# Wilmington-Peotone Planning and Environmental Linkage (PEL) Study

# PURPOSE AND NEED STATEMENT

**Wilmington-Peotone Road**

From I-55 to Drecksler Road

Section 23-00116-15-ES

Will County Division of Transportation

November 2024

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# 1. PROJECT BACKGROUND

Burns & McDonnell is conducting a Planning Environmental Linkage (PEL) Study on behalf of the Will County Division of Transportation (WCDOT) for proposed improvements to the Wilmington-Peotone Corridor from I-55 to Drecksler Road. This document shall serve as the Purpose and Need Statement for the PEL and subsequent NEPA Phase I Studies – a summary of the issues identified through the project team's investigations, and a declaration of what the Wilmington-Peotone PEL Study will seek to achieve for WCDOT and its constituents.

## A. Study Area

The Wilmington-Peotone project limits begin to the west at the interchange of I-55 and River Road. The project follows River Road for 4 miles to the intersection with IL Route 53, then follows IL Route 53 from River Road to Wilmington-Peotone Road, and continues along Wilmington-Peotone Road until it ends at Drecksler Road. The limits extend roughly 22 miles and will be referred to as the Wilmington-Peotone Corridor. The Location Map is included in Figure 1.

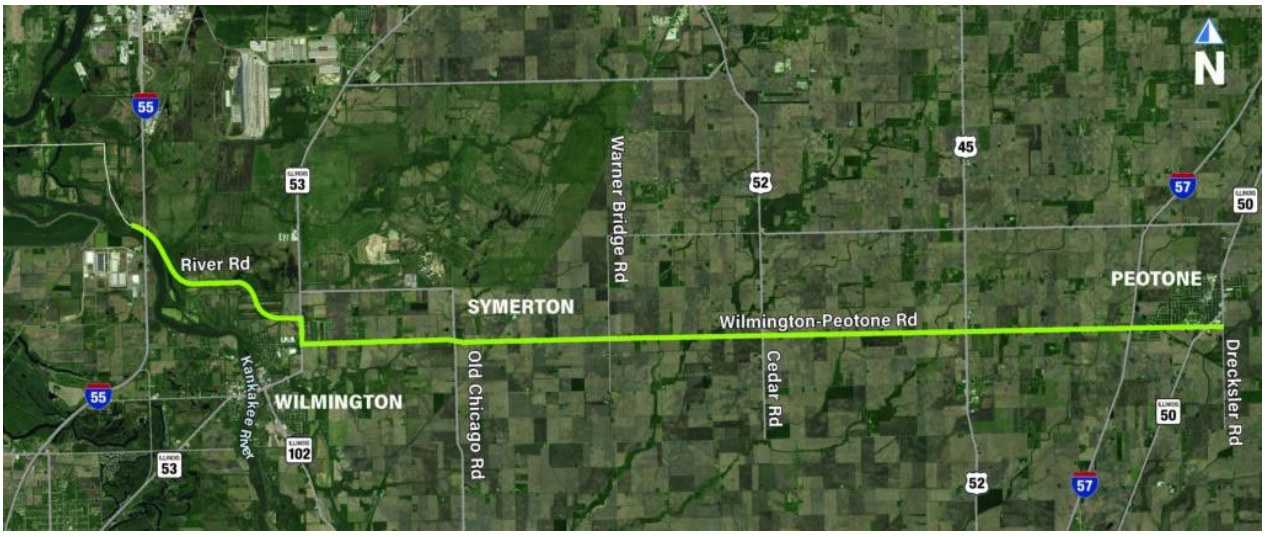



***Figure 1**: Wilmington-Peotone Corridor Location Map*

The majority of the corridor is under WCDOT jurisdiction with the exception of the 0.6 miles section along IL Route 53 which is an Illinois Department of Transportation (IDOT) route. The Wilmington-Peotone Corridor travels east-west and is designated by IDOT as a Strategic Regional Arterial, part of a network of regional highways for which capacity and throughput is of primary importance.

I-55 along with I-57 represent the major north-south interstates within the study area, making them major destinations for those traveling along Wilmington-Peotone Road. West of I-55, River Road changes classification from a Strategic Regional Arterial and travels through the State Game and Wildlife Park. The Strategic Regional Arterial designation follows the project corridor through to the Drecksler Road intersections where the east-west roadway ends. As such, I-55 to the west and Drecklser Road to the east are the logical termini of the project.

## 2. PURPOSE

The purpose of this project is to improve safety, enhance mobility for all users through providing an efficient east-west connection, and support current and future travel demand throughout the corridor.

The Wilmington-Peotone corridor has seen an increased rate of crashes compared to the state and county averages. Commercial and industrial development growth is occurring rapidly across Will County as evidenced by new freight clusters along the Wilmington-Peotone corridor that are challenging the roadway infrastructure. Multimodal accommodations are minimal with recreational trails present but no safe connections directly along the Wilmington-Peotone corridor. For roadway users, the number of east-west connectors throughout the County are limited and the increase in distribution and logistics centers throughout the area has only increased the need for access between I-55 and I-57.

## 3. NEED

The needs for this project are to address deficiencies in the existing roadway and multimodal infrastructure and accommodate growth in local and regional traffic to improve mobility throughout the county.

Will County as a whole has seen extensive commercial and industrial development growth in recent years challenging the existing infrastructure safety and capacity. The Wilmington-Peotone Corridor is one of few major east-west connectors within Will County.

Corridor geometry is a major cause of crashes with a narrow cross section that includes both lane and shoulder widths less than current standards for much of the study area. The narrow cross-section combined with rolling hills and a high percentage of large vehicles creates safety concerns resulting in rear end and fixed object crashes. The lack of shoulder width throughout the corridor deters law enforcement with no place to safely stop vehicles. Minimal shoulders and few sidewalks/multi-use paths deter alternate means of transportation. The continued development throughout the County is only expected to increase traffic using this corridor and exacerbate the safety concerns caused by the narrow corridor. Recent public meetings show strong support of safety improvements to the Wilmington-Peotone Corridor.

## 4. SUPPORTING FACTS

### A. Safety

Crash analysis was performed for the 5 most recent years of crash data received from the IDOT Bureau of Data Collection: 2018 to 2022. All charts shown in this segment are reflections of this crash data. 535 crashes were reported along the Wilmington-Peotone corridor. The severity of crashes along the corridor is a concern as the percentage of fatal crashes was consistently greater than both the county and state averages. One to two fatal crashes were reported per year within the study area. A more detailed look at the crash severity by segment can be found in Table 1.

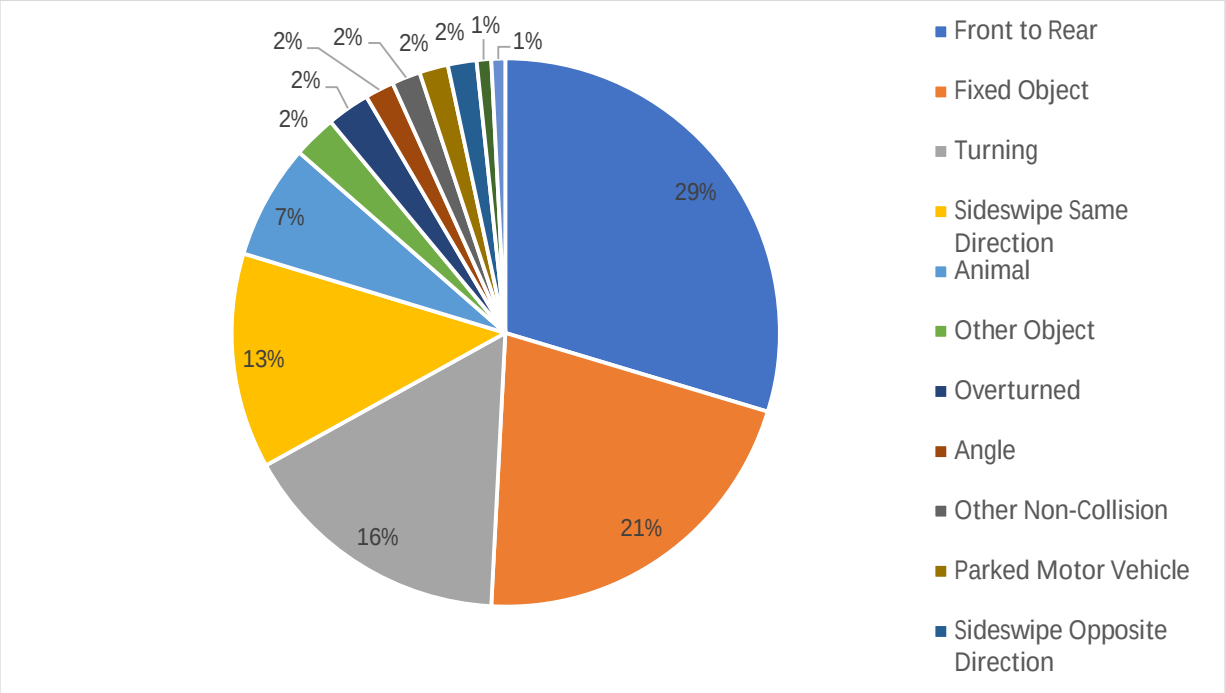
*Table 1: Project Comparison to State and County Fatal and Injury Crash Proportions*

| | Project Avg | | Illinois State Avg | | Will County Avg | |
|---|---|---|---|---|---|---|
| **Year** | % Injury Crashes | % Fatal Crashes | % Injury Crashes | % Fatal Crashes | % Injury Crashes | % Fatal Crashes |
| **2018** | 22.73% | **1.82%** | 21.10% | 0.30% | 22.69% | 0.35% |
| **2019** | 28.13% | **0.78%** | 20.40% | 0.30% | 20.88% | 0.37% |
| **2020** | 21.51% | **2.15%** | 21.10% | 0.44% | 21.74% | 0.51% |
| **2021** | 24.73% | **2.15%** | 20.60% | 0.41% | 22.07% | 0.45% |
| **2022** | 31.82% | **0.91%** | 20.04% | 0.38% | 21.51% | 0.42% |

*River Road*

The River Road segment experienced 118 crashes during the study period, 22% of the total crashes. The most common crash types were rear end and fixed object which accounted for half of all crashes at 29% and 21% of crashes, respectively.

*Figure 2: River Road Crashes By Type*




River Road is designated as a class II truck route with a 55 mph design speed. The typical section includes a 2-lane undivided roadway with 12-foot travel lanes, 10-foot paved shoulders, and centerline and shoulder rumble strips. There are several curves along River Road that are No Passing Zones, but passing is present along 45% of River Road within the study limits. There was one fatality reported along River Road closer to the IL Route 53 intersection. The crash was a head-on collision that occurred in the morning hours when a vehicle was attempting to pass a truck in a no-passing zone. Much of the River

Road corridor is adjacent or within the Midewin National Tall Prairie Nature Preserve and the western terminus runs along the Kankakee River. This western portion of the project also includes a crossing over Prairie Creek and an at grade crossing of the Union Pacific railroad. There are two unsignalized intersections within this segment as well as the interchange with I-55. Outside of the I-55 interchange, turn lanes are limited with westbound right turn lanes present at Boathouse Drive and N Kankakee Street. With a high percentage of truck traffic and a lack of auxiliary lanes, rear ends can be caused by traffic slowing to turn or those unable to see around large vehicles to anticipate stopped traffic ahead.

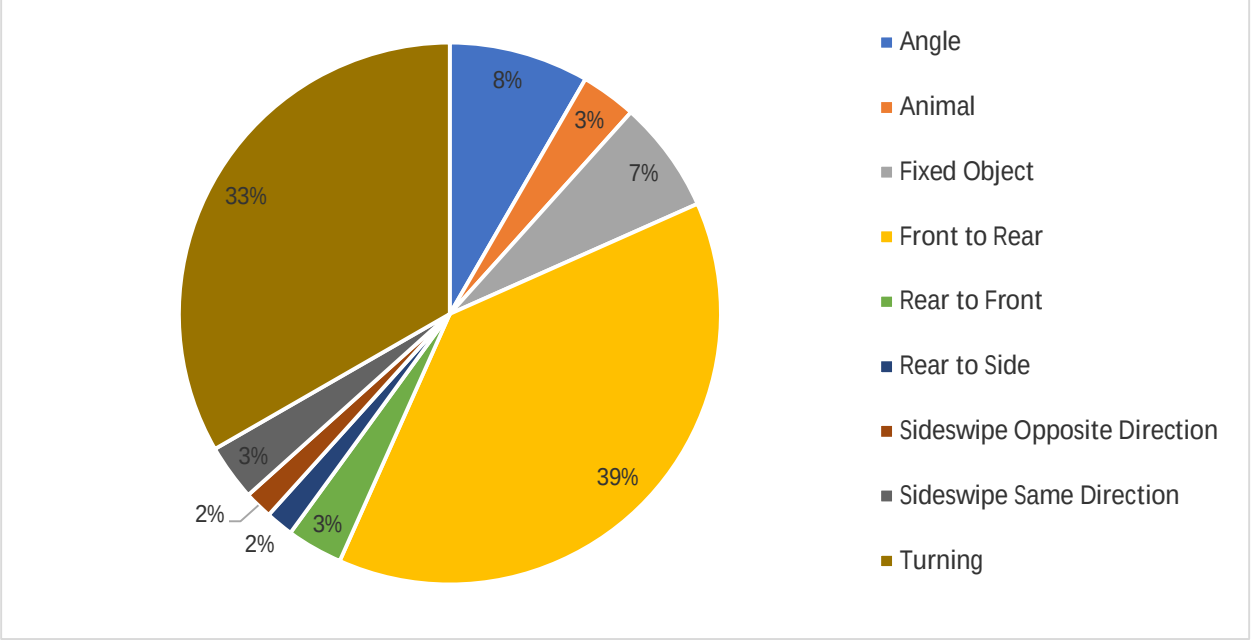

***Figure 3**: River Road Incapacitating Injury Crash Locations*

The I-55 interchange saw the highest number of crashes with a total of 65 crashes, over half of the total crashes on River Road making this a hot spot along the corridor. Four of these resulted in incapacitating injury crashes. The most common crash type was rear end crashes (42%), followed by fixed object (22%), and same direction sideswipe (20%). The interchange is a partial cloverleaf nestled within the Midewin National Tallgrass Prairie and along the Kankakee River. Both ramp intersections are unsignalized with left turn lanes present along River Road in both directions to access I-55. The presence of significant truck traffic and unsignalized intersections located on a bridge on a vertical curve could be causing sight distance concerns with drivers unable to stop in time for unexpected queues. All of the incapacitating injury crashes along River Road were at this interchange and were fixed object crashes. The I-55 ramps include a number of tight curves and the surrounding area is heavily wooded with barriers and guardrails which could be contributing to fixed object crashes in this area. The locations of the incapacitating injuries are displayed in Figure 3.

*IL Route 53*

The IL Route 53 section is 0.6 miles long, 3% of the overall corridor, but experienced 11% of all crashes. This segment is a small portion of the overall corridor length but includes two highly trafficked intersections which could be contributing to the increased crash rate. The most common crash types were rear ends and turning.

***Figure 4**: IL Route 53 Crashes By Type*




IL 53 is a north-south principal arterial, class II truck route, with a 55 mph posted speed limit. The typical section includes a 2-lane undivided roadway with 12-foot travel lanes and 6-foot paved shoulders. Left turn lanes are present at the intersections with both River Road and Wilmington-Peotone Road which are signalized intersections. There were no fatalities or incapacitating injuries recorded along IL Route 53 during the study period. This short north-south segment requires vehicles to make turns through two intersections in order to travel east-west; the high percentage of truck traffic make this especially difficult.

Both intersections saw a high number of crashes compared to other intersections along the corridor. The intersection with River Road saw 25 crashes, over half of which were rear ends (52%). The intersection with Wilmington-Peotone Road saw a slightly higher crash rate with 35 crashes. Turning crashes were more prominent at this location (40%). Turning crashes are common at intersections which involve multiple conflict points. Additionally, frustration from vehicles that are behind slow moving trucks can lead to aggressive driving and rear ends.

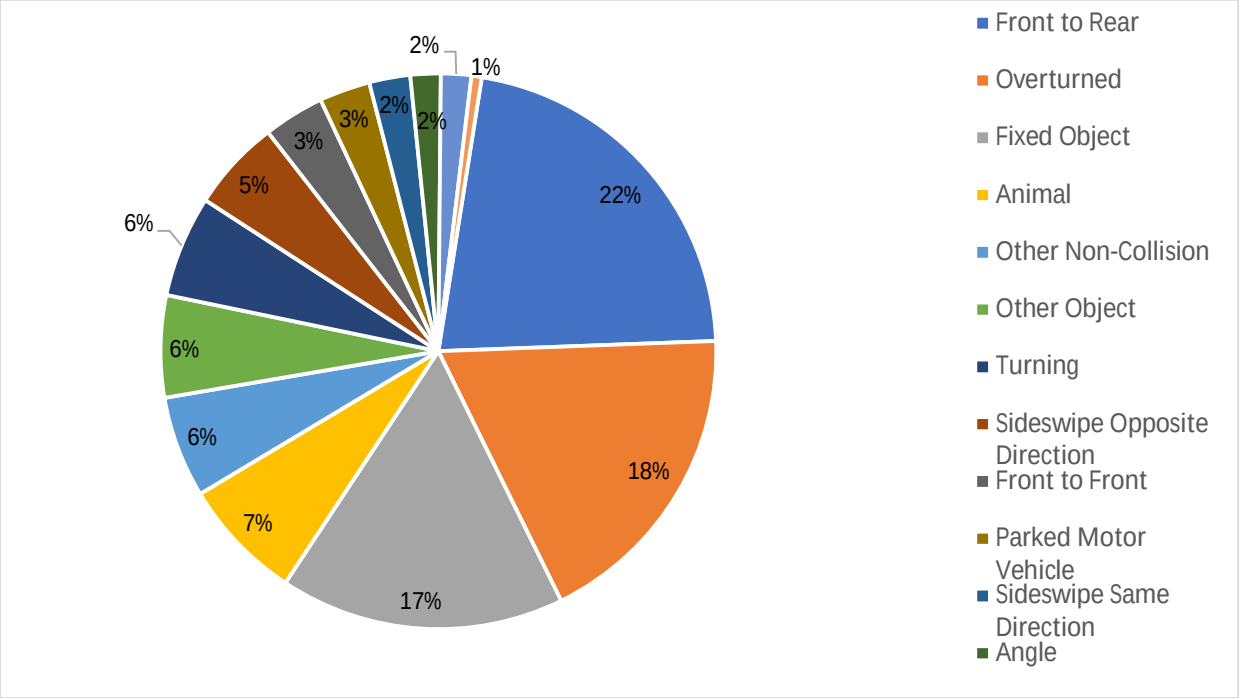
*Wilmington-Peotone Road*

Wilmington-Peotone Road experienced 357 crashes during the study period. At 17.4 miles long, Wilmington-Peotone Road is an east-west principal arterial making this the longest section of the corridor and 79% of the overall length. This segment includes the I-57 interchange and all-way stop-controlled intersections with US Route 45/52 and IL Route 50; all other intersections are stop-controlled on the side streets/minor leg. Most of the corridor is posted at 55 mph from IL Route 53 to just past I-57. This segment includes a 2 lane undivided typical section with 11-foot travel lanes and minimal unpaved shoulders. Wilmington-Peotone Road crosses the Wauponsee Glacial Trail and Forked Creek. This segment includes an at-grade crossing of the Canadian National Railway. East of the I-57 interchange the area becomes more residential as it enters the Village of Peotone. The speed limit drops to 45 mph and

the typical section includes curb and gutter outside of two 12-foot lanes and a 14-foot median. WCDOT is in the process of lowering the speed limit further to 40 mph based on discussions with the Village regarding safety concerns and a recent speed study.

While most areas with the highest concentration of crashes are intersection-related, almost half of the crashes along Wilmington-Peotone Road occurred outside of intersection locations (169). Rear end crashes made up the largest proportion of the mainline non-intersection related crashes (22%), followed by overturned (18%), and fixed object (17%).

***Figure 5**: Wilmington-Peotone Road Mainline Crashes By Type*



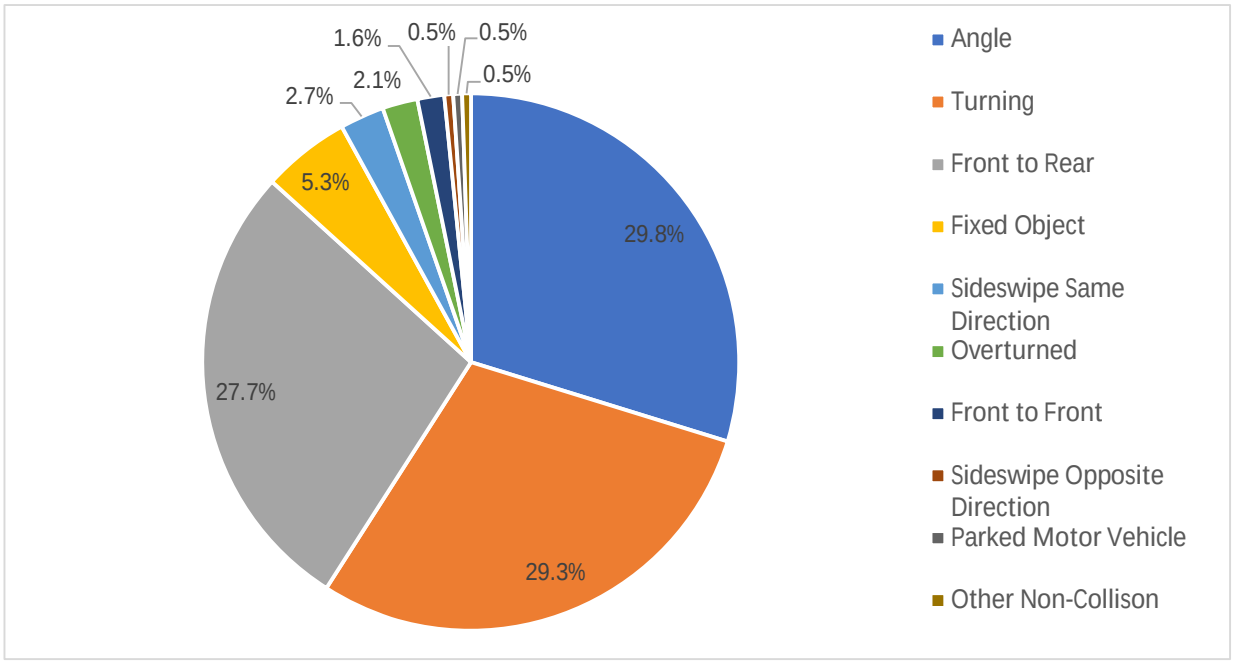

Wilmington-Peotone Road is a class II truck route on the east end of the corridor from I-57 to IL Route 50. The 11-foot lanes and 4-foot shoulder width along the rest of Wilmington-Peotone Road are not wide enough to be considered a class II truck route. The lack of shoulder means that there is no place for vehicles to safely stop in times of need; it is also a deterrent for law enforcement with few locations to enforce the speed limit. Turn lanes are limited to the intersections with Old Chicago Road and Center Road along Wilmington-Peotone Road. The lack of auxiliary lanes can be disruptive to the flow of traffic and cause safety concerns with high-speed through traffic attempting to pass those slowing to turn. These factors could be contributing to the high number of rear ends with vehicles unable to adapt to unexpected stopping either from following to close, inability to see around large vehicles, or insufficient sight distance based on the current geometry. Drone survey and public input have confirmed that the vertical profile contains steep grades and rolling hills, including several deficient vertical curves that do not provide adequate stopping sight distance for vehicles travelling 55 mph. In addition to the narrow cross-section, there are many locations along the corridor where steep ditch sections or trees and other hazards are located directly adjacent to the roadway. The resulting roadway can be unforgiving for any vehicle that leaves the travel lane with minimal shoulders and hazards located within the clear zone.

This could also be contributing to overturned vehicles. Overturning crashes can occur on a segment of high-speed roadway when a driver misjudges the distance or speed needed to pass and runs off the road, especially with steep ditch sections adjacent to the pavement.


***Figure 6**: Existing Wilmington-Peotone Typical Sections – IL 53 to I-57*

Separate trends can be seen in intersection-related crashes with the vast majority of crashes being angle or turning. Of the angle crashes on Wilmington-Peotone Road at intersections, 52% of the crashes occurred at intersections without left turn lanes. Three locations along the corridor, US Route 45/US Route 52, I-57, and IL Route 50, account for almost 70% of intersection crashes (130). These intersections are described in more detail below.

***Figure 7**: Wilmington-Peotone Road Intersection Crashes By Type*



Seventy-one (71) crashes occurred at the intersection of US Route 45/ US Route 52 and Wilmington-Peotone Road during the study period, the most of any other intersection or interchange along the corridor. Consistent with the IDOT safety tiers, it is the only intersection identified as "Critical." Three of these crashes resulted in incapacitating injuries, due to an angle crash, fixed object crash, and rear end crash. Rear end crashes were most common (51%), followed by angle (32%) and turning (7%). This location is a four-way stop-controlled intersection with no turn lanes. The conflict points present at intersections can present safety concerns which can result in angle and turning crashes. The potential to eliminate points of conflict or provide a signalized intersection could help to improve the flow of traffic through this area. Given the high number of crashes at this location and "critical" safety tier classification, the intersection of Wilmington-Peotone Road and US 45 will be a point of focus when developing alternatives to provide safety improvements. Figure 8 below shows the location of crashes at the intersection, color coded by the year the crash occurred.


***Figure 8**: US Route 45 / 52 Intersection Crashes By Year*

A high number of crashes were observed at I-57 and Wilmington-Peotone Road, a diamond interchange with unsignalized ramp terminals and no turn lanes. There were 42 crashes at this interchange, one resulted in an incapacitating injury. Turning crashes were most common (29%), followed by rear end (24%), fixed object (19%), and angle (12%). The bridge over I-57 is only 31.5' wide and the profile includes a vertical curve over I-57 which limits sight distance. This combination can create safety concerns with high volumes of turning traffic and minimal pavement. A high volume of trucks use this interchange. The increased number of conflicts at the intersections combined with the reduced sight lines around large trucks could contribute to the turning and rear end crashes through the I-57 interchange.


***Figure 9**: I-57 / Wilmington-Peotone Road interchange*

A four-way stop controlled, skewed intersection, Wilmington-Peotone Road at IL Route 50 is included in the IDOT 2020 safety tiers as a "high" intersection location. IL Route 50 provides a four-lane cross-section with no turn lanes. Wilmington-Peotone Road is a single lane in each direction with left turn lanes. Seventeen (17) crashes were recorded at this intersection within the study period; the majority being property damage crashes but four included B-injuries. Consistent with the rest of the corridor, rear ends were the most common crash type followed by turning and fixed object crashes. The skew of the intersection combined with the high number of lanes present could contribute to crashes in this location and the IDOT safety tier "high" classification.


***Figure 10**: Wilmington-Peotone Road / IL Route 50 Intersection*

Seven fatal crashes occurred sporadically along Wilmington-Peotone Road; half involved a drug-impaired driver. Two were pedestrian crashes which occurred west of the I-57 interchange close to midnight. It is difficult to determine the exact cause of these crashes with the information available, but with no pedestrian accommodations near the crash location it is assumed this was an unusual occurrence. There were 18 reported incapacitating injury crashes, mostly due to angle and turning crashes.

Angle crashes resulted in the greatest portion of the injury crashes and fatal crashes on Wilmington-Peotone Road. Angle crashes were frequently located at intersections, indicating countermeasures such as intersection control, alternative intersections, signing, and pavement marking considerations. Out of the angle crashes on Wilmington-Peotone Road at intersections, 52% occurred at intersections without left turn lanes. Intersection improvements at the locations with an increased crash rate could help to reduce the occurrence of angle and turning crashes.

*Highway Safety Manual: Part C*

*A Highway Safety Manual: Part C, Predictive Methods* analysis was completed using existing conditions and volumes to compare crashes experienced against predicted crashes. Spreadsheets available on IDOT's Highway Safety Improvement Program website for crash analysis were used in this crash comparison for the segment and intersection predictive crashes. For most cases, the rural, two-lane crash prediction model was used. One exception to that was the ramp terminals at both the I-55 interchange with N River Road and the I-57 interchange on Wilmington-Peotone Road. The ISATe (Enhanced Interchange Safety Analysis Tool) model was used to evaluate the ramp terminals. The other exception was at the N River Road and IL Route 53 intersection, which is a signalized 3-leg intersection. The IDOT HSM Crash Prediction Tool did not contain this intersection type. This intersection type has been added to the 2020 updated Rural Two-Lane Roads Spreadsheet v3.1. The N River Road and IL Route 53 intersection was run in both the IDOT Crash Prediction Tool under the urban/suburban category to best fit predicted crashes with Illinois calibration factors as well as with the updated spreadsheet available from the FHWA to look for any major changes or impacts. AADTs used were both

collected as part of this study and also used those available on the IDOT AADT GIS map available on the IDOT website.

Table 2 shows the results of the predicted method by segment along the corridor. Overall, the total observed crashes were less than those predicted by the model. The only segment with an overall higher number of observed crashes against the predicted crashes was Wilmington-Peotone Road from IL Route 53 to S Indian Trail Road. The other segment of note is on Wilmington-Peotone Road from Warner Bridge Road to S Cedar Road. While the overall total crashes on this segment was below that predicted, it experienced a higher number of fatal/injury crashes than the model predicted.

**Table 2**: Segment Observed Crashes vs. Predicted Crashes

| | Total | | Fatal/Injury | | PDO | |
|---|---|---|---|---|---|---|
| Segment | Observed Crashes | Predicted Crashes | Observed Crashes | Predicted Crashes | Observed Crashes | Predicted Crashes |
| N River Road Segments | | | | | | |
| N River Rd Sta 5+00 to 16+52 | 5 | 3.0 | 2 | 1.0 | 3 | 2.0 |
| N River Rd Sta 16+52 to 47+60 | 4 | 7.8 | 2 | 2.5 | 2 | 5.3 |
| N River Rd Sta 47+60 to 78+03 | 2 | 9.6 | 1 | 3.1 | 1 | 6.5 |
| N River Rd Sta 78+03 to 114+29 | 3 | 6.7 | 0 | 2.2 | 3 | 4.6 |
| N River Rd Sta 114+29 to 150+26 | 7 | 8.4 | 3 | 2.7 | 4 | 5.7 |
| N River Rd Sta 150+26 to 178+24 | 6 | 6.6 | 2 | 2.1 | 4 | 4.4 |
| N River Rd Sta 178+24 to 201+72 | 4 | 4.4 | 0 | 1.4 | 4 | 3.0 |
| IL Route 53 Segments | | | | | | |
| IL53 (Entire Segment) | 10 | 10.1 | 0 | 3.3 | 10 | 6.9 |
| Wilmington-Peotone Road Segments | | | | | | |
| IL53 to S Indian Trail Rd | 29 | 20.1 | 7 | 7.7 | 22 | 16.4 |
| S Indian Trail Rd to Sta 146+14 | 7 | 10.2 | 2 | 3.3 | 5 | 6.9 |
| Sta 146+14 to 159+19 | 6 | 16.4 | 2 | 5.3 | 4 | 11.1 |
| Sta. 159+19 to 170+77 | 6 | 10.6 | 2 | 3.4 | 4 | 7.2 |
| Sta. 170+77 to S Symerton Rd | 11 | 9.4 | 2 | 3.0 | 9 | 6.4 |
| S Symerton Rd to Warner Bridge Rd | 15 | 17.5 | 4 | 5.6 | 11 | 11.9 |
| Warner Bridge Rd to S Cedar Rd | 22 | 26.7 | 10 | 8.6 | 12 | 18.2 |
| S Cedar Rd to S Elevator Rd | 11 | 14.7 | 4 | 4.7 | 7 | 10.0 |
| S Elevator Rd to US-45 | 13 | 23.9 | 0 | 7.7 | 13 | 16.2 |
| US-45 to S Center Rd | 8 | 17.1 | 6 | 5.5 | 2 | 11.6 |
| S Center Rd to I-57 | 7 | 11.6 | 2 | 3.7 | 5 | 7.8 |
| I-57 to S Rathje Rd | 14 | 8.1 | 5 | 2.6 | 9 | 5.5 |
| S Rathje Rd to IL50 | 5 | 6.6 | 1 | 2.1 | 4 | 4.5 |
| IL50 to S. Harlem Ave | 0 | 0.7 | 0 | 0.2 | 0 | 0.5 |
| *Total* | *195* | *250.1* | *57* | *81.5* | *138* | *172.5* |

Table 3 shows the results of the predicted method by intersection along the corridor. In contrast to the segment comparison table, nearly twice as many crashes were observed at intersections compared to those predicted by the models. Intersections of note include N River Road and IL Route 53, IL Route 53 and Wilmington-Peotone Road, and US Route 45/52 and Wilmington-Peotone Road. The interchange terminals for both northbound and southbound I-57 also experienced several more crashes than predicted by the models.

**Table 3:** Intersection Observed Crashes vs. Predicted Crashes

| | Total | | Fatal/Injury | | PDO | |
|---|---|---|---|---|---|---|
| Intersection | Observed Crashes | Predicted Crashes | Observed Crashes | Predicted Crashes | Observed Crashes | Predicted Crashes |
| River Road Intersections | | | | | | |
| I-55 SB Terminal | 2 | 1.8 | 2 | 1.2 | 0 | 0.6 |
| I-55 NB Terminal | 6 | 3.8 | 1 | 1.5 | 5 | 2.3 |
| N River Rd & IL53* | 44 | 4.2/0.8* | 10 | 1.5/0.3* | 34 | 2.7/0.6* |
| IL53 Intersections | | | | | | |
| IL53 and Wilmington-Peotone | 62 | 17.5 | 4 | 5.9 | 58 | 11.5 |
| Wilmington-Peotone Intersections | | | | | | |
| S Indian Trail Rd | 2 | 3.1 | 1 | 1.4 | 1 | 1.7 |
| Old Chicago Rd | 11 | 9.9 | 4 | 4.6 | 7 | 5.3 |
| S Cedar Rd | 18 | 13.2 | 9 | 6.1 | 9 | 7.1 |
| S Elevator Rd | 1 | 1.5 | 0 | 0.7 | 1 | 0.8 |
| 120th Ave/Scheer Rd | 2 | 2.4 | 0 | 1.1 | 2 | 1.3 |
| US-45 | 59 | 32.8 | 12 | 15.3 | 47 | 17.5 |
| Center Rd | 15 | 10.8 | 9 | 4.7 | 6 | 5.4 |
| S 88th Ave | 8 | 6.3 | 4 | 2.9 | 4 | 3.4 |
| I-57 SB Terminal | 14 | 3.7 | 5 | 1.1 | 9 | 2.5 |
| I-57 NB Terminal | 12 | 4.0 | 2 | 1.2 | 10 | 2.7 |
| S Rathje Rd | 5 | 5.7 | 3 | 2.6 | 2 | 3.0 |
| IL50 | 7 | 12.6 | 1 | 4.3 | 6 | 8.3 |
| *Total* | *268* | *133* | *67* | *56* | *201* | *76* |

*Denotes uncalibrated rural 3-leg signalized/calibrated urban and suburban model results

B. Traffic

*Existing Traffic Conditions*

The project corridor currently carries a significant amount of truck traffic. Table 4 shows the average daily traffic volumes and the percentage of trucks volumes based on traffic counts conducted in August 2023. The percentage of single unit trucks , including buses, is in the range of 2% to 5% of the total traffic volume among various segments of the corridor. Multi-unit trucks are in the range of 13% to 28% of the total traffic volume with most segments exceeding 20%. The percentage of heavy vehicles on a typical roadway is between 5% and 10% depending on the location. There is a need to investigate alternatives to accommodate the high volume of truck traffic as the percentage of heavy vehicles is only expected to increase in future years with additional anticipated development adjacent to the corridor.

**Table 4 –** Year 2023 Average Daily Traffic Summary

| Intersection | ADT (vehicles) | Percent Heavy Vehicle (%)* |
|---|---|---|
| River Rd & I-55 SB Ramps | 5,885 | 24.2 |
| River Rd & I-55 NB Ramps | 9,962 | 25.1 |
| IL 53 & River Rd | 13,841 | 22.2 |
| IL 53 & Kankakee River Dr/Peotone Rd | 15,430 | 16.5 |
| Old Chicago Rd & Peotone Rd | 9,350 | 22.8 |
| Warner Bridge Rd & Peotone Rd | 6,892 | 28.2 |
| Cedar Rd & Wilmington Rd | 8,427 | 24.7 |
| US 52 & Wilmington Rd | 13,644 | 19.6 |
| I-57 SB Ramps & Wilmington Rd | 9,885 | 21.7 |
| I-57 NB Ramps & Wilmington Rd | 10,847 | 17.7 |
| IL 50 & Wilmington Rd | 11,946 | 13.8 |

**Percent Heavy Vehicle includes multi-unit trucks, single-unit trucks, and buses*

Corridor Operations

The existing traffic counts included peak hour turning movement counts defined by the following time periods:

- Morning (AM) Peak Hour: 6:15 AM-7:15 AM
- Afternoon (PM) Peak Hour: 3:15 PM-4:15 PM

These counts were used to determine the existing Level of Service (LOS) at each leg of the intersections to identify locations where congestion is a concern. A summary of intersection traffic operations can be found in Table 5. Three locations currently experience an undesirable level of service and are highlighted in the table. IL Route 53/Wilmington-Peotone Road, US 45/Wilmington-Peotone Road, and the I-57 interchange have also been identified as intersections with increased crash rates. LOS analysis cannot be conducted at locations where traffic is in a free-flow condition. Most locations that can be analyzed operate at acceptable LOS. These locations have been noted in the table as well. Each intersection will be studied in context with traffic analysis, crash analysis, and feedback from public outreach to determine the appropriate need for improvement.

**Table 5 –** Year 2023 Intersection and Approach Level of Service (LOS)

| Intersection | Traffic Control | Peak Hour | EB | WB | NB | SB | Intersection LOS |
|---|---|---|---|---|---|---|---|
| River Rd & I-55 SB Ramps | Two-way Stop Controlled | AM | * | * | - | B | * |
| | | PM | * | * | - | B | * |
| River Rd & I-55 NB Ramps | Two-way Stop Controlled | AM | * | * | - | B | * |
| | | PM | * | * | - | C | * |
| IL 53 & River Rd | Signalized | AM | C | - | A | A | B |
| | | PM | D | - | A | A | B |
| IL 53 & Kankakee River Dr/Peotone Rd | Signalized | AM | D | E | B | A | C |
| | | PM | E | E | B | A | C |
| Old Chicago Rd & Peotone Rd | Two-way Stop Controlled | AM | * | * | C | B | * |
| | | PM | * | * | C | D | * |
| Warner Bridge Rd & Peotone Rd | Two-way Stop Controlled | AM | * | * | B | B | * |
| | | PM | * | * | C | C | * |
| Cedar Rd & Wilmington Rd | Two-way Stop Controlled | AM | * | * | C | C | * |
| | | PM | * | * | C | B | * |
| US 52 & Wilmington Rd | All-way Stop Controlled | AM | B | B | B | C | B |
| | | PM | F | C | F | C | F |
| I-57 SB Ramps & Wilmington Rd | Two-way Stop Controlled | AM | * | * | - | B | * |
| | | PM | * | * | - | E | * |
| I-57 NB Ramps & Wilmington Rd | Two-way Stop Controlled | AM | * | * | B | - | * |
| | | PM | * | * | C | - | * |
| IL 50 & Wilmington Rd | All-way Stop Controlled | AM | B | A | B | B | B |
| | | PM | B | B | B | B | B |

**HCM 6th Edition does not calculate a LOS value for approaches that are free-flow or the overall intersection at two-way stop-controlled intersections*

*Origin – Destination Summary and Travel Patterns*

It is important to understand existing travel patterns along the corridor and surrounding area given limited east-west options for vehicles to travel within Will County. Data from StreetLight, one type of Probe Data Analytics (PDA) dataset, was purchased for the project study area to understand the existing travel patterns within and around the study area. StreetLight data uses two main data sources to develop its volume metrics: location-based services (LBS) and navigation-GPS data. The study was then divided into preset Traffic Analysis Zones (TAZs) allowing the study team to analyze traffic patterns between different TAZs. StreetLight Origin-Destination (OD) volumes were developed by first determining a total volume for each zone, then calculating the total amount of measured LBS and GPS trips between origins and destinations. The final step involves scaling the LBS and GPS trips to the total zone volume. The OD matrix data includes all vehicle types from an average weekday (Tuesday,

Wednesday, and Thursday) in 2023. The results have been visualized into different maps where thicker lines represent high traffic volumes between TAZs.

Figure 11 is a travel desire line map illustrating the flows between six internal districts within the study area. There are approximately 15,300 local trips within the six highlighted districts (numbered 1 through 6 on the map). The thicker blue lines indicate higher traffic volumes between districts with 31% of these trips having a demand for east-west travel. These trips would benefit from an improved Wilmington-Peotone Road corridor.

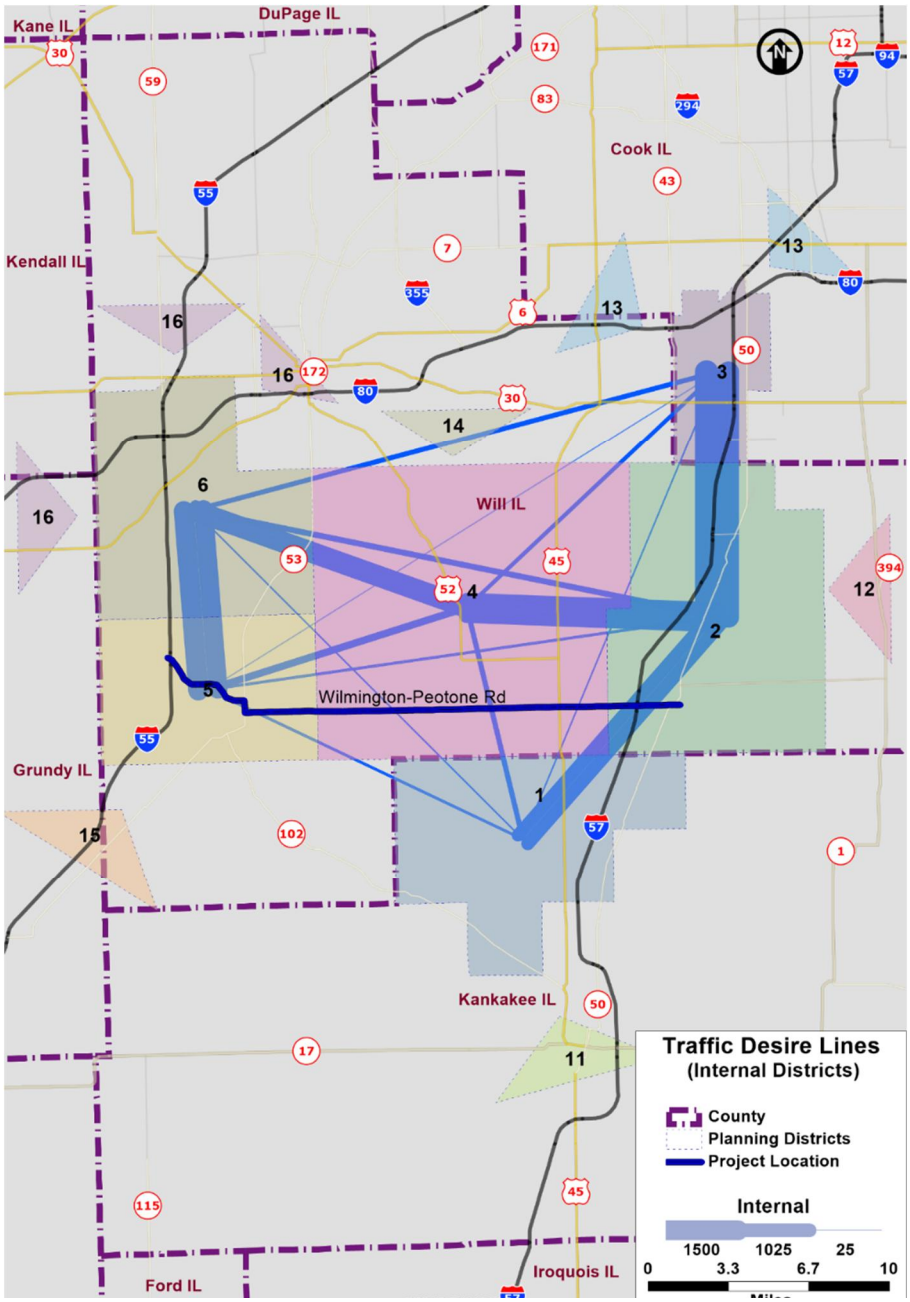



***Figure 11 –*** *Traffic Desire Lines*
*(Local Traffic Internal to Study Area)*

Figure 12 shows the desire line flows for traffic traveling between six external zones adjacent to the study area and the same six internal districts within the study area from Figure 11. It includes approximately 295,300 trips that represent travel patterns for vehicles entering and leaving the study area. Among all of the trips, 11% cross the study area in an east-west direction indicating a potential need for an improved Wilmington-Peotone corridor.

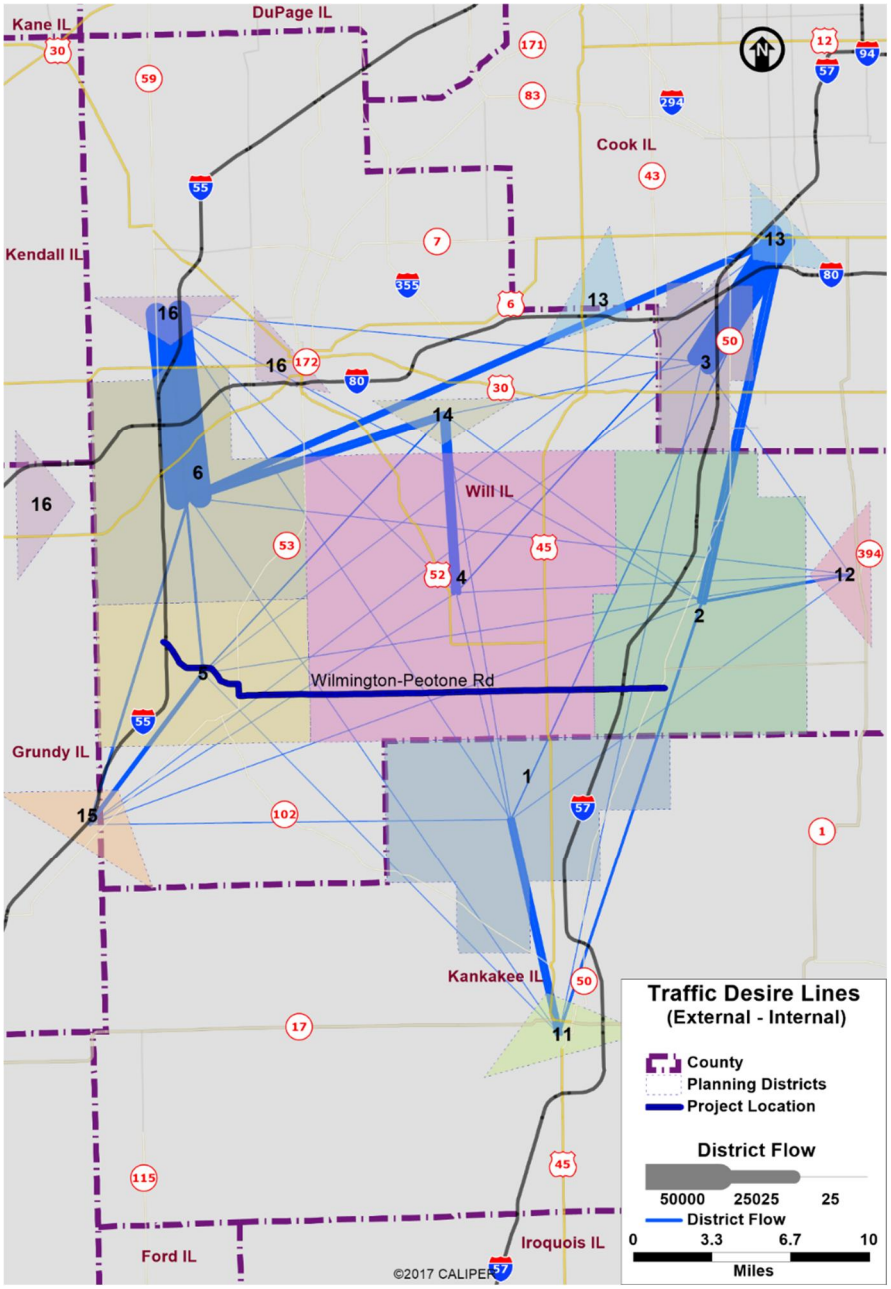



***Figure 12 –*** *Traffic Desire Lines*
*(External Traffic Entering the Study Area)*

Figure 13 shows the desire line flows for traffic that is only passing through the six external zone groups from Figure 12. There are a total of 153,300 trips passing through the study area and approximately 59% of the trips crossing the area are in the east-west direction. This indicates a potential need for an improved Wilmington-Peotone corridor.

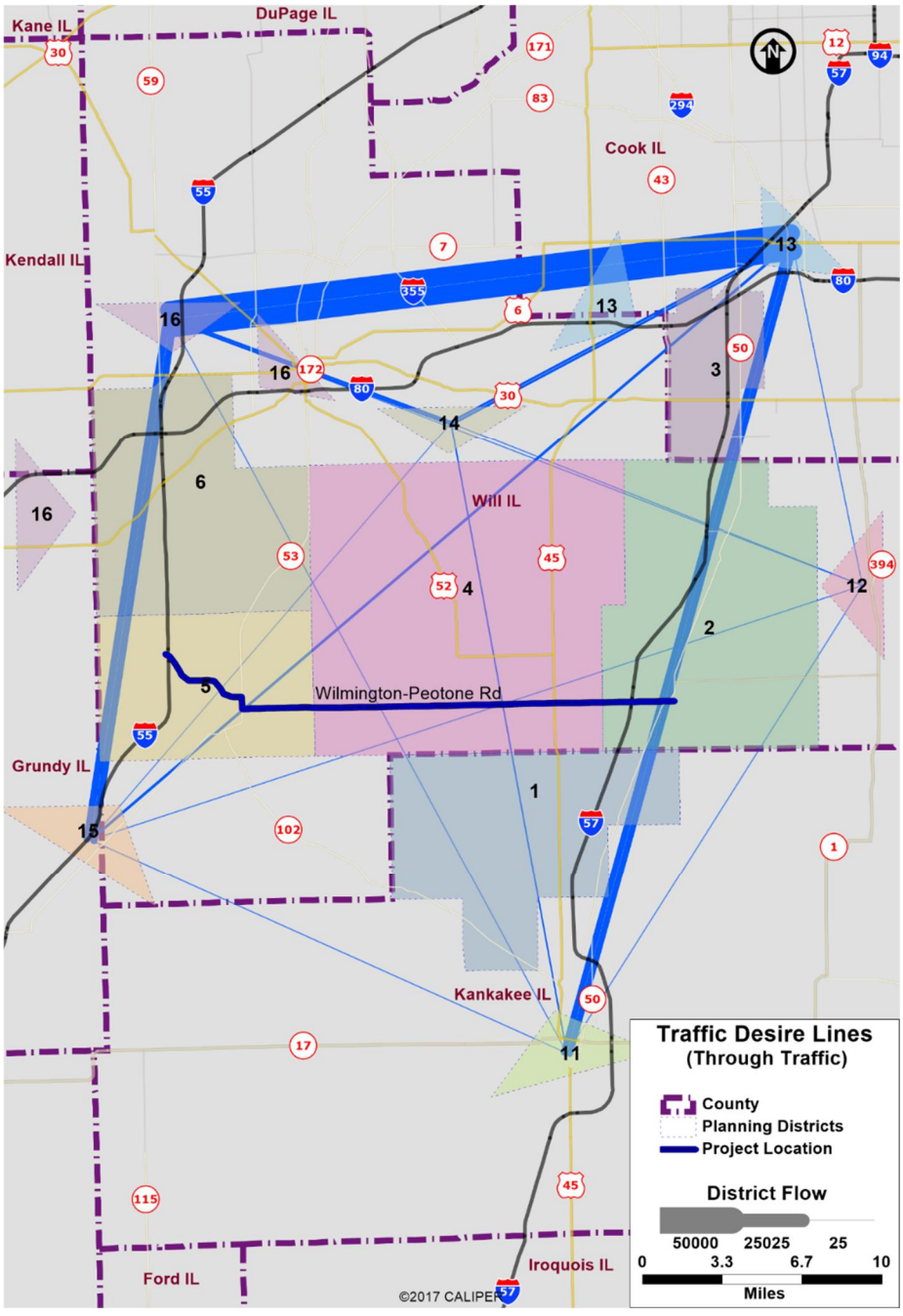



***Figure 13 –*** *Traffic Desire Lines*
*(External Traffic Passing Through the Study Area)*

C. Land Use

The western portion of the Wilmington-Peotone Corridor along River Road is surrounded by sensitive environmental resources including the Kankakee River to the south for portions of the project area. To the north and east is the Midewin National Tallgrass Prairie. The land use around IL Route 53 includes a mix of commercial, agricultural, and industrial zoning types. The United States Cold Storage and DuPont facilities are located west of the intersection with Wilmington-Peotone Road and the Water's Edge residential development is located to the east. The land use is consistent for the majority of Wilmington-Peotone Road with agricultural farmland from IL Route 53 through I-57. Exceptions include the Village of Symerton located north of Wilmington-Peotone Road off of Symerton Road and several locations of commercial developments including the Enchanted Shored RV Park and Campground in the northeast quadrant of the intersection with US Route 45/52. At the interchange with I-57, the land use changes to business and industrial surrounding the interchange including the new Peotone Travel Center and then becomes largely residential with the exception of the Will County Fairgrounds located near the IL Route 50 intersection. While the corridor is agricultural for the majority of the corridor, the surrounding study area includes a variety of land uses contributing to the complex traffic patterns through the area.

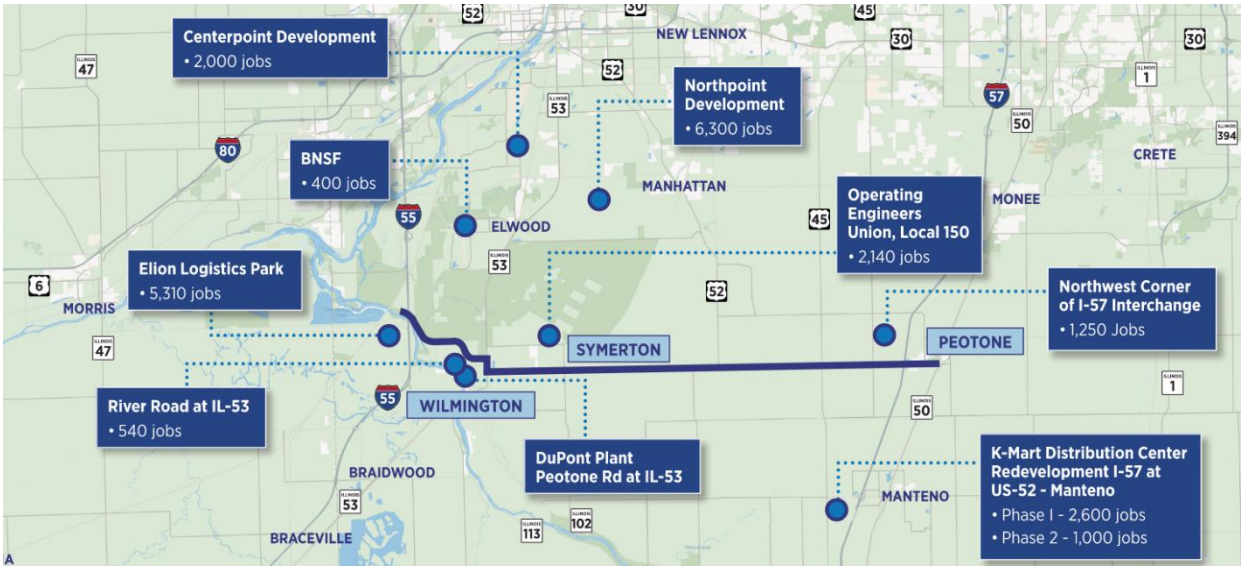



***Figure 14**: Planned Potential Developments*

While not always directly along the corridor, the surrounding area in southern Will County has seen extensive growth in recent years in industrial development. Will County was the #1 job creator in Illinois from 2019 to 2023 adding 12,000 jobs. The county is also leading the way in terms of both industrial development and manufacturing. The project team is working with the Will County Center for Economic Development (CED) to track potential future developments that will contribute to traffic traveling east-west through the county. Known future developments are shown in Figure 14. Additional employment numbers were provided by the county or estimated by the project team based on the approximate square footage of commercial development provided by the County and are shown in Table 6. The additional employment was added to the Regional Model's socioeconomic input data.

**Table 6:** Estimated Major Development in Project Vicinity

| ID | Development Name | Type | Commercial Development (Sq. ft.) | Employment Expected by 2050 |
|---|---|---|---|---|
| 1 | Elion Logistics Park | Industrial | 10,809,600 | 5,310 |
| 2 | River Road at IL 53 | Industrial | 2,142,000 | 540 |
| 3 | Gotion (Battery Plant) - Phase I | Industrial | 10,400,000 | 2,600 |
| 4 | Gotion (Battery Plant) - Phase II | Industrial | 4,000,000 | 1,000 |
| 5 | Northwest Quadrant of I-57 Interchange | Industrial | 5,000,000 | 1,250 |
| 6 | Operating Engineers Union, Local 150 | Industrial | 8,568,000 | 2,140 |
| 7 | Northpoint Development | Industrial | 8,568,000 | 6,300 |
| 8 | Centerpoint | Industrial | 25,200,000 | 2,000 |
| 9 | BNSF | Industrial | 1,600,000 | 400 |
| Total | | | 76,287,600 | 21,540 |

*Anticipated Future Demand*

Horizon year (2050) traffic volumes for the project corridor were developed using the Chicago Metropolitan Agency for Planning (CMAP)'s regional travel demand model (Regional Model).

To validate the Regional Model's ability to estimate the 2019 base year traffic in the project study area, the project team conducted a model calibration and validation process to compare the model estimated volume with several data sources. Traffic counts collected by the project team from August 2023 along with counts available from Illinois Department of Transportation (IDOT), Origin and destination (OD) data from Streetlight, and OD trip tables from the Illinois Statewide Travel Demand Model (Statewide Model) were used in the validation process.

With the validated Regional Model and the added employment growth, the future year 2050 Regional Model was used to forecast future year traffic volumes along the project corridor. The estimated future traffic volumes were shown in Table 7. The Regional Model predicts an average of 50% growth for the majority of the project corridor.

**Table 7:** Planning Horizon Year 2050 Average Daily Traffic and Growth

| Segment ID | Location Description | Year 2023 ADT | Estimated 2050 ADT | Estimated 2050 Truck % | Change % | Annual Growth % |
|---|---|---|---|---|---|---|
| 1 | River Rd (West of I-55) | 609 | 900 | 3% | 48% | 1.25% |
| 2 | River Rd (East of I-55) | 9,716 | 13,070 | 36% | 35% | 0.96% |
| 3 | River Rd (West of Hwy 53) | 7,350 | 10,250 | 46% | 39% | 1.08% |
| 4 | Hwy 53 | 11,895 | 17,090 | 26% | 44% | 1.19% |
| 5 | W Peotone Rd (East of Hwy 53) | 8,816 | 14,220 | 26% | 61% | 1.55% |
| 6 | W Peotone Rd (East of Indian Trail Rd) | 8,201 | 13,220 | 27% | 61% | 1.55% |
| 7 | W Peotone Rd (East of Old Chicago Rd) | 6,992 | 11,640 | 41% | 66% | 1.66% |
| 8 | W Peotone Rd (West of Warner Bridge Rd) | 6,828 | 11,400 | 41% | 67% | 1.67% |
| 9 | W Wilmington-Peotone Rd (East of Warner Bridge Rd) | 6,807 | 11,240 | 42% | 65% | 1.63% |
| 10 | W Wilmington-Peotone Rd (West of Cedar Rd) | 7,662 | 11,460 | 32% | 50% | 1.31% |
| 11 | W Wilmington-Peotone Rd (East of Cedar Rd) | 6,821 | 9,920 | 38% | 45% | 1.22% |
| 12 | W Wilmington-Peotone Rd (West of Hwy 45) | 6,685 | 9,740 | 40% | 46% | 1.22% |
| 13 | W Wilmington-Peotone Rd (East of Hwy 45) | 5,344 | 8,070 | 41% | 51% | 1.34% |
| 14 | W Wilmington-Peotone Rd (West of I-57) | 7,189 | 10,690 | 35% | 49% | 1.29% |
| 15 | W Wilmington-Peotone Rd (East of I-57) | 8,804 | 12,070 | 19% | 37% | 1.02% |
| 16 | W Wilmington-Peotone Rd (West of Governors Hwy) | 6,486 | 9,120 | 21% | 41% | 1.11% |
| 17 | Tucker Rd (East of Governors Hwy) | 1,232 | 1,320 | 36% | 7% | 0.22% |

D. Structures

The bridges over I-55 (IDOT Structure No. 099-4641) and I-57 (IDOT Structure No. 099-0161) at the west and east study limits respectively, connect the Wilmington-Peotone corridor to the interstate system. Increases in capacity may require either reconstruction or widening of these bridges, as well as 8 additional structures along the corridor. For that reason, in September of 2023, Burns & McDonnell's structural design team performed a visual assessment of the structures and noted the following:

*River Road over I-55 (SN 099-4641)*

- The existing structure is a two-span curved steel plate girder bridge with a 57'-6" clear deck width, including a raised center median.
- The bridge was built in 1961 to accommodate the widening of River Road and provide a clearer cross section over I-55 at this location.
- The deck, beams, joints, bearings, abutments, and piers are all in good condition.

For this structure, the bridge assessment team recommends bridge widening to accommodate any additional roadway width needed by an alternative to be carried forward. Although it is not recommended, per IDOT Bridge Condition Report Procedures and Practices (IDOT BCR PP) to reuse portions of the structure over 15 years old, the overall structure appears to be in good condition and widening or widening with full deck replacement is a viable option.

*Wilmington-Peotone Road over I-57 (SN 099-0161)*

- The existing structure is a four-span steel wide flange beam bridge with a 31'-6" clear deck width.
- The bridge was built in 1967 to provide a grade separation over I-57; and the bridge was redecked in 2001.
- The bridge elements including deck, beams, joints, bearings, range from fair to satisfactory condition and the piers and abutment are in good condition.
- The IDOT Structure Summary Report notes that the clearance of the bridge is intolerable and a high priority for correction.

The bridge assessment team recommends that this structure be replaced for any alternative to be carried forward for which additional roadway width is required across the bridge. All elements of the structure are over 15 years old; portions of which are rated as fair. Therefore, per IDOT BCR PP, widening of the existing bridge is not recommended, as it is likely that the future maintenance needs would be high. Although initial construction costs for a new bridge would be greater than that of a deck widening and rehabilitation, the modifications that would need to be made to the existing structure are substantial considering the condition and the design life of the structure would be met in the next 20 years. Additionally, complete replacement will allow for a customized and aesthetic structure that could suit any determined needs of the interchange as well as correct any current clearance issues.

*Additional Structures along Wilmington-Peotone and River Road*

- The additional structures consist of 7 bridges and 1 culvert.
- All structures span waterway features and it assumed that current hydraulic criteria is met.
- The minimum clear deck width for the structures is 40'-0".
- 5 of the structures utilize railings that do not meet current standards.

Although each structure will need to be evaluated individually depending on the alternative to be carried forward, for most of these structures the bridge assessment team recommends bridge widening to accommodate any additional roadway width needed. The structures built within the last 15 years and/or rated to be good or better condition appear to be viable candidates for bridge widening. Widenings will also allow for modification of existing rails to meet current standards. Structure Number 099-3331 is recommended to be replaced due to the age of the structure, inventory rating, and bridge condition if widening of the structure is needed.

E. Public and Stakeholder Coordination

Public and Stakeholder coordination has been ongoing from the start of this project. Multiple stakeholder meetings as well as a public information meeting have been held by WCDOT, with future meetings scheduled after alternatives development. Given the length of the corridor, Public Information Meetings will be held twice with the same material presented at either end of the corridor for ease of access for the users of Wilmington-Peotone Road to provide their input. The first Public Information Meeting was held on December 6 and December 13, 2023. This first meeting focused on presenting and

gathering data to support the development of this project Purpose and Need. A survey was also conducted to gather additional information from corridors users.

A summary of public information meeting #1 information is as follows:

- 76 people attended the City of Wilmington meeting on December 6, 2023
- 35 people attended the Village of Peotone meeting on December 13, 2023
- 53 surveys were completed
- 96 comments received online and during the meetings

Public outreach was also held virtually on the project website www.wilmingtonpeotonestudy.com. The website provides an opportunity for visitors to sign up for future communications throughout the PEL study.

Out of the total survey participants, 80% percent of survey respondents said that they had concerns about the corridor and said improvements were needed now. Additionally, 76% percent of respondents ranked improving safety as the number one priority when evaluating alternatives for the corridor.

The comments received as part of the first public information meeting were related to concerns within the following categories:

- Intersection Safety
- Concerns related to the Increase in Truck Traffic
- Speeding
- Alternate Routes / Roadway Realignment
- Roadway Typical Section
- Farmland Access and Land Acquisition
- Drainage Concerns

The data obtained will also be used to develop proposed alternatives which will then be presented at the second public information meeting in Summer 2024.

F. Regional Bikeway Plan

Bicycling is an important part of Will County's multimodal transportation network. Connectivity between bikeways and trails increases mobility and provides a safe and enjoyable alternative option to driving. There are recreational trails available near or crossing the corridor within Midewin as well as the Wauponsee Glacial Trail; however, pedestrian and bicycle accommodations are minimal throughout the Wilmington-Peotone corridor. Outside of a short segment of multi-use path along IL Route 53 and sidewalk at the eastern end of Wilmington-Peotone Road there are no safe connections to these trails directly from the Wilmington-Peotone corridor.

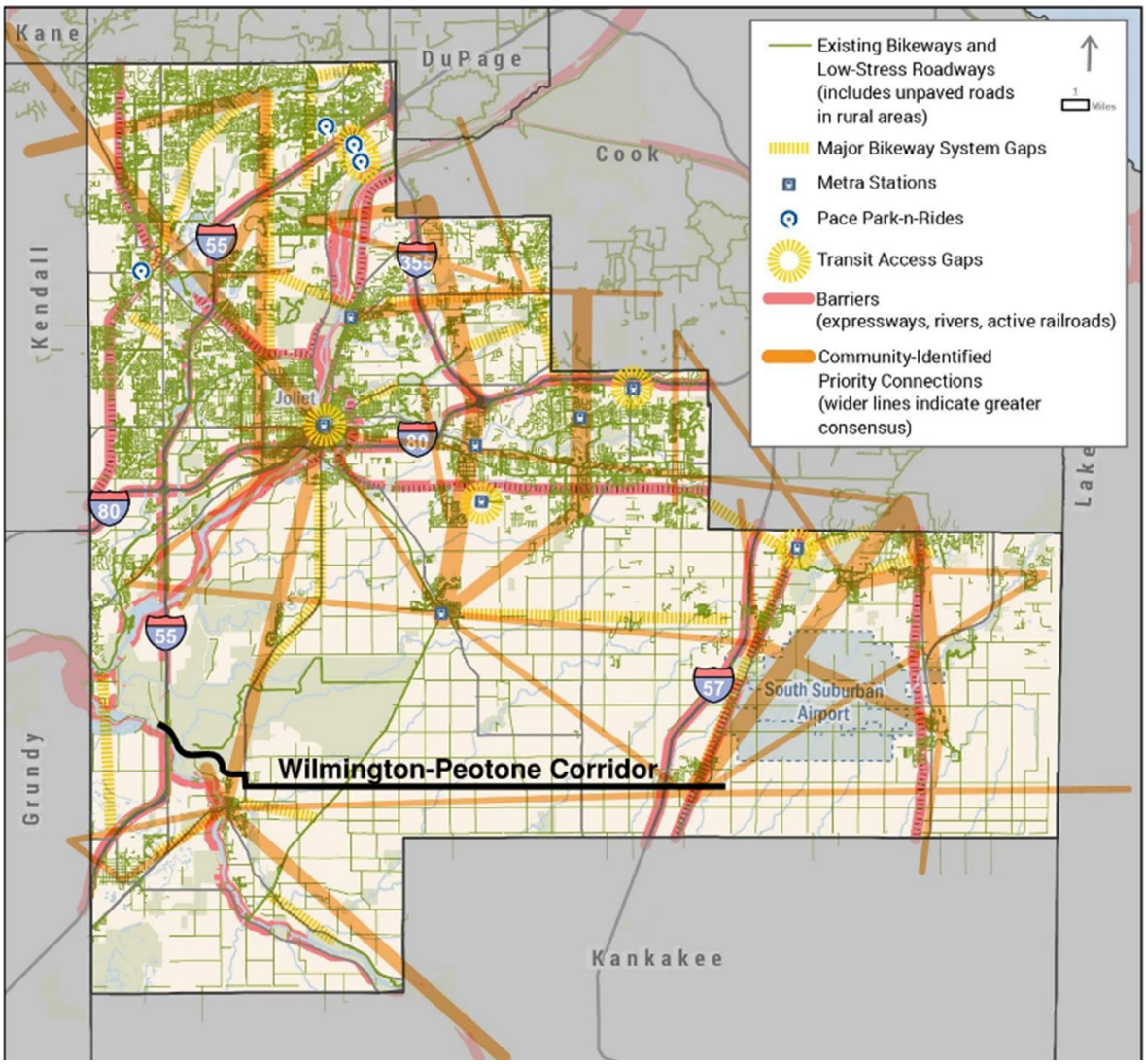



***Figure 15:*** *Will County Regional Bike Plane Connectivity Analysis Summary*

The Will County Regional Bikeway plan has identified the connection between Wilmington and Peotone as a priority connection by the communities in Will County. The plan also assessed a number of different characteristics of their existing roads to determine their compatibility for bicyclists. This level of stress evaluation considers the speed limit, traffic volumes, pavement width, presence of on-street parking, and presence of bike lanes to determine the road compatibility with bicyclists of different skill levels. Wilmington-Peotone Road received a “poor” rating for the current level of stress; unsurprisingly given the tight cross section as previously noted. River Road and IL Route 53 also were “poor” for the majority with the exception of a segment of River Road that received a “moderate” rating. These roadways are only suitable for very skilled and confident bicyclists. Outside of this corridor, while there are many roads that are low stress the majority of these are local roads that do not provide connectivity within the County. As such, improvements are needed along the corridor to address the existing pedestrian and bicyclist limitations.

## 4. CONCLUSION

The purpose of this project is to improve safety, enhance mobility for all users through providing an efficient east-west connection, and support current and future travel demand throughout the corridor. Based on the supporting facts presented in the sections, the needs for this project are to address deficiencies in the existing roadway and multimodal infrastructure and accommodate growth in local and regional traffic to improve mobility throughout the county.

The development and growth throughout Will County in recent years is already challenging the existing infrastructure and is only expected to increase. The Wilmington-Peotone corridor provides an east-west connection through the County but does not meet the current design standards for a major connector. The narrow cross-section combined with rolling hills and a higher percentage of large vehicles creates safety concerns resulting in rear end and fixed object crashes. The lack of shoulder deters law enforcement with no place to safely stop vehicles. Recent public meetings show strong support of safety improvements to the Wilmington-Peotone Corridor.