APPENDIX E: FINAL PURPOSE AND NEED REPORT

PROPEL US 31

Smarter Transportation. Stronger Communities.

US 31 South

Purpose and Need Report

FINAL

Revision 1 – March 27, 2024

Prepared By:

HNTB

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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1. INTRODUCTION

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 early in the planning process. Through PEL studies, INDOT aspires to create smarter transportation systems that build stronger communities.

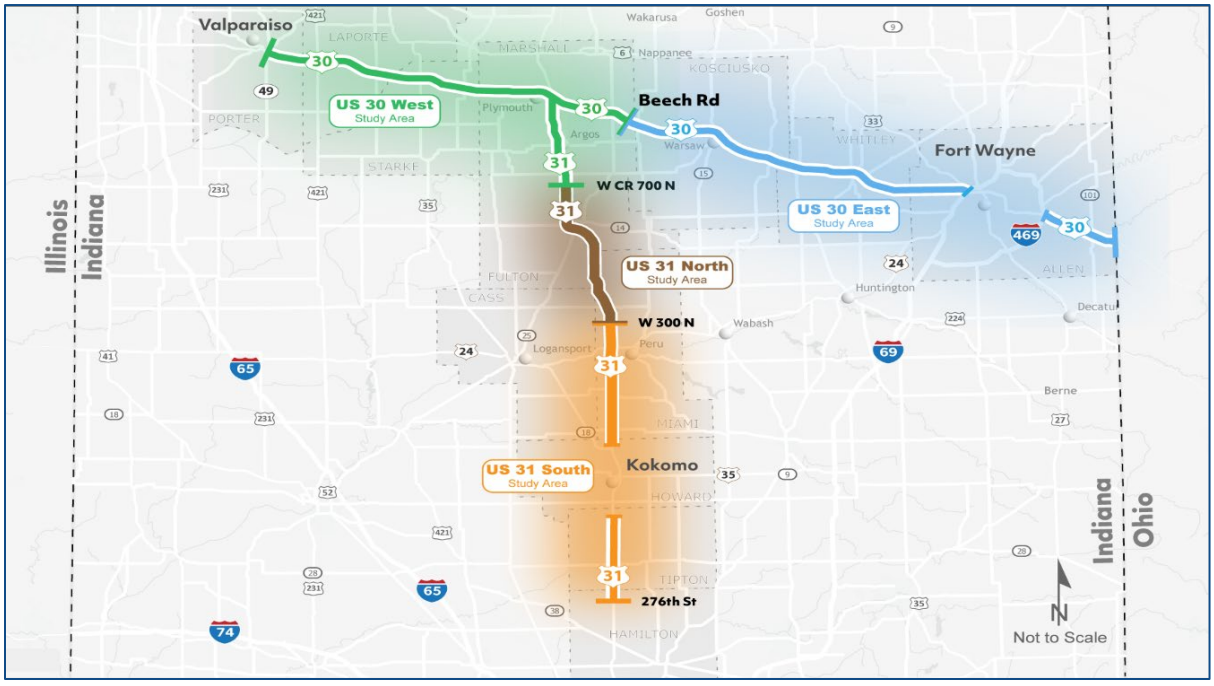
The ProPEL US 30 and 31 studies span 180 miles across 12 counties (Allen, Fulton, Hamilton, Howard, Kosciusko, LaPorte, Marshall, Miami, Porter, Starke, Tipton, and Whitley). The overall study area, which was established as a direct result of stakeholder input, includes:

- US 30 from Valparaiso to the Indiana/Ohio state line (excluding the I-69/I-469 section around the north side of Fort Wayne).
- US 31 between Hamilton County and US 30 (excluding the US 31 Kokomo bypass).

The US 31 Kokomo bypass and the portions of I-69/I-469 around the north side of Fort Wayne have been excluded from the overall study limits because they are currently freeway facilities. Therefore, the long-term vision of those portions of US 30 and US 31 has been decided.

Within the overall study limits, INDOT designated four smaller study areas for conducting individual PEL studies (see Figure 1). This approach enables each of the study teams to more closely consider community needs and goals. 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 are integrated and work together across study area boundaries.

Figure 1: ProPEL US 30 and US 31 Study Areas



This Purpose and Need Report is being prepared for the ProPEL US 31 South study. The ProPEL US 31 South study area includes US 31 from approximately 276th Street in Hamilton County north to the State Route (SR) 931 south junction in Tipton County, and from the SR 931 north junction in Howard County north to County Road (CR) West 300 North in Miami County. As previously mentioned, the US 31 Kokomo bypass is excluded from the ProPEL US 31 South study. The ProPEL US 31 South study area is shown in Figure 2 and Figure 3.

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 specific desired outcomes (purposes). The purpose and need statement helps determine a reasonable range of alternatives. Potential alternatives determined not to meet the purpose and need are eliminated from further consideration. Additionally, project goals that are desirable, but not required outcomes, can guide the development and screening of potential alternatives along with other factors, such as transportation performance, environmental impacts, benefits, and cost.

The PEL study connects the planning process and National Environmental Policy Act (NEPA) environmental review 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, and INDOT intends to use the purpose and need statement developed during this PEL study as the foundation of the subsequent NEPA review for any reasonable alternatives identified and funded for further development.

This Purpose and Need Report is primarily based on the scoping and data collection documents prepared for the study, including the *Existing Transportation Conditions Report*, as well as the ongoing agency coordination and public involvement processes for the study. Study documents are available on the study website (https://propelus31.com/us-31-south/). The *Existing Transportation Conditions Report* is incorporated by reference into this document.

Coordination will be ongoing throughout the study, and the purpose and need statement may be revised based on agency coordination, public involvement, or new information as it is developed.

Figure 2: ProPEL US 31 South Study Area (1 of 2)

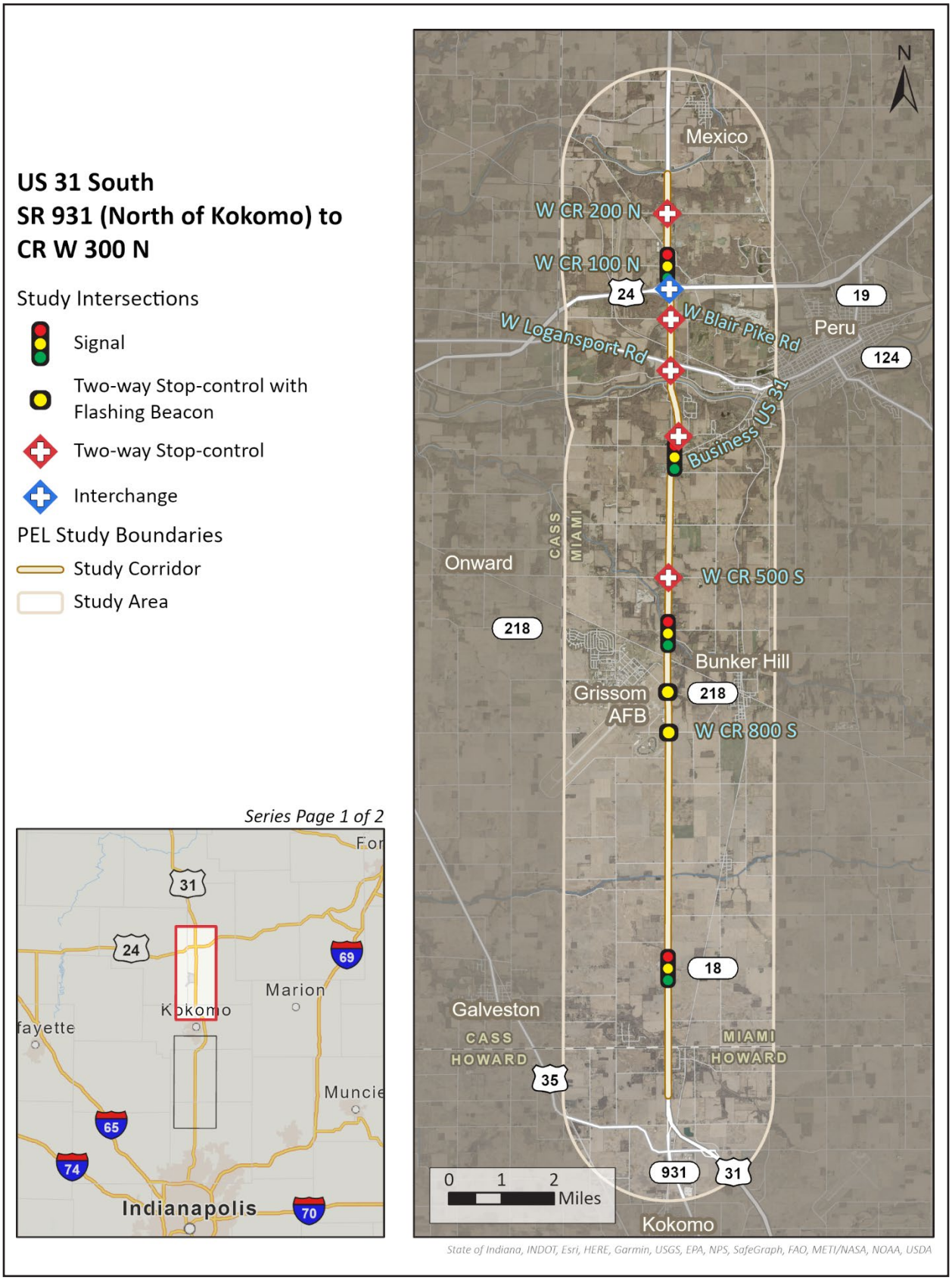
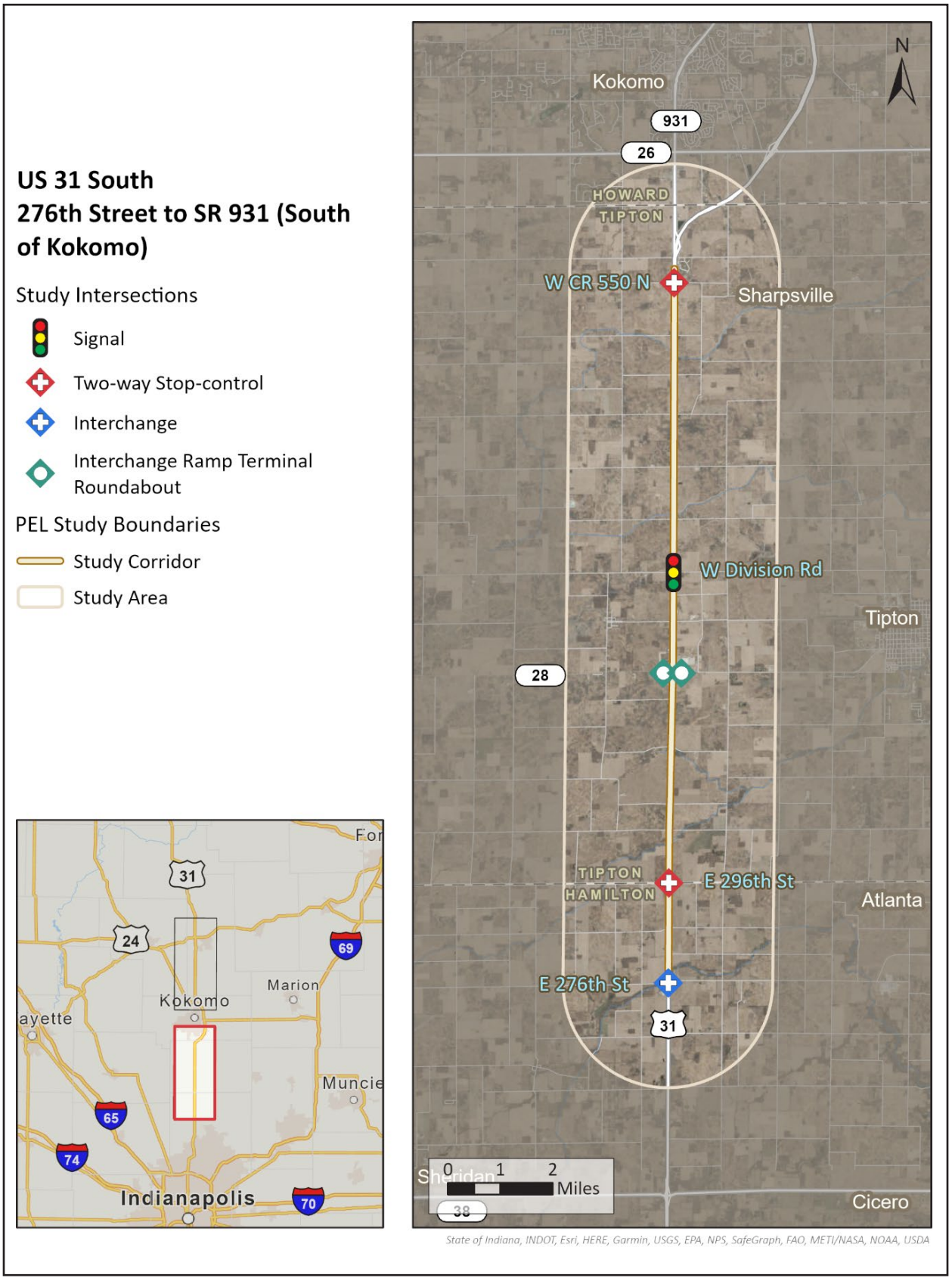


Figure 3: ProPEL US 31 South Study Area (2 of 2)



2. SUMMARY OF PUBLIC INVOLVEMENT

Data to inform this Purpose and Need Report 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 during the Vision and Scoping phase, which included:

- Bi-monthly community office hours (COH) at various times and locations within the study area beginning in October 2022.
- Two virtual Stakeholder Advisory Committee meetings in November 2022.
- Two in-person public information meetings (PIMs) to solicit input on Vision and Scoping in December 2022.
- A virtual PIM to solicit input on Vision and Scoping in December 2022.
- Comments received via the study website and the Public Involvement Management Application (PIMA)
- Ongoing coordination with local agencies and elected officials.

Subsequently, two in-person PIMs and a virtual PIM were held in June 2023 to get feedback on the Draft Purpose and Need Report. The public involvement and agency/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.

2.1. VISION AND SCOPING

Two in-person public information meetings were held during the Vision and Scoping phase of the study. The format of the meetings was an open house with a presentation from study team members. A virtual, on-demand meeting was also made available on the study website, and it was structured to closely match the format of the in-person meetings.

The public meetings included exercises for soliciting feedback from attendees. The exercises were organized in two categories: 1) location-specific feedback and 2) corridor vision. The purpose of these exercises was to gather input on the corridor's fit and function. For fit, the study team wanted to understand how participants would like to see any improvements reflect the character of the area. For function, the study team sought to understand how the corridor could better function and operate for all transportation system users.

The location-specific boards included maps of the various sections within the study area. Participants were asked to place color-coded dots on the map to denote any traffic concerns, safety concerns, bike and pedestrian connections, local connections, sensitive resources, and development or redevelopment potential. Other location-specific boards asked prompting questions with a designated area for participants to write answers on sticky notes. The prompting questions included:

- What are your biggest safety concerns along the corridor?
- Where are your biggest traffic concerns along the corridor?
- What other concerns do you have regarding the corridor?
- What local connections are needed along the corridor?
- Are there sensitive environmental resources along the corridor?

The corridor vision boards sought to understand the communities' vision for desired improvements that reflect the character of the area and serve as community gateways. The boards included prompting questions and a designated area for participants to write answers on sticky notes. The prompting questions included:

- What do you like most about the corridor?
- What is the most important thing the study should consider or do as part of the PEL study process?

The comments received during the public meetings and the subsequent comment period were grouped by the study team according to intersection location (where applicable) and to the general type of concern. Of the 257 comments received as of January 2023, 149 were related to specific intersections within the US 31 South study area. Figure 4 and Figure 5 show the location and number of the comments related to specific intersections. The remaining 108 comments were more general in nature and did not include references to specific locations. Figure 6 provides a summary of all the comments grouped by general type of concern into one of the following categories:

- Local Mobility – Local mobility comments were primarily related to maintaining access to the homes, businesses, farmland, and towns along and adjacent to the US 31 South study corridor by maintaining or improving access to, from, or across US 31.
- Regional Mobility – Regional mobility comments typically related to increasing the ability of traffic to access and travel along US 31 with minimal delay. Comments included requests for additional interchanges, overpasses, and/or the conversion of US 31 to a freeway.
- Safety – Safety comments were related to user experiences in the study area, with the most frequent concerns indicating high travel speeds on US 31, difficulty accessing or crossing US 31, and red light running.
- Redevelopment – Redevelopment comments provided information about needs or concerns related to potential improvements or modifications to existing developed areas.
- Environmental – Environmental comments related to historic properties along the corridor, increased vehicle emissions, and traffic noise of high-speed vehicles.
- Bike and Pedestrian – Bicycle and pedestrian comments related to the addition of non-motorist facilities on or adjacent to US 31, such as sidewalks, trails, transitways, or other multimodal accommodations.
- Economic Development – Economic development comments focused on the effect US 31 can have on future development throughout the corridor.
- Other – This category includes comments that do not readily fall into any of the above categories.

Figure 4: Number of Intersection Related Comments (1 of 2)

US 31 South
SR 931 (North of Kokomo)
to CR W 300 N

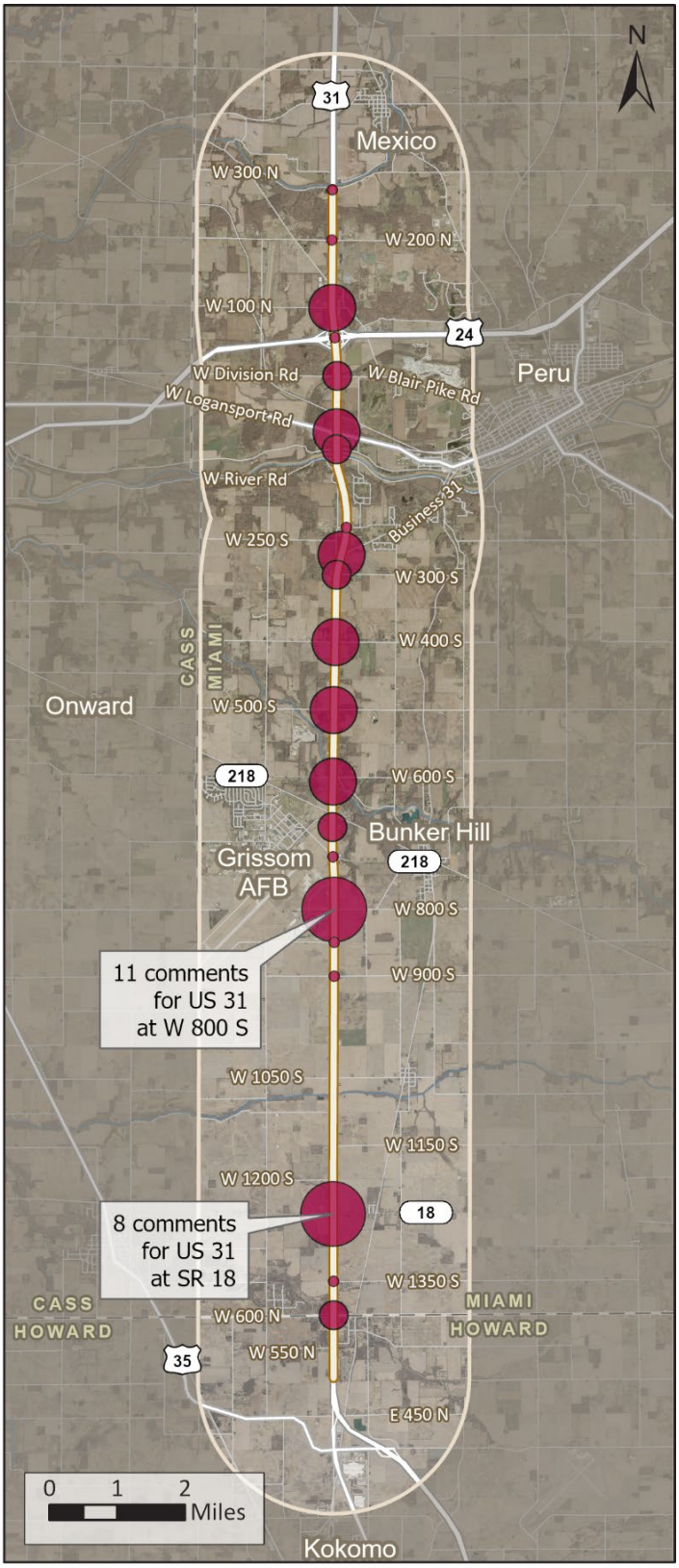
Public Involvement Comments

Number of Intersection-Related Comments

- 0 - 1
- 2 - 3
- 4 - 6
- 7 - 12
- 13 - 22

PEL Study Boundaries

- Study Corridor
- Study Area



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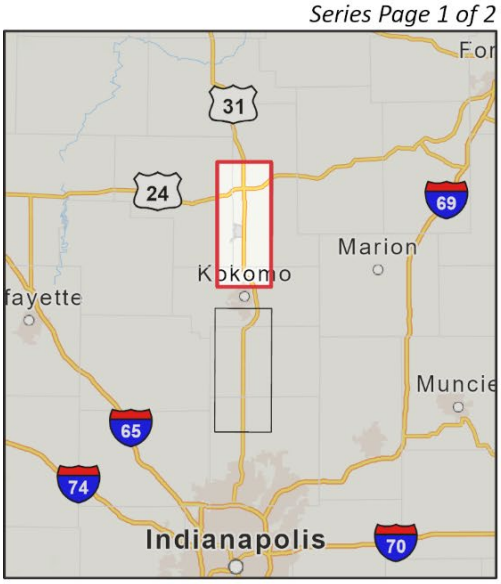


Figure 5: Number of Intersection Related Comments (2 of 2)

US 31 South
276th Street to SR 931
(South of Kokomo)

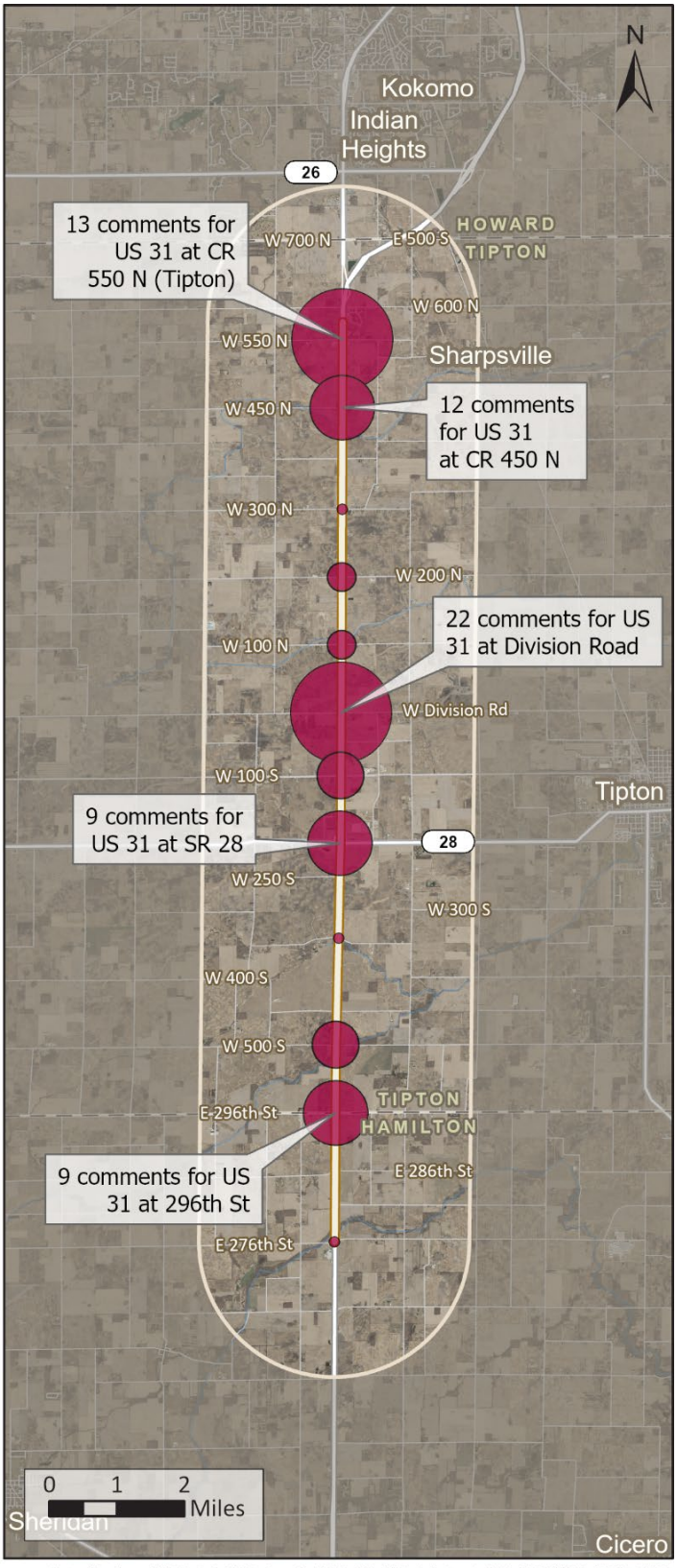
Public Involvement Comments

Number of Intersection-Related Comments

- 0 - 1
- 2 - 3
- 4 - 6
- 7 - 12
- 13 - 22

PEL Study Boundaries

- Study Corridor
- Study Area



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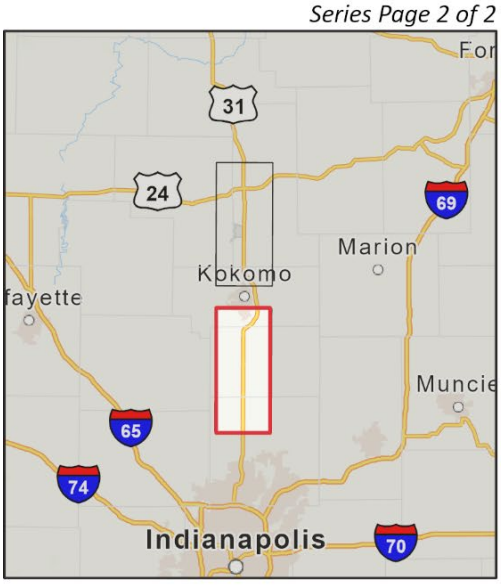
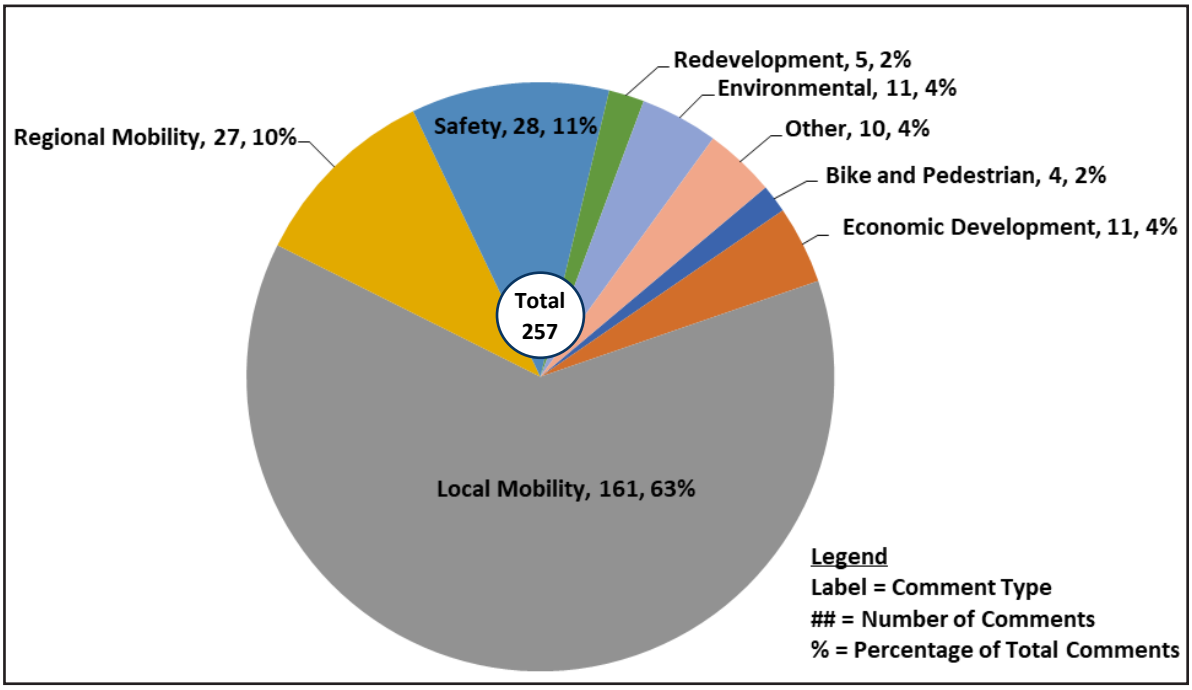


Figure 6: Summary of Public Comment Types Received



As shown in Figure 4, majority of comments received to date were related to local mobility (63%), regional mobility (10%), and safety (11%). Collectively, these categories accounted for more than 84% of the total comments received.

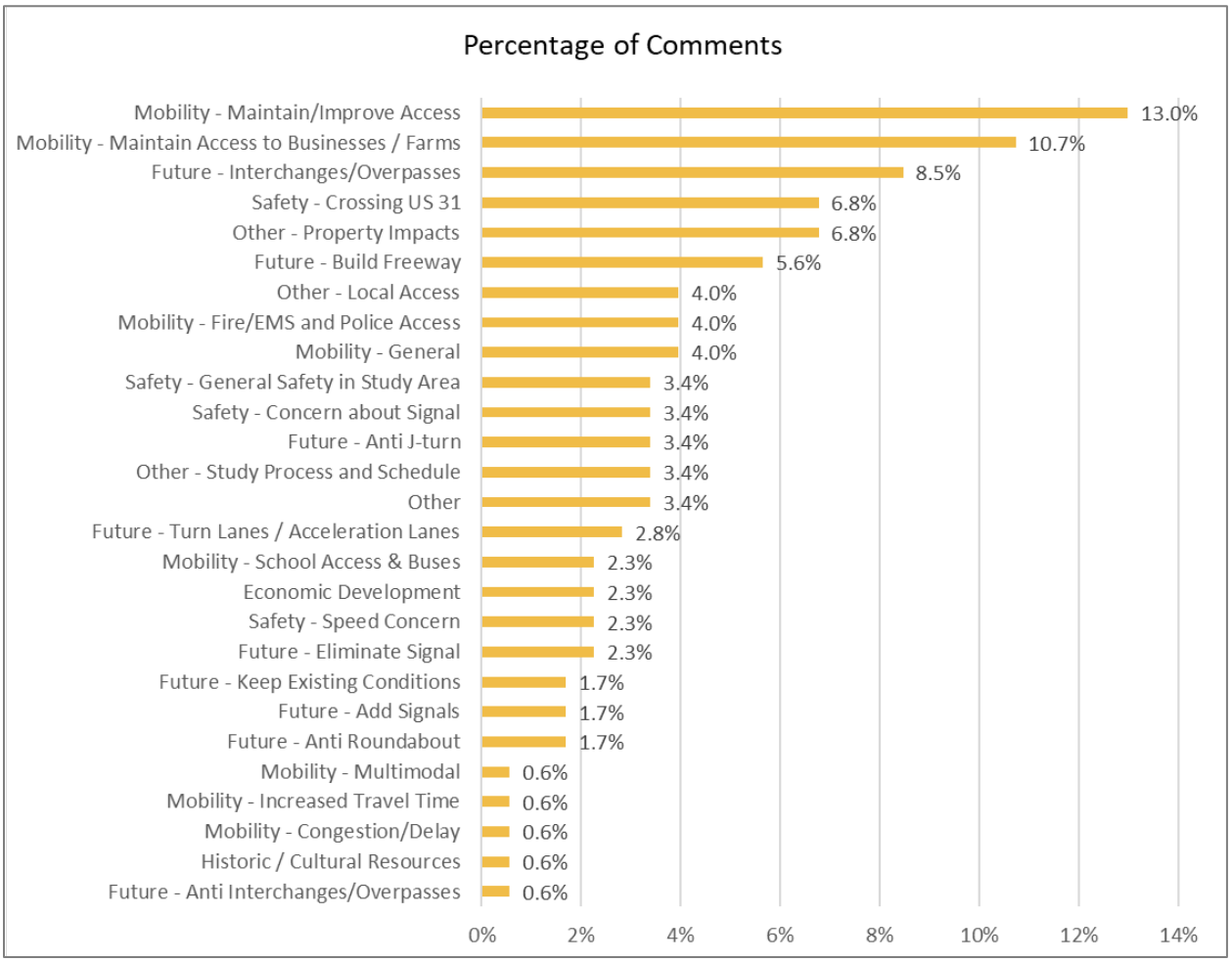
2.2. DRAFT PURPOSE AND NEED

The Draft Purpose and Need Report was published for public and agency review on June 5, 2023. Virtual SAC meetings were held on May 22 and 23, 2023. Two in-person PIMs was held on June 14 (Tipton County Fairgrounds) and 15 (Pipe Creek Elementary School), 2023. A virtual meeting, which included the meeting materials and a recording of the presentation from the in-person meeting, was 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 on the Draft Purpose and Need Report were submitted online, at the bi-monthly COH, and shared at the PIMs. Following the Purpose and Need in-person and virtual PIMs, the study team received about 60 comments. Approximately 100 additional comments were received via community office hours, community outreach events, and the online comment form. 105 of those 160 comments were collected during the public comment period following the US 31 South Purpose and Need PIM. A breakdown of the comments by general type of concern is provided in Figure 7.

As shown, nearly 36% of the total comments received were related to mobility. The majority of these comments were related to local mobility, including maintaining access to the homes, businesses, schools, farmland, and towns along and adjacent to the US 31 South study corridor by maintaining or improving access to, from, or across US 31. Some comments were related to regional mobility, which were related to increasing the ability of traffic to access and travel along US 31 with minimal delay.

Figure 7: Summary of Public Comment Types from Purpose and Need Outreach



Comments related to safety accounted for approximately 16% of the total comments received. These comments related to user safety throughout the study area, with the most frequent concerns indicating difficulty accessing or crossing US 31, red light running and high travel speeds on US 31.

A meeting with resource agencies and cultural resource stakeholders was held on September 15, 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. No substantive comments regarding these two draft reports were received at the meeting or during the agency comment period, which was open through September 29, 2023.

The public comments received on the Draft Purpose and Need Report were consistent with input received during its development and do not conflict with the identified transportation needs and/or goals. As a result, no substantive changes were made to the Draft Purpose and Need Report. Minor edits were made to Sections 4, 5, and 7 to expand and reinforce how addressing mobility and safety can provide economic benefit.

3. CORRIDOR VISION

The vision for the US 31 corridor – which was collaboratively developed for both the 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.

PROPEL US 31 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.**

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

4. TRANSPORTATION NEEDS

Detailed analysis has been conducted to identify transportation needs within the ProPEL US 31 South study area. Elected officials, the US 31 Coalition, study stakeholders (including residents, businesses, schools, and emergency services), and the general public have been engaged to help identify, confirm, and clarify transportation needs along the study corridor. The results of the analysis and engagement have identified the following transportation needs:

- Safety concerns due to a high number and severity of crashes within the study area.
- Operational issues at intersections across the study area.
- Lack of consistency with INDOT's Access Management Guidelines.
- Mobility requirements across the corridor (east-west).
- Safe, high-quality mobility for long-distance passenger and freight trips through the study corridor.

A more detailed discussion of each identified transportation need is provided in the following sections. The *Existing Transportation Conditions Report* provides additional detail, including analysis methodology and data sources, for the transportation data summarized below.

4.1. SAFETY

A total of 1,564 crashes occurred within the US 31 South study area between January 1, 2017, and December 31, 2021. The crash types and severity along with time-of-day and road conditions are analyzed in the *Existing Transportation Conditions Report* (https://propelus31.com/us-31-south/). A majority of the crashes were rear end (33.2%) and right angle (23.1%) crashes, with half (50.4%) of the crashes occurring in dry conditions during daylight hours. Although the factors influencing crash rate and/or severity vary by location, the recurring contributing causes identified in the crash narratives include:

- High travel speeds and/or traveling at an unsafe speed.
- Disregarding traffic signals.
- Following too closely.

RoadHAT crash analysis software was used to identify areas where the frequency (Index of Crash Frequency (ICF)) and severity (Index of Crash Cost (ICC)) of crashes were higher than similar segments and intersections within Indiana. ICF values indicate how much the number of crashes deviate from what is expected. ICC values indicate how much the severity of crashes deviate from what is expected. The ICF and ICC values indicate standard deviations from the expected value. Values greater than zero indicate crash frequency or severity greater than expected, while values less than zero indicate a crash frequency or severity less than expected. The full crash analysis of the study area intersections is included in the *Existing Transportation Conditions Report* (https://propelus31.com/us-31-south/).

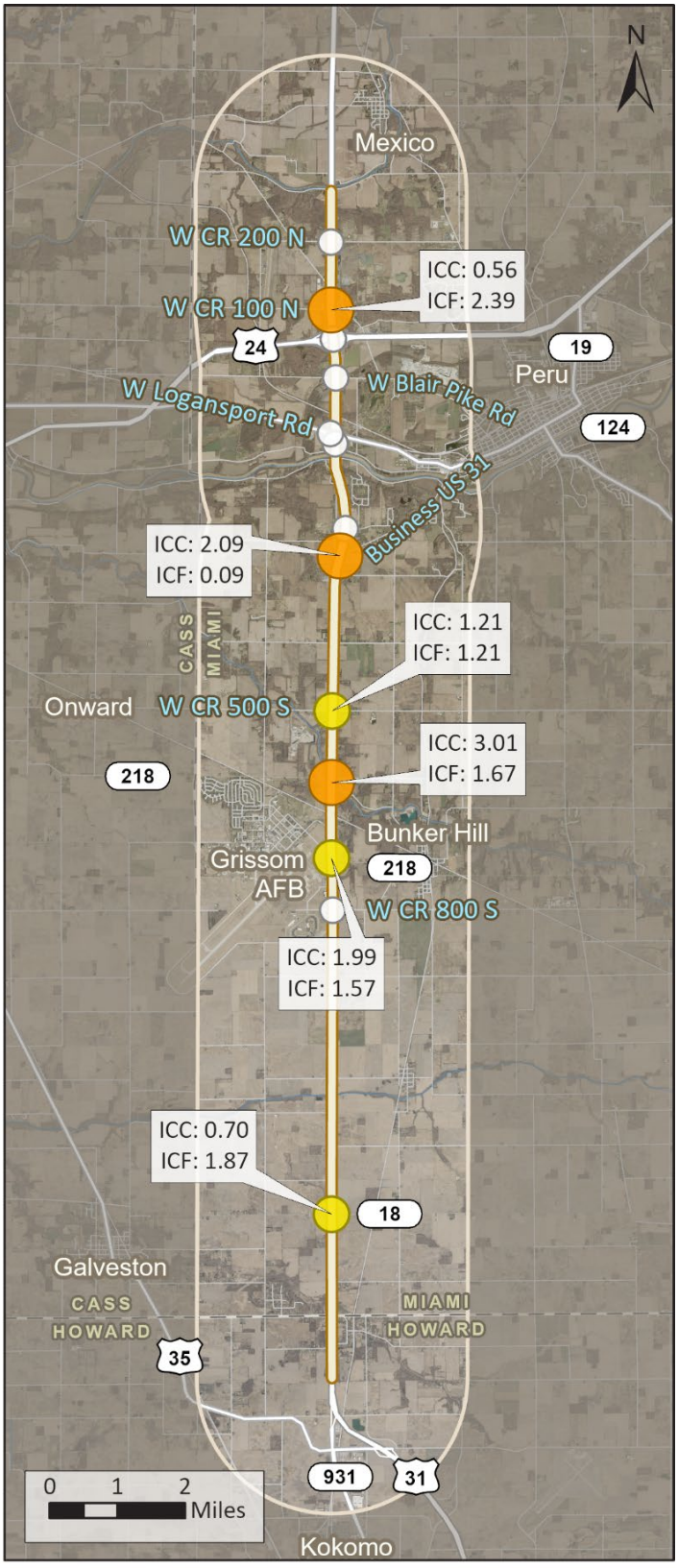
Eight locations within the study area were identified with an ICF or ICC value greater than 1.0. Of these eight locations, five are signalized and three are unsignalized. One of the unsignalized locations is the western roundabout of the US 31 at SR 28 / W 200 S interchange. One location was greater than 3.0, and three were greater than 2.0. These locations are shown in Figure 8 and Figure 9 and are summarized in Table 1.

Figure 8: Locations with High Crash Frequency and/or Severity (1 of 2)

US 31 South
SR 931 (North of Kokomo)
to CR W 300 N

ICC or ICF Values
- ≥ 2
- < 2
- < 1

PEL Study Boundaries
- Study Corridor
- Study Area



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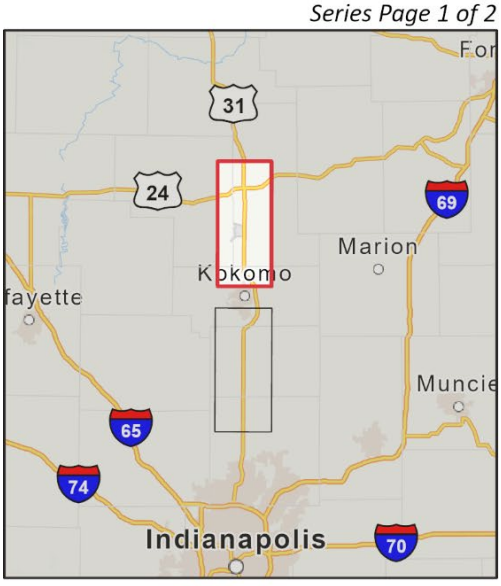
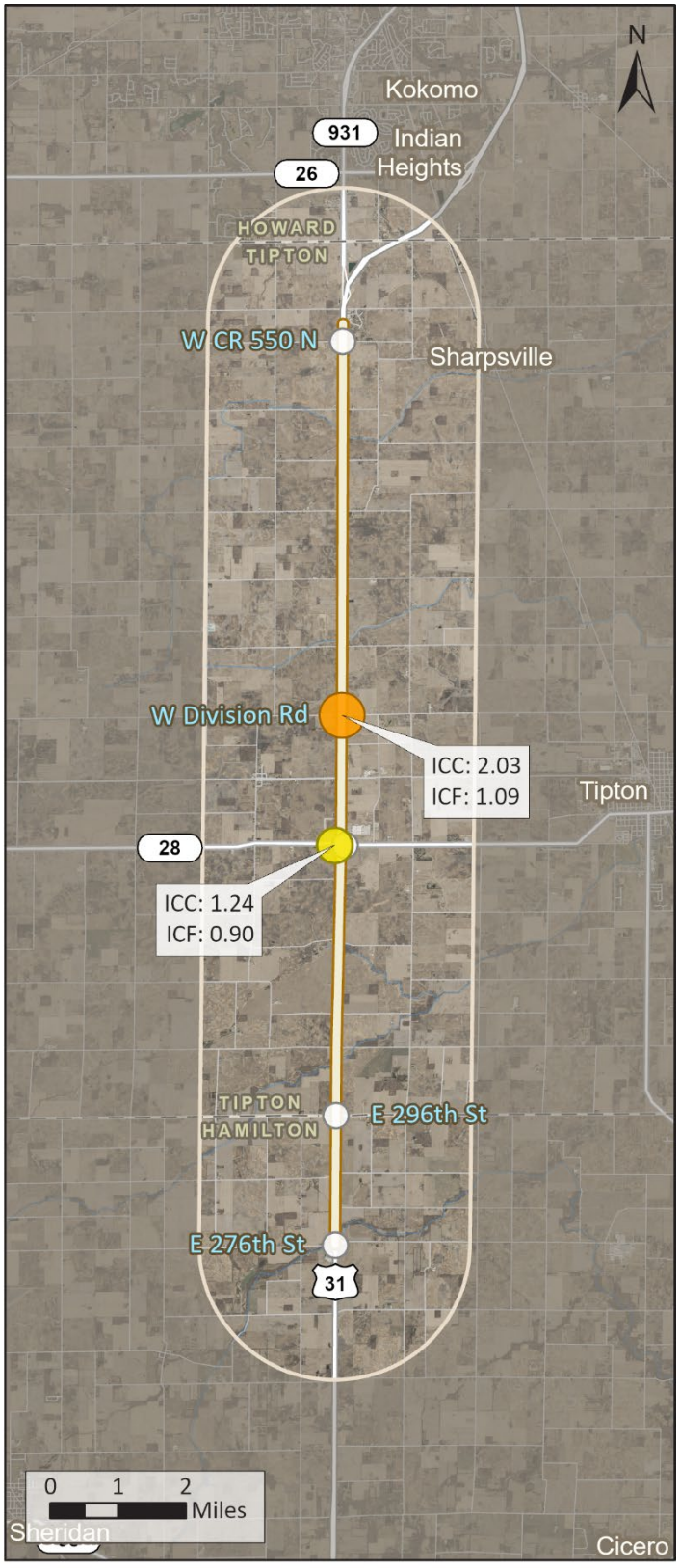


Figure 9: Locations with High Crash Frequency and/or Severity (2 of 2)

US 31 South
276th Street to SR 931
(South of Kokomo)

ICC or ICF Values
- ≥ 2
- < 2
- < 1

PEL Study Boundaries
- Study Corridor
- Study Area



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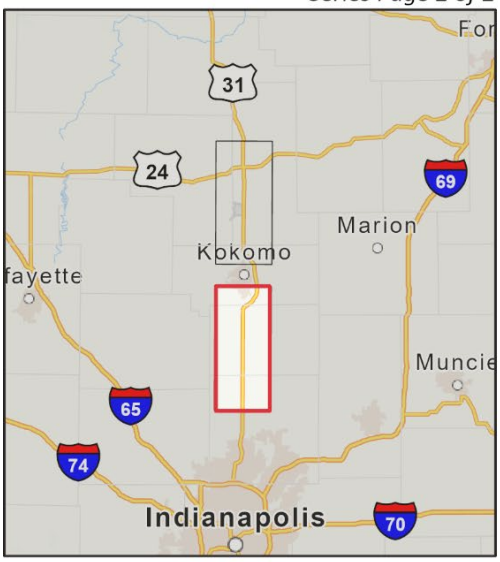


Table 1: Intersections with Safety Concerns

Location	ICF	ICC
US 31 at W CR 100 N (signalized)	2.39	0.56
US 31 at Business US 31 (signalized)	0.09	2.09
US 31 at W CR 500 S (unsignalized)	1.21	1.21
US 31 at SR 218 N (signalized)	1.67	3.01
US 31 at SR 218 S / W Broadway Street (unsignalized)	1.57	1.99
US 31 at SR 18 (signalized)	1.87	0.70
US 31 at Division Road (signalized)	1.09	2.03
US 31 at SR 28 / W CR 200 S (western roundabout of interchange)	0.90	1.24

4.1.1. 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.

4.2. TRAFFIC OPERATIONS

The intersections within the study area were analyzed using existing (Year 2022) and future forecasted (Year 2045) traffic volumes to identify how well they are performing, and whether any locations are operationally deficient. Level of Service (LOS) is a performance measure that represents quality of service, measured on an A – F scale, with LOS A representing the best operating conditions from a traveler's perspective and LOS F representing the worst. The minimal acceptable LOS for the US 31 roadway is LOS D, with no specific intersection movements operating at LOS F.

The analysis shows operational issues at the intersections in both existing and future conditions, resulting in unacceptable delays. Unacceptable LOS occurs in the existing (Year 2022) and/or future forecasted (Year 2045) scenarios at five intersections (eight movements) within the study area.

Table 2 shows intersections with existing (Year 2022) LOS areas of concern and Table 3 shows intersections with future forecasted (Year 2045) LOS areas of concern. It is important to note that the unacceptable delays are associated with the east-west connecting roadways. No operational problems were identified for US 31. One of the areas of concern (the 276th Street intersection) is currently being reconstructed as a grade-separated interchange, which is anticipated to correct all operational deficiencies. Two other intersections (US 31 at W CR 100 N and US 31 at SR 218 N) have existing and future movements with LOS E.

The full analysis of all intersections within the study area is included in the *Existing Transportation Conditions Report* (https://propelus31.com/us-31-south/).

Table 2: Existing (2022) Levels of Service

Intersection	Approach	AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
US 31 at W CR 500 S (unsignalized)	Eastbound	C	17.7	D	32.3
	Westbound	C	22.2	**F**	**54.7**
US 31 at W CR 800 S (unsignalized)	Eastbound	D	25.5	C	23.7
	Westbound	C	20.2	**E**	**40.4**
US 31 at 276th Street[1] (unsignalized)	Eastbound	D	27.9	**E**[1]	**40.4**[1]
	Westbound	**E**[1]	**37.1**[1]	**F**[1]	**59.7**[1]

1. *The 276th Street intersection is currently being reconstructed as a grade-separated interchange, which is anticipated to correct all operational deficiencies.*
2. *Unsignalized = Two-Way Stop-Controlled Intersection*

Table 3: Future (2045) Levels of Service

Intersection	Approach	AM Peak		PM Peak	
		LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
US 31 at W CR 500 S (unsignalized)	Eastbound	C	20.4	**E**	**45.6**
	Westbound	D	27.9	**F**	**110.0**
US 31 at W CR 800 S (unsignalized)	Eastbound	D	32.6	D	30.6
	Westbound	D	26.0	**F**	**80.6**
US 31 at W CR 550 N (unsignalized)	Eastbound	C	18.4	**E**	**36.2**
	Westbound	C	20.7	C	18.1
US 31 at 296th Street (unsignalized)	Eastbound	C	22.9	**E**	**37.9**
	Westbound	**E**	**43.0**	**E**	**43.9**
US 31 at 276th Street[1] (unsignalized)	Eastbound	**E**[1]	**35.0**[1]	**F**[1]	**63.4**[1]
	Westbound	**F**[1]	**61.7**[1]	**F**[1]	**122.8**[1]

1. *The 276th Street intersection is currently being reconstructed as a grade-separated interchange, which is anticipated to correct all operational deficiencies.*
2. *Unsignalized = Two-Way Stop-Controlled Intersection*

4.3. ACCESS CONTROL

Access management is the process that regulates driveways to land development while simultaneously preserving the flow of traffic on the surrounding public road system in terms of safety, capacity, and speed. Access management provides a systematic means of balancing access needs and movement/mobility requirements of streets and roads.

The US 31 South corridor through Hamilton, Tipton, Howard, and Miami counties is classified by the INDOT Access Management Guide as a Tier 1A Mobility Corridor that:

- Provides safe, high-speed connections for long distance trips.
- Serves as a freight artery of the state.
- Is part of the National Highway System.

Consistent with the INDOT Access Management Guide for a Tier 1A Mobility Corridor and the INDOT Driveway Permit Manual, the following guidelines apply to US 31 within the study area:

- Signalized intersections should have a minimum spacing of ½ mile.
- Unsignalized intersections should have a minimum spacing of 670 feet (desirable conditions) or 515 feet (limiting conditions) for a posted speed of 55 mph.
- Driveways should have a minimum separation of 495 feet where the posted speed is 55 mph.
- Only major commercial driveways may be provided full access (i.e., the ability to make all turning movements).
- All other driveways should be restricted to right-in/right-out (RIRO).
- Left-turn access from US 31 is allowed, if reviewed and approved by INDOT.
- Parcels should have only one driveway unless the parcel frontage exceeds 400 feet in length.
- Median openings may be provided only when all the following criteria are met:
  - The median opening is more than 400 feet from an existing median opening.
  - The median opening will improve safety.
  - There is sufficient room for turn lanes and recovery tapers.
  - The median opening will operate acceptably.
- Left-turn lanes to a driveway approach are required when one or more of the following criteria are met:
  - On divided highways where median width is equal to or greater than 24 feet.
  - Where a new approach is constructed as the 4th leg of a 3-legged intersection.
  - Where capacity analysis determines a left turn is necessary to meet level of service criteria.
  - Where crash data, existing traffic operations sight distance, or engineering judgment indicate a substantial conflict related to right-turning vehicles.

The following locations were identified where median opening spacing violates the 400-foot spacing rule:

- Two segments, both located less than 2,100 feet south of W CR 500 S in Miami County.
- Between W CR 550 N and Walnut Street in Howard County.
- 2,250 feet north of W CR 100 N in Tipton County.

The median along US 31 within the study area is approximately 50 feet in width; however, all but one of the driveway approach median openings do not include a left-turn lane, which is inconsistent with the Access Management Guidelines. The only driveway location where a left-turn lane is provided at a US 31

median opening is located 2,600 feet south of SR 18. This driveway provides access to the Maple Lawn Village mobile home park, which is a community with potential environmental justice concerns.

There are 125 driveways within the study area, as shown in Figure 10 and Figure 11. The existing driveways were reviewed to determine if they meet INDOT's existing guidelines. It was found that:

- Forty-two driveways have substandard spacing.
- Seventy-eight residential driveways have full access to US 31 but should have only right-in/right-out (RIRO) access.
- Nine parcels do not meet the guideline of one driveway per 400 feet of frontage.

In total, 91 of the 125 driveways within the study area (73%) do not meet at least one criterion. The locations of these driveways are shown in Figure 10 and Figure 11. This lack of access control impacts the previously defined safety need, as well as capacity and speed within this section of US 31. The full analysis of access control within the study area is included in the *Existing Transportation Conditions Report* (https://propelus31.com/us-31-south/).

Figure 10: Existing Driveways (1 of 2)

US 31 South
SR 931 (North of Kokomo)
to CR W 300 N

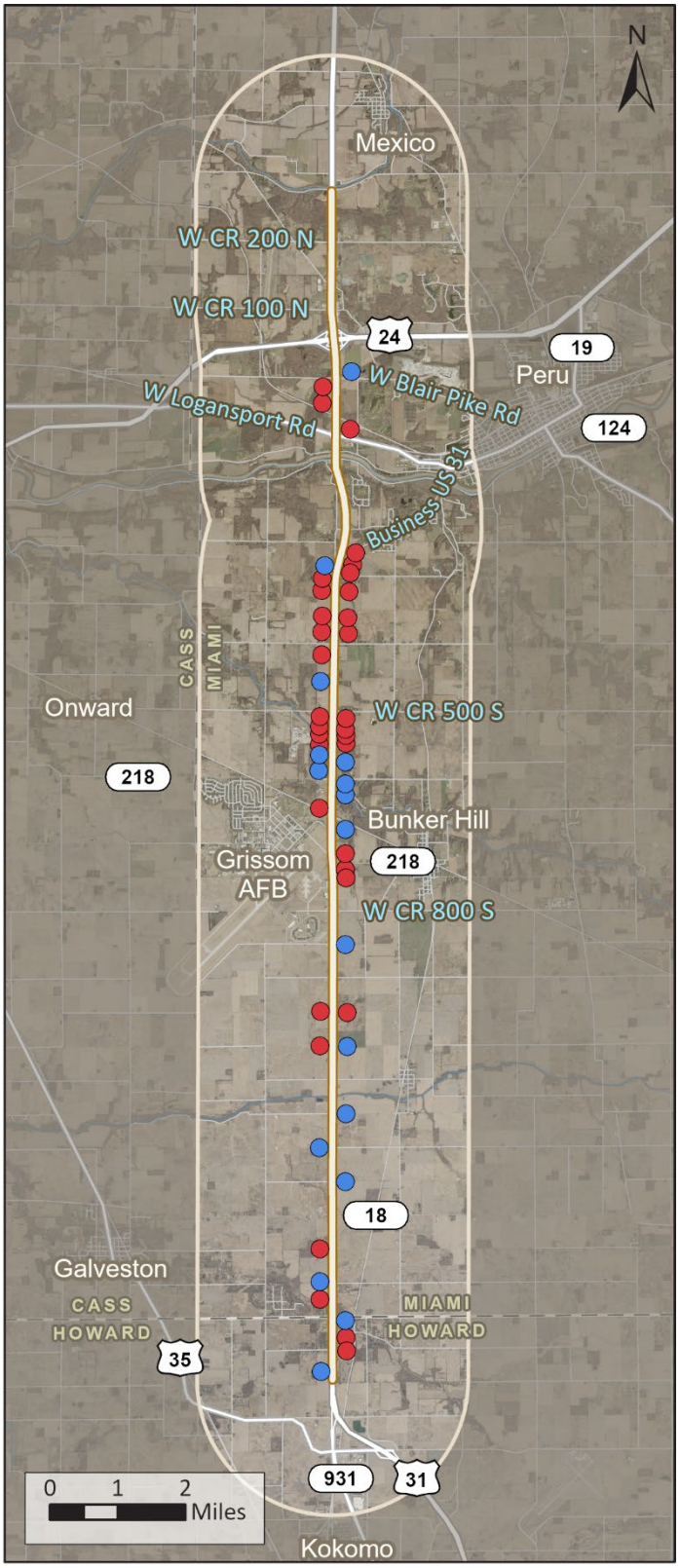
Driveway Conformance with Access Management Guidelines*

- Guidelines Not Met
- Conforms with Guidelines

PEL Study Boundaries

- Study Corridor
- Study Area

**Driveway locations are graphical representations and are not to scale.*



State of Indiana, INDOT, Esri, HERE, Garmin, USGS, EPA, NPS, SafeGraph, FAO, METI/NASA, NOAA, USDA

Series Page 1 of 2

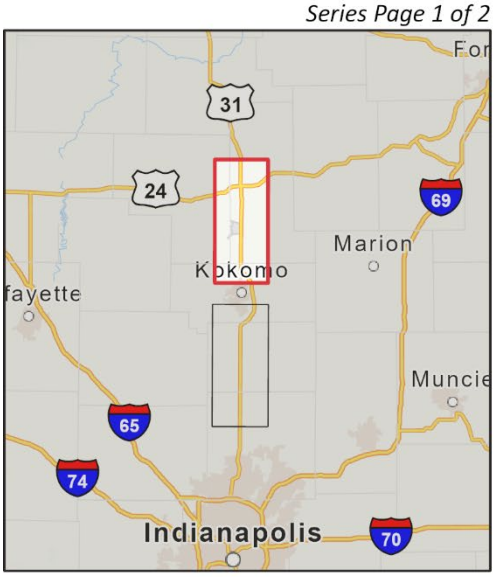


Figure 11: Existing Driveways (2 of 2)

US 31 South
276th Street to SR 931
(South of Kokomo)

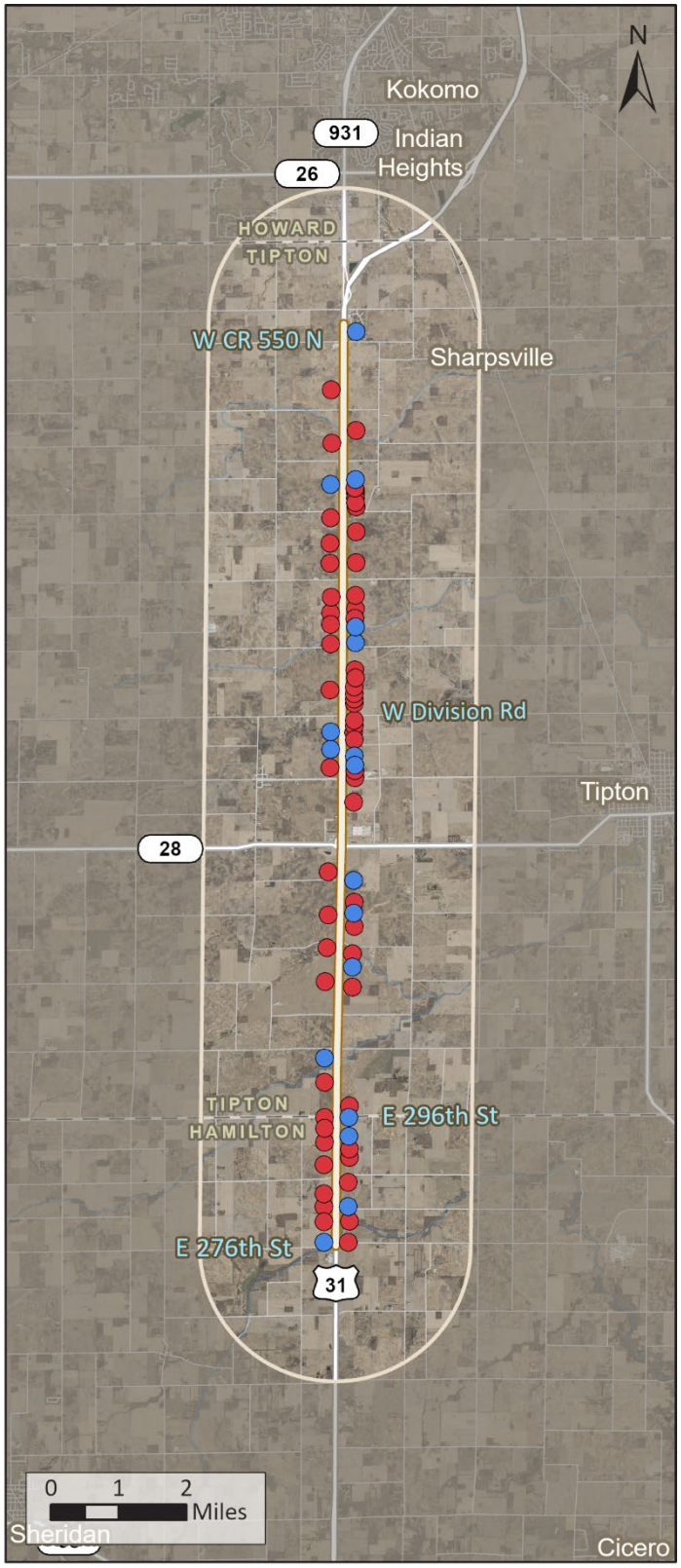
Driveway Conformance with Access Management Guidelines*

- Guidelines Not Met
- Conforms with Guidelines

PEL Study Boundaries

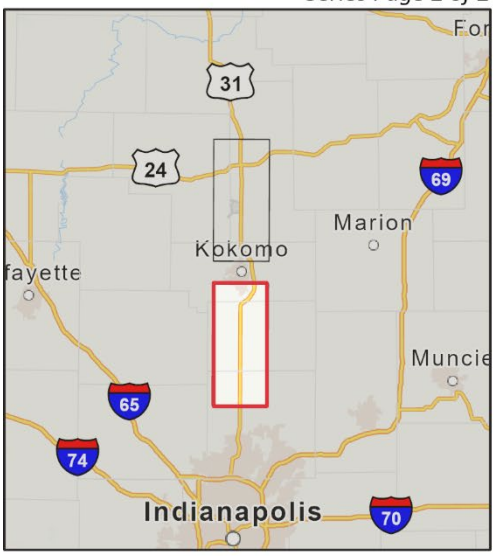
- Study Corridor
- Study Area

**Driveway locations are graphical representations and are not to scale.*



State of Indiana, INDOT, Esri, HERE, Garmin, USGS, EPA, NPS, SafeGraph, FAO, METI/NASA, NOAA, USDA

Series Page 2 of 2



4.4. CROSS-CORRIDOR (EAST-WEST) MOBILITY

In addition to access management, cross-corridor (east to west) mobility for schools, emergency services, and agricultural field access were identified through public engagement as a critical mobility and safety need for students, residents with need for emergency care, and farmers. Therefore, additional outreach was conducted with school districts, emergency service providers, and farm bureaus within the study area to identify important crossings for them to provide their services. This outreach, combined with a review of local planning documents, identified a number of important roadway crossings in the study corridor. These important crossings support local mobility for emergency services and law enforcement, school buses, slower-moving vehicles such as farm equipment and related agricultural trucking services, and non-motorized vehicles – including bicycles and pedestrians – within the study area.

The comprehensive plans for Tipton and Miami counties promote greater connectivity for county residents, businesses, and communities, and include documentation of high priority connectivity needs and improvements, particularly to assure local accessibility for emergency services and schools.

- The *Tipton County Comprehensive Plan* includes a goal to "promote increased connectivity within and between existing communities." The plan identifies several locations to "facilitate east-west connections across US 31." This includes US 31 intersections with CR 600 North, CR 450 North, CR 300 North, Division Road, SR 28, CR 450 South, and 296th Street/CR 600 South.
- 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." The plan notes needed improvements to east-west circulation at the US 31 intersections with CR 500 South, CR 800 South, and SR 18, as well as bicycle and pedestrian improvements at CR 400 South, CR 1050 South, and SR 18.

Figure 12 and Figure 13summarize important crossings and access points of school buses, emergency services, agricultural and industrial vehicles, and non-motorized users along the study corridor. These locations were identified based on contacts with school districts in the study area, interviews with emergency response personnel, and public and stakeholder input.

Figure 12: Important Crossings and Access Points (1 of 2)

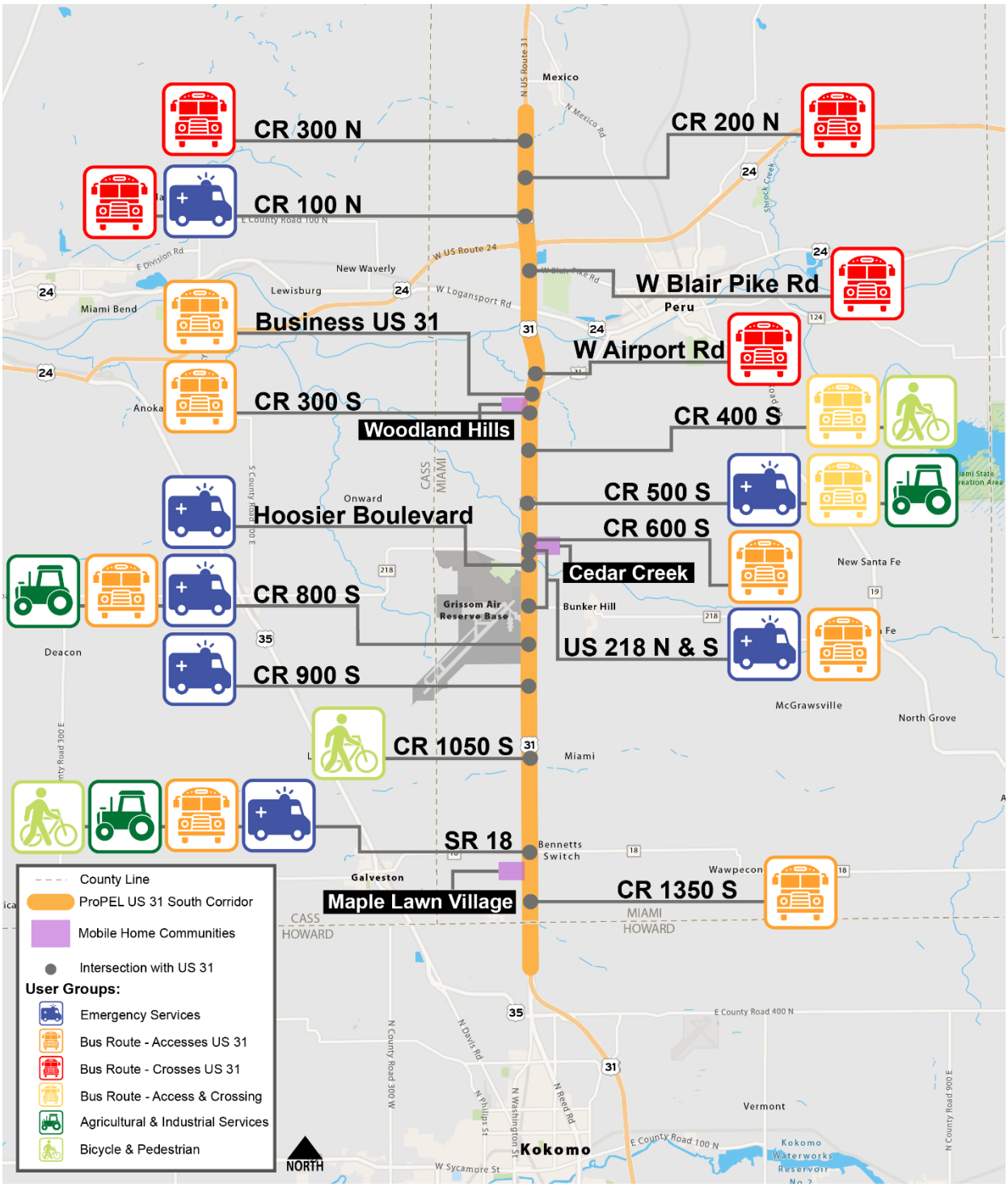
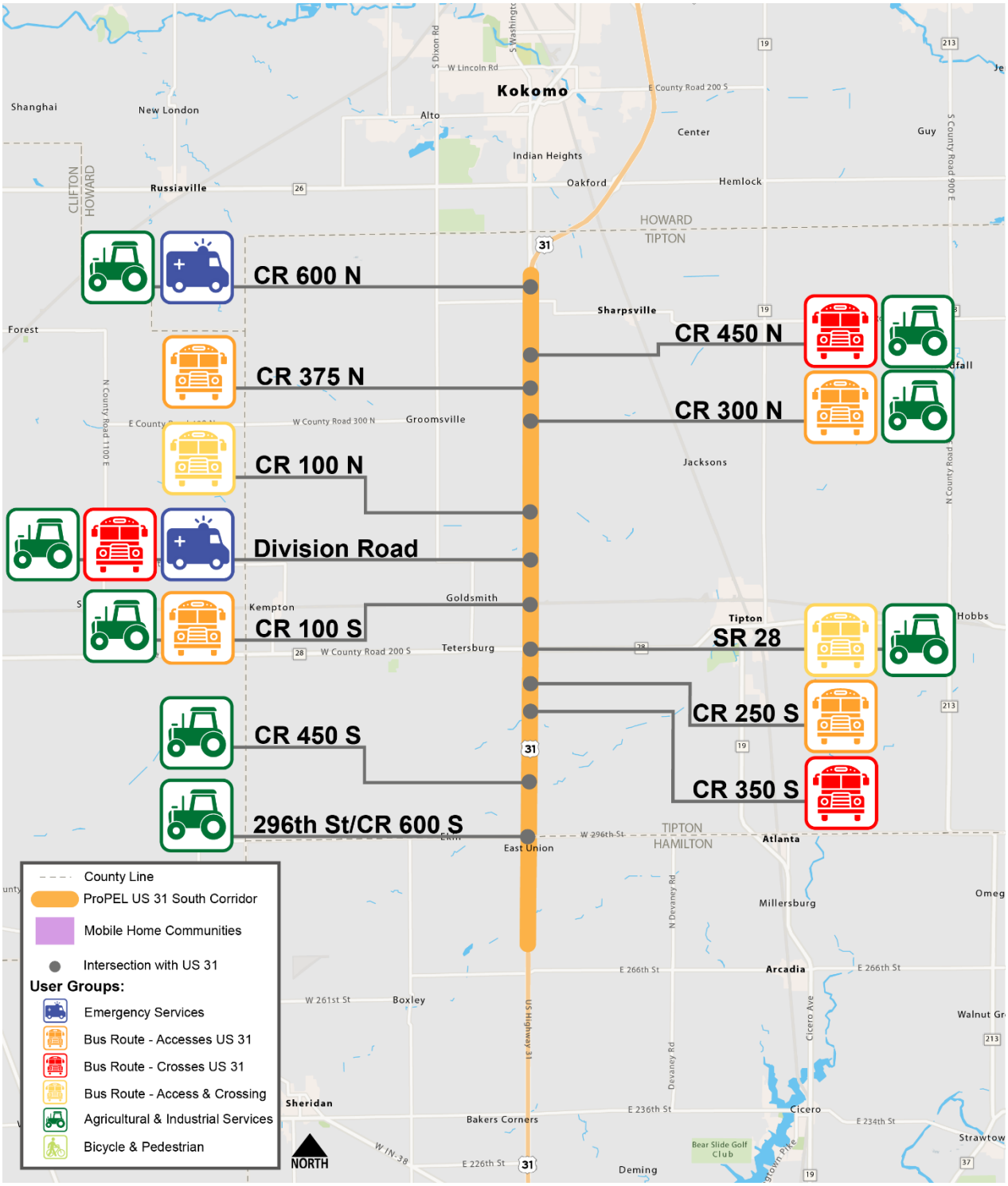


Figure 13: Important Crossings and Access Points (2 of 2)



4.5. REGIONAL AND STATEWIDE MOBILITY

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 following:

- *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 South 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.

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 different portions of US 31 within the study area serve different primary functions. This data, which is summarized in Table 4, shows the importance of the US 31 in local, regional, and statewide mobility.

Trips were categorized into local trips, sub-regional trips, and regional trips, which are defined as follows:

- Local Trips – Trips with origins and destinations within the US 31 South study segment.
- Sub-Regional Trips – Trips with origins and destinations outside of the US 31 South study segment.
- Regional Through Trips – Trips with origins and destinations in or beyond the Indianapolis and South Bend/Mishawaka metropolitan areas.

Table 4: US 31 South Study Area Trip Types

Study Segment	Local Trips	Regional Trips	
US 31 North of Kokomo	75%	25%	
		Sub-Regional	Regional Through
		11%	14%
US 31 South of Kokomo	30%	70%	
		Sub-Regional	Regional Through
		59%	11%

Additionally, the comprehensive plans for both Tipton and Miami counties call for improved north-south mobility to support the efficient movement of people and goods, and both plans assume and/or promote some level of limited-access improvements along US 31.

5. PURPOSE

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

- Improve safety along the US 31 corridor by reducing the number and severity of crashes within the study area.
- Improve traffic operations by reducing delay at unsignalized intersections.
- Improve access control through implementation of INDOT's Access Management Guidelines.
- Support east-west mobility for schools, emergency services, and agricultural services.
- Enhance the efficiency and reliability of US 31 as a regional and statewide corridor.

Given the size of the study area and the needs identified in Section 4, 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 purpose of transportation improvements along the US 31 South transportation corridor is for moving people and goods in a safer and more efficient manner.

US 31 serves as an important highway freight corridor with heavy vehicles holding a higher percentage of the through traffic. 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 existing and planned adjacent land uses.

US 31 serves as vital link that connects local communities and businesses to regional as well as national markets across the state. The ProPEL US 31 South study purpose of improving regional mobility and safety are expected to benefit regional economic development and is therefore consistent with the established economic development goals of the communities within the study area.

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. 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 regional mobility is also expected to result in reduced congestion and time savings, labor market and supply chain efficiency, and overall quality of life improvements.

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.

6. PERFORMANCE MEASURES

Performance measures are quantifiable criteria used to measure how well an alternative functions with respect to planning objectives. As this study progresses, alternatives will be developed and evaluated for their ability to satisfy the study's purpose and need using performance measures shown in Table 5.

Table 5: Study Performance Measures

Study Purpose	Performance Measure
Improve safety along the US 31 corridor by reducing the number and severity of crashes within the study area.	Apply safety countermeasures to reduce crash rates and/or severity.
Improve traffic operations at the unsignalized intersections.	Reduce delay at the unsignalized intersections.
Improve access control through implementation of INDOT's Access Management Guidelines.	Prioritize and consolidate access points on US 31 to meet INDOT's Access Management Guidelines.
Support east-west mobility for schools, emergency services, and agricultural services.	Maintain or improve safety, access, and mobility across the corridor for school bus routes, emergency services, and agricultural equipment by preserving the most important crossing locations.
Enhance the efficiency and reliability of US 31 as a regional and statewide corridor.	Improve operations along US 31 to enhance passenger and/or freight mobility.

7. STUDY GOALS

Goals represent overarching outcomes that are desirable, but not specifically required since they are not measurable with respect to identified study area needs. Potential goals for the US 31 corridor were identified primarily through public and stakeholder input and are supported by local, regional, and statewide planning documents. The goals were also aligned with the adjacent ProPEL US 31 North study, as applicable. Potential goals identified include:

- **Economic Development** – Provide 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. Within the study area, the ability of US 31 to support the local economy – including, more specifically, the operations of the farming industry and access to local businesses – were recurring themes in the ongoing public and stakeholder engagement.
- **Equity In Transportation** – Provide equitable solutions that consider the needs of underserved communities. There are multiple underserved communities in the 5-mile demographic study area. This includes 28 census block groups with elevated minority populations, 41 census block groups with elevated low-income populations. There are also 15 census tracts with Disadvantaged Communities. Several executive orders and federal regulations address the potential effects of federally funded projects and programs on underserved communities. As the study progresses, INDOT will maintain focus on achieving equitable outcomes related to safety, mobility, and access for these groups.
- **Multimodal Access & Connections** – Accommodate non-motorized, transit, and active modes of travel in and across the study corridor. The comprehensive plans for both Tipton and Miami counties include goals for expansion of the bicycle and pedestrian networks. The *Indiana Governor's Public Health Commission Report* (2022)[1] stresses the importance of active transportation and improved wellness activities and opportunities, particularly for children and adolescents. Research suggests that rural communities are more likely to lack access to fitness facilities.[2,3] In these communities, the importance of transportation investments that provide active transportation opportunities can help increase physical activity, which supports the Governor's public health initiatives. 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.[4] The CRS 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.
- **Emerging Technologies** – Support emerging technologies and related infrastructure, including alternative fuel and autonomous or connected vehicles. The *Indiana Electric Vehicle Infrastructure Deployment Plan* (2022)[5] outlines how Indiana plans to implement electric vehicle (EV) infrastructure over the course of the next five years. The plan identifies US 31 as an Alternative Fuel Corridor. The plan also identifies four preliminary and two alternate locations for EV charging stations within the US 31 corridor. One of the alternate locations is in the ProPEL US 31 South study area near the US 31 / US 24 interchange. The carbon reduction strategy, which INDOT is currently developing, is expected to outline Indiana's context and action plan for reducing on-road carbon emissions. It is anticipated the CRS will consider electric

[1] https://www.in.gov/health/files/GPHC-Report-FINAL-2022-08-01_corrected.pdf
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4256125/
[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8535724/
[4] https://www.in.gov/indot/public-involvement/public-involvement/carbon-reduction-strategy/
[5] https://www.in.gov/indot/files/INDOT-EV-Deployment-Plan_DRAFT_7-29-22.pdf

vehicles/alternative fuels/energy efficiency (i.e., supporting electric or alternative fuel vehicle adoption) as a potential category of transportation projects and/or strategies that can support carbon reduction.

- **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 long- and short-range planning documents are required to be fiscally constrained, which means the projects programmed within them can be realistically completed with available and projected funding and revenue sources. Several of INDOT's planning documents also identify environmental responsibility as a stated agency goal, 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, plays a key role in shaping INDOT's investment strategies and policies.

Although these study goals will be considered in overall project development, they are not identified as primary transportation need elements to be solved by the ProPEL US 31 study. As with the corridor vision, project goals are useful as a guide to the development and review of potential alternatives, but they do not take the place of the purpose and need statement. Goals will not be the sole basis for eliminating or carrying forward a solution or alternative; they will be considered alongside other factors such as transportation performance, benefits, impacts, and costs.

8. GLOSSARY OF COMMONLY USED TERMS

Access/Access Management | Access/accessibility relates to the ability of 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 South 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 South study, vehicles that support agriculture and the agricultural industry are characterized by heavy, slow-moving farm equipment as well as large trucks.

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 where collisions are most likely to occur.

Connections/Connectivity | In the context of the ProPEL US 31 South 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 14008 (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 30 and US 31 studies, disadvantaged communities were identified using at least one of the tools identified by USDOT, which includes: the Climate and Economic Justice Screening Tool developed by the Council on Environmental Quality, the USDOT Disadvantaged Census Tracts tool, and the Areas of Persistent Poverty & Historically Disadvantaged Communities 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 30 and US 31 studies, 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 | Executive Order 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 mainline vehicles traveling past stop-controlled side streets. In typical conditions, free-flow traffic operates at the posted speed limit and motorists are generally unaffected by the presence of other vehicles on the roadway facility.

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

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

Index of Crash Frequency (ICF)/Index of Crash Cost (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. These indices help to prioritize locations for focus, but the whole US 31 corridor within the study area was investigated for correctible crash patterns.

Level of Service (LOS) | Level of Service is a performance measure that represents quality of service, measured on an A – F scale, with LOS A representing the best operating conditions from a traveler's perspective and LOS F representing the worst.

Local Trips | For the ProPEL US 31 South 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.

Multi-modal | Multi-modal transportation opportunities provide more freedom in how people get around, especially for people who cannot, or choose not, to drive a car. Multi-modal transportation supports the needs of all users, whether they choose to drive, walk, bike, or use transit, either for all or part of their journey or for recreational purposes. For the ProPEL US 31 South study, non-vehicular multi-modal users accessing or crossing the study corridor potentially include on-demand transit, bicycles, pedestrians, and active recreators using the nearby Nickel Plate Trail or other recreational facilities.

Planning and Environment Linkages | 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 better understand community needs and to develop alternatives that meet those needs. 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 South is one.

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

Purpose and Need | Purpose and need are terms describing why a study or project is being completed. Need is the specific transportation problems that are present or projected to occur. The purpose defines the desired outcomes/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 South study, five needs and five associated purposes have been identified.

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

Safety Countermeasures | 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 (e.g., speed management, intersections, pedestrians/bicyclists). Some countermeasures 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 to sight distance 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 in crashes, particularly at intersections.

Study Area/Study Corridor | The ProPEL US 31 South study corridor is approximately 32 miles long, extending from CR 300 North, just south of the Eel River in Miami County, to E 276th Street in Hamilton County. The portion of US 31 between its junctions with SR 931 both north and south of Kokomo are excluded from the study area. 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, 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 South study limits is a Tier 1 Statewide Mobility Corridor – which is a multi-lane 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; and
- 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 Through the Federal Government), 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 South study, underserved communities include minority and low-income populations (environmental justice), Disadvantaged Communities (see above), limited English proficiency (LEP) populations, populations with limited internet access, and populations with limited vehicle access.

Two-Way Stop-Controlled Intersection | An intersection where mainline traffic is free-flow and the side-street approaches have a stop sign and must yield the right-of-way to the mainline.