PROPEL US 30

Smarter Transportation. Stronger Communities.

US 30 East

Level 3 Screening Report

Draft

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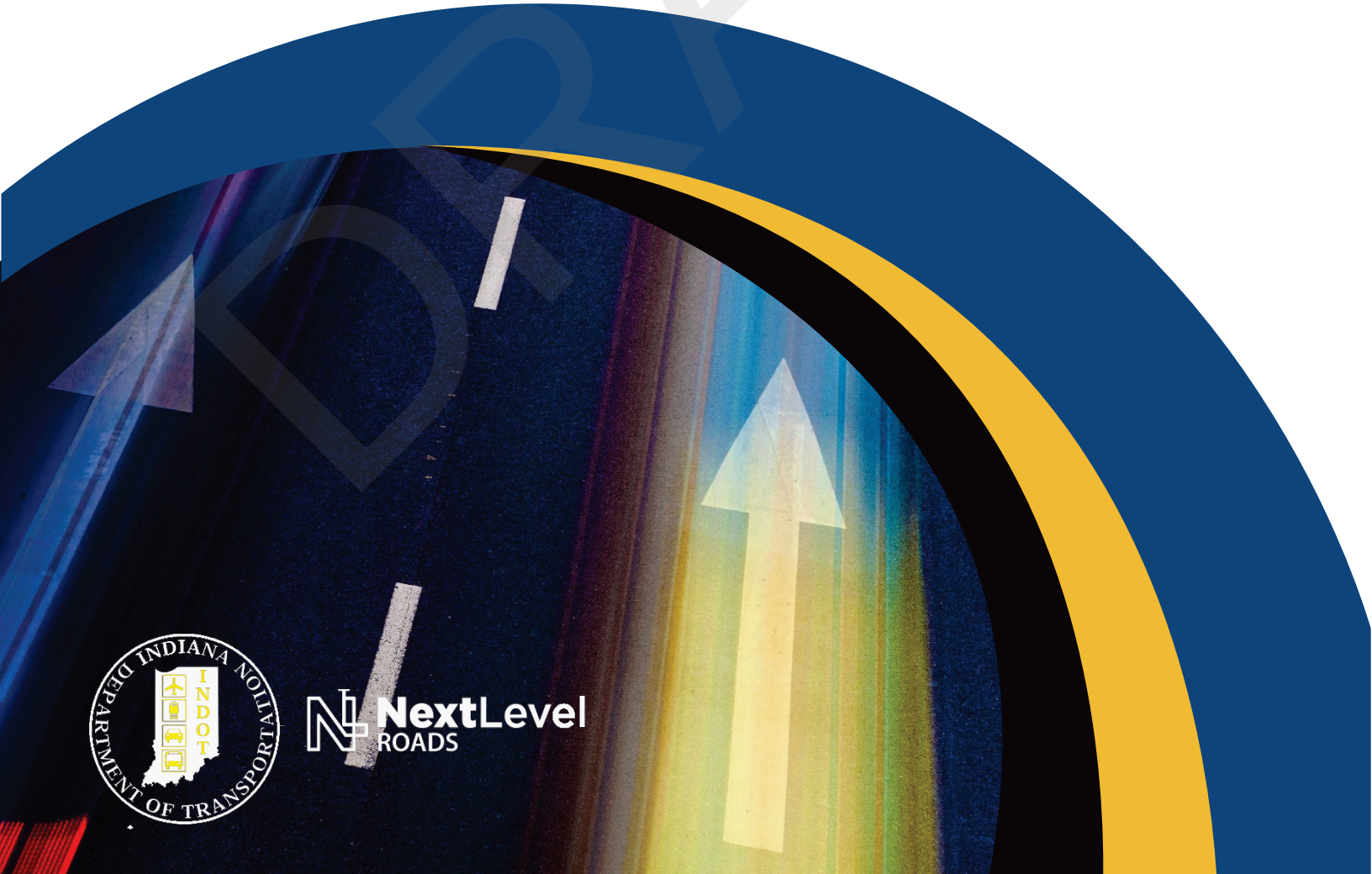
Prepared By

wsp



INDIANA DEPARTMENT OF TRANSPORTATION INDOT

NextLevel ROADS

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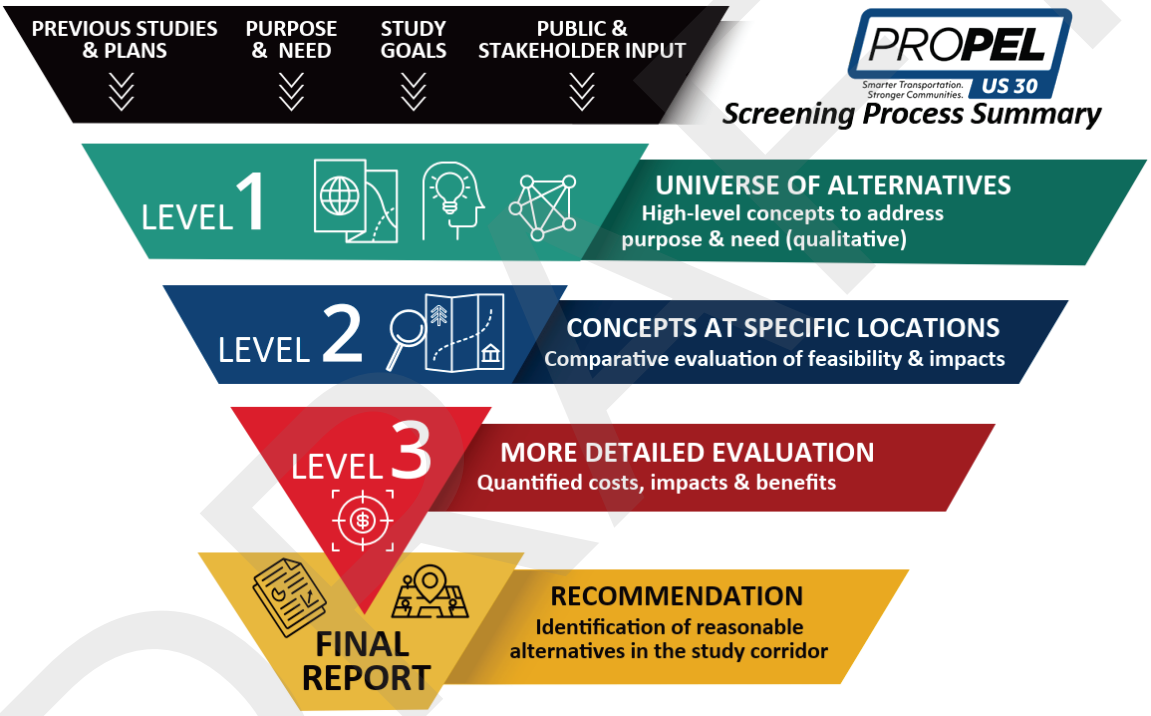
EXECUTIVE SUMMARY

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

The ProPEL US 30/31 studies are using a three-level screening process, depicted in Figure ES-1, to identify reasonable alternatives that address the identified transportation needs and goals of the study area. The Level 3 screening evaluates alternatives advancing from the Level 2 screening at the primary intersections within the study area. The Level 3 screening also considers the secondary intersections and the roadway sections between them.

Figure ES-1 – US 30 East Study Alternatives Development and Screening Process



This *ProPEL US 30 East Level 3 Screening Report*, which details the Level 3 screening methodology and results, has been prepared for the ProPEL US 30 East study and is based on existing conditions, projected future conditions, current plans and past studies, public comments, and stakeholder input as well as social, economic, and environmental constraints. The ProPEL US 30 East study area extends for approximately 58 miles from Beech Road in Marshall County to the Indiana/Ohio state line in Allen County, with portions within I-69 and I-469 around the north side of Fort Wayne excluded from the study.

This Level 3 screening report provides a comparative evaluation of reasonability and impacts for potential transportation improvements and identifies alternatives to be carried forward from this PEL study.

In the Universe of Alternatives (Level 1) screening a set of 55 high-level concepts (including the No Build condition) were initially identified and qualitatively evaluated to determine if they had the potential to meet the purpose and

need established for this study as identified in the separate *ProPEL US 30 East Purpose and Need Report*. Alternatives that did not satisfy the purpose and need or that were not practical were eliminated from further consideration. Alternatives that had the greatest chance to address the purpose and need were advanced to Level 2 Screening for further consideration and application along the US 30 East study area. Sixteen (16) potential primary and complementary solutions were identified for further consideration in Level 2 screening.

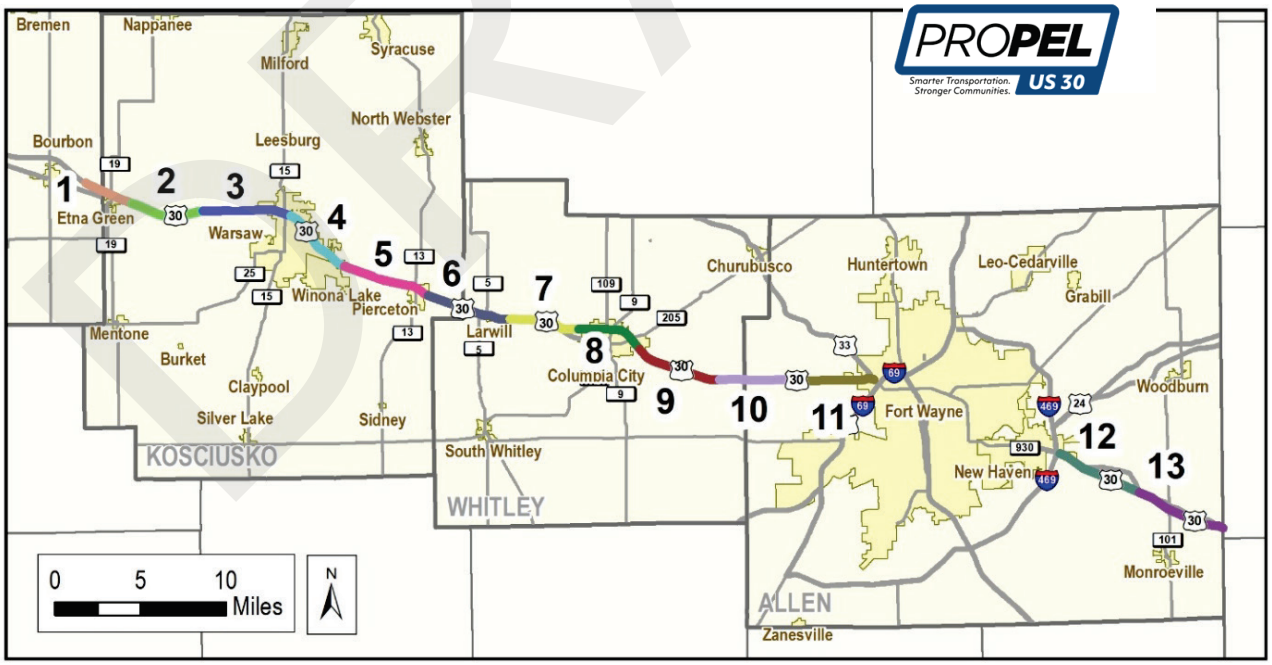
In Level 2, the seventeen identified Primary and Complementary Concepts (including the No Build condition) were qualitatively evaluated at primary intersections in the study area. Primary intersections in the US 30 East study area are locations where US 30 intersects with a roadway that is either a Minor Arterial, Major Collector, or Principal Arterial, or if the existing intersection is signalized. These primary intersections largely control roadway operations in the study area, therefore, alternatives selected at the primary intersections influence what can be constructed upstream or downstream of the primary intersection and set the foundation for improvements between them. The results of the Level 2 screening serve as the building blocks for the Level 3 evaluation.

This report documents the process and results of the Level 3 screening of alternatives that advanced from the Level 2 screening for the ProPEL US 30 East study. The Level 3 screening represents the third step in a three-level alternatives development and screening process, as depicted in **Figure ES-1**.

LEVEL 3 SCREENING OVERVIEW

The Level 3 screening process divided the study area into planning segments (**Figure ES-2**) in which traffic characteristics and context are similar, and where improvements at one intersection could influence those at adjacent intersections. Thirteen planning segments, ranging from 3.0 to 5.5 miles in length were created within the US 30 East study area.

Figure ES-2 – US 30 East Planning Segments



Intersection alternatives that advanced from the Level 2 screening process were then arranged to form multiple improvement packages for each of the thirteen planning segments. These improvement packages vary with respect

to facility type, traffic flow, and the level of access to adjacent land. These improvement packages were then comparatively evaluated against each other and against the No-Build scenario to determine which should be further considered beyond the Level 3 screening process. **Table ES-1** outlines the characteristics of each improvement package considered in the screening process.

Table ES-1 - US 30 East Level 3 Screening

Characteristics	Criteria
Safety	Ability to reduce severe crashes, including the cost effectiveness of each package.
Mobility	Travel time along US 30, delay crossing US 30, and level of access to/from US 30.
Environmental Resource Impacts	Natural, cultural, and community/socioeconomic impacts; greenhouse gas emissions; alignment with public input received to date.
Costs	Estimated construction costs, right-of-way costs, and total Improvement Package costs.
Goals	Is the Improvement Package aligned with study goals?

After completing the Level 3 analysis using the factors described above, each improvement package was rated using the following terminology and definitions:

- **Eliminated** = Meets the purpose and need established with this study; however, the improvement package is considered unreasonable due to limited benefits compared to its impacts and/or costs. It likely does not warrant consideration as part of any subsequent NEPA studies in this planning segment.
- **Recommended** = Meets the purpose and need established with this study and is considered reasonable. The improvement package is considered one of the best within the planning segment at addressing the identified needs with limited impacts and without extraordinarily high costs. It likely warrants consideration as part of any subsequent NEPA studies in this planning segment.
- **Carried Forward** = Meets the purpose and need established with this study; however, in comparison to others, the improvement package is considered to have marginal benefits. In some cases, it may also have higher impacts and/or costs. It could be considered in future studies and may require further analysis to determine if it is a reasonable solution to the planning segment's transportation needs.

LEVEL 3 SCREENING RESULTS

Improvement packages were then evaluated against the Study's Purpose and Need and Goals, and compared to the No Build scenario to identify those which should be further considered beyond the level 3 screening process.

Table ES-2 lists the improvement packages considered in each planning segment. Forty-eight packages of improvements were developed across the 13 planning segments. The packages are comprised of 210 intersection alternatives applied to the 80 intersections evaluated within the US 30 East study area.

Packages of improvements within each planning segment were developed to address a range of flow-type and access control objectives, consisting of individual intersection improvement alternatives assembled to support those objectives. Only those intersection improvement alternatives that were operationally effective and/or improved safety were considered when assembling each package. Each of the 48 packages of improvements summarized in

this document address the study area Purpose and Need and achieve several of the identified goals to varying degrees and are either 'Recommended' or 'Carried Forward' for further consideration.

Table ES-2 - US 30 East Level 3 Screening Results

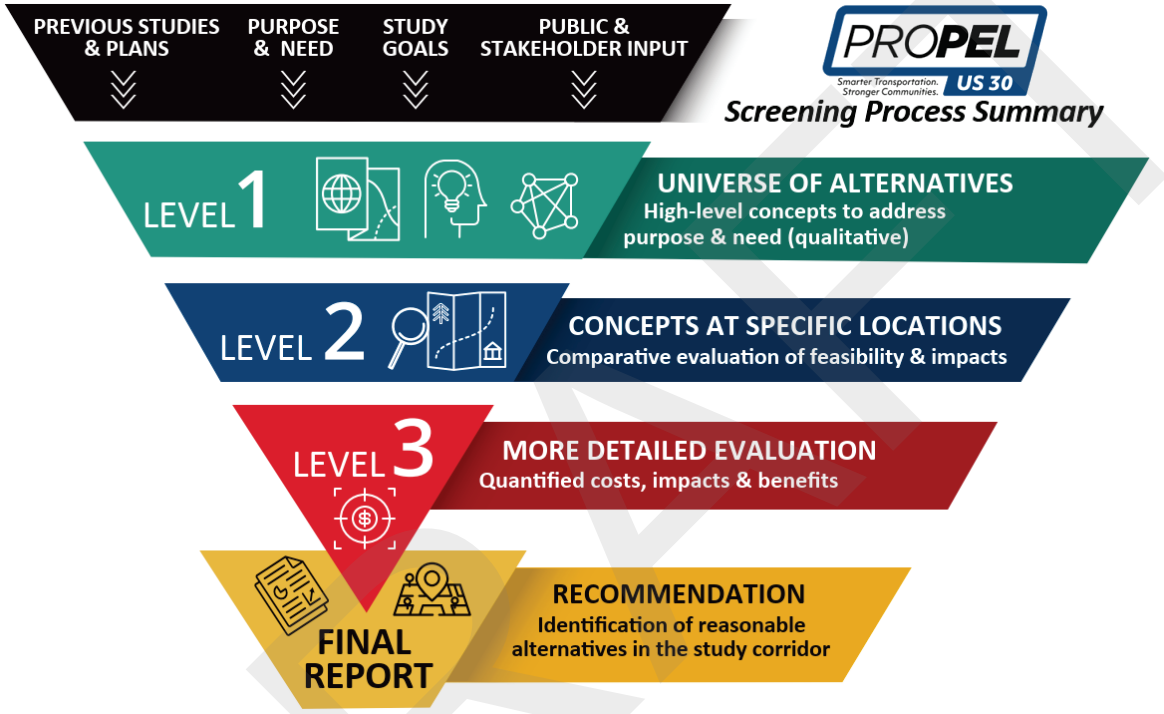
PLANNING SEGMENT			PACKAGE									
		Flow Cond. ->	Non-Free Flow			Free Flow						
		Facility Type ->	Arterial					Expressway Lite	Expressway		Frontage Rds.	Freeway
		Access Cntrl. ->	Minimal	Partial		Minimal	Partial				Full	
1	Etna Green	3.0 mi.	No Build			1			2	3		4
			Carried Forward			Carried Forward			Recommended			Carried Forward
2	Hoffman Lake	4.3 mi.	No Build			1			2	3		4
			Carried Forward			Carried Forward			Recommended			Carried Forward
3	Warsaw West	5.2 mi.	No Build	1			2		3			4
			Carried Forward	Eliminated			Recommended		Recommended			Carried Forward
4	Warsaw	4.4 mi.	No Build		1	2			3	4	5	6
			Carried Forward		Carried Forward	Eliminated			Recommended	Recommended	Eliminated	Recommended
5	Pierceton	5.2 mi.	No Build				1	2	3	4		5
			Carried Forward				Recommended	Recommended	Carried Forward	Carried Forward		Carried Forward
6	Larwill	5.0 mi.	No Build				1	2	3	4		5
			Carried Forward				Recommended	Recommended	Carried Forward	Carried Forward		Carried Forward
7	Whitley West	4.1 mi.	No Build				1	2	3	4		5
			Carried Forward				Recommended	Recommended	Carried Forward	Carried Forward		Carried Forward
8	Columbia City	4.1 mi.	No Build		1	2			3	4		5
			Carried Forward		Carried Forward	Eliminated			Recommended	Recommended		Carried Forward
9	Whitley East	5.1 mi.	No Build				1	2	3	4		5
			Carried Forward				Carried Forward	Recommended	Recommended	Recommended		Recommended
10	Steel Dynamics	4.8 mi.	No Build					1	2	3		4
			Carried Forward					Carried Forward	Recommended	Recommended		Carried Forward
11	Allen West	4.2 mi.	No Build									1
			Carried Forward									Carried Forward
12	New Haven	5.2 mi.	No Build				1	2	3	4		5
			Carried Forward				Recommended	Recommended	Carried Forward	Carried Forward		Carried Forward
13	Allen East	5.4 mi.	No Build				1	2	3	4		5
			Carried Forward				Recommended	Recommended	Carried Forward	Carried Forward		Carried Forward

1. INTRODUCTION

1.1. PURPOSE AND INTENT OF THIS REPORT

This report documents the process and results of the Level 3 screening of alternatives that advanced from the Level 2 screening for the ProPEL US 30 East study. The Level 3 screening represents the third step in a three-level alternatives development and screening process, as shown in **Figure 1.1-1.**

Figure 1.1-1 – US 30 East Study Alternatives Development and Screening Process



The purpose of the Level 3 screening – which is the final screening step for this PEL study – is to develop and analyze improvement packages for sections of the study area. These sections, called planning segments, consider improvements at all study area intersections as well as the roadway sections between them (see Section 2 for full details on methodology). The improvements considered in the Level 3 screening were identified from the Level 2 screening, previous studies, current plans, and public and stakeholder input as well as industry guidelines and solutions for safety and operations for highways like US 30.

The Level 3 screening includes both qualitative and quantitative factors to enable a relative assessment of costs, benefits, and impacts to eliminate unreasonable alternatives. It is INDOT's intent for the Level 3 screening to develop and evaluate varied access management approaches for planning segments in the study area to better understand relative costs, benefits, and impacts of different access management strategies along the study corridor for all users. Since it is not the intent to have a single recommended alternative at the conclusion of this PEL study, the Level 3 screening presents a range of improvement packages for each planning segment, including some with more access control similar to freeway conditions and some with less access control on US 30 that would provide public access points more in line with existing conditions.

Inputs to this report include the following, all of which are available on the study website (https://propelus30.com/30doclibrary/):

- ProPEL US 30 East Existing Transportation Conditions Report;
- ProPEL US 30 East Environmental Constraints Report;
- ProPEL US 30 East Purpose and Need Report;
- ProPEL US 30 East Resource Agency, Stakeholder & Public Involvement Summary Reports;
- ProPEL US 30 East Final Universe of Alternatives (Level 1) Screening Report; and
- ProPEL US 30 East Final Level 2 Screening Report

Similar to the first two levels of screening, meeting the purpose, needs, and study goals are confirmed in Level 3, and public and stakeholder input is considered and will be sought as part of this screening. A goal of this PEL study is the identification of a range of reasonable alternatives for the study area. Given the transportation needs identified within the study area, a reasonable alternative could consist of improvements at a single intersection; it could also consist of improvements at multiple intersections and/or the roadway sections in between them (i.e., access management). Depending on multiple factors, including statewide priorities and funding availability, improvements carried forward from this PEL study could be combined in different ways to address the identified transportation needs and support the goals of the study area.

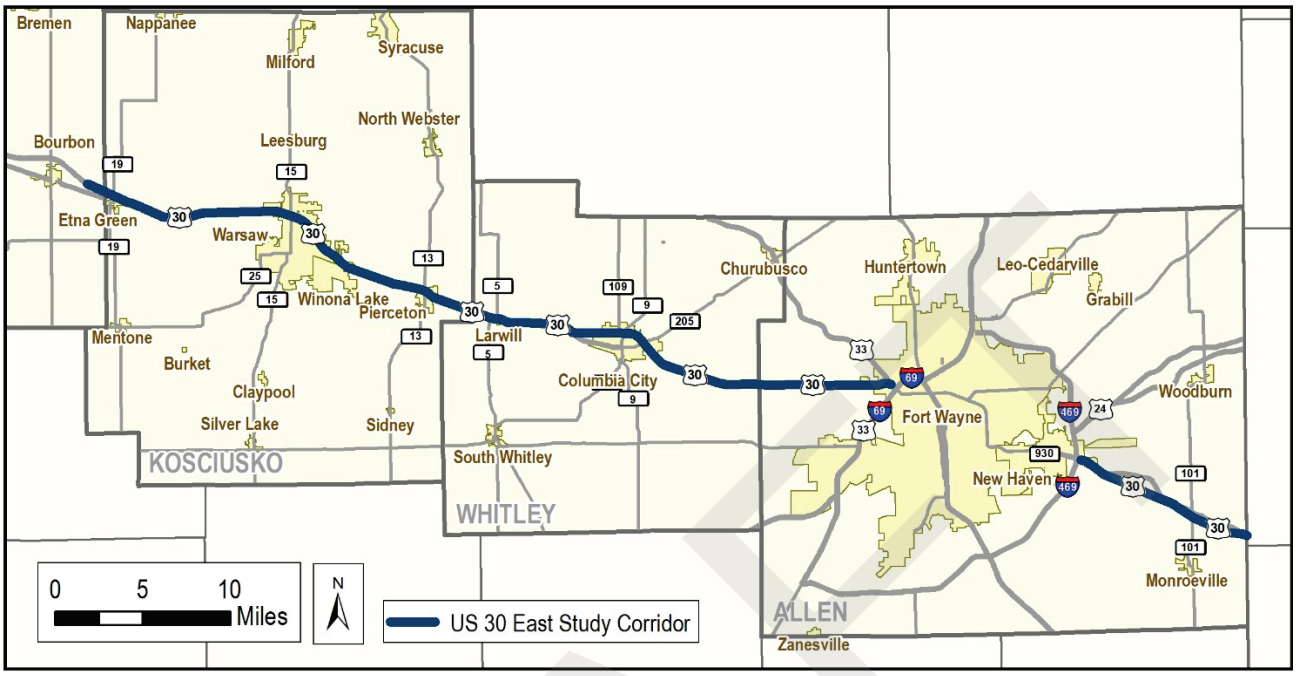
The following information is provided in this report:

- A summary of the study area purpose and need statement along with study goals.
- A summary of the Level 1 screening and the concepts advanced.
- A summary of the Level 2 screening and the alternatives advanced.
- The methodology developed and applied in the Level 3 screening process.
- Details of how alternatives were identified, developed, and evaluated during the Level 3 screening.
- An overview of the next steps in this PEL study.

1.2. STUDY LIMITS & STUDY INTERSECTIONS

The ProPEL US 30 East study area includes US 30 from Beech Road in Marshall County to State Line Road at the Indiana/Ohio border in Allen County (see **Figure 1.2-1)** The study area is approximately 60 miles from Beech Road to State Line Road. The study area does not include the portion of US 30 that follows I-69/I-469 in the Fort Wayne area. Within the study area, US 30 is a four-lane Principal Arterial with two lanes in each direction separated by a grassed median that varies in width from approximately 30 to 50 feet. There are 87 roadway intersections with US 30 within the study area. Of those intersections with US 30, 21 are signalized and two are interchanges. The maximum posted speed limit is 60 miles per hour (mph), with posted speeds dropping to 45 mph through the more urban areas of Warsaw and Columbia City.

Figure 1.2-1 – ProPEL US 30 East Study Area



The study area contains 87 intersections which were designated as "primary" or "secondary" intersections based on the functional classification of the crossroad[1]. The primary and secondary intersections are listed in **Table 1.2-1**. Primary and secondary intersections are generally described as follows:

- Primary Intersections: Intersections where a crossroad with US 30 is classified as either a Minor Arterial, Major Collector, or Principal Arterial, or if the existing intersection is signalized. The primary intersections largely control the operations of US 30 within the study area. Improvements at these intersections were developed and evaluated as part of the Level 2 screening. There are 31 primary intersections within the study area.
- Secondary Intersections: Intersections where the crossroad has a classification of Minor Collector or Local Road, which are the lowest classifications of roadways[2]. These intersections are typically two-way stop controlled and have crossroads that carry low volumes of traffic. These intersections have minor influence on the operations of US 30 within the study area. Improvements at secondary intersections were identified and evaluated in the Level 3 screening process using criteria such as compatibility with potential improvements at adjacent primary intersections, current INDOT access management guidelines, facility type, and public input. There are 56 secondary intersections within the study area.

This Level 3 screening considers a range of alternatives at the primary intersections, the secondary intersections, as well as access control assumptions for the sections between them.

[1] Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

[2] https://www.fhwa.dot.gov/planning/processes/statewide/related/hwy-functional-classification-2023.pdf

Table 1.2-1 – US 30 East Primary and Secondary Intersections

Planning Segment	Intersection	No-Build
1 Etna Green 3.0 Miles	Beech Rd	TWSC
	Apple Rd	TWSC
	SR 19	Signal
	CR 950W	TWSC
2 Hoffman Lake 4.3 Miles	CR 300N	OWSC
	CR 875W	TWSC
	CR 800W	TWSC
	Grandview Dr	TWSC
	CR 700W	TWSC
	CR 650W	TWSC
3 Warsaw West 5.2 Miles	CR 500W	TWSC
	CR 350W	TWSC
	Fox Farm Rd	TWSC
	CR 200W	TWSC
	CR 150W	Signal
	SR 15 N. Jct	Signal
	SR 15 S. Jct	Signal
4 Warsaw 4.4 Miles	CR 200N / Anchorage Dr	Signal
	Meijer Dr	Signal
	Springhill Rd	Signal
	Parker St	Signal
	Center St	Signal
	Old US 30	Signal
	Commerce Dr West	TWSC
	Commerce Dr / Orthopedic Dr	Signal
	Circle Dr	TWSC
	CR 250E	Signal
5 Pierceton 5.2 Miles	CR 325E	TWSC
	CR 450E	OWSC
	Van Ness Rd W	TWSC
	Van Ness Rd E	TWSC
	CR 200S	TWSC
	Tulip St	OWSC
	SR 13	Signal
	Matchette Industrial Park Rd	OWSC
	CR 250S	TWSC
6 Larwill 5.0 Miles	Regency Pointe Estates	OWSC
	CR 900E	TWSC
	Binkley Rd	TWSC
	Depot St. (EB)	RIRO
	Depot St. (WB)	RIRO
	SR 5	Signal
	McLallen St	OWSC
	CR 100N	OWSC
	CR 650W	TWSC

Planning Segment	Intersection	No-Build
7 Whitley West 4.1 Miles	CR 550W	TWSC
	CR 450W	OWSC
	CR 400W	TWSC
	Wilson Lake Rd	OWSC
	CR 300W	OWSC
	Business 30	OWSC
	Wolf Rd	TWSC
8 Columbia City 4.1 Miles	Lincolnway	Signal
	Armstrong Dr	Signal
	SR 109	Signal
	SR 9	Signal
	SR 205	Signal
9 Whitley East 5.1 Miles	CR 100S	TWSC
	CR 300E / Business 30	Signal
	CR 400E	TWSC
	CR 500E	RCI
	CR 600E	Signal
10 Steel Dynamics 4.8 Miles	CR 700E	TWSC
	*CR 800E**	*Signal*
	*Butt Rd**	*TWSC*
	*Solon Rd**	*TWSC*
	*Leesburg / Felger Rd**	*TWSC*
11 Allen West 4.2 Miles	*Stalhut Rd**	*TWSC*
	*O'Day Rd**	*TWSC*
	*Flaugh Rd**	*Signal*
	*Kroemer Rd**	*Signal*
	*US 33**	*Interchange*
12 New Haven 5.2 Miles	Doyle Rd	Signal
	Franke Rd	OWSC
	Ryan Rd	TWSC
	Lincoln Hwy W	OWSC
	Girard Rd	TWSC
	Webster Rd	TWSC
	Snyder Rd	TWSC
13 Allen East 5.4 Miles	Ternet Rd	TWSC
	Sampson Rd	TWSC
	Martin Rd	TWSC
	SR 101	RCI
	Lortie Rd	TWSC
	Morgan Rd	TWSC
	Simmer Rd	TWSC
	Lincoln Hwy E	OWSC
	State Line Rd	TWSC

** Being addressed as part of a separate INDOT Study*

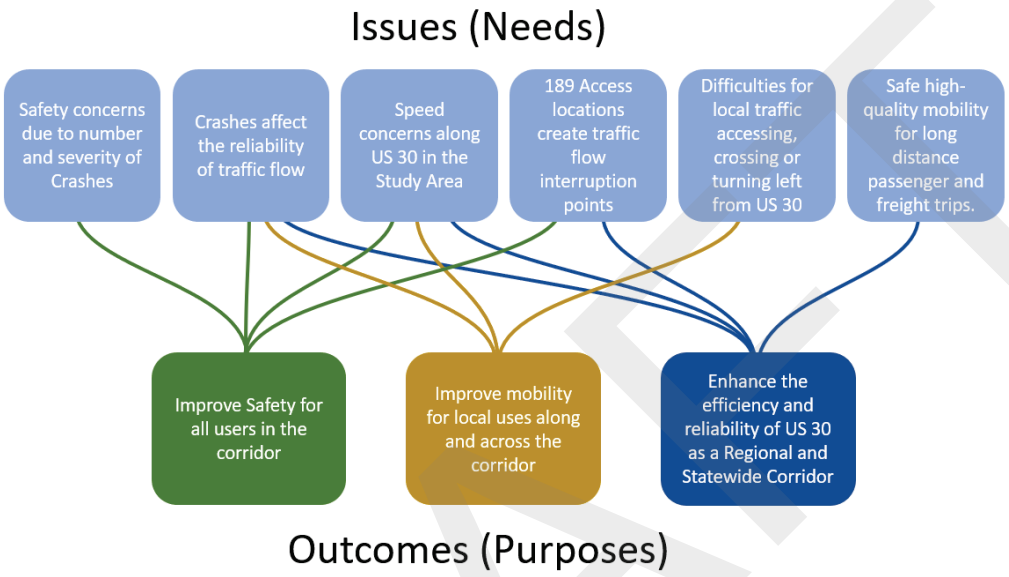
Primary Intersection

TWSC – Two Way Stop Control
OWSC – One Way Stop Control
RCI – Reduced Conflict Intersection
RIRO – Right-In/Right-Out

1.3. SUMMARY OF PURPOSE AND NEED & GOALS

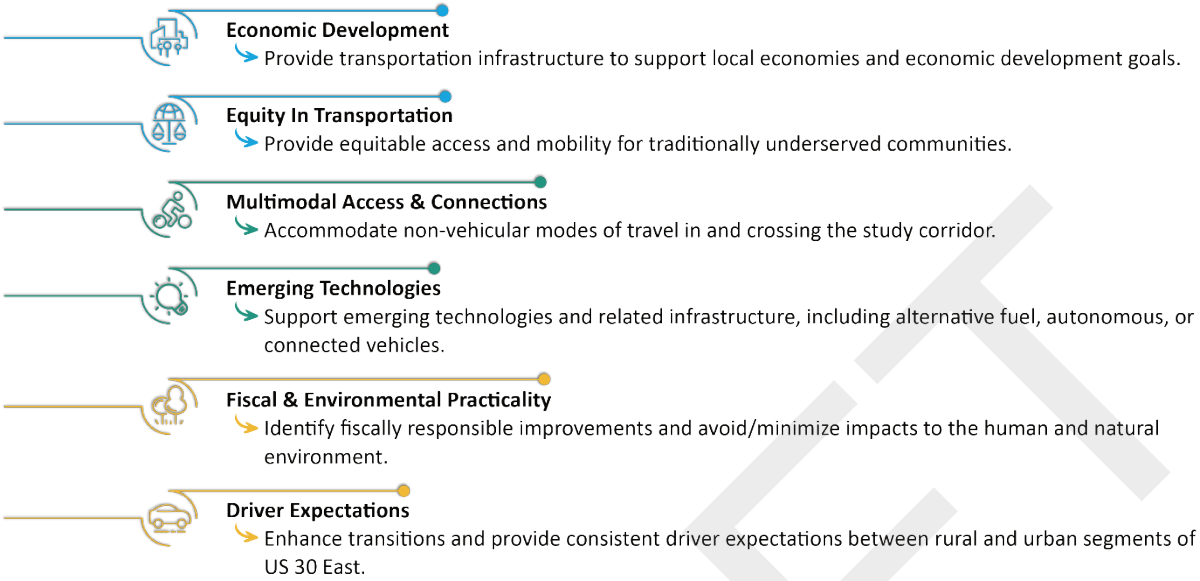
The *ProPEL US 30 East Purpose and Need Report* (https://propelus30.com/us-30-east/) identified six issues (needs) that led to the identification of three desired outcomes (purposes). Figure 1.3-1 summarizes the issues and how they relate to three identified desired outcomes.

Figure 1.3-1 – US 30 East Study Area Purposes and Needs



Six study specific goals were identified during the development of the purpose and need. Goals are other desirable, but not required, outcomes that help to guide the development and screening of alternatives alongside other factors such as transportation performance, benefits, impacts and cost.

Figure 1.3-2 – US 30 East Study Goals



1.4. SUMMARY OF LEVEL 1 & LEVEL 2 SCREENING

1.4.1. UNIVERSE OF ALTERNATIVES (LEVEL 1) SCREENING

The Level 1 screening process considered a set of 55 high-level transportation improvement concepts, including the No-Build Alternative, for the ProPEL US 30 East study area. Each concept was qualitatively evaluated against the purpose and need for the study area and for practicality within the study corridor. Public and stakeholder input was considered as part of the Level 1 screening.

The Level 1 screening resulted in the following:

- Six Primary Concepts that met a majority of transportation needs and were carried forward to the Level 2 screening for evaluation as stand-alone alternatives.
- Eleven Complementary Concepts that met some transportation needs but could not function as a stand-alone alternative. These concepts were carried forward to the Level 2 screening for location-specific application as part of a Primary Concept.
- Twenty Design Elements that did not meet any transportation needs but were considered practical, as they provided some benefit to the study area. These concepts were carried forward to the Level 2 screening for incorporation, where applicable.
- The No-Build Alternative did not meet any transportation needs but was advanced to the Level 2 screening to serve as a baseline for comparison to build alternatives.

The *Draft Universe of Alternatives (Level 1) Screening Report* was published for public review and comment on November 13, 2023, and the public comment period extended through December 22, 2023. Additionally, the report was distributed to federal, state, and local resource agencies as well as the tribal nations for review and comment.

For further information on the Level 1 screening, including details on methodology, screening results, as well as comments and responses received during the public comment period, please see the *Final Universe of Alternatives (Level 1) Screening Report*, which is available on the study website (https://propelus30.com/30doclibrary/).

1.4.2. LEVEL 2 SCREENING

The purpose of the Level 2 screening was to qualitatively evaluate location-specific improvements carried forward from the Universe of Alternatives (Level 1) screening for reasonability and potential impacts. In Level 2, the 17 potential solutions that were identified as Primary and Complementary Concepts were qualitatively evaluated at the primary intersections in the study area. These intersections largely control roadway operations in the study area. Therefore, the intersection alternatives considered at them influence what can be constructed upstream or downstream and set the foundation for improvements between them. Thus, the Level 2 screening identified the building blocks for the Level 3 screening.

The Level 2 screening resulted in the following:

- Eleven intersection improvement alternatives were carried forward to the Level 3 screening for further study: Roundabouts, Reduced Conflict Intersections (RCIs), RCI Variants, Traffic Signal Improvements, Green-T Intersections, Partial Median U-Turns, Restricted Crossing U-Turn Intersections, Boulevard Left Intersections, Convert to Interchange, Access Management (i.e., convert to a right-in/right-out intersection, intersection closure, and directional median openings), as well as Adding or Lengthening Turn Lanes.
- A freeway concept was also carried forward as a Primary Concept. A freeway is one example of a free-flow facility, which is a road that has no traffic signals, stop signs, or yield signs. There are varying types of free-flow facilities, ranging from freeways – which have full control of access – to free-flow facilities that have no or partial control of access (e.g., unsignalized arterial, expressway). The Level 2 screening report indicated the potential options for facility types in the US 30 East study area would be evaluated in the Level 3 screening.
    - Note: A freeway may be designated an interstate if certain conditions are met; however, not all freeways are interstates. INDOT is not including or considering applying interstate design standards along the US 30 East study corridor.
- Five complementary concepts were carried forward to the Level 3 screening for location-specific application: Overpass/Underpass, Adjacent Intersection Improvements, Realign Skewed Intersections, Add/Extend Acceleration/Deceleration Lanes, and Warning Systems.
- The No-Build Alternative was advanced to the Level 3 screening to serve as a baseline for comparison to build alternatives.

The *Draft Level 2 Screening Report* was published for public review and comment on March 27, 2024, and the public comment period extended through April 30, 2024. Additionally, the report was distributed to federal, state, and local resource agencies as well as tribal nations for review and comment.

For further information on the Level 2 screening, including details on methodology, screening results as well as comments and responses received during the public comment period, please see the *Final Level 2 Screening Report*, which is available on the study website (https://propelus30.com/30doclibrary/).

1.5. COMPLEMENTARY CONCEPTS

The Complementary Concepts evaluated in the Level 3 screening are listed in **Table 1.5-1**Table 1.6-1, along with an explanation how each was considered in this study and/or should be considered going forward.

