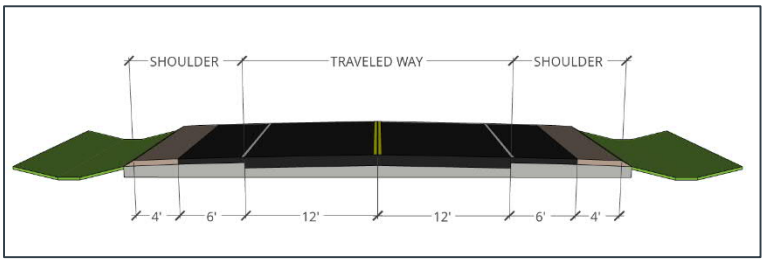


Figure 3. AGGREGATED ALTERNATIVES

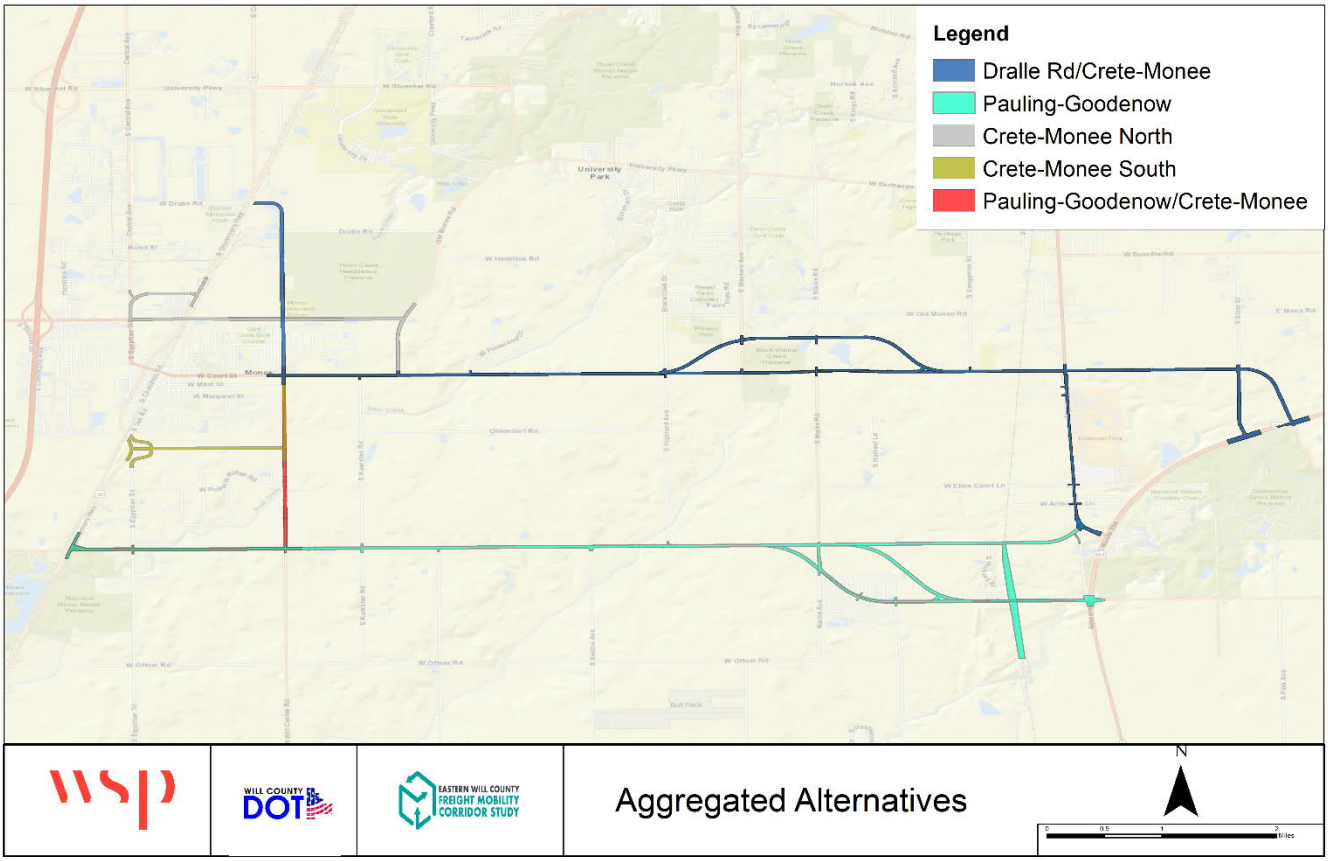
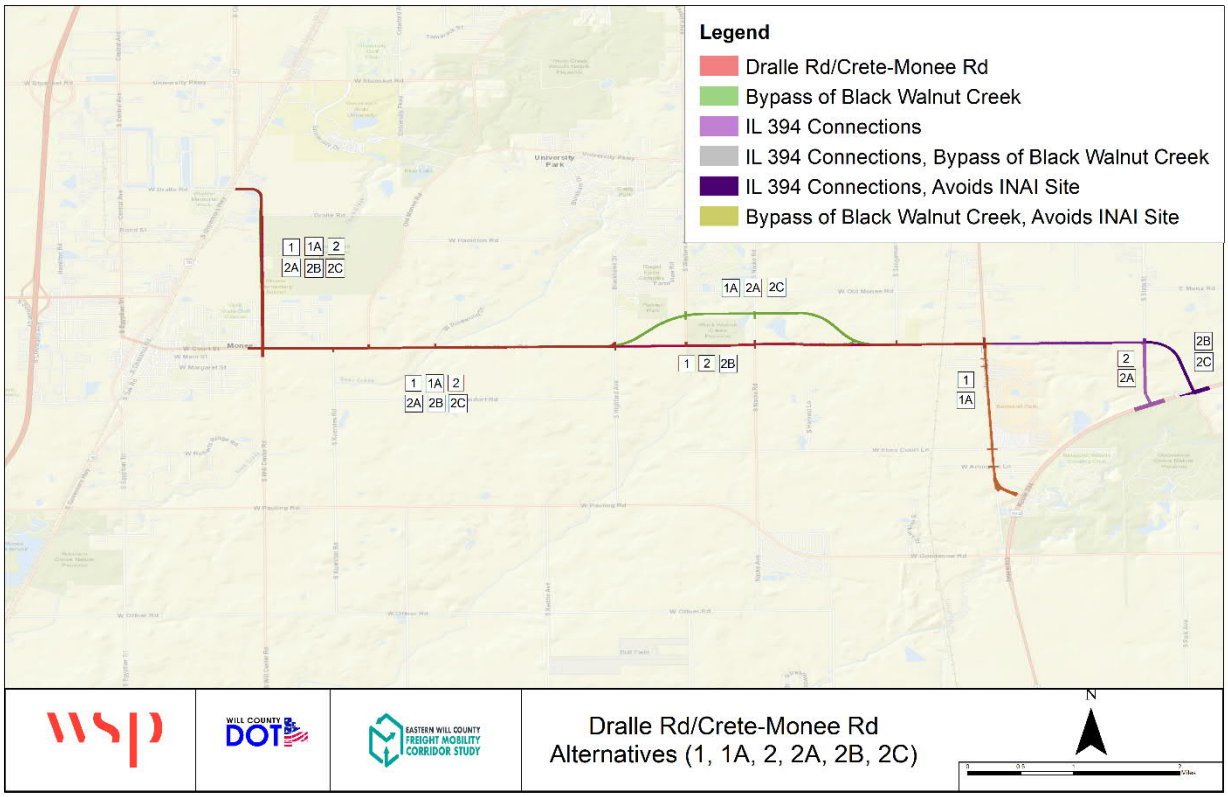


Figure displays each of the alternatives aggregated based on the main route(s) they use. The sections below discuss these alternatives in detail. See Appendix C for detailed figures of each alternative.

Dralle Road / Crete-Monee

Figure 4. DRALLE RD/CRETE-MONEE RD ALTERNATIVES



There are six alternatives that designate the truck route along Dralle Road, Will Center Road, and Crete-Monee Road (Figure). Differences among the six include bypasses for the Black Walnut Creek Preserve and three variations of connecting to IL 394. These alternatives' west end connections are north of Monee, IL. The Dralle Road / Crete-Monee alternatives could require a jurisdictional transfer of Dralle Road, Will Center Road, and Court Street, improvements to the existing crossing of the CN Railroad, and a new traffic signal installation at IL 50. For alternatives using IL 1 to connect to IL 394 (Alternatives 1 and 1A), the IL 1 portion would remain under IDOT jurisdiction.

Details about the Crete-Monee / Dralle Road alternatives are below.

ALTERNATIVE 1

The route for Alternative 1 is Dralle Road east to Will Center Road, south to Crete-Monee Road, east to IL 1, and south to the existing intersection with IL 394. It proposes improvements to the existing routes of Dralle Road, Will Center Road, Crete-Monee Road, and IL 1. There are no new alignments as part of this alternative.

ALTERNATIVE 1A

Alternative 1a is the same as Alternative 1, with a bypass of the Black Walnut Creek Preserve. Alternative 1a proposes improvements to the same existing roads as Alternative 1. The new proposed alignment would bypass the Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east.

ALTERNATIVE 2

The route for Alternative 2 is Dralle Road east to Will Center Road, south to Crete-Monee Road, extension of Crete-Monee Road to the east beyond IL 1, and a new roadway and intersection to IL 394. It proposes improvements to the existing routes of Dralle Road, Will Center Road, and Crete-Monee Road, while proposing one new alignment. The new alignment would extend State Street south from Crete-Monee Road to a new intersection with IL 394, with potential installation of new traffic signals at IL 394.

ALTERNATIVE 2A

Alternative 2a is the same as Alternative 2, but also includes a bypass of the Black Walnut Creek Preserve. Alternative 2a proposes improvements to the same existing roads as Alternative 2. The new proposed alignment would bypass the Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. The new alignment to extend State Street south from Crete-Monee Road to a new intersection with IL 394, which would be the same as Alternative 2.

ALTERNATIVE 2B

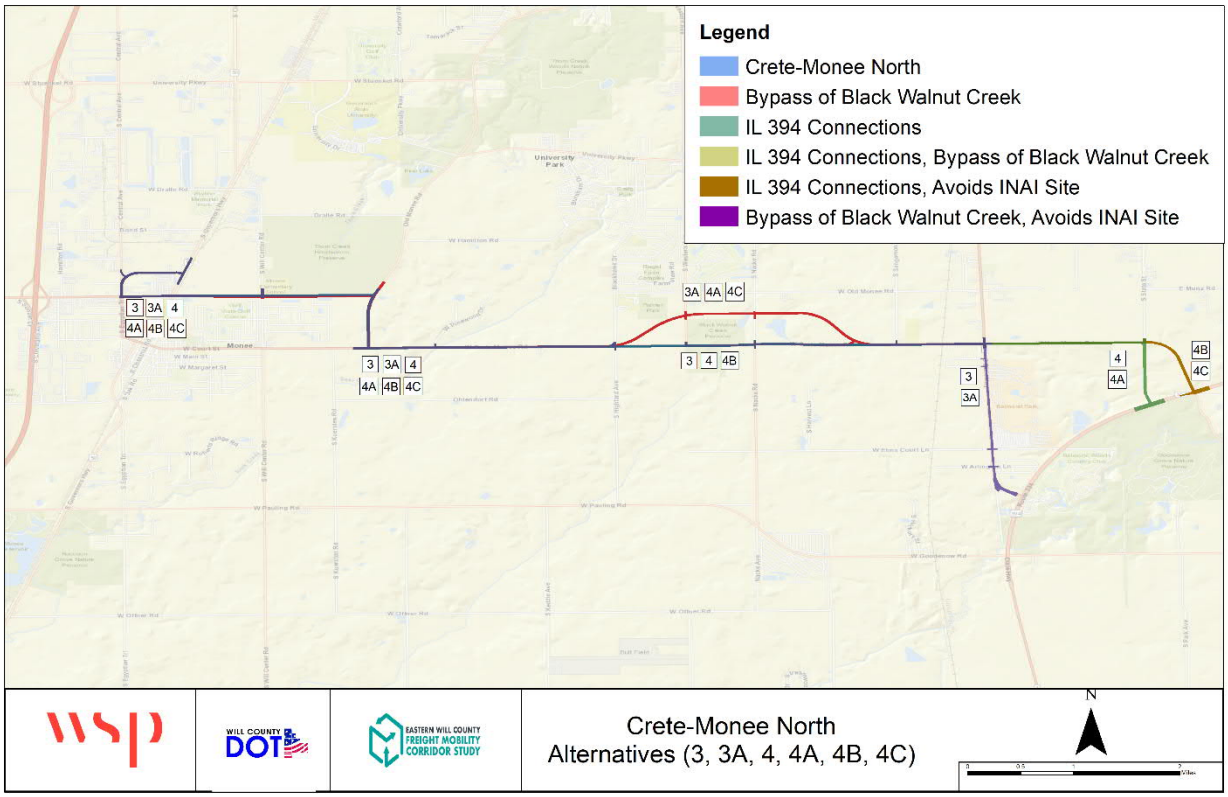
Alternative 2b follows a similar alignment to Alternative 2a, but includes a connection to IL 394 that avoids an INAI site. Alternative 2b proposes improvements to the same existing roads as Alternative 2. Instead of extending State Street south, the new proposed alignment would extend Crete-Monee Road east from State Street to curve south to a new intersection with IL 394 and Bemes Road. It also includes the potential installation of traffic signals at IL 394.

ALTERNATIVE 2C

Alternative 2c is the same as Alternative 2b, but also includes a bypass of the Black Walnut Creek Preserve. The new proposed alignment would bypass the Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. The new proposed alignment would extend Crete-Monee Road from State Street to curve south to a new intersection with IL 394 and Bemes Road, the same as Alternative 2b.

Crete-Monee North

Figure 5. CRETE-MONEE NORTH ALTERNATIVES



There are six alternative variations that designate the truck route along an extension of Monee-Manhattan Road, Old Monee Road, and Crete-Monee Road (Figure). These alternatives' west end connection are on the north side of Monee, IL. Differences among the six include bypases for the Black Walnut Creek Preserve and three variations of connecting to IL 394. Additional improvements for the Crete-Monee North alternatives include an extension of Monee Manhattan Road with a new alignment to connect to Steger Monee Road (CH 48), new traffic signals at IL 50, and a proposed grade-separated crossing of the CN Railroad. For alternatives using IL 1 to connect to IL 394 (Alternatives 3 and 3A), the IL 1 portion would remain under IDOT jurisdiction.

Details about the Monee Manhattan-Old Monee-Crete Monee alternative routes are below.

ALTERNATIVE 3

The route for Alternative 3 is an extension and new alignment of Monee Manhattan Road over IL 50 and the CN Railroad east to Steger Monee Road (CH 48), south to Crete-Monee Road, east to IL 1, and south to the existing intersection with IL 394. It proposes improvements to the existing

routes Steger Monee Road, Crete-Monee Road, and IL 1. With the proposed grade-separated crossing of IL 50 and the CN Railroad to extend Monee Manattan Road to the east, roadway improvements would be needed for Central Avenue and Horner Avenue. A new roadway alignment is proposed from IL 50 to Steger Monee Road (CH 48). This would require new intersections at Will Center Road and Steger Monee Road (CH 48).

ALTERNATIVE 3A

Alternative 3a is the same as Alternative 3, but also includes a bypass of Black Walnut Creek Preserve. Alternative 3a proposes improvements to the same existing roads as Alternative 3. The new proposed alignment would bypass the Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. The new alignment to extend Monee Manhattan Road to Steger Monee Road (CH 48) would be the same as Alternative 3.

ALTERNATIVE 4

The route for Alternative 4 is an extension and new alignment of Monee Manhattan Road over IL 50 and the CN Railroad east to Steger Monee Road (CH 48), south to Crete-Monee Road, extension of Crete-Monee Road to the east beyond IL 1, and a new roadway and intersection at IL 394. This would require improvements to existing roadways to accommodate trucks and meet current design standards. Improvements are proposed for Steger Monee Road and Crete-Monee Road. There are two new roadway alignments proposed, one from the existing intersection of Monee Manhattan Road and IL 50 to Steger Monee Road (CH 48) and the other as an extension of State Street south from Crete-Monee Road to connect to IL 394. It would also potentially require installation of traffic signals at IL 394.

ALTERNATIVE 4A

Alternative 4a proposes improvements to the same existing roads as Alternative 4, but also includes a bypass of Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. The two new alignments to extend Monee Manhattan Road to Steger Monee Road (CH 48) and State Street to IL 394 would be the same as Alternative 4.

ALTERNATIVE 4B

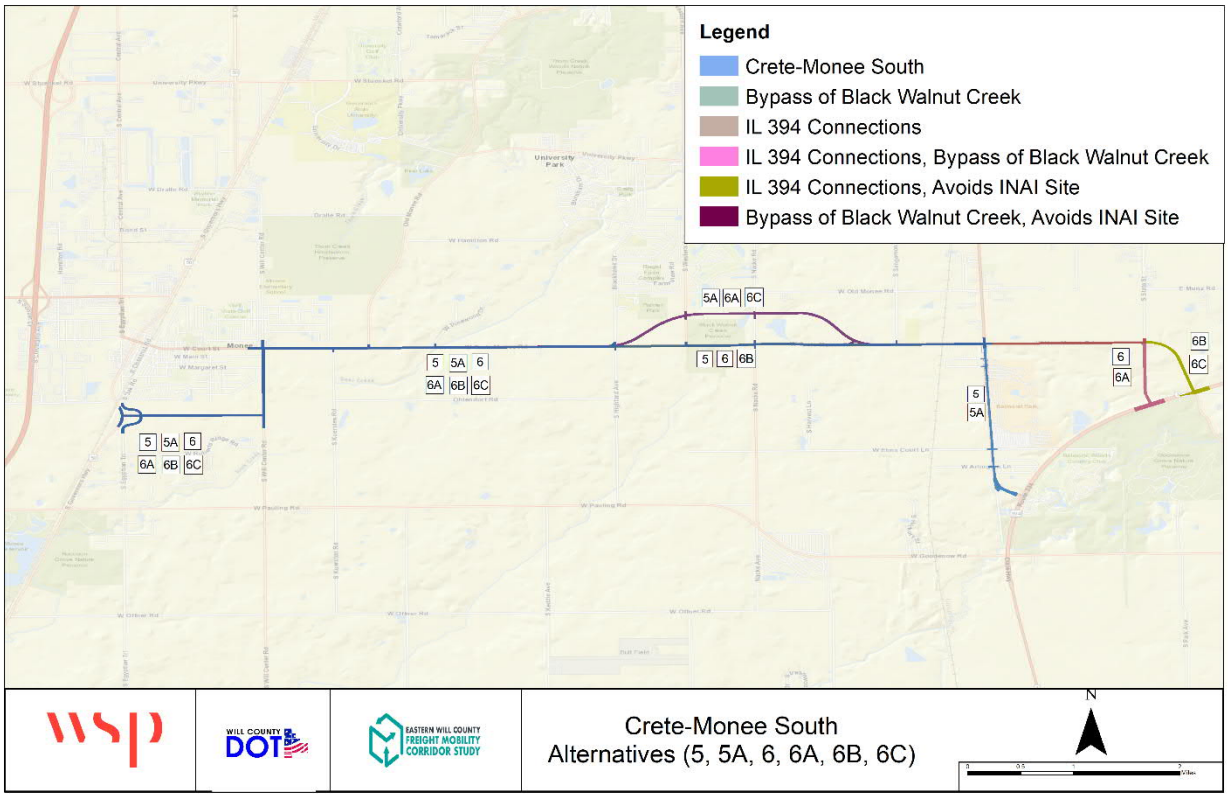
Alternative 4b follows a similar alignment to Alternative 4a, but includes includes a connection to IL 394 that avoids an INAI site. Alternative 4b proposes improvements to the same existing roads as Alternative 4. Instead of extending State Street south, the new proposed alignment would extend Crete-Monee Road east from State Street to curve south to a new intersection with IL 394 and Bemes Road. It would also require potential installation of traffic signals at IL 394.

ALTERNATIVE 4C

Alternative 4c is the same as Alternative 4b, but includes a bypass of the Black Walnut Creek Preserve. The new proposed alignment would bypass the Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. The new proposed alignment would extend Crete-Monee Road from State Street to curve south to a new intersection with IL 394 and Bemes Road, the same as Alternative 4b.

Crete-Monee South

Figure 6. CRETE-MONEE SOUTH ALTERNATIVES



There are six alternatives which bring the designated truck route from south of Monee, IL, connecting from IL 50 to Will Center Road (CH 10) to Crete-Monee Road (Figure). The differences among these alternatives are a bypass for the Black Walnut Creek Preserve and three variations of connecting to IL 394. All six alternatives require a new east-west roadway between IL 50 and Will Center Road (CH 10), and a new intersection with IL 50 with potential installation of traffic signals. IL 50 is to the east of the CN Railroad at this location, and has an existing bridge over the CN Railroad. All these alternatives would require a jurisdictional transfer of Court Street, between Will Center Road (CH 10) and Steger Monee Road (CH 48), as it is currently under the Village of Monee. For alternatives using IL 1 to connect to IL 394 (Alternatives 5 and 5a), the IL 1 portion would remain under IDOT jurisdiction.

ALTERNATIVE 5

Alternative 5 is a new roadway from IL 50 to Will Center Road, which continues on the existing road network north to Crete-Monee Road, east to IL 1, and south to existing intersection with IL 394. It proposes improvements to the existing routes of Will Center Road (CH 10), Crete-Monee Road, and IL 1. It proposes a new alignment roadway from IL 50 to Will Center Road (CH 10),

south of Monee, IL. This alternative requires a new intersection with IL 50 and Will Center Road, but since IL 50 is east of the CN Railroad at this location, a new grade-separated crossing is not needed.

ALTERNATIVE 5A

Alternative 5a is the same as Alternative 5, but includes a bypass of the Black Walnut Creek Preserve. Alternative 5a proposes improvements to the same existing roads as Alternative 5, but with two areas of new alignment. One area of new alignment is a north bypass of the Black Walnut Creek Forest Preserve, and the other area of new alignment is the same as Alternative 5, from IL 50 to Will Center Road (CH 10). The bypass would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east.

ALTERNATIVE 6

The route for Alternative 6 proposes a new roadway east from IL 50 to Will Center Road (CH 10), then north on existing Will Center Road (CH 10) to Crete-Monee Road (CH 21), then east with an extension of State Street south of Crete-Monee Road to a new intersection with IL 394. It proposes improvements to the existing routes of Will Center Road (CH 10) and Crete-Monee Road (CH 21). This alternative will require new alignments between IL 50 and Will Center Road (CH 10) and State Street from Crete-Monee Road to IL 394, and new intersections at IL 50, Will Center Road (CH 10), and IL 394, with potential installation of new traffic signals at IL 394.

ALTERNATIVE 6A

Alternative 6a is the same as Alternative 6, but includes a bypass of the Black Walnut Creek Preserve. Alternative 6a proposes improvements to the same existing roads as Alternative 6, but with one new alignment not part of Alternative 6. This new alignment is a north bypass of the Black Walnut Creek Forest Preserve, The bypass would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east.

ALTERNATIVE 6B

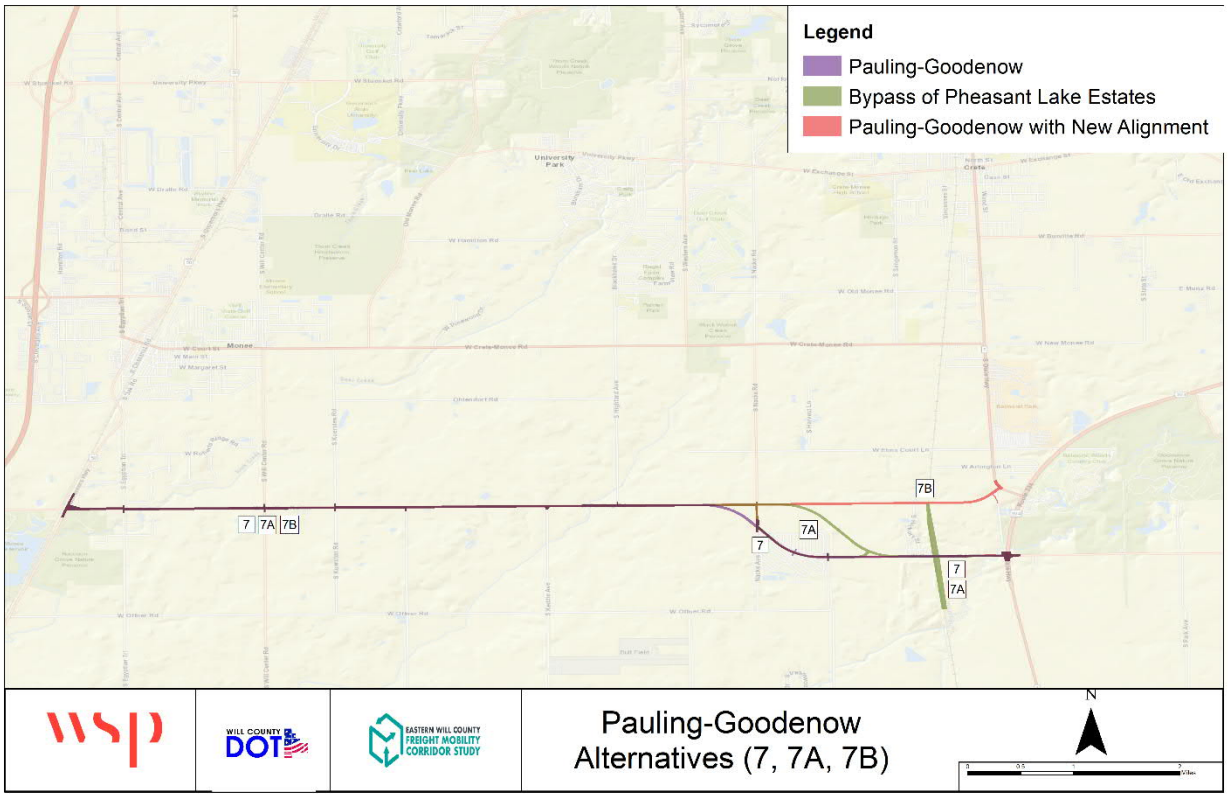
Alternative 6b follows a similar alignment to Alternative 6a, but includes a connection to IL 394 that avoids an INAI site. Alternative 6b proposes improvements to the same existing roads as Alternative 6. Instead of extending State Street south, the new proposed alignment would extend Crete-Monee Road east from State Street to curve south to a new intersection with IL 394 and Bemes Road, with potential installation of new traffic signals at IL 394.

ALTERNATIVE 6C

Alternative 6c is the same as Alternative 6b, but includes a bypass of the Black Walnut Creek Preserve. The new proposed alignment would bypass the Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. The new proposed alignment would extend Crete-Monee Road from State Street to curve south to a new intersection with IL 394 and Bemes Road, the same as Alternative 6b.

Pauling-Goodenow

Figure 7. PAULING-GOODENOW ALTERNATIVES



There are three alternatives that designate the east-west truck route along Pauling-Goodenow Road from IL 50 to IL 394 (Figure). The differences between the three alternatives are options to bypass Pheasant Lake Estates and how they tie in to IL 1/IL 394. Near the east end of the corridor, the alternatives cross the CSX/UP Railroad with a grade separation.

ALTERNATIVE 7

The route for Alternative 7 is from IL 50 east on Pauling-Goodenow Road to IL 1/IL 394. It proposes improvements to existing Pauling-Goodenow Road and the replacement of the existing railroad bridge carrying CSX/UP Railroad over Pauling-Goodenow Road with a new structure with adequate vertical and horizontal clearance. It would also require intersection improvements throughout the corridor. There are no new alignments proposed as part of this alternative.

ALTERNATIVE 7A

Alternative 7A is the same as Alternative 7, but includes a bypass of Pheasant Lake Estates. The bypass would require an extension of Pauling-Goodenow Road to the east to then rejoin existing Pauling-Goodenow Road east of Pheasant Lake Estates, prior to the railroad bridge. It would

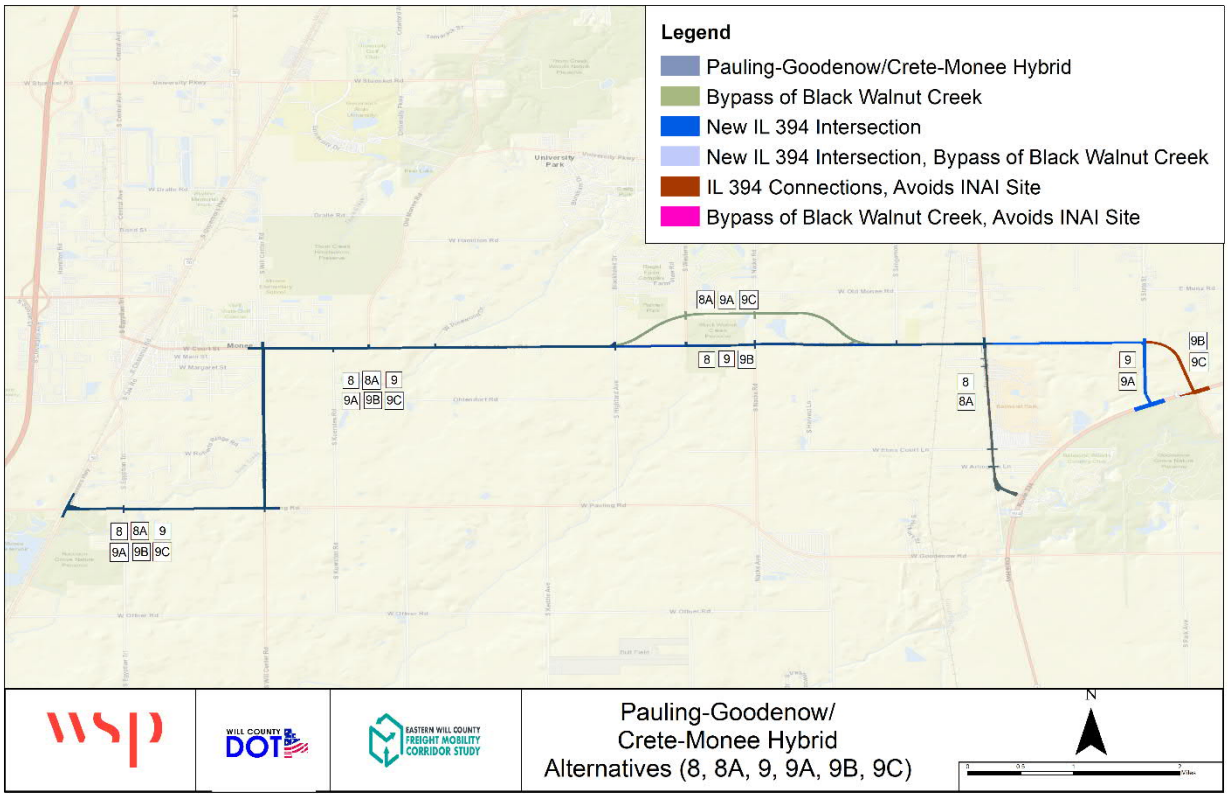
require the same improvements to existing Pauling-Goodenow Road and the railroad bridge carrying CSX/UP.

ALTERNATIVE 7B

The route for Alternative 7B is from IL 50 along Pauling-Goodenow Road, with an extension of Pauling-Goodenow Road, before it turns south through Pheasant Lake Estates, to IL 1, using the existing intersection of IL 1/IL394. This alternative requires a new alignment from Pauling-Goodenow Road to IL 1, with intersection improvements at Nacke Road and IL 1 (with potential installation of new traffic signals at IL 1), and a new grade-separated crossing of the CSX/UP Railroad.

Pauling-Goodenow / Crete-Monee Hybrid

Figure 8. PAULING-GOODENOW/CRETE-MONEE HYBRID ALTERNATIVES



There are six alternatives that designate a hybrid of Pauling-Goodenow Road and Crete-Monee Road to create an east-west truck route through Eastern Will County (Figure). These alternatives utilize the existing Pauling-Goodenow Road and IL 50 intersection, Will Center Road (CH 10), and Crete-Monee Road. The differences between the alternatives include a bypass of the Black Walnut Creek Preserve and three variations of connecting to IL 394. For alternatives using IL 1 to connect to IL 394 (Alternatives 8 and 8A), the IL 1 portion would remain under IDOT jurisdiction. Details of the alternatives are outlined below.

ALTERNATIVE 8

The route for Alternative 8 is along Pauling-Goodenow Road from IL 50 to Will Center Road (CH 10), north to Crete-Monee Road, east to IL 1, and south to IL 394. It proposes improvements to existing Pauling-Goodenow Road, Will Center Road (CH 10), Crete-Monee Road (CH 21), and IL 1. It would also require improvements to existing intersections. There are no new alignments proposed for this alternative.

ALTERNATIVE 8A

Alternative 8A is the same as Alternative 8, but includes a bypass of the Black Walnut Creek Preserve. It proposes the same improvements to existing roadways as Alternative 8. The bypass would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east.

ALTERNATIVE 9

The route for Alternative 9 is along Pauling-Goodenow Road from IL 50 to Will Center Road (CH 10), north to Crete-Monee Road, extension of Crete-Monee Road east of IL 1 to a new intersection with IL 394 It proposes improvements to existing Pauling-Goodenow Road, Will Center Road (CH 10), and Crete-Monee Road (CH 21). A new alignment is proposed to extend Crete-Monee Road to an extension of State Street south to IL 394, requiring a new intersection and potential traffic signal at IL 394.

ALTERNATIVE 9A

Alternative 9A is the same as Alternative 9, but includes a bypass of the Black Walnut Creek Preserve. It proposes the same improvements to existing roadways as Alternative 9. The bypass would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. It also includes the same new alignment from IL 1 to IL 394 as Alternative 9.

ALTERNATIVE 9B

Alternative 9b follows a similar alignment to Alternative 9a, but includes a connection to IL 394 that avoids an INAI site. Alternative 9b proposes improvements to the same existing roads as Alternative 9. Instead of extending State Street south, the new proposed alignment would extend Crete-Monee Road east from State Street to curve south to a new intersection with IL 394 and Bemes Road. It also includes the potential installation of a traffic signal at IL 394.

ALTERNATIVE 9C

Alternative 9c is the same as Alternative 9b, but includes a bypass of the Black Walnut Creek Preserve. The new proposed alignment would bypass the Black Walnut Creek Preserve to the north of existing Crete-Monee Road. This would require new intersections with Western Avenue, Kings Road, and Crete-Monee Road. This alternative also changes the access to the Black Walnut Creek Preserve to Western Avenue in the west, while maintaining the access in the east. The new proposed alignment would extend Crete-Monee Road from State Street to curve south to a new intersection with IL 394 and Bemes Road, the same as Alternative 9b.

2.3 Evaluation Criteria and Process

All alternatives were evaluated in PEL to find how well they meet the Purpose and Need, and weighed against their potential impacts to the natural and human environment. The No Build Alternative serves as the comparative baseline for the Build Alternatives evaluation and is carried throughout the alternatives evaluation process. Refinement and potential avoidance measures based on the PEL evaluation process will be further evaluated in NEPA after the Build Alternatives are narrowed down to the Alternatives to be Carried Forward.

Three levels of alternatives evaluation were completed in PEL:

- Level 1: Feasibiilty Evaluation – Evaluates the initial range of alternatives to identify any constructibilty issues or potential "fatal flaws" that make the alternative not feasible to construct.
- Level 2: Purpose and Need Evaluation – Evaluates the feasible alternatives and eliminated thost that do not satisfy the Purpose and Need
- Level 3: Environmental Resources Evaluation – Evaluates the feasible alternatives that meet the Purpose and Need for potential environmental impacts from PEL-level alternatives. These impacts were measured based on an assumed 120-ft wide corridor along each of the alternatives.

The evaluation criteria for Levels 1 and 2 are detailed below. Evaluation criteria for Level 3, Environmental Resources, are detailed in the next section, prior to characterizing environmental resources in the project area.

Level 1: Feasibility Evaluation Criteria

At the start of the alternatives evaluation, a feasibility evaluation was performed for the alternatives being considered. This level of evaluation was to determine if there were any "fatal flaws" that would eliminate those alternatives from carrying forward to Level 2. These "fatal flaws," or conditions that would render that alternative not feasible to construct, included review of utility impacts, considerable grade changes specifically related to the railroad at the east end of the project affecting constructability and sight lines, and overall adherence to the scope of the project.

As part of the public involvement, additional alternatives that included a corridor connecting to the interchange at Stuenkel Road were suggested. These Stuenkel Road alternatives were far outside the project study area. After further discussion, these alternatives were eliminated in the feasibility evaluation, as there are feasible and reasonable alternatives within the study area boundaries.

Level 2: Purpose and Need Evaluation Criteria

The alternatives were evaluated against the three needs identified for the study:

- Improve freight mobility deficiencies due to a lack of continuous east-west freight routes
- Accommodate growth in local and regional freight traffic
- Alleviate roadway safety deficiencies for freight and other users

Each alternative was measured on how well it met each need statement using specific evaluation criteria developed for each of the project's need statements. The evaluation criteria are shown in Table .

Table 1. LEVEL 2 PURPOSE AND NEED EVALUATION CRITERIA

Project Need	Evaluation Criterion
Improve freight mobility deficiencies due to a lack of a continuous east-west freight route	Will the alternative support a continuous east-west route for single-unit and multi-unit truck travel (no truck restrictions) through eastern Will County?
Accommodates growth in local and regional freight traffic	Will the alternative provide enough capacity to serve projected travel demand in the project area?
	Will the alternative support existing and developing freight-dependent land uses in Eastern Will County?
Alleviates roadway safety deficiencies for freight and other users	Will the alternative provide adequate pavement strength/weight limits to support freight travel?
	Does the alt provide improvements that potentially reduce crashes and dominant crash types within the project area?
	Will the alternative resolve current lane width and shoulder width deficiencies to provide safe design for freight travel per IDOT BLR design standards?

2.1 The purpose and need evaluation results are shown in Level 3 Evaluation Results: Environmental Resources

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2.4 Level 1 Evaluation Results: Feasibility

Of the nineteen alternatives considered plus the No Build Alternative, all passed the Level 1 evaluation. While there are some design and engineering challenges involving utility crossings,

new drainage structures, new structures over the railroad, and additional considerations that will need to be reviewed and further analyzed, all alternatives were considered to be feasible and moved forward to the Level 2 Evaluation for Purpose and Need.

2.5 Level 2 Evaluation Results: Purpose and Need

As summarized in Table below, all of the Build Alternatives meet the Purpose and Need evaluation criteria and the identified Purpose and Need for the project. The No Build Alternative does not meet the Purpose and Need, but as previously stated it will be carried through the entire project to serve as a baseline for comparison to the Build Alternatives.

Table 2. EVALUATION RESULTS – PURPOSE AND NEED SCREENING

ALTERNATIVE	IDENTIFIED PROJECT NEEDS & METRICS						
	Improves freight mobility deficiences	Accommodates growth in local and regional freight traffic		Alleviates roadway safety deficiencies for freight and other users			
	Supports continuous east-west route for SU and MU truck travel	Provides capacity to serve projected travel demand	Supports existing & developing freight land use	Provides adequate pavement strength/weight limits for freight	Provides improvements to potential reduce crashes	Resolves current lane and shoulder width deficiencies	Resolves current safety concerns at culvert crossings
NO BUILD	-	-	-	-	-	-	-
ALT 1	X	X	X	X	X	X	X
ALT 1A	X	X	X	X	X	X	X
ALT 2	X	X	X	X	X	X	X
ALT 2A	X	X	X	X	X	X	X
ALT 2B	X	X	X	X	X	X	X
ALT 2C	X	X	X	X	X	X	X
ALT 3	X	X	X	X	X	X	X
ALT 3A	X	X	X	X	X	X	X
ALT 4	X	X	X	X	X	X	X
ALT 4A	X	X	X	X	X	X	X
ALT 4B	X	X	X	X	X	X	X
ALT 4C	X	X	X	X	X	X	X
ALT 5	X	X	X	X	X	X	X
ALT 5A	X	X	X	X	X	X	X
ALT 6	X	X	X	X	X	X	X
ALT 6A	X	X	X	X	X	X	X
ALT 6B	X	X	X	X	X	X	X
ALT 6C	X	X	X	X	X	X	X
ALT 7	X	X	X	X	X	X	X
ALT 7A	X	X	X	X	X	X	X
ALT 7B	X	X	X	X	X	X	X
ALT 8	X	X	X	X	X	X	X
ALT 8A	X	X	X	X	X	X	X
ALT 9	X	X	X	X	X	X	X
ALT 9A	X	X	X	X	X	X	X
ALT 9B	X	X	X	X	X	X	X
ALT 9C	X	X	X	X	X	X	X

3: ENVIRONMENTAL RESOURCES SUMMARY

This section summarizes the environmental resources present in the EWC study area, and how the proposed project alternatives are anticipated to impact the community and natural environments. At the conclusion of this section, proposed alternatives are compared to identify the EWC alternatives that have fewer or less environmental impacts. These alternatives will comprise the Alternatives Carried Forward to conclude the PEL phase of the project. The Alternatives Carried Forward will be further refined to one Preferred Alternative during the National Environmental Policy Act (NEPA) process for the EWC project. This section first characterizes environmental resources present in the project area generally, by resource type. Then, the section concludes with the Level 3 Environmental Resources Evaluation. Please reference the Environmental Resource Map sets in Appendix D for location and extent of environmental resources, in relation to the study area and proposed alternatives.

4.1 Agriculture and Farmland

Agriculture has historically been an important industry for Will County. The Will County Farm Bureau reports that the county contains 801 farms, with over 216,000 acres of farmland, and the county produces soybeans, corns, cattle, pigs, vegetables, sheep, fruit, and forage hay, among other crops and products. Will County's development has been shifting to include moreurbanized industry, and agriculture has decreased. Farmland acreage decreased by eight percent from 2012 to 2017 (USDA, 2017 Census of Agriculture Will County Profile 2017), and the agricultural workforce in the county dropped by 22 percent from 2014 to 2019 (Will County Workforce Investment Board 2022). Latest figures for 2020 from the USDA show that Will County yields about 175.1 bushels per acre of corn, 69.2 bushels per acre of wheat, and 53.6 bushels per acre of soybeans. Soybeans are produced on 101,745 of the county's acres, while corn is produced on 89,000 (USDA, National Agricultural Statistics Service Illinois Field Office Will County Estimates 2020-21).

The United States Department of Agriculture (USDA) defines prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses" (7 U.S.C. § 4201(c)(1)). The Illinois Department of Agriculture (IDA) defines farmland of statewide importance as that of of statewide importance for the production of food, fiber, forage, and oilseed crops" (Illinois Department of Agriculture 2001).

Spatial data from the National Resource Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) indicate that approximately 83.4 percent of the acreage of the study area is on prime farmland, and an additional 11.2 percent is on farmland of statewide importance. There is an abrupt shift at the northern project limits of the study area. That is where Will County meets the border of Cook County, where much of the farmland has been lost to development.

Coordination with US Department of Agriculture/Natural Resources Conservation Service for the proposed project will occur during NEPA, through the NRCS-CPA-106 form and agency coordination process.

4.2 Cultural Resources

Cultural resources include above-ground architectural resources and archaeological resources. Cultural resources that are listed on or eligible for the National Register of Historic Places (NRHP) are eligible for protection under Section 106 of the National Historic Preservation Act (NHPA) and Section 4(f) of the US DOT Act (See Section 3.4).

An Environmental Survey Request (ESR) was submitted to IDOT for the PEL in 2021 and 2022. In response to the ESR, the IDOT Cultural Resources Unit (IDOT CRU) and the Illinois State Archaeological Survey (ISAS) conducted a "PEL Database Review" and Historic Resource Survey of the PEL's ESR limits (IDOT CRU and ISAS: May 5, 2022). The IDOT CRU survey included a review

of the NRHP as well as state and local historic databases (Illinois State Historic Preservation Office's Historic and Architectural Resources Geographic Information Systems [HARGIS], Will County local landmarks, and the Will County Rural Historic Structure Survey [WCRHSS]).

Using this data, the IDOT CRU survey identified twenty-three (23) previously-identified architectural historic resources within the ESR limits. IDOT CRU did not provide data on previously-identified archaeological resources in the ESR limits; archaeological resources were not identified or characterized in the PEL study.

One of the known resources was previously determined eliglble for listing on the NRHP: the Carl Wilhelm Steiber House (Wayfarer Farm), at 109 W. New Monee Rd. in Crete. The remaining twenty-two (22) known above-ground historic resources in the ESR limits were identified using HARGIS and WCRHSS:

- Monee Creamery/Monee Cheese Factory (Stone Building), 5144 W. Court Street, Monee
- Marti Farmstead, 4900 W. Main Street, Monee
- William Arnold Farmstead, 4333 W. Crete-Monee Road, Monee
- Henry Arnold Farmstead, 4252 W. Crete-Monee Road, Monee
- Kuersten-Halfeldt Farmstead, 3221 W. Crete-Monee Road, Monee
- Immanuel Lutheran (Black Walnut) School, 25915 S. Nacke Road, Crete
- Koelling-Seggebruch Farmstead, 25828 S. Dixie Highway, Crete
- Muehring-Moeller Farmstead, 25705 S. Dixie Highway, Crete
- Balmoral Park, 26435 S. Dixie Highway, Crete
- Davis House, 27007 S. Governors Highway, Monee
- Cellarius-Twietmeyer Farmstead, 4715 W. Pauling Road, Monee
- Rabe Farmstead, 4314 W. Pauling Road, Monee
- Meier-Rodewald Farmstead, 4237 W. Pauling Road, Monee
- Rabe-Pauling-Kannberg Farmstead, 4140 W. Pauling Road, Monee
- Tucker-Miller-Siemsen Farmstead, 3664 W. Pauling Road, Monee
- Seggebruch-Lehman Farmstead, 2661 W. Pauling Road, Monee
- Becker-Deutsche Farmland, 3537 W. Pauling Road, Monee
- Seggebruch Farmstead, 27020 S. Nacke Road, Crete
- Kraegel-Langebartels Farmstead, 1455 W. Goodenow Road, Beecher
- Arkenberg Tenant Farmstead, 1335 W. Goodenow Road, Beecher
- Jeney House, 624 W. Goodenow Road, Beecher

These previously identified above-ground historic properties identified by IDOT CRU may be subject to protection under Section 106 of the National Historic Preservation Act of 1966. In a letter dated October 6, 2022, IDOT states that "(o)nce a Preferred Alternative is selected, additional evaluation of the 25 resources noted directly above will need to be conducted in order to ascertain each resource's NRHP eligibility." Exact boundaries of each historic site will be further defined in NEPA if the properties are eliglble for the NRHP; property parcel boundaries were used to define the limits of each potentially eligible property for resource characterization in PEL.

As shown in Table 3, each Build Alternative impacts multiple potential historic resource properties, and eight alternatives impact the Carl Wilhelm Steider House. The No Build Alternative does not impact these resources.

Table 3. HISTORIC PROPERTIES ON OR POTENTIALLY ELGIBLE FOR NRHP

Property	Alternatives impacting property
Arkenberg Tenant Farmstead	7, 7A
Balmoral Park	3A
Becker-Deutsche Farmstead	7, 7A, 7B
Carl Wilhelm Steiber House (Wayfarer Farm)	2, 2A, 2B, 2C, 4, 4A, 4B, 4C, 6, 6A, 6B, 6C, 9, 9A, 9B, 9C
Cellarius-Twietmeyer Farmstead	7, 7A, 7B, 8, 8A, 9, 9A, 9B, 9C
Goodenow School	7, 7A
Henry Arnold Farmstead	1, 1A, 2, 2A, 2B, 2C, 3, 3A, 4, 4A, 4B, 4C, 5, 5A, 6, 6A, 6B, 6C, 8, 8A, 9, 9A, 9B, 9C
Hohman-Triem-Bonem Farmstead	1, 1A, 2, 2A, 2B, 2C
Immanuel Lutheran (Black Walnut School)	1, 1A, 2, 2A, 2B, 2C, 3, 3A, 4, 4A, 4B, 4C, 5, 5A, 6, 6A, 6B, 6C, 8, 8A, 9, 9A, 9B, 9C
Jeney House	7, 7A, 7B
Kraegel-Langebartels Farmstead	7, 7A
Kuersten-Halfeldt Farmstead	1, 1A, 2, 2A, 2B, 2C, 3, 3A, 4, 4A, 4B, 4C, 5, 5A, 6, 6A, 8, 8A, 9, 9A, 9B, 9C
Meier-Rodewald Farmstead	7, 7A, 7B
Rabe Farmstead	7, 7A, 7B
Rabe-Pauling-Kannberg Farmstead	7, 7A, 7B
Tucker-Miller-Siemsen Farmstead	7, 7A, 7B
William Arnold Farmstead	1, 1A, 2, 2A, 2B, 2C, 3, 3A, 4, 4A, 4B, 4C, 5, 5A, 6, 6A, 6B, 6C, 8, 8A, 9, 9A, 9B, 9C

In NEPA, a Phase I Cultural Resources Survey (CRS) will be completed for the proposed project either by the State (through an Environmental Survey Request) or by the County/consultant. The Phase I CRS will include the results of the IDOT CRU 2022 survey and additionally identify any other or currently unknown above-ground historic or archaeological resources that may be

present in the project area. Coordination with the State Historic Preservation Office (Illinois Historic Preservation Office) and local historical groups will be completed, and the project will be reviewed in compliance with Section 106 of the NHPA.

4.3 Demographics, Socioeconomics, and Environmental Justice

Demographics

Table displays the population growth that occurred in Will County, Illinois and project area villages and census-designated place (CDP) from 2010 to 2020. While Illinois's population has changed little, decreasing by 0.1 percent, Will County has experienced growth, its population increasing by 2.8 percent. Beecher and Crete have the largest percentage change in population of the seven villages studied in and near the project area. The CDP of Willowbrook has experienced sharp population decline. The remaining places saw little population change over the decade.

Table 4. POPULATION CHANGE, 2010 TO 2020

Location	2010	2020	Percent change
Beecher	4,359	4,713	+8.1%
Crete	8,259	8,465	+2.5%
Monee	5,148	5,128	-0.4%
Park Forest	21,975	21,687	-0.0%
Steger	9,570	9,584	+0.0%
University Park	7,129	7,145	+0.0%
Willowbrook	2,076	1,346	-35.2%
Will County	677,560	696,355	+2.8%
Illinois	12,830,632	12,812,508	-0.1%

Source: US Census (2010 and 2020)

Table displays 2019 5-year estimates of various demographic characteristics from the US Census Bureau. Of the affected villages and CDP in the study area, Beecher's median household income is the highest, and its racial/ethnic minority population and unemployment rate are lowest. The median household incomes of all villages are higher than the Illinois's, but lower than Will County's. With the exception of Beecher, each of the places in the study area contain

higher racial/ethnic minority populations than Will County and Illinois. University Park, Park Forest, and Willowbrook are majority-minority places. Beecher is also the only community in the study area with a lower unemployment rate than the county average, although Crete's and Monee's is lower than the state average. Limited English speaking households are far lower in each of the villages and CDP than the county and the state.

Table 5. SELECTED DEMOGRAPHIC CHARACTERISTICS

Location	Median houshold income	Racial/ethnic minority	Unemployment	Limited English households
Beecher	$82,222	1.6%	2.2%	0.7%
Crete	$79,375	44.0%	5.1%	2.0%
Monee	$71,082	36.7%	3.9%	0.6%
Park Forest	$53,938	72.8%	7.9%	1.2%
Steger	$49,112	29.1%	8.4%	1.7%
University Park	$52,250	91.3%	9.0%	0.0%
Willowbrook	$81,658	59.4%	7.6%	0.0%
Will County	$86,961	26.5%	3.2%	8.4%
Illinois	$62,843	27.5%	5.3%	8.4%

Source: US Census American Community Survey

Land Use and Zoning

Land use planning in Will County includes municipal planning for cities and villages, and county planning in unincorporated areas. The study area includes land that falls under the purview of comprehensive plans for Crete, Monee, Park Forest, Steger, and University Park. The unincorporated CDP place of Willowbrook is in the eastern portion of the study area. The village of Beecher is located just south of the study area, but its comprehensive plan includes development into currently unincorporated portions of the project area, which would require annexation.

The entirety of Crete's zoning jurisdiction is included in the study area. Most of the existing land use in the northern part of Crete is single-family residential, with commercial use largely concentrated around the IL 1/Exchange Avenue intersection. Zones of single-family residences are also located east of IL 394 and south of New Monee Road. Crete contains abundant parks and open space, particularly east of IL 394, where Plum Valley Ravines, Moeller Woods Forest Preserve, Plum Valley Preserve, and Goodenow Grove Nature Preserve are located. Elsewhere, existing land use largely agricultural, especially west of IL 394. Public/semi-public and industrial land is scattered throughout.

The portion of Monee in the study area has a diverse mix of land use, particularly along I-57 and IL-50. Industrial zones lie here, including an Amazon fulfillment center in the northwest corner of the study area. North Monee, especially between I-57 and where IL-50 and the Canadian National Railroad diverge, supports more density than the rest of the city including commercial and multifamily residential land use. At the southern portion of the study area is the Monee Reservoir and Raccoon Grove Nature Preserve, overseen by the Forest Preserve District of Will County. Away from I 57 and IL 50, much of Monee is single-family residential and agricultural, with some civic/institutional areas scattered throughout.

The villages of Park Forest and Steger straddle the border separating Will County and Cook County. The Will County portions of these villages are located in the northern part of the study area. Both of these areas are predominantly residential, with some commercial development primarily concentrated along major roads, South Steger-Monee Road in Park Forest and Chicago Road in Steger.

The village of University Park also shares space with Will and Cook Counties, but the vast majority of it is in Will County, with only a small residential enclave north of Steger Road lying outside the study area. West of Governors Highway, the village is almost entirely industrial. Governors State University, a public university, occupies the central portion of the village, with some residential, commercial, and industrial development north and south of it. Eastern University Park contains a greater mix of land uses, with detached housing, multifamily homes, abundant greenspace and public land, and commercial development, much of it concentrated along University Parkway.

Most of the unincorporated land in the study area is agricultural. A considerable amount of residences are in the unincorporated portions of the study area as well, most of those being single-family homes. Some industrial land is scattered throughout the unincorporated parts of the study area.

Economics

Will County's economy is driven largely by heavy industry, with transportation and warehousing cited as its largest sector. The county is currently focused on growing its advanced manufacturing, food processing, energy, and life sciences industry sectors as well. In 2020, manufacturing contributed $4.6 billion to the countywide GDP, the largest of any industry. Transportation and warehousing was third (behind manufacturing and wholesale trade) at $2.7 billion. Transportation and warehousing employs 14.3 percent of the county's workers, more than any other sector in the county, and 2.89 times the national average.

Industry as an economic focus is driven by the county's status as the largest inland port in North America, spurred by the opening of the CenterPoint Intermodal Center, BNSF Logistics Park, and Union Pacific Global IV Intermodal Center, all since 2002. Currently, there is over 200 million square feet of industrial area in Will County, encompassing over 2,000 buildings. Industrial economic development that has occurred during this millennium has come on the heels of a

population growth of over 40 percent, from over 350,000 to over 500,000, between 1990 and 2000 (Will County Land Use Department 2002, rev. 2011).

In response to the rapid expansion of the industrial economy and population growth, Will County's Land Resources Management Plan (LRMP), published in 2002 and revised in 2011, foresaw the need to consider freight in making land use and transportation decisions. Its site plan for the former Joliet Army Ammunition Plant properties, for example, articulated the need for resulting truck freight to be directed away from local roads and onto interstates as soon as feasible. The site planning efforts here resulted, in part, in the CenterPoint Intermodal Center. The LRMP's area plan for the south suburban airport, which is still only proposed, considered the linkages between land use, freight, and the regional highway system. These considerations underscored the need to connect the local industrial economy with major transportation networks while interfering as little as possible with local streets serving people's homes, businesses, schools, and recreational areas.

The need for freight to supplement the regional economy has only grown since the LRMP, and recent planning efforts suggest that it will continue to do so. As discussed in the Land Use section of this document, industrial development is an economic driver within the study area as well, and the municipalities within the area plan for industry to grow into an even larger economic force here. Crete plans for an intermodal industrial facility and industrial park in the southern part of the city, and for an industrial and business park west of IL 394. In Monee, where industrial growth from 2010 to 2020 outpaced its countywide inventory share, the comprehensive plan calls for light industrial development in a near-contiguous area along IL 50 and I-57 from Pauling Road north to the village limits. While about half the land in this area is currently industrial, much of it is currently agricultural and single-family residential. Beecher envisions a contiguous section of industrial development north along IL-1 and west of existing village limits, most of which is currently agricultural. The village acknowledges the need to annex much of this area to have oversight of industrial development.

Although industrial development is the centerpiece of the county economy, the affected villages envision their neighborhoods as becoming more economically diversified in the years ahead. Crete's comprehensive plan recommends neighborhood commercial nodes and a downtown tax-increment finance (TIF) district to stimulate the economy in the village, which residents routinely leave to purchase goods, and to attract residential development dense enough to support retailers. Monee recently purchased 38 acres of land southwest of Monee-Manhattan Road and IL-50 with the goal of creating a pedestrian-friendly and mixed-use town center. Beecher's comprehensive plan contains a downtown revitalization element, and plans for mixed-use, high-density residential, and institutional/civic spaces connected by an expanded walking and biking trail. The development of a route dedicated to truck freight would support not only support local industry, it would support the growth of the local economy in other areas by limiting the impact of freight-related land uses on these areas.

Public Facilities and Services

Police protection in the study area is provided by the Beecher Police Department, Crete Police Department, and Monee Police Department within the villages. In unincorporated Will County, police protection is provided by the Will County Sheriff's Office. The Forest Preserve District of Will County has a police department as well. Fire service is provided by the Beecher Fire District, Crete Fire Department, and Monee Fire District. There are two local school districts in the area: the Beecher Community Unit School District 200U and Crete Monee Community School District 201U. The closest full-service hospital to the study area is Franciscan Health in Olympia Fields, Cook County. St. James Community Health Care, at the intersection of Crete-Monee Road and Will Center Road in Monee, provides some clinical services and is located in the study area.No fixed route public transportation service currently exists in the study area. Pace Bus, Chicago's suburban bus service, extends as far south as the Will County communities of Joliet, New Lenox, and University Park, but does not serve Beecher, Crete, Monee, or surrounding unincorporated area. Will Dial-a-Ride is available to any eligible residents in the service area. This service provides rides to and from work, grocery stores, local shopping centers, nursing homes, Village Hall, restaurants, appointments, to visit a friend or relative, or events. Seniors, the disabled, and those who do not have transportation to and from work are eligible.

The Forest Preserve District of Will County (FPDWC) was established in 1927 to protect, conserve, enhance, and promote nature in the county. Today, FPDWC counts nearly 22,000 acres of land in its jurisdictions (FPDWC 2019). Eleven FPDWC properties, encompassing over 7,500 acres, are in the study area (FPDWC n.d.). These lands are shown in Appendix D. FPDWC lands are discussed in more detail in Sections 3.4 and 3.5 (Section 4(f); Special Lands).

Environmental Justice

Executive Order (EO) 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations was used as a basis for the environmental justice (EJ) assessment of the EWC. The EO directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. Data from the US Census Bureau's 2019 ACS 5-year estimates were used to determine whether the project would disproportionately impact minority, low-income, and limited English populations. Of the 29 block groups within the study area, ten meet the definition of an area with EJ characteristics based on their minority population, and one meets the definition based on its low-income population. Refer to Appendix E for a table of block groups in the study area identified to have EJ characterstics.

The IDOT Bureau of Design and Environment Manual defines an area with EJ characterstics as "a community with a low-income and/or minority population greater than twice the statewide average." (Illinois EPA 2021) As shown in Appendix D, all areas with EJ characteristics are north of Crete-Monee Road, and most between SR-50 and SR-1. As shown, there are no block groups with concentrations of limited English-speaking populations above the state average.

Of the alternatives considered, only 7, 7A, and 7B do not impact any block groups with EJ characteristics. The remaining BGs all impact Census Tract 8836.06, Block Group 1. This block group borders Crete-Monee Road to the north and S. Will Center Road to the east. It is considered an area with EJ characteristics due to its high concentration of minority populations (69 percent).

The PEL process includes input from residents living in areas with EJ characteristics. The Stakeholder Involvement Plan (SIP) includes a goal to connect with diverse stakeholder groups. It does so by identifying and partnering with key leaders in the communities, developing bilingual promotional materials and focusing on popular community areas where the target audiences gather regularly. The SIP also includes small community events with targeted stakeholder groups to overcome language barriers, as well as technological barriers such as internet access. The SIP is included in Appendix B.

As the PEL developed, multiple meetings were held with representatives from the affected cities, villages, and townships to ensure local interests are reflected. Targeted outreach was conducted with specific stakeholders that include groups responsible for developing an economically vibrant region. Among these groups are Amazon, the Chicago Southland Economic Development Corporation, and the Will County Center for Economic Development. Four rounds of MetroQuest surveys were conducted to allow all citizens to provide input. As discussed in the SIP, the surveys have been promoted heavily via a dedicated page on the website, paid social media promotion, and word-of-mouth through the team's one-on-one meetings. Low-income and limited-English populations were given the opportunity to respond to the surveys via postcards; 5,500 people from these populations received postcards.

A total of 252 surveys were completed during the kickoff stakeholder engagement period, during winter 2020. Seventy-nine percent of participants were white, nine percent were Black or African-American, eight percent were some other race, and four percent were two or more races. Demographic data were also made available for the final public engagement period from June 6, 2022, through July 8, 2022. Eighty-three percent of participants were white, five percent Black or African-American, four percent Hispanic or Latino, and eight percent other/two or more races.

According to the US Census ACS data used in support of the EJ analysis of this PEL report, the approximately forty-three percent of people who live in a block group that lies partially or entirely within the project area belong to a racial/ethnic minority group.

When the EWC project is in the NEPA process, it is expected that the project will be reassessed for environmental justice populations, engagement with those populations, and impacts to environmental justice communities from the proposed action using any new methodologies from the updated IDOT Community Impacts Assessment manual.

4.4 Section 4(f) and Section 6(f)

Section 4(f) of the US Department of Transportation Act, codified in 49 U.S.C. § 303 and 23 U.S.C. § 138, protects publicly-owned park and recreation lands and wildlife and waterfowl refuges, and all historic sites on or eligible for the National Register of Historic Places.

Section 6(f) of the Land and Water Conservation Fund (LWCF) (54 U.S.C. § 2003i) funds public agencies to develop outdoor recreation areas. Section 6(f)(3) protects properties funded with LWCF funds from conversion to another use (such as a conversion from park use to transportation use). Effectively an Illinois state analog of LWCF is the Open Space Lands Acquisition and Development Grant (OSLAD) (Ill. Admin. Code tit. 17, § 3025). OSLAD is a state-financed grant program that provides funding assistance to local government agencies for acquisition and/or development of land for public parks and open space.

Section 4(f)

Properties with potential Section 4(f) protection were identified using Will County parcel data, municipal parks and trails information, Forest Preserve District of Will County (FPDWC) data, Illinois Nature Preserves and state parks, and may also include Illinois Natural Area Inventory (INAI) sites. (See Section 3.5; Natural Resources for details on parks/recreation/preserve 4(f) properties), and any cultural resource sites (see Section 3.2; Cultural Resources for details on cultural resource sites) listed on or potentially eligible for listing on the National Register of Historic Places.

FPDWC lands in the study area are Black Walnut Creek Preserve, Goodenow Grove Nature Preserve, Monee Reservoir, Plum Valley Preserve, Racoon Grove Nature Preserve, and Thorn Creek Headwaters Preserve. Of these lands, Raccoon Grove and Goodenow Grove are also Illinois Nature Preserves (See Section 3.5; Natural Resources). Municipal parks identified in the project area are Fireman's Park and Palmer Park. Recreational trails identified in the project area are associated with FPDWC lands (Goodenow Grove and Monee Reservoir).

As discussed in the Cultural Resources section, one property with an historic resource previously found eligible for listing on the NHRP (Carl Wilhelm Steiber House (Wayfarer Farm)) and 22 additional architectural resources previously found potentially eligible for the NRHP properties were identified in the project area by IDOT CRU. Refer to the Environmental Resources Map in Appendix D for a display of the known or potential Section 4(f) resources in relation to the alternatives.

During NEPA, potential park/recreation/preserve Section 4(f) resources will be evaluated in cooperation with FHWA and Officials with Jurisdiction (OWJ) to determine Section 4(f) applicability and potential impacts from the project.

During NEPA, further cultural resources review (including a Phase I Cultural Resource Survey) will be conducted to identify all cultural resources (architectural and archaeological) in the study area that may be on or eligible for the NHRP. Coordination with the State Historic Preservation Office (Illinois Historic Preservation Office) and local historical groups will be completed, and the project will be reviewed in compliance with Section 106 of the NHPA. Cultural resources

identified in NEPA as eligible or potentially eligible for the NRHP will be also identified as Section 4(f) resources in NEPA, and these resources will be coordinated with SHPO, the likely OWJ for Section 4(f), as part of the Section 106 process.

Section 6(f)

IDNR LWCF data for the state of Illinois were reviewed to identify LWCF-funded lands, and lands funded by the Illinois OSLAD grant.

No LWCF-funded lands were identified in the study area. Illinois DNR identified that Thorn Creek Woods/Thorn Creek Headwaters Preserve and Raccoon Grove Nature Preserve, all located in the study area, were funded by OSLAD. Refer to Appendix D - Environmental Resources Map.

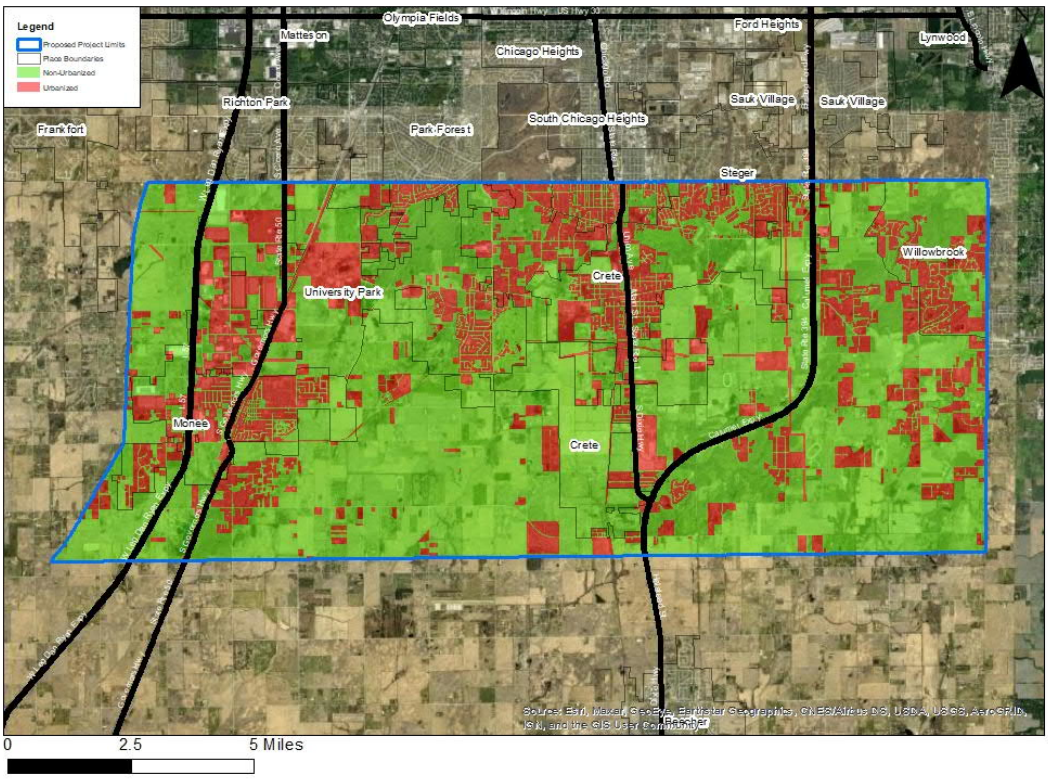
4.5 Natural Resources

Land Cover/Topography

Most of Will County, including the study area, is located in the Wheaton Morainal Country subsection of the Till Plains section, within the Central Lowland physiographic province of Illinois (ISGS n.d.). This area, which surrounds the lake bed on which the city of Chicago was built, was formed from about 14,000 to about 15,500 years ago. It is characterized by features consistent with continental glaciation including moraines, eskers, kettles, and outwash plains. It contains gently rolling topography shaped by glacial retreat, primarily rocks, gravel, sand, and soil (Northern Illinois University 2004).

Presettlement, land in the study area was a mix of forest and prairie, with some swampland (Prairie State Conservation Coalition n.d.). Today, land cover in the study area is a mix of woodland, open space, development of varying intensity, as well as row crops (ISGS 2007). Error! Reference source not found. displays the general land cover in the study area based on the latest data from Chicago Metropolitan Agency for Planning, with urbanized areas encompassing all developed space in the area inlcuidng residential, commercial, and industrial space; and non-urbanized area including agricultural land, parks, and greenspace.

Figure 9. GENERAL LAND COVER IN THE STUDY AREA



NATURAL AREAS

The Forest Preserve District of Will County (FPDWC) has ten properties within the study area (FPDWC n.d.). Of these, five are considered unimproved preserves with few or no built resources, focusing on natural resource preservation. The five unimproved preserves include Black Walnut Creek Preserve on Crete-Monee Road, Moeller Woods Preserve and Plum Valley Ravines (both part of the Plum Creek preservation system), and Deer Creek Preserve and Thorn Creek Headwaters Preserve (both part of the Thorn Creek preservation system).

The remaining five FPDWC properties in the study area are considered improved preserves, and include:

- Goodenow Grove Nature Preserve: Goodenow Grove Nature Preserve is located along IL 394, and is part of the Plum Creek preservation system. It was a Boy Scout camp prior to FPDWC acquisition, and a portion of the site is dedicated as an Illinois Natural Areas Inventory site and as an Illinois Nature Preserve (See “Special Lands” section below). The

Illinois Nature Preserve designation provides permanent protection for natural resources at Goodenow Grove. Goodenow Grove contains multiple habitats (forest, prairie, wetland, Plum Creek), wildlife, birding, trails, picnicking, camping, sledding, snowshoeing, ice skating, geocaching, and a visitors center.

- Monee Reservoir: Monee Reservoir is located at the southwest corner of IL 50 and Pauling-Goodenow Road and is part of the Rock Creek preservation system. It is a created lake that was previously used by a railroad as a water source for its steam engines. In addition to the lake, the property has wetlands, wildlife, and birds, and offers trails, picnic areas, fish, canoeing/kayaking/boating, geocaching, and a visitors center.
- Plum Valley Preserve: Plum Valley Preserve is located near the intersection of IL 1 and IL 394, and is part of the Plum Creek preservation system. It includes forest and wetland habitat, and Plum Creek, as well as trails, a dog park, and picnicking.
- Raccoon Grove Nature Preserve: Raccoon Grove Nature Preserve is located at the southeast corner of IL 50 and Pauling-Goodenow Road, and is part of the Rock Creek preservation system. The property protects cultural resources and natural resources; a portion of the site is dedicated as an Illinois Natural Areas Inventory site and as an Illinois Nature Preserve (see "Special Lands" section below). The Illinois Nature Preserve designation provides permanent protection for natural resources at Raccoon Grove. Raccoon Grove contains multiple habitats (forest, prairie, savanna, wetlands, and Rock Creek), wildlife, birding, and trails.
- Thorn Creek Woods Nature Preserve: Thorn Creek Woods Nature Preserve is located in University Park and Park Forest, north of the project alternatives, and is part of the Thorn Creek preservation system. It is jointly owned by the FPDWC, Villlage of Park Forest, Village of University Park, and is managed by the Thorn Creek Woods Management Commission (landowners and Friends of Thorn Creek Woods). A portion of the site is dedicated as an Illinois Natural Areas Inventory site and as an Illinois Nature Preserve (see "Special Lands" section below). The Illinois Nature Preserve designation provides permanent protection for natural resources at Thorn Creek Woods. Thorn Creek Woods contains multiple habitats (forest, prairie, savanna, wetland, and Thorn Creek), wildlife, birding, trails, and a visitors center.

Four FPDWC properties are adjacent to the considered range of alternatives: Black Walnut Creek Preserve, Goodenow Grove Nature Preserve, Raccoon Grove Nature Preserve, and Thorn Creek Nature Preserve. Of these, two FPDWC properties could be physically impacted by project alternatives: Black Walnut Creek Preserve and Thorn Creek Nature Preserve.

The entirety of the study area is Will/South Cook Soil and Water Conservation District (WSCSWCD). WSCSWCD works with the USDA and NRCS to assist in the districtwide conservation of conservation, development, management, and wise use of land, water, and related resources.Additional designations for these natural areas are described below in the "Special Lands" section. See Appendix D - Environmental Resources Map for the location of all natural resources in the study area.

Special Lands

State designated lands include Illinois Natural Area Inventory (INAI) sites, Land and Water Reserves, Natural Heritage Landmarks, and Illinois Nature Preserves. The Illinois Natural Areas Preservation Act sets the criteria for these land designations to help protect Illinois' sensitive natural resources (525 ILCS 30). Publicly available data were reviewed to identify these lands in the study area.

ILLINOIS NATURE PRESERVES/LAND AND WATER RESERVES

The Illinois Nature Preserves Commission (INPC) protects high quality natural areas and habitats of endangered and threatened species, in perpetuity, through voluntary dedication or registration of these lands into the Illinois Nature Preserves System. Only high quality natural areas qualify as Illinois Nature Preserves, and the designation provides permanent protection and preservation. The Illinois Nature Preserves in the study area include:

- Goodenow Grove Nature Preserve (owned by FPDWC): The INPC describes Goodenow Grove as "Dry-mesic and mesic upland forest, mesic and wet-mesic floodplain forest and forested seep of the Morainal Section of the Northeastern Morainal Natural Division" (Illinois DNR 1996)
- Raccoon Grove Nature Preserve (owned by FPDWC): The INPC describes Raccoon Grove as "Raccoon Grove is 202 acres of upland and floodplain forest, savanna and stream habitats representative of the Morainal Section of the Northeastern Morainal Division. The preserve is situated on the front slope of the West Chicago Moraine, the terminal moraine of the Valparaiso Morainic System which was deposited during the late Wisconsinan Stage upon retreat of the glaciers 15,000 years ago. Glacial meltwaters eroded the drainage basin of Rock Creek, an intermittent stream with its headwater system dissecting Raccoon Grove. The nature preserve protects approximately a third of the original Raccoon Grove that was mapped by the 1834 Land Survey as a forested island surrounded by prairie. Notable features include high quality examples of dry-mesic upland forest, dominated by white, bur and black oak and shagbark hickory, and mesic upland forest dominated by red and white oak and sugar maple. These forested areas have a rich mesophytic herbaceous flora. Management priorities include restoration of the prairie and savanna communities" (Illinois DNR 1989)
- Thorn Creek Woods (owned by FPDWC): The Thorn Creek INPC site only includes Thorn Creek Woods, and does not include Thorn Creek Headwaters Preserve that is adjacent to several project alternatives. The INPC describes Thorn Creek Woods as "Thorn Creek Woods is a 500 acre preserve with examples of upland, bottomland and ravine forests, glacial potholes, prairie and the aquatic environment of Thorn Creek. The original land survey, completed in 1834, indicates that the boundaries of the woods were very similar to what they are today, except for the southern edge of the woods which was probably an open oak savanna. Today, the forests on the slopes of the ravines are dominated by red oak. White oak is associated with red oak on the upper ravine slopes. Swamp white

oaks dominate scattered poorly drained depressions in the uplands. Sugar maple, black maple and basswood are common on the lower slopes and ravine bottoms. The mesic sites support a rich and diverse herbaceous flora including many spring wildflowers common to the Chicago region such as yellow trout-lily, columbine, jack-in-the-pulpit and a variety of asters. A small area of wet and mesic prairie is located on the western edge of the woods. Prairie cordgrass dominates the low wet areas while little bluestem is more typical of drier areas. Common forbs of the prairie include wild hyacinth, Turk's-cap-lily, Culver's root, swamp saxifrage, swamp thistle, sand violet and sunflowers. Blue spotted and spotted salamanders breed in wetland depressions" (Illinois DNR 1978)

NATURAL HERITAGE LANDMARK SITES

Natural Heritage Landmark sites are recognized by the Illinois Department of Natural Resources and allows the state to assist with management of the natural area. No Natural Heritage Landmark sites are in Will County.

ILLINOIS NATURAL AREAS INVENTORY (INAI)

The Illinois Natural Areas Inventory (INAI) was reviewed to identify areas designated by the DNH as "high quality natural areas, habitats of endangered species, and other significant natural features." Use of land from INAI sites may also be subject to Section 4(f). Four of the five INAI sites in the study area—Goodenow Grove, Moeller Woods, Raccoon Grove, and Thorn Creek Woods—are FPDWC properties. A fifth INAI site in the project area, Monee Railroad Prairie, is located near the IL-50/S. Governors Highway Split in University Park. The INAI site at Thorn Creek Woods does not include the Thorn Creek Headwaters Preserve.

Spatial data from the INAI inventory and FPDWC indicate that boundaries of INAI sites and FPDWC properties do not always align. This occurs in two locations near alternatives (See Appendix D - Environmental Resources Map):

- Raccoon Grove Nature Preserve: The northeastern corner of the INAI site at Raccoon Grove extends farther to the east than the FPDWC property limits. Also, the Raccoon Grove INAI site includes portions of the Pauling-Goodenow right-of-way, so alternatives located within the existing right-of-way on Pauling-Goodenow Road may avoid impacting the Raccoon Grove FPDWC property but would impact the Raccoon Grove INAI site.
- Goodenow Grove Nature Preserve: The Goodenow Grove INAI boundary extends north of IL 394, whereas the Goodenow Grove FPDWC property and the Goodenow Grove Illinois Nature Preserve boundaries are all south of IL 394.

Threatened and Endangered Species

An initial Natural Resources Review (NRR) was completed and signed by IDOT on September 30, 2021. An updated NRR was completed and signed by IDOT on September 27, 2022. See Appendix F.

ILLINOIS ENDANGERED SPECIES PROTECTION ACT

The NRR included a review of state threatened and endangered species (T&E) as listed in the Illinois Endangered Species Protection Act (520 ILCS 10) and Illinois Natural Areas Preservation. IDOT reviewed the Illinois Natural Heritage Database (INHD) to identify state-listed threatened or endangered species that may be present or have habitat in the study area. The INHD indicated that the the Raccoon Grove INAI and Nature Preserve is located near a Class 1-2 (grade A/B or C) prairie site that demonstrates "high species diversity in some areas" (Handel 2004). Any alternative that proposes improvements to Pauling-Goodenow Road may impact this prairie.

The NRR's state T&E review also indicated that the Goodenow Grove INAI and Nature Preserve includes records of the state-listed Kirtland's snake (Clonophis kirtlandii), Blanding's turtle (Emyodidea blandingii), and state and federally-listed Eastern massasauga rattlesnake (Sistrurus catenatus). Kirtland's snake and Blanding's turtle are verified extant, with surveys recording them in 2022 and 2021, respectively. The Eastern massasauga rattlesnake is considered extirpated, having not been seen here since 2001.

When the project proceeds to NEPA evaluation, it will be coordinated with Illinois Department of Natural Resources in coordination with the Illinois Endangered Species Protection Act (state T&E species). Any alternatives located near the Goodenow Grove INAI and Nature Preserve may require herpetological field surveys during NEPA for Kirtland's snake and Blanding's turtle.

SECTION 7 OF THE ENDANGERED SPECIES ACT (16 U.S.C. § 1536 ET SEQ.)

The NRR included a review of federal T&E species per Section 7 of the Endangered Species Act (16 U.S.C. § 1536 et seq.).

IDOT reviewed the US Fish and Wildlife Service (USFWS) Information for Planning and Conversation (iPaC) records to identify federally-listed endangered, threatened, proposed, and candidate species in the study area. Seven federally-listed species are recorded in Will County: Northern long-eared bat (NLEB), Eastern massasauga rattlesnake, sheepnose mussel, Hine's emerald dragonfly, lakeside daisy, leafy prairie clover, and Eastern prairie fringed orchid (EPFO). No critical habitat was identified for any of these species by the state.

- Northern Long-eared Bat: NLEB's suitable summer habitat includes forested or wooded areas for roosting, foraging, and traveling. Potential NLEB roosts are live trees or snags greater than 3 inches diameter at breast height (dbh) with exfoliating bark, cracks, crevices, or hollows, or linear features such as fencerows, riparian forests, or other wooded corridors. There are no records of known maternity roost trees, maternity colonies, or NLEB hibernacula in the vicinity of the project corridor. Seasonal tree clearing restrictions are likely to be included if the project will require tree removal.
- Eastern Massaauga: The NRR's federal T&E review indicated that the Goodenow Grove INAI and Nature Preserve includes records of the state and federally-listed Eastern massasauga rattlesnake (Sistrurus catenatus). The Eastern massasauga rattlesnake is considered extirpated, having not been seen here since 2001.

- Eastern Prairie Fringed Orchid: EPFO occurs in a variety of habitats, from mesic prairie to wetland communities. The NRR states that any wetland and prairie sites impacted by the project should be evaluated for the presence of potentially suitable EFPO habitat. All PEL alternatives impact wetlands.
- The remaining federally-listed species (sheepnose mussel, Hine's emerald dragonfly, lakeside daisy, and leafy prairie clover) do not have suitable habitat in the study area.

When the project proceeds to NEPA evaluation, it will be coordinated with US Fish and Wildlife Service in accordance with Section 7 of the Endangered Species Act (Federal T&E species). T&E habitat or species surveys will be recommended in NEPA as needed by USFWS, IDOT, or FHWA. Seasonal tree clearing restrictions for NLEB will likely be required during the NEPA evaluation if the project will require tree removal, and will restrict tree clearing between April 1 and October 31 for trees three inches or greater dbh. Trees potentially impacted by the project may require survey during NEPA for potential NLEB or Indiana bat suitable habitat. Any wetlands or prairie sites potentially impacted by the project may require EPFO surveys during NEPA.

4.6 Wetlands

Wetlands are areas where water covers the soil all year or seasonally, and these water-saturated soils provide habitat for various types of plant and animal life. Wetlands are a natural place for surface water to infiltrate to groundwater, supporting a healthy watershed and ecosystem. According to the USFWS National Wetland Inventory (NWI), there are approximately 1,358 acres of wetlands in the study area (see Appendix D). Table displays the types of wetlands in the study area and their acreage.

Table 6. WETLAND AND WATERS TYPES WITHIN STUDY AREA (USFWS n.d.)

Type	Total Wetlands and Waters in Study Area (Acres)
Freshwater Emergent Wetland	756.0
Freshwater Pond	272.5
Lake	83.4
Riverine	246.3

Wetland impacts from the alternatives range from 1.43 acres (Alternative 6A) to 6.52 acres (Alternative 6A). Refer to Table 2 for the range of wetland impacts for each alternative.

The 2022 Natural Resources Review (IDOT) stated that numerous hydric soils exist in the project area, and wetland surveys will be required in future phases of the project (See Appendix F).

A wetland delineation, including information on wetland quality, will be completed during NEPA for the footprints of the reasonable range of alternatives. As indicated in the Threatened &

Endangered Species section of this document, this work will involve an evaluation of EFPO suitability. Wetland impacts will be reassessed during NEPA using the wetland delineation data.

4.7 Surface Water Resources

The 2022 Natural Resources Review (IDOT) identified several streams crossing the project limits, including Rock Creek, Big Walnut Creek, Deer Creek, Plum Creek, and Forked Creek (See Appendix F). Various ponds, lakes, and reservoirs were identified in the study area as well, the largest of which is Monee Reservoir, whose 46 acres lie alongside IL-50 at the southwestern portion of the study area. The Illinois EPA includes the following project area streams in the 305(b)-listed streams list (Illinois EPA n.d.):

- Black Walnut Creek
- Deer Creek
- Plum Creek
- Rock Creek
- Thorn Creek

Of these streams, Plum Creek is listed by National Park Service on the Nationwide Rivers Inventory (NRI), indicating that it is "believed to possess one or more 'outstandingly remarkable' natural or cultural values judged to be at least regionally significant" (USEPA 2022). NRI river segments are potential candidates for the National Wild and Scenic River System. Federal agencies must seek to avoid or mitigate actions that would affect NRI river segments. No Wild or Scenic Rivers exist within the study area.

Deer Creek and Thorn Creek are listed by Illinois EPA as 303(d)-listed impaired and threatened waters. Deer Creek is 303(d)-listed for phosphorus and sedimentation/siltation (Illinois EPA 2022). Thorn Creek is 303(d)-listed for aldrin, chlordane, DDT, dieldrin, endrin, hexachlorobenzene, phosphorus, PCBs, and chloride. Table shows the streams in the project area that would be crossed by the proposed alterantives.

Table 7. STREAMS IMPACTED BY ALTERNATIVES

Stream	Alternatives Crossing Stream
Black Walnut Creek	7, 7A, 7B
Deer Creek	1, 1A, 2, 2A, 2B, 2C, 3, 3A, 4, 4A, 4B, 4C, 5, 5A, 6, 6A, 6B, 6C, 8, 8A, 9, 9A, 9B, 9C
Forked Creek	3, 3A, 4, 4A, 4B, 4C
Plum Creek (Nationwide Rivers Inventory)	7, 7A, 7B
Rock Creek	7, 7A, 7B, 8, 8A, 9, 9A, 9B, 9C

The impacts to all rivers range from 165 linear feet (Alternatives 1, 1A, 5, and 5A) and 360 linear feet (7, 7A, and 7B). As shown, Alternatives 7, 7A, and 7B impact the NRI-listed Plum Creek. Refer to Table 2 10 and 11 - Environmental Resources Impacts for the range of impacts to streams, and Appendix D - Environmental Resources Map to view these streams in relation to the alternatives.

The reasonable range of alternatives, and preliminary design for the Preferred Alternative, will be assessed during NEPA for in-stream impacts, potential Clean Water Act permit needs, and water quality Best Management Practices.

4.8 Groundwater Resources

The project is in proximity to an abundance of water wells. According to the Illinois State Geological Survey (ISGS), there are 1,794 water wells within the EWC study area (ISGS n.d.). The IEPA Source Water Assessment Protection Program indicates that there are eight community water supply sources in the study area (Illinois EPA n.d.).

There are no sole source aquifers within the study area. The EWC project is not above the Mahomet Sole Source Aquifer; the aquifer lies approximately forty (40) miles south of the EWC study area. More than half the population in East-Central Illinois relies on the Mahomet Sole Source Aquifer for drinking water, and due to that reliance the USEPA has authority to review Federal projects that have potential to contaminate the aquifer. The EWC project does not have potential to contaiminate the Mahomet Sole Source Aquifer given its distance from the aquifer.

The alternatives will impact between three wells (Alternatives 1 and 2) and ten wells (Alternatives 8, 8A, 9, and 9A). No community water supply wells are expected to be impacted. Refer to Table 2 - Environmental Resources Impacts for the range of impacts to wells.

4.9 Floodplains

Various areas of the study area are within Flood Zones A and AE. These are Federal Emergency Management Agency (FEMA)-designated Special Flood Hazard Areas (SFHAs), which are defined as areas that have a 1 percent chance or greater of being inundated by a flood annually. These areas closely correspond to the streams discussed in the “Surface Water Resources” section.

Impacts from the alternatives range from 4.35 acres (Aternatives 1 and 5) and 10.69 acres (Alternative 4C). Refer to Tables 10 and 11 - Environmental Resources Impacts for the entire range of impacts and Appendix D - Environmental Resources Map to view Flood Zones A and AE in relation to the alternatives.

4.10 Traffic Noise

In Illinois, traffic noise analyses are typically not conducted during a PEL process. The decision to conduct a traffic noise study typically occurs during Phase I during a NEPA process, at which point the IDOT determines if the project is a Type I project requiring a traffic noise analysis.

4.11 Air Quality

The National Ambient Air Quality Standards (NAAQS), established by the US Environmental Protection Agency, set maximum allowable concentration limits for six criteria air pollutants. Areas in which air pollution levels persistently exceed the NAAQS may be designated as "nonattainment." States where a nonattainment area is located must develop and implement a State Implementation Plan (SIP) containing policies and regulations that will bring about attainment of the NAAQS. Areas that had been designated as nonattainment, but that have attained the NAAQS for the criteria pollutant(s) associated with the nonattainment designation, will be designated as maintenance areas.

All areas of Illinois are currently in attainment of the standards for five of the six criteria pollutants: particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead.

For the eight-hour ozone, Cook, DuPage, Kane, Lake, McHenry, and Will Counties, as well as Aux Sable and Goose Lake Townships in Grundy County and Oswego Township in Kendall County, have been designated as marginal nonattainment areas. Jersey, Madison, Monroe, and St. Clair Counties in the St. Louis area also have been designated as marginal nonattainment areas for the eight-hour ozone standard.

4.12 Regulated Substances

Publicly accessible regulated substances databases within the study area were reviewed as part of this PEL. Findings from these databases were then narrowed to the ESR limits. It is anticipated that a Preliminary Environmental Site Assessment (PESA) will be completed during Phase I and NEPA documentation. Table displays the types of sites searched, their corresponding databases, and the number of sites located within the study area.

Table 8. SPECIAL WASTE DATABASE FINDINGS

Database/Source	Type of Site	# of Sites in Study Area
Illinois Bureau of Land (BOL) Inventory	Sites on file with IL Bureau of Land (involved with regulated substances, and/or an environmental related citation or citizen complaint)	54
Illinois State Geological Survey (ISGS) wells and borings database	Injection wells, oil wells, and proposed boring locations	0

USEPA RCRA database	Resource and Recovery Act (RCRA) corrective action sites	8
Illinois BOL LUST database	Leaking underground storage tank (LUST) sites	26
USEPA Cleanups in My Community	Federal Brownfields sites	0
USEPA CAFO permit database	Confined feeding operations	0
Illinois Emergency Management Agency (IEMA)	Hazardous materials incidents	58
Illinois EPA waste management permitted facilities	Infectious/medical waste sites	0
"Locations of Gas Plants and Other Coal-tar Sites in the U.S.: The State of Illinois" (Hatheway and Doyle 2009)	Manufactured gas plants	0
Illinois Department of Public Health (IDPH) private sewage license search	Septic waste sites	0
Illinois EPA solid waste database	Solid waste disposal sites	1
Illinois EPA Brownfields assistance database	State Brownfields sites	1
Illinois EPA tire unit database	Tire waste sites	0
Illinois Division of Petroleum & Chemical Safety UST public inquiry page	Active underground storage tank sites	6
Illinois EPA site remediation program database	Voluntary remediation program sites	1
Illinois EPA storage transfer directory	Waste transfer stations	0
USEPA PCB disposal facility directory	Polychlorinated Biphenyl (PCB) waste disposal sites	0
USEPA Toxic Release Inventory	Toxic release inventory (TRI) sites	3

A total of 157 known special waste sites or incident occurrences on 57 property parcels were identified within the ESR limits. An additional five sites were also identified, but could not be tied to a specific parcel because the information provided was too general (e.g., a spill at an intersection).

Parcels represented at least once on databases are shown on Appendix D - Environmental Resources Map. Parcels with Recognized Environmental Conditions (RECs) will be identified during future development of the PESA in NEPA/Phase I.

An additional 42 sites in Beecher, Crete, and Monee that turned up on databases were unable to be located because of incomplete, outdated or inaccurate information, such as an address or PIN that could not be identified, or an overly general description of the site (e.g., a street but no cross-street or an estimated distance from a mile marker). These missing sites include one Federal Brownfields site (Iliana Scrap, FRS 110009336085), the coordinates and address of which mark it in Hammond, Indiana. As part of the NEPA process, ISGS will prepare a preliminary environmental site assessment (PESA). The PESA will explore the potential need for further investigation and remediation of special waste sites, and can refine and reconcile the locations of all sites, including those that could not be located.

4.13 Cumulative and Indirect Impacts

FHWA defines cumulative impacts as impacts "on the environment, which (result) from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." Indirect impacts are those that are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." (FHWA n.d.) The following cumulative and indirect impacts have been identified for the project in its PEL phase, and will be studied in more detail in the NEPA/Phase I project phase.

- Construction of proposed action may influence unplanned development of freight-generating and/or residential subdevelopment in this area. This can continue to convert farmland and fragments of remaining natural areas in the project area into urban uses.
- The project is proposed to create a more efficient travel route for freight through Eastern Will County. More efficient means of transporting freight goods, however, may influence more industrial growth in the region than is currently planned.
- The public and agencies in the project area have noted their need to reduce freight traffic in their cities. Crete and Beecher both have comprehensive plans calling for more dense, walkable, and economically diverse central business districts. A dedicated freight corridor will allow traffic to be redirected from local streets in the cities, villages, towns, and CDPs in and around the project area, and the proposed project may help the villages meet these goals by reducing freight traffic through towns,

4.14 Level 3 Evaluation Results: Environmental Resources

Level 3 Evaluation Criteria: Environmental Resources

All Build Atlernatives were found feasible in Level 1 Evaluation and found to meet the Purpose and Need Statement in Level 2 Evaluation, meaning all nineteen plus the No-Build Alternative were evaluated in the Level 3 Environmental Resource Evaluation. At this level, the alternatives were reviewed using PEL-specific environmental resource data for impacts to the human and natural environment using the criteria listed in Table 9. Please reference the Environmental Resource Map sets in Appendix D for location and extent of environmental resources, in relation to proposed alternatives.

Table 9. LEVEL 3 EVALUATION CRITERIA: ENVIRONMENTAL RESOURCES

Criterion	Measure
Agricultural	Prime & Important Farmland Impacts (acres)
Cultural Resources	Impacts to property parcels associated with previously identified historic architectural sites, as provided by IDOT CRU. A Phase I Cultural Resources Survey (CRS) will be completed in NEPA, and Section 106 consultation will be conducted in NEPA with SHPO through IDOT CRU.
Social and Economic	Home and Businesses Direct Building Impacts (number)
	Areas of Limited English Proficiency (number block groups)
	Property Impacts to Government Uses and Places of Worship (number, acres)
	Cemeteries Impacted (number)
	Schools/Educational Uses Impacted (number of schools, acres)
	Compatible with Land Use and Existing/Proposed Freight Generators (Y/N)
	Compatible with Business Park Locations (Y/N)
Environmental Justice	Census Block Groups with Higher Concentrations of Minority Race/Ethnicity persons (number block groups, number homes/businesses)
	Census Block Groups with Higher Concentrations of Low Income Persons (number block groups)
Transportation	Impacts to Proposed South Suburban Airport (acres)
Section 4(f)	Impacts to Municipal Parks & Recreational Areas (acres)
	Impacts to Recreational Trails (feet)
	National Register of Potentially Eligible Properties Impacted (number)
Section 6(f)	Impacts to lands Funded by Land & Water Conservation Fund (acres)

Criterion	Measure
	Impacts to Lands Funded by Open Space Lands Acquisition and Development Grant (acres)
Natural Resources	Impacts to FPDWC lands
	Impacts to Illinois Nature Preserves
	Impacts to INAI sites (acres)
	Impacts to NWI Wetlands (acres)
	State and federal T&E species will be studied in coordination with IDNR and USFWS during NEPA (Section 7 of Endangered Species Act)
Surface Waters	Impacts to Surface Waters (LF, acres)
	Impacts to Impaired Waters (LF, acres)
	Nationwide Rivers Inventory (LF, acres)
Groundwater	Impacts to Community Water Supply Wells and Other Wells (number)
Floodplains	Impacts to FEMA Floodplain, Zone A, AE (acres)
Floodway	Impacts to Regulated Floodway (acres)
Traffic Noise	Traffic noise will be studied in NEPA
Air Quality	Attainment status for National Ambient Air Quality Standards (NAAQS)
Regulated Substances	Impacts to Regulated Substances as Located Through Database Searches (parcels, acres)

The goal of the Level 3 environmental resources evaluation was to identify and remove from further consideration all project alternatives that have high impacts to sensitive environmental resources or impact important environmental resources that have special protections. Environmental resources were studied commensurate with a PEL level of study, rather than a more in-depth NEPA level of study. Level 3 evaluation considered the detail of data available for

this PEL, and recommended evaluation out alternatives where all applicable data for that resource was available during this stage. If more precise environmental data or additional detail would not be available for that resource until the NEPA phase of the project, alternatives were not screened based on that resource at this point, but will be evaluated during NEPA and Phase I.

For PEL, environmental resources were evaluated largely through desktop review using GIS and readily available resource data within a generalized120-foot wide corridor for each alternative. The alternatives that were not screened out during Level 3 evaluation will be moved forward as the Alternatives to be Carried Forward for further evaluation in NEPA and Phase I.

Level 3 Evaluation Results: Environmental Resources

The results of Level 3 environmental resources evaluation in the two following tables. Table 1 summarizes impacts to community resources, and Table 2 summarizes impacts to natural resources. Please reference the Environmental Resource Map sets in Appendix D for location and extent of environmental resources, in relation to proposed alternatives.

Wetlands and Waters of the United States are an example of an environmental resource that will have more precise or detailed data available during NEPA.

In PEL, wetlands are studied using National Wetlands Inventory (NWI) desktop databases. These are large-scale datasets with no information on wetland quality.

In NEPA, wetlands will be studied for this project using wetland and waters field delineations. In a wetland delineation, wetland scientists test soil and study plants to refine the boundaries of a wetland and provide detailed information on each wetland's type and quality. This helps identify which wetlands are most critical to protect, and this information is not available during PEL.

Table 1. LEVEL 3 EVALUATION RESULTS - COMMUNITY AND COMMUNITY RESOURCES

Resource Type	Impact from No Build Alt	Impacts from Build Alternatives																								
		Dralle Road / Crete- Monee						Crete-Monee North						Crete-Monee South						Pauling-Goodenow			Pauling-Goodenow/Crete-Monee Hybrid				
		1	1A	2	2A	2B	2C	3	3A	4	4A	4B	4C	5	5A	6	6A	6B	6C	7	7A	7B	8	8A	9	9A	9B	9C
Agriculture																												
Prime and Important Farmland (acres)[1]	0	124	139	132	147	134	149	136	151	143	158	146	161	134	149	141	156	144	159	111	142	131	148	163	155	170	157	172
Cultural Resources																												
Previously-identified architectural sites eligible for or potentially eligible for the NRHP[2]	0	4		5				4	5	5	5	5	5	4		5				10	10	7	5		6			
Social and Economic																												
Home and Business Building impacts[2]	0	7 homes 0 businesses		8 homes 0 businesses				3 homes 1 businesses		4 homes 1 businesses				6 homes 0 businesses		7 homes 0 businesses				20 homes 1 business	9 homes 1 business	2 homes 1 business	7 homes 0 businesses		8 homes 0 businesses			
Areas of Limited English Proficiency[3]	0	3 block groups												2 block groups						1 block group			2 block groups					
Government and Place of Worship Property Impacts[2]Error! Bookmark not defined.	0	1 place of worship (0.07 ac)	1 place of worship (0.01 ac)	1 place of worship (0.07 ac)	1 place of worship (0.01 ac)	1 place of worship (0.07 ac)		1 place of worship (0.01 ac)	1 place of worship (0.07 ac)	1 place of worship (0.01 ac)	1 place of worship (0.07 ac)			1 place of worship (0.01 ac)	1 place of worship (0.07 ac)	1 place of worship (0.01 ac)	1 place of worship (0.07 ac)			0			1 place of worship (0.07 ac)	1 place of worship (0.01 ac)	1 place of worship (0.07 ac)	1 place of worship (0.01 ac)	1 place of worship (0.07 ac)	
Cemeteries Impacted [2]	0	0																										
School/Educational Properties Impacted[2]	0	2 schools (0.91 ac)						2 schools (0.57 ac)						1 school (0.30 ac)						0			1 school (0.30 ac)					
Compatible with Land Use Plans and Freight-Generating Land Uses [4]	No	Yes; current and future land use plans show heavy concentration of industrial land use in area, and several freight-focused developments are anticipated for the area, and would be supported by any of these alternatives to varying degrees.																										
Compatible with Area Business Parks [2 4]	No	Yes; all alternatives access existing and planned business parks along S. Governors Highway & IL 394																										

Resource Type	Impact from No Build Alt	Impacts from Build Alternatives																									
		Dralle Road / Crete- Monee						Crete-Monee North						Crete-Monee South						Pauling-Goodenow			Pauling-Goodenow/Crete-Monee Hybrid					
		1	1A	2	2A	2B	2C	3	3A	4	4A	4B	4C	5	5A	6	6A	6B	6C	7	7A	7B	8	8A	9	9A	9B	9C
Environmental Justice																											
Areas with Higher Concentrations of Minority Race or Ethnicity[3] Block groups impacted, homes impacted, businesses impacted	0	1 EJ block group 2 homes, 0 businesses impacted						1 EJ block group 0 homes or businesses impacted												0	0	0	1 EJ block group 0 homes or businesses impacted					
Areas with Higher Concentrations of Low-Income Persons[3]	0	0																									
Transportation																											
Impacts to South Suburban Airport proposed location (acres) [5]	0	0												2.07						88.7	100.5	96.2	23.7					
Impacts to recreational trails (linear feet; also Section 4(f) resource) [2]	0	0																									
Regulated Substances																											
Impacts to regulated substances located through database searches [6]	0	2 parcels (1.54 ac)		2 parcels (1.54 ac)		4 parcels (4.34 ac)		5 parcels (6.26 ac)		7 parcels (9.05 ac)	8 parcels (9.10 ac)		7 parcels (7.37 ac)	4 parcels (7.77 ac)		6 parcels (10.57 ac)		6 parcels (8.89 acres)		8 parcels (1.35 ac)	8 parcels (1.13 ac)	6 parcels (1.60 ac)	4 parcels (0.63 ac)		6 parcels (3.43 ac)		6 parcels (1.75 ac)
Air Quality																											
Nonattainment areas for the National Ambient Air Quality Standards (NAAQS) Criteria Pollutants[7]	0	Will County is designated as a marginal nonattainment area for the eight-hour ozone standard.																									

Table 2. LEVEL 3 EVALUATION RESULTS - NATURAL RESOURCES

Resource Type	Impacts from No Build Alt	Impacts from Build Alternatives																									
		Dralle Road / Crete- Monee						Crete-Monee North						Crete-Monee South						Pauling-Goodenow			Pauling-Goodenow/Crete-Monee Hybrid					
		1	1A	2	2A	2B	2C	3	3A	4	4A	4B	4C	5	5A	6	6A	6B	6C	7	7A	7B	8	8A	9	9A	9B	9C
Section 4(f)																												
Impacts to FPDWC lands (acres)[8]	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	0	0	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0	1.71 (Black Walnut Creek)	0
Impacts to Illinois Nature Preserves (Raccoon Grove and Goodenow Grove) (acres)[9]	0	0																									
Impacts to municipal parks and recreational areas (Fireman's Park, Palmer Park)[2]	0	0																									
Impacts to architectural sites eliglble for or potentially eligible for NHRP[10]	0	See “cultural resources” in Table 10																									
Impacts to Illinois Natural Areas Inventory (INAI) sites (Goodenow Grove INAI, Thorn Creek Woods INAI, Raccoon Grove INAI)[11]	0	0	Goodenow Grove (6.34 ac)		0		Goodenow Grove (6.34 ac)		0			Goodenow Grove (6.34 ac)		0						Raccoon Grove (2.02 ac) Goodenow Grove (0.07 ac)		Raccoon Grove (2.02 ac)		Raccoon Grove (2.02 ac) Goodenow Grove (6.34 ac)		Raccoon Grove (2.02 ac)	
Section 6(f)																											
Impacts to properties funded by Land and Water Conservation Fund[9]	0	0																									
Impacts to lands funded by the Open Space Lands Acquisition and Development grant (Thorn Creek and Raccoon Grove)[9]	0	0																									

Resource Type	Impacts from No Build Alt	Impacts from Build Alternatives																									
		Dralle Road / Crete- Monee						Crete-Monee North						Crete-Monee South						Pauling-Goodenow			Pauling-Goodenow/Crete-Monee Hybrid					
		1	1A	2	2A	2B	2C	3	3A	4	4A	4B	4C	5	5A	6	6A	6B	6C	7	7A	7B	8	8A	9	9A	9B	9C
Natural Resources																											
Impacts to National Wetlands Inventory (NWI) wetlands[12]	0	2.32	3.31	2.66	3.65	2.56	3.55	5.13	6.18	5.47	6.52	5.37	6.42	3.11	4.1	3.45	4.44	3.35	4.34	1.43	1.8	1.61	2.3	3.29	2.64	3.63	2.54	3.53
Surface Water																											
Impacts to surface waters[13]	0	1 stream (165 LF; 0.1 ac)		2 streams (210 LF; 0.16 ac)				2 streams (237 LF; 0.16 ac)		3 streams (282 LF; 0.22 ac)				1 stream (165 LF; 0.2 ac)		2 streams (210 LF; 0.16 ac)				3 streams (360 LF; 0.36 ac)			2 streams (285 LF; 0.169 ac)		3 streams (330 LF; 0.25 ac)			
Impacts to impaired waters (Deer Creek)[13]	0	165 LF (0.1 ac)																		0			165 LF (0.1 ac)					
Nationwide Rivers Inventory (Plum Creek)[14]	0	0																		120 LF (0.16 ac)			0					
Wild and Scenic Rivers[12]	0	0																									
Ground Water																											
Impacted community water supply wells and other wells[15]	0	3 wells (1 water, 1 engineering, 1 other) No community water supply source impacts		4 wells (1 water, 2 engineering, 1 other) No community water supply source impacts				3 wells (1 water, 1 engineering, 1 other) No community water supply source impacts		4 wells (1 water, 2 engineering, 1 other) No community water supply source impacts				5 wells (1 water, 3 engineering, 1 other) No community water supply source impacts		6 wells (1 water, 4 engineering, 1 other) No community water supply source impacts				9 wells (2 water, 7 engineering) No community water supply source impacts		8 wells (1 water, 7 engineering) No comm. water supply source impact	10 wells (2 water, 7 engineering, 1 other) No community water supply source impacts					
Floodplain and Floodway																											
Impacts to FEMA floodplain (Zones A, AE) (acres) [16]	0	4.35	5.74	5.03	6.42	6.53	7.15	7.89	9.26	8.56	9.96	10.07	10.69	4.35	5.74	5.02	5.63	6.53	7.15	5.75	5.84	4.81	6.2	6.79	6.85	7.47	8.37	8.98
Impacts to regulated floodway (acres)[17]	0	0																									

Combined References for Table 10 and Table 11:

[1] USDA Soil Survey, Will County, IL.

[2] Aerial photography and Will County Assessor data. (Buildings are impacted by the 120'-wide corridor assumed for each alternative (corridor width will be refined during NEPA. Any impacts to schools or educational properties are lawn impacts only (no building impacts.)

[3] American Community Survey 2015 (US Census Bureau). (US Census Bureau – Census Block Groups) US Census (2020) and American Community Survey. (The U.S. Census Bureau must adhere to the 1997 Office of Management and Budget (OMB) standards on race and ethnicity which guide the Census Bureau in classifying written responses to the race question: White – A person having origins in any of the original peoples of Europe, the Middle East, or North Africa. Black or African American – A person having origins in any of the Black racial groups of Africa. American Indian or Alaska Native – A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment. Asian – A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. Native Hawaiian or Other Pacific Islander – A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.)

[4] CMAP Land Use Inventory (2015); stakeholder and local business data

[5] South Suburban Airport Project

[6] BOL, IEMA, Brownfields, LUST, RCRA, SEMS, Solid Waste, TRI, UST (see Section 3 for sources used)

[7] US EPA "Green Book"

[8] Forest Preserve District of Will County

[9] Illinois DNR

[10] Illinois Department of Transportation, Cultural Resources Unit, Department of the Interior - National Register of Historic Places

[11] Illinois Nature Preserve Commission, Illinois DNR

[12] US Fish and Wildlife Service

[13] Environmental Protection Agency

[14] National Park Service

[15] Illinois State Geological Survey

[16] FEMA Flood Insurance Rate Map/National Flood Hazard Layer

[17] National Flood Hazard Layer (FEMA)

In Level 3, all alternatives were screened against their impact to the socioeconomic and natural environments as shown in Tables 10 and 11 above. The results of that evaluation are described below, categorized by resources found to have "non-differentiating" impacts in the Level 3 evaluation (resources whose impacts did not affect PEL alternatives evaluation results OR would not result in alternatives being dismissed from further consideration) and "differentiating" impacts (resources whose impacts did influence PEL alternatives evaluation results, and may result in alternatives being dismissed from further consideration). A summary of alternatives dismissed and Alternatives Carried Forward concludes this section.

In NEPA, refined project alternatives will be screened again using more detailed environmental information (including field surveys as applicable) that will be available during the NEPA process. Altenratives will be modified in NEPA to avoid, minimize, and mitigate resource impacts as practicable.

Resources with Non-Differentiating Impacts from Build Alternatives

COMMUNITY RESOURCES

- Agriculture - Prime and Important Farmland: Impacts to Prime and Important Farmland range from 111 to 170 acres. The impacts between alternatives in PEL are similar, and further alternatives evaluation for farmland impacts and coordination with USDA/NRCS will occur during NEPA.
- Cultural Resources/Section 106 of National Historic Preservation Act and Section 4(f): IDOT CRU provided a listing of previously-identified architectural resources found to be eligible for or potentially eligible for the NHRP, and this data was assessed in PEL to characterize each alternative. The Build Alternatives were found to impact between 5 and 10 property parcels associated with these previously-identified architectural resources. In NEPA, a Phase I Cultural Resources Survey (CRS) will be completed either by the State (through an Environmental Survey Request) or by the County/consultant. The Phase I CRS will identify any additional potentially eligible sites that may be present in the project area that are not currently listed on the National Register of Historic Places and identify boundaries of any potentially eligible cultural sites. Coordination with SHPO during NEPA will determine if the NEPA project alternatives will or will not result in Section 106 adverse effects.
- Socioeconomic Resources:
    - Home and business direct building impacts: The Build Alternative corridors as currently aligned could impact between two and 20 homes (Alternative 7 impacts 20 homes, primarily in manufactured housing communities along Pauling-Goodenow), and from zero to two businesses. These are differentiating impacts, but further work will be done in NEPA to identify if altenratives carried forward in NEPA will be refined to avoid direct impacts to homes and businesses where practicable.
    - The alternatives all affect areas where residents are reported to have limited English proficiency, and this information will inform community outreach in NEPA.

Direct impacts to homes and businesses will be avoided where practicable when alternatives are refined in NEPA.

  - Property impacts to government uses and places of worship will be avoided or minimized where practicable when alternatives are refined in NEPA.
  - Cemeteries: No Build Alternatives impact cemeteries.
  - Property impacts to schools will be avoided or iminimzied where practicable when alternatives are refined in NEPA. Traffic control and safety features will be considered in NEPA as needed where alternatives are near schools.
  - Land use compatibility: All Build Alternatives were found to be compatible with planned land use, freight generators, and planned business park locations. Traffic control and auxuilary lanes to support vehicles accessing planned land uses will be assessed during NEPA and should be assessed by the appropriate jurisdiction at the time of land development.

- Environmental Justice: All Build Alternatives impact at least one Census block group considered to contain communities with EJ charactertistics. This information will be used to inform NEPA, and direct impacts to homes and businesses will be avoided where practicable when alternatives are refined in NEPA. Additional coordination with these communities with EJ characteristics will continue through NEPA.
- Transportation
  - Impacts to South Suburban Airport: The Crete-Monee South and Pauling-Goodenow alternatives are the only Build Alternatives located inside the footprint of the proposed future South Suburban Airport (SSA). These are differentiating impacts, but further work will be done in NEPA to identify if alternatives impacting the SSA ultimate footprint would result in impacts to the airport, or if the alternatives could be incorporated into and benefit freight movement at the airport.
  - Municipal parks and recreational trails (also Section 4(f)): No build altenatives directly impact municipal parks or trails
- Regulated Substances: The Build Alternatives impact between two and eight parcels identified on regulated substances databases. These parcels are associated with sites identified on BOL, IEMA, LUST, RCRA, and solid waste databases, as discussed in the Regulated Substances section. Further study of regulated substances will be completed during NEPA, when a Preliminary Environmental Site Assessment (PESA) will be completed either by the State (through an Environmental Survey Request) or by the County/consultant. The PESA will be used in NEPA to further screen alternatives for regulated substances impacts.
- Air Quality: All Build Alternatives and the No Build Alternative are located within Will County, a marginal attainment area for the eight-hour ozone standard. Further air quality analyses will be completed during NEPA as applicable.

- Section 4(f) – Park, Recreation, Preserve Lands
    - Impacts to FPDWC lands: Approximately half of the Build Alternatives impact FPDWC properties. Where Build Alternatives impact FPDWC properties, additional alternatives were added to the range of alternatives to avoid FPDWC property impacts. The avoidance alternatives are noted with an "A" in their name (Alternatives 1A, 2A, 3A, 4A, 5A, 6A, 8A, and 9A). Alternatives that do impact FPDWC properties (Alternatives 1, 2, 3, 4, 5, 6, 8, and 9) were not removed from consideration after Level 3 evaluation for two reasons:
        1. Alternatives will be further refined during NEPA and preliminary design, and may ultimately avoid impacting 4(f) properties.
        2. If these alternatives still impact 4(f) properties after refinement, the 4(f) use will be determined during NEPA with FHWA, and with OWJ coordination. If a 4(f) use is ultimately found to be de minimis, it may not need to be avoided and other environmental resources may be larger differentiators during NEPA alternatives screening.
    - Impacts to Illinois Nature Preserves: The Build Alternatives do not impact the property parcels associated with the Illinois Nature Preserves in the study area (Raccoon Grove Nature Preserve and Goodenow Grove Nature Preserve).
    - Impacts to municipal parks and recreational areas: The Build Alternatives will not impact municipal parks in the study area (Fireman's Park and Palmer Park).
- Section 6(f) - Land and Water Conservation Funds lands (Section 6(f)): No lands purchased by the Land and Water Conservation Act will be impacted by the Build Alternatives. Two FPDWC properties in the study area were purchased using OSLAD funds (Raccoon Grove and Thorn Creek Woods/Headwaters), but PEL alternatives were developed to avoid impacts to these properties.
- Natural Resources - National Wetland Inventory (NWI): All Build Alternatives will impact NWI wetlands, ranging from 2.32 acres to 6.52 acres of impact based on publicly available NWI data.
    - NWI data do not contain detailed boundaries as wetland field delineation data has, and NWI data do not contain wetland quality information. NWI data does not denote jursidctional wetland boundaries, which identify wetlands that are jurisdictional to the US Army Corps of Engineers and protected by Section 404 of the Clean Water Act.
    - Build Alternatives will be further assessed in NEPA for wetland impacts using wetland field delineation data collected either by the State (through an Environmental Survey Request) or by the County/consultant. Likely jurisdictional wetlands will be identified after the wetland delineation to determine if the project will need to be in the NEPA/404 merger process.
    - Due to the size of NWI wetland impacts observed in the PEL, it it likely that the project will be in the NEPA/404 merger process.
- Surface Water

- Surface Waters and Impaired Waters: Each Build Alternative will impact between one and three streams. One Section 303(d) impaired water body is impacted by some of the Build Alternatives (Deer Creek); Deer Creek is impacted by all Build Alternatives other than the Pauling-Goodenow alternatives (Alternatives 7, 7A, and 7B). Alternatives will be refined during NEPA and preliminary design to include any structures required for water conveyance. All stream impacted by Build Alternatives will be coordinated with various state and federal agencies in NEPA to determine where jurisdictional waters are present and required agency coordination and Clean Water Act compliance is required.
- Wild and Scenic Rivers: No Wild and Scenic Rivers are located in the study area.

- Groundwater: Each alternative is expected to impact between three and ten water wells. No impacts to community water supply sources are anticipated. Additional work will be done in NEPA to avoid, minimize, or mitigate impacts to wells, including identifying wells for closure that are impacted by the Preferred Alternative identified during NEPA.
- Floodplain and Floodway: The Build Alternatives would impact FEMA floodplains (Zones A and AE), ranging from approximately 4 to more than 10 acres of impact. No impacts to regulated floodways are anticipated. During NEPA and preliminary engineering, design refinements will seek to minimize impacts to floodplains. Floodplain impacts from the Preferred Alternative at the consluion of NEPA may require coordination or future permitting from IDNR Office of Water Resources.

Resources with Differentiating Impacts from Build Alternatives

Two resource types with differentiating impacts from Build Alternatives were identified during the Level 3 evaluation. These two resources were considered differentiating in PEL because they met both these conditions:

1. The level of resource data and knowledge used in PEL is not expected to change between PEL and NEPA. The PEL information on the resource is as detailed and complete in PEL as it would be in NEPA.
2. The Build Alternative considered would impact the resource more substantially than other Build Alternatives, or the Build Alternative considered would impact the resource and other Build Alternatives would avoid the resource.

The two resources with differentiating impacts in the Level 3 evaluation are both natural resources. They include Illinois Natural Areas Inventory (INAI) sites (Illinois DNR) and Nationwide Rivers Inventory (National Park Service).

<u>Illinois Natural Areas Inventory (INAI) sites (Natural Resources; Section 4(f)):</u>

- INAI lists information about high quality natural areas, habitats of endangered species, and other important natural features in Illinois. INAI sites inform the selection of Illinois Nature Preserves, as well as other land acquisition for the purpose of preserving and protecting natural lands. INAI sites are selected by Illinois DNR Division of Natural Heritage

through statewide inventories and reviews from the Natural Areas Evaluation Committee. The use of INAI sites may also be subject to Section 4(f).

- Five INAI sites are present within the study area. The INAI site at Thorn Creek Woods does not include the Thorn Creek Headwaters Preserve.
- Two INAI sites are impacted by project alternatives:
    - The Raccoon Grove Nature Preserve INAI site is located at the southeast corner of IL 50 and Pauling-Goodenow Road. The boundaries of the Raccoon Grove Natural Preserve INAI site are larger than the FPDWC property boundary, and the INAI site includes the right-of-way of Pauling-Goodenow Road. The project alternatives that propose improvements to Pauling-Goodenow Road at IL 50 will impact the INAI site.
    - The Goodenow Grove Nature Preserve INAI site extends beyond the FPDWC Goodenow Grove property boundaries, and extends north of IL 394. All of the Pauling-Goodenow Road and Crete-Monee/Pauling-Goodenow Hybrid alternatives have impacts to the INAI site.
- Alternatives 2, 2A, 4, 4A, 6, 6A, 7, 7A, 7B, 8, 8A, 9, 9A, 9B, and 9C were dismissed from further consideration because each alternative impacts one or more INAI sites.

Nationwide Rivers Inventory:

- Plum Creek is listed by National Park Service on the Nationwide Rivers Inventory (NRI), indicating that it is "believed to possess one or more 'outstandingly remarkable' natural or cultural values judged to be at least regionally significant" (USEPA 2022). NRI river segments are potential candidates for the National Wild and Scenic River System. Federal agencies must seek to avoid or mitigate actions that would affect NRI river segments.
- Alternatives 7, 7A, and 7B were dismissed from further consideration, as they all would affect or cross Plum Creek, listed on the Nationwide Rivers Inventory.

Summary of Alternatives Dismissed and Alternatives Carried Forward

SUMMARY OF ALTERNATIVES DISMISSED FROM FURTHER CONSIDERATION

The Level 1 and Level 2 evaluations resulted in no alternatives removed from consideration, as all met the threshold for feasibility and met the Purpose and Need developed for this project. Because no alternatives were screened out in Level 1 or Level 2 evaluations, all nineteen Build Alternatives and the No-Build Alternative were considered in to the Level 3 evalaution for impacts to socioeconomic and natural resources. The differentiating impacts for the Level 3 evaluation were natural resources, and more specifically, related to OSLAD, INAI, and the Nationwide Rivers Inventory.

As part of the Level 3 evaluation, fifteen alternatives were removed from consideration based on their proposed impacts to natural resources (See Table 12). Generally, the alternatives removed impacted the Goodenow Grove Nature Preserve INAI site at the eastern connection

with IL 394, and the Pauling-Goodenow Road corridors that impacted the Raccoon Grove INAI site. The Pauling-Goodenow Road corridors also cross Plum Creek, which is listed on the Nationwide Rivers Inventory.

Table 3. SUMMARY OF DISMISSED ALTERNATIVES

Dismissed Alternative	Rationale for Dismissal
2	• Impacts Goodenow Grove INAI site (6.34 ac)
2A	• Impacts Goodenow Grove INAI site (6.34 ac)
4	• Impacts Goodenow Grove INAI site (6.34 ac)
4A	• Impacts Goodenow Grove INAI site (6.34 ac)
6	• Impacts Goodenow Grove INAI site (6.34 ac)
6A	• Impacts Goodenow Grove INAI site (6.34 ac)
7	• Impacts Goodenow Grove (0.07 ac) and Raccoon Grove (2.02 ac) INAI sites • Impacts Plum Creek (listed on Nationwide Rivers Inventory)
7A	• Impacts Goodenow Grove (0.07 ac) and Raccoon Grove (2.02 ac) INAI sites • Impacts Plum Creek (listed on Nationwide Rivers Inventory)
7B	• Impacts Goodenow Grove (0.07 ac) and Raccoon Grove (2.02 ac) INAI sites • Impacts Plum Creek (listed on Nationwide Rivers Inventory)
8	• Impacts Raccoon Grove INAI site (2.02 ac)
8A	• Impacts Raccoon Grove INAI site (2.02 ac)
9	• Impacts Goodenow Grove (6.34 ac) and Raccoon Grove INAI sites
9A	• Impacts Goodenow Grove (6.34 ac) and Raccoon Grove INAI sites
9B	• Impacts Raccoon Grove INAI site (2.02 ac)
9C	• Impacts Raccoon Grove INAI site (2.02 ac)

SUMMARY OF ALTERNATIVES CARRIED FORWARD/REASONABLE RANGE OF ALTERNATIVES

At the end of the Level 3 Evaluation, the alternatives remaining are considered the Alternatives Carried Forward and will move into more in depth evaluation during NEPA and Phase I. The alternatives carried forward are all variations of a Crete-Monee Road alternative, and include:

Alternatives proposed for further evaluation include:

- Alternative 1
- Alternative 1a
- Alternative 2b
- Alternative 2c
- Alternative 3
- Alternative 3a
- Alternative 4b
- Alternative 4c
- Alternative 5
- Alternative 5a
- Alternative 6b
- Alternative 6c

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