APPENDIX D. PURPOSE & NEED REPORT

PROPEL US 31

Smarter Transportation. Stronger Communities.

US 31 North

PURPOSE AND NEED REPORT

Revision 1 – March 27, 2024

Prepared By

PARSONS

This report was finalized prior to the issuance of several Executive Orders (EOs) and one United States Department of Transportation (USDOT) order, including:

- Federal EOs: EO 14154, EO 14148, EO 14173, and EO 14281;
- State EOs: EO 25-49, EO 25-37, and EO 25-14;
- USDOT Order 2100.7

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EXECUTIVE SUMMARY

ProPEL is an Indiana Department of Transportation (INDOT) initiative for transportation planning that uses collaborative Planning and Environment Linkages (PEL) studies to consider environmental, community, and economic goals. INDOT has initiated PEL studies on the US 30 and US 31 corridors in central and northern Indiana, as shown in Figure 1. This statement of purpose and need has been prepared for the ProPEL US 31 North study in Fulton and Miami Counties. The purpose and need statement is based on scoping and data collection efforts that have been documented since the study began in August 2022, as well as feedback received from the ongoing public and stakeholder involvement completed to date.

As summarized in Figure 2, six needs and three associated purposes have been identified for the ProPEL US 31 North study, in addition to seven study goals. The corridor vision, which is an overarching and forward-looking perspective that was coordinated with adjacent ProPEL studies on US 30 and 31, is also shown.

A more detailed discussion of how each of these were determined is provided within this report.

Figure 1. Context of the ProPEL US 31 North Study

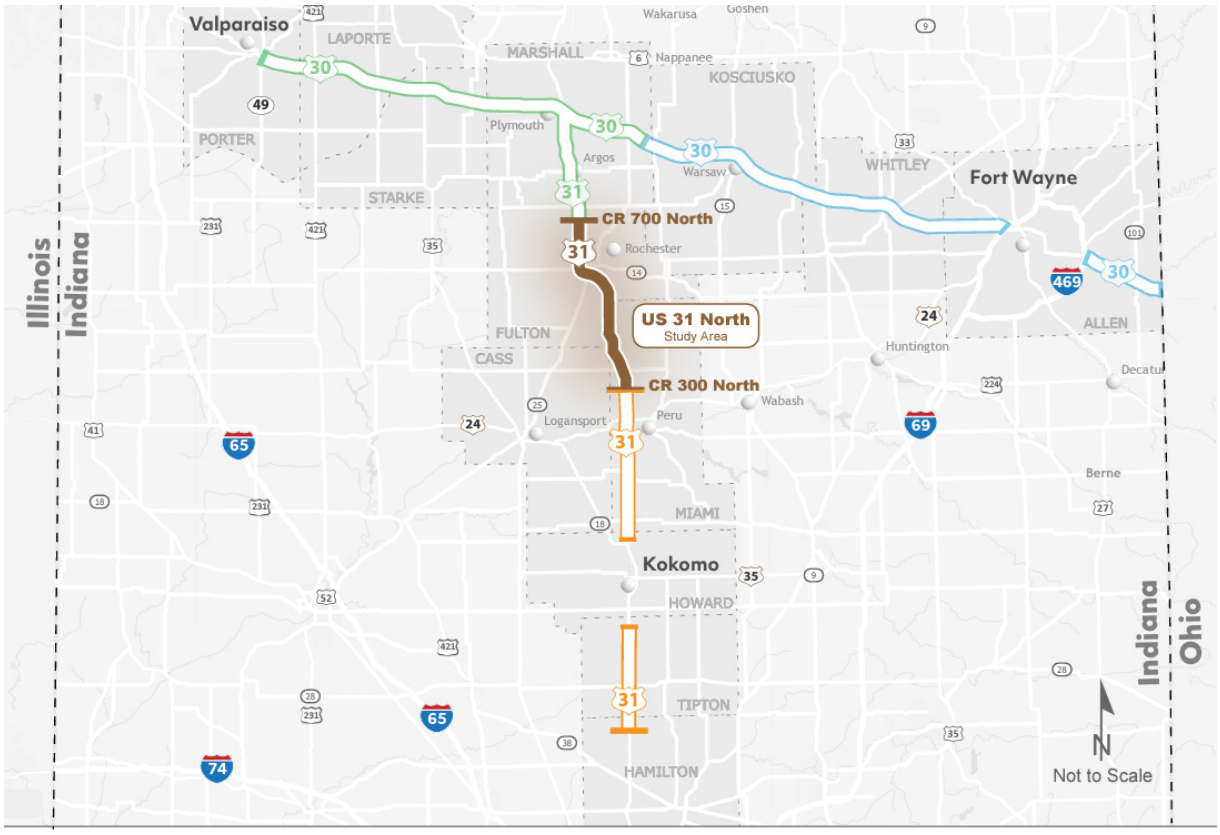


Figure 2. Summary of ProPEL US 31 North Purpose & Need Statement

CORRIDOR VISION

The US 31 corridor will **serve local, regional, and national** travelers by **balancing mobility and access** considerations in a way that:

- Enhances **safety** for all users,
- Provides **equitable transportation solutions**, and
- Complements **local community goals and objectives**, including maintaining the character of the study area.

NEEDS

Safety Concerns Along US 31 | *Portions of US 31 along the study corridor have elevated crash frequency and/or severity (i.e., above the statewide average).*

Safety Concerns at Intersections with US 31 | *Intersections along the study corridor have elevated crash frequency and/or severity, notably for crossing and turning movements and include fatalities and incidents with non-motorized users.*

Access Control Issues | *The type and spacing of private driveways along the study corridor, including for businesses, residences, and/or farms, is not consistent with INDOT's Access Management Guidelines.*

PURPOSES

Improve roadway safety in the study corridor for all users

Ability to Access US 31 | *Challenges associated with direct and easy access routes to and from US 31 impact public safety, mobility, and the local economy and need to align with community plans and objectives.*

Cross-Highway Connectivity | *The design and traffic characteristics of US 31 impact east-west mobility requirements for emergency services, schools, and non-motorized vehicles and in support of agricultural operations.*

Meet the mobility needs of residents, businesses, and service providers in the study area

Regional and Statewide Mobility | *The need to provide safe, high-quality mobility for long-distance passenger and freight trips through and beyond the study corridor is documented in several statewide and regional plans and reports and is limited by the current configuration and traffic conditions in the study corridor.*

Enhance the efficiency and reliability of US 31 as a regional and statewide corridor

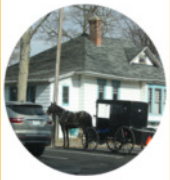
STUDY GOALS

Economic Development

Provide adequate transportation infrastructure to support local economies and economic development goals

Equity in Transportation

Provide equitable solutions that take into account the needs of underserved communities

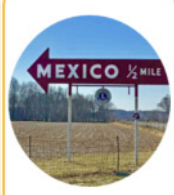


Multimodal Access & Connections

Accommodate non-motorized vehicles, transit, and active modes of travel in and crossing the study corridor

Corridor Character

Maintain the rural fit and function of the corridor



Sense of Place & Visual Character

Enhance US 31 as a gateway to local communities and enhance community identity

Emerging Technologies

Support emerging technologies and related infrastructure

Fiscal & Environmental Practicality

Identify fiscally responsible improvements; avoid/minimize impacts to the human and natural environment, including resources important to Tribal Nations

1. INTRODUCTION

1.1. BACKGROUND

ProPEL is an Indiana Department of Transportation (INDOT) initiative for transportation planning that uses collaborative Planning and Environment Linkages (PEL) studies to consider environmental, community, and economic goals. Through the PEL studies, INDOT aspires to create smarter transportation systems that build stronger communities. INDOT is using PEL studies on the US 30 and US 31 corridors in central and northern Indiana. The ProPEL US 30 and 31 studies span 180 miles across 12 counties (Allen, Fulton, Hamilton, Howard, Kosciusko, LaPorte, Marshall, Miami, Porter, Starke, Tipton and Whitley) and includes:

- US 30 from Valparaiso to the Indiana/Ohio state line; and
- US 31 between Hamilton County and US 30.

Within the overall study limits, INDOT designated four smaller study areas for conducting individual PEL studies (see Figure 1 above). This approach enables each study to more closely consider community needs and goals. Additionally, the limits of the four study areas were defined to optimize engagement by keeping communities that associate with each other in the same study area. The four PEL studies are being closely coordinated to make sure that potential solutions along US 30 and US 31 are integrated and work together across study area boundaries.

This Purpose and Need Report is being prepared for the ProPEL US 31 North study. As detailed in Section 1.3, the study corridor is approximately 27 miles long, extending from County Road (CR) 300 North, just south of the Eel River in Miami County, to CR 700 North, just south of the Fulton/Marshall County line. Land use within the study area is predominantly agricultural with residential and commercial properties, including those supporting agricultural uses, and community facilities interspersed throughout. Rochester is the county seat of Fulton County and is located directly adjacent to US 31 along the ProPEL US 31 North study corridor.

This statement of purpose and need is primarily based on the scoping and data collection documents that have been prepared for the study corridor, including the *Existing Transportation Conditions Report* and the *Environmental Constraints Report*, as well as the ongoing agency coordination and public involvement processes for the study as documented in the *Resource Agency, Stakeholder, & Public Involvement Summary Memorandum*. Continued coordination will be ongoing throughout the study, and the purpose and need statement will continue to be evaluated throughout the study and may be revised if appropriate. Study documents will be available on the study website (https://propelus31.com/us-31-north/) as they are finalized and are incorporated by reference in to this report.

1.2. PURPOSE OF THIS REPORT

The purpose and need statement establishes “why” a study or project is being proposed and sets the foundation for alternatives development and evaluation. The statement identifies specific transportation problems (needs) to be addressed and describes the specific desired outcomes (purposes). The purpose and need statement helps determine a reasonable range of alternatives to move forward; potential alternatives are measured against the purpose and need statement and alternatives that are determined to not meet the purpose and need are eliminated from further consideration. Additionally, goals, which are desirable, but not required, objectives for a study or project can be identified during the development of the purpose and need. Goals are intended to guide the development and screening of potential alternatives in future phases of a study or project, alongside other factors such as transportation performance, benefits and impacts, and cost.

The PEL study connects the planning process and the National Environmental Policy Act (NEPA) process, which occurs during INDOT's traditional project development process for projects utilizing federal funds or requiring federal approvals. The purpose and need statement is a core element of the NEPA environmental review process. INDOT intends to use the purpose and need developed during this PEL study as the foundation of the subsequent NEPA review process for any reasonable alternatives that are identified and funded for further development.

1.3. STUDY TERMINI

The limits of the study, as shown in Figure 3, have been defined based on the identified needs within the study corridor and the goal of maximizing public engagement across multiple communities for the four ongoing US 30 and US 31 PEL studies. The ProPEL US 31 North study will identify and evaluate potential improvements to US 31 from just south of the Eel River in Miami County (CR 300 North) to CR 700 North in Fulton County, just south of the Marshall County line. US 31 is a critical transportation link in Indiana that serves cross-state travel from Louisville, Kentucky, through Indianapolis, to South Bend near the Michigan state line. While the section of US 31 between Indianapolis to Louisville has network redundancy with I-65 running parallel, the northern section of US 31 between Indianapolis and South Bend is the only highway link between the two cities and is thus a critical link in the statewide highway network. Additionally, in the vicinity of the study limits, US 31 serves as both a thoroughfare for regional trips as well as a connector for local communities including Rochester, Mexico, Denver, and Macy.

Figure 3. ProPEL US 31 North Study Corridor

The two proposed termini for the study define the most rural portion of US 31 and are fully located within the north central Indiana region. The roadway segment for the study is consistent in character – including lane configuration, intersection spacing and treatment, and land use patterns. Due to the rural nature of the study area and the free-flow condition along US 31 within its extents, the types of operational and safety concerns within these limits are distinct. Traffic volumes, and associated congestion, increase outside of these termini, as do the presence of traffic control and more grade-separated interchanges on US 31 in the more urban areas of Argos and Plymouth to the north and Peru, Grissom Air Reserve Base, and Kokomo to the south, outside of the proposed termini.

As part of the study, physical improvements may be identified along local roadways including those that intersect with US 31 within the study limits. For this

reason, the study area is generally a half-mile buffer on both sides of US 31 (i.e., an approximately one-mile wide area centered on the highway) and will be revised during future phases of the study, if needed. The ProPEL US 31 North study will identify reasonable alternative(s) to address the needs of the study corridor. Any reasonable alternative(s) would be evaluated for logical termini and independent utility.

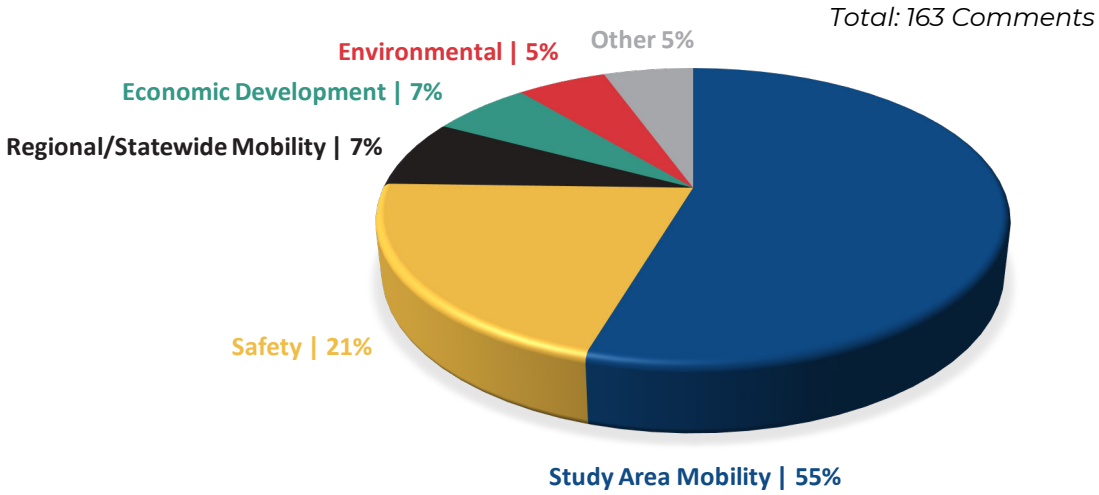
1.4. SUMMARY OF PUBLIC INVOLVEMENT

Data to inform this statement of purpose and need was obtained from the study's ongoing public involvement and stakeholder coordination. A Draft Purpose and Need Report was developed based on early scoping and data gathering activities, including a public information meeting (PIM) in December 2022, and was published for public and agency review on June 5, 2023. Subsequently, a second PIM was held in June 2023 to get feedback on the Draft Purpose and Need Report. The public involvement and stakeholder coordination related to these two PIMs are discussed separately below. A full summary of involvement and outreach efforts is provided in the *Resource Agency, Stakeholder & Public Involvement Summary (RASPI) #1* and *RASPI #2,* available on the study website.

1.4.1. SCOPING AND EXISTING CONDITIONS

Early scoping and data gathering activities to inform the development of the purpose and need included: ongoing bi-monthly Community Office Hours (COH) in the study area beginning in October 2022; a Stakeholder Advisory Committee (SAC) meeting in November 2022; an in-person and virtual on-demand PIM in December 2022; comments received via the study website (https://propel31.com/); and ongoing coordination with local agencies, representatives, and officials. Comments related to existing conditions, needs, or deficiencies within the study area are summarized in this section, as received through January 1, 2023 – which was the close of the first PIM comment period. During this timeframe, approximately 170 comments were received in response to a series of prompted visioning and scoping exercises during the PIM as well as open-ended comments received via the PIM, COH, and study website. Most comments covered multiple topics or concerns and were each individually reviewed and categorized based on recurring common themes. A total of 163 concerns related to existing conditions and needs were identified, as summarized on Figure 4 and further described below.

Figure 4. Summary of Public Comments on Existing Conditions, Needs, or Deficiencies



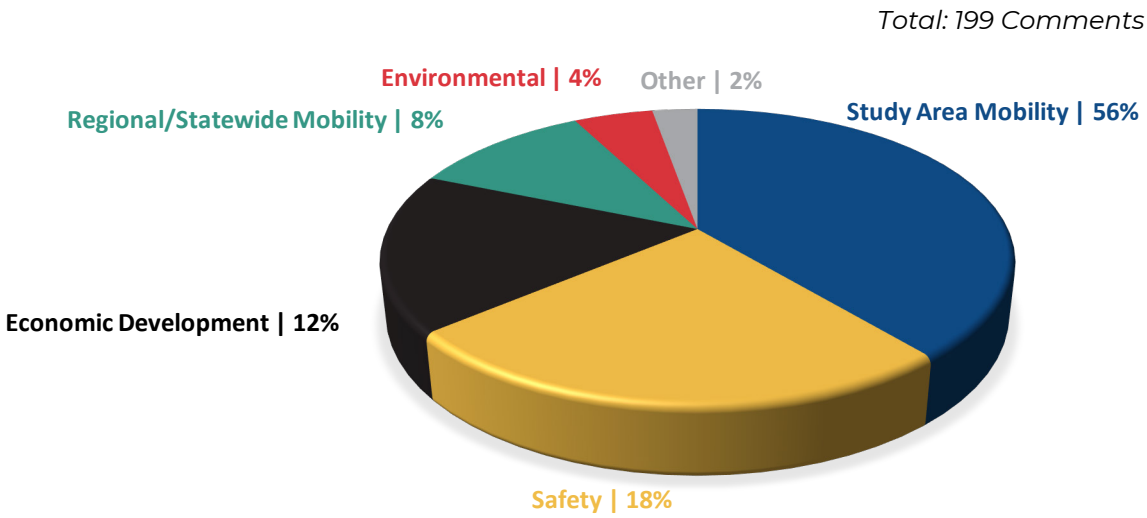
Overall, the importance of US 31 for both daily life in the study area as well as for facilitating more regional travel was clear in the comments received. More than 75% of the comments received for existing conditions related to Study Area Mobility and Safety. Difficulty turning onto or crossing US 31 for a variety of reasons and particular conditions for specific users including emergency services, school buses, agricultural equipment, large vehicles/trucks, and non-motorized vehicles, were the most common themes.

- **Study Area Mobility** | 55% | 89 Comments | Concerns were primarily related to existing connections to, from, or across US 31, both for specific areas or specific users, or generally throughout the study area.
    - Needs of existing users within the study area, particularly at existing intersections: emergency vehicles, school buses, non-motorized (including horse-drawn vehicles and bicycles), farm and other large and heavy equipment, and trucks.
    - General connectivity needs throughout the study area for:
        - Communities, notably Rochester, Mexico, Macy, Denver, and Leiter's Ford;
        - Farms and related agricultural services; and
        - Residences and businesses.
    - General mobility deficiencies across and/or accessing US 31.
    - Existing traffic volumes, including truck traffic, particularly within Rochester and the grade-separated interchange of SR 25 with US 31, or during specific events (Notre Dame football games and weekends near recreational areas).
    - Accessibility needs to/from three grain elevators (in Rochester, Macy, and Mexico).
    - Lack of other existing options across the Eel River in the area, particularly the size/weight limitations of Denniston Bridge.
- **Safety** | 21% | 34 Comments | Concerns were primarily related to experienced or perceived safety issues, both in general as well as at specific locations and/or for specific users.
    - Difficulties crossing and/or turning across US 31 at existing intersections, including sight distance and the safety risk of vehicles stacking the median opening.
    - Difficulties entering and/or exiting US 31 at existing intersections, including lack of sufficient turn lanes.
    - Speed of through traffic along US 31 (in general, and speed differential related to slower-moving traffic entering/exiting/crossing highway).
    - Safety of specific users, particularly at specific intersections: non-motorized vehicles (including horse-drawn vehicles), school buses, farm equipment, and trucks.
    - General safety issues, including insufficiency of local roadways to safely accommodate farm and other large and heavy equipment/trucks.
- **Regional/Statewide Mobility** | 7% | 12 Comments | Concerns were primarily related to the importance of travel along US 31 in the study area as part of the larger transportation network, and US 31 being a free-flow facility within the study area to facilitate more regional travel needs.
- **Economic Development** | 7% | 10 Comments | Concerns were related to current population and development trends and the associated importance of US 31 in the local communities.
- **Environmental** | 5% | 9 Comments | Concerns were related to the presence of environmental resources including cemeteries and wildlife habitat, as well as noise issues due to traffic.
- **Other** | 5% | 9 Comments | Concerns were related to drainage or alternative fuel options.

1.4.2. DRAFT PURPOSE AND NEED

The Draft Purpose and Need was published for public and agency review on June 5, 2023. A SAC meeting was held in-person on May 17, 2023, and an in-person PIM was held on June 7, 2023. A virtual meeting, which included the meeting materials and a recording of the presentation from the in-person meeting, were made available online at the ProPEL US 31 website the following day. During this time, stakeholder outreach included elected officials, stakeholder groups and the public. Study materials were also located at several high-traffic locations along the corridor, including communities with environmental justice concerns. Public comments were submitted online, at the biweekly COH, and shared at the PIMs. Overall, 107 comments – most of which covered multiple topics and concerns – were received during the PIM comment period, which was open through July 31, 2023. Similar to the first PIM, each comment was individually reviewed and categorized based on recurring common themes and a total of 199 concerns related to existing conditions and needs were identified, as summarized in Figure 5. The common themes were similar to those submitted during PIM #1, and indicate that the identified study needs and goals are appropriate. Additionally, based on the public comments received, clarifications were added to this statement of purpose and need including additional information on the Eel River crossings in Section 2.4 and, in Section 2.5, on the Miami County Comprehensive Plan and on documented routes for industrial services and grain elevators.

Figure 5. Summary of Public Comments on Draft Purpose and Need



A meeting for resource agencies and cultural resource stakeholders was held on August 10, 2023. The main purpose of the meeting was to review and receive input on the Draft Purpose and Need Report, as well as the separate Draft Environmental Constraints Report. Comments from eight federal, state, or local resource agencies or cultural resource stakeholders were received at the meeting or during the agency comment period, which was open through August 24, 2023. The majority of comments received were in regard to environmental resources. However, based on the agency feedback, Sections 2.1 and 2.2 were updated to identify the county in which the identified safety concerns were located.

Additionally, based on ongoing coordination with all ProPEL US 30 and US 31 study areas, Sections 2 and 3 were updated to include additional details on economic development in terms of purpose and need.

1.5. CORRIDOR VISION

The vision for the US 31 corridor – which was collaboratively developed for all the ongoing ProPEL US 31 North and US 31 South studies – is an overarching and forward-looking perspective that reflects input received from the public, stakeholder, and agency involvement completed to date.

The corridor vision is separate from and does not take the place of the purpose and need statement.

CORRIDOR VISION: The US 31 corridor will serve **local, regional, and national** travelers by **balancing mobility and access** considerations in a way that:

- Enhances **safety** for all users,
- Provides **equitable transportation** solutions, and
- Complements **local community goals and objectives**, including maintaining the character of the study area.

2. STUDY NEEDS

US 31 is a critical transportation link in Indiana that serves cross-state travel from Louisville, Kentucky, through Indianapolis, to South Bend near the Michigan state line. Within the study corridor, US 31 serves as both a thoroughfare for regional trips as well as a connector for local communities. US 31 is a four-lane Principal Arterial roadway with two lanes in each direction separated by an approximately 50- to 60-foot grass median (excluding turn lanes). It is generally on a north-south alignment and crossing through a predominantly grid-based county road network, with the cross-streets generally on an east-west alignment.

The average annual daily traffic (AADT) on US 31 in the study corridor ranges from 14,300 vehicles at the northern end of the study corridor south of Argos to 11,800 vehicles south of Rochester. There are more than 40 roadway or private driveway intersections of US 31 along the corridor, nine of which are classified as Major Collectors or higher. In Rochester, there is one full-service, grade-separated interchange (SR 25), which has the highest traffic volumes of all intersections in the study corridor, and one overpass (with no local access); all others are at-grade intersections with US 31 that are stop controlled on the intersecting roadway or driveway and generally serve less than 1,000 vehicles per day. Traffic operations on US 31 in terms of delay and level of service are not a concern in the study corridor – existing and future traffic volumes are low enough that speeds along US 31 are free-flow and traffic movements at key intersections operate with an acceptable level of service. Within the study corridor, US 31 serves a variety of motorized and non-motorized vehicles and is a heavily used truck route, with trucks comprising up to 32% of the daily traffic.

CR 700 North, the northern study limit, is part of a planned access control project and is proposed to be grade separated over US 31; this separate project is presumed to be an existing condition for the ProPEL US 31 North study and coordination will be ongoing throughout the PEL process, as needed. Other projects currently programmed by INDOT in the study area are routine maintenance, repair, and restoration projects, or small drainage projects, that would not alter function of US 31 or the transportation network along US 31.

Six needs have been identified for the ProPEL US 31 North study. A more detailed discussion of each of these study needs is provided in the following sections. The *Existing Transportation Conditions Report* provides additional details, including analysis methodology and data sources, for the transportation data.

- **Safety Concerns Along US 31** | Portions of US 31 along the study corridor have elevated crash frequency and/or severity (i.e., above the statewide average).
- **Safety at Intersections with US 31** | Intersections along the study corridor have elevated crash frequency and/or severity, notably for crossing and turning movements and include fatalities and incidents with non-motorized users.
- **Access Control Issues** | The type and spacing of private driveways along the study corridor, including for businesses, residences, and/or farms, is not consistent with INDOT's Access Management Guidelines.
- **Ability to Access US 31** | Challenges associated with direct and easy access routes to and from US 31 impact public safety, mobility, and economic development and need to align with community plans and objectives.
- **Cross-Highway Connectivity** | The design and traffic characteristics of US 31 impact east-west mobility requirements for emergency services, schools, and non-motorized vehicles and in support of agricultural operations.
- **Regional and Statewide Mobility** | The need to provide safe, high-quality mobility for long-distance passenger and freight trips through and beyond the study corridor is documented in several statewide and regional plans and reports and is limited by the current configuration and traffic conditions in the study corridor.

2.1. SAFETY CONCERNS ALONG US 31

There were 730 crashes in the study corridor during the five-year analysis period between January 1, 2017 and December 31, 2021. Typical of a rural corridor, almost half of the crashes within the study corridor were animal- related with deer being the most common animal. The locations of these crashes were investigated and found to be distributed throughout the study corridor with no areas of concentrated deer crashes. As such, the location-specific safety evaluation described below focused further on the non-animal crashes.

Figure 6 shows a heat map that highlights the areas along the study corridor with the highest crash densities. Spatially within the study corridor, the densest concentrations of crashes on US 31 are: adjacent to Rochester over a stretch of approximately five miles; and at the southern end of the study corridor over a stretch of approximately four miles north of the Eel River.

Need | Portions of US 31 along the study corridor have elevated crash frequency and/or severity (i.e., above the statewide average).

The safety evaluation for the study divided the US 31 into 10 roadway segments based on major intersections, and identified four segments with elevated indices for crash frequency and/or crash severity, shown on Figure 7. These locations generally align with the areas of highest crash densities in the study corridor, as noted above. The four US 31 segments with elevated crash indices are:

- Olson Road to CR 100 North/6th Street, Fulton County – elevated crash severity
- CR 100 North/6th Street to SR 25, Fulton County – elevated crash severity
- SR 16 to CR 550 North/Mexico Road, Miami County – elevated crash severity
- CR 550 North/Mexico Road to the southern study limit, Miami County – elevated crash frequency

The safety evaluation for the US 31 North study corridor and its intersections used the RoadHAT software, which considers the number and severity of crashes (in terms of injuries and fatalities), the exposure (in terms of traffic volumes), and the length of the segment. The software calculates the number of standard deviations that the observed crashes is above or below the number of expected crashes for similar segments in Indiana. An index greater than 0.0 is above the statewide average. Higher indices indicate worse safety performance as compared to lower numbers.

The index of crash frequency (ICF) indicates the frequency of all crashes within the segment and the index of crash cost (ICC) indicates the severity of all crashes within the segment. This study indicates indices greater than 0.0 as elevated crash locations. For ease of distinguishing locations with higher indices, color coding has been assigned: green shading indicates indices less than 0.0; yellow shading indicates indices 0.0 to 1.0; and orange shading indicates indices greater than 1.0. The indices help to prioritize locations for focus, but the entire ProPEL US 31 North study corridor was investigated for correctible crash patterns with detailed evaluation at all intersections with indices greater than 0. The *Existing Transportation Conditions Report* provides full detail.

Economic Benefits of Improved Safety. INDOT's number one priority is safety as it plans, builds and maintains Hoosier roadways. Reducing crashes and related injuries is an important focus for improving the lives of those who live, work or travel through the state. Further, there is a clear link between improved safety and economic benefit for communities. According to the National Highway Traffic Safety Administration [crashstats.nhtsa.dot.gov], the economic cost of motor vehicle crashes that occurred in 2019 totaled $339.8 billion. This is equivalent to approximately $1,035 for every person living in the United States and 1.6 percent of the US Gross Domestic Product.

Figure 6. Crash Density Along the US 31 North Study Corridor

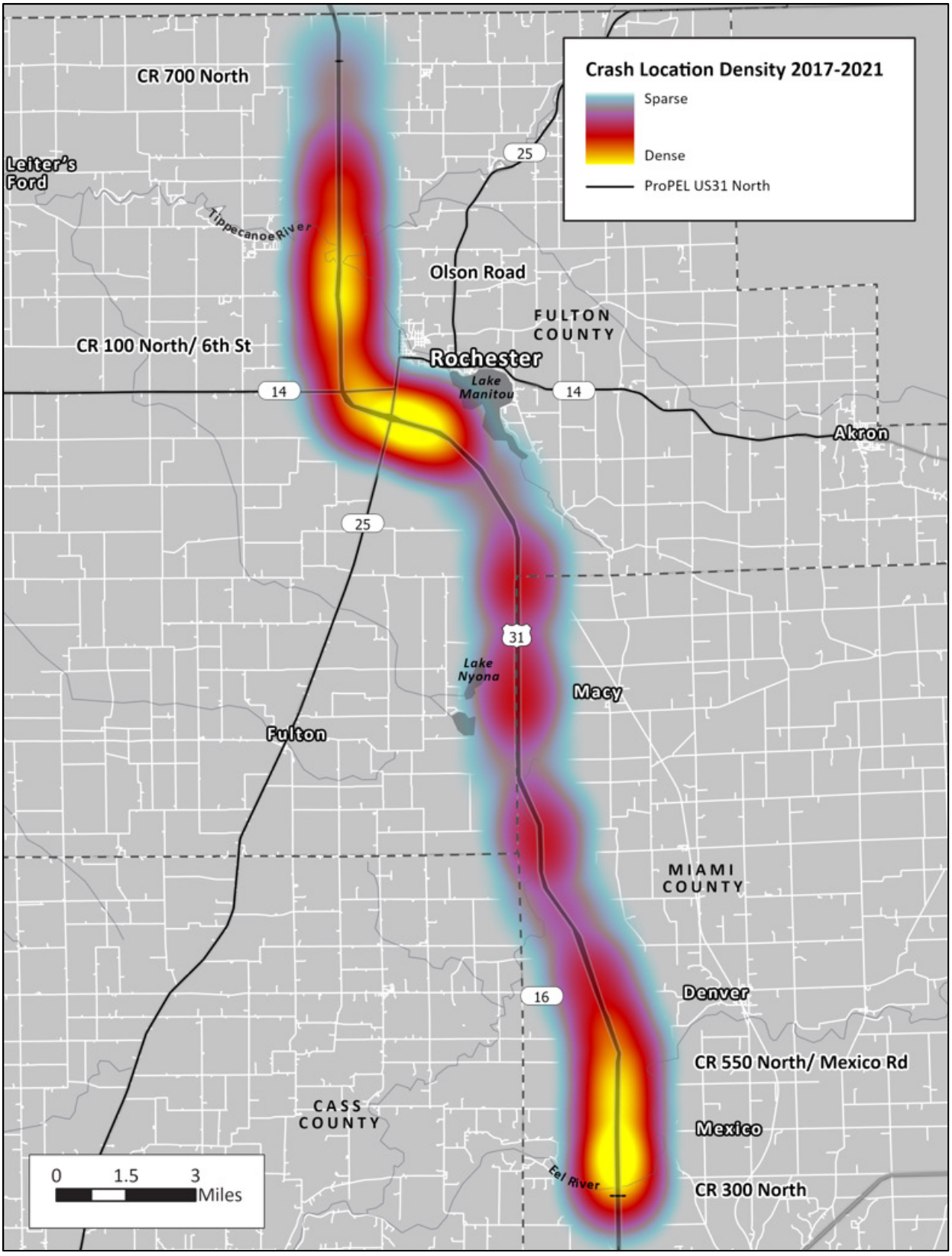
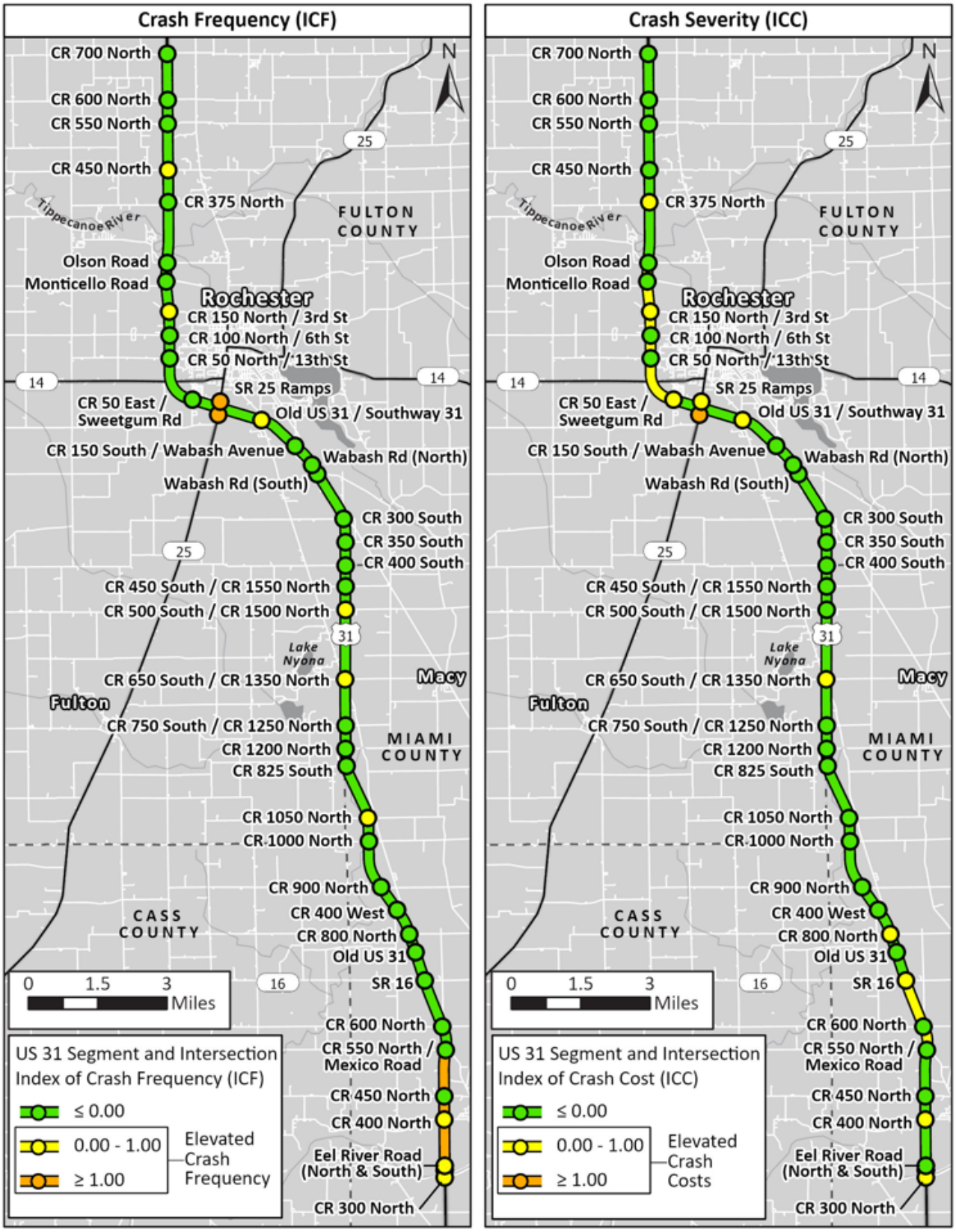


Figure 7. Crash Frequency and Severity on US 31 and at Intersections with US 31 in the Study Corridor



2.2. SAFETY CONCERNS AT INTERSECTIONS WITH US 31

Fifteen intersections within the study corridor were identified to have elevated indices for crash frequency or crash severity, or both, as shown on Figure 7. The highest values for both crash frequency and severity are located at the intersections of the US 31 ramps with SR 25 at the grade-separated interchange in Rochester, followed by the intersection with Old US 31/Southway 31 just south of the interchange and with CR 300 South at the southern study limit. The ICC and ICF values for each intersection are provided in Attachment A.

Need | Intersections along the study corridor have elevated crash frequency and/or severity, notably for crossing and turning movements and include fatalities and incidents with non-motorized users.

The historic crash data indicates that the intersections with US 31 in the study corridor are prone to right-angle, rear-end, and running off-road crashes. Right angle crashes – which indicate the involvement of vehicles from a cross street crossing or turning onto US 31, or vehicles from US 31 turning onto a cross street – account for half of crashes resulting in injury and tend to be the most severe in the study corridor. All documented fatal crashes occurred at intersections, and the majority involved vehicles attempting to cross or turn across US 31:

- Two fatal crashes at the US 31 intersection with Old US 31/Southway 31 in Fulton County;
- One fatal crash in the vicinity of Olson Road in Fulton County; and
- One fatal crash at the US 31 intersection with CR 400 South/CR 1600 North in Miami County.

There are also documented non-motorized concerns regarding safety at intersections in US 31 in Fulton County. In December 2022, a pedestrian was struck and killed by a vehicle while attempting to cross US 31 at the CR 50 East/Sweetgum Road intersection near Rochester, and at least two of the crashes in the records indicated that a horse-drawn vehicle was involved (near CR 700 North and CR 600 North intersections).

The *Fulton County Comprehensive Plan* notes that "the numerous access points along U.S. 31 have been a concern for both state and local officials. The various access points [are] a source of concern in regard to the number of traffic hazards this accessibility creates." Public and stakeholder concerns on intersection safety was one of the most common themes (see Section 1.4), and comments that indicated specific locations included both major and local intersections with US 31 generally aligned with the areas of elevated indices for crash frequency and/or severity, as documented above. As indicated by the crash records and identified during the public involvement process, elevated crash indices at intersections in the study corridor can be attributed to several potential factors, as summarized below and further detailed in Attachment A.

The speed differential between through traffic on US 31 and all other stop-controlled movements. The study corridor has a posted speed of 60 miles per hour (mph), though evaluation of speed and travel time data indicate that through traffic – including trucks –average travel speeds of 65 mph or higher on US 31. Vehicles entering or crossing US 31 at intersections enter US 31 from a stopped condition. The difference in speed, particularly for accelerating or decelerating vehicles, at intersections can be a contributing factor to several collision types including rear-end crashes.

Limited space in the median for stopped, turning, or slower-moving users. Often, through movements on cross streets and left turns from the cross streets are executed in two stages with a pause in the median, with risk of right-angle or secondary rear-end crashes at both crossings. Additionally, the 50- to 60-foot grass median (excluding turn lanes) can make it challenging for a standard 70-foot long tractor-trailer, or multiple vehicles, to pause in the median without encroaching on adjacent travel lanes. Therefore, larger vehicles tend to cross both lanes in one continuous movement, which necessitates finding a large simultaneous gap in two streams of traffic in opposite directions and can impact required sight distance (as discussed below).

The proximity of and control at immediately adjacent intersections with local roadways that run parallel to US 31. As shown in Figure 8, there are nine intersections along US 31 that have immediately adjacent intersections with parallel roadways that are located within 250 feet of the intersection with US 31 (see Section 2.3 for details on access management guidelines for spacing requirements of adjacent intersections). At two of these locations – the intersections of US 31 with CR 800 North in Miami County and Monticello Road in Fulton County – the parallel street is the free-flow movement at the adjacent intersection. This type of intersection control in proximity to US 31 presents a potentially dangerous situation because a vehicle from US 31 turning on to the cross street must immediately stop at the intersection to avoid the through traffic on the parallel roadway, which does not stop. At CR 800 North, the intersection with Main Street (Old Route 31) is within 95 feet of the edge of the travel lane of US 31 and at Monticello Road, the intersection with Meridian Road is within 115 feet. Additionally, the Nickel Plate Trail crosses South Wabash Road within approximately 115 feet of its intersection with US 31 in the study corridor in Fulton County. While the Nickel Plate Trail is stop-controlled for trail users, the speed differential between stopped bicycles and pedestrians on the trail and free-flow vehicular traffic turning off of US 31 presents a potentially dangerous situation – a northbound vehicle turning right onto Wabash Road at 15 mph would reach the trail in 6.4 seconds.

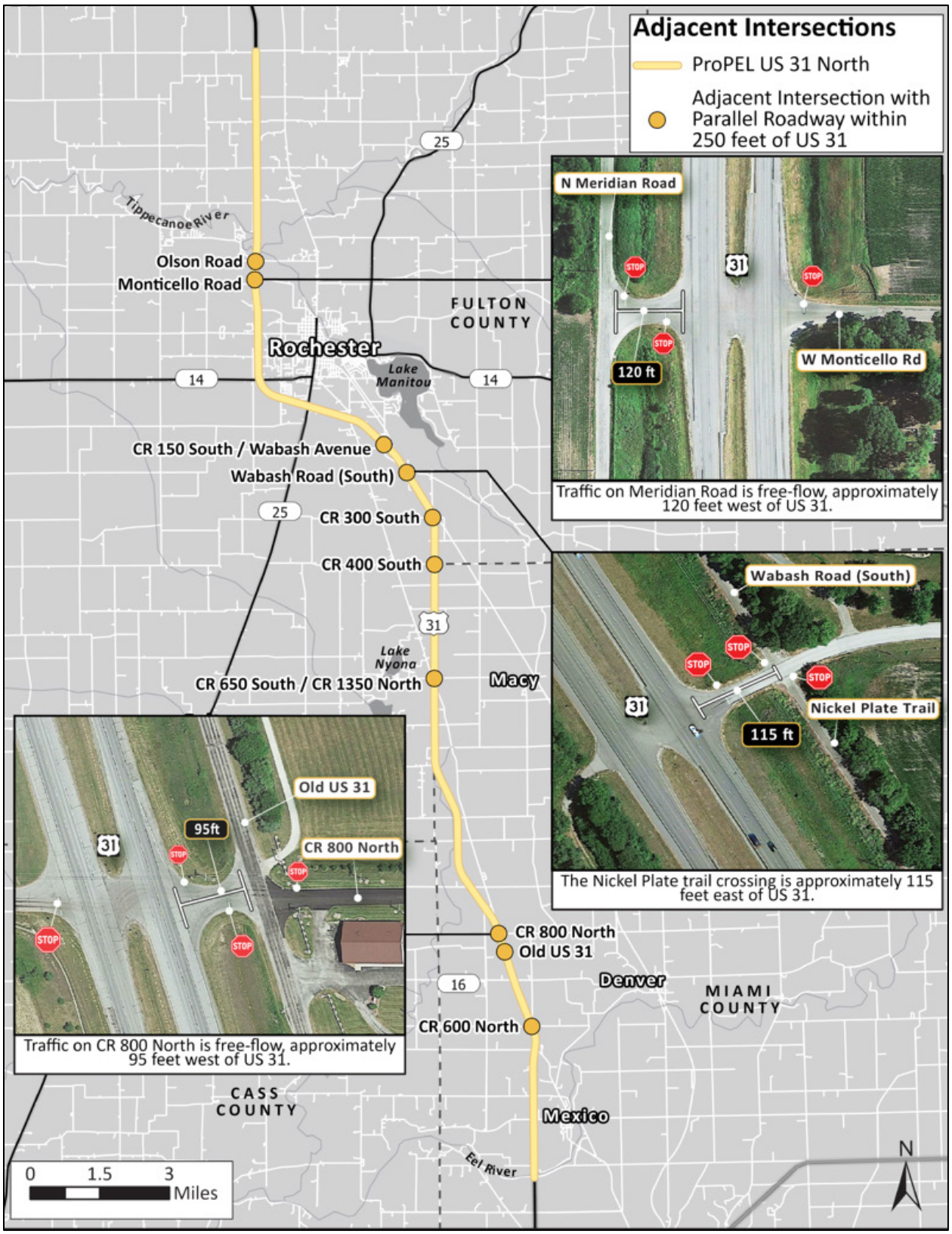
At CR 800 North and Main Street, there is documented crash activity for eastbound vehicles on CR 800 North from the direction of US 31, indicative of the traffic patterns noted above; the other two intersections have potential for similar patterns but there are no documented crashes at the adjacent intersections at Monticello Road or Wabash Road. All other locations shown on Figure 8 are stop-controlled on the adjacent parallel roadway (i.e., the movement from US 31 is the free-flow movement at the adjacent intersection), and although the proximity is still a concern, present less of a safety concern in terms of intersection control.

Lack of acceleration or deceleration lanes at some intersections for vehicles entering/exiting US 31. There are no acceleration lanes provided on US 31 other than at the on-ramps at the SR 25 interchange in Fulton County. Three intersections in the study corridor do not provide any type of deceleration lanes (i.e, dedicated left- or right-turn lanes on US 31 at intersections with local roadways) and an additional 10 intersections do not provide right-turn deceleration lanes for at least one turning movement. All are located in the southern portion of the study corridor in Miami County, south of Wabash Road. Lack of acceleration or deceleration lanes means that turning vehicles are accelerating or decelerating in the main travel lanes which can cause high speed differentials for trailing vehicles, a situation that can lead to rear-end crashes. Five of the intersections without acceleration or deceleration lanes in the study corridor have elevated crash indices.

Limited sight distance for vehicles crossing/turning across US 31. Two locations in Fulton County where insufficient sight distance creates safety concerns for traffic entering US 31 have been identified; both were noted as safety concerns during the public and stakeholder involvement process.

- *3rd Street / CR 150 North, on the eastern side of US 31.* This intersection has limited visibility when turning left on to US 31 (southbound). The existing topography over the crest of the hill on US 31 north of the intersection limits available sight distances for vehicles on 3rd Street. The crest curve on US 31 that creates the issue at 3rd Street was for a bridge over a railroad that is now abandoned and tracks removed. The Fulton County Emergency Management Agency noted that emergency vehicles generally avoid this intersection due to the limited visibility. 3rd Street provides access to the Prairie Edge Nature Park at the intersection and connects to the Fulton County 4-H fairgrounds, George N. Riddle Elementary School, and the northern side of Rochester.
- *Old US 31/Southway 31, on the southern side of US 31.* This intersection has limited visibility when turning left on to US 31 (northbound). The presence of trees, located outside of the transportation right-of-way, limits available sight distances around the curve on US 31 south of the intersection for vehicles on Old US 31. Old US 31 provides access to several residences in proximity to this side of the intersection and connects to the CR 650 South/CR 1350 North intersection with US 31.

Figure 8. Intersections with Immediately Adjacent Parallel Roadways in the Study Corridor



2.3. ACCESS CONTROL ISSUES

US 31 is classified as a Tier 1 Statewide Mobility Corridor; therefore, according to INDOT's *Access Management Guide* and *Driveway Permit Manual*, the following guidelines are applicable at private driveways that access US 31 within the context of the study corridor, which shown in Figure 9. Considerations for emergency services access are separate.

Private access is prohibited, except in locations where it is infeasible to provide alternate access (via joint-use driveways or frontage roads). There are 10 private driveways in the study corridor that directly access US 31, the majority of which are located in the southern portion of the study area in Miami County.

Full turning movements may be allowed at major commercial driveways; all other driveways should be limited to right-in/right-out access. Left-turn access may be allowed, contingent upon INDOT review and approval, and would require a dedicated left turn lane on rural divided highways where the median is equal to greater to 24 feet. One private driveway is commercial and residential, serving McClure's Orchard and a residence in Miami County; all others serve private residences and/or farms. Nine of the 10 private driveways in the US 31 study corridor allow full access to both directions of US 31 via a median opening; one private driveway has only right-in/right-out access.

Minimum spacing criteria for all unsignalized intersections and driveways along a major roadway should have a minimum spacing of 495 feet at speeds over 55 mph. There are two private driveways located 0.4 miles north of CR 600 North in Miami County are spaced approximately 70 feet apart.

Additionally, minimum spacing for intersections with local roadways or driveways on the cross street with a major roadway is based on American Association of State Highway and Transportation Officials (AASHTO) stopping sight distance, which is 250 feet for 35 miles per hour (see Section 2.2 above for discussion of adjacent intersections). At more than half of the intersections of local roadways with US 31, there are private driveways for residences and farms, as well as businesses and churches, within 250 feet on one or both sides of US 31.

Figure 9. Private Driveways in the Study Corridor

Need | The type and spacing of private driveways along the study corridor, including for businesses, residences, and/or farms, is not consistent with INDOT's Access Management Guidelines.

2.4. ABILITY TO ACCESS US 31

Given the rural character of the study area, access to US 31 plays a vital role for the numerous communities along it including Rochester, Mexico, Denver, and Macy, as well as agricultural operations, local businesses, residences, and community facilities. The major roadways in the study area, as well as the local roadways that intersect US 31 directly, particularly those that span the entire counties, provide connections to the higher classification network. During the public and stakeholder involvement process to date, public meeting attendees indicated almost equal importance of access to US 31 for both local travel within the study area as well as regional travel. At the at-grade intersections along US 31, the public identified finding sufficient gaps within higher-speed traffic flow, taking refuge within the median, and getting up to speed in front of approaching traffic as challenges in accessing US 31.

Need | Challenges associated with direct and easy access routes to and from US 31 impact public safety, mobility, and economic development and need to align with community plans and objectives.

The majority of traffic volumes on US 31 in the study corridor – 84% – are local trips that begin and/or end in the study corridor.

Evaluation of travel patterns using origin-destination (OD) data from the US 30/31 ProPEL travel demand model (which is based on the Indiana Statewide Travel Demand Model) indicates that 84% trips on US 31 either access or egress US 31, or both, within the study corridor. Approximately 37% of the trips on US 31 enter and exit US 31 within the study corridor, and 48% of the trips either enter or exit US 31 within the study corridor, but at least part of the trip is on US 31 outside of the study corridor. The remaining 16% of trips on US 31 in the study corridor are pass-through trips that travel all the way through the study limits from end to end (see Section 2.6). It is important to note that the regional OD data are useful to get a sense of travel patterns using US 31, particularly regarding the high-level travel patterns such as local versus through trips in the study corridor as noted above, but may not fully represent more local trips outside of this broader travel pattern.

Both Fulton and Miami County indicate that regional access is essential to support and achieve their community and economic development goals.

- The transportation chapter of the *Fulton County Comprehensive Plan* states that "enabling direct and easy access routes to and from U.S. 31 is imperative to the growth and maintenance of Indiana's thoroughfares, businesses, and communities."
- The transportation chapter of the *Miami County Comprehensive Plan* promotes "increased connectivity between and within communities regarding safety, function, and efficiency of various modes of transportation within the county especially for the purpose of agriculture, public safety, and economic development." A specific objective of the plan is to "provide improved mobility north-south through Miami County" for goods and services.

Additionally, at the southern end of the study corridor in Miami County, US 31 provides access to one of the limited crossings of the Eel River in the region. While not located directly in the study area, the two closest crossings are the Denniston Bridge 1.5 miles to the west and the North Mexico Road bridge just over 1 mile to the east. The North Mexico Road bridge over the Eel River is a modern bridge, providing 32 feet of clear roadway, but the Denniston Bridge is not suitable for large or heavy vehicle use. It is a wrought iron truss bridge with a wooden deck that is less than 18 feet wide and is currently posted with a maximum load of four tons. This natural constraint on mobility was noted as an existing issue throughout the ongoing public involvement process, and the *Miami County Comprehensive Plan* documents crossing the Eel River as part of maintaining mobility through the county.

2.5. CROSS-HIGHWAY CONNECTIVITY

All cross-highway traffic movements in the study corridor are stop-controlled, in effect making US 31 an obstacle for local vehicles that need to travel across the highway – which is generally an east-west movement – to get to and from destinations on the other side. Cross-highway movements must identify and utilize sufficient gaps in through traffic in what amounts to crossing two high-speed roadways separated by a 50- to 60-foot median.

Need | The design and traffic characteristics of US 31 impact east-west mobility requirements for emergency services, schools, and non-motorized vehicles and in support of agricultural operations.

Both Fulton and Miami County promote greater connectivity for county residents, businesses, and communities and include documentation important connectivity needs and improvements, particularly to assure local accessibility for emergency services and schools.

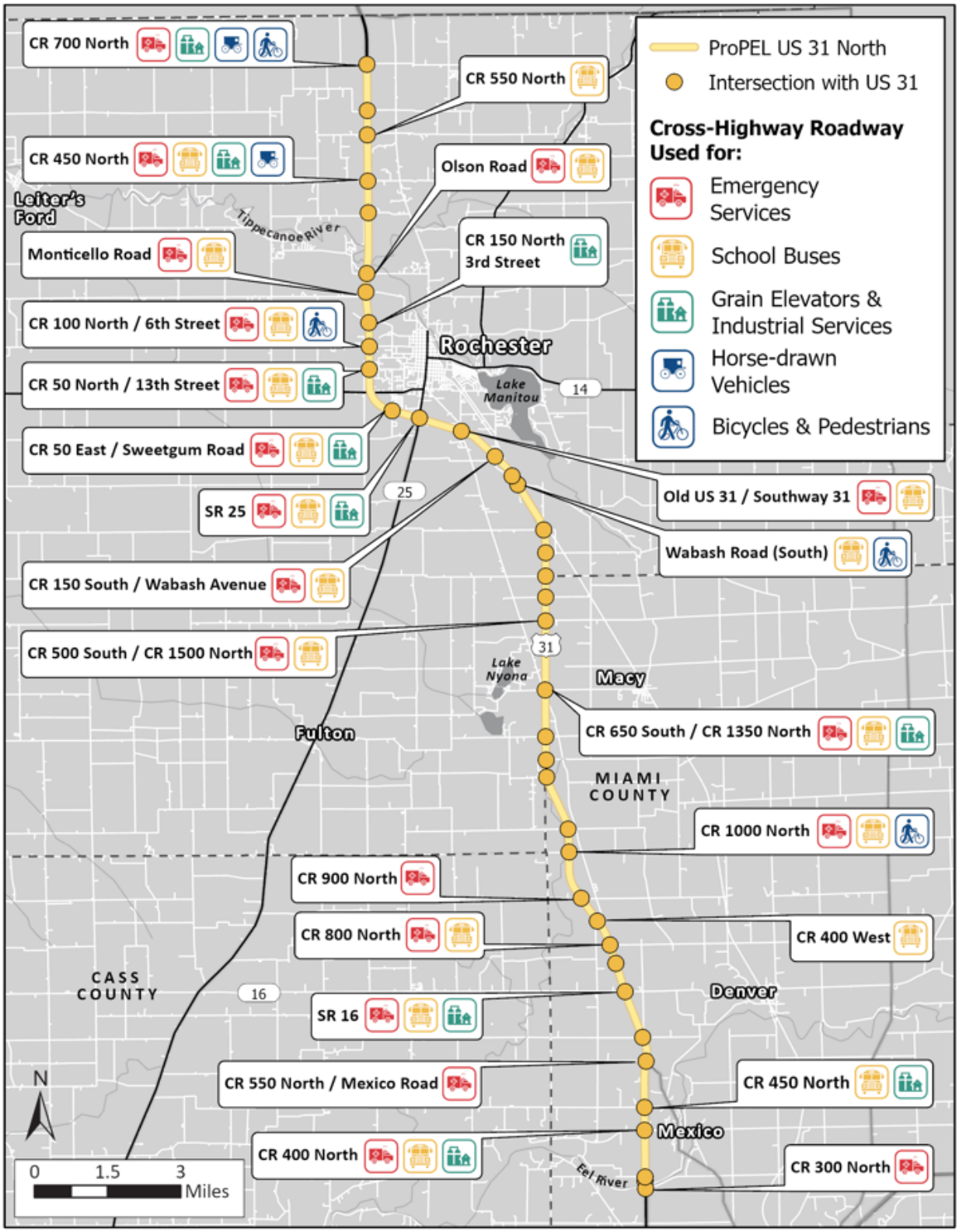
- The *Fulton County Comprehensive Plan* is based on an expected outcome of "greater connectivity" and the transportation element of the plan recognizes the need to have "local access across the transportation network for business, personal, emergency and medical services." In context of US 31, the plan notes that the intersections with CR 450 North, CR 100 North, and Old US 31 "maintain connectivity between communities across the highway."
- The *Miami County Comprehensive Plan* specifically states objectives to "provide improved mobility east-west through Miami County along key corridors" and "assure accessibility for police, emergency, fire, and school vehicles to all properties within districts or jurisdictions." Along US 31, the plan identifies locations that are important to overall circulation at CR 1500 North, CR 1350 North, CR 1000 North, SR 16, and CR 400 North, and to primarily east-west circulation at CR 1250 North, CR 900 North, and CR 550 North.

Figure 10 summarizes important cross-highway routes of school buses, emergency services, agricultural and industrial vehicles, and non-motorized users along the study corridor. These crossings were identified based on the comprehensive plans as well as coordination with the three local school districts that utilize US 31 within the study limits, the Emergency Management Agencies for Fulton and Miami Counties, and direct access to industrial services and grain elevators in Rochester, Macy, and Mexico. Of note, all three school districts span US 31 – some students live on the opposite side of US 31 from the schools – and the majority of emergency services in the study area – including fire departments, hospitals, and police stations – are located on the east side of US 31, which was a common public concern (see Section 1.4). The 2022 *Indiana Governor's Public Health Commission Report* indicates the need to improve the scalability of emergency response efforts at the regional level. In addition to the crossings identified in the figure, given the rural nature of the study area, many cross streets that intersect US 31 are regularly used by local farm operators.

On average, about one-third of cross street traffic at intersections with US 31 crosses the highway and two-thirds of traffic turns onto US 31.

Within the study corridor, intersections of US 31 with both major roadways (nine are classified as Major Collectors or higher) and local roadways are relied on to provide east-west mobility through the counties for local travel. Evaluation of daily traffic counts, which were available for at-grade intersections of major roadways in the study corridor, were evaluated for percentages of through traffic and turning traffic at the cross streets; on average, one-third of all traffic at intersections with US 31 crosses the highway. Details are provided in the intersection summary table in Attachment A.

Figure 10. Important Crossings in the Corridor



2.6. REGIONAL AND STATEWIDE MOBILITY

US 31 within the study corridor is free-flowing: there are no signalized intersections or stop-controlled intersections for US 31 traffic, and the posted speed limit is 60 mph. US 31 plays an important role in moving people and goods – both regionally and within Indiana and beyond. The regional and national importance of statewide mobility corridors like US 31, and the strategic goal to improve US 31 for its full extent to high-quality, free-flow access for passenger and/or freight mobility, is documented in several state and regional plans and reports, including the:

Need | The need to provide safe, high-quality mobility for long-distance passenger and freight trips through and beyond the study corridor is documented in several statewide and regional plans and reports and is limited by the current configuration and traffic conditions in the study corridor.

- INDOT *Carbon Reduction Strategy* (Draft 2022). Following the guidelines set out by the federal government in the Bipartisan Infrastructure Law, INDOT is developing a carbon reduction strategy (CRS) to support efforts to reduce carbon dioxide emissions. In this draft plan, INDOT commits to supporting national efforts to achieve a net-zero transportation system, and identifies the state's freight activity, particularly on-road diesel vehicles, as an obstacle in achieving the objective – with projected growth by more than 39% by 2045 throughout the state. The draft plan notes reducing total fuel consumption as one of three primary pathways to help reduce emissions, and includes optimizing traffic flow, particularly for vehicles with higher emissions per mile, as a potential strategy to reduce emissions. The draft plan states that INDOT intends to integrate these strategies into Indiana's *Long-Range Transportation Plan* (see below).
- *Indiana Multimodal Freight Plan Update* (2018). This plan identifies US 31 as one of Indiana's statewide mobility corridors, to provide safe, high-speed connections for long-distance trips between the metropolitan areas of Indiana and to those of surrounding states. The statewide mobility corridor is also noted as one of the "freight arteries of the state," and thus, is vital for economic development. This plan details INDOT's strategic goal to directly connect metropolitan areas of 25,000 in population or greater with a set of free-flowing, high-quality corridors.
- INDOT *Long-Range Transportation Plan* (LRTP) (2018-2045). INDOT identifies US 31 as a major corridor in the state, and thus, critical to mobility and economic activity. Specifically, the plan identifies an opportunity to enhance system reliability and safety by upgrading rural segments of US 31 into free-flow access and recommends improvements for traffic flow and safety along US 31 from Kokomo north to US 30 (i.e., within the ProPEL US 31 North study limits).
- INDOT's *Access Management Guide*. US 31 is classified as a Tier 1 Statewide Mobility Corridor, of which a primary traffic function is to accommodate high-speed and long-distance trips.

16% of trips on US 31 in the study corridor are pass-through trips that do not start or stop within the study limits. Trucks on US 31 are much more likely to be making through trips with almost half (44%) passing through.

The evaluation of travel patterns using OD data (see Section 2.4) indicate that 16% of trips on US 31 in the study corridor are pass-through trips that travel all the way through the study limits from end to end. Of those trips passing through, the majority (11% of total trips, or 71% of the total pass-through trips) are longer-range travel that use US 31 traveling towards the Indianapolis and South Bend/Mishawaka metropolitan areas and beyond. Trucks on US 31 are much more likely to be making through trips, with 44% of truck trips on US 31 within the study limits being through trips that pass all the way from end to end. A similar data trend was apparent during the public and

stakeholder involvement process to date, in which public meeting attendees indicated almost equal importance of access to US 31 for both local travel within the study area as well as regional travel.

Additionally, within their comprehensive plans, both Fulton and Miami County call for improved north-south mobility to support the efficient movement of people and goods, and additionally assume and/or promote some level of limited-access improvements along US 31. The importance of travel along US 31 as part of the larger transportation network, and US 31 being a free-flow facility within the study limits to facilitate more regional transportation needs, was a theme identified during the ongoing public and stakeholder involvement process (see Section 1.4).

Traffic volume growth along US 31 and intersecting roadways in the study area were forecasted for year 2045 using Indiana's statewide travel demand model. The travel demand model was modified and enhanced to focus on the ProPEL US 31 North study area and includes development growth assumptions in the corridor. Based on these growth projections, the travel demand model predicts annual traffic growth rates of -1.9% to as much as 1.1%, with an overall annual growth rate of 0.6% for the corridor. The travel demand model indicates that US 31 is an attractive corridor to accommodate anticipated growth in the region.

3. STUDY PURPOSE

As defined by, and to address the needs documented above, the purpose of the ProPEL US 31 North study is to:

- Improve roadway safety in the study corridor for all users;
- Meet the mobility needs of residents, businesses, and service providers in the study area; and
- Enhance the efficiency and reliability of US 31 as a regional and statewide corridor.

Table 1 summarizes the three study purposes in context of the needs documented for the ProPEL US 31 North study.

Given the size of the study area, as well as the needs identified, the purpose and need statement has been developed to support a range of potential improvement solutions. This could include corridor-wide improvements, as well as localized improvements that address the identified needs. The transportation solutions identified should contribute to the improvement of the regional movement of goods and the improvement of safety related to crashes throughout the corridor. Improvements should be compatible with the built and natural environment and support the rural and agricultural land uses.

Table 1. Purpose and Need for the ProPEL US 31 North Study

Needs	Purposes
 **Safety Concerns Along US 31** | *Portions of US 31 along the study corridor have elevated crash frequency and/or severity (i.e., above the statewide average).*	Improve roadway safety in the study corridor for all users
 **Safety Concerns at Intersections with US 31** | *Intersections along the study corridor have elevated crash frequency and/or severity, notably for crossing and turning movements and include fatalities and incidents with non-motorized users.*	
 **Access Control Issues** | *The type and spacing of private driveways along the study corridor, including for businesses, residences, and/or farms, is not consistent with INDOT's Access Management Guidelines.*	
 **Ability to Access US 31** | *Challenges associated with direct and easy access routes to and from US 31 impact public safety, mobility, and the local economy and need to align with community plans and objectives.*	Meet the mobility needs of residents, businesses, and service providers in the study area
 **Cross-Highway Connectivity** | *The design and traffic characteristics of US 31 impact east-west mobility requirements for emergency services, schools, and non-motorized vehicles and in support of agricultural operations.*	
 **Regional and Statewide Mobility** | *The need to provide safe, high-quality mobility for long-distance passenger and freight trips through and beyond the study corridor is documented in several statewide and regional plans and reports and is limited by the current configuration and traffic conditions in the study corridor.*	Enhance the efficiency and reliability of US 31 as a regional and statewide corridor

Local economic growth and development has been a prevalent theme from the public and study area stakeholders and is a focus of the Fulton and Miami County comprehensive plans. While the population within the state of Indiana has grown and is projected to experience a 7.9% population growth from 2020 to 2050, total population in the study area jurisdictions has declined since 2000, a trend which is projected to continue through 2050. These longer-term trends of population decline and associated declines in employment are also documented in the Fulton and Miami County comprehensive plans. The ProPEL US 31 North study purposes of improving safety and mobility in the study area and enhancing US 31 as a regional and statewide corridor are expected to benefit regional economic development and is therefore consistent with the established economic development goals of the communities within the study area, as follows:

- Enhanced mobility allows businesses to access larger labor pools and markets, which can attract new businesses and encourage expansion of existing businesses, leading to job creation and increased economic output.
- Improving safety can contribute to a range of economic development benefits, including reduced healthcare costs, increased productivity, lower insurance expenses, improved consumer confidence, attraction of investments, and growth in tourism and other industries. By creating a safer and more stable transportation environment, regions can foster a positive economic climate that supports sustainable growth and prosperity.
- Improving regional mobility is expected to provide economic benefits by enhancing transportation connectivity and accessibility, making it easier for people to travel to and within the region. This accessibility attracts businesses, investors, and tourists, boosting economic activity. Improving regional mobility is also expected to result in time savings, labor market and supply chain efficiency, and overall quality of life improvements.

4. PERFORMANCE MEASURES

As the study progresses, alternatives will be developed and evaluated for their ability to satisfy the study's purpose and need using the performance measures shown in Table 2. Detailed screening criteria and methodology related to each performance measure will be developed and refined during the screening of potential alternatives in future phases of the ProPEL US 31 North study, alongside other factors such as goals, benefits, impacts, and cost.

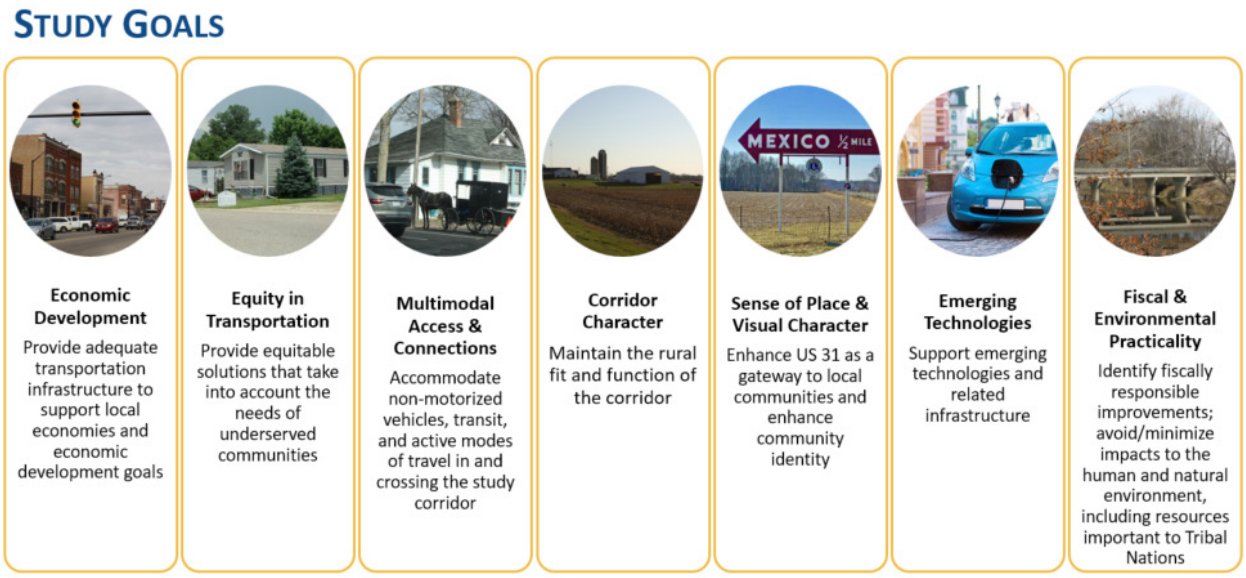
Table 2. Performance Measures for the ProPEL US 31 North Study

PURPOSES	PERFORMANCE MEASURES
Improve roadway safety in the study corridor for all users	**Reduce conflict points, particularly at intersections on US 31 with elevated crash indices** | Identify and evaluate the number and type of potential collision points along the study corridor with respect to exposure (i.e., the number, type, and speed of different vehicles in an intersection). Particularly prioritize reducing high-speed conflict points for angle crashes at intersections.
	Apply crash reduction measures to improve safety | Identify safety countermeasures that address common crash types. Evaluate potential changes and locations where these countermeasures can create a positive impact on overall crash rates and/or severity.
	Improve multimodal safety | Identify and evaluate safety countermeasures targeted to non-motorized users and special-use vehicles.
	Prioritize and consolidate access points on US 31 | Address access control issues for number and spacing of access points and meet current guidance.
Meet the mobility needs of residents, businesses, and service providers in the study area	**Maintain or improve east-west mobility at important crossing locations** | Evaluate mobility across the study corridor, including safety, access, traffic operations (delay), and traffic volumes, particularly for school and emergency services routes.
	Maintain or improve accessibility to and from US 31 along important routes | Evaluate mobility to and from the study corridor, including safety, access, traffic operations (delay), and traffic volumes
Enhance the efficiency and reliability of US 31 as a regional and statewide corridor	**Maintain or improve free-flow operations along US 31** | Support continued free-flow conditions along US 31 and prioritize not introducing delay for through movements on US 31.

5. STUDY GOALS

Seven goals for the ProPEL US 31 North Study are summarized in Figure 11 and detailed after the figure.

Figure 11. Summary of Goals for the ProPEL US 31 North Study



Goals for the ProPEL US 31 North study area were primarily identified through public and stakeholder input and supported by local and regional planning documents, and also were aligned with the adjacent US 30 and US 31 ProPEL studies as applicable. Goals are elements that are desirable – but not required – objectives for the study area that are intended to help guide the development and screening of potential alternatives in future phases of the study. Goals will not be the sole basis for eliminating or carrying forward a solution or alternative, and will be considered alongside other factors such as transportation performance, benefits, impacts, and costs.

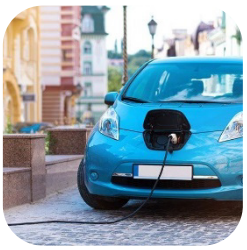
Economic Development | Provide adequate transportation infrastructure to support local economies and economic development goals. US 31 is a statewide corridor that connects local communities and businesses to regional and national markets. The INDOT LRTP includes a goal for economic competitiveness, and within their comprehensive plans, both Fulton and Miami County include economic development goals and indicate that regional access is essential to support improved development and quality of life. Total population in the study area has declined since 2000, a trend which is projected to continue. Support of local economic development is a common theme in the ongoing public and stakeholder involvement process – US 31 supporting the local economy specifically in regard to operation of the farming industry and access to local businesses were top documented priorities for citizens. The North Central Indiana Regional Planning Council, which includes both Fulton and Miami Counties, submitted a regional development plan in 2021 to receive an *Indiana Regional Economic Acceleration and Development Initiative* (READI) grant, which documented the needs and priorities to spur economic development and population growth.

Equity In Transportation | Provide equitable solutions that take into account the needs of underserved communities. There are multiple underserved communities in the 5-mile demographic study area. Of the 49 census tract block groups (CTBGs) within this area, 17 (approximately 35%) were identified as meeting INDOT's threshold for communities with environmental justice (EJ) concerns (i.e, minorities and/or persons in poverty). Based on federal tools identified by USDOT, there are also four census tracts with Disadvantaged Communities. Other underserved communities were also identified throughout the study area including persons with limited English proficiency or disability status and households with limited vehicle access or limited internet access. Additionally, there are two mobile home park communities and four HUD-subsidized properties in Rochester whose residents use US 31 and its intersecting roadways in the study area, as well as documented Amish/Mennonite communities in Fulton County. There are several recent Executive Orders (EO) and federal regulations and guidance, including EO 13985 *Advancing Racial Equity and Support for Underserved Communities* and EO 14096 *Revitalizing our Nation's Commitment to Environmental Justice,* that seek the just treatment and meaningful engagement of all people and to address historic underinvestment in underserved and disadvantaged areas. As the ProPEL US 31 North study progresses, INDOT will maintain focus on achieving equitable outcomes related to safety, mobility, and access for underserved communities.

Multimodal Access & Connections | Accommodate non-motorized vehicles, transit, and active modes of travel in and crossing the study corridor. A variety of non-motorized and transit vehicles are present along or crossing the study corridor, including: horse-drawn vehicles, on-demand transit, bicycles, pedestrians, and active recreators using the nearby Nickel Plate Trail or other recreational facilities. Consideration of multimodal users is a theme in the ongoing public and stakeholder involvement process. Within their comprehensive plans, both Fulton and Miami County include goals to support expanded bicycle and pedestrian trips. The 2022 *Indiana Governor's Public Health Commission Report* stresses the importance of active transportation and improved wellness activities and opportunities, particularly for children and adolescents. INDOT's *Carbon Reduction Strategy (*currently in draft format) is anticipated to identify active and alternative transportation modes (e.g., walking, biking, and transit) as a potential category of transportation projects and/or strategies that can support carbon reduction in Indiana.

Corridor Character | Maintain the rural fit and function of the study area. Land use in the study area is predominantly agricultural with residential and commercial properties, including those supporting agricultural uses, The comprehensive plans for Fulton and Miami County support maintaining and promoting local character through rural area goals, as well as agricultural and land use and development goals, respectively. Many stakeholders noted the importance to maintain the rural character of the study area.

Sense of Place & Visual Character | Enhance US 31 as a gateway to local communities and enhance community identity. The comprehensive plans for Fulton and Miami County support maintaining and promoting community visual character and quality of life improvements through design and placemaking goals and regional and local identity goals, respectively. Supporting the community character of local towns and communities was the top documented priority for citizens regarding how US 31 should reflect the local area.



Emerging Technologies | Support emerging technologies and related infrastructure. Within their comprehensive plans, both Fulton and Miami County support alternative modes of transportation and alternative fuel vehicles. In accordance with the National Electric Vehicle (EV) Infrastructure (NEVI) Formula Program, the 2022 *Indiana Electric Vehicle Infrastructure Deployment Plan* outlines how Indiana will implement EV infrastructure over the course of the next five years and beyond, utilizing almost $100 million in federal funding, and includes a proposed EV charging station within the study area in the vicinity of the US 31 interchange with SR 25 in Rochester. The 2022 INDOT *Carbon Reduction Strategy* (draft) identifies alternative fuels/energy efficiency (i.e., supporting electric or alternative fuel vehicle adoption) as one of five categories of transportation projects and strategies that can support carbon reduction in Indiana, and cites carbon reduction as a core element to the goal of environmental responsibility.

Fiscal & Environmental Practicality | Identify fiscally responsible improvements, and avoid/minimize impacts to the human and natural environment, including resources important to Tribal Nations. INDOT has a responsibility to the taxpayers of the State of Indiana to ensure that the budget is spent in a manner that maximizes the return on investment. INDOT's LRTP, which is used to guide the development of Indiana's transportation infrastructure network, is fiscally constrained and required to program projects that can be realistically completed with available funding and revenues. Environmental responsibility is a goal of the LRTP, including a specific objective to minimize the potential impacts of improvements to the transportation system on the natural and human environment. This objective, as well as others in the LRTP, plays a key role in shaping INDOT's investment strategies and policies.

6. GLOSSARY OF COMMONLY USED TERMS

Access/Access Management | Access/accessibility is enabling traffic to reach a particular place, area, service, or activity. Access management is limiting vehicular access points to land parcels adjacent to a roadway to promote safe and efficient use of the transportation network. Within the ProPEL US 31 North study limits, US 31 is considered to have partial access control: access to and across US 31 is provided at specific roadways and driveways.

Agriculture/Agricultural Services | The agricultural industry is a large contributor to Indiana's economy. In context of the ProPEL US 31 North study, vehicles that support agriculture and the agricultural industry are characterized by large and heavy, slow-moving farm equipment as well as large trucks, such as those that would access the grain elevators in Rochester, Macy, and Mexico.

Conflict Point | A conflict point on a roadway is any location where two or more vehicles' paths have the potential to merge, diverge, or cross. A single intersection can have numerous points where vehicles can potentially collide with one another. These are the locations the most likely for collisions to occur.

Connections/Connectivity | In context of the ProPEL US 31 North study, connection refers to the directness of travel routes between destinations, particularly those on opposite sides of US 31.

Disadvantaged Communities | As set forth in Executive Order (EO) 14008 on *Tackling the Climate Crisis at Home and Abroad*, Disadvantaged Communities are those that are marginalized, underserved, and overburdened by pollution. Indicators of burdens include the following:

- Affordable and sustainable housing
- Clean energy and energy efficiency
- Clean transit
- Climate change
- Development of critical clean water and wastewater infrastructure
- Training and workforce development
- Remediation and reduction of legacy pollution

Definitions and eligibility of what communities qualified as "disadvantaged" vary across United States Department of Transportation (USDOT) programs. For the ProPEL US 31 North study, Disadvantaged Communities were identified using federal tools identified by USDOT, including: the Climate and Economic Justice Screening Tool developed by the Council on Environmental Quality and the USDOT Disadvantaged Census Tracts tool.

Environmental Justice | According to the Executive Order 14096 (Revitalizing our Nation's Commitment to Environmental Justice), environmental justice means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

(i) are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

(ii) have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.

According to Executive Order 14096, it is intended to supplement the foundational efforts of Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations), which was focused on identifying and addressing disproportionately high and adverse human health or environmental impacts on minority populations and low-income populations. For the ProPEL US 31 North study, the term environmental justice will refer to communities where low-income and/or minority populations, as currently defined by USDOT Order 5610.2(c) and FHWA Order 6640.23A *Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, are present.

Equity | EO 13985 Advancing Racial Equity and Support for Underserved Communities defines equity as the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities (see definition below). According to the US Department of Transportation, equity in transportation seeks fairness in mobility and accessibility to meet the needs of all community members. An equitable transportation plan considers the circumstances impacting a community's needs and identifies if any additional measures are needed to develop an equitable transportation network.

Free-flow| Free-flow traffic movements do not require a motorist to stop for other traffic movements, such as at signalized intersections or stop-controlled intersections. In typical conditions, free-flow traffic operates at the posted speed limit and motorists are practically unaffected by the presence of other vehicles on the roadway facility. US 31 within the ProPEL US 31 North study limits is a free-flow condition as there are no traffic signals or stop signs for traffic traveling on US 31.

Freight |Freight is the movement of goods and materials, such as manufacturing outputs and bulk commodities, that supports the state's economic growth and competitive access to markets. In context of the ProPEL US 31 North study, freight is typified by long-haul, heavy-duty commercial truck travel on US 31.

Goal |For the ProPEL US 31 North study, goals are elements that are desirable outcomes of any improvements. While goals will not be a basis for eliminating a solution or alternative, they will factor into the screening process and identifying solutions to move forward through the study.

ICF/ICC | The Index of Crash Frequency (ICF) is a measure of the frequency of crashes on a specific segment of road or at an intersection. The Index of Crash Cost (ICC) is a measure of crash severity on a specific segment of road or at an intersection. The indices are generated using the RoadHAT software and represent the number of standard deviations that the observed crashes for the analyzed segment or intersection are above or below the statewide average for similar facilities in Indiana. An index greater than 0.0 is above the statewide average, while values less than zero indicate crash frequency or severity less than expected. Higher indices indicate worse safety performance as compared to lower numbers. The figures and tables for the ProPEL US 31 North study indicate indices greater than 0.0 as elevated crash locations. These indices help to prioritize locations for focus, but the whole US 31 corridor within the study area was investigated for correctible crash patterns.

Local Trips |For the ProPEL US 31 North study, local trips are characterized by traffic that enters and/or exits US 31 within the study limits.

Mobility | Mobility is the ability and ease of a transportation system to move people and goods using one or more transportation modes. Mobility is characterized by the ability to connect people to the places they want to go in a safe and efficient manner, while minimizing travel time, making effective use of available capacity, and providing reliable performance.

Multimodal |Multimodal transportation opportunities provide more freedom in how people get around, especially for people who cannot or choose not to drive a car. Multimodal transportation supports the

needs of all users, whether they choose to walk, bike, or use transit, either for all or part of their journey or for recreational purposes. For the ProPEL US 31 North study, non-vehicular multimodal users accessing or crossing the study corridor potentially include horse-drawn vehicles, on-demand transit, bicycles, pedestrians, and active recreators using the nearby Nickel Plate Trail or other recreational facilities.

Performance Measure | A measure of the degree to which an alternative satisfies an identified need or goal in a study or project.

Planning and Environment Linkages (PEL) | A PEL study is a way for transportation agencies, such as INDOT, to make and document planning decisions. A PEL study precedes any construction decisions and allows INDOT to better understand community needs and to develop alternative solutions that meet those needs. PEL is a collaborative and integrated approach to decision-making that:

1. Considers environmental, community, and economic goals early in the transportation planning process; and
2. Uses the information, analysis, and products developed during planning to inform the environmental review process conducted in accordance with the National Environmental Policy Act (NEPA).

ProPEL |ProPEL is an INDOT initiative for transportation planning that uses collaborative PEL studies to consider environmental, community, and economic goals. Through the PEL studies, INDOT aspires to create smarter transportation systems that build stronger communities. INDOT is using PEL studies on the US 30 and US 31 corridors in central and northern Indiana, of which ProPEL US 31 North is one.

Purpose and Need | Purpose and need are terms describing why a project is being completed. Need is the specific transportation problems that are present or projected to occur. The purpose defines desired outcomes and objectives. The Purpose and Need establishes a basis for the development of a range of reasonable alternatives. It also provides the basis for performance measures which assess the relative ability of alternatives to address the project needs. If an alternative does not meet the purpose and need of a project, it is eliminated from consideration. For the ProPEL US 31 North study, six needs and three associated purposes have been identified.

Regional Trips/Through Trips | For the ProPEL US 31 North study, regional trips are characterized by pass-through trips that travel all the way through the study limits on US 31 without stopping.

Safety Countermeasures | Safety countermeasures are improvements or strategies applied to a roadway with the specific goal of reducing roadway fatalities and serious injuries. Each countermeasure addresses at least one safety focus area – speed management, intersections, roadway departures, or pedestrians/bicyclists – while others are cross-cutting strategies that address multiple safety focus areas.

Sight Distance | Sight distance is the length of roadway visible to a driver at a single moment in time. Examples of obstructions include roadway features such as curves or hills or other objects such as crops, hedges, trees, parked vehicles, utility poles, or buildings. Insufficient sight distance can be a contributing factor traffic crashes, particularly at intersections.

Study Area/Study Corridor |The ProPEL US 31 North study corridor is approximately 27 miles long, extending from County Road (CR) 300 North, just south of the Eel River in Miami County, to CR 700 North, just south of the Fulton/Marshall County line. The study area is the larger general area served by US 31

within the study limits; for purposes of identification of resources that could be affected by the alternatives under consideration, the study area generally extends approximately a half-mile on either side of US 31.

Tier 1 Statewide Mobility Corridor | According to INDOT's *Access Management Guide*, US 31 within the ProPEL US 31 North study limits is a Tier 1 Statewide Mobility Corridor – which is a multilane roadway that:

- Provides connections to major metropolitan areas within the state and to neighboring states.
- Provides accessibility to cities and regions around the state.
- Accommodates high-speed and long-distance trips.
- Can accommodate heavy commercial vehicle traffic.
- Includes most rural non-Interstate routes on the Principal Arterial System.

Underserved Communities | According to *Executive Order 13985 Advancing Racial Equity and Support for Underserved Communities*, the term underserved communities refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. For the ProPEL US 31 North study, underserved communities encompass all efforts to focus on achieving equitable outcomes related to safety, mobility, and access, and include: minority and low-income populations (including communities with environmental justice concerns), Disadvantaged Communities (see above), limited English proficiency (LEP) populations, populations with limited internet access, populations with limited vehicle access, and populations with disabilities.

US 31 North
PURPOSE AND NEED REPORT

Attachment A. Summary of Intersections with US 31

Attachment A. Summary of Intersections with US 31

County	Cross Street Name	Functional Classification	Crash Indices[1] & Fatalities		Presence of Acceleration/Deceleration Lanes on US 31			Adjacent Intersection with Parallel Roadway	Private Driveways on Cross Street within 250 Feet of US 31?	Vehicles Per Day on Cross Street (Major Collectors)	Limited Sight Distance?	Cross-Highway Roadway Used For:			
			ICF	*ICC*	*Acceleration Lane on to US 31?*	*Left Turn Decel Lane?*	*Right Turn Decel Lane?*	*Name | Side of US 31 | Distance | Stop Controlled on Parallel Street?*		*Crossing US 31 | Turning Left | Turning Right*		*School Buses*	*Emergency Services*	*Grain Elevators & Industrial Services*	*Non-Motorized*
Fulton County	CR 700 North	Local	-0.50	-0.18	No	Yes	Yes	--	--	--	--		Yes	Yes	Yes
	CR 600 North	Local	-0.74	-0.07	No	Yes	Yes	--	--	--	--				
	CR 550 North	Local	-0.74	-0.68	No	Yes	Yes	--	--	--	--	Yes			
	CR 450 North	Local	0.25	-0.02	No	Yes	Yes	Meridian Road | West Side | 328 Feet |Yes	Yes (Both Sides)	--	--	Yes	Yes	Yes	Yes
	CR 375 North	Local	-0.07	0.12	No	Yes	Yes	Meridian Road | West Side | 361 Feet |Yes	Yes (West Side)	--	--				
	Olson Road	Major Collector	-0.07	**-0.48**	No	Yes	Yes	Meridian Road | West Side | 220 Feet |Yes	--	505 (47%)| 100 (9%)| 460 (44%)	--	Yes	Yes		
	Monticello Road	Local	-0.38	-0.04	No	Yes	Yes	Meridian Road | West Side | 120 Feet | No (T-intersection)	Yes (East Side)	--	--	Yes	Yes		
	CR 150 North / 3rd Street	Local	0.11	0.06	No	Yes	Yes	--	--	--	YES: Eastbound Left onto US 31			Yes	
	CR 100 North / 6th Street	Major Collector	-0.21	-0.11	No	Yes	Yes	--	--	430 (52%)| 95 (11%)| 305 (37%)	--	Yes	Yes		Yes
	CR 50 North / 13th Street	Local	-0.55	-0.57	No	Yes	Yes		Yes (West Side)	--	--	Yes	Yes	Yes	
	SR 14 *(Overpass)*	Principal Arterial	--	--	--	--	--	--	--	--	--				
	CR 50 East / Sweetgum Road	Local	-0.26	0.46	No	Yes	Yes	--	Yes (East Side)	--	--	Yes	Yes	Yes	
	SB Ramps @ SR 25	--	1.58	1.14	Yes	Yes	Yes	--	--	--	--				
	SR 25 *(Interchange)*	Principal Arterial	--	--	--	--	--	--	--	--	--	Yes	Yes	Yes	
	NB Ramps @ SR 25	--	1.34	0.07	Yes	Yes	Yes	--	--	--	--				
	Old US 31 / Southway 31	Major Collector	0.99	**0.86**	No	Yes	Yes	--	Yes (Both Sides)	500 (47%)| 450 (42%)| 125 (11%)	YES: Southbound Left onto US 31	Yes	Yes		
	CR 150 South / Wabash Avenue	Major Collector	-1.36	-0.90	No	Yes	Yes	S Wabash Road | West Side | 190 Feet |Yes	Yes (East Side)	40 (9%)| 300 (71%)| 85 (20%)	--	Yes	Yes		
	Wabash Road (north)	Local	-1.36	-0.90	No	Yes	Yes	--	Yes	--	--				
	Wabash Road (south)	Minor Collector	-0.71	-0.22	No	Yes	No	Nickel Plate Trail | East Side | 115 Feet |Yes	Yes	--	--	Yes			Yes
	CR 300 South	Local	-1.11	-0.69	No	Yes	Yes	CR 400 East | East Side | 110 Feet |Yes	--	--	--				
	CR 350 South	Local	-0.25	-0.57	No	Yes	Yes	--	--	--	--				
	CR 400 South	Minor Collector	-0.90	**-0.03**	No	Yes	Yes	CR 400 East | West Side | 95 Feet |Yes	--	--	--				

Attachment A. Summary of Intersections with US 31

County	Cross Street Name	Functional Classification	Crash Indices[1] & Fatalities		Presence of Acceleration/Deceleration Lanes on US 31			Adjacent Intersection with Parallel Roadway	Private Driveways on Cross Street within 250 Feet of US 31?	Vehicles Per Day on Cross Street (Major Collectors)	Limited Sight Distance?	Cross-Highway Roadway Used For:			
			ICF	*ICC*	*Acceleration Lane on to US 31?*	*Left Turn Decel Lane?*	*Right Turn Decel Lane?*	*Name | Side of US 31 | Distance | Stop Controlled on Parallel Street?*		*Crossing US 31 | Turning Left | Turning Right*		*School Buses*	*Emergency Services*	*Grain Elevators & Industrial Services*	*Non-Motorized*
Fulton County / Miami County	CR 450 South / CR 1550 North	Local	-0.71	-0.67	No	Yes	N0 (Northbound)	--	--	--	--				
	CR 500 South / CR 1500 North	Local	0.18	-0.62	No	Yes	No (Southbound)	--	Yes (East Side)	--	--	Yes	Yes		
	CR 650 South / CR 1350 North	Major Collector	0.45	0.18	No	Yes	Yes	Old US 31 & Main Street | Both Sides | 115 Feet (Both Sides) |Yes (Both Sides)	Yes (Both Sides)	180 (28%)| 150 (24%)| 305 (48%)	--	Yes	Yes	Yes	
	CR 750 South / CR 1250 North	Local	-0.70	-0.67	No	Yes	Yes	--	Yes (West Side)	--	--				
Miami County	CR 1200 North	Local	-1.11	-0.68	No	Yes	Yes	--	Yes (West Side)	--	--				
	CR 825 South	Local	-1.05	-0.61	No	Yes	Yes	--	Yes (West Side)	--	--				
	CR 1050 North	Local	0.03	-0.52	No	Yes	No (Northbound)	--	--	--	--				
	CR 1000 North	Minor Collector	-1.11	-0.68	No	Yes	No (Southbound)	--	--	--	--	Yes	Yes		Yes
	CR 900 North	Local	-0.72	-0.67	No	Yes	No (Southbound)	--	Yes (West Side)	--	--		Yes		
	CR 400 West	Local	-0.91	-0.04	No	Yes	Yes	--	Yes (Both Sides)	--	--	Yes			
	CR 800 North	Local	0.00	0.61	No	Yes	Yes	Main Street| East Side | 95 Feet |NO	Yes (West Side)	--	--	Yes	Yes		
	Old US 31	Local	-1.11	-0.69	No	Yes	Yes	Main Street| East Side | 80 Feet | Yes (Yield)	--	--	--				
	SR 16	Major Collector	-0.19	0.49	No	Yes	Yes	--	Yes (Both Sides)	170 (21%)| 390 (49%)| 240 (30%)	--	Yes	Yes	Yes	
	CR 600 North	Local	-0.72	-0.03	No	Yes	No (Both Directions)	--	Yes (West Side)	--	--				
	CR 550 North / Mexico Road	Major Collector	-0.97	-0.77	No	Yes	No (Both Directions)	--	--	110 (19%)| 25 (4%)| 430 (77%)	--		Yes		
	CR 450 North	Minor Collector	-0.62	-0.71	No	Yes	No (Both Directions)	CR 300 West| East Side | 80 Feet | Yes	Yes (East Side)	--	--	Yes		Yes	
	CR 400 North	Local	0.62	0.56	No	Yes	No (Southbound)	--	Yes (Both Sides)	--	--	Yes	Yes	Yes	
	Eel River Road (north)	Local	0.60	-0.21	No	No	No	--	Yes	--	--				
	Eel River Road (south)	Local	-0.52	-0.59	No	No	No	--	Yes	--	--				
	CR 300 North	Local	0.91	0.65	No	No	No	--	--	--	--		Yes		
									Total:	1,935 (36%)| *1,510 (28%)*| *1,955 (36%)*						

[1] ICC = Index of Crash Cost (Severity); ICF = Index of Crash Frequency. An index greater than 0.0 is above the statewide average, with higher indices indicating worse safety performance as compared to lower numbers. For ease of distinguishing locations with higher indices, color coding has been assigned for the ProPEL US 31 North study: yellow shading is 0.0 - 1.0 and orange shading is > 1.0. Red bolded text = crash fatality locations. The Existing Transportation Conditions Report for the US 31 North study area provides full detail.