Table 1.5-1 – Consideration of Complementary Concepts in Level 3

Complementary Concept	Explanation
Adjacent Intersection Improvements	Adjacent intersection improvements were considered where US 30 intersection or interchange alternatives were in conflict with the design and operation of existing nearby adjacent intersections. One such location is at Parker Street and the adjacent intersection of Parker Street and Dubois Drive.
Signal Timing Updates/Coordination	Signal Timing Updates/Coordination was too detailed for this level of planning study but should be considered as part of subsequent project design phases.
Auxiliary lanes	Traffic volumes did not indicate a need for additional capacity, therefore auxiliary lanes were not developed as part of any Level 3 alternatives.
Realign Skewed Intersections	Realignment of roadways at intersections where substantial skew is present was considered in the development of Level 3 intersection alternatives. However, this alternative was generally found to be impractical as a standalone solution due to potential impacts that would be caused by a realignment.
Add or Lengthen Acceleration/ Deceleration Lanes	Adding or lengthening acceleration or deceleration lanes was considered at the exit and entrance ramp merges and diverges for interchange alternatives and at various primary intersections.
Crossroad Overpass/Underpass	Crossroad overpass/underpass alternatives were considered and included in Level 3 expressway and freeway packages of improvements.
Traveler Information System	Traveler Information System was considered too detailed for this level of planning study and was not specifically identified or evaluated in Level 3.
Warning Systems	Although not specifically identified in Level 3, Warning systems were generally included as part of improvement costs at TWSC intersections with elevated crash indices.
Freight Priority System	Freight Priority System was considered too detailed for this level of planning study and was not specifically identified or evaluated in Level 3.
Roadside Assistance services	Roadside assistance service was considered too detailed for Level 3 screening. These services typically fall under the realm of operational policies and management strategies rather than early-stage planning and environmental assessment.
Incident Management	Incident Management was considered too detailed for Level 3 screening. This typically falls under the realm of operational policies and management strategies rather than early-stage planning and environmental assessment.

1.6. DESIGN ELEMENTS

The design elements evaluated in the Level 3 screening are listed in **Table 1.6-1**, along with an explanation of how each design element was considered in this study and/or should be considered going forward.

Table 1.6-1 – Consideration of Design Elements

Design Element	Explanation
Roadway Shoulder Improvements	Roadway shoulders improvements were considered in Level 3 through the application of current design standards when laying out alternatives.
Continuous Roadway Lighting	Continuous lighting would be considered as part of future US 30 East facility wide improvements based on design guidance for the facility type.
Median Safety Improvements	Median safety improvements were included in cost estimating efforts for the Level 3 screening but not specifically designed within improvement packages. More detailed safety improvements will be considered in conjunction with future project development plans.
Parallel Route Improvements	No parallel route improvements were identified in Level 3 that would reasonably impact safety or mobility along US 30 East.
Intersection Sight Distance Improvements	All alternatives in Level 3 involving a modification of an intersection considered adequate sight distance through the adherence to current design standards.
Traffic Control Visibility Upgrades	No specific deficiencies were noted during Level 3 alternatives development, but upgrading visibility was included in cost estimating efforts.
Add Capacity to Movements	While some movements were identified that would benefit from added capacity, these were addressed through Primary and Secondary Alternatives.
Collector-Distributor System	Collector-Distributor Roads were considered in support of US 30 East facility alternatives in Level 3.
Ramp Terminal Intersection Improvements	Ramp terminal improvements included as part of interchange alternatives in Level 3.
Pavement Marking Improvements	Pavement marking improvements, including improved reflectivity, will be addressed in the preliminary design phase of any project that follows this PEL study.
Geometric Improvements	The need for geometric improvements other than realignment of skewed intersections was not identified within the study area.
Roadway Signage Improvements	Roadway signage improvements will be addressed in the preliminary design phase of any project that follows this PEL study.
Accommodate Wildlife Crossing	A review of the crash data in the study area did not identify any high frequency crash locations involving wildlife at this time; however, wildlife patterns are influenced by development and could change in the future. The need for wildlife crossings should be evaluated in any subsequent NEPA studies that follow this PEL study.
Spot Roadway Lighting	No specific locations were identified in Level 3 to include spot roadway lighting, but cost estimating efforts include contingency amounts to cover lighting should a subsequent NEPA study indicate it would be beneficial to a project.
Roadway Drainage Improvements	The existing conditions analysis did not identify any areas where drainage specific improvement alternatives are needed in the study areas. All Level 3 alternatives include consideration of maintaining or improving existing roadway drainage.

Design Element	Explanation
Gateway/ Corridor Treatments	Gateway and corridor treatments are aesthetic improvements that can also provide visual cues to drivers to reduce speeds when entering a transitional area. As a standalone solution these would not address the study area purpose and need; however, they are considered in direct response to public input. Locations for such improvements were considered in the Level 3 screening process; however, details of the specific treatments would be addressed in the preliminary design phase of any future projects in the study area.
Speed Management	Managing speed was considered within Level 3 for those segments that have posted speed limits lower than 55 mph.
Alternative Fuel/Electric Vehicle Considerations	Improvements that include additional messaging to direct users to alternative fuel / charging stations will have no substantive impact on the outcome of this PEL study. This should be addressed in the preliminary design phase of any project that follows this PEL study and be consistent with the Indiana Electric Vehicle Deployment Plan at that time.
Non-Motorized User Accommodations	Non-Motorized user accommodations were considered during the Level 3 screening process but have not been specifically included within the design of each alternative. Input received as part of this study will help inform where and what specific treatments would be further considered in subsequent studies and preliminary design phase of any future projects in the study area.
Bike/Pedestrian Facilities	The need for bicycle and pedestrian facilities within the study area have not been identified in this study. Reference documents, such as the upcoming Kosciusko County Trails Master Plan, identify future locations for bicycle and pedestrian facilities. The alternatives evaluated in the Level 3 screening do not include such facilities but the ability of the improvement to accommodate these facilities is discussed in this report.

2. LEVEL 3 EVALUATION METHODOLOGY

2.1. STEP 1: DEFINING PLANNING SEGMENTS

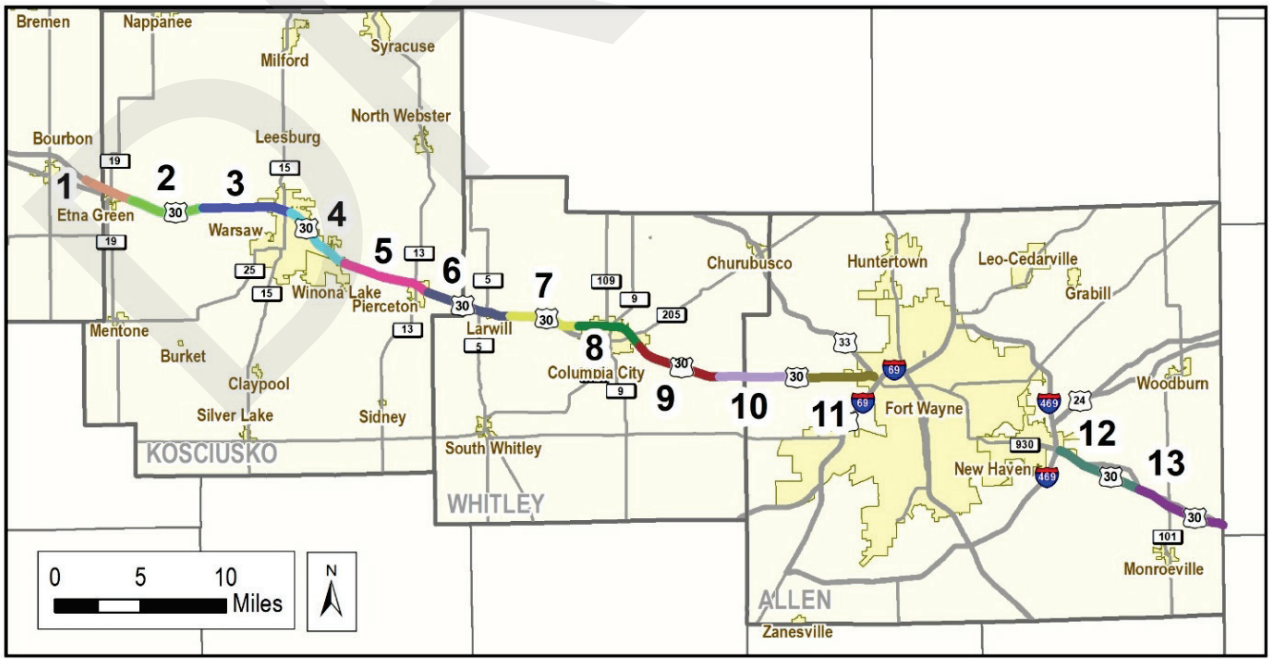
While the Level 2 screening focused on primary intersections, the Level 3 evaluation expands and looks at sections of the study corridor. The study corridor was divided into sections called planning segments. Planning segments are sections of the study area that function as a "system" to provide access and mobility within a geographic area. Intersections and roadway segments within these sections were evaluated with respect to Purpose and Need and impacts as a unit within the planning segment. Planning segments provide a broader context for evaluating and recommending improvements in the Level 3 screening. This approach also helps to avoid potential negative impacts from focusing only on a single intersection without analyzing the upstream and downstream effects.

Planning segments for the ProPEL US 30 East study area were identified using the following criteria:

- Which intersections function together to provide access to adjacent land?
- Which intersections would influence adjacent intersections if improved?
- Which intersections should be reviewed together to ensure continuity along US 30?
- Where do traffic volumes substantially change along US 30?
- Where does the land use context change along US 30?
- Where do natural and man-made barriers exist?

Planning segments were numbered consecutively and named based on their geographic area. The 13 planning segments for the US 30 East study corridor are shown in **Figure 2.1-1**. It is important to note that planning segments are not intended to be segments of independent utility with logical termini as required by the National Environmental Policy Act (NEPA) process. **Table 1.2-1** in **Section 1.2** above provides a listing of the segment names, lengths and what primary and secondary intersections are included in each.

Figure 2.1-1 – US 30 East Planning Segments



2.2. STEP 2: ALTERNATIVES PRE-SCREENING

Providing the building blocks for the Level 3 screening, the Level 2 screening was a high-level initial screening at each location that did not consider combinations of different intersection improvements together within a planning segment. As the Level 3 analysis progressed, the appropriateness of several alternative concepts from Level 2 changed upon further consideration as part of a package of improvements. In some cases, a variation of an access management concept not previously identified in Level 2 was introduced and applied during the Level 3 evaluation. The following bullet points provide the general considerations for the application of certain alternatives during the Level 3 screening; more detailed discussions of Level 2 alternatives not appearing in Level 3 improvement packages can be found in each planning segment discussion.

Primary Concepts

- Directional Intersections: Prior to Level 3, the Primary Concept of Access Management was revisited to incorporate additional contextual considerations. This resulted in the consideration of directional intersections as a low cost, low impact option at locations to address safety and provide a higher level of access than a grade separation or right-in/right-out only solution would provide. Generally, if access management was identified as a viable alternative in Level 2, the Level 3 analysis considered either right-in/right-out or directional intersections depending on contextual access needs of the area. Note that in the Level 2 report, a Directional Medians schematic and description was provided; that concept also represents the movements accommodated by a Directional Intersection.
- Reduced Conflict Intersections (RCI): Traffic volumes were evaluated in more detail in Level 3 and RCIs were eliminated where they did not perform acceptably assuming design year traffic.
- RCI Variant: At locations where RCIs without mainline left turns were considered, none were identified with a higher-than-average rate of left-turn crashes. RCI variants to eliminate mainline left turns were eliminated from further consideration.
- Rural Traffic Signal Improvements: Isolated rural signalized intersections have a high rate and severity of crashes and were identified for removal rather than providing marginal signalized improvements.
- Signalized Green T intersections: Spacing requirements of acceleration and deceleration lanes for Green-T intersections make these concepts less feasible in some locations when considered as part of a planning segment, particularly in urban areas with closely spaced intersections.
- Partial Median U-Turn: Driver expectancy, geometric constraints, and corridor consistency considerations resulted in no locations where a Partial Median U-Turn would be beneficial over a full Median U-Turn (Boulevard Left) improvement.
- Boulevard Left: Spacing considerations for boulevard left intersections were applied in Level 3 that resulted in locations with more than 1 mile of separation between Boulevard Left alternatives being removed from consideration. For the purposes of this study, this alternative was not considered at an isolated intersection, but in a series of similar improvements to reinforce the movement restrictions.
- Add or Lengthen Turn Lanes: Lengthened turn lanes are represented in developed primary alternatives where appropriate. Turn lanes currently exist at all intersections where warranted by the Indiana Design Manual, and added turn lanes were not identified as necessary based on a capacity analysis of future traffic volumes.

Complementary Concepts

- Adjacent Intersection Improvements: Alternative designs at locations with nearby local intersections that were impacted were further refined in Level 3 to avoid impacts to adjacent intersections where possible.
- Realign Skewed Intersections: Modifying approaches at intersecting roadways with skewed approaches was considered as part of conceptual designs, where appropriate.
- Add/Extend Acceleration and Deceleration Lanes: Where turning volumes meet Indiana Design Manual requirements, acceleration and deceleration lanes were considered in alternatives.
- Warning Systems: All non-free flow alternatives should include warning systems for motorists to alert of an upcoming stopped condition. All free flow alternatives that retain left turns from the intersecting roadway at the main intersection should consider including a warning system for motorists to alert of potentially conflicting left-turn and crossing movements ahead. Warning systems were not specifically applied as part of conceptual design but were factored into improvement cost estimates.

2.3. STEP 3: DEFINE IMPROVEMENT PACKAGES

For each planning segment, a comprehensive set of intersection improvements were combined as improvement packages. Multiple improvement packages were developed for each planning segment. The following criteria were considered when forming the improvement packages:

- **Influence on adjacent intersections:** The influence of a potential intersection improvement on the adjacent intersections was considered. For example, if an interchange alternative was considered at a primary intersection, consolidation of access to/from US 30 through closure of adjacent secondary intersections was recommended along with it.
- **Interchange spacing guidelines:** A minimum interchange spacing of 3 miles between adjacent interchanges in rural areas and 1 mile in urban areas was utilized for this study.
- **Access management principles:** Driveway improvements and recommendations on the spacing of median openings were considered.
- **Improvements at Secondary Intersections:** There are numerous secondary intersections within the study limits where no detailed evaluation was performed in the Level 2 screening. Access management principles were considered in the Level 3 screening to align the improvements at intersections along the corridor with the appropriate access management strategies. The improvements to secondary intersections typically consist of restricting turning movements or closure of the intersection. Certain secondary intersections were considered for other intersection improvements when the location called for an access point or crossing location.

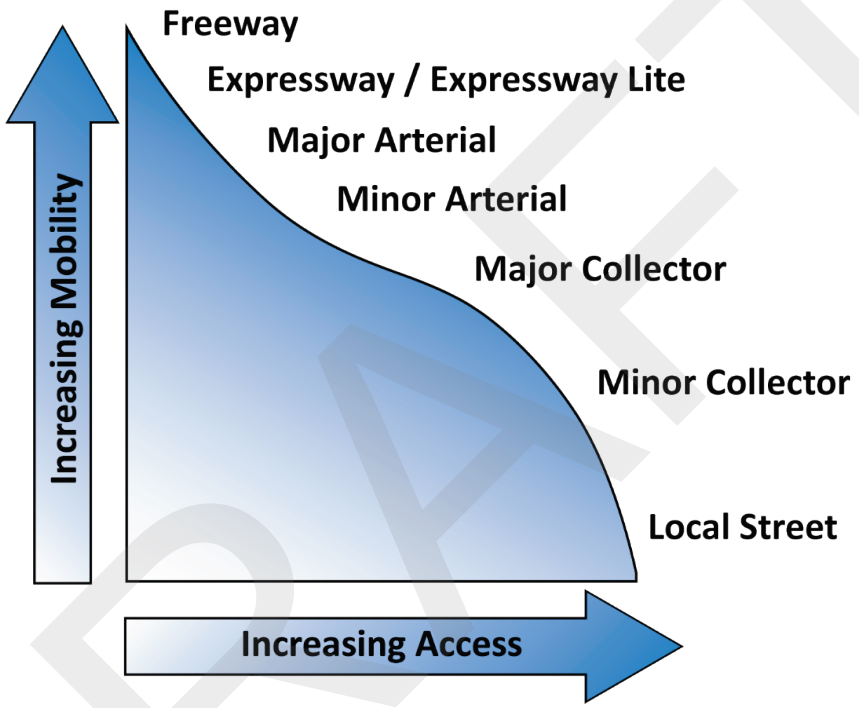
Public input was considered when developing improvement packages for each planning segment. County Transportation Plans were also used to inform the intersection alternatives in some of the improvement packages, especially regarding overpasses or interchanges in the packages with more access control.

A major consideration in the creation of improvement packages was the level of access management. According to FHWA, access management provides an important means of maintaining mobility. It calls for effective ingress and egress to a facility, efficient spacing and design to preserve the functional integrity, and overall operational viability

of street and road systems. **Figure 2.3-1**, which has been adapted for use in this study, was created by FHWA to conceptually illustrate the balance of mobility and access for different facility types.

A range of access control was also considered for the Level 3 improvement packages. INDOT classifies US 30 as a Major Arterial and designates it as a Tier 1 Mobility Corridor. Based on this classification and designation, the US 30 East study corridor should have a lower level of access to adjacent lands and should provide a high degree of mobility along the corridor, as indicated by **Figure 2.3-1.**

Figure 2.3-1 – Mobility and Access Based on Functional Classification[3]



Source: *https://www.in.gov/indot/files/guide_total.pdf*

Currently, per INDOT's access management guidelines, the level of access provided along US 30 within the study area is considered high due to the 87 intersections and 112 driveways and field entrances within the US 30 East study area. Mobility along US 30 also considered to be high as mobility is interrupted only by the 21 signalized intersections within the study area. Mobility to/from and across US 30 benefits from these signalized intersections.

This Level 3 screening process identified a range of facility types that can be applied to the US 30 East study corridor, as depicted in **Table 2.3-1**. These facility types, and their associated characteristics, are based on guidance found in the *INDOT Access Management Guide*[4] and the *INDOT Driveway Permit Manual*[5]. The table is arranged left to right from least access control (existing conditions) to most (full) access control.

[3] https://ops.fhwa.dot.gov/access_mgmt/what_is_accsmgmt.htm
[4] https://www.in.gov/indot/files/guide_total.pdf
[5] https://www.in.gov/indot/files/Driveway-Permit-Manual.pdf

Table 2.3-1 – Facility Types & Access Management Guiding Principles

Characteristics	Higher Access to/from US 30 Lower Mobility Along US 30 Lower Cost ⟷ Lower Access to/from US 30 Higher Mobility Along US 30 Higher Cost					
	Arterial *No Build*	Arterial	Arterial	Expressway Lite	Expressway	Freeway
	Non-Free & Free Flow	Non-Free Flow	Free Flow			
Access Control	Minimal	Partial				Full
Signalized Intersections	Yes		No			
Unsignalized Intersections	Yes					No
Residential Driveways	Full Access	RIRO only			None	
Commercial Driveways	Full Access		RIRO Only		None	
Median Openings*	Allowed			Limited	Not Allowed	

Note: RIRO = Right-in/Right-out intersection

*Refers to public median openings between intersections. For all improvement packages, including those with higher access control, median openings for emergency vehicles may be provided.

Each intersection alternative advancing from the Level 2 screening is associated with one or more of the facility types listed in **Table 2.3-1**. These alternatives were then paired in various combinations, along with secondary intersections and roadway sections, to create improvement packages for each planning segment that represent each of the potential facility types. Improvements at secondary intersections and roadway sections were selected based on the guiding principles for access management provided in **Table 2.3-1**, as well as consideration of the improvements at the adjacent primary intersection(s). Due to the high number of combinations possible (i.e., several thousand improvement packages), it is not feasible to evaluate every permutation as part of this study. Professional judgement was used to create representative improvement packages for each planning segment of the study area that constitute a reasonable range of alternatives, including different facility types.

One of the facility types shown in **Table 2.3-1** is an expressway lite, which includes the following elements:

- No traffic signals
- Partial control of access
- Limited median openings for U-turn movements between intersections
- Right-in/right-out only access for residential and commercial driveways

The expressway lite facility type was developed in direct response to the public comments received throughout the study. Residents and other local stakeholders requested improved mobility through reduction or elimination of traffic signals without sacrificing accessibility to/from US 30. After considering these comments, the expressway lite facility type was developed to combine the driveway access aspects of Arterial without Signals (free flow) with the increased access management of expressway (free flow). Expressway lite, however, would have properly designed median U-turn opening(s) at select locations to reduce how far drivers must travel when turning movements are limited to right-in/right-out and/or directional medians. The inclusion of the median U-turn openings would be limited and evaluated on a case-by-case basis in each planning segment based on access and safety considerations. This evaluation would occur during the project development process.

2.4. STEP 4: EVALUATE PURPOSE AND NEED MEASURES

Safety, local mobility, and regional mobility were three identified transportation needs for the US 30 East study area. Each improvement package was evaluated based on following measures associated with these needs.

2.4.1. SAFETY ANALYSIS

The safety performance of each improvement package was determined through a multi-step process that started with identification of conflict points. Conflict points represent locations where vehicle paths intersect at driveways, intersections, and interchanges. Reductions in conflict points are associated with improvements in safety, as fewer conflict points result in fewer locations where crashes can occur. Conflict points are generally grouped into three categories:

- Merging: One vehicle path merges with another. Example: Right turn movement from a side street merges with traffic on the major road.
- Diverging: Two vehicle paths separate from each other. Example: Right turn movement and through movements from US 30 diverge at an intersection.
- Crossing: Paths of opposite or opposing vehicle paths cross. Example: Left turn movement crosses the opposing through movement at a four-legged intersection.

Crossing conflict points pose the highest risk for severe right-angle crashes, while merging and diverging conflict points commonly result in non-severe crashes. The likelihood of crashes at an intersection can be decreased as conflict points are eliminated. Reducing conflict points improves safety. Therefore, the focus of the Level 3 crash analysis was to understand to what extent different improvement packages would reduce or eliminate crossing conflict points.

The total number of crossing conflict points at the primary and secondary intersections was summed for each improvement package. This allowed the number of crossing conflicts points in each improvement package to be compared to that of the No-Build scenario. The percent reduction in total crossing conflict points compared to the No Build scenario was then applied to the number of crashes that previously occurred over a five-year period at the existing crossing conflict points in each planning segment. This provided an estimate of the potential reduction of right-angle crashes due to the implementation of each Improvement Package over a period of twenty years. It should be noted that even if all mainline crossing conflict points are eliminated with a certain Improvement Package (e.g. a freeway package), there could still be severe crashes from other crash types.

The change in total crossing conflict points was then associated with historic data for crashes that are known to occur at the existing crossing conflict points in each planning segment. This resulted in a method to estimate the potential reduction in crossing crashes estimated to result from each improvement package.

A Cost-Effectiveness Index (CEI) was then used to compare the safety performance of each improvement package. The CEI, which here represents the average cost to reduce one crossing crash, is calculated by dividing the total estimated cost of the improvement package, using the average of the high and low estimate, by the number of potential crossing crashes reduced by the implementation of the improvement package. This index provides a means to compare the safety benefits of each improvement package, with the lowest CEI value representing those improvement packages that are most cost effective from a safety standpoint. A lower CEI value is more cost-effective than a higher CEI value.

2.4.2. MOBILITY

Travel Time Along US 30

Travel time along US 30 was calculated by adding travel time at the posted speed limit and the average AM and PM peak hour delay values associated with eastbound and westbound approaches at primary intersections, as determined from capacity analysis. Delay is incurred on the eastbound or westbound approaches only when the approach must stop or yield to cross street traffic at a traffic signal or roundabout. No delay is incurred on the eastbound or westbound approaches at intersection types that do not require US 30 motorists to stop or yield to cross street traffic, such as Two-Way Stop Controlled (TWSC) intersections, Reduced Conflict Intersections (RCIs), or interchanges. Secondary intersections in the US 30 East study area are excluded from the estimation of travel time along US 30 as these intersections do not require US 30 traffic to stop or yield to cross street traffic. This method allows for comparison of travel times along US 30 for each improvement package.

Access Points and Crossing Points

Public input placed high importance on the ability to access US 30 and the ability to cross US 30. These two aspects were compared for each improvement package to determine how access is impacted. The approximate spacing of driveways, intersections, overpasses and underpasses was used to determine the average number of access points per mile and the average number of crossing points per mile for each improvement package. Values were compared across improvement packages and against the No Build conditions to estimate how much additional travel will result from each improvement package. Access points and crossing points are defined as follows:

- Access point – Cross road providing access to/from US 30 and may or may not include the ability to cross US 30. (i.e., Right-In/Right-Out).
- Crossing Point – Cross road providing the ability to cross US 30 where access to/from US 30 may also be provided (e.g., Reduced Conflict Intersection).

A lower number for distance between crossing points generally indicates better north-south mobility. A higher number generally indicates having to travel longer distances to cross US 30.

North-South Mobility

Changes in crossing points affect north-south travel across US 30, and the reduction or elimination of access or crossing points results in additional travel for users seeking to access or cross US 30 from the north or south. Using the average spacing between crossing points, north-south mobility for each improvement package was qualitatively assessed as follows:

- Similar – Mobility for north-south trips is similar to that of the No Build alternative. Under this ranking, spacing between north-south crossings provide mobility similar to the No Build condition.
- Decreased – Mobility for north-south trips is decreased compared to existing conditions as some of the of intersections either changed to right-in/right-out or closed.
- Greatly Decreased – Mobility for north-south trips is greatly decreased with most or all intersections either changed to right-in/right-out or closed.

Driveway Impacts

The US 30 East study area includes 85 driveways providing access to adjacent developments. The level of access provided at these driveways exceeds current access management guidelines. Each improvement package includes recommended changes to driveway access to better align the level of access control with INDOT's current access management guidelines, which is reflected in the guiding principles for access management established in **Section**

2.3. The number of each type of driveway (e.g., full access, right-in/right-out) is compared for each improvement package to understand the impact of each improvement package on adjacent developments.

2.4.3. SAFETY AND MOBILITY MEASURES OF EFFECTIVENESS

Table 2.4-1 summarizes the safety and mobility measures of effectiveness evaluated for each improvement package within each planning segment.

Table 2.4-1 – Safety and Mobility Measures of Effectiveness

Measure of Effectiveness		Units	Description
Safety	**Total Conflict Points**	#	Reducing the number of conflict points will improve safety by reducing the exposure to crashes. See Section 2.3.1
	Crossing Conflict Points	#	Crashes involving vehicles crossing the mainline tend to be more severe than right turning crashes. A reduction in the number of crossing conflict points will improve safety through decreasing the severity of crashes. See Section 2.3.1
	% Reduction in Crossing Conflict Points	%	Similar to the above, this calculation provides the amount of reduction (and therefore reduction in potential future crashes) for crossing conflict points.
	Estimated Crossing Crashes Prevented (20 years)	#	Historic crash data for the planning segments was used to estimate the number of crossing crashes that may be prevented by each improvement package over the 20-year life of the improvement
	Cost-Effectiveness Index (CEI)	#	CEI provides a means to compare the safety benefits of each improvement package, with the lowest CEI value representing those improvement packages that are most cost-effective from a safety standpoint.
Mobility	**Average Travel Time along US 30**	Min	A combination of the travel time for motorists through the planning segment traveling at the posted speed limit, as well as any delay associated with the primary intersections within the segment during the AM/PM peak hours. See Section 2.3.2
	Average Distance between US 30 Access Points (Along US 30)	Mi	The average distance in miles along US 30 between primary and secondary access points in a given planning segment. This value serves as a general gauge of the level of access provided to US 30 and is one measurement of local mobility.
	Average Distance between US 30 Crossing Points (Along US 30)	Mi	The average distance along US 30 between available north-south crossing points within each planning segment. This value serves as a general gauge of the amount of access provided across US 30 and is one measurement of local mobility.
	North-South Mobility Compared to No Build		Qualitative assessment of changes in delay for north-south travel across US 30 compared to No Build.
	Residential Driveways RIRO vs. Full	#/#	Each package provides a specific treatment for driveways within the planning segment. This value indicates the number of RIRO and Full access driveways in a package.
	Commercial Driveways RIRO vs. Full	#/#	Each package provides a specific treatment for driveways within the planning segment. This value indicates the number of RIRO and Full access driveways in a package
	Field Access RIRO vs. Full	#/#	Each package provides a specific treatment for driveways within the planning segment. This value shows the impacts to the existing field entrances when each improvement package and its access restrictions is implemented.

2.5. STEP 5: REFINE CONCEPTUAL DESIGN & ESTIMATE COSTS

2.5.1. CONCEPTUAL DESIGN PROCESS

The Level 2 screening report provided a high-level estimation of improvement limits (i.e., a footprint) for each primary intersection alternative. These conceptual designs were advanced during the Level 3 screening process to:

- Revise the conceptual design and associated footprint at the primary intersections, as needed, to consider results of the safety and mobility analysis described in Section 2.4, as well as the overall context of each improvement package;
- Detail improvements at secondary intersections;
- Avoid and minimize adverse impacts to the human and natural environment; and
- Minimize project costs.

Efforts were made to avoid and minimize adverse impacts to the human and natural environment to the extent feasible for a planning study. When avoidance was infeasible, minimization measures (i.e., retaining walls) were incorporated, where possible, to avoid impacts to notable environmentally sensitive areas (e.g., historic properties, cemeteries, and environmental justice communities).

Conceptual design construction footprints and estimated right-of-way exhibits are provided in **Appendix A**.

Right-of-way requirements for each of these conceptual designs were estimated from the anticipated construction limits. A conservative approach was used to estimate right-of-way acquisition so that potential impacts were not understated. Parcel boundaries were obtained from each county's assessor's office for the entire study area (Marshall, Kosciusko, Whitley, and Allen counties). Engineering judgement was applied to this information to determine the impacts to each parcel. Several improvement packages do not allow driveway access to/from US 30. In those packages, non-agricultural parcels that currently have driveways to US 30 are assumed to be total acquisitions. Agricultural parcels with driveway access to/from US 30 were assumed to have feasible alternative access to avoid the need for total acquisition. Future studies may evaluate means to provide alternative access to impacted parcels that eliminates the need for total acquisition. Additionally, there are several areas where the cross-street right-of-way is unclear or unknown. When more detailed design is prepared for the specific intersection treatments in future studies, the potential right-of-way impacts may be reduced.

2.5.2. COST ESTIMATING

Planning-level construction and right-of-way acquisition costs were estimated for each of the improvement packages. Quantities for major construction items (e.g., pavement, earthwork, retaining walls, bridges) were estimated using the conceptual designs. Current unit prices were applied to these quantities to estimate construction costs. The costs associated with unquantified items (e.g., drainage, traffic items, ancillary construction activities) were estimated based on INDOT historical bid data and applied as a percentage of the construction sub-total. Soft costs (e.g., preliminary engineering, construction engineering, mobilization/demobilization, etc.) were computed as percentages of the construction sub-totals based on past experience for similar types of projects in Indiana as well as per guidance in the *INDOT Design Manual*. A range of estimated construction costs were developed based on the application of an appropriate contingency for the level of design detail developed as part of a transportation planning study. The contingency was verified through an independent assessment of risk.

Right-of-way acquisition costs were estimated for all non-agricultural use parcels based on assessed values obtained from the property assessor's website of each county. These assessed values were inflated by 20% to better represent

current market values. Agricultural use parcels were valued on a per acre basis using current sales data for each county. Relocation costs and real estate consultant fees were estimated based on a working knowledge of current INDOT right-of-way acquisition processes.

All estimated costs listed in this report are provided in 2024 dollars. Inflation of costs to a year of expenditure was not possible as the timeline for any projects resulting from this PEL study is not yet known. The planning-level cost estimates should be revisited in the future as additional detail is developed and as statewide priorities and funding availability become clearer. Planning-level cost estimates are provided in **Appendix B**.

All cost estimates shown in this report do not include pavement replacement or resurfacing outside of the intersection improvement areas. It can be assumed that replacement of pavement may cost approximately $14,000,000 per mile of existing cross section if needed for any of the improvement packages that move forward from the PEL study. Asset condition at that time is assumed to dictate what is needed between intersections.

2.6. STEP 6: EVALUATE ENVIRONMENTAL RESOURCES

Environmental resources within the study area were identified in the *ProPEL US 30 East Environmental Constraints Report* (https://propelus30.com/30doclibrary/) and supplemented through public and stakeholder engagement and coordination with resource agencies. Environmental resources within the study area include natural resources, cultural resources, and community/socioeconomic impacts, as outlined in **Table 2.6-1**.

During the Level 2 screening, potential alternatives at the primary intersections were modified to avoid or minimize substantial impacts to known environmental resources. These modifications ranged from minor shifts in the alignment to shifting entire intersections north, south, east, or west to avoid known resources.

As part of the Level 3 screening, each package was analyzed against known environmental constraints within each planning segment to determine the potential impacts. Impacts were calculated via a spatial analysis using ArcGIS software. When possible, impacts were quantified by acreage, linear feet, or count. Otherwise, potential impacts were qualitatively assessed utilizing the refined conceptual designs. Alternative footprints and environmental resources are presented in exhibits provided in **Appendix A**. Note, any project that moves forward from this study that would span two or more segments would require additional analysis during the project development process.

The potential impacts presented in this Level 3 screening are preliminary and reflect the planning level of design available at this time. Throughout the screening process, a conservative approach was taken, and it is anticipated that impacts may be further minimized and/or avoided in the future at a more detailed level of design after this PEL study. For example, while a residential or commercial relocation may be counted at the planning level due to potential loss of access, these impacts may be avoided during subsequent project development activities by providing alternative access. Impacts estimated for this screening are direct/permanent impacts; there may be additional construction-related impacts that are involve temporary or short-term changes that are beyond the scope of this planning-level study. Potential issues related to environmental resources are noted below and will be documented in the final *PEL Study Report* at the end of this study. Additional details and evaluation would typically be developed during 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.

Greenhouse gas (GHG) emissions were also considered in the analysis. More specifically, the analysis included an estimation of the relative cumulative change (2022 to 2045) in peak hour GHG emissions as compared to the No Build scenario and rated using the following scale:

- Decrease – More than 5% decrease in GHG emissions
- No Change – Less than 5% increase or decrease in GHG emissions
- Increase – More than 5% increase in GHG emissions.

Table 2.6-1 – Natural Resources, Cultural Resources, and Community/Socioeconomic Impacts Measures of Effectiveness

	Measure of Effectiveness	Units	Description
Natural	**NWI Wetlands Impact**	**Acres**	Acres impacted (US Fish & Wildlife Service's National Wetlands Inventory)
	Rivers & Streams Impact	**Feet**	Linear feet impacted
	Floodplain Impact	**Acres**	Acres impacted (Federal Emergency Management Agency)
	Forested Area Impact	**Acres**	Acres impacted
Cultural	**Historic Properties/Districts**	**Yes/No**	Impacts to identified historic properties or districts will receive a Yes.
	Potential Impacts to Known Archaeological Sites	**Yes/No**	Impacts to identified archaeological sites will receive a Yes.
	Potential Impacts to Other Section 4(f) Resources	**Yes/No**	Impacts to other Section 4(f) resources, such as parks, recreational areas, fairgrounds, will receive a Yes.
	Cemeteries	**#**	Number of cemeteries impacted
Community/Socioeconomic Impacts	**Total New Right-of-Way Acquisition**	**Acres**	Total acres of anticipated right-of-way required for construction, operation, and maintenance. Excludes acreage of additional new right-of-way from relocations that could be considered excess property and potentially be sold off at project completion.
	Residential Relocations	**#**	Number of residential relocations
	Business Relocations	**#**	Number of business relocations
	Farmland Impact	**Acres**	Acres impacted
	Farmland Access Impact	**Yes/No**	Access impacts to farmland from US 30, through a field entrance or through removing connections from local roadways, will receive a Yes.
	Potential Impacts to Communities with EJ Concerns	**Acres**	Acres of new right-of-way in areas that are designated as communities of EJ concern
	Potential Relocations in Communities with EJ Concerns	**#**	Number of relocations within a community of EJ concern.
	Potential Risk of Disproportionate EJ Impacts	**Yes/No**	Potential risk of disproportionate impacts to communities of EJ concern (yes/no)
	Potential Hazardous Materials Sites	**#**	Number of identified sites impacted
	Greenhouse Gas (GHG) Emissions		Cumulative change (2022 to 2045) in Peak Hour GHG emissions as compared to No-Build (Decrease, No Change, Increase)

Public Input

As noted in Section 1.4.2, the *Draft Level 2 Screening Report* was published for public review and comment. Specific comments received have been summarized within each planning segment to further aid in the analysis of the improvement packages.

2.7. STEP 7: GOALS EVALUATION

Each improvement package was also evaluated qualitatively with respect to the goals identified in the Purpose and Need report. In most cases, this process uses measures of effectiveness as a guide for comparatively evaluating improvement packages with respect to study area goals. These measures and related considerations used for the qualitative goals assessment are outlined in **Table 2.7-1**.

Table 2.7-1 – Goals Evaluation Measures

Study Area Goal	How is it Evaluated?	How is it Considered as Part of the Level 3 Screening?
Economic Development	Support the existing economy and/or planned economic development through transportation infrastructure that provides improved safety, mobility, and/or access.	• % Reduction in Crossing Conflict Points • Estimate of Crossing Crashes Prevented (20 yrs) • Avg. Travel Time Along US 30 During AM/PM Peak Hour • Average Distance Between US 30 Access Points • Average Distance Between US 30 Crossing Points • North-South Mobility Compared to No Build
Equity in Transportation	Improve safety, mobility, or access for underserved communities.	• Economic Development Criteria above • Underserved populations and/or Communities with EJ Concerns present? • Potential Risk of Disproportionate Impacts to Communities with EJ Concerns?
Multimodal Access & Connections	Include sidewalk, trails, or other non-motorized methods of travel and transit.	• Multimodal facilities were identified as Design Elements during the Universe of Alternatives (Level 1) screening. Therefore, no specific measures were identified or evaluated during the Level 2 or Level 3 screenings. • Future projects will consider the application of multimodal elements as part of more detailed planning studies and design and utilize input received during this PEL study. • No existing facilities exist within the US 30 East study area. • All alternatives will equally address multimodal access through consideration as design elements. All will be rated as Neutral compared to other alternatives within the Planning Segment.
Emerging Technologies	Has the potential to interact with connected vehicles and/or support alternative fuel initiatives.	• In general, none of the improvement packages would impact the ability to implement autonomous and connected vehicles. • Consistency with INDOT's EV Infrastructure plan was utilized to assess support of alternative fuel initiatives.
Fiscal & Environmental Practicality	Expected to not have substantial environmental impacts and are expected to have good returns on the investments.	• Cost-Effectiveness Index • Impacts to Natural & Cultural Resources • Right-of-way Acquisition, Residential / Business Relocations, and Impacts to Farmland and/or Farmland Access • Change in peak hour GHG Emissions
Driver Expectations	Does improvement package improve driver expectations for US 30 as a four-lane divided highway and/or highlight the transition from rural areas to urban areas?	• Adjustments to traffic control, such as removing traffic signals and other conditions that would stop US 30 traffic. • Adjustments to geometry, such as introducing geometric controls to reinforce driving at the posted speed limit. • Ability of the package to accommodate a gateway treatment or otherwise highlight entering a community.

Using these criteria, qualitative ratings for each study area goal were assigned to each improvement package. The following defines the ratings used for each goal:

- **Greatly Diminishes** – High negative performance in majority of performance measures
- **Diminishes –** Negative performance in multiple measures of effectiveness; May include no change or minor positive performance in some measures.
- **Neutral –** Performance varies; Some positive performance and some negative performance OR factor/condition not present OR further information needed to assess.
- **Enhances –** Positive performance in multiple measures of effectiveness; May include no change or minor negative performance in some measures.
- **Greatly Enhances –** High positive performance in majority of performance measures; No negative performance measures.

The goal of Fiscal and Environmental Practicality was evaluated using the following ratings:

- **Low –** Low-cost effectiveness combined with relatively high impacts to community and environmental resources.
- **Moderate –** Moderate cost-effectiveness combined with relatively moderate impacts to community and environmental resources.
- **High –** High cost-effectiveness combined with relatively low impacts to community and environmental resources.

This methodology was applied to each planning segment within the Level 3 analysis, and a brief summary of the rationale for each rating is included within each planning segment.

2.8. STEP 8: EVALUATE IMPROVEMENT PACKAGES

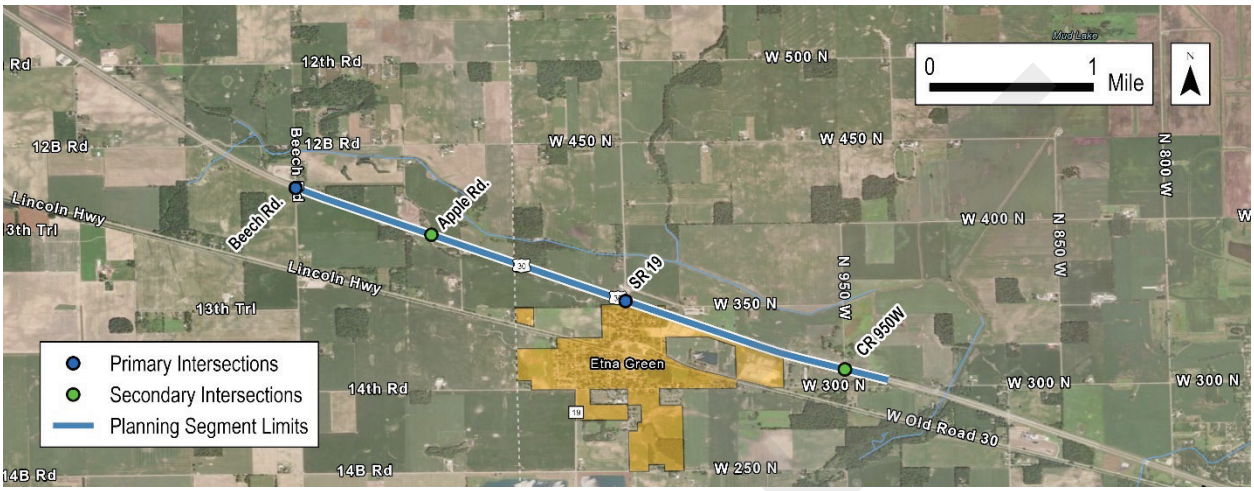
All measures for safety and mobility, impacts to environmental resources, and costs are summarized in a table for each improvement package within each planning segment. This allows for relative comparisons between the improvement packages within a planning segment. Using this information, each improvement package was rated using the following terminology and definitions:

- **Eliminated** = Meets the purpose and need established with this study; however, the improvement package is considered unreasonable due to limited benefits compared to its impacts and/or costs. It likely does not warrant consideration as part of any subsequent NEPA studies in this planning segment.
- **Recommended** = Meets the purpose and need established with this study and is considered reasonable. The improvement package is considered one of the best within the planning segment at addressing the identified needs with limited impacts and without extraordinarily high costs. It likely warrants consideration as part of any subsequent NEPA studies in this planning segment.
- **Carried Forward** = Meets the purpose and need established with this study; however, in comparison to others, the improvement package is considered to have marginal benefits. In some cases, it may also have higher impacts and/or costs. It could be considered in future studies and may require further analysis to determine if it is a reasonable solution to the planning segment's transportation needs.

  While it would not fully meet the identified needs, the No Build alternative would be required to be considered in any subsequent environmental reviews conducted in accordance with the NEPA process and will, therefore, be carried forward in all Planning Segments.

3. LEVEL 3 SCREENING

3.1. PLANNING SEGMENT 1: ETNA GREEN



3.1.1. PLANNING SEGMENT OVERVIEW

The Etna Green planning segment is 3 miles in length, generally centered along the town of Etna Green and SR 19. This section is rural in context, with land use primarily being farmland, with some residential and commercial intermixed in and around Etna Green.

This planning segment contains two primary and two secondary intersections. The two primary intersections are Beech Road and State Road 19, and the two secondary intersections are Apple Road and CR 950 W.

There are no driveways or field entrances located along US 30 between the primary and secondary intersections in this planning segment.

This section of US 30 operates as non-free flow as there is a traffic signal located at SR 19 that periodically stops the flow of traffic along US 30. The remaining intersections are two-way stop controlled.

Notable Features Influencing Development of Packages

The packages within this planning segment were largely influenced by the SR 19 intersection and the access it provides to Etna Green. While the intersection traffic volumes meet the warrants for a traffic signal and one exists today, warranting a traffic signal does not require one to be installed depending on context and other considerations. Based on the safety analysis performed during the *Existing Transportation Conditions Report*, rural signalized intersections often result in more frequent and severe crashes than average. Based on this consideration, an alternative that retained the existing traffic signal was not considered within the packages and was discarded from the Level 3 report.

Based on the safety analysis, crashes are a concern at Beech Road as well. This consideration resulted in no packages recommending retaining the existing two-way stop-controlled intersection control at this location.

Summary of Public Comments for the Planning Segment

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Create interchange at SR 19.
- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Turn US 30 into a freeway from SR 49 to I-69.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- No Reduced Conflict Intersections (RCIs) in Etna Green. They are not conducive for buggy use, especially in areas with higher speeding traffic.

3.1.2. IMPROVEMENT PACKAGES

Four packages of improvements were identified for planning segment 1 and are characterized as follows:

Table 3.1-1 – Packages of Improvements - Planning Segment 1 - Etna Green

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared to.
1	Arterial	Free Flow	Partial	A low-cost package consisting of minor improvements primarily intended to address safety issues identified at Beech Road and SR 19. A non-motorized overpass is also provided at SR 19 to accommodate horse drawn buggies that use this intersection regularly. This option maintains existing access points and provides a free flow condition along US 30.
2	Expressway	Free Flow	Partial	A variation of package 1 that maintains a free flow condition along US 30 but with further reduced intersection conflict points and RIRO access controls at driveways to improve safety and mobility along US 30. This alternative includes a directional intersection at SR 19, as well as the overpass for non-motorized buggies.
3	Expressway	Free Flow	Partial	A variation of package 2 that maintains a free flow condition along US 30 but provides an overpass at SR 19 for all vehicles rather than just non-motorized vehicles.

4	Freeway	Free Flow	Full	A higher cost option that reduces conflict points by either closing or grade separating some intersections and not permitting any driveway access directly to US 30. A diamond type interchange is identified at SR 19 for the purposes of this study, but other types may be considered at this location.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

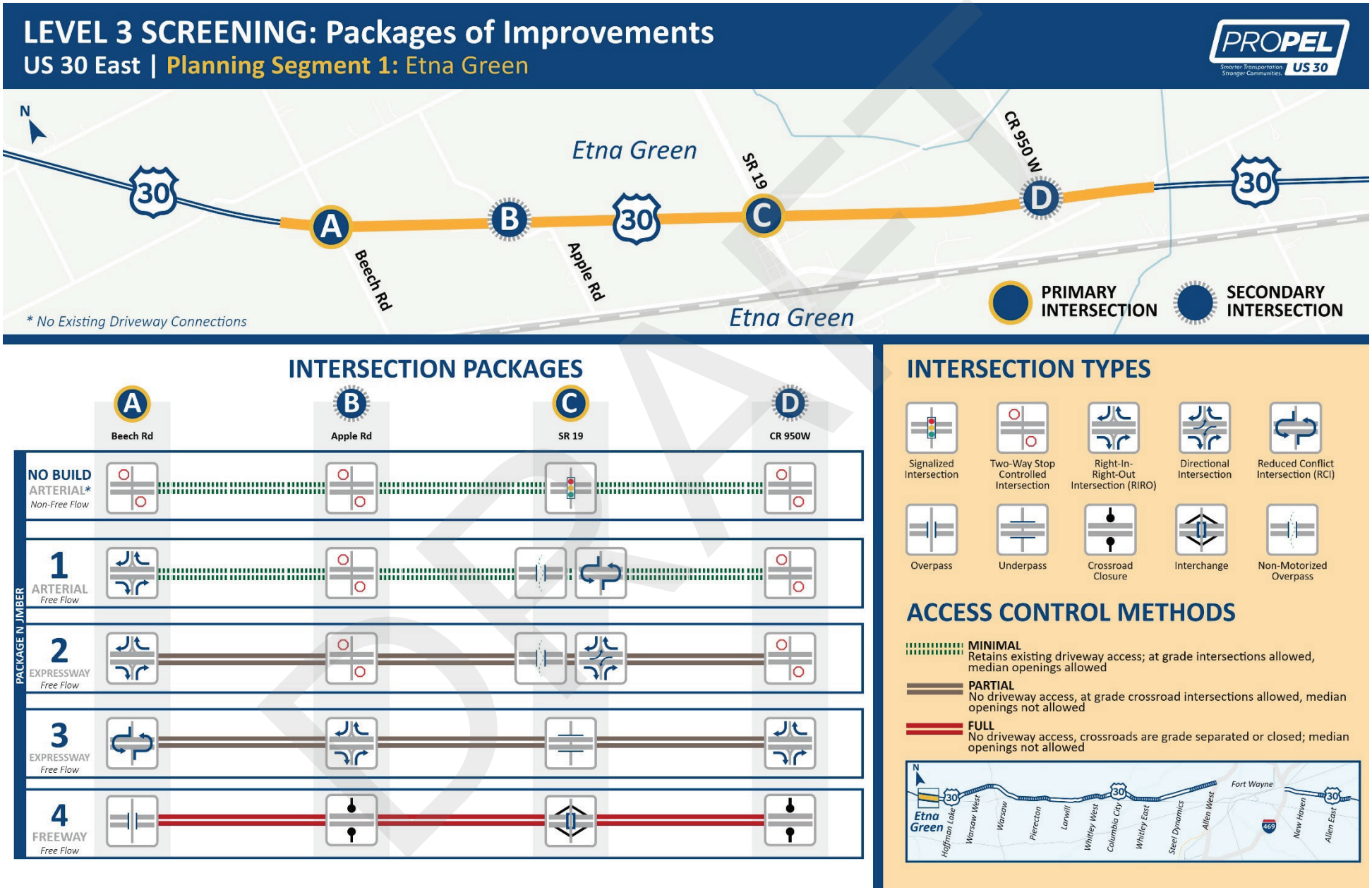
Table 3.1-2 – Level 2 Concepts in Level 3 - Planning Segment 1 – Etna Green

Primary Intersection			Beech Rd	SR 19
		Existing Traffic Control	STOP	
Primary Concepts	Unsignalized Improvements	Roundabout		
		RCI - Reduced Conflict Intersection	3	1
		RCI - Variant		
	Signalized Improvements	Traffic Signal Improvements		⊗
		Green-T Intersection		
		Partial Median U-Turn		
		RCUT - Restricted Crossing U-turn		⊗
		Boulevard Left		
	Other	Interchange		4
		Access Management – RIRO or Closed	1,2	
		Access Management – Directional		2
		Add or Lengthen Turn Lanes		
Complementary Concepts		Overpass/Underpass	4	3
		Adjacent Intersection Improvements		●
		Realign Skewed Intersection	●	●
		Add / Extend Accel. / Decel. Lanes	●	●
		Warning Systems	●	●

⊗ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number.
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.1-1 below provides a diagram of existing conditions and each improvement package, indicating the concepts assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.1-1 – Planning Segment 1: Etna Green - Packages of Improvements Diagrams



3.1.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. A summary of the findings for each category of measures is provided following the table

Table 3.1-3 – Measures Comparison Table - Planning Segment 1 - Etna Green

Planning Segment: 01 - Etna Green				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Free Flow Minimal	2 Expressway Free Flow Partial Access	3 Expressway Free Flow Partial Access	4 Freeway Free Flow Full		
Purpose and Need	Safety	Total Conflict Points	#	168	112	100	32	26		
		Crossing Conflict Points	#	96	52	52	4	10		
		% Reduction in Crossing Conflict points	%	-	-46%	-46%	-96%	-90%		
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	31	31	65	61		
		Cost Effectiveness Index (CEI)		-	0.4	0.3	0.3	1.2		
	Mobility	Average Travel Time Along US 30	Min	3.2	3.0	3.0	3.0	3.0		
		Average Distance Between US 30 Access Points	#	0.7	0.7	0.7	1.0	3.0		
		Average Distance Between US 30 Crossing Points	#	0.7	1.0	1.0	1.5	1.5		
		North-South Mobility Compared to No Build		-	Similar	Similar	Decreased	Decreased		
		N-S Delay Per Vehicle	Min	1.6	8.4	12.1	5.1	1.6		
		Residential Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
		Field Access RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	0	0		
		Rivers & Streams Impact	Feet	-	0	0	0	0		
		Floodplain Impact	Acres	-	0	0	0	0		
		Forested Area Impact	Acres	-	0	0	< .5	< .5		
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No		
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No		
		Cemeteries	Yes/ No	-	No	No	No	No		
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		3	3	< .5	8.5		
		Residential Relocations	#	-	0	0	0	1		
		Business Relocations	#	-	0	0	0	2		
		Farmland Impact	Acres	-	3	3	0	5		
		Farmland Access Impact	#	-	No	No	No	No		
		Potential Hazardous Materials Sites	#	-	0	0	1	1		
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No	No	No	No		
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0		
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0		
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	Yes	Yes		
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Decrease	Decrease	Decrease	Decrease		
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$10 to $13	$9 to $12	$15 to $19	$66 to $82		
		Estimated Right of Way Cost (2024 Dollars)	$M	-	< $0.1	< $0.1	< $0.1	$0.3 to $0.5		
		Estimated Total Package Cost (2024 Dollars)	$M	-	$10 to $13	$9 to $12	$15 to $19	$66 to $82		
Goals		Economic Development		No Change	Neutral	Neutral	Neutral	Neutral		
		Equity in Transportation		No Change	Neutral	Neutral	Neutral	Diminshes		
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral		
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral		
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Low		
		Driver Expectations		No Change	Neutral	Neutral	Neutral	Neutral		
Level 3 Screening Result				Carried Forward	Carried Forward	Recommended	Recommended	Carried Forward		

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety. **Table 3.1-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. Each of the four improvement packages would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 4 (freeway) results in slightly more conflict points than package 3 due to providing an interchange at SR 19 that results in two intersections along SR 19.

Mobility

Regional Mobility

In **Table 3.1-3**, the measure used to assess each packages' effect on regional mobility is Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Generally, regional mobility appears to not be a major differentiator between packages in this segment given that the only existing traffic signal in this planning segment is at SR 19. Removal of this traffic signal results in a free flow condition along the entire planning segment, resulting in a minimal travel time reduction of less than 30 seconds per vehicle in the peak hours on average.

Local Mobility

In **Table 3.1-3**, several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance that needs to be traveled along US 30 between access points, indicating a higher level of local access/mobility. When compared to No Build, the distance per *access point* is the same for packages 1 and 2, with a slight increase for package 3, indicating that these packages offer similar accessibility as exists today. Package 4, the freeway option, results in the greatest adverse effect on local access to/from US 30 with an average distance of 3 miles.

Compared to No Build, the distance per *crossing point* increases in all packages, with the longest distance of 1.5 miles for packages 3 and 4. This indicates that north-south mobility becomes more constrained as the level of access control increases in these packages and options for crossing US 30 are fewer.

There are no existing residential driveways, commercial driveways, or field entrances in this planning segment.

Social & Environmental Impacts

All packages for Segment 1 result in minimal social and environmental impact. The packages all have similar potential impact to forested land but package 4 presents the most potential impacts to farmland and the greatest increase in right-of-way.

Natural Resources

Packages 1 and 2 do not have potential for impacts to natural resources. Packages 3 and 4 have similar potential impacts to natural resources with less than 0.5 acre of possible forested area impacts.

Cultural Resources

There are no direct impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to nearby resources should be considered as solutions are further developed. The following potential historic resources have been identified within ½ mile of an intersection in this segment; if these resources are determined to be historic, additional investigations may be warranted for any projects that move forward adjacent to these sites:

- Old Parks Cemetery (IHSSI No. 099-160-30044, CR-50-6) approximately 0.37 mile from Beech Road
- Ridenour Farm (IHSSI No. 099-061-30042, ca. 1870, rated Notable) approximately 0.45 mile from Apple Road

Socioeconomic Impacts

The intersections in Segment 1 are not in an area of EJ concern for either minority or low-income populations.

Package 4 would require the most additional right-of-way out of the alternatives considered for Segment 1 at 8.5 acres of impact and would require one residential relocation and two business relocations. No community resources or vulnerable housing populations are within the new right-of-way or within 0.1 miles of alternative footprints. Socioeconomic impacts in Segment 1 are potentially the greatest with the new right-of-way needed and relocations in package 4, but impacts would be minimal for all other packages.

North-south travel across the corridor will be affected by the build alternatives, including for residents traveling locally for daily activities and for farmers crossing US 30 East to move agricultural field equipment. Generally, impacts to US 30 access and north-south travel increase as the level of access control increases in a given package of improvements, typically resulting in fewer opportunities to access or cross US 30 because of increased access control needs.

In the No Build condition, there are north-south crossings of US 30 East approximately every 0.7 miles. The four improvement packages have greater access control that will reduce and consolidate north-south access (from access every 1 mile for package 1 to 3 miles with the freeway package 4). While this will increase the distance of travel for local residents and businesses to cross US 30 East, the build alternatives provide safer crossings of US 30 in response to public comments and safety analyses. Improvement package 4 will reduce the number north-south crossings of US 30 for local traffic more than the other improvement packages; all north-south crossings would be grade-separated for this freeway option.

In package 4, the Interchange alternative at SR 19 affects the most farmland of all the alternatives with 5 acres of impact.

Goals Assessment

Economic Development

Economic development is rated as neutral for all packages within this segment. The packages each reduce estimated crashes in relatively similar amounts, although packages 3 and 4 improve safety more than packages 1 and 2. The increased safety benefits of packages 3 and 4 are offset by the reduced access to local roadways.

Equity in Transportation

Package 1 has little impact on local mobility and is considered neutral for equity. Packages 2 and 3 improve safety for the roadway without negatively impacting access to US 30 or greatly increasing the crossing opportunity distances of the roadway and are also rated as neutral. Package 4 is rated as diminishing the equity due to the restrictions on local mobility caused by a freeway.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1, 2, and 3 are all rated as moderately practical due to the relatively low costs and impacts compared to the benefits of the improvements. Package 4 is rated as low due to the relatively high cost, anticipated relocations and right-of-way impacts to implement a freeway alternative.

Driver Expectations

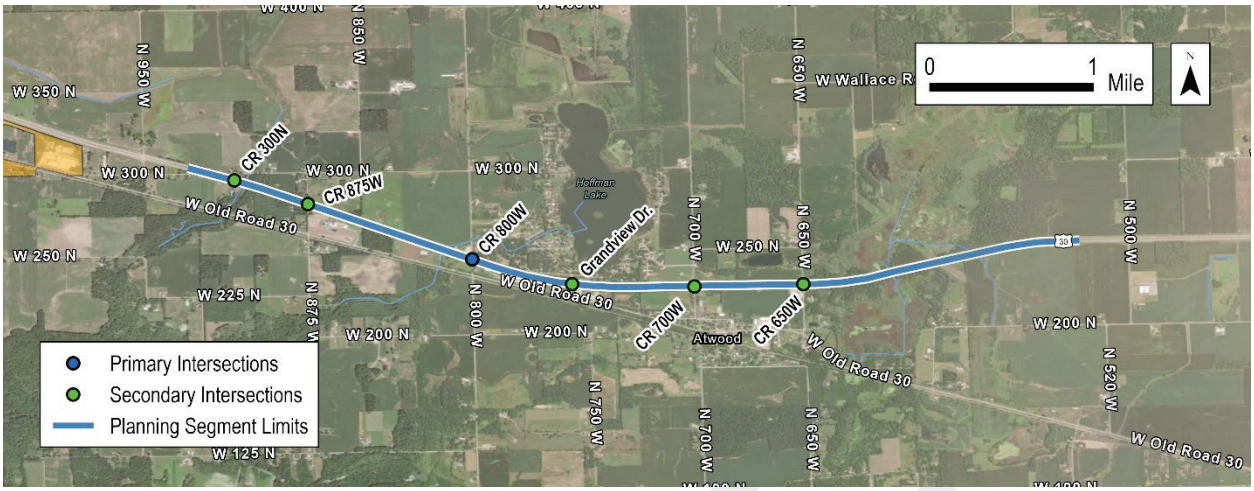
All four packages are rated as neutral to driver expectations. Removal of the traffic signal at SR 19 will improve regional driver expectations for the roadway, but packages 1 and 2 will not geometrically address roadway speed while packages 3 and 4 will eliminate movements in rural areas that would be less likely to expect the restrictions.

3.1.4. FINDINGS AND RECOMMENDATIONS

Packages 1, 2 and 3 result in the lowest costs and impacts while addressing study needs and study goals similarly. These packages result in improved safety performance and are the most cost effective with respect to safety. Each package eliminates the signal at SR 19, promoting free flow conditions in this segment while maintaining a similar level of local access as exists today. Package 1 is '*Carried Forward*' and packages 2 and 3 are '*Recommended*' for further evaluation as part of subsequent project development studies.

Package 4 provides good safety performance and promotes free flow conditions along US 30 by eliminating the signal at SR 19. Package 4 results in impacts to local mobility due to the limited access requirements of a freeway, generally resulting in longer distance travel for local trips accessing or crossing US 30. Package 4 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in package 4, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if package 4 is a reasonable solution to the planning segment's transportation needs. For these reasons, package 4 is categorized as *'Carried Forward'*.

3.2. SEGMENT 2: HOFFMAN LAKE



3.2.1. PLANNING SEGMENT OVERVIEW

The Hoffman Lake planning segment is 4.3 miles in length, generally centered with Hoffman Lake. This section is rural in context, with land use primarily being farmland and residential.

This planning segment contains six primary and secondary intersections. The only primary intersection located in this segment is CR 800W which is currently a two-way stop controlled (TWSC) intersection. The remaining five existing secondary intersection locations are also two-way stop controlled and located at CR 300N, CR 875W, Grandview Drive, CR 700W and CR 650W.

There are no driveways or field entrances located along US 30 between the primary and secondary intersections in this planning segment.

This section of US 30 is considered to operate as free flow as there are no traffic signals located at intersections that would periodically stop the flow of traffic.

Notable Features Influencing Development of Packages

Access to areas around Hoffman Lake and Atwood are the key considerations for the packages within this segment. At CR 800W, although the intersection traffic volumes meet the warrants for a traffic signal, that does not require one to be installed depending on context and other considerations. Based on the safety analysis performed during the *Existing Transportation Conditions Report*, rural signalized intersections often result in more frequent and severe crashes than average. Based on this consideration, a package that installs a new traffic signal at CR 800W was not considered.

Based on the crash data, safety is also a concern at CR 700W, which is two-way stop controlled. This consideration resulted in no packages that recommend retaining a two-way stop-controlled intersection at this location.

Starting with the primary intersection and the identified Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were identified that would be consistent with each package's access management strategy and the primary intersection alternative within each package.

Summary of Comments for Planning Segment 2 – Hoffman Lake

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Turn US 30 into a freeway from SR 49 to I-69.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.

3.2.2. IMPROVEMENT PACKAGES

Four packages of improvements were identified for planning segment 2 and are characterized as follows:

Table 3.2-1 – Packages of Improvements - Planning Segment 2 - Hoffman Lake

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Free Flow	Minimal	No Build represents existing conditions against which each package is compared.
1	Arterial	Free Flow	Partial	A low-cost package consisting of minor improvements primarily intended to improve safety along US 30, particularly at CR 800W, which has the highest crash frequency and crash cost in the segment. This option maintains existing connections and free flow conditions on US 30.
2	Expressway	Free Flow	Partial	A variation of package 1 that maintains a free flow condition along US 30 but with additional access controls at CR 800W and CR 700W. This lower cost package focuses on improving safety by reducing conflict points compared to package 1.
3	Expressway	Free Flow	Partial	A variation of package 2 that maintains a free flow condition along US 30 but converts all remaining one-way and two-way stop-controlled intersections to right-in/ right-out. This lower cost package includes RCIs at CR 800W and CR 700W and has an additional focus on safety improvements by further reducing overall number conflict points compared to package 2.

4	Freeway	Free-Flow	Full	A higher cost option that reduces conflict points by closing or grade separating some intersections and not permitting any driveway access directly to US 30. A diamond type interchange is assumed at CR 800W for the purposes of this study, but other types may be considered at this location.

As mentioned in **Section 2.2**, some concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

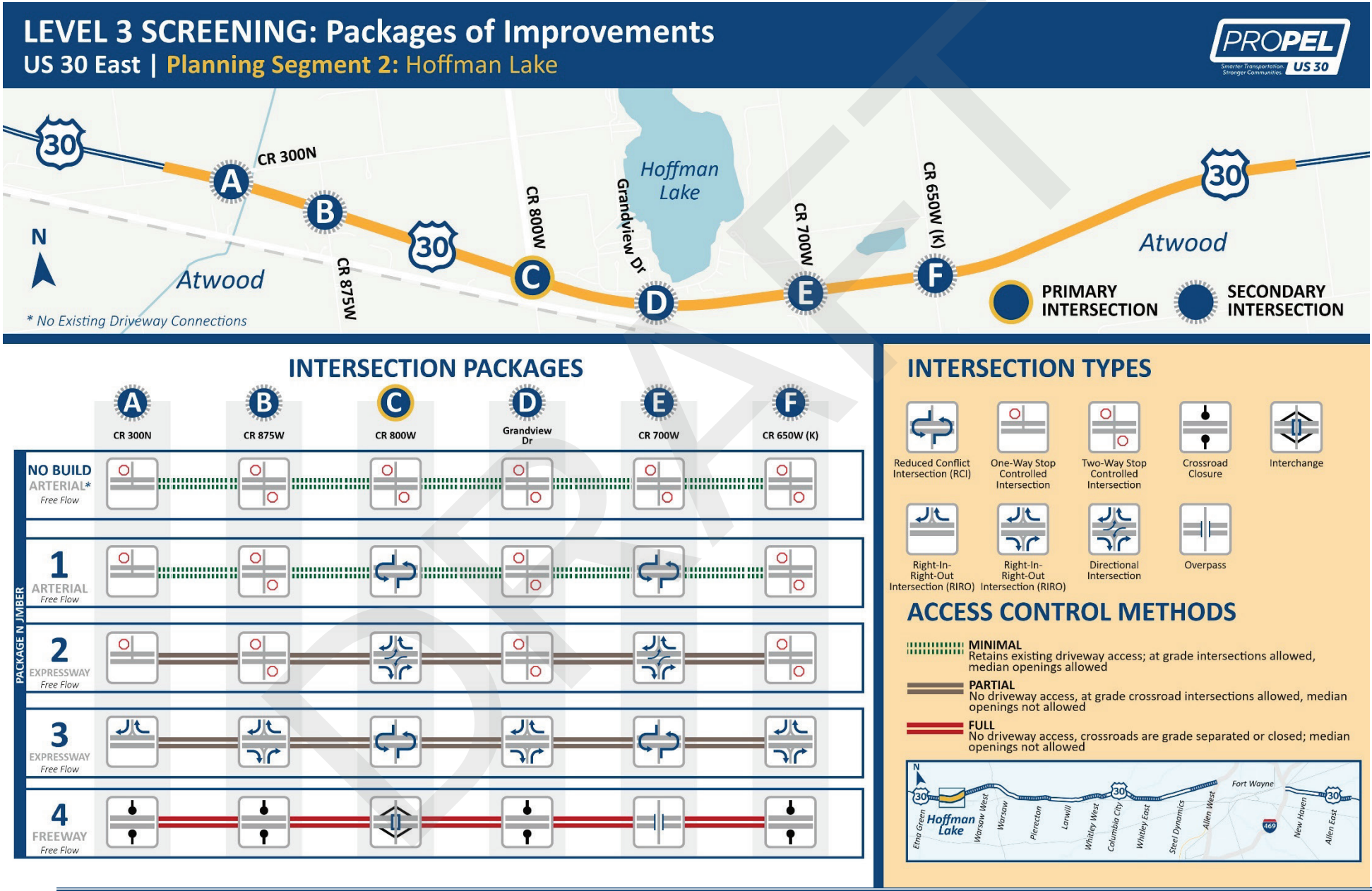
Table 3.2-2 – Level 2 Concepts in Level 3 - Planning Segment 2 – Hoffman Lake

Primary Intersection			CR 800W
		Existing Traffic Control	STOP
Primary Concepts	Unsignalized Improvements	Roundabout	
		RCI - Reduced Conflict Intersection	1,3
		RCI - Variant	
	Signalized Improvements	Traffic Signal Improvements	⊗
		Green-T Intersection	
		Partial Median U-Turn	⊗
		RCUT - Restricted Crossing U-turn	⊗
		Boulevard Left	
	Other	Interchange	4
		Access Management – RIRO or Closed	⊗
		Access Management – Directional	2
		Add or Lengthen Turn Lanes	
Complementary Concepts		Overpass/Underpass	
		Adjacent Intersection Improvements	
		Realign Skewed Intersection	●
		Add / Extend Accel. / Decel. Lanes	●
		Warning Systems	●

⊗ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.2-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.2-1 – Planning Segment 2: Hoffman Lake - Packages of Improvements Diagrams



3.2.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed available in **Appendix A**. A summary of the findings for each category of measures is provided following the table.

Table 3.2-3 – Measures Comparison Table - Planning Segment 2 - Hoffman Lake

Planning Segment: 02 - Hoffman Lake				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Free Flow Minimal	1 Arterial Free Flow Minimal	2 Expressway Free Flow Partial Access	3 Expressway Free Flow Partial Access	4 Freeway Free Flow Full		
Purpose and Need	Safety	Total Conflict Points	#	221	185	161	62	26		
		Crossing Conflict Points	#	125	85	85	8	10		
		% Reduction in Crossing Conflict points	%	-	-32%	-32%	-94%	-92%		
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	47	47	139	136		
		Cost Effectiveness Index (CEI)		-	0.1	0.1	0.1	0.4		
	Mobility	Average Travel Time Along US 30	Min	4.3	4.3	4.3	4.3	4.3		
		Average Distance Between US 30 Access Points	#	0.7	0.7	0.7	0.7	4.3		
		Average Distance Between US 30 Crossing Points	#	0.9	0.9	1.4	2.1	2.1		
		North-South Mobility Compared to No Build		-	Similar	Decreased	Decreased	Decreased		
		N-S Delay Per Vehicle	Min	1.2	1.3	2.9	1.3	0.1		
		Residential Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
		Field Access RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	0	2		
		Rivers & Streams Impact	Feet	-	0	0	0	700		
		Floodplain Impact	Acres	-	0	0	0	0.5		
		Forested Area Impact	Acres	-	0	0	0	7.5		
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No		
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No		
		Cemeteries	Yes/ No	-	No	No	No	No		
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	0	0	27.5		
		Residential Relocations	#	-	0	0	0	1		
		Business Relocations	#	-	0	0	0	0		
		Farmland Impact	Acres	-	0	0	0	24.5		
		Farmland Access Impact	#	-	No	No	No	No		
		Potential Hazardous Materials Sites	#	-	0	0	0	0		
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No	No	No	No		
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0		
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0		
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No		
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Increase	Increase	Increase	Decrease		
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$4 to $6	$3 to $5	$7 to $10	$52 to $64		
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.0	$0.0	$0.5 to $0.7		
		Estimated Total Package Cost (2024 Dollars)	$M	-	$4 to $6	$3 to $5	$7 to $10	$52 to $65		
Goals		Economic Development		No Change	Neutral	Neutral	Enhances	Neutral		
		Equity in Transportation		No Change	Neutral	Neutral	Enhances	Neutral		
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral		
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral		
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Low		
		Driver Expectations		No Change	Neutral	Diminshes	Neutral	Neutral		
Level 3 Screening Result				Carried Forward	Carried Forward	Recommended	Recommended	Carried Forward		

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.2-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. All four improvement packages would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 4 (freeway) results in slightly more crossing conflict points than package 3 due to providing an interchange at CR 800W that includes two terminal ramp intersections along CR 800W.

Mobility

Regional Mobility

In **Table 3.2-3**, the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Regional mobility is not a distinguishing factor between packages in this planning segment because there are no existing traffic signals, meaning US 30 is already in a free-flow condition and no additional travel time savings would be achieved within the segment.

Local Mobility

In **Table 3.2-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating a higher level of local access/mobility. When compared to No Build, the distance per *access point* is the same for packages 1, 2, and 3, but increases to 4.3 miles for freeway package 4, indicating that the freeway option results in the greatest adverse effect local access to/from US 30. Compared to No Build, the distance per *crossing point* increases in packages 2 thru 4, with the longest distance of 2.1 miles for both packages 3 and 4. This indicates that north-south mobility becomes more constrained as the level of access control increases and options for crossing US 30 are fewer.

There are no existing residential driveways, commercial driveways, or field entrances in this planning segment.

Social & Environmental Impacts

For Segment 2, package 4 poses more social and environmental impact than other packages. Package 3 will likely impact natural, cultural, and socioeconomic resources but package 4 presents considerably more potential impact than the other alternatives.

Natural Resources

Package 4 has the most potential impacts to natural resources including wetlands (2 acres), floodplains (0.5 acre), rivers and streams (approximately 700 feet) and forested areas (7.5 acres). Packages 1, 2, and 3 are not expected to have potential impacts to natural resources.

Cultural Resources

There are direct impacts to known cultural resources within this segment. The Hoffman Lakes residential neighborhood (ca. 1925) could potentially qualify as a historic district. This resource is directly adjacent to the Grandview Drive intersection and could be directly impacted by packages 3 and 4. Indirect impacts to potential nearby historic resources should be considered as solutions are further developed. At this time, no other known resources have been identified within ½ mile of an intersection in this segment.

Socioeconomic Impacts

Potential intersection changes in Segment 2 are not located in an area of minority or low-income EJ communities, thus no Segment 2 package is expected to pose disproportionate impacts to EJ populations. In package 4, the CR 800W interchange alternative and CR 700W overpass would increase right-of-way by 27.5 acres, which is the largest right-of-way increase of the three segment packages. One residential relocation would be required for package 4, but no other package would require relocations. No community resources or vulnerable housing populations are located within increased right-of-way or within 0.1 miles thereof.

Package 4 would have the greatest right-of-way impact to farmland, while the other packages would all have no direct impact.

North-south travel across the corridor will be affected by the Build Alternatives, including for residents traveling locally for daily activities and for farmers crossing US 30 East to move agricultural field equipment. Generally, impacts to US 30 access and north-south travel increase as the level of access control increases in a given package of improvements, typically resulting in fewer opportunities to access or cross US 30 because of increased access control needs.

In the No Build condition, there are north-south crossings of US 30 East approximately every 0.7 miles. The improvement packages have greater access control that will reduce and consolidate north-south access (from access every 0.7 mile for arterial package 1 to 4.3 miles with the freeway package 4). While this will increase distance of travel for local residents and businesses to cross US 30 East, the build alternatives provide safer crossings of US 30 East in response to public comments and safety analyses. Improvement package 4 will reduce the number north-south crossings of US 30 East for local traffic more than the other improvement packages; all north-south crossings would be grade-separated for this freeway option.

Goals Assessment

Economic Development

Economic development is rated as neutral in packages 1, 2, and 4; package 4 improves safety more than packages 1 or 2, but at the cost of reduced local mobility through reduced opportunities to access or cross US 30. Package 3 retains most of the existing access to US 30 while still reducing crossing conflict points and having the highest number of estimated crashes prevented and is therefore rated as enhancing economic development.

Equity in Transportation

Similar to economic development, equity is rated as neutral in packages 1, 2, and 4. Package 1 and 2 retains local mobility options but does not improve resident's safety as much as other packages. Package 4 is anticipated to greatly improve safety, but with an impact to local mobility opportunities. Package 3 is rated as enhancing equity due to the improved safety while still retaining access to US 30.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1, 2, and 3 are rated as moderately practical due to the relatively minor environmental and right-of-way impacts anticipated compared to the benefits associated with the improvements. Package 1 is identified as the most practical of the three packages, having the lowest overall Cost Effectiveness Index value. Package 4 is rated with low practicality due to the anticipated higher costs and impacts of the package compared to the similar benefits of package 3.

Driver Expectations

Package 2 is rated as diminishing driver expectations, while packages 1, 3, and 4 are identified as neutral. Package 2 reduces local mobility along and across US 30 in the planning segment, which violates the expectations of a rural highway without full access control. Packages 3 and 4 also reduce local mobility, but with the geometric changes expected to accompany those reductions, which results in a neutral rating. Package 1 retains the existing conditions with minor changes in travel patterns, so driver expectations do not change from current conditions.

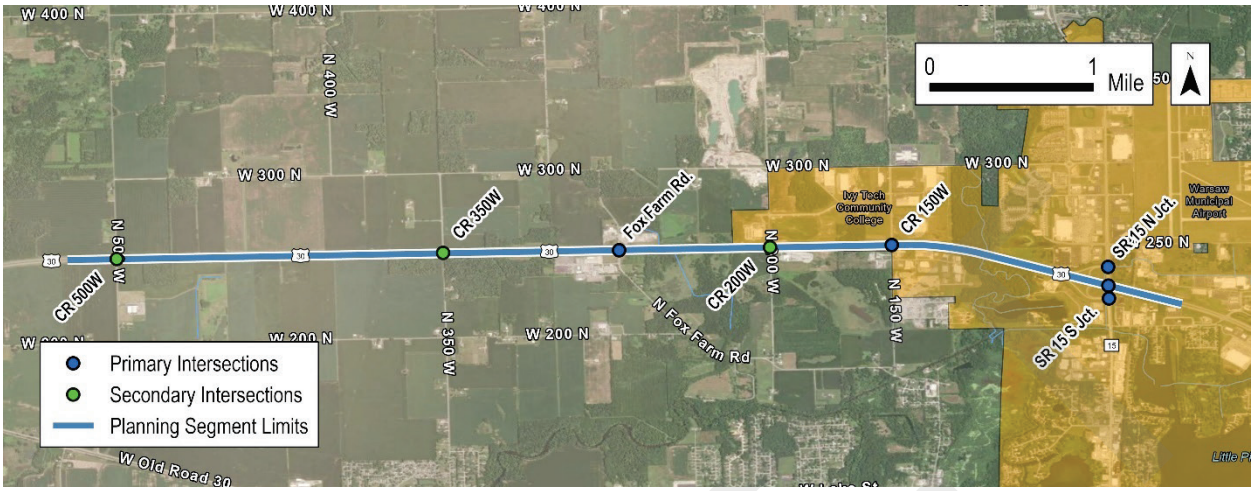
3.2.4. FINDINGS AND RECOMMENDATIONS

Packages 1, 2, and 3 result in the lowest costs and impacts while addressing study needs and study goals similarly. These packages result in good safety performance and are the most cost effective with respect to safety performance. All three packages maintain the existing free flow conditions in this segment while supporting local access. For these reasons, package 1 is categorized as '*Carried Forward*'. Packages 2 and 3 are '*Recommended*' for further evaluation as part of subsequent project development studies, with package 2 serving as a potential interim solution that could be implemented ahead of the more comprehensive safety improvements offered by Package 3.

Package 4 provides good safety performance and also maintains free flow conditions along US 30. However, as the highest cost and highest impact package, it results in being the least cost-effective while not providing substantially greater benefits as lower cost, lower impact packages. Additionally, package 4 results in impacts to local mobility due to the limited access requirements of a freeway, generally resulting in longer distance travel for local trips accessing or crossing US 30. Package 4 would result in higher costs and higher impacts with marginal additional safety and mobility benefits as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in package 4, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if package 4 is a

reasonable solution to the planning segment's transportation needs. For these reasons, Package 4 is categorized as *'Carried Forward'*.

3.3. SEGMENT 3: WARSAW WEST



3.3.1. PLANNING SEGMENT OVERVIEW

The Warsaw West planning segment is 5.2 miles in length and is located on the west side of the City of Warsaw. This section is primarily rural in context in the west half with land use primarily being farmland. From Fox Farm Road to the east, this segment transitions to a more urban context with more commercial land use as you approach the Warsaw City limits from the west.

This planning segment contains seven primary and secondary intersections. The three primary intersections are Fox Farm Road (TWSC), CR 150W (Signal) and the two SR 15 interchange ramp connections at SR 15 (Signals). The remaining three existing secondary intersection locations are two-way stop controlled and located at CR 500W, CR 350W, and CR 200W.

There are no driveways or field entrances located along US 30 between the primary and secondary intersections in this planning segment.

This section of US 30 is considered to operate as non-free flow as there is a traffic signal at one primary intersection (CR 150W) that periodically stops the flow of traffic along US 30.

Notable Features Influencing Development of Packages

For the portion of US 30 west of Warsaw, the key considerations for the packages within this segment are improvements for the existing traffic signal at CR 150W and the unsignalized primary intersection at Fox Farm Road. At Fox Farm Road, when assembling the packages, it was found that cross-corridor access was important at this location and therefore several packages include options that provide cross corridor access at that location.

For the SR 15 ramp junctions, the options are either to retain and improve the traffic signals as part of the overall signal system on SR 15, or to replace the signals with roundabouts. Roundabouts are preferred to control wrong way entrance onto the folded diamond ramps, but with no history of this movement it is not necessary to include the alternative in every package.

Starting with the primary intersection and the remaining Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were

identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 3 – Warsaw West

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Conflicting opinions: Turn US 30 into a freeway from SR 49 to I-69 / a freeway will negatively affect local residents' quality of life.
- Turning US 30 into a freeway will negatively affect the businesses.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Too many traffic lights in Warsaw.

3.3.2. IMPROVEMENT PACKAGES

Four packages of improvements were identified for planning segment 3 and are characterized as follows:

Table 3.3-1 – Packages of Improvements - Planning Segment 3 - Warsaw West

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against to which each package is compared to.
1	Arterial	Non-Free Flow	Minimal	A low-cost package consisting of minor improvements primarily intended to improve safety along US 30, particularly at CR 150W, which has the highest crash frequency and cost in the segment. This option maintains existing connections and non-free flow conditions on US 30.
2	Arterial	Free Flow	Partial	A variation of package 1 that provides a free flow condition while maintaining a high level of local connectivity along US 30. This lower cost package focused on additional safety enhancements by converting existing stop controlled or signalized intersections to right-in/right-out or directional intersections.

3	Expressway	Free Flow	Partial	A higher cost package that reduces conflict points by closing or grade separating intersections. In this package, SR 15 is the only US 30 access location.
4	Freeway	Free Flow	Full	This is the highest cost package and is a variation of package 3 that adds a full access interchange at Fox Farm Road.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

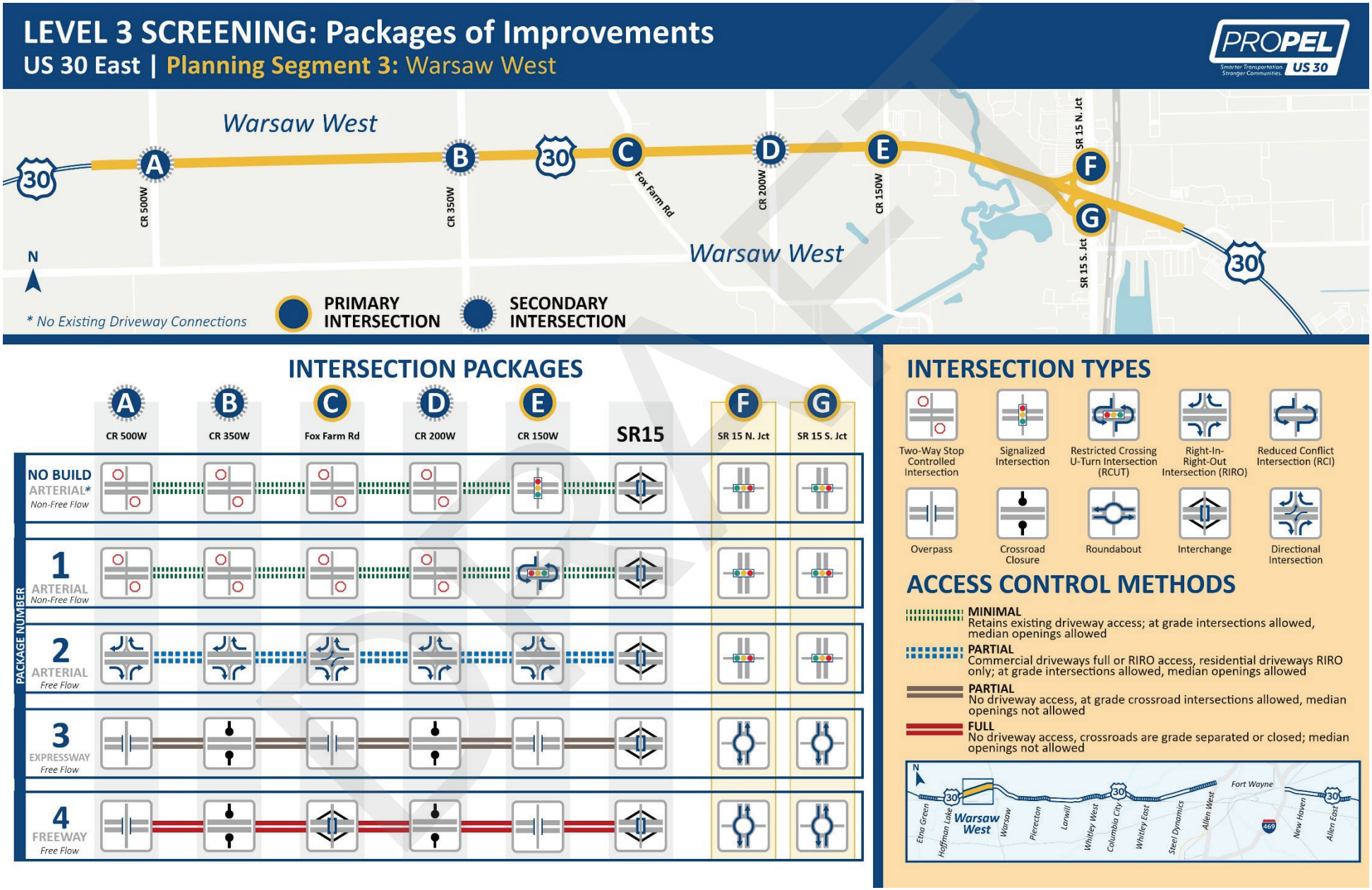
Table 3.3-2 – Level 2 Concepts in Level 3 - Planning Segment 3 - Warsaw West

Primary Intersection			Fox Farm Rd	CR 150W	SR 15 North Jct	SR 15 South Jct
		Existing Traffic Control	STOP			
Primary Concepts	Unsignalized Improvements	Roundabout			3,4	3,4
		RCI - Reduced Conflict Intersection	●			
		RCI - Variant	●			
	Signalized Improvements	Traffic Signal Improvements		●	1,2	1,2
		Green-T Intersection			●	●
		Partial Median U-Turn		●		
		RCUT - Restricted Crossing U-turn		1		
		Boulevard Left				
	Other	Interchange	4			
		Access Management - RIRO or Closed	●	2		
		Access Management - Directional	2			
		Add or Lengthen Turn Lanes				
Complementary Concepts		Overpass/Underpass	3	3,4		
		Adjacent Intersection Improvements				
		Realign Skewed Intersection				
		Add / Extend Accel. / Decel. Lanes	●	●		
		Warning Systems	●	●	●	●

● Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.3-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.3-1 – Planning Segment 3: Warsaw West - Packages of Improvements Diagrams



3.3.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. A summary of the findings for each category of measures is provided following the table.

Table 3.3-3 – Measures Comparison Table - Planning Segment 3 - Warsaw West

Planning Segment: 03 - Warsaw West				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Non-Free Flow Minimal	2 Arterial Free Flow Partial Access	3 Expressway Free Flow Partial Access	4 Freeway Free Flow Full		
Purpose and Need	Safety	Total Conflict Points	#	232	214	54	22	48		
		Crossing Conflict Points	#	126	106	14	6	16		
		% Reduction in Crossing Conflict points	%	-	-16%	-89%	-95%	-87%		
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	23	132	141	129		
		Cost Effectiveness Index (CEI)		-	0.2	0.1	0.3	0.5		
	Mobility	Average Travel Time Along US 30	Min	5.6	5.4	5.2	5.2	5.2		
		Average Distance Between US 30 Access Points	#	0.9	0.9	0.9	5.2	2.6		
		Average Distance Between US 30 Crossing Points	#	0.9	0.9	5.2	1.3	1.3		
		North-South Mobility Compared to No Build		-	Similar	Greatly Decreased	Similar	Similar		
		N-S Delay Per Vehicle	Min	2.3	2.9	16.4	9.7	4.3		
		Residential Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
		Field Access RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	< .5	< .5		
		Rivers & Streams Impact	Feet	-	0	0	0	0		
		Floodplain Impact	Acres	-	0	0	< .5	< .5		
		Forested Area Impact	Acres	-	0	0	0	1		
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No		
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No		
		Cemeteries	Yes/ No	-	No	No	No	No		
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	0	6	21.5		
		Residential Relocations	#	-	0	0	0	0		
		Business Relocations	#	-	0	0	0	0		
		Farmland Impact	Acres	-	0	0	2.5	13		
		Farmland Access Impact	#	-	No	No	No	No		
		Potential Hazardous Materials Sites	#	-	0	3	3	3		
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No	No	Yes	Yes		
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0		
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0		
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No		
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Increase	Increase	Increase	Increase		
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$4 to $5	$11 to $14	$40 to $49	$54 to $67		
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.0	$0.2 to $0.3	$0.4 to $0.6		
		Estimated Total Package Cost (2024 Dollars)	$M	-	$4 to $5	$11 to $14	$40 to $50	$54 to $68		
Goals		Economic Development		No Change	Neutral	Enhances	Neutral	Neutral		
		Equity in Transportation		No Change	Diminshes	Neutral	Neutral	Neutral		
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral		
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral		
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Moderate		
		Driver Expectations		No Change	Diminshes	Neutral	Neutral	Enhances		
Level 3 Screening Result				Carried Forward	Eliminated	Recommended	Recommended	Carried Forward		

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.3-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. All four improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 4 (freeway) results in about 12% more conflict points than package 3 due to providing an interchange at Fox Farm Road that includes two terminal ramp intersections along Fox Farm Road.

Mobility

Regional Mobility

In **Table 3.3-3**, the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Generally, regional mobility appears not to be a major differentiator between packages in this segment given that the only existing traffic signal in this planning segment is at CR 150W. Removal of this traffic signal results in a free-flow condition along the entire planning segment, resulting in a minimal travel time reduction of less than 30 seconds per vehicle in the peak hours on average.

Local Mobility

In **Table 3.3-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to No Build, the distance per *access point* is the same for packages 1 and 2, but increases to 2.6 miles for freeway package 4 and 5.2 miles for expressway package 3, indicating that the expressway option results in the greatest adverse effect local access to/from US 30. Compared to No Build, the distance per *crossing point* increases in packages 2, 3 and 4, with the longest distance of 2.6 miles for package 2 while package 1 remains the same. This indicates that north-south mobility becomes more constrained as the level of access control increases and options for crossing US 30 are fewer.

There are no existing residential driveways, commercial driveways, or field entrances in this planning segment.

Social & Environmental Impacts

In Segment 3, packages 2, 3, and 4 all present potential impacts to natural, cultural, and socioeconomic resources. Packages 2 and 4 present a higher potential impact on cultural resources than other packages in the segment, while packages 3 and 4 present higher potential impact on natural and socioeconomic resources. Package 4 presents the highest potential impact across all social and environmental resources.

Natural Resources

Packages 3 and 4 both have potential impacts to natural resources including NWI wetlands, floodplains, and/or forested areas, but all impacts are at, or less than, 1 acre. Packages 1 and 2 are not anticipated to have any potential natural resources impacts.

Cultural Resources

There are no direct impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to nearby resources should be considered as solutions are further developed. The following potential historic resource has been identified within ½ mile of an intersection in this segment; if this resource is determined to be historic, additional investigations may be warranted for any projects that move forward adjacent to this site:

- Pike Lake residential neighborhood (ca. 1935) approximately 0.28 mile from SR 15

Socioeconomic Impacts

Segment 3 intersections are not located in areas of EJ concern for minority or low-income populations, thus none of the packages are expected to have disproportionate impacts on EJ populations. There are limited increases in right-of-way with the improvement packages in this area and no home or business acquisitions or relocations are anticipated for any package. Package 4 results in the largest increase of right-of-way at 21.5 acres, followed by package 3 with an estimated 6 acres of right-of-way.

In packages 3 and 4, the CR 150W intersection overpass alternative crosses a public trail, the Warsaw Side Paths, and would impact the potential future pedestrian and cyclist crossing of CR 150W north of US 30. Similarly, also in packages 3 and 4, the SR 15 roundabout alternatives intersect the same Warsaw Side Paths, which would impact the potential future pedestrian and cyclist trail use parallel to SR 15 and crossing US 30. Thus packages 3 and 4 have the most potential for impact on green space and recreational activity in this segment.

Package 4 has the most potential impact on farmland at 13 acres, followed by package 3 at 6 acres.

North-south travel across the corridor will be affected by the build alternatives, including for residents traveling locally for daily activities and for farmers crossing US 30 East to move agricultural field equipment. Generally, impacts to US 30 access and north-south travel increase as the level of access control increases in a given package of improvements, typically resulting in fewer opportunities to access or cross US 30 because of increased access control needs.

In the No Build condition, there are north-south crossings of US 30 East approximately every 0.9 miles. The improvement packages have greater access control that will reduce and consolidate north-south access (from access every 0.9 mile for arterial package 1 to 5.2 miles with the expressway package 3 and 2.6 miles with the freeway package 4). While this will increase distance of travel for local residents and businesses to cross US 30 East, the build alternatives provide safer crossings of US 30 in response to public comments and safety analyses.

Goals Assessment

Economic Development

Economic development is neutral in packages 1, 3, and 4. Package 1 has little benefit of improving safety or improving regional mobility, but also does not restrict local mobility. Packages 3 and 4 both increase safety through reducing conflict points and estimated future crashes, as well as improving travel time along the corridor through the removal

of the traffic signal at CR 150W, but with a reduction in local access to US 30. Package 2 has the best benefit for safety and retains partial access at all local roadways, and is rated as enhancing economic development.

Equity in Transportation

Package 1 is rated as diminishing equity due to the restriction of access to US 30 and the ability to cross the roadway, despite minor improvements in safety. Packages 2, 3, and 4 are rated as neutral due to the improved safety results balancing with the reduced access to and across US 30.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

All packages are rated as moderately practical due to the relatively minor environmental and right-of-way impacts anticipated compared to the benefits associated with the improvements. Package 2 is identified as the most practical of the packages, having the lowest overall Cost Effectiveness Index (CEI) value, while package 4 has the worst CEI score within the planning segment.

Driver Expectations

Retaining the existing traffic signal at CR 150W causes package 1 to rate as diminishes driver expectations, as the traffic signal is unexpected adjacent to an interchange and within a high-speed corridor. Packages 2 and 3 are rated as neutral; both remove the traffic signal to improve expectations, but the level of access to US 30 is restricted in the largely rural segment. Package 4 is rated to enhance expectations due to the removal of the traffic signal and geometric changes to better align the roadway and the posted speed limit.

3.3.4. FINDINGS AND RECOMMENDATIONS

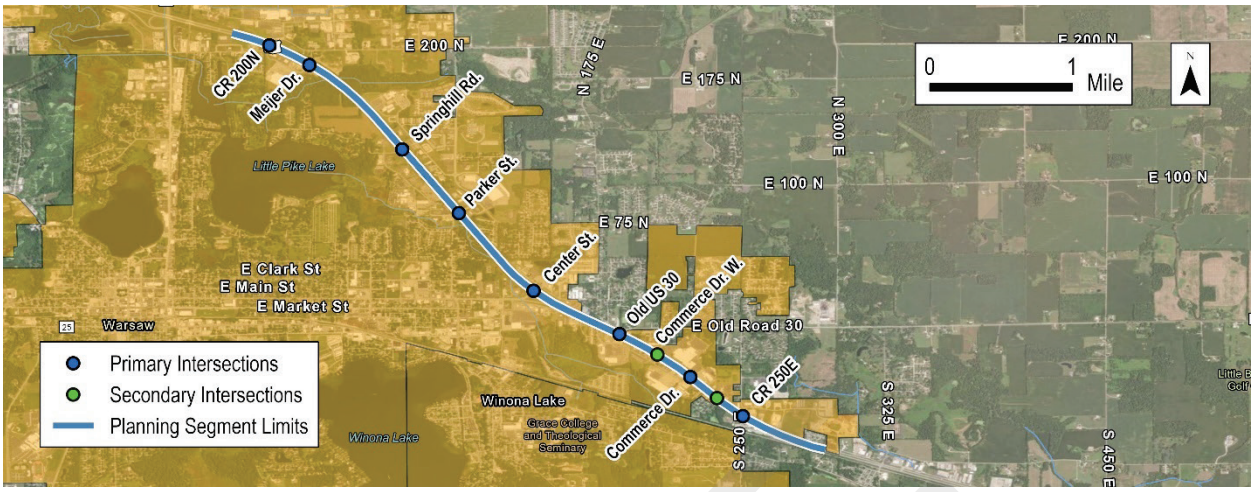
Package 1 is the lowest cost and lowest impact package that addresses identified safety issues at CR 150W by reconfiguring this intersection as a RCUT. However, because this is planning segment is primarily rural in context, with CR 150W located at the western limits of the city of Warsaw, maintaining a signal with an RCUT at CR 150W is not considered desirable. Therefore package 1 is *'Eliminated'* from further consideration.

Package 2 is also a low cost, low impact package that would improve safety by reducing conflict points at all five of the existing intersections with US 30 and results in being the most cost-effective package. Although this package increases the average distance between US 30 crossing points, it maintains the same average distance between access points while promoting free-flow conditions along US 30 with the removal of the signal at CR 150W. No new right-of-way would be required with no residential/business relocations. Package 2 is '*Recommended'* for further evaluation as part of subsequent project development studies.

Expressway package 3 provides the best safety performance of all the packages and also provides free flow conditions along US 30. This is a higher cost and higher impact package as compared to package 2, that provides for additional crossing points, but with fewer access points. This package is also *'Recommended'* for further consideration due to its superior safety performance and because it offers some contrasting access tradeoffs as compared to package 2.

Freeway package 4 results in the greatest potential impacts and has the least favorable cost effectiveness of all the packages. Approximately 21.5 acres of new right-of-way would be required with no residential/business relocations. Package 4 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in package 4, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if package 4 is a reasonable solution to the planning segment's transportation needs. For these reasons, package 4 is categorized as *'Carried Forward'*.

3.4. SEGMENT 4: WARSAW



3.4.1. PLANNING SEGMENT OVERVIEW

The Warsaw planning segment is 4.4 miles in length and includes all of the signalized intersections east of SR 15 within Warsaw. The area is urban in context with land use consisting mostly of commercial and industrial adjacent to US 30. This entire planning segment contains signage warning motorists of a "congested area" and speed limit reductions through the city.

This planning segment contains eight primary and two secondary intersections. The eight primary intersections are all signalized – CR 200N, Meijer Drive, Springhill Road, Parker Street, Center Street, Old US 30, Commerce Drive, and CR 250E. The two secondary intersections are Commerce Drive West and Circle Drive.

There are twelve driveways located along US 30 in this planning segment, ten serving commercial properties and two leading to residential developments.

This section of US 30 is considered to operate as non-free flow as there are traffic signals throughout the corridor which frequently stop the flow of traffic along US 30. The secondary intersections are two-way stop controlled.

Notable Features Influencing Development of Packages

Access within the Warsaw planning segment was a primary factor guiding the development of packages, with Parker Street and Center Street identified as key corridors into the city. Parker Street carries a large proportion of traffic crossing US 30 to destinations north and south of the route, while Center Street is a key connection to downtown Warsaw. Further complicating the package development is the presence of Dupuy Synthes, a major employer with driveways along US 30 between Old US 30 and CR 250E.

Beginning with lower impact packages that retain signal control, the *Existing Transportation Conditions Report* analysis shows that the existing traffic signals within the segment have safety and mobility concerns. Therefore, retaining the existing traffic signals in their current configuration was not determined to meet the needs of the segment.

Given the eight signalized primary intersections within the segment, it was next decided to divide the segment into two sets of intersections that are interrelated based on access and spacing: from CR 200N to Springhill Road, and from Parker Street to CR 250E. To maximize driver expectations, a signalized improvement was selected for each

grouping and used throughout that portion of the segment – RCUT for the western signals and boulevard left for the eastern intersections – based on the alternatives that operate satisfactorily at all locations within the grouping. This eliminates the RCUT alternative for the eastern intersections (Center Street, Old US 30, Commerce Drive, and CR 250E) and the boulevard left alternative for the western intersections (CR 200N, Meijer Road, and Springhill Road).

For package two, the roundabout alternative was introduced to the western and eastern ends of the segment to geometrically force motorists to slow down entering the city. The traffic would be calmed at the roundabouts, and the slower speeds would be reinforced through cross section changes within the segment (such as introducing curbed sections, street trees and pedestrian improvements, placemaking installations, and other elements). The signalized alternatives would be retained for the eastern grouping of intersections. For the western portion, a Green-T alternative at Meijer Road would not geometrically combine with the roundabout and was eliminated as an option. An RCI at Meijer Road and a signalized Green-T at Springhill Road were selected as alternatives for package two.

Packages 3 through 6 combine elements from Level 2 into an expressway (packages 3 & 4) or a freeway (packages 5 and 6) to provide a free flow alternative through the planning segment. Secondary intersection improvements were identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 4 – Warsaw

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Warsaw is an incredibly congested and unsafe area along US 30, especially at Parker Street.
- Bypass around the city to support economic development, safety, and traffic flow.
- Eliminate traffic signals and convert them to interchanges.
- Remove truck lane restrictions to improve safety and traffic flow.
- Create service roads so that one drives on a service road until there is an interchange or crossover.
- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Turning US 30 into a freeway will negatively affect the businesses.
- Purchase the former Pennsylvania Railroad from CSX and build passenger rail that runs parallel to US 30.
- Crossing US 30 by bicycle and foot is dangerous.
- Conflicting opinions: Turn US 30 into a freeway from SR 49 to I-69 / a freeway will negatively affect local residents' quality of life.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Too many traffic lights in Warsaw.
- A large number of comments request that Parker Street remain open to retail shoppers going to/from Menard's. Eliminating the Parker Street access to the shopping center would mean that shoppers and trucks bringing goods into/out of the retail space would move to smaller residential roads and greatly affect residents' quality of life.

3.4.2. IMPROVEMENT PACKAGES

Six packages of improvements were identified for planning segment 4 and are characterized as follows:

Table 3.4-1 – Packages of Improvements - Planning Segment 4 - Warsaw

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared.
1	Arterial	Non-Free Flow	Partial	A low-cost package that replaces the traditional traffic signals with RCUTs and Boulevard Lefts to improve operations and safety. Secondary Intersections and residential driveways would be restricted to RIRO to improve safety through the planning segment.
2	Arterial	Non-Free Flow	Partial	A variation of package 1 that maintains a signalized corridor from Springhill Drive to Commerce Drive, but with roundabouts at CR 200N and CR 250E to reduce travel speeds as traffic enters the urbanized area.
3	Express way Lite	Free Flow	Partial	Given the traffic volumes on intersecting roadways in the planning segment, providing a free flow option necessitates an expressway with RIRO or grade separated intersection alternatives. This package provides overpasses, plus interchanges at Springhill Road, Center Street and CR 250E to provide connectivity within the planning segment. To further support local circulation and reduce weaving patterns on US 30, collector distributor roads are provided between Springhill Road, Parker Street and Center Street. Existing driveway connections are allowed to remain.
4	Express way	Free Flow	Partial	This package follows the same intersection configurations as package 3 but increases access controls by prohibiting driveway connections and median openings between intersections.
5	Freeway w/ Frontage Roads	Free Flow	Full	The first of two fully access controlled packages, this would close the median of US 30 and construct one-way frontage roads with slip lanes to enter and exit US 30 to local connections. The frontage road connections allow for a more compact footprint and interchange-like operations at each intersection. Frontage road ramp connections would be provided at Anchorage Road, Springhill Drive, Center Street, and CR 250 East.
6	Freeway	Free Flow	Full	The full freeway package for the planning segment would include closely spaced interchanges to provide local connections and collector distributor roads between Springhill Road, Parker Street, and Center Street to reduce weaving concerns on mainline US 30 and facilitate local circulation.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

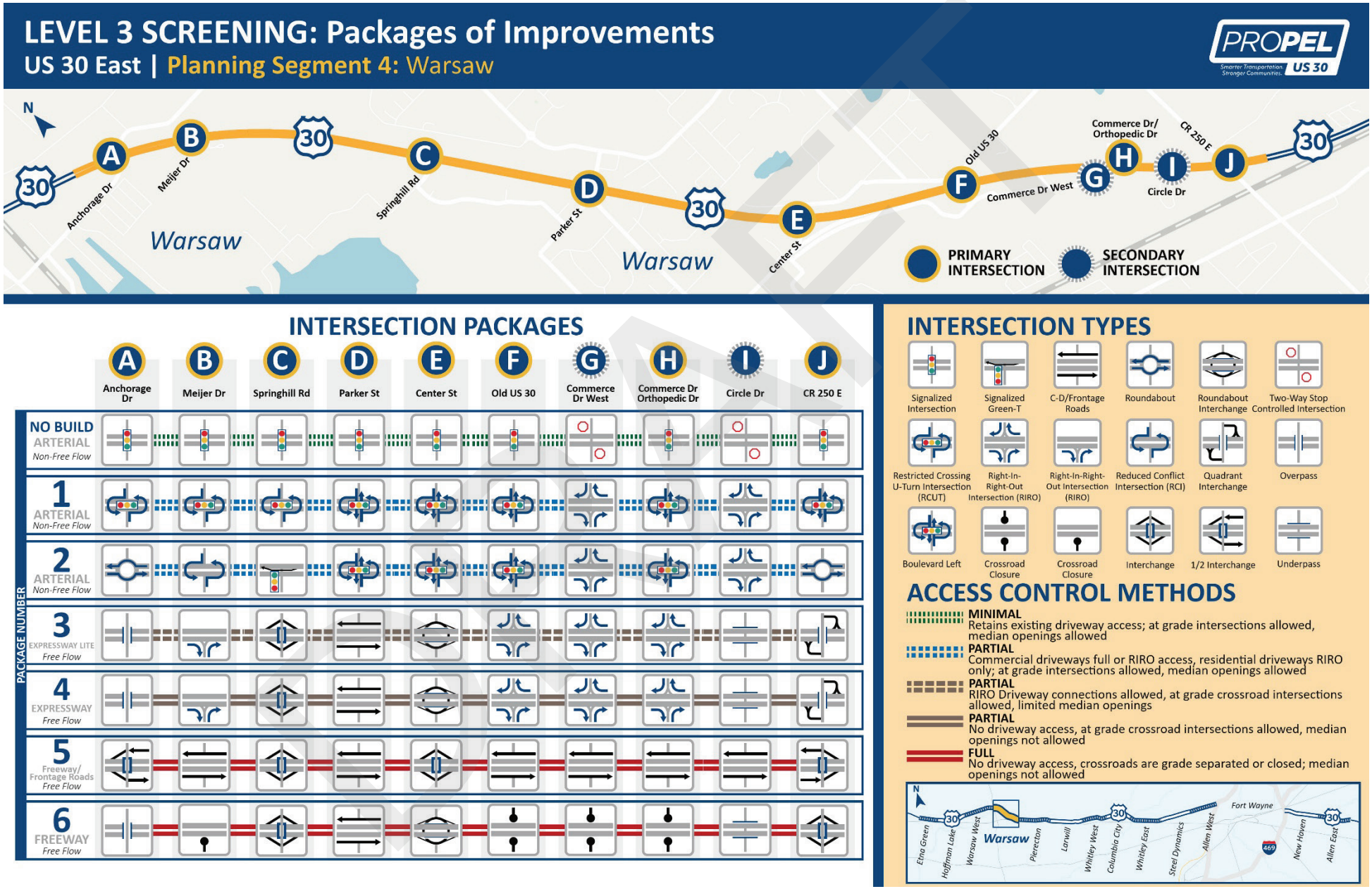
Table 3.4-2 – Level 2 Concepts in Level 3 - Planning Segment 4 – Warsaw

Primary Intersection			CR 200N	Meijer Rd	Springhill Rd	Parker St	Center St	Old Route 30	Commerce Dr	CR 250E
		Existing Traffic Control	🚦	🚦	🚦	🚦	🚦	🚦	🚦	🚦
Primary Concepts	Unsignalized Improvements	Roundabout	2							2
		RCI - Reduced Conflict Intersection	~~●~~	2	~~●~~	~~●~~	~~●~~	~~●~~	~~●~~	~~●~~
		RCI - Variant								
	Signalized Improvements	Traffic Signal Improvements	~~●~~	~~●~~	~~●~~	~~●~~	~~●~~	~~●~~	~~●~~	~~●~~
		Green-T Intersection		~~●~~	2					
		Partial Median U-Turn	~~●~~			~~●~~	~~●~~	~~●~~	~~●~~	~~●~~
		RCUT - Restricted Crossing U-turn	1	1	1		~~●~~	~~●~~	~~●~~	~~●~~
		Boulevard Left	~~●~~			1,2	1,2	1,2	1,2	1
	Other	Interchange			3,4,6		3,4,6	~~●~~		3,4,6
		Access Management - RIRO or Closed		3,4				3,4	3,4	
		Access Management - Directional								
		Add or Lengthen Turn Lanes	●			●		●		
Complementary Concepts		Overpass/Underpass	3,4,6			3,4,6	~~●~~			
		Adj. Intersection Improvements				●	●			●
		Realign Skewed Intersection								
		Add / Extend Accel. / Decel. Lanes	●	●	●			●	●	
		Warning Systems	●	●	●	●	●	●	●	●

~~●~~ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number.
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.4-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.4-1 – Planning Segment 4: Warsaw - Packages of Improvements Diagrams



3.4.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.4-3 – Measures Comparison Table - Planning Segment 4 - Warsaw

Planning Segment: 04 - Warsaw				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Non-Free Flow Partial Access	2 Arterial Non-Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway w/Frtg. Free Flow Full	6 Freeway Free Flow Full
Purpose and Need	Safety	Total Conflict Points	#	443	276	229	89	59	185	69
		Crossing Conflict Points	#	232	78	63	7	7	83	10
		% Reduction in Crossing Conflict points	%	-	-66%	-73%	-97%	-97%	-64%	-96%
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	305	335	446	446	295	440
		Cost Effectiveness Index (CEI)		-	0.1	0.1	0.5	0.5	1.0	0.4
	Mobility	Average Travel Time Along US 30	Min	7.4	6.9	6.6	4.7	4.7	4.7	4.7
		Average Distance Between US 30 Access Points	#	0.5	0.5	0.5	0.5	0.5	0.5	1.6
		Average Distance Between US 30 Crossing Points	#	0.6	0.8	0.8	1.6	1.6	0.8	0.8
		North-South Mobility Compared to No Build		-	Similar	Similar	Decreased	Decreased	Similar	Similar
		N-S Delay Per Vehicle	Min	11.6	11.7	8.7	14.2	14.2	12.5	12.5
		Residential Driveways RIRO vs. Full	#	0 / 1	0 / 1	1 / 0	1 / 0	0 / 0	0 / 0	0 / 0
		Commercial Driveways RIRO vs. Full	#	9 / 5	9 / 5	9 / 5	14 / 0	0 / 0	0 / 0	0 / 0
		Field Access RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	1	1	0.5	0
		Rivers & Streams Impact	Feet	-	0	0	1,700	1,700	1,800	1,700
		Floodplain Impact	Acres	-	0	0	0	0	4	0
		Forested Area Impact	Acres	-	0	< .5	< .5	< .5	2.5	< .5
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No	No	No
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	No
		Cemeteries	Yes/ No	-	No	No	No	No	No	No
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0.5	3	15	15	9.5	8.5
		Residential Relocations	#	-	0	0	2	2	1	2
		Business Relocations	#	-	0	0	3	8	1	8
		Farmland Impact	Acres	-	0	0	0	0	< .5	0
		Farmland Access Impact	#	-	No	No	No	No	No	No
		Potential Hazardous Materials Sites	#	-	1	3	2	2	11	3
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	Yes	Yes	Yes	Yes	Yes	Yes
		Potential Impacts to Communities with EJ Concerns	Acres	-	< .5	1	5.5	5.5	4	5.5
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	3	3	0	3
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	Yes	Yes	No	Yes
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Increase	Increase	Decrease	Decrease	Decrease	Decrease
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$23 to $29	$43 to $52	$181 to $222	$181 to $222	$266 to $326	$159 to $195
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.1 to $0.2	$0.2 to $0.4	$0.9 to $1.2	$3.2 to $4	$1 to $1.3	$3.1 to $3.9
		Estimated Total Package Cost (2024 Dollars)	$M	-	$23 to $29	$43 to $53	$182 to $223	$185 to $226	$267 to $327	$162 to $199
Goals		Economic Development		No Change	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances
		Equity in Transportation		No Change	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Low	Low	Low
		Driver Expectations		No Change	Diminshes	Diminshes	Enhances	Enhances	Neutral	Neutral
Level 3 Screening Result				Carried Forward	Carried Forward	Eliminated	Recommended	Recommended	Eliminated	Recommended

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.4-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. Each of the six improvement packages would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 5 (freeway w/ frontage roads) results in more conflict points than package 6 due to the intersections along the frontage roads adding conflict points.

Mobility

Regional Mobility

In **Table 3.4-3,** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Regional mobility appears not to be a major differentiator between packages 1 and 2 as the travel time savings are 0.5 and 0.8 minutes, respectively when compared to the No Build conditions since the traffic signals still remain along the planning segment. However, as shown in packages 3-6, removal of all eight existing traffic signals at the primary intersections results in a free-flow condition along the entire planning segment, resulting in an average of almost 3 minutes of travel time savings per vehicle in the peak hours along US 30.

Local Mobility

In **Table 3.4-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to No Build, the distance per *access point* is the same for packages 1 thru 5 but increases to 1.6 miles for freeway package 6, indicating that the freeway option results in the greatest adverse effect local access to/from US 30. Compared to No Build, the distance per *crossing point* slightly increases in all packages, with the longest distance of 1.6 miles for expressway packages 3 and 4.

There are one residential and 14 commercial driveways, with no field entrances in this planning segment. Almost half of these driveways currently have full access to US 30. In packages 1, 2, 3, and 5 all residential and commercial driveways would be converted to right-in/right-out (RIRO) only access. All driveways would be closed in packages 4 and 6 as these packages do not permit driveway access.

Social & Environmental Impacts

All packages in Segment 4 are likely to have impacts on social and environmental resources. Packages 3, 4, 5 and 6 present the most impact on natural resources, especially on rivers and streams. All packages have potential

socioeconomic impacts within an EJ area, and all affect cultural resources similarly across the packages. Package 5 has the most amount of potential impact on natural, environmental, and social resources.

Natural Resources

All packages within Segment 4 will have potential impacts to various natural resources aside from package 1. Package 5 has the most amount of potential impacts to natural resources with potential impacts to rivers and streams (approximately 1,800 feet), 4 acres of potential floodplain impact and 2.5 acres of potential forested areas impacts. Package 1 has no potential impacts to natural resources.

Cultural Resources

There are direct impacts to known cultural resources within this segment. The Pike Lake residential neighborhood (ca. 1935) could potentially qualify as a historic district. This resource is directly adjacent to the CR 200N intersection and could be directly impacted by all packages. However, indirect impacts to nearby resources should be considered as solutions are further developed. The following other resources have been identified within ½ mile of an intersection in this segment; if these resources are determined to be historic, additional investigations may be warranted for any projects that move forward adjacent to these sites:

- Justin O. Zimmer House (NR-1017, IHSSI No. 085-080-45008, NPS File No. 91001865), approximately 0.32 mile from Center Street
- Hodges Addition residential neighborhood (ca. 1961) approximately 0.37 mile from Parker Street
- Meadow Brook residential neighborhood (ca. 1961) approximately 0.10 mile from Parker Street and 0.47 mile from Center Street
- Oak Ridge Heights residential neighborhood (ca. 1960) approximately 0.28 mile from Springhill Road and approximately 0.31 mile from Parker Street
- Mount Memorial Addition residential neighborhood (ca. 1940) approximately 0.42 mile from Center Street
- Whispering Oaks residential neighborhood (ca. 1955) approximately 0.35 mile from Center Road, 0.08 mile from Old US 30, and 0.32 mile from Commerce Drive West
- Bibler's Addition residential neighborhood (ca. 1950) approximately 0.50 mile from Old US 30, approximately 0.37 mile from Commerce Drive West, approximately 0.33 mile from Commerce Drive – Orthopedic Drive, and approximately 0.40 mile from Circle Drive
- Lamp Post Manor Estates residential neighborhood (ca. 1970) approximately 0.43 mile from Commerce Drive – Orthopedic Drive, approximately 0.38 mile from Circle Drive, and approximately 0.44 mile from CR 250E

Socioeconomic Impacts

Some Segment 4 intersections are located in areas of EJ concern for poverty, including Springhill Dr., Parker St. and parts of the Center St. intersections. However, none of the intersection designs propose substantial increase in right-of-way in an EJ area. The largest increase in right-of-way within the EJ area is in packages 3, 4, and 6, each with an increase of 5.5 acres. This is followed by a 4-acre right-of-way increase in the EJ area for package 5, while packages 1 and 2 have right-of-way increases of 1.5 acres or less. Although packages 4 and 6 have the largest cumulative increase in right-of-way within the EJ area, this increase is distributed over a much larger area, including the frontage

roads and the intersections of Springhill Drive, Parker Street, and Center Street, rather than being concentrated at one or two individual intersections. As a result, there is likely to be no concentrated impact on the EJ areas.

Packages 3, 4, and 6 each present three potential business relocations and two potential residential relocations while package 5 would require one residential relocation and one business relocation. Three of the relocations in packages in 3, 4, and 6 would be EJ relocations, while no relocations in package 5 would be EJ. These relocations present a potential risk of socioeconomic impact, particularly in packages 3, 4, and 6, thus potentially may cause disproportionate impact to EJ populations specifically.

All potential intersection designs at US 30 and CR 200N, Springhill Dr, and Parker St as well as the Old US 30 boulevard left intersection will cross potential Section 4(f) resources - the Warsaw Side Paths and the Husky Trail connection - likely affecting recreational opportunities and pedestrian access throughout the Segment. This impact will be present in all packages and the number of times intersections impact resources varies. Package 4 will likely have the largest impact on this resource as the frontage roads will cross potential Section 4(f) resources 5 times throughout Segment 4, and have the potential to impede pedestrian and cycling crossing of US 30 and related recreational opportunities as well as require additional crossing of frontage roads at each path intersection. However, all of the potentially impacted trail crossings are for proposed trails and trail connections, so the impacts are not likely to occur at this point in time.

All packages are likely to have impact on nearby manufactured home communities, and there will likely be similar levels of impact across all packages. All intersection designs at CR 200 N are directly adjacent to a manufactured home community, while alternatives at CR 250 E in packages 3, 4, 5, and 6 are directly adjacent to a manufactured home community, and alternatives at Commerce Dr. in packages 1 and 2 are directly adjacent to a manufactured home community. Package 5 is likely to present the most impact on manufactured home communities and will come within 0.1 miles proximity of four such communities throughout Segment 4.

All packages are all likely to have similar impact on HUD subsidized resources. There is only one HUD subsidized resource with 0.1 miles of an intersection which will potentially be impacted in Segment 4. The Old US 30 boulevard left design in packages 1 and 2, the Center St. intersection design in packages 3, 4, and 6, and the frontage roads in package 5 are the intersections which may have potential impact on this resource.

In terms of community and social resources, packages 1, 2, and 5 are likely to have more impact, while packages 3, 4, and 6 are likely to have the least amount of impact. At the Center St. intersection, all packages will be within 0.1 miles of a kindergarten. Furthermore, packages 2, 3, 4, and 6 will be within 0.1 miles proximity of one health clinic, while packages 1 and 5 will be within 0.1 miles proximity of two health clinics. Package 5 is likely to present slightly more impact on community and social resources as the frontage roads will come within 0.1 miles proximity of the two health clinics and kindergarten impacted by the other packages, but also an animal shelter and a skate park.

All packages within the segment have little to no impact on farmland.

Goals Assessment

Economic Development

Economic development is rated as greatly enhances for all packages. This is due to the overwhelming improvement in safety that would accompany any of the packages as currently proposed, combined with the reduction in regional travel time through the elimination of some or all traffic signals. These benefits outweigh the negative impacts to local mobility that accompany more restrictive access management packages.

Equity in Transportation

For many of the same reasons as the economic development goal, the equity is rated as greatly enhances for all packages.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1, 2, and 3 are rated as moderately practical due to the relatively low cost and impacts while providing safety and mobility benefits. Packages 4, 5, and 6 are all rated as low practicality due to the higher relative costs and right-of-way impacts. Package 5 provides the lowest Cost Effectiveness Index score, while the scores of packages 1 and 2 are relatively similar and packages 3, 4, and 6 are nearly the same.

Driver Expectations

Packages 1 and 2 were rated as diminishing driver expectations due to retaining traffic signals on the route, essentially a safer version of the existing conditions that currently do not meet expectations. Packages 3 and 4 are anticipated to improve driver expectations, as these packages retain much of the existing access while removing traffic signals. The remaining packages are rated as neutral for expectations, with the benefits of removing the traffic signals offset by the reduced access compared to existing conditions.

3.4.4. FINDINGS AND RECOMMENDATIONS

Packages 1 and 2 are the lowest cost and lowest impact packages that address identified safety issues at each of the 10 primary and secondary intersections in this segment. The combination of safety improvements and cost result in these two packages being the most cost effective while retaining a similar level of local mobility as exists today. Although these packages are not free-flow, they do reduce east-west travel times along US 30, improving regional mobility. Approximately one to three acres of new right-of-way would be required with no residential/business relocations. Despite the similarities, package 2 includes mainline roundabouts which have received stakeholder concerns regarding the impacts on regional travel. Therefore, while package 1 is *'Carried Forward'* for further evaluation as part of subsequent project development studies, package 2 is categorized as *'Eliminated'*.

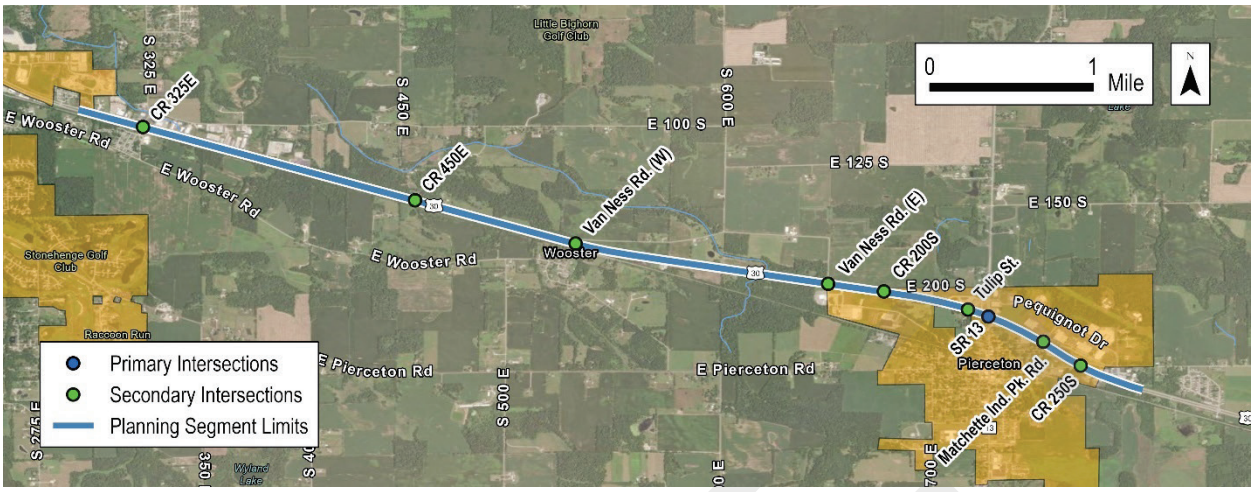
Expressway packages 3 and 4 are higher cost, higher impact packages that improve east west mobility by eliminating all traffic signals. Both packages include a collector distributor road between Springhill Drive, Parker Street and Center Street. The expressway lite package allows for existing driveways to continue to connect to US 30, but as right-in/right-out only, while the expressway package would close all driveways. Although these packages may require the greatest amount of new right-of-way (15 acres), resulting in two residential relocations and up to 8 business relocations, they result in good overall safety performance and result in a comparatively good cost effectiveness. For this reason, and because they eliminate traffic signals in this segment, these packages are categorized as '*Recommended*'.

Freeway with frontage roads, package 5, is a high-cost, high impact package and although it has good safety performance, its high cost results in this being the least cost effective package. Because the frontage roads connect with each cross-street, this package retains a similar level of local mobility as exists today while improving regional,

east-west mobility along US 30. Approximately 9.5 acres of new right-of-way would be required with two residential/business relocations. Package 5 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. For these reasons, Package 5 is categorized as '*Eliminated*'.

Freeway package 6 is a high cost, high impact package that has good safety performance. The good safety performance results in this package being slightly more cost effective than packages 3 and 4. Eliminating the traffic signals would improve regional mobility through reducing the travel time through the segment, but the improvements necessary to remove the signals would result in approximately 8.5 acres of new right-of-way with 10 residential/business relocations. Despite the high cost and potential right-of-way impacts, package 6 is '*Recommended*' for further evaluation in subsequent project development studies due to improved safety, regional mobility, and relatively good cost effectiveness.

3.5. SEGMENT 5: PIERCETON



3.5.1. PLANNING SEGMENT OVERVIEW

The Pierceton planning segment is 5.2 miles in length and includes the Town of Pierceton, as well as the rural / suburban area between Warsaw and Pierceton. The western-most portion of the roadway is adjacent to light industrial uses, and the eastern-most portion of the roadway contains commercial and industrial land uses within Pierceton. The rural area is agricultural and residential in nature, with driveways accessing properties and fields.

This planning segment contains one primary and eight secondary intersections. SR 13 is the only primary intersection, is signalized, and passes through the middle of Pierceton. The secondary intersections include several county roadways (CR 325E, CR 450E, and Van Ness Road West Junction) as well as Pierceton streets near SR 13 (Van Ness Road East Junction, CR 200N, Tulip Street, Machette Industrial Park Road, and CR 250S). Each secondary intersection is two-way stop controlled (TWSC) allowing US 30 to operate in a free flow condition.

There are fifteen driveways and one field entrance located along US 30 in this planning segment, ten serving commercial properties and two leading to residential developments.

Overall, this section of US 30 is considered to operate as non-free flow as there is a traffic signal at SR 13 which frequently stops the flow of traffic along US 30.

Notable Features Influencing Development of Packages

For the Pierceton planning segment, stretching from east of Warsaw through the Town of Pierceton, the key considerations for the packages within this segment are improvements related to the existing traffic signal at SR 13.

Based on the safety analysis performed during the *Existing Transportation Conditions Report* crash rates were elevated at Van Ness Road (East Jct), so retaining the existing two-way stop-controlled intersection was not included in any packages. SR 13 did not experience elevated crash rates, but isolated traffic signals have been identified as a location of safety concern elsewhere in the US 30 East corridor, so that alternative was eliminated.

Starting with the primary intersection and the remaining Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 5 – Pierceton

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Create interchange at SR 13.
- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Turn US 30 into a freeway from SR 49 to I-69.
- Turning US 30 into a freeway will negatively affect the businesses.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Enforce a rule that semitrucks must use the right lane only.

3.5.2. IMPROVEMENT PACKAGES

Five packages of improvements were identified for planning segment 5 and are characterized as follows:

Table 3.5-1 – Packages of Improvements - Planning Segment 5 - Pierceton

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared.
1	Arterial	Free Flow	Minimal	A low cost, low impact package that retains the existing conditions and access for all locations except for Van Ness Road East, which is converted to right-in/right-out (RIRO) to address elevated crash frequency and costs, and SR 13, that is converted to a directional intersection to eliminate the traffic signal and provide free flow conditions.
2	Arterial	Free Flow	Partial	A lower impact safety improvement package that reduces or eliminates conflict points at each intersection. The SR 13 intersection is reconfigured as an RCI to eliminate the existing traffic signal while providing for full access and free flow conditions. The remaining intersections are either reconfigured as RIRO, RCI or closed. Existing commercial and residential driveway access is still permitted as full and RIRO access (respectively).
3	Expressway Lite	Free Flow	Partial	A higher cost, higher impact free flow package that is similar to package 2 but includes a full interchange at SR 13. Existing residential and commercial driveways on US 30 are still permitted but as RIRO access only.

4	Expressway	Free Flow	Partial	This free flow package includes the same intersection improvements as package 3 but commercial and residential driveway access is not permitted.
5	Freeway	Free Flow	Full	The highest cost free-flow package that reconfigures US 30 as a limited access freeway and provides grade separation at CR 325E and Van Ness Road W. and an interchange at SR 13. All other connections to US 30 are closed.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

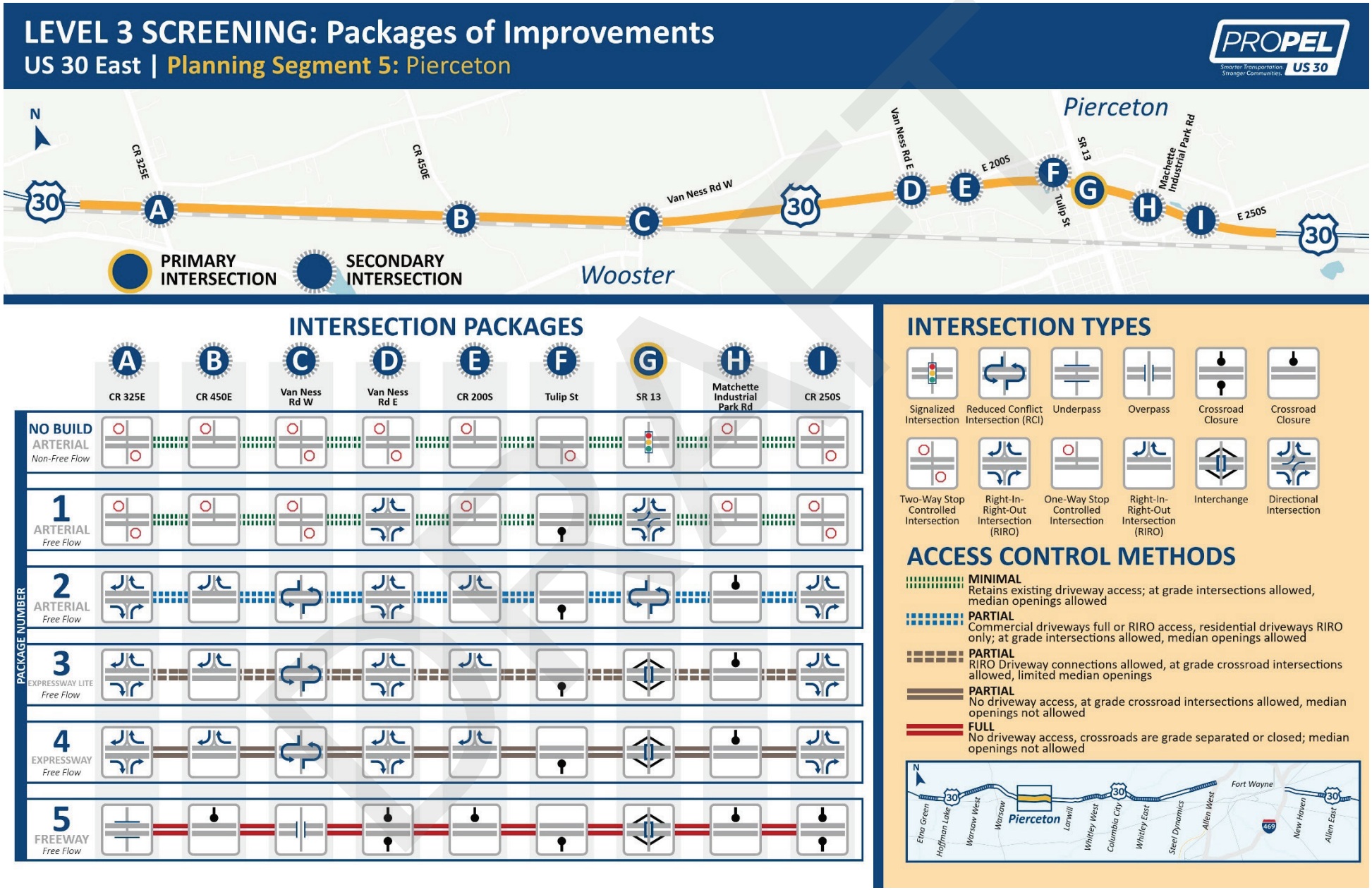
Table 3.5-2 – Level 2 Concepts in Level 3 - Planning Segment 5 – Pierceton

Primary Intersection			SR 13
		Existing Traffic Control	
Primary Concepts	Unsignalized Improvements	Roundabout	
		RCI - Reduced Conflict Intersection	2
		RCI - Variant	
	Signalized Improvements	Traffic Signal Improvements	
		Green-T Intersection	
		Partial Median U-Turn	
		RCUT - Restricted Crossing U-turn	
		Boulevard Left	
	Other	Interchange	3,4,5
		Access Management - RIRO or Closed	
		Access Management - Directional	1
		Add or Lengthen Turn Lanes	
Complementary Concepts		Overpass/Underpass	
		Adjacent Intersection Improvements	●
		Realign Skewed Intersection	●
		Add / Extend Accel. / Decel. Lanes	
		Warning Systems	●

~~●~~ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number.
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.5-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.5-1 – Planning Segment 5: Pierceton - Packages of Improvements Diagrams



3.5.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits at for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.5-3 – Measures Comparison Table - Planning Segment 5 - Pierceton

Planning Segment: 05 - Pierceton				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Free Flow Minimal	2 Arterial Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway Free Flow Full	
Purpose and Need	Safety	Total Conflict Points	#	369	286	175	94	64	26	
		Crossing Conflict Points	#	185	136	53	14	14	10	
		% Reduction in Crossing Conflict points	%	-	-26%	-71%	-92%	-92%	-95%	
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	34	91	118	118	121	
		Cost Effectiveness Index (CEI)		-	0.1	0.1	0.7	0.7	1.2	
	Mobility	Average Travel Time Along US 30	Min	5.5	5.0	5.0	5.0	5.0	5.0	
		Average Distance Between US 30 Access Points	#	0.6	0.6	0.7	0.7	0.7	5.0	
		Average Distance Between US 30 Crossing Points	#	1.0	1.7	2.5	2.5	2.5	1.7	
		North-South Mobility Compared to No Build		-	Decreased	Decreased	Decreased	Decreased	Decreased	
		N-S Delay Per Vehicle	Min	2.1	2.9	1.8	0.1	0.1	0.0	
		Residential Driveways RIRO vs. Full	#	1 / 2	1 / 2	3 / 0	3 / 0	0 / 0	0 / 0	
		Commercial Driveways RIRO vs. Full	#	5 / 7	5 / 7	5 / 7	12 / 0	0 / 0	0 / 0	
		Field Access RIRO vs. Full	#	0 / 3	0 / 3	0 / 3	3 / 0	0 / 0	0 / 0	
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	< .5	< .5	< .5	
		Rivers & Streams Impact	Feet	-	0	0	0	0	0	
		Floodplain Impact	Acres	-	0	0	0	0	0	
		Forested Area Impact	Acres	-	0	0	0.5	0.5	0.5	
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	
		Cemeteries	Yes/ No	-	No	No	No	No	No	
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	0	7.5	7.5	12	
		Residential Relocations	#	-	0	0	9	13	16	
		Business Relocations	#	-	0	0	3	4	4	
		Farmland Impact	Acres	-	0	0	2	2	4.5	
		Farmland Access Impact	#	-	No	No	No	Yes	Yes	
		Potential Hazardous Materials Sites	#	-	0	0	1	1	2	
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0	0	
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0	0	
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No	No	
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Decrease	Decrease	Decrease	Decrease	Decrease	
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$3 to $5	$9 to $12	$67 to $83	$67 to $83	$122 to $151	
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.0	$1.9 to $2.5	$4.3 to $5.3	$4.6 to $5.7	
		Estimated Total Package Cost (2024 Dollars)	$M	-	$3 to $5	$9 to $12	$69 to $86	$72 to $89	$127 to $156	
Goals		Economic Development		No Change	Neutral	Neutral	Enhances	Enhances	Neutral	
		Equity in Transportation		No Change	Neutral	Neutral	Enhances	Enhances	Neutral	
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Low	Low	Low	
		Driver Expectations		No Change	Neutral	Neutral	Enhances	Enhances	Neutral	
Level 3 Screening Result				Carried Forward	Recommended	Recommended	Carried Forward	Carried Forward	Carried Forward	

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.5-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. All five improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 5 (freeway) results in the greatest conflict point reduction due to closures and grade separation intersection alternatives, followed by expressway package 4 and expressway lite package 3.

Mobility

Regional Mobility

In **Table 3.5-3,** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Generally, regional mobility appears not to be a major differentiator between packages in this segment given that the only existing traffic signal in this planning segment is at SR 13. Removal of this traffic signal results in a free-flow condition along the entire planning segment which results in a minimal travel time savings of 30 seconds per vehicle during the peak hours for all five packages.

Local Mobility

In **Table 3.5-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access points, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to No Build, the distance per *access point* is the same as no build for package 1 and increases slightly to 0.7 miles for packages 2 thru 4. Freeway package 4, indicating that the freeway option results in the greatest adverse effect local access to/from US 30.

For the distance between crossing points, the lower the number of miles, the less distance (on average) that there is between crossing points, indicating higher level of local access/mobility. Generally, north-south mobility becomes more constrained as the level of access control increases and options for crossing US 30 are fewer. Compared to No Build, the distance per *crossing point* increases in all packages, with the longest distance of 2.5 miles for packages 2 thru 4 which have two crossings each. Packages 1 and 5 result in 1.7 miles per crossing point on average with 3 crossings.

There are three residential driveways, twelve commercial driveways, and three field entrances in this planning segment. Most of these driveways and field entrances currently have full access to US 30. All residential driveways would be converted to right-in/right-out (RIRO) only access in package 2, while commercial driveways and field entrances would still have the same access to US 30 as the No Build in packages 1 and 2. In the expressway lite package 3, existing residential and commercial driveways would be permitted as RIRO access only, whereas

driveways would be closed to accommodate an expressway in package 4. And, as a freeway, all driveways would be closed in package 5.

Social & Environmental Impacts

For Segment 5, there are minimal potential social and environmental impacts. Package 5 has the most potential impact to natural resources in the segment, while packages 3, 4, and 5 present the highest potential socioeconomic impact for the segment.

Natural Resources

Potential impacts to natural resources are generally minimal for Segment 5. Packages 2, 3 and 4 all have potential impacts to natural resources including forested areas (packages 2, 3, and 4) and NWI wetlands (packages 3 and 4). Package 3 has the most potential impacts to natural resources with less than 0.5 acre of potential impacts to wetlands and less than 1 acre of impacts to forested land, while package 1 results in no impacts to natural resources.

Cultural Resources

There are no direct impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to nearby resources should be considered as solutions are further developed. The following resource has been identified within ½ mile of an intersection in this segment; additional investigations may be warranted for any projects that move forward adjacent to this site:

- Pierceton Historic District (NR-1097, IHSSI No. 085-510-41001-41035, NPS File No. 92001147) approximately 0.30 mile from Tulip Street, approximately 0.27 mile from SR 13, approximately 0.22 mile from Matchette Industrial Park Road, and approximately 0.33 mile from CR 250S

Socioeconomic Impacts

Packages for Segment 5 are not located in an EJ area, and no community resources or vulnerable housing populations are within areas of potential new right-of-way or within 0.1 miles thereof. However, packages 3 and 4 present the potential for nine residential relocations and three business relocations and package 5 presents the potential for 16 residential relocations and four business relocations. These relocations present a potential risk socioeconomic impact, but none of the relocations are located in EJ areas and thus are not likely to cause disproportionate impact to EJ populations specifically. Package 5 also presents the highest increase in new right-of-way needed, followed by packages 3 and 4, while packages 1 and 2 have none or close to no additional right-of-way.

Package 5 presents the largest overall potential impact to farmland at 4.5 acres, followed by packages 3 and 4 at 3.5 acres, neither of which present substantial impacts.

North-south travel across the corridor will be affected by the build alternatives, including for residents traveling locally for daily activities and for farmers crossing US 30 East to move agricultural field equipment. Generally, impacts to US 30 access and north-south travel increase as the level of access control increases in a given package of improvements, typically resulting in fewer opportunities to access or cross US 30 because of increased access control needs.

In the No Build condition, there are north-south crossings of US 30 East approximately every 0.8 miles. The improvement packages result greater access control that will reduce and consolidate north-south access (from access every 0.8 mile, on average for arterial package 1, to 5 miles with the freeway package 5). While this will increase distance of travel for local residents and businesses to cross US 30 East, the build alternatives reduce crossing conflict points indicating a safety improvement. Improvement package 4 will reduce the number north-

south crossings of US 30 for local traffic more than the other improvement packages; all north-south crossings would be grade-separated for this freeway option.

Goals Assessment

Economic Development

Economic development is rated as neutral for all packages except packages 3 and 4, which are rated as enhances. Package 1 provides minor safety improvements and only has minor local mobility restrictions, which should not impact economic development opportunities. Package 2 improves regional mobility and safety through the removal of the traffic signal at SR 13 but restricts local access across US 30. Package 5 improves safety and regional mobility above package 2 but eliminates access to US 30 except at one location. Packages 3 and 4 combines the best pieces of the other packages, through improved safety and regional mobility while still retaining access to US 30 – package 3 would retain existing driveways in the segment, while package 4 would close all driveways.

Equity in Transportation

For many of the same reasons as the economic development goal, the equity is rated as neutral for all packages except packages 3 and 4, which is rated as enhances due to the combination of improved safety without restricting access to US 30.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1 and 2 are rated as moderately practical due to the relatively low cost and low impacts while providing safety and mobility benefits. Packages 3, 4, and 5 are rated as low practicality due to the higher relative costs and impacts and large number of potential relocations and impacts.

Driver Expectations

Packages 1 and 2 were rated as neutral for driver expectations due to the removal of the traffic signal at SR 13 with no geometric changes, essentially a safer version of the existing conditions that currently do not meet expectations. Packages 3 and 4 are rated as enhances expectations due to the removal of the traffic signal combined with improvements to better match the roadway and the posted speed limit. Package 5 is rated as neutral for expectations due to the lengthy stretch of roadway that would lose access to US 30 that drivers would not expect in a rural setting.

3.5.4. FINDINGS AND RECOMMENDATIONS

Package 1 is lowest cost and lowest impact package that addresses identified safety issues at Van Ness Road (East Jct) only. These safety improvements coupled with its low cost result in this package being highly cost effective. This package also maintains a similar level of local access as exists today and could represent an incremental, initial investment to improve safety. No new right-of-way would be required with no residential/business relocations. This package is '*Recommended*' for further evaluation as part of subsequent project development studies.

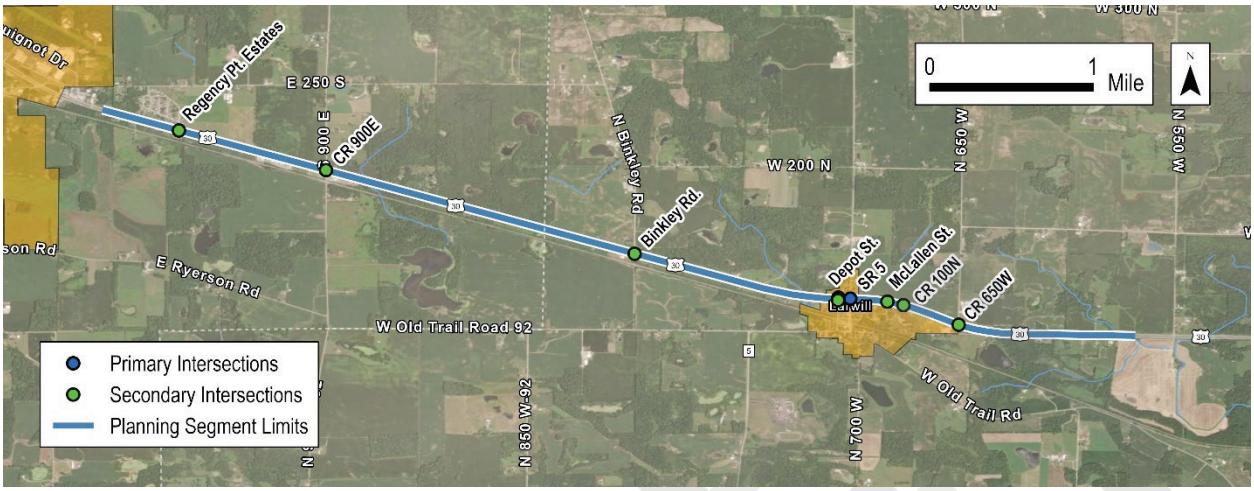
Package 2 is low cost and low impact package that includes improvements at each of its 9 intersections to address identified safety issues. These low cost safety improvements result in this package being very cost effective. Although this package provides some east-west regional mobility benefits while retaining similar driveway and roadway access as exists today, north-south crossings of US 30 are reduced from five to two. No new right-of-way would be required with no residential/business relocations. This package is '*Recommended*' for further evaluation as part of subsequent project development studies.

Expressway lite package 3 and expressway package 4 result in higher costs and higher impacts compared to packages 1 and 2. Although these packages have good safety performance, their higher costs result in reduced cost effectiveness. While both these packages result in some minor additional US 30 travel time savings compared to package 2, the expressway package further limits existing local access by closing 15 driveways. These packages also result in 7.5 acres of new right-of-way potentially resulting in 12 to 17 relocations.

Freeway package 5 results in the highest costs and impacts of all packages in this segment. Although this package has good safety performance, its high cost results in it being the least cost effective. While this package results in some minor additional US 30 travel time savings compared to package 2, it also further impacts existing local access by closing 15 driveways and restricting US 30 access to SR 13 only. This package also results in 12 acres of new right-of-way potentially requiring 10 relocations.

Packages 3, 4 and 5 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in these packages, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if either of these packages are a reasonable solution to the planning segment's transportation needs. For these reasons, packages 3, 4 and 5 are categorized as *'Carried Forward'*.

3.6. SEGMENT 6: LARWILL



3.6.1. PLANNING SEGMENT OVERVIEW

The Larwill planning segment is 5.0 miles in length and includes the Town of Larwill, as well as the rural area between Pierceton and Larwill. The eastern-most portion of the segment contains commercial land uses associated with Larwill, but the majority of the segment is rural and provides access to adjacent residential properties and fields.

This planning segment contains one primary and seven secondary intersections. SR 5 is the only primary intersection, is signalized, and passes through the middle of Larwill. The secondary intersections include county roadways (CR 900E, Binkley Road) as well as Larwill streets near SR 5 (Depot Street, McLallen Street, CR 100N, and CR 650W) and a roadway into a mobile home community (Regency Place Estates). Each secondary intersection is two-way stop controlled (TWSC) allowing US 30 to operate in a free flow condition through these intersections.

There are twenty-two driveways and five field entrance located along US 30 in this planning segment, which results in many additional conflict points compared to other planning segments.

Other Notable Features Influencing Development of Packages

The Larwill planning segment contains several rural secondary intersections along the border between Kosciusko and Whitley Counties, but the focus of the improvement packages is SR 5 and the surrounding intersections within Larwill.

Based on the safety analysis performed during the *Existing Transportation Conditions Report*, SR 5 did not experience elevated crash rates that would remove consideration of a traditional signalized intersection. The crash pattern at the intersection also doesn't indicate a need to restrict left turns from US 30, so the RCI Variant was not included in Level 3 packages.

Starting with the primary intersection and the remaining Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were identified that would be consistent with each package's access management strategy and the primary intersection alternatives developed within each package.

Summary of Comments for Planning Segment 6 – Larwill

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Turn US 30 into a freeway from SR 49 to I-69.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Continued access to CR 650 W is necessary for emergency vehicles.
- An interchange in smaller town such as Larwill (the SR 5 intersection) will wipe out whole communities with the amount of space they would require.

3.6.2. IMPROVEMENT PACKAGES

Five packages of improvements were identified for planning segment 6 and are characterized as follows:

Table 3.6-1 – Packages of Improvements - Planning Segment 6 - Larwill

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared.
1	Arterial	Free Flow	Minimal	A low cost, low impact package that retains the existing conditions and access for all locations except for Binkley Road, which is converted to right-in/right-out (RIRO) to address elevated crash frequency and costs, and SR 5 which is converted to a directional intersection to eliminate the traffic signal and provide free flow conditions.
2	Arterial	Free Flow	Partial	A low impact safety improvement package that reduces conflict points at each intersection. The SR 5 intersection is reconfigured as an RCI to remove the existing signal while providing for full access and free-flow conditions. The remaining intersections are either reconfigured as RIRO or closed. Commercial and residential driveway access is still permitted as full access and RIRO access only (respectively).
3	Expressway Lite	Free Flow	Partial	A more costly package that aims to enhance east-west travel and safety along US 30 by removing the traffic signal at SR 5 and implementing grade separations at busier secondary roads. Existing commercial and residential driveways will have RIRO access to US 30. The SR 5 intersection is redesigned as a quadrant interchange, with grade separations at Binkley Road and CR 650W, while the remaining intersections are closed.

4	Expressway	Free Flow	Partial	This package follows the same intersection configurations as package 3, but increases access controls by prohibiting driveway connections between intersections.
5	Freeway	Free Flow	Full	This highest-cost package converts US 30 to a fully access-controlled freeway, incorporating all improvements from Package 4, but with a traditional interchange at SR 5 in place of the quadrant interchange.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

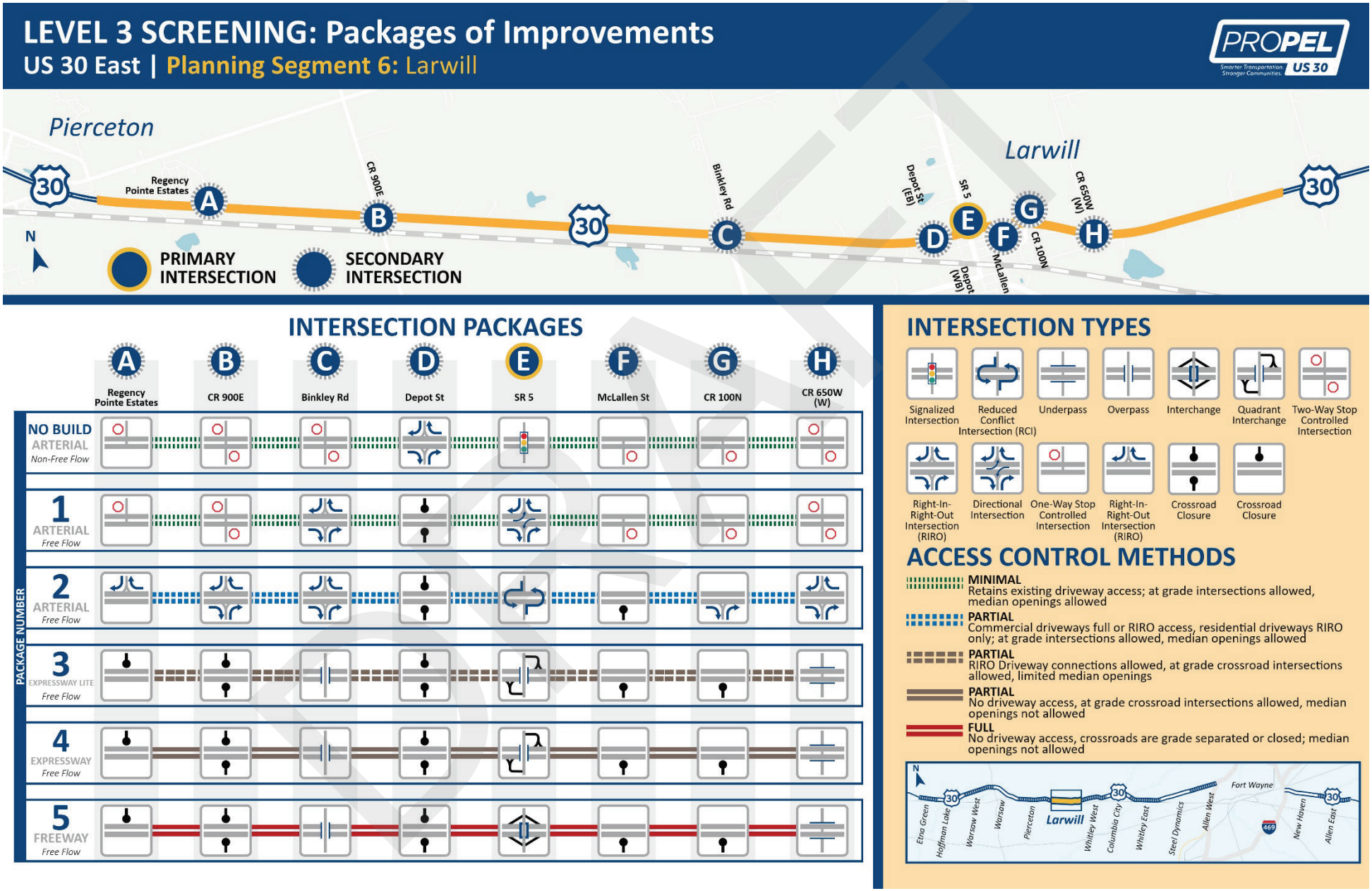
Table 3.6-2 – Level 2 Concepts in Level 3 - Planning Segment 6 – Larwill

Primary Intersection			SR 5
		Existing Traffic Control	
Primary Concepts	Unsignalized Improvements	Roundabout	
		RCI - Reduced Conflict Intersection	2
		RCI - Variant	⊗
	Signalized Improvements	Traffic Signal Improvements	
		Green-T Intersection	
		Partial Median U-Turn	
		RCUT - Restricted Crossing U-turn	⊗
		Boulevard Left	
	Other	Interchange	3,4,5
		Access Management - RIRO or Closed	
		Access Management - Directional	1
		Add or Lengthen Turn Lanes	
Complementary Concepts		Overpass/Underpass	
		Adjacent Intersection Improvements	●
		Realign Skewed Intersection	
		Add / Extend Accel. / Decel. Lanes	
		Warning Systems	●

⊗ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number.
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.6-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.6-1 – Planning Segment 6: Larwill - Packages of Improvements Diagrams



3.6.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.6-3 – Measures Comparison Table - Planning Segment 6 - Larwill

Planning Segment: 06 - Larwill				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Free Flow Minimal	2 Arterial Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway Free Flow Full	
Purpose and Need	Safety	**Total Conflict Points**	#	443	367	157	98	22	26	
		Crossing Conflict Points	#	211	167	39	12	6	10	
		% Reduction in Crossing Conflict points	%	-	-21%	-82%	-94%	-97%	-95%	
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	12	46	53	54	53	
		Cost Effectiveness Index (CEI)		-	0.3	0.2	1.8	1.8	2.2	
	Mobility	**Average Travel Time Along US 30**	Min	5.7	5.0	5.0	5.0	5.0	5.0	
		Average Distance Between US 30 Access Points	#	0.6	0.7	0.8	5.0	5.0	5.0	
		Average Distance Between US 30 Crossing Points	#	1.3	2.5	5.0	1.7	1.7	1.7	
		North-South Mobility Compared to No Build		-	Decreased	Greatly Decreased	Similar	Similar	Similar	
		N-S Delay Per Vehicle	Min	1.2	4.5	1.2	1.0	1.0	0.0	
		Residential Driveways RIRO vs. Full	#	3 / 15	3 / 15	17 / 0	16 / 0	0 / 0	0 / 0	
		Commercial Driveways RIRO vs. Full	#	4 / 1	4 / 1	4 / 1	5 / 0	0 / 0	0 / 0	
		Field Access RIRO vs. Full	#	0 / 6	0 / 6	0 / 6	6 / 0	0 / 0	0 / 0	
Environmental Resource Impacts	Natural Resources	**NWI Wetlands Impact**	Acres	-	0	0	0	0	< .5	
		Rivers & Streams Impact	Feet	-	0	0	200	200	1,000	
		Floodplain Impact	Acres	-	0	0	0	0	0	
		Forested Area Impact	Acres	-	0	0	8.5	8.5	12.	
	Cultural Resources	**Potential impacts to Above Ground Resources**	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	
		Cemeteries	Yes/ No	-	No	No	No	No	No	
	Socioeconomic Impacts	**Total New ROW Acquisition**	Acres		0	< .5	22	22	41.5	
		Residential Relocations	#	-	0	0	4	10	10	
		Business Relocations	#	-	0	0	0	1	1	
		Farmland Impact	Acres	-	0	0	15	15	16	
		Farmland Access Impact	#	-	No	No	No	Yes	Yes	
		Potential Hazardous Materials Sites	#	-	1	1	1	1	1	
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	Yes	Yes	Yes	Yes	Yes	
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0	0	
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0	0	
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No	No	
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Decrease	Decrease	Decrease	Decrease	Decrease	
Costs		**Estimated Construction Cost** (2024 Dollars)	$M	-	$3 to $4	$7 to $10	$85 to $104	$85 to $104	$98 to $121	
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	< $0.1	$0.3 to $0.5	$2.4 to $3	$2.9 to $3.6	
		Estimated Total Package Cost (2024 Dollars)	$M	-	$3 to $4	$7 to $10	$85 to $105	$87 to $107	$101 to $125	
Goals		**Economic Development**		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Equity in Transportation		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Low	Low	Low	
		Driver Expectations		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
Level 3 Screening Result				Carried Forward	Recommended	Recommended	Carried Forward	Carried Forward	Carried Forward	

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.6-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. All five improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 5 (freeway) results in slightly more conflict points than package 4 (expressway) due to providing full interchange rather than a quadrant interchange at SR 5.

Mobility

Regional Mobility

In **Table 3.6-3,** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Generally, regional mobility appears not to be a major differentiator between packages in this segment given that the only existing traffic signal in this planning segment is at SR 5. Removal of this traffic signal in each package results in a free-flow condition along the entire planning segment resulting in a minimal travel time savings of about 45 seconds per vehicle during peak hours on average.

Local Mobility

In **Table 3.6-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to No Build, the distance per *access point* is very similar for packages 1 and 2 but increases to 5.0 miles for expressway lite package 3, expressway package 4, and freeway package 5, indicating that the expressway/freeway options result in the greatest adverse effect local access to/from US 30.

Compared to No Build, the distance per *crossing point* increases in all packages, with the longest distance of 5.0 miles for packages 3 thru 5. This indicates that north-south mobility becomes more constrained as the level of access control increases and options for crossing US 30 are fewer.

There are 18 residential, five commercial driveways, and six field entrances in this planning segment. Most of these driveways and field entrances currently have full access to US 30. All residential driveways would be converted to right-in/right-out (RIRO) only access in package 2, while commercial driveways and field entrances would still have the same access to US 30 as the No Build in packages 1 and 2. For expressway lite package 3, all driveway access would still be permitted but would be converted to RIRO access only. For expressway and freeway packages 4 and 5, all driveways would be closed as these packages increase the level of access control.

Social & Environmental Impacts

In Segment 6, package 5 presents the highest potential impact for the segment overall, with the greatest amount of natural resources affected but with a similar level of socioeconomic impact as packages 3 and 4. Package 1 presents the least amount of natural resource impact, and the least amount of socioeconomic impact alongside package 2.

Natural Resources

Most packages for Segment 6 have potential impacts to natural resources, the greatest potential impacts being in Package 5with 12 acres of potential impacts to forested land, approximately 1,000 feet of rivers and stream impacts and less than 1 acre of impacts to NWI wetlands. Package 1 is the only package that has no potential impacts to natural resources.

Cultural Resources

There are no direct impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to nearby resources should be considered as solutions are further developed. The following potential historic resource has been identified within ½ mile of an intersection in this segment; if this resource is determined to be historic, additional investigations may be warranted for any projects that move forward adjacent to this site:

- Dr. Christopher Souder House (NR-1809, IHSSI No. 183-510-16028, NPS File No. 05000315, ca. 1877) approximately 0.22 mile from Depot Street, approximately 0.24 mile from SR 5, approximately 0.34 mile from McLallen Street, and approximately 0.39 mile from CR 100N

Socioeconomic Impacts

Packages for Segment 6 are not located in an EJ area, and no vulnerable housing or manufactured home populations are within areas of potential new right-of-way or within 0.1 miles thereof. Access to a manufactured home community, Regency Point, would be affected by packages 3 and 5 but would not require new right-of-way and therefore would not be directly impacted. Packages 3, 4, and 5 each present the potential for 10 residential relocations and one business relocation. The majority of the relocations are for parcels that become landlocked when their access via US 30 is closed for the expressway and freeway packages. Relatedly, right-of-way increase is largest for package 5 at 41.5 acres, followed by packages 3 and 4 at 22 acres.

There are community resources located within 0.1 miles of the SR 5 intersection but none of the intersection designs would likely have direct impacts on these specific resources, which are a post office and sewage facility. However, all alternatives at all intersections in Segment 6 intersect a potential Section 4(f) resource, which is a proposed trail along the US 30/Lincolnway corridor. Impacts on this trail would likely be minimal however, as it is only a proposed resource. In packages 3, 4, and 5, the CR 650W underpass design and SR 5 quadrant interchange design may also have a minor impact to a local baseball field in Larwill but would not cause a change or detriment to recreational use.

Package 5 presents the greatest potential for impact to farmland followed by packages 3 and 4. Packages 1 and 2 result in no impacts to farmland.

Goals Assessment

Economic Development

Economic development is rated as neutral for all packages in the segment. Package 1 provides minor safety improvements and only has minor local mobility restrictions, which should not impact economic development opportunities. Package 2 improves regional mobility and safety through the removal of the traffic signal at SR 5 but restricts local access across US 30. Packages 3, 4, and 5 eliminate access to US 30 except at SR 5, but greatly improve safety and regional mobility.

Equity in Transportation

For many of the same reasons as the economic development goal, the equity is rated as neutral for all packages due to offsetting benefits of improved safety with reduced levels of local access to and across US 30.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1 and 2 are rated as moderately practical due to the relatively low cost and impacts while providing safety and mobility benefits. Packages 3, 4, and 5 are rated as low practicality due to the higher relative costs and impacts and large number of potential relocations.

Driver Expectations

All packages are rated as neutral for expectations due to the removal of the signalized intersection at SR 5 but with varying levels of access restrictions that would not be expected along a rural section of roadway or few geometric changes that would match the conditions that drivers would expect.

3.6.4. FINDINGS AND RECOMMENDATIONS

Package 1 is the lowest cost and lowest impact package that addresses identified safety issues at Binkley Road only. These safety improvements coupled with its low cost result in this package being very cost effective. This package also maintains a similar level of local access as exists today and could represent an incremental, initial investment to improve safety. This package is '*Recommended*' for further evaluation as part of subsequent project development studies.

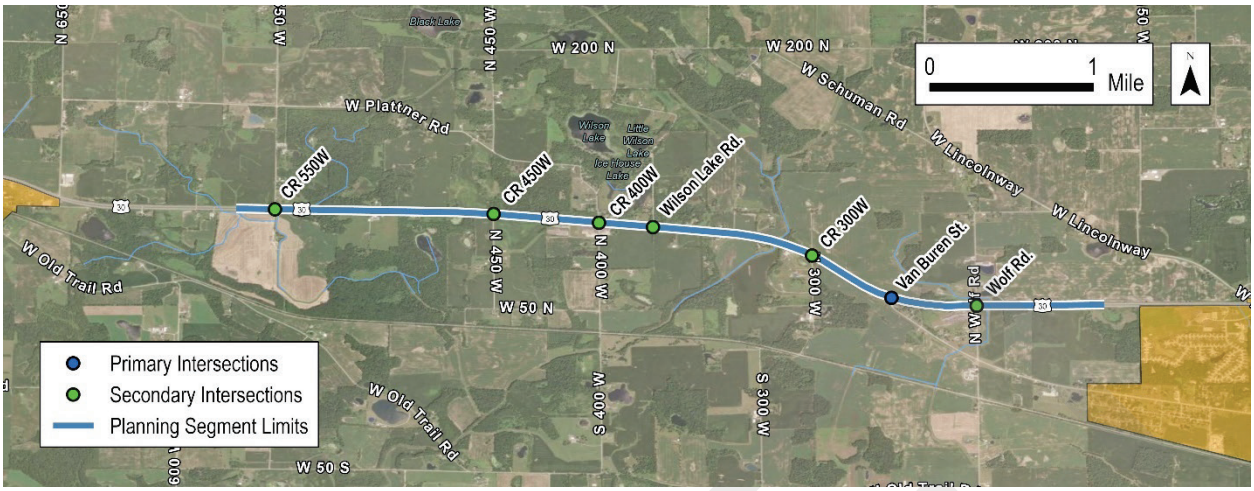
Package 2 is a low cost and low impact package that includes improvements at each of its 8 intersections to improve overall safety and operations. These safety improvements combined with a low cost results in this package being the most cost effective package. This package provides east-west regional mobility benefits by removing the signal at SR 5 and promotes free flow travel along US 30 while retaining access for nearly all existing driveways. Local mobility is affected by reducing existing access at eight crossroads to six, and reduces north-south crossings of US 30 from four to one. No new right-of-way would be required with no residential/business relocations. This package is '*Recommended*' for further evaluation as part of subsequent project development studies.

Expressway lite package 3 and expressway package 4 results in increased costs and impacts as compared to packages 1 and 2. Although these free flow packages have good safety performance, their increased costs result in them not being very cost effective. Expressway package 4 results in the same level of US 30 travel time savings compared to packages 2 and 3, but due to increased access control it further impacts existing local access by closing 23 driveways and six farm field entrances, and limits US 30 access to SR 5 only. Both packages result in 22 acres of new right-of-way (including 15 acres of farmland). It is also worth noting that the number of relocations increases from 4 for expressway lite to 11 for the full expressway. This is due to the closure of 7 driveways to properties that rely solely on US 30 for access, which would otherwise be landlocked.

Freeway package 5 incurs the highest costs and impacts within this planning segment. While it offers strong safety performance as a free flow option, it is not considered cost-effective due to its high expense. Despite providing the same level of travel time savings on US 30 as package 2, it further disrupts local access by closing 23 driveways and six farm field entrances, and limits US 30 access to SR 5 only. This package also requires 41.5 acres of new right-of-way, including 16 acres of farmland, and necessitates 11 relocations.

Packages 3, 4 and 5 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in these packages, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if either of these packages are a reasonable solution to the planning segment's transportation needs. For these reasons, packages 3, 4 and 5 are categorized as *'Carried Forward'*.

3.7. SEGMENT 7: WHITLEY WEST



3.7.1. PLANNING SEGMENT OVERVIEW

The Whitley West planning segment is 4.1 miles in length and consists of the rural area between Larwill and Columbia City. The segment is highlighted by many secondary roadways and driveways providing access to fields and residences in the area.

This planning segment contains one primary and six secondary intersections. Business 30 (Van Buren St.) is the only primary intersection and provides secondary access to Columbia City from the west. The secondary intersections include county roadways (CR 550W, CR 450W, CR 400W, Wilson Lake Road, CR 300W, and Wolf Road) which are not continuous through routes in the county due to environmental constraints in the area. All intersections in the planning segment are one-way or two-way stop controlled (OWSC / TWSC) allowing US 30 to operate in a free flow condition through these intersections.

There are fifteen driveways and one field entrance located along US 30 in this planning segment, ten serving commercial properties and two leading to residential developments.

Notable Features Influencing Development of Packages

For the Whitley West planning segment, the key considerations for the packages within this segment are safety considerations and the extent of access restrictions to reduce conflict points in the area.

Based on the safety analysis performed during the *Existing Transportation Conditions Report* crash rates were elevated at Wilson Lake Road, so retaining the existing one-way stop-controlled intersection was not included in any packages. Business 30 did not exhibit crash patterns due to left turns from US 30, so the RCI variant was eliminated from Level 3 packages.

Starting with the primary intersection and the remaining Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 7 – Whitley West

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Turn US 30 into a freeway from SR 49 to I-69.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.

3.7.2. IMPROVEMENT PACKAGES

Five packages of improvements were identified for planning segment 7 and are characterized as follows:

Table 3.7-1 – Packages of Improvements - Planning Segment 7 - Whitley West

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Free Flow	Minimal	No Build represents existing conditions against which each package is compared to.
1	Arterial	Free Flow	Minimal	A low-cost package consisting of minor improvements primarily intended to address safety issues identified at Wilson Lake Road and Business 30. Wilson Lake Road is converted to RIRO and Business 30 an RCI. This package maintains existing driveway access and free flow conditions along US 30.
2	Arterial	Free Flow	Partial	This package enhances safety by increasing access controls, incorporating directional intersections at CR 400W and Business 30, and implementing RIRO access at the remaining five intersections. Existing driveways would still have access to US 30, but residential driveways would be limited to RIRO access only.
3	Expressway Lite	Free Flow	Partial	This higher-cost, higher-impact package further reduces conflict points by closing or grade-separating existing intersections. Business 30 is realigned to connect to US 30 through a full interchange positioned between Wolf Road and Lincolnway. Existing driveways would still have access to US 30, but only as RIRO access.
4	Expressway	Free Flow	Partial	This package follows the same intersection configurations as package 3, but increases access controls by prohibiting driveway connections and median openings between intersections.

5	Freeway	Free Flow	Full	This highest-cost package converts US 30 to a fully access-controlled freeway, incorporating the same improvements from package 4, but with a traditional interchange at the existing Business 30 intersection.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

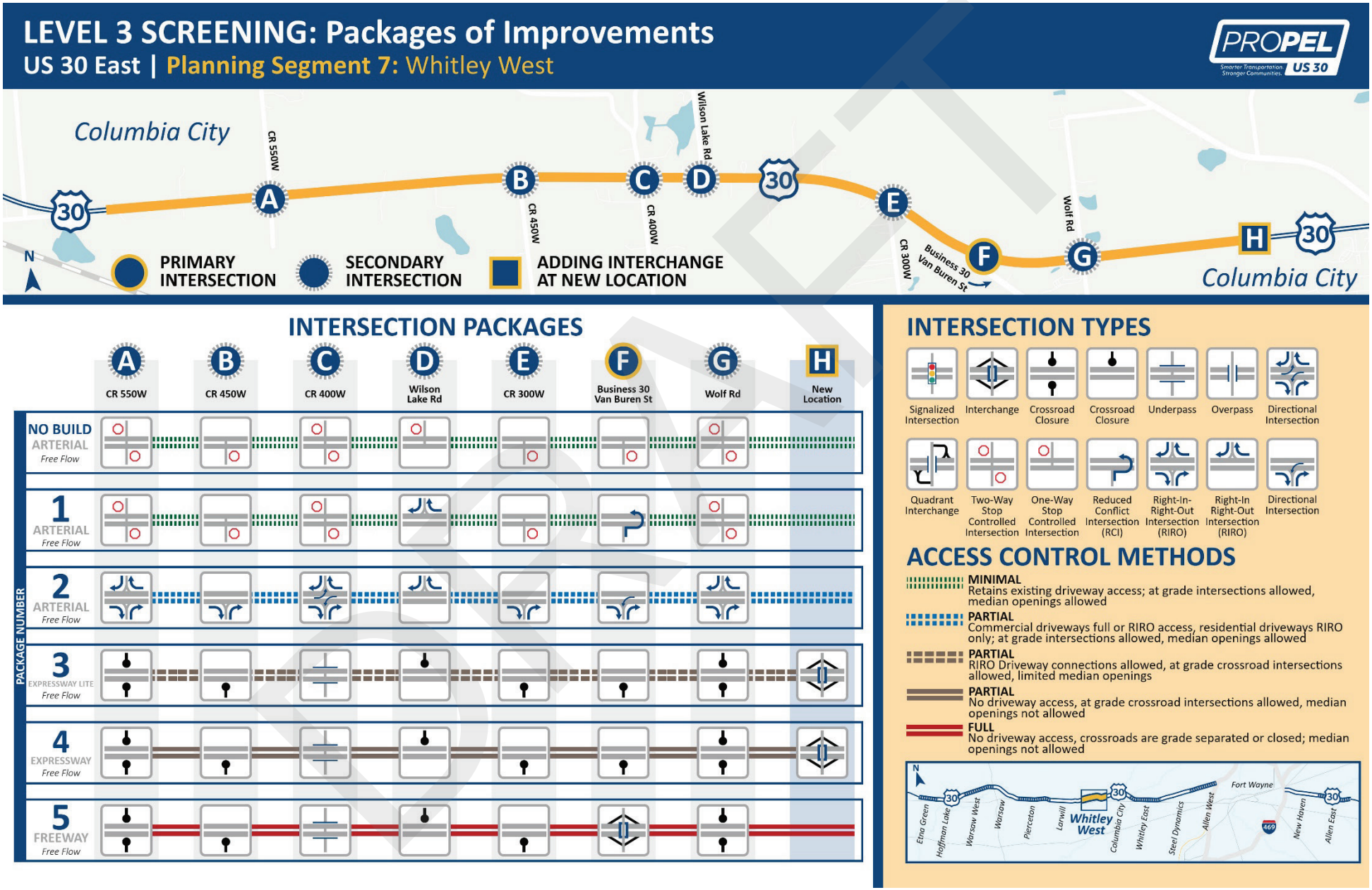
Table 3.7-2 – Level 2 Concepts in Level 3 - Planning Segment 7 – Whitley West

Primary Intersection			Business 30
		Existing Traffic Control	STOP
Primary Concepts	Unsignalized Improvements	Roundabout	
		RCI - Reduced Conflict Intersection	1
		RCI - Variant	●
	Signalized Improvements	Traffic Signal Improvements	
		Green-T Intersection	
		Partial Median U-Turn	
		RCUT - Restricted Crossing U-turn	
		Boulevard Left	
	Other	Interchange	5
		Access Management - RIRO or Closed	3,4
		Access Management - Directional	2
		Add or Lengthen Turn Lanes	
Complementary Concepts		Overpass/Underpass	
		Adjacent Intersection Improvements	
		Realign Skewed Intersection	
		Add / Extend Accel. / Decel. Lanes	●
		Warning Systems	●

● Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.7-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.7-1 – Planning Segment 7: Whitley West - Packages of Improvements Diagrams



3.7.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.7-3 – Measures Comparison Table - Planning Segment 7 - Whitley West

Planning Segment: 07 - Whitley West				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Free Flow Minimal	1 Arterial Free Flow Minimal	2 Arterial Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway Free Flow Full	
Purpose and Need	Safety	Total Conflict Points	#	371	354	137	66	26	26	
		Crossing Conflict Points	#	181	172	41	10	10	10	
		% Reduction in Crossing Conflict points	%	-	-5%	-77%	-94%	-94%	-94%	
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	1	19	23	23	23	
		Cost Effectiveness Index (CEI)		-	2.6	0.4	5.3	5.4	4.6	
	Mobility	Average Travel Time Along US 30	Min	4.1	4.1	4.1	4.1	4.1	4.1	
		Average Distance Between US 30 Access Points	#	0.6	0.6	0.6	4.1	4.1	4.1	
		Average Distance Between US 30 Crossing Points	#	1.0	1.0	4.1	2.1	2.1	2.1	
		North-South Mobility Compared to No Build		-	Similar	Greatly Decreased	Decreased	Decreased	Decreased	
		N-S Delay Per Vehicle	Min	0.7	1.3	7.2	0.2	0.2	0.0	
		Residential Driveways RIRO vs. Full	#	6 / 7	6 / 7	13 / 0	13 / 0	0 / 0	0 / 0	
		Commercial Driveways RIRO vs. Full	#	0 / 3	0 / 3	0 / 3	3 / 0	0 / 0	0 / 0	
		Field Access RIRO vs. Full	#	0 / 4	0 / 4	0 / 4	4 / 0	0 / 0	0 / 0	
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	6.5	6.5	< .5	
		Rivers & Streams Impact	Feet	-	0	0	0	0	0	
		Floodplain Impact	Acres	-	0	0	0	0	0	
		Forested Area Impact	Acres	-	0	0	7.5	7.5	6.	
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	
		Cemeteries	Yes/ No	-	Yes	No	No	No	Yes	
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	0	40.5	40.5	16.5	
		Residential Relocations	#	-	0	0	1	14	16	
		Business Relocations	#	-	0	0	0	1	1	
		Farmland Impact	Acres	-	0	0	33.5	33.5	7.5	
		Farmland Access Impact	#	-	No	No	No	Yes	Yes	
		Potential Hazardous Materials Sites	#	-	0	0	0	0	0	
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	Yes	Yes	Yes	Yes	Yes	
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0	0	
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0	0	
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No	No	
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Increase	Increase	Increase	Increase	No Change	
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$2 to $4	$6 to $8	$106 to $131	$106 to $131	$90 to $111	
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.0	$0.4 to $0.7	$1.6 to $2.1	$1.5 to $2	
		Estimated Total Package Cost (2024 Dollars)	$M	-	$2 to $4	$6 to $8	$107 to $131	$108 to $133	$91 to $113	
Goals		Economic Development		No Change	Neutral	Neutral	Diminshes	Diminshes	Diminshes	
		Equity in Transportation		No Change	Neutral	Neutral	Diminshes	Diminshes	Diminshes	
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Low	Low	Low	
		Driver Expectations		No Change	Neutral	Neutral	Diminshes	Diminshes	Diminshes	
Level 3 Screening Result				Carried Forward	Recommended	Recommended	Carried Forward	Carried Forward	Carried Forward	

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.7-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. All five improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Packages 4 (expressway) and 5 (freeway) result in the highest conflict points reduction package due to crossroad and driveway closures as well as grade separation alternatives.

Mobility

Regional Mobility

In **Table 3.7-3,** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Regional mobility does not vary between packages in this planning segment because there are no existing traffic signals, and the primary intersection at Business 30 and Van Buren operates under One-Way Stop Control (OWSC). As US 30 already functions as free-flow, travel time savings would not be achieved by any of the packages.

Local Mobility

In **Table 3.7-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. Compared to the No Build option, the distance per access point remains the same for packages 1 and 2 but increases to 4.1 miles for expressway/expressway lite packages 3 and 4, as well as freeway package 5. This indicates that the expressway and freeway packages have the greatest negative impact on local access to and from US 30.

Compared to No Build, the distance per *crossing point* increases in all but the first package, with the longest distance of 4.1 miles for package 2 which does not include a crossing point within the segment. The expressway and freeway packages each result in 2.1 miles per crossing point as they each include two such locations.

There are 14 residential driveways, three commercial driveways, and four field entrances in this planning segment. Most of these driveways and field entrances currently have full access to US 30. In package 2, 13 residential driveways would be converted to right-in/right-out (RIRO) only access and one would remain with full access to US 30. Commercial driveways and field entrances would still have the same access to US 30 as the No Build in packages 1-3. All driveways would be closed in packages 4 and 5.

Social & Environmental Impacts

For Segment 7, packages 4 and 5 present the most potential social and cultural impact in terms of natural and socioeconomic resources while package 1 presents the least. However, packages 1 and 5 present the most potential impact on cultural resources.

Natural Resources

Packages 3, 4, and 5 all have potential impacts to natural resources while Package 1 is the only package for Segment 7 that has no potential impacts to natural resources. Packages 3 and 4 have the most potential impacts to natural resources with 6.5 acres of potential NWI wetland impacts and about 7.5 acres of potential forested impacts.

Cultural Resources

There are direct impacts to known cultural resources within this segment. The Ream-Bethel Cemetery (IHSSI No. 183-368-20005) is directly adjacent to the Business US 30/Van Buren Street intersection and could be directly impacted by packages 1 and 5. Indirect impacts to potential nearby historic resources should be considered as solutions are further developed. At this time, no other known resources have been identified within ½ mile of an intersection in this segment.

Socioeconomic Impacts

Packages for Segment 7 are not located in an EJ area, and no vulnerable housing populations or community resources are within areas of potential new right-of-way or within 0.1 miles thereof. However, package 3 presents the potential for one residential relocation, package 4 presents the potential for 14 residential relocations and one business relocation, and package 5 presents the potential for three residential relocations. While these relocations are not in an EJ area, they nevertheless are a potentially substantial impact. Packages 3 and 4 present the highest amount of potential additional right-of-way needed at 40.5 acres and are the packages with the greatest amount of socioeconomic impact in the segment. Package 5 follows with 18 acres of additional right-of-way needed.

All alternatives at all intersections in Segment 7 intersect potential Section 4(f) resources, which is a proposed trail along the US 30/Lincolnway corridor. Impacts on this trail would likely be minimal, as it is a proposed resource.

Segment 7 would have potentially substantial impacts on farmland. Package 1 results in no farmland impacts with Package 2 as the next least amount of farmland impact at 2 acres. Packages 3 and 4 results in an impact of 33 acres primarily due to relocating the Business 30/VanBuren Street interchange to the east of Wolf Road on new a new local road alignment.

Goals Assessment

Economic Development

Packages 1 and 2 provide minor safety improvements without impacting local mobility restrictions, which should not impact economic development opportunities and was rated as neutral. Packages 3, 4, and 5 are all rated as diminishes economic development due to the relatively minor number of crashes prevented and higher restrictions on local mobility in the planning segment.

Equity in Transportation

For many of the same reasons as the economic development goal, the equity is rated as neutral for packages 1 and 2 and diminishes for packages 3, 4, and 5, due to the extensive restrictions on the number of access points to US 30 and the number of opportunities to cross US 30.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1 and 2 are rated as moderately practical due to the relatively low cost and impacts. Packages 3, 4, and 5 are all rated as low practicality due to the higher relative costs, number of potential relocations, right-of-way impacts, and relatively limited safety and mobility benefits gained from the impacts.

Driver Expectations

Packages 1 and 2 were rated as neutral for driver expectations due to the proposed alternative closely matching existing conditions, which has access and operations that drivers expect for a rural divided highway. Packages 3, 4, and 5 are rated as diminishes due to the access restrictions not fully anticipated on a very rural segment of roadway.

3.7.4. FINDINGS AND RECOMMENDATIONS

Package 1 is the lowest cost and lowest impact package that addresses identified safety issues at Wilson Lake Road and Business 30 only. This package maintains free flow operations on US 30 and a similar level of local access as exists today including the access to 20 existing driveways and field entrances. No new right-of-way would be required with no residential/business relocations. This package could represent an incremental, initial investment to improve safety at those two locations. This package is '*Recommended*' for further evaluation as part of subsequent project development studies.

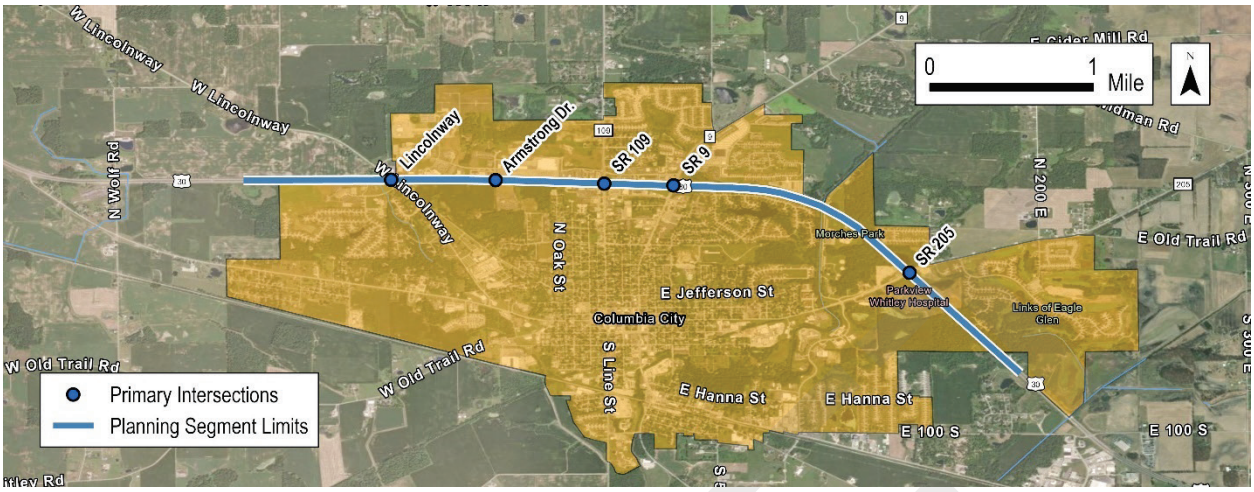
Package 2 is a low cost, lower impact package that addresses safety at each of the seven intersection locations. This package maintains free-flow operations along US 30 while still retaining some level of access for the 20 existing driveways and field entrances in this segment. Local mobility is also supported by retaining the existing average access spacing. No new right-of-way or relocations are required. This package is the most cost effective package in this segment and is '*Recommended*' for further evaluation as part of subsequent project development studies.

Packages 3 and 4 result in the highest costs and impacts for this planning segment. Although these free flow packages have good safety performance, they are not very cost effective given the high costs. While the expressway lite package 3 retains driveway access as right-in/right-out only, expressway package 4 closes all 16 driveways and four farm field entrances in this segment. Both packages restrict US 30 access to a new interchange located east of Wolf Road and result in 40.5 acres of new right-of-way (including 33.5 acres of farmland). However, expressway package 4 results in 15 relocations due to driveway closures to properties that rely solely on US 30 for access, which would otherwise be landlocked.

Freeway package 5 results in the second highest costs and highest impacts for this planning segment. Although this free-flow package has good safety performance, it is not considered very cost effective. This package impacts existing local access by closing 16 driveways and four farm field entrances, and also restricts US 30 access to an interchange located at Van Buren Street. This package results in 16.5 acres of new right-of-way (7.5 acres of farmland) and requires 17 relocations.

Packages 3, 4 and 5 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in these packages, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if either of these packages are a reasonable solution to the planning segment's transportation needs. For these reasons, packages 3, 4 and 5 are categorized as *'Carried Forward'*.

3.8. SEGMENT 8: COLUMBIA CITY



3.8.1. PLANNING SEGMENT OVERVIEW

The Columbia City planning segment is 4.1 miles in length and includes nearly all of the city limits of Columbia City, including all of the signalized intersections. US 30 is abutted by commercial and industrial land uses throughout the city, as well as a large park (Morches Park) between SR 9 and SR 205.

All five intersections in this planning segment are primary intersections. Each intersection is signalized, including SR 9 (a key north-south route in eastern Indiana) as well as regional routes SR 109 and SR 205. Lincolnway is an old routing of US 30, while Armstrong Drive provides access to a commercial area north of US 30.

There are four driveways and one field entrance located along US 30 in this planning segment, servicing residences and fields adjacent to US 30.

Notable Features Influencing Development of Packages

Treatment of the signalized intersections in the city is the key consideration for the packages within this segment, as this this planning segment only includes primary intersections.

The safety analysis performed in the *Existing Transportation Conditions Report* identified safety concerns at all five traffic signal locations, with SR 109 and SR 9 also facing mobility issues, and a package is provided that converts all signals to Boulevard Lefts or RCIs. Similar to Warsaw's Segment 4, RCUTs were removed from consideration in Level 3 of this planning segment due to unsatisfactory performance at SR 9 and a desire to maintain driver expectancy along the signalized corridor.

Additionally, no package was developed that reduced movements at SR 109 without an overpass, as crossing traffic was determined to be critical in supporting the local roadway network in the area. Diverting that traffic to SR 9 would negatively impact operations of the intersections along that roadway.

Finally, all signalized options were removed from Armstrong Drive in an effort to minimize signalized intersections and address safety concerns at that location.

Starting with the primary intersection and the remaining Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were

identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 8 – Columbia City

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Bypass around the city to support safety, traffic flow, and economic development.
- Remove truck lane restrictions to improve safety and traffic flow.
- Create service roads so that one drives on a service road until there is an interchange or crossover.
- Create interchange at SR 9.
- Create a cloverleaf at SR 9, IN 109, and/or Lincoln Way Road.
- IN 109 should be an overpass.
- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Turning US 30 into a freeway will negatively affect the businesses.
- Purchase the former Pennsylvania Railroad from CSX and build passenger rail that runs parallel to US 30.
- Crossing US 30 by bicycle is dangerous.
- Turn US 30 into a freeway from SR 49 to I-69.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Semitrucks run red lights frequently.
- SR 205 is an incredibly dangerous intersection.
- No Reduced Conflict Intersections (RCIs) at SR 205.
- Reduce the number of intersections and driveway access points between SR 205 and I-69.
- Reduce the number of stop lights between SR 205 and I-69.
- Reduce the speed limit to 30-45 MPH between SR 205 and Lincoln Way Road.
- Safety is a major concern at SR 205, especially with regards to Parkview Hospital and the emergency vehicles traveling to/from.
- Creating an interchange/overpass at SR 205 would negatively affect the newly constructed retail/businesses.

3.8.2. IMPROVEMENT PACKAGES

Five packages of improvements were identified for planning segment 8 and are characterized as follows:

Table 3.8-1 – Packages of Improvements - Planning Segment 8 - Columbia City

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared to.
1	Arterial	Non-Free Flow	Partial	This low-cost package replaces several traditional traffic signals with Boulevard Lefts to enhance operations and safety. Existing driveway connections to US 30 would remain, but residential driveways would be limited to RIRO access only.
2	Arterial	Non-Free Flow	Partial	A variation of package 1 that retains Boulevard Left intersections at SR 109 and SR 9, while introducing roundabouts at Lincolnway and SR 205 to help reduce traffic speeds as vehicles approach the urbanized area.
3	Expressway Lite	Free Flow	Partial	Considering traffic volumes on the intersecting roadways in the planning segment, offering a free flow package necessitates right-in/right-out access and grade-separated intersection alternatives. This high cost, higher impact package includes an interchange at SR 9 and overpasses at Lincolnway, SR 109, and SR 205 to support connectivity across US 30 within the planning segment. Existing driveways would be allowed to access US 30, but only as right-in/right-out access.
4	Expressway	Free Flow	Partial	This high cost, higher impact package follows the same intersection configurations as package 3, but increases access controls by prohibiting driveway connections and median openings between intersections.
5	Freeway	Free Flow	Full	This highest cost, highest impact package converts US 30 to a fully access controlled freeway with interchanges at Lincolnway, SR 9, and SR 205. Armstrong Drive would be closed and SR 109 grade separated with US 30.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

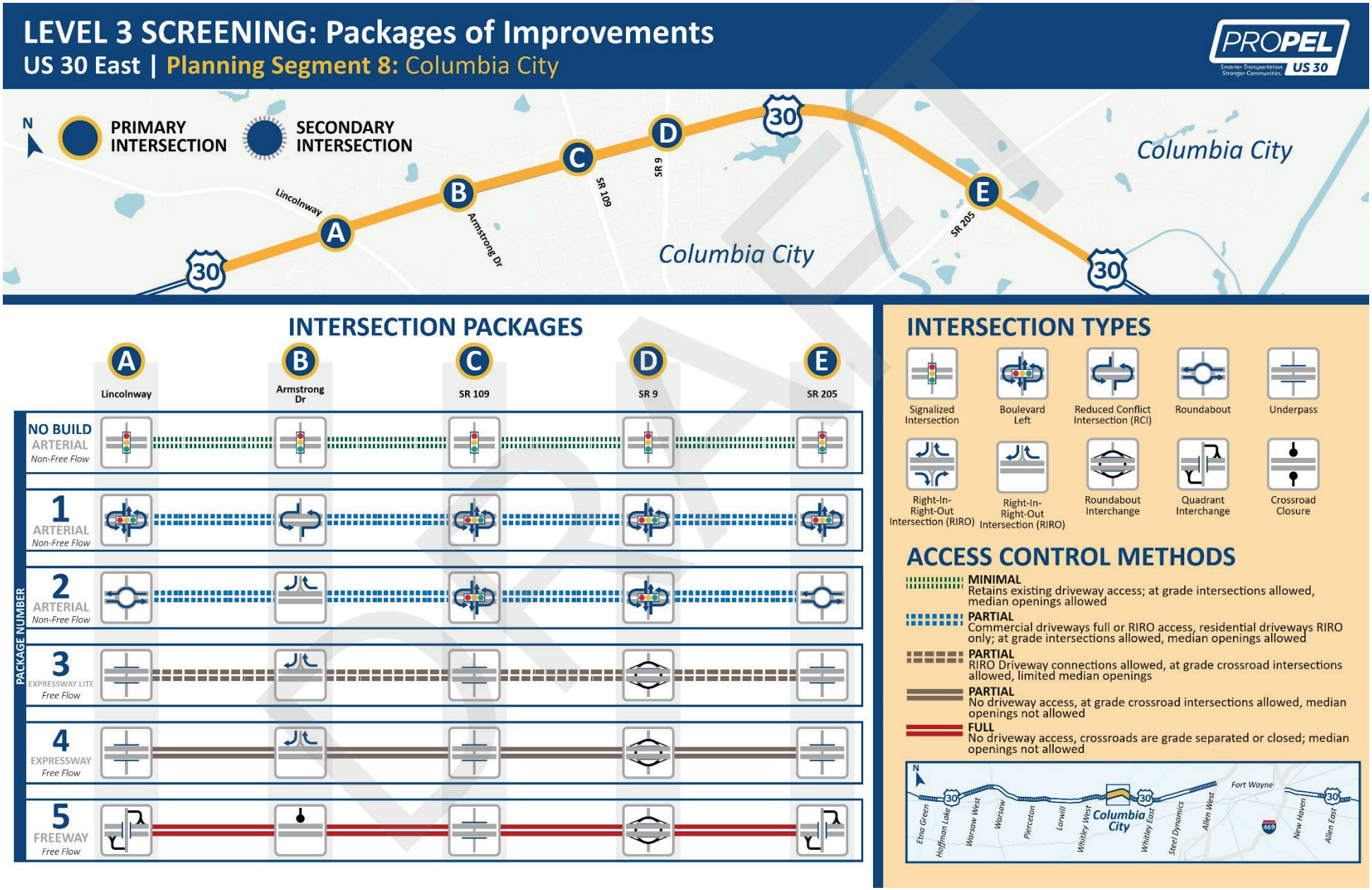
Table 3.8-2 – Level 2 Concepts in Level 3 - Planning Segment 8 – Columbia City

Primary Intersection			Lincolnway	Armstrong Dr	SR 109	SR 9	SR 205
		Existing Traffic Control	🚦	🚦	🚦	🚦	🚦
Primary Concepts	Unsignalized Improvements	Roundabout	2				2
		RCI - Reduced Conflict Intersection	⊗	1	⊗	⊗	⊗
		RCI - Variant					
	Signalized Improvements	Traffic Signal Improvements	⊗	⊗	⊗	⊗	⊗
		Green-T Intersection		⊗			
		Partial Median U-Turn	⊗		⊗	⊗	⊗
		RCUT - Restricted Crossing U-turn	⊗	⊗	⊗		⊗
		Boulevard Left	1		1,2	1,2	1
	Other	Interchange	5			3,4,5	5
		Access Management - RIRO or Closed		2,3,4,5	⊗		
		Access Management - Directional			⊗		
		Add or Lengthen Turn Lanes				●	
Complementary Concepts		Overpass/Underpass	3,4		3,4,5		3,4
		Adjacent Intersection Improvements	●		●	●	
		Realign Skewed Intersection	●				
		Add / Extend Accel. / Decel. Lanes		●	●		
		Warning Systems	●	●	●	●	●

⊗ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number.
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.8-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.8-1 – Planning Segment 8: Columbia City - Packages of Improvements Diagrams



3.8.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.8-3 – Measures Comparison Table - Planning Segment 8 - Columbia City

Planning Segment: 08 - Columbia City				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Non-Free Flow Partial Access	2 Arterial Non-Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway Free Flow Full	
Purpose and Need	Safety	Total Conflict Points	#	223	136	91	22	14	64	
		Crossing Conflict Points	#	121	38	21	0	0	16	
		% Reduction in Crossing Conflict points	%	-	-69%	-83%	-100%	-100%	-87%	
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	209	251	304	304	264	
		Cost Effectiveness Index (CEI)		-	0.1	0.1	0.5	0.5	0.7	
	Mobility	Average Travel Time Along US 30	Min	6.0	5.5	5.1	4.0	4.0	4.0	
		Average Distance Between US 30 Access Points	#	0.8	0.8	0.8	2.0	2.0	1.3	
		Average Distance Between US 30 Crossing Points	#	1.0	1.0	1.0	1.0	1.0	1.0	
		North-South Mobility Compared to No Build		-	Similar	Similar	Similar	Similar	Similar	
		N-S Delay Per Vehicle	Min	9.1	7.0	5.9	12.0	12.0	0.0	
		Residential Driveways RIRO vs. Full	#	0 / 3	3 / 0	3 / 0	3 / 0	0 / 0	0 / 0	
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	
		Field Access RIRO vs. Full	#	0 / 1	0 / 1	0 / 1	1 / 0	0 / 0	0 / 0	
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	< .5	2.5	2.5	4	
		Rivers & Streams Impact	Feet	-	0	0	0	0	0	
		Floodplain Impact	Acres	-	0	0	0	0	0	
		Forested Area Impact	Acres	-	0	1	1.5	1.5	4.5	
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	
		Cemeteries	Yes/ No	-	No	No	No	No	No	
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0.5	4	7	7	24.5	
		Residential Relocations	#	-	0	0	0	2	3	
		Business Relocations	#	-	0	0	1	1	1	
		Farmland Impact	Acres	-	0	1	2	2	14.5	
		Farmland Access Impact	#	-	No	No	No	Yes	Yes	
		Potential Hazardous Materials Sites	#	-	0	2	2	2	3	
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	Yes	Yes	Yes	Yes	Yes	
		Potential Impacts to Communities with EJ Concerns	Acres	-	< .5	0.5	2	2	10	
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	1	1	2	
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	Yes	Yes	Yes	
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Increase	Increase	Decrease	Decrease	Decrease	
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$12 to $15	$20 to $25	$147 to $180	$147 to $180	$165 to $203	
		Estimated Right of Way Cost (2024 Dollars)	$M	-	< $0.1	< $0.1	$0.4 to $0.6	$0.7 to $1	$1 to $1.4	
		Estimated Total Package Cost (2024 Dollars)	$M	-	$12 to $15	$20 to $26	$147 to $181	$148 to $181	$166 to $204	
Goals		Economic Development		No Change	Neutral	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances	
		Equity in Transportation		No Change	Neutral	Greatly Enhances	Greatly Enhances	Greatly Enhances	Greatly Enhances	
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Low	Low	
		Driver Expectations		No Change	Diminshes	Neutral	Enhances	Enhances	Neutral	
Level 3 Screening Result				Carried Forward	Carried Forward	Eliminated	Recommended	Recommended	Carried Forward	

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.8-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. All five improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 4 (expressway) results in the greatest conflict points reduction package due to having the fewest connections with US 30.

Mobility

Regional Mobility

In **Table 3.8-3** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Regional mobility appears not to be a major differentiator between packages 1 and 2 as the travel time savings are less than a minute compared to the No Build conditions due to still having signalized intersections in the planning segment. However, as shown in packages 3, 4 and 5, removal of all five existing traffic signals at the primary intersections results in a free-flow condition along the entire planning segment, resulting in an average of about 2 minutes of travel time savings per vehicle along US 30 in the peak hours.

Local Mobility

In **Table 3.8-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to No Build, the distance per *access point* is comparable for packages 1 and 2 but increases to 2.0 miles for expressway packages 3 and 4, and 1.3 miles for freeway package 5, indicating that the expressway option results in the greatest adverse effect local access to/from US 30 due to having more crossroad grade separation alternatives in the segment.

Compared to No Build, the distance per *crossing point* remains the same for all packages as it is for the No Build condition. This indicates that north-south mobility for each package is similar to existing, having crossing points spaced evenly along US 30 throughout the planning segment.

There are three residential driveways and one field entrance, with no commercial driveways in this planning segment. All of these driveways/entrances currently have full access to US 30. In packages 1 and 2 all residential driveways would be converted to right-in/right-out (RIRO) only access, while the field access remains full access. For expressway lite package 3 all driveways would be RIRO only access, while all driveways would be closed in packages 4 and 5 to accommodate expressway and freeway facility types.

Social & Environmental Impacts

In Segment 8, package 5 presents the highest amount of potential impact with the most predicted impact on NWI wetlands, forested lands, cultural resources, community facilities, farmland, and potential relocations, followed by package 4. Conversely, package 1 presents the least amount of potential impact for all social and environmental resources.

Natural Resources

All packages for Segment 8 have potential impacts to natural resources except for package 1, which has identified no potential natural resource impacts. Package 5 has the most potential impacts with 4 acres of potential NWI wetlands impacts and 4 acres of impacts to forested lands.

Cultural Resources

There are no direct impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to nearby resources should be considered as solutions are further developed. The following potential resources have been identified within ½ mile of an intersection in this segment; if these resources are determined to be historic, additional investigations may be warranted for any projects that move forward adjacent to these sites:

- Fairview Addition residential neighborhood (ca. 1910) approximately 0.31 mile from Armstrong Drive, 0.17 mile from SR 109, and approximately 0.41 mile from SR 9
- Wood Dale Subdivision residential neighborhood (ca. 1958) approximately 0.19 mile from SR 109 and approximately 0.21 mile from SR 9
- Columbia City Historic District (IHSSI No. 183-129-21001-21297, NR-0803, NPS File No. 87001307) approximately 0.44 mile from SR 109 and approximately 0.47 mile from SR 9
- North Park Subdivision residential neighborhood (ca. 1955) approximately 0.16 mile from SR 109 and approximately 0.09 mile from SR 9
- Collinwood Acres residential neighborhood (ca. 1960) approximately 0.43 mile from SR 109 and approximately 0.26 mile from SR 9
- Hilltop Addition residential neighborhood (ca. 1950) approximately 0.5 mile from SR 9
- Columbia Shores Section 1 residential neighborhood (ca. 1972) approximately 0.31 mile from SR 9

Socioeconomic Impacts

Segment 8 intersections are all partly located in an EJ area of concern for poverty. Package 5 has the largest increase in additional right-of-way needed in an EJ area at 10 acres while the total package additional right-of-way needed would be 24.5 acres. Package 5 also presents the potential for one residential relocation and one business relocation which are both EJ relocations. As the relocations in package 5 are in an EJ area, they present an increased risk of potentially disproportionate impacts to EJ populations.

All packages will have equal impact on potential HUD resources and manufactured home communities, as there is one HUD resource and one manufactured home community each located within 0.1 miles of both SR 9 intersection designs. All packages are likely to have similar effects on community and social resources. Potential such resources within 0.1 miles proximity of intersections which may be impacted include a corrections facility near the SR 109 intersection for all packages, and a Christian academy near the SR 205 intersection for packages 3 and 4. All packages

are likely to have similar impact on recreational and outdoor opportunities, as all intersections in all packages will affect potential Section 4(f) resources. All intersections for all packages in Segment 8 may have some conflict with the proposed trail along the US 30/Lincolnway corridor, however as a proposed trail, this would not be an impact at this time.

Packages in Segment 8 would have varying degrees of impact on farmland. Packages 1, 2, and 3 would each have little to no impact, while package 5 would have the most impact at 15 acres.

Goals Assessment

Economic Development

Package 1 provides safety improvements without impacting local mobility, which should not impact economic development opportunities and was rated as neutral. Packages 2, 3, 4, and 5 are all rated as greatly enhancing economic development due to the large improvement in safety and regional mobility expected for all packages, despite the restrictions in local mobility due to reduced access to US 30.

Equity in Transportation

For many of the same reasons as the economic development goal, the equity is rated as neutral for package 1 and greatly enhances for packages 2, 3, 4, and 5, which are rated as greatly enhances due to the high number of crashes estimated to be prevented.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1, 2, and 3 are rated as moderately practical due to the relatively low cost and high benefits. Packages 4 and 5 are rated as low practicality due to the higher relative costs and large number of potential relocations. Packages 1 and 2 have extremely low Cost Effectiveness Index (CEI) values, indicating they provide high safety benefits for their costs. The CEI for packages 3, 4, and 5 are also below 1.0, indicating a possibility that the benefits outweigh the costs for these alternatives as well. However, packages 3 and 4 have high costs and require new right-of-way, while package 5 has the highest cost, greatest number of relocations, and the greatest amount of new right-of-way.

Driver Expectations

Package 1 was rated as diminishing driver expectations due to retaining traffic signals on the route with no larger geometric changes, essentially a safer version of the existing conditions that currently do not meet expectations. Package 2 is rated as neutral to expectations, as this package includes geometric changes that would support traffic speeds that better match the posted speeds while retaining some traffic signals. Package 5 is also rated as neutral for driver expectations due to the removal of all traffic signals that is offset by the elimination of some key access points that would require routing through city streets. Packages 3 and 4 are rated as enhancing expectations through eliminating traffic signals and matching the roadway geometry to what is expected of a regional route within an urban context.

3.8.4. FINDINGS AND RECOMMENDATIONS

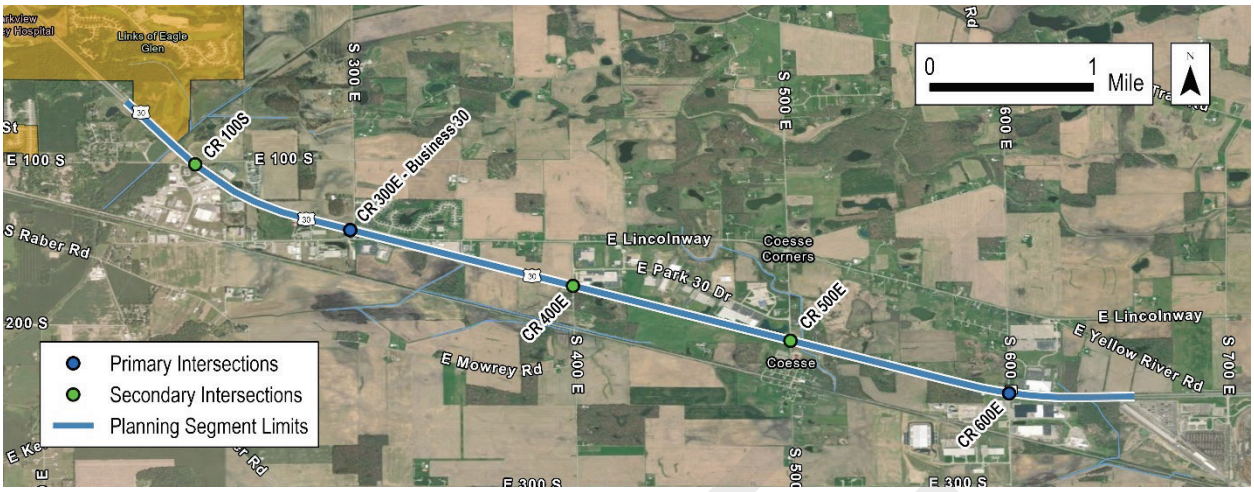
Package 1 is the lowest cost and lowest impact package that addresses identified safety issues at each of the five signalized intersections in this planning segment. The safety improvements coupled with the low cost result in this package being highly cost effective. Although this package is not free-flow, east-west travel along US 30 is improved with the removal of a signal at Armstong Drive, and local mobility is maintained with no changes in US 30 access or crossing locations. Approximately 0.5 acres of new right-of-way would be required with no residential/business relocations. This package is '*Carried Forward*' for further evaluation as part of subsequent project development studies.

Package 2 is a variation of package 1 that utilizes roundabouts at the eastern and western most intersections of this intended to provide multiple cues that align with the characteristics of urban driving, thus enhancing driver expectations and promoting safer, more efficient navigation of the urban area. Similar to package 1, safety improvements coupled with the relatively low cost of this package result in it being highly cost effective. Approximately 3.5 acres of new right-of-way would be required with no residential/business relocations. However, mainline roundabouts have received stakeholder input concerning impacts on regional travel, therefore this package is '*Eliminated*' for further evaluation as part of subsequent project development studies.

Expressway lite package 3 and expressway package 4 are higher cost, higher impact packages that improve safety and east west mobility by eliminating all traffic signals. Local mobility is affected by an increase in the average distance between US 30 access points and eliminating existing driveway access to US 30. Even with the high cost of these packages, their potential to reduce severe crashes by eliminating all crossing conflict points results in these having a relatively good cost effectiveness index. It is estimated that these packages would require approximately 7 acres of new right-of-way and result in one to three residential/business relocations. Due to having good cost effectiveness indices and eliminating all traffic signals, packages 3 and 4 are categorized as '*Recommended*'.

Freeway package 5 is a high cost, high impact freeway package that has good safety performance, however its high cost makes it the least cost effective of the four packages in this segment. Local mobility is affected due to a reduction in access points and loss of driveway access to US 30. This package would result in approximately 24.5 acres of new right-of-way (14.5 acres of farmland) and result in four residential/business relocations. Package 5 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in this package, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if this package is a reasonable solution to the planning segment's transportation needs. For these reasons, package 5 is categorized as *'Carried Forward'*.

3.9. SEGMENT 9: WHITLEY EAST



3.9.1. PLANNING SEGMENT OVERVIEW

The Whitley East planning segment is 5.1 miles in length and stretches between Columbia City and Steel Dynamics, nearly reaching the Whitley County / Allen County line. The area is largely commercial and industrial in nature, with business parks and development occurring at each primary and secondary intersection.

This planning segment contains two primary and three secondary intersections. Both CR 300E and CR 600E are signalized primary intersections serving as major access points to employment and businesses in the segment. The secondary intersections include the other county roadway intersections (CR 100S, CR 400E, and CR 500E). Each secondary intersection is two-way stop controlled (TWSC) allowing US 30 to operate in a free flow condition through these intersections. CR 500E was recently reconstructed as an unsignalized Reduced Conflict Intersection (RCI).

There are four driveways and four field entrance located along US 30 in this planning segment; the driveways serve individual residences, while the field entrances are near Eel River and Mossman Ditch.

Notable Features Influencing Development of Packages

Addressing safety and access needs through the planning segment was the key consideration when developing packages. Based on the safety analysis performed during the *Existing Transportation Conditions Report* the traffic signal at CR 300E experiences a safety concern, therefore no package was created that retained the existing signalized intersection at this location. Additionally, because an RCI operates satisfactorily at both primary intersections and an RCI is already present between them, boulevard left alternatives (which include traffic signals) were eliminated to promote free flow travel and driver expectancy in the segment.

Starting with the primary intersection and the remaining Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 9 – Whitley East

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Conflicting opinions regarding Coesse intersection (CR S 500 E): I like the way that the Reduced Conflict Intersection (RCI) works in Coesse / I do not like the way that the RCI works in Coesse.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Semitrucks run red lights frequently.
- Add a sound barrier next to Eagle Glen.
- Reduce the number of intersections, driveway access points, and stop lights between SR 205 and I-69.

3.9.2. IMPROVEMENT PACKAGES

Five packages of improvements were identified for planning segment 9 and are characterized as follows:

Table 3.9-1 – Packages of Improvements - Planning Segment 9 - Whitley East

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared.
1	Arterial	Free Flow	Minimal	This low-cost package includes improvements to CR 300E and CR 600E that remove traffic signals to address safety concerns and facilitate free flow traffic operations along US 30. Existing driveway connections are allowed to remain.
2	Arterial	Free Flow	Partial	A variation of package 1 that also converts the stop controlled intersections at CR 100S and CR 400E to RIRO access only to further improve safety and mobility. Existing driveways would be RIRO access only.
3	Expressway Lite	Free Flow	Partial	A higher cost, higher impact package that accommodates free-flow conditions on US 30 and provides full access at CR 300E via a quadrant interchange. Existing driveways would be allowed to access US 30, but only as RIRO access.
4	Expressway	Free Flow	Partial	This package follows the same intersection configurations as package 3, but increases access controls by prohibiting driveway connections and median openings between intersections and includes a grade separation at CR 600E.

5	Freeway	Free Flow	Full	The highest cost package reconfigures US 30 to a limited access freeway, providing a quadrant interchange at CR 300E and incorporating grade separations at CR 100S and CR 600E. CR 400E and CR 500E would be closed.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

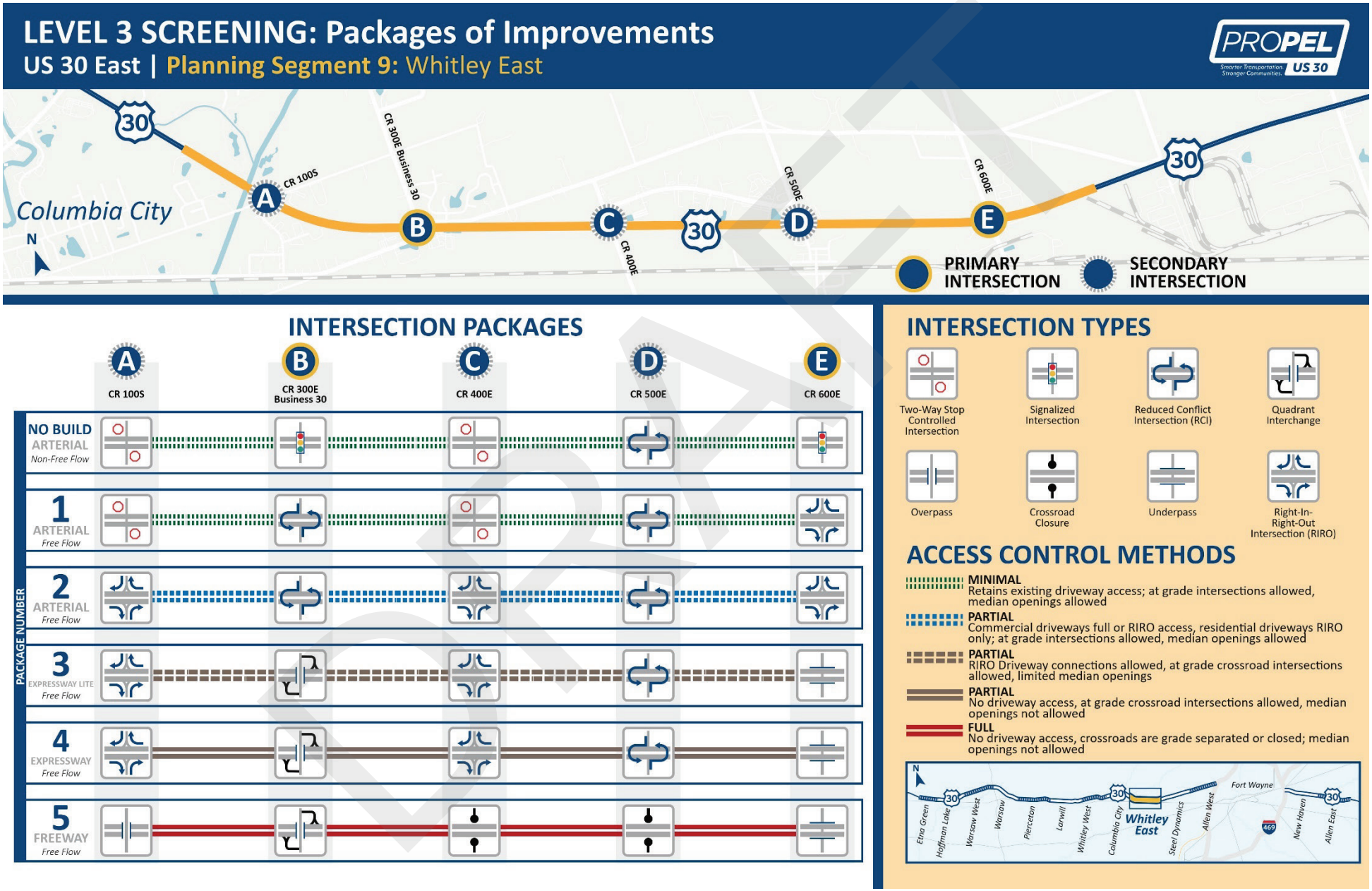
Table 3.9-2 – Level 2 Alternatives in Level 3 - Planning Segment 9 –Whitley East

		Primary Intersection	CR 300E	CR 600E
		Existing Traffic Control		
Primary Concepts	Unsignalized Improvements	Roundabout		
		RCI - Reduced Conflict Intersection	1,2	
		RCI - Variant		
	Signalized Improvements	Traffic Signal Improvements	●	●
		Green-T Intersection		
		Partial Median U-Turn	●	●
		RCUT - Restricted Crossing U-turn	●	●
		Boulevard Left	●	●
	Other	Interchange	3,4,5	
		Access Management - RIRO or Closed		1,2
		Access Management - Directional		
		Add or Lengthen Turn Lanes		
Complementary Concepts		Overpass/Underpass		3,4,5
		Adjacent Intersection Improvements	●	
		Realign Skewed Intersection		
		Add / Extend Accel. / Decel. Lanes		
		Warning Systems	●	●

● Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number.
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.9-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.9-1 – Planning Segment 9: Whitley East - Packages of Improvements Diagrams



3.9.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.9-3 – Measures Comparison Table - Planning Segment 9 - Whitley East

Planning Segment: 09 - Whitley East				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Free Flow Minimal	2 Arterial Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway Free Flow Full	
Purpose and Need	Safety	Total Conflict Points	#	316	258	137	76	58	22	
		Crossing Conflict Points	#	160	116	39	10	10	6	
		% Reduction in Crossing Conflict points	%	-	-28%	-76%	-94%	-94%	-96%	
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	37	103	128	128	131	
		Cost Effectiveness Index (CEI)		-	0.1	0.1	0.6	0.6	0.7	
	Mobility	Average Travel Time Along US 30	Min	5.8	5.2	5.2	5.2	5.2	5.2	
		Average Distance Between US 30 Access Points	#	1.0	1.0	1.0	1.3	1.3	5.2	
		Average Distance Between US 30 Crossing Points	#	1.0	1.3	2.6	1.7	1.7	1.7	
		North-South Mobility Compared to No Build		-	Similar	Decreased	Decreased	Decreased	Decreased	
		N-S Delay Per Vehicle	Min	2.1	6.4	6.4	5.4	5.4	0.0	
		Residential Driveways RIRO vs. Full	#	1 / 3	1 / 3	4 / 0	4 / 0	0 / 0	0 / 0	
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	
		Field Access RIRO vs. Full	#	0 / 4	0 / 4	0 / 4	4 / 0	0 / 0	0 / 0	
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	0	0	0	
		Rivers & Streams Impact	Feet	-	0	0	0	0	0	
		Floodplain Impact	Acres	-	0	0	0	0	3	
		Forested Area Impact	Acres	-	0	0	6.5	6.5	6.5	
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	
		Cemeteries	Yes/ No	-	Yes	Yes	Yes	Yes	Yes	
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	0	18.5	18.5	26	
		Residential Relocations	#	-	0	0	0	2	2	
		Business Relocations	#	-	0	0	0	0	0	
		Farmland Impact	Acres	-	0	0	8	8	12.5	
		Farmland Access Impact	#	-	No	No	No	Yes	Yes	
		Potential Hazardous Materials Sites	#	-	0	0	0	0	0	
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	Yes	Yes	Yes	Yes	Yes	
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0	0	
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0	0	
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No	No	
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Decrease	Decrease	Decrease	Decrease	Decrease	
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$4 to $5	$6 to $8	$65 to $81	$65 to $81	$84 to $104	
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.0	$0.2 to $0.3	$0.3 to $0.4	$0.3 to $0.5	
		Estimated Total Package Cost (2024 Dollars)	$M	-	$4 to $5	$6 to $8	$66 to $81	$66 to $81	$85 to $105	
Goals		Economic Development		No Change	Neutral	Neutral	Neutral	Enhances	Neutral	
		Equity in Transportation		No Change	Neutral	Neutral	Neutral	Enhances	Neutral	
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Moderate	Low	
		Driver Expectations		No Change	Enhances	Enhances	Neutral	Neutral	Neutral	
Level 3 Screening Result				Carried Forward	Carried Forward	Recommended	Recommended	Recommended	Recommended	

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.9-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. Each improvement package for this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 5 (freeway) results in the highest conflict points reduction package due to closures and grade separation intersection alternatives.

Mobility

Regional Mobility

In **Table 3.9-3** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Although there are two existing traffic signals in this planning segment, located at CR 300E and CR 600E, regional mobility does not seem to be a differentiator between the packages. Removing these two traffic signals creates a free-flow condition throughout the entire planning segment for all five packages, resulting in a minimal travel time savings of approximately 35 seconds per vehicle on US 30 during peak hours on average.

Local Mobility

In **Table 3.9-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to No Build, the distance per *access point* remains the same as existing for packages 1 and 2. Expressway lite package 3 and expressway package 4 includes an overpass at 600E which reduces the number of access points and increases the distance between access points to 1.3 miles. Freeway package 5 includes only 1 access point at CR 300E increasing the average distance to 5.2 miles, indicating that the freeway package results in the greatest adverse effect for local access to/from US 30.

Compared to the No Build option, the distance per *crossing point* increases in all packages. Packages 2 has the longest distance of 2.6 miles as it includes the fewest crossing points of any package, with only two crossings.

There are four residential driveways, no commercial driveways, and four field entrances in this planning segment. Most of these driveways and field entrances currently have full access to US 30. Driveway connections are allowed to remain in packages 1 through 3, with RIRO-only restrictions applied to residential driveways in Package 2 and to all driveways in package 3. All driveways would be closed in packages 4 and 5 as the planning segment transitions to expressway and freeway conditions.

Social & Environmental Impacts

All packages present potential socioeconomic and cultural resource impacts while only packages 3, 4, and 5 present potential natural resource impacts. Package 5 is likely to have the highest impact of the segment packages, with the most potential impact to floodplain, forested area, cultural resources, new right-of-way needed, and relocations. Packages 1 and 2 do not present likely impacts to natural resources and are projected to have low levels socioeconomic and cultural impact.

Natural Resources

Packages 1 and 2 have no potential impacts to natural resources. Package 5 has the highest potential impacts to natural resources with approximately 3 acres of potential floodplain impacts and approximately 6 acres of potential impacts to forested areas.

Cultural Resources

There are direct impacts to known cultural resources within this segment. The Union Township Cemetery (CR-92-75) is directly adjacent to CR 500E intersection and could be directly impacted by all of the package options. Indirect impacts to potential nearby resources should be considered as solutions are further developed. One archaeological resource has been identified within ½ mile of an intersection in this segment; if this resource is determined to be historic, additional investigations may be warranted for any projects that move forward adjacent to the site.

Socioeconomic Impacts

Segment 9 is not located in an area of EJ concern for minority or low-income populations. Packages 5 has the largest amount of new right-of-way needed of all the packages in Segment 9 at 26 acres, followed by packages 3 and 4 at 18.5 acres of new right-of-way each. No vulnerable housing populations or community resources are within areas of potential new right-of-way or within 0.1 miles thereof, and thus there will be little potential impact on housing and community resources for any package in Segment 9. However, packages 4 and 5 both present the potential for 2 residential relocations each. The intersection designs for CR 300E in all packages intersect with a proposed trail along the US 30/Lincolnway corridor. However, since this is still a proposed trail, the impacts on recreational activity are not quantifiable. For Segment 9, packages 4 and 5 present the highest potential socioeconomic impacts due to the new right-of-way needed and potential relocations.

While packages 1 and 2 would have little to no farmland impact, packages 3 and 4 would have 8 acres of impact and package 5 would have 12.5 acres of impact.

Goals Assessment

Economic Development

Packages 1 and 2 provide safety improvements without impacting local mobility, which should not impact economic development opportunities and was rated as neutral. Packages 3 and 5 are also rated as neutral for economic development due to a large improvement in safety being offset by restrictions in local mobility due to reduced access to and across US 30. Package 4 is rated as enhancing economic development due to improved safety with fewer restrictions to crossing US 30 and elimination of just one access point to US 30.

Equity in Transportation

Equity is rated as neutral for all packages within the planning segment except package 4, which is rated as enhancing equity. While local mobility is reduced in each subsequent package, the impacts are offset by the improved safety

and regional mobility that are provided within each package. Similar to economic development, package 4's improved safety paired with fewer access restrictions are anticipated to improve equity in the segment.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1, 2, 3, and 4 are all rated as moderately practical due to the relatively low cost and high benefits. Package 5 is rated as low practicality due to the higher relative costs and larger amount of right-of-way impacts, potential relocations, and environmental impacts. All packages have low Cost Effectiveness Index (CEI) values, indicating they provide high benefits for their costs.

Driver Expectations

Packages 1 and 2 were rated as enhancing driver expectations due to combination of removing traffic signals and other geometric improvements to better match the expected conditions of a higher speed suburban to rural arterial. Packages 3, 4, and 5 are rated as neutral for driver expectations due to the access restrictions that are not anticipated for the context of the planning segment.

3.9.4. FINDINGS AND RECOMMENDATIONS

Free flow package 1 is the lowest cost and lowest impact package that addresses identified safety issues and improves east-west mobility by removing signals at CR 300 E and CR 600E. The safety improvements at these locations coupled with the low cost result in this improvement being highly cost effective. East-west travel time along US 30 is reduced by removing signals, and local mobility is maintained with no changes in US 30 access or crossing locations. No new right-of-way would be required with no residential/business relocations, and existing driveway access is maintained. Improvements at this location could provide an incremental, initial investment to improve safety. This package is '*Carried Forward*' for further evaluation as part of subsequent project development studies.

Free flow package 2 is a low cost, lower impact package that addresses safety at four of the five existing intersection locations. A reduced conflict intersection has already been constructed to address safety at the fifth location (CR 500E) as part of a previous, stand-alone project. East-west travel time along US 30 is reduced by removing signals at CR 300E and CR 600E. Local mobility is also supported by retaining the existing average access spacing, however US 30 crossing points are reduced from five to three locations. No new right-of-way would be required with no residential/business relocations, and existing driveway access can be maintained as right-in/right-out access. This package is '*Recommended*' for further evaluation as part of subsequent project development studies.

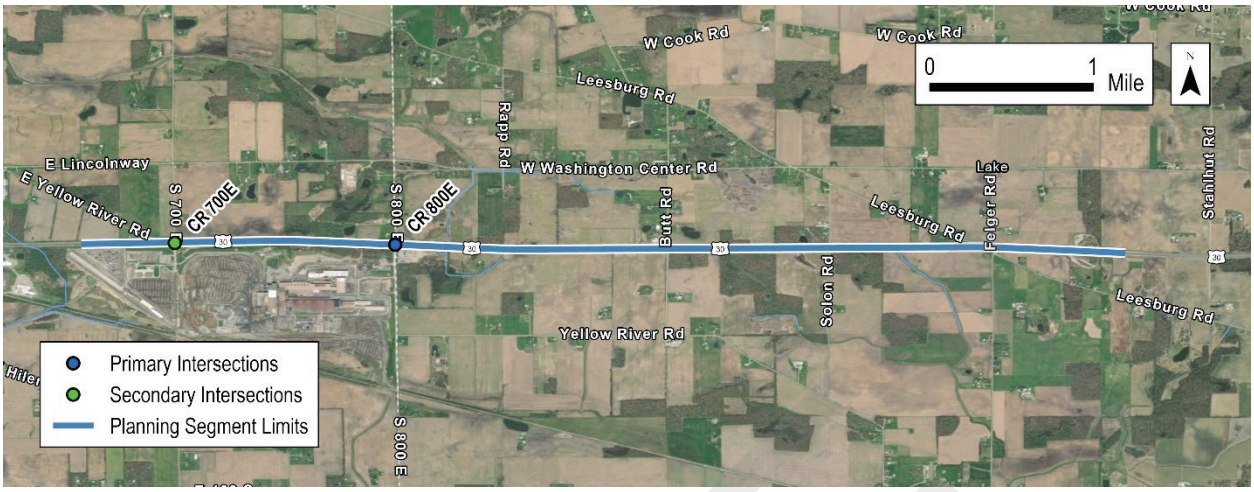
Expressway lite package 3 is a higher cost, higher impact package that also improves east west mobility by eliminating all traffic signals. This package includes a quadrant style interchange at CR 300E with an overpass that provides improved access and local mobility; however, to achieve access controls for expressway lite all driveways would be restricted to RIRO access only. Although this package results in the improved overall safety performance, the increase in cost due to the interchange at CR 300E decreases its cost-effectiveness. It is estimated that this

package would require approximately 18.5 acres of new right-of-way (8 acres of farmland). This package is '*Recommended'* for further evaluation as part of subsequent project development studies.

Expressway package 4 is similar to package 3 but includes a grade separation at CR 600E instead of an at-grade RIRO intersection, and trades off access *to* US 30 for access *across* US 30. Additionally, to accommodate expressway access control, all existing driveway connections would be closed. It is estimated that this package would require approximately 18.5 acres of new right-of-way (8 acres of farmland). This package is '*Recommended'* for further evaluation as part of subsequent project development studies.

Freeway package 5 is the highest cost, highest impact package that has good safety performance, however its high cost makes it the least cost effective of the five packages in this segment. Local mobility is affected due to a reduction in US 30 access and crossing points and removal of driveway access to US 30. This package would result in approximately 26 acres of new right-of-way (12.5 acres of farmland) and result in two residential relocations. Despite package 5 resulting in higher costs and higher impacts, given the role of US 30 in the regional and statewide transportation network, a change in facility type such as that included in this package may be considered in the future to achieve broader transportation goals and objectives. For these reasons, package 5 is categorized as *'Recommended'*.

3.10. SEGMENT 10: STEEL DYNAMICS



3.10.1. PLANNING SEGMENT OVERVIEW

The Steel Dynamics planning segment is 4.8 miles in length in total and includes an active INDOT design project to the east of CR 700E. The length of the planning segment not included in the active INDOT design project is approximately 1 mile centered on CR 700E, and is what is evaluated here. Outside of the presence of Steel Dynamics, the area is very rural with little roadside development.

This planning segment as evaluated contains one secondary intersection, CR 700E, in addition to four other intersections east of CR 700E that were not studied specifically within this PEL study as they are being addressed by a separate INDOT study. CR 700E serves as the main entrance to Steel Dynamics, as well as providing some connectivity to county roadways north of US 30. Four other intersections (CR 800E, Butt Road, Solon Road, and Leesburg / Felger Road) are within the limits of an INDOT design project.

There is one driveway located along US 30 in this planning segment, serving a cellular tower site.

Overall, this section of US 30 is considered to operate as non-free flow as there is a traffic signal at CR 800E which frequently stops the flow of traffic along US 30.

Notable Features Influencing Development of Packages

CR 700E is the key consideration for the packages within this segment as it is the only intersection being evaluated as part of this PEL study.

Based on the safety analysis performed during the *Existing Transportation Conditions Report*, CR 700E experiences higher than average crash rates and packages should consider reducing conflict points to improve safety.

Packages were developed following Step 3 of the Level 3 evaluation methodology outlined in **Section 2.3**. Since the separate INDOT design study is still in progress and no decisions have been finalized, intersection improvements at CR 700E were identified that could align with various potential access management strategies for areas east of CR 700E.

Summary of Comments for Planning Segment 10 – Steel Dynamics

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Steel Dynamics is incredibly important to the economy and job force in northeastern Indiana.
- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Semitrucks run red lights frequently.
- Reduce the number of intersections and driveway access points between SR 205 and I-69.
- Reduce the number of stop lights between SR 205 and I-69.

3.10.2. IMPROVEMENT PACKAGES

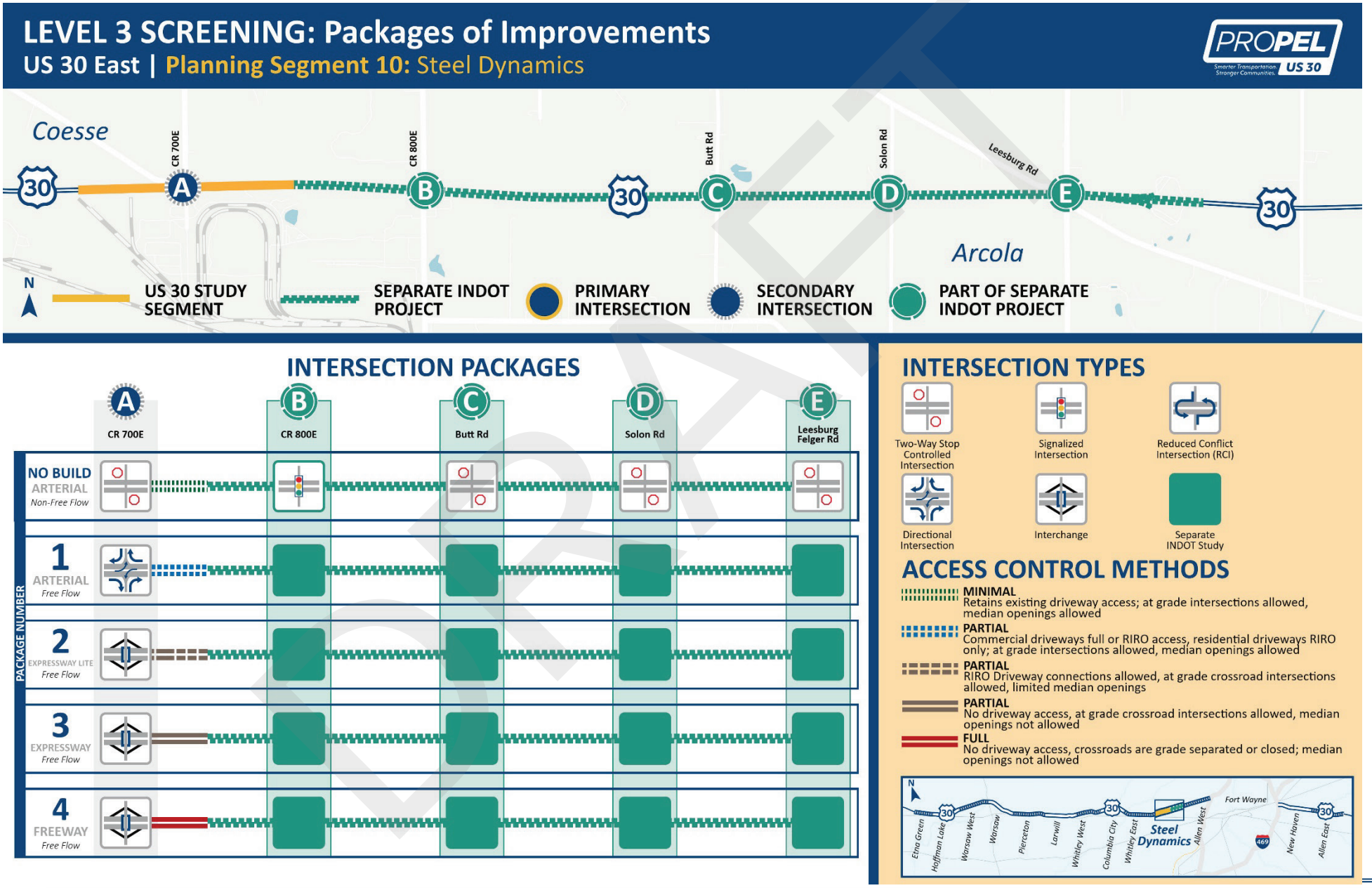
Four packages of improvements were identified for planning segment 10 and are characterized as follows:

Table 3.10-1 – Packages of Improvements - Planning Segment 10 - Steel Dynamics

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared.
1	Arterial	Free Flow	Partial	This low-cost, low-impact package aims to improve safety while preserving partial access at CR 700E by installing a directional intersection. Existing driveways would continue to have access to US 30.
2	Expressway Lite	Free Flow	Partial	This higher-cost, higher-impact package converts CR 700E into an interchange, with driveway connections limited to RIRO access only.
3	Expressway	Free Flow	Partial	This package is similar to package 2, except driveway connections would be closed.
4	Freeway	Free Flow	Full	This highest cost, highest impact package converts US 30 to a fully access controlled freeway.

Figure 3.10-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.10-1 – Planning Segment 10: Steel Dynamics - Packages of Improvements Diagrams



3.10.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**, except for right-in/right-out (RIRO) and roadway closure concepts as these footprints remained entirely within existing right-of-way. Below the table is a summary of the findings for each category of measures.

Table 3.10-2 – Measures Comparison Table - Planning Segment 10 - Steel Dynamics

Planning Segment: 10 - Steel Dynamics				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Free Flow Partial Access	2 Expressway Lite Free Flow Partial Access	3 Expressway Free Flow Partial Access	4 Freeway Free Flow Full		
Purpose and Need	Safety	Total Conflict Points	#	53	14	28	26	26		
		Crossing Conflict Points	#	29	4	10	10	10		
		% Reduction in Crossing Conflict points	%	-	-86%	-66%	-66%	-66%		
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	138	105	105	105		
		Cost Effectiveness Index (CEI)		-	0.0	0.5	0.5	0.5		
	Mobility	Average Travel Time Along US 30	Min	1.0	1.0	1.0	1.0	1.0		
		Average Distance Between US 30 Access Points	#	1.0	1.0	1.0	1.0	0.5		
		Average Distance Between US 30 Crossing Points	#	1.0	1.0	1.0	1.0	1.0		
		North-South Mobility Compared to No Build		-	Similar	Similar	Similar	Similar		
		N-S Delay Per Vehicle	Min	1.1	0.0	0.0	0.0	0.0		
		Residential Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
		Commercial Driveways RIRO vs. Full	#	0 / 1	1 / 0	1 / 0	0 / 0	0 / 0		
		Field Access RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0		
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	0	0		
		Rivers & Streams Impact	Feet	-	0	0	0	0		
		Floodplain Impact	Acres	-	0	0	0	0		
		Forested Area Impact	Acres	-	0	0	0	0		
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No		
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No		
		Cemeteries	Yes/ No	-	No	No	No	No		
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	13	13	13		
		Residential Relocations	#	-	0	0	0	0		
		Business Relocations	#	-	0	0	0	0		
		Farmland Impact	Acres	-	0	7.5	7.5	7.5		
		Farmland Access Impact	#	-	No	No	No	No		
		Potential Hazardous Materials Sites	#	-	0	1	1	1		
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No	No	No	No		
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0		
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0		
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No		
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Decrease	Decrease	Decrease	Decrease		
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$1 to $3	$51 to $63	$51 to $63	$51 to $63		
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.1 to $0.2	$0.1 to $0.2	$0.1 to $0.2		
		Estimated Total Package Cost (2024 Dollars)	$M	-	$1 to $3	$51 to $63	$51 to $63	$51 to $63		
Goals		Economic Development		No Change	Enhances	Enhances	Enhances	Enhances		
		Equity in Transportation		No Change	Neutral	Neutral	Neutral	Neutral		
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral		
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral		
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Moderate		
		Driver Expectations		No Change	Neutral	Neutral	Neutral	Enhances		
Level 3 Screening Result				Carried Forward	Carried Forward	Recommended	Recommended	Carried Forward		

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.10-2** includes a summary of the improvement packages conflict point evaluation for this planning segment. All four improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points at CR 700E. Package 4 (freeway) results in more conflict points than packages 2 and 3 due to providing an interchange that includes two terminal ramp intersections along CR 700E.

Mobility

Regional Mobility

In **Table 3.10-2** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Generally, regional mobility is not a major differentiator between packages in this segment given that traffic is currently in free flow along US 30 at CR 700E.

Local Mobility

In **Table 3.10-2,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. Considering the 1-mile section of the segment that is not included in a separate INDOT design study the distance per *access point* remains the same for all packages and is not a differentiator.

In the 1-mile portion of the planning segment not included in a separate INDOT design study, compared to No Build, the distance per *crossing point* increases compared to No Build in packages 2 and 3 as north-south crossing traffic is not accommodated with a directional intersection.

There is only one commercial driveway with neither residential driveways nor field entrances in the 1-mile section of this planning segment. The commercial driveway currently has full access to US 30, but this would be restricted to RIRO access only in expressway lite Package 2 and closed in expressway Package 3 and freeway Package 4.

Social & Environmental Impacts

In Segment 10, packages 2, 3, and 4 present the highest amount of potential social and environmental impact with equal impacts in each, while package 1 has the lowest amount. Packages 2, 3, and 4 are likely to have the largest impact to farmland, and none of the packages are expected to have natural or cultural impacts.

Natural Resources

There are no packages in Segment 10 that have potential impacts to natural resources.

Cultural Resources

There are no direct or indirect impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to potential nearby resources should be considered as solutions are further developed. At this time, no known historic resources have been identified within ½ mile of an intersection in this segment.

Socioeconomic Impacts

Segment 10 is not located in an area of EJ concern for minority or low-income populations. No vulnerable housing populations or community resources are within areas of potential new right-of-way or within 0.1 miles thereof, and thus there will be little potential impact on housing and community resources for any package in Segment 10. Packages 2, 3, and 4 have the largest potential new right-of-way needed at 13 acres.

While Package 1 would have little to no farmland impact, Packages 2, 3, and 4 would each impact 7.5 acres of farmland.

Goals Assessment

Economic Development

Packages 1, 2, 3, and 4 are all rated as enhancing economic development. Each package is anticipated to improve safety through removing more higher severity crossing movements from the CR 700E intersection while still providing some level of access at the location.

Equity in Transportation

Equity is rated as neutral for all packages within the planning segment. Each package has safety benefits but some level of access restrictions to offset the safety benefits.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

All packages are rated as moderately practical due to the relatively low cost and high benefits. All packages have Cost Effectiveness Index (CEI) values below 1.0, indicating they provide high safety benefits for their costs. Package 1 is the most cost effective package, while packages 2-4 all have a CEI value of 0.5 indicating the safety benefits outweigh the cost of the package.

Driver Expectations

Packages 1, 2, and 3 were all rated as neutral to expectations, as they all restrict some access to CR 700E but through those restrictions they better match geometric conditions of the roadway's rural context. Package 4 is rated as enhancing expectations through providing a fully access controlled roadway, matching the condition to the east after programmed projects are completed.

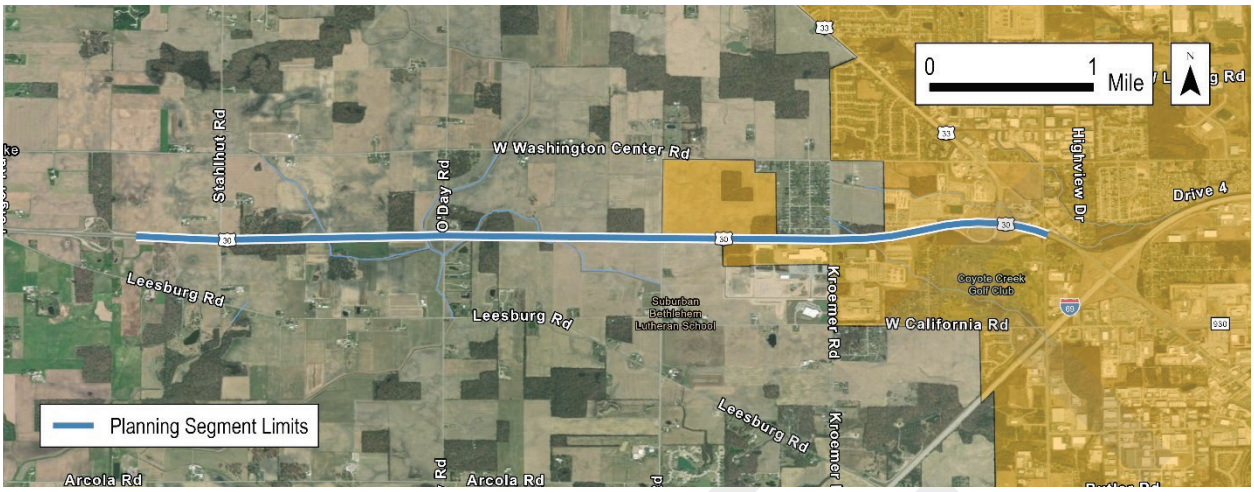
3.10.4. FINDINGS AND RECOMMENDATIONS

Package 1 is a low cost and low impact package that addresses identified safety issues at CR 700 E. The safety improvements by adding a directional intersection at this location coupled with the low implementation cost result in this improvement being highly cost effective. Local mobility is maintained with no changes in US 30 access or crossing locations. No new right-of-way would be required with no residential/business relocations. This package is '*Carried Forward'* for further evaluation and coordination as part of subsequent project development studies.

Expressway lite package 2, expressway package 3, and freeway package 4 are higher cost, higher impact packages that improve safety. Local mobility is improved through reduced cross corridor delays, although the crossing points remain the same as the No Build condition. Although the intersection improvement is the same in all three packages, the roadway type and its access management changes. The existing driveway would be converted to a right-in/right-out configuration in Package 2, while it would be closed in packages 3 and 4. Package 3 would allow for the existing right-of-way configuration to remain, while package 4 would require fully access controlled right-of-way to be purchased.

Packages 3, and 4 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in these packages, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if either of these packages are a reasonable solution to the planning segment's transportation needs. Given the reduced impacts on access control for packages 2 and 3, the packages are categorized as *'Recommended'*. The higher access control required for package 4 results in that package being categorized as *'Carried Forward'*.

3.11. SEGMENT 11: ALLEN WEST



3.11.1. PLANNING SEGMENT OVERVIEW

Notable Features Influencing Development of Packages

The majority of this 4.2-mile segment is within the project limits of an active INDOT project, which proposes to construct an interchange at Flaugh Road. As of the publication of this report, the project is scheduled to be bid in March of 2025 and will also include a closure of Stalhut Road, an overpass at O'Day Road, and conversion of Kroemer Road to right-in/right-out access only.

The project will create an expressway within this planning segment of US 30, with no median openings. The segment is included in the Level 3 screening report for consideration of the Kroemer Road intersection, which would not be allowable in a fully access-controlled, freeway alternative. Otherwise, alternatives at the other intersections will only consider the build condition of the proposed INDOT project.

Summary of Comments for Planning Segment 11 – Allen West

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Turn US 30 into a limited access interstate from SR 49 to I-69 to support economic development and job growth in manufacturing.
- Crossing US 30 by bicycle is dangerous.
- The Amazon Fulfillment Center at Flaugh Road has increased truck traffic, which negatively affects local travel from both a safety and traffic congestion standpoint.
- Crashes have increased at Kroemer before Sweetwater Sound moved to its current location.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Semitrucks run red lights frequently.
- Reduce the number of intersections and driveway access points between SR 205 and I-69.
- Reduce the number of stop lights between SR 205 and I-69.

3.11.2. IMPROVEMENT PACKAGES

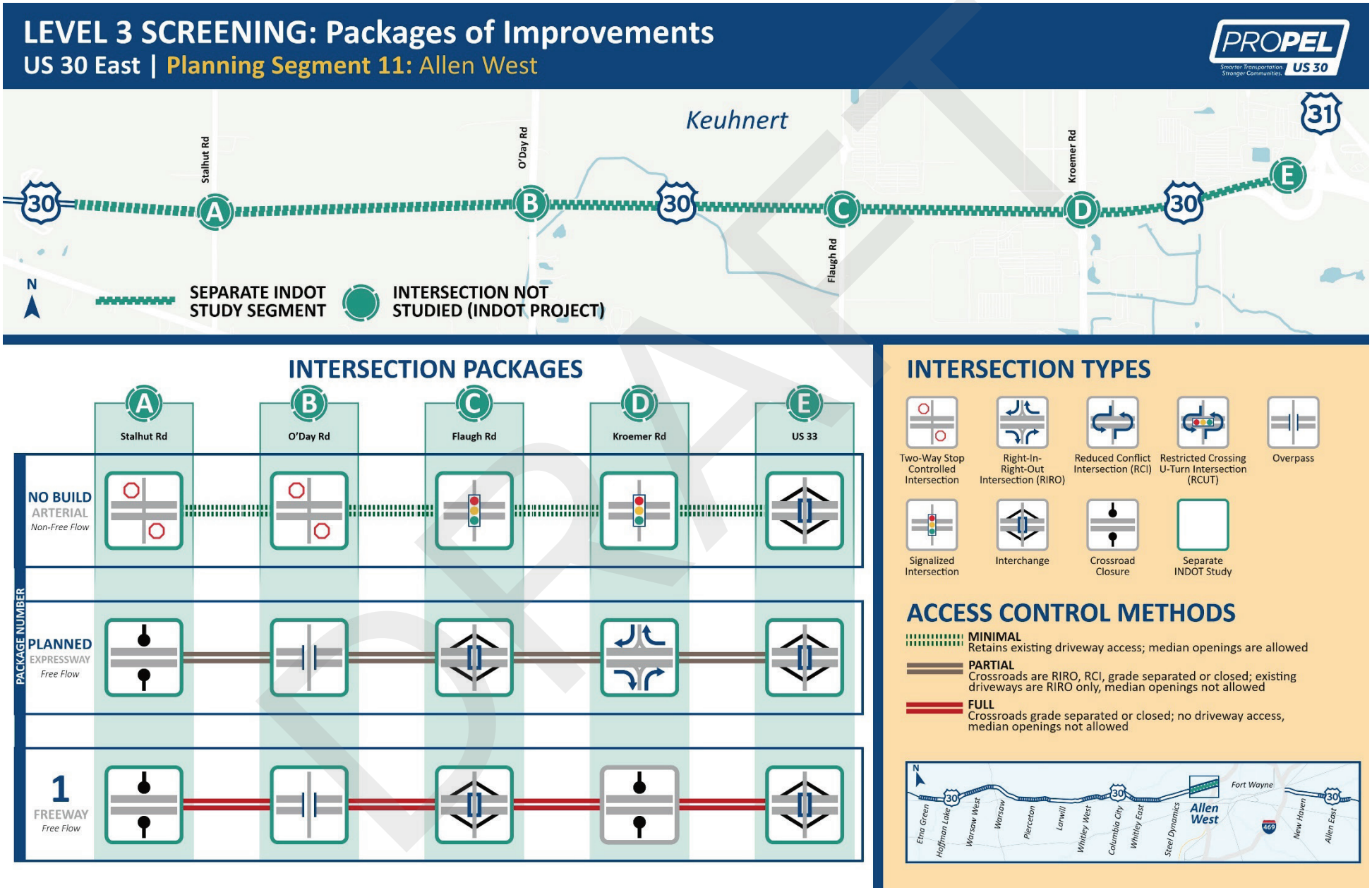
One improvement package was identified for Planning Segment 11 and are characterized as follows:

Table 3.11-1 – Packages of Improvements - Planning Segment 11 - Allen West

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions at the time of the Level 3 report publication, prior to a programmed construction project.
Planned	Expressway	Free Flow	Partial	Planned represents conditions after a programmed construction project is completed, against which each package is compared.
1	Freeway	Free Flow	Full	Closure of Kroemer Road to provide a full freeway condition.

Figure 3.11-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at Kroemer Road, as well as the access control and flow condition assumptions between the intersections.

Figure 3.11-1 – Planning Segment 11: Allen West - Packages of Improvements Diagrams



3.11.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.11-2 – Measures Comparison Table - Planning Segment 11 - Allen West

Planning Segment: 11 - Allen West				Planned	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Freeway Free Flow Full					
Purpose and Need	Safety	Total Conflict Points	#	30	26					
		Crossing Conflict Points	#	10	10					
		% Reduction in Crossing Conflict points	%	-	0%					
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	0					
		Cost Effectiveness Index (CEI)		-	-					
	Mobility	Average Travel Time Along US 30	Min	4.2	4.2					
		Average Distance Between US 30 Access Points	#	2.1	4.2					
		Average Distance Between US 30 Crossing Points	#	2.1	2.1					
		North-South Mobility Compared to No Build		-	Similar					
		N-S Delay Per Vehicle	Min	0.0	0.0					
		Residential Driveways RIRO vs. Full	#	0 / 0	0 / 0					
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0					
		Field Access RIRO vs. Full	#	0 / 0	0 / 0					
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0					
		Rivers & Streams Impact	Feet	-	0					
		Floodplain Impact	Acres	-	0					
		Forested Area Impact	Acres	-	0					
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No					
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No					
		Cemeteries	Yes/ No	-	No					
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0					
		Residential Relocations	#	-	0					
		Business Relocations	#	-	0					
		Farmland Impact	Acres	-	0					
		Farmland Access Impact	#	-	No					
		Potential Hazardous Materials Sites	#	-	0					
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No					
		Potential Impacts to Communities with EJ Concerns	Acres	-	0					
		Potential Relocations in Communities with EJ Concerns	#	-	0					
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No					
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	No Change					
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$1 to $2					
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0					
		Estimated Total Package Cost (2024 Dollars)	$M	-	$1 to $2					
Goals		Economic Development		No Change	Diminshes					
		Equity in Transportation		No Change	Diminshes					
		Multimodal Access & Connections		No Change	Neutral					
		Emerging Technologies		No Change	Neutral					
		Fiscal & Environmental Practicality		No Change	Moderate					
		Driver Expectations		No Change	Neutral					
Level 3 Screening Result				Carried Forward	Carried Forward					

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the Planned condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.11-2** includes a summary of the improvement packages conflict point evaluation for this planning segment. The improvement package to create a full freeway would reduce conflict points by eliminating the RIRO condition at Kroemer Road, but as those are merge and diverge conflict points the improvement is not likely to provide a large safety benefit compared to the planned improvements.

Mobility

Regional Mobility

In **Table 3.11-2** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Since both the Planned improvement and improvement package 1 are both free flow, the removal of the RIRO at Kroemer in package 1 would not result in any additional regional mobility improvement.

Local Mobility

In **Table 3.11-2,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- US 30 Access - Miles per Access Point,
- US 30 Crossings - Miles per Crossing Point,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to the Planned improvement, the distance per *access point* increases to 4.2 miles for package 1 with the removal of the Kroemer Road access point. Compared to Planned, the distance per *crossing point* remains the same.

There are no existing residential driveways, commercial driveways, or field entrances in this planning segment.

Social & Environmental Impacts

Social and environmental impacts in Segment 11 are expected to be very minimal for package 1. As there are few social or cultural resources in proximity and there is minimal new right-of-way needed for the whole segment, environmental impacts are likely to be insubstantial.

Natural Resources

There are likely to be minimal natural resource impacts throughout Segment 11.

Cultural Resources

There are no direct or indirect impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to potential nearby resources should be considered as solutions are further developed. At this time, no known historic resources have been identified within ½ mile of an intersection in this segment.

Socioeconomic Impacts

Segment 11 is not located in an area with EJ concerns, thus no packages will result in disproportionate EJ impacts. No vulnerable housing populations, community resources, or potential Section 4(f) resources are within areas of potential new right-of-way or within 0.1 miles thereof, so there will be little potential impact on housing and community resources for any package in Segment 11.

There would be little to no farmland impacts for Segment 11.

Goals Assessment

Economic Development

The elimination of access at Kroemer Road within this package would diminish economic development through reducing local access.

Equity in Transportation

Similar to economic development, the elimination of local access would diminish equity within this planning segment.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

The package is rated as moderately practical given that it would have no right-of-way or environmental impacts and would be relatively low cost to implement.

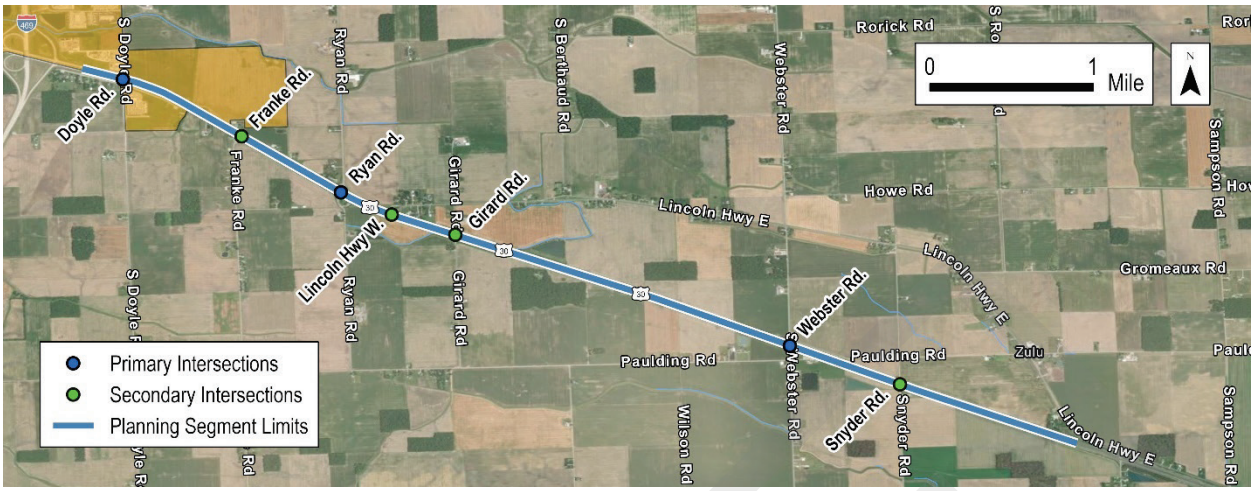
Driver Expectations

The package is rated as neutral for driver expectations, as the change from a RIRO to a closure at a single intersection is not likely to result in a substantial effect on drivers along US 30 in the planning segment.

3.11.4. FINDINGS AND RECOMMENDATIONS

Package 1 includes all Improvements that are being implemented under a concurrent INDOT project that will convert this segment to free flow and be limited access with the exception of Kroemer Road which will be right-in/right-out. This package modifies this segment by closing Kroemer Road to accommodate full access control requirements of a freeway. Because this change doesn't result in any substantive safety improvements this package is '*Carried Forward*' and would require further analysis to determine if it is a reasonable solution for the identified transportation needs.

3.12. SEGMENT 12: NEW HAVEN



3.12.1. PLANNING SEGMENT DETAILS

The New Haven planning segment is 5.2 miles in length and includes the area east of New Haven. The western-most portion of the roadway contains some commercial land uses, while the remaining area is rural with agriculture dominating and a few residences adjacent to the roadway. The traffic volumes along US 30 east of Fort Wayne are much lower than to the west of Fort Wayne, and results in the proportion of trucks being higher in these eastern planning segments.

This planning segment contains three primary and four secondary intersections. Doyle Road is signalized and serves commercial traffic at the intersection, including restaurants and a truck stop. Ryan Road and Webster Road are both primary intersections due to their regional connectivity in eastern Allen County, as well as providing access to an industrial area north of US 30. The secondary intersections include the remaining county roadways (Franke Road, Lincoln Highway, Girard Road, and Snyder Road). All intersections except Doyle Road are one-way or two-way stop controlled (OWSC / TWSC) allowing US 30 to operate in a free flow condition through these intersections.

There are six driveways and two field entrances located along US 30 in this planning segment, all serving individual houses or farm fields.

Notable Features Influencing Development of Packages

Two factors controlled the package development of the New Haven planning segment: the traffic signal at Doyle Road and the connectivity of key north-south routes in the area.

Based on the safety analysis documented in the *Existing Transportation Conditions Report,* Doyle Road, Franke Road, Ryan Road, and Webster Road all experience higher than average crash values and should receive safety improvements. The rural traffic signal at Doyle Road was removed in Level 3 packages, and the existing OWSC and TWSC intersections at Franke Road, Ryan Road, and Webster Road were not retained. Because crash patterns did not indicate that left turns from US 30 were a concern, the RCI – Variant (that would remove left turns) was discarded from consideration at Ryan and Webster Roads.

Starting with the primary intersection and the remaining Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were

identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 12 – New Haven

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Any alternatives being considered in New Haven should support the community's recent growth.
- Enhance the intersection at Doyle Road to support the growth in New Haven.
- Match Ohio's speed limit for US 30 for better mobility.
- Crossing US 30 by bicycle is dangerous.
- Turning US 30 into a freeway will negatively affect the businesses.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- The stop light at the Flying J truck stop is dangerous and causes traffic to back up.

3.12.2. IMPROVEMENT PACKAGES

Five packages of improvements were identified for planning segment 12 and are characterized as follows:

Table 3.12-1 – Packages of Improvements - Planning Segment 12 - New Haven

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Non-Free Flow	Minimal	No Build represents existing conditions against which each package is compared to.
1	Arterial	Free Flow	Minimal	This low-cost, low-impact safety improvement package converts Doyle, Ryan, and Webster Roads to directional intersections and Franke Road to RIRO, while preserving the existing access control at the other intersections. The traffic signal at Doyle Road would be removed to enable free-flow conditions in this segment. Existing driveway connections would remain unchanged.
2	Arterial	Free Flow	Partial	This low-cost, low-impact safety improvement package is similar to Package 1 but offers increased access by converting Doyle, Ryan, and Webster Roads to RCIs. Existing residential driveways along US 30 would be RIRO access only.
3	Expressway Lite	Free Flow	Partial	This higher-cost expressway lite package aims to enhance safety and improve east-west travel on US 30 by eliminating all stop controls at intersections within this segment. The signal at Doyle Road would be replaced with an overpass, Webster Road would be converted to an RCI, and the remaining intersections would transition to RIRO access only. As an "expressway lite" option, existing driveway access would remain, but restricted to RIRO access.
4	Expressway	Free Flow	Partial	This package follows the same intersection configurations as package 3 but increases access controls by prohibiting driveway connections and median openings between intersections.
5	Freeway	Free Flow	Full	This highest cost package reconfigures US 30 to a limited access freeway with an interchange at Webster Road and overpasses at Doyle and Ryan Roads. The remaining intersections would be closed.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

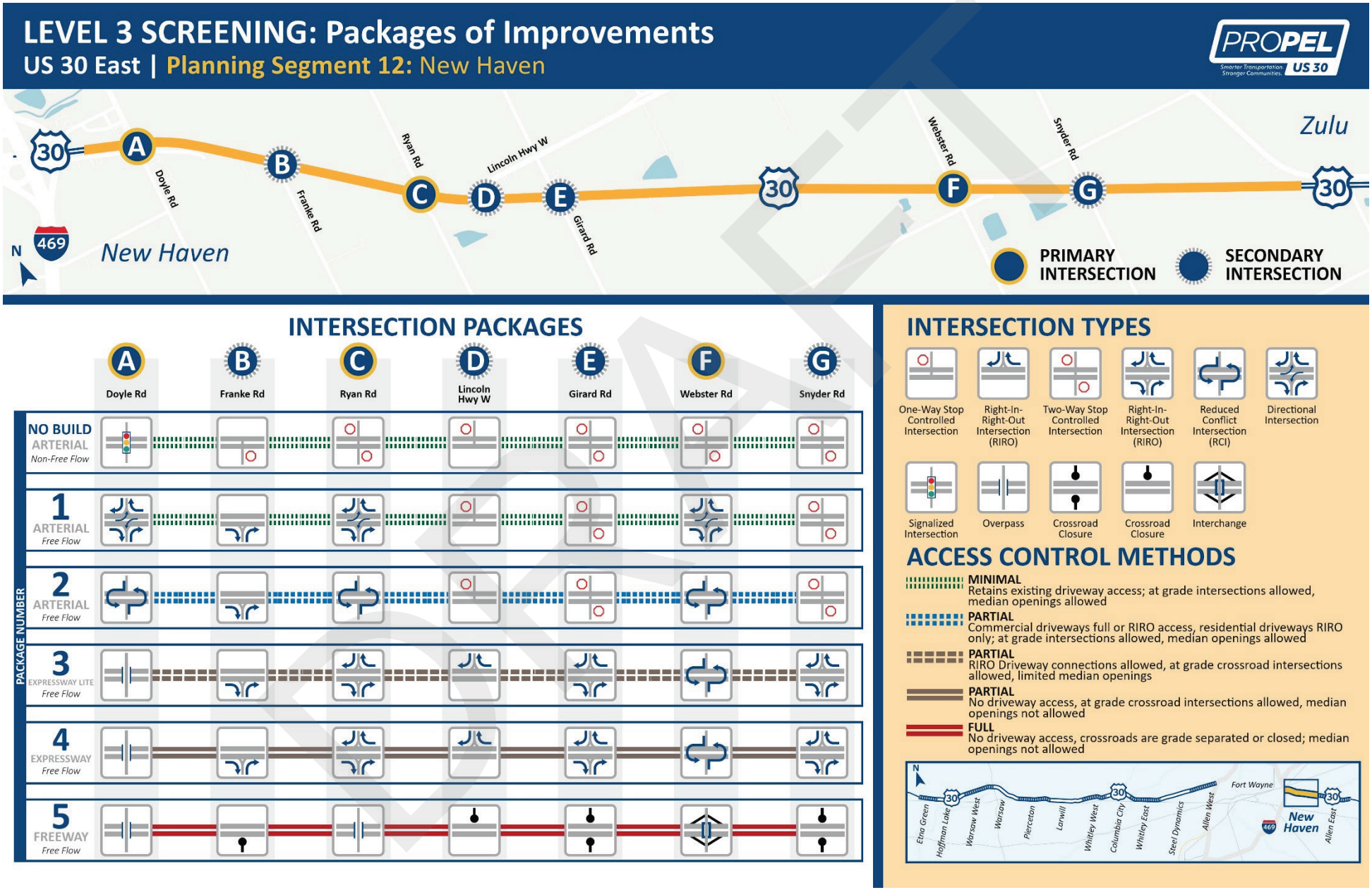
Table 3.12-2 – Level 2 Concepts in Level 3 - Planning Segment 12 – New Haven

Primary Intersection			Doyle Road	Ryan Road	Webster Road
		Existing Traffic Control		STOP	STOP
Primary Concepts	Unsignalized Improvements	Roundabout			
		RCI - Reduced Conflict Intersection	2	2	2,3,4
		RCI - Variant		●	●
	Signalized Improvements	Traffic Signal Improvements	●		
		Green-T Intersection			
		Partial Median U-Turn			
		RCUT - Restricted Crossing U-turn			
		Boulevard Left			
	Other	Interchange			5
		Access Management - RIRO or Closed		3,4	
		Access Management – Directional	1	1	1
		Add or Lengthen Turn Lanes			
Complementary Concepts		Overpass/Underpass	3,4,5	5	
		Adjacent Intersection Improvements	●		
		Realign Skewed Intersection			●
		Add / Extend Accel. / Decel. Lanes		●	
		Warning Systems	●	●	●

~~●~~ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.12-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.12-1 – Planning Segment 12: New Haven - Packages of Improvements Diagrams



3.12.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.12-3 – Measures Comparison Table - Planning Segment 12 - New Haven

Planning Segment: 12 - New Haven				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Non-Free Flow Minimal	1 Arterial Free Flow Minimal	2 Arterial Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway Free Flow Full	
Purpose and Need	Safety	Total Conflict Points	#	302	205	212	56	40	26	
		Crossing Conflict Points	#	160	95	80	4	4	10	
		% Reduction in Crossing Conflict points	%	-	-41%	-50%	-98%	-98%	-94%	
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	50	62	121	121	116	
		Cost Effectiveness Index (CEI)		-	0.1	0.1	0.2	0.2	0.7	
	Mobility	Average Travel Time Along US 30	Min	5.6	5.2	5.2	5.2	5.2	5.2	
		Average Distance Between US 30 Access Points	#	0.7	0.7	0.7	0.9	0.9	5.2	
		Average Distance Between US 30 Crossing Points	#	1.0	2.6	1.0	2.6	2.6	1.7	
		North-South Mobility Compared to No Build		-	Decreased	Similar	Decreased	Decreased	Decreased	
		N-S Delay Per Vehicle	Min	1.9	14.4	3.5	18.8	18.8	0.0	
		Residential Driveways RIRO vs. Full	#	2 / 3	2 / 3	5 / 0	5 / 0	0 / 0	0 / 0	
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	
		Field Access RIRO vs. Full	#	0 / 3	0 / 3	0 / 3	3 / 0	0 / 0	0 / 0	
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	0	0	0	
		Rivers & Streams Impact	Feet	-	0	0	0	0	< 100	
		Floodplain Impact	Acres	-	0	0	0	0	0	
		Forested Area Impact	Acres	-	0	0	0	0	0.	
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	
		Cemeteries	Yes/ No	-	No	No	No	No	No	
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	0	8.5	8.5	33.5	
		Residential Relocations	#	-	0	0	0	6	8	
		Business Relocations	#	-	0	0	0	0	0	
		Farmland Impact	Acres	-	0	0	7	7	30.5	
		Farmland Access Impact	#	-	No	No	No	Yes	Yes	
		Potential Hazardous Materials Sites	#	-	0	0	3	3	3	
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0	0	
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0	0	
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No	No	
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	Increase	Increase	Increase	Increase	Increase	
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	$6 to $8	$7 to $10	$22 to $28	$22 to $28	$74 to $91	
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.0	$0.2 to $0.4	$1.2 to $1.6	$1.8 to $2.3	
		Estimated Total Package Cost (2024 Dollars)	$M	-	$6 to $8	$7 to $10	$23 to $29	$24 to $30	$76 to $94	
Goals		Economic Development		No Change	Neutral	Neutral	Enhances	Enhances	Neutral	
		Equity in Transportation		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Moderate	Low	
		Driver Expectations		No Change	Neutral	Enhances	Neutral	Neutral	Neutral	
Level 3 Screening Result				Carried Forward	Recommended	Recommended	Carried Forward	Carried Forward	Carried Forward	

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.12-2** includes a summary of the improvement packages conflict point evaluation for this planning segment. All five improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 5 (freeway) results in the highest conflict points reduction package due to closures and grade separation alternatives.

Mobility

Regional Mobility

In **Table 3.12-2** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Generally, regional mobility appears not to be a major differentiator between packages in this segment given that the only existing traffic signal in this planning segment is at Doyle Road. Removal of this traffic signal results in a free-flow condition along the entire planning segment, resulting in an average, minimal travel time savings of under 30 seconds per vehicle along US 30 in the peak hours for all packages.

Local Mobility

In **Table 3.12-2,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. When compared to No Build, the distance per *access point* is the same as No Build for packages 1 and 2 but increases to 0.9 miles for expressway lite package 3 and expressway package 4. This measure increases substantially to 5.2 miles for freeway package 5, indicating that the freeway option has the greatest adverse effect with respect to local access.

Compared to No Build, the distance per *crossing point* is greatest for expressway lite and expressway packages at 2.6 miles (as it has the fewest crossing points) while package 2 remains the same as No Build. This indicates that north-south mobility becomes more constrained as the options for crossing US 30 are reduced.

This planning segment includes five residential driveways and three field entrances, with no commercial driveways present. Most of these driveways and field entrances currently have full access to US 30. In package 1, these driveways would retain their existing access, but in Packages 2 and 3, they would be converted to right-in/right-out (RIRO) access only. Field entrances would maintain the same access to US 30 as in the No Build option in packages 1 and 2 and be configured as RIRO for package 3. However, all driveways and field entrances would be closed in Packages 4 and 5 to accommodate expressway and freeway access controls.

Social & Environmental Impacts

Overall, there are minimal social and environmental impacts for Segment 12 packages. Package 5 has the most potential environmental and social impacts, with relocations as the primary concern.

Natural Resources

Packages 1, 2, 3, and 4 have no expected impacts to natural resources. Package 5 is the only package in Segment 12 with potential impacts to natural resources, with less than 100 feet of potential impacts to rivers and streams.

Cultural Resources

There are no direct or indirect impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to potential nearby resources should be considered as solutions are further developed. At this time, no known historic resources have been identified within ½ mile of an intersection in this segment.

Socioeconomic Impacts

Segment 12 is not located in an area with EJ concerns thus no packages will result in disproportionate EJ impacts. No vulnerable housing populations, community resources, or potential Section 4(f) resources are within areas of potential new right-of-way or within 0.1 miles thereof, so there will be little potential impact on housing and community resources for any package in Segment 12. However, package 4 presents the potential for six residential relocations which are related to land-locked parcels due to loss of access to US 30 for the expressway alternative. Package 5 presents the potential for two additional residential relocations above package 4 due to impacts at the proposed interchange at Webster Road.

While packages 1 and 2 would have little to no impact on farmland, packages 3 and 4 would have 7 acres of impact due to an overpass at Doyle Road and package 5 would have a substantial impact of 31 acres primarily due to a new interchange located at Webster Road along with overpasses at Doyle and Ryan Roads.

Goals Assessment

Economic Development

Packages 3 and 4 are rated as enhancing economic development, as they provide safety improvements and regional mobility improvements without impacting local mobility. Packages 1, 2, and 5 are all anticipated to have an improvement in safety and similar regional mobility improvements as packages 3 and 4. But, due to a larger negative impact to local mobility from reduced access to and across US 30, these packages are rated as neutral to economic development.

Equity in Transportation

Equity is rated as neutral for all packages within the planning segment. While local mobility is reduced in each subsequent package, the impacts are offset by the improved safety and regional mobility that are provided within each package.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1, 2, 3, and 4 are all rated as moderately practical due to the relatively low cost and high benefits. Package 5 is rated as low practicality due to the higher relative costs and larger amount of right-of-way impacts and potential relocations. Packages 1, 2, 3, and 4 all have extremely low Cost Effectiveness Index (CEI) values, indicating they provide high safety benefits for their costs. However, the CEI for package 5 is also below 1.0, indicating a possibility of good safety benefits relative to its cost.

Driver Expectations

Packages 1, 3, 4, and 5 are rated as neutral for driver expectations due to the offsetting benefits of geometrically improving the roadway to better match the posted speed limit and elimination of traffic signals with the impacts of implementing stricter access management along a mostly rural segment of roadway. Package 2 is rated as enhancing driver expectations through the removal of the traffic signal and geometric improvements to safely maintain access through the rural segment.

3.12.4. FINDINGS AND RECOMMENDATIONS

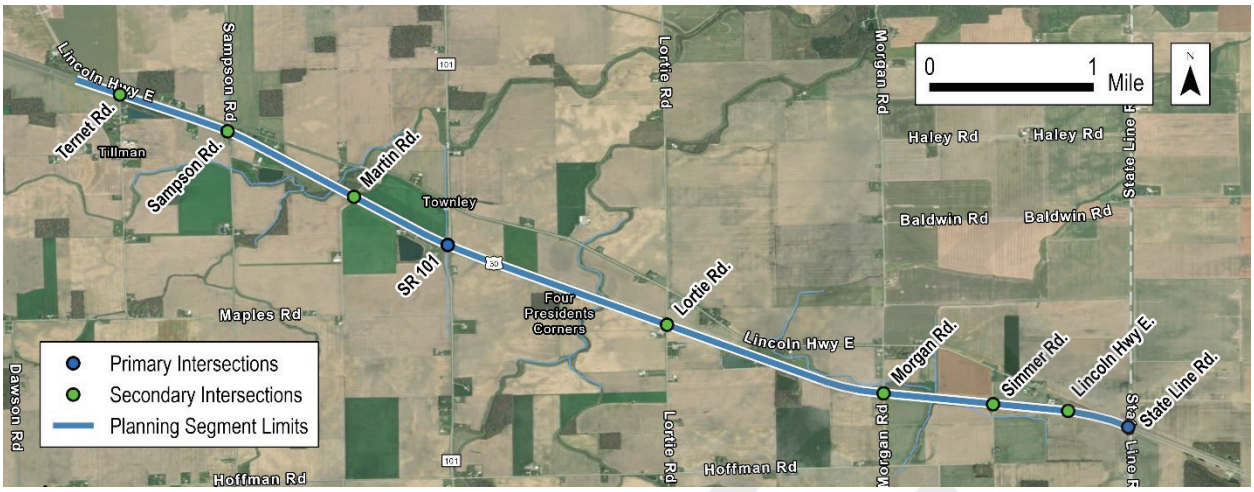
Free flow package 1 is a low cost and low impact package that addresses identified safety issues at four of the seven intersections in this segment. The safety improvements at these locations coupled with the low implementation cost result in this improvement package being very cost effective. East-west travel time along US 30 is improved by eliminating the signal at Doyle Road and making the segment free flow. However, local mobility is somewhat affected by access limitations of the Directional Intersections at Doyle, Ryan and Webster Roads that do not accommodate left turns onto US 30. No new right-of-way would be required with no residential/business relocations and the existing eight driveways and field entrances would be maintained. Improvements at this location could provide an incremental, initial investment to improve safety. This package is '*Recommended*' for further evaluation and coordination as part of subsequent project development studies.

Free Flow package 2 is also a low cost and low impact package that addresses identified safety issues at four of the seven intersection locations. Similar to package 1, the signal is removed at Doyle Road making this segment free flow, however the Doyle, Ryan, and Webster Road intersections are converted to RCIs which accommodate movements in all directions. In this package, residential driveways are converted to RIRO access only. This results in slightly improved safety performance with similar cost effectiveness as package 1. No new right-of-way would be required with no residential/business relocations. This package is '*Recommended*' for further evaluation and coordination as part of subsequent project development studies.

Expressway lite package 3 and expressway package 4 are higher cost, higher impact packages that improve east-west mobility by eliminating the traffic signal at Doyle Road and replacing it with an overpass. Full access would be provided by an RCI at Webster Road and all remaining intersections would be RIRO access only. These packages result in a substantial estimated reduction in crossing crashes which offsets the higher cost resulting in these packages being as cost effective as package 2. The expressway lite package 3 would allow existing driveways to remain as RIRO access only. However, the expressway package 4 would require all driveways to be closed resulting in six residential relocations due to loss of access to these parcels. These packages would both require approximately 8.5 acres of new right-of-way (7 acres of farmland). Packages 3 and 4 are categorized as '*Carried Forward*' and would require further analysis and coordination to determine if it is a reasonable solution for the identified transportation needs.

Freeway package 5 is the highest cost, highest impact package with good safety performance, however its high cost makes it the least cost effective of the four packages in this segment. Local mobility is reduced as access is limited to an interchange at Webster Road. Along with Webster Road, two additional crossings of US 30 are provided that help limit impacts to cross-corridor mobility. This package would result in approximately 33.5 acres of new right-of-way (30.5 acres of farmland) and result in eight residential relocations Package 5 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in this package, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if this package is a reasonable solution to the planning segment's transportation needs. For these reasons, package 5 is categorized as *'Carried Forward'*.

3.13. SEGMENT 13: ALLEN EAST



3.13.1. PLANNING SEGMENT OVERVIEW

The Allen East planning segment is 5.4 miles in length and stretches through rural eastern Allen County to the Ohio state line. Agricultural uses dominate the area, with driveways accessing properties and fields.

This planning segment contains two primary and seven secondary intersections. SR 101 and State Line Road are primary intersections and regional north-south roadways through the eastern portion of the county. The secondary intersections include the remaining county roadways (Ternet Road, Sampson Road, Martin Road, Lortie Road, Morgan Road, Simmer Road, and Lincoln Highway). All intersections in the planning segment are one-way or two-way stop controlled (OWSC / TWSC) allowing US 30 to operate in a free flow condition through the entire segment.

There are two driveways and three field entrance located along US 30 in this planning segment, with both driveways acting as shared access for multiple residences to access US 30.

Notable Features Influencing Development of Packages

Given the very rural nature of the segment, the packages within this planning segment were developed to improve safety while retaining as much access as possible. Based on the safety analysis performed during the *Existing Transportation Conditions Report*, no discernable patterns of crashes at State Line Road were identified due to mainline left turns, so the RCI – Variant alternative (that would eliminate left turns) was dropped. State Line Road is considered to be a key access point in the planning segment, particularly when compared to adjacent secondary intersections and considering access in Ohio. As a result, access management options at State Line Road were limited to only one of the Level 3 packages. No safety concerns at other locations within the planning segment were identified that rise to the level of reducing the existing level of access within the packages.

Starting with the primary intersections and the identified Level 2 alternatives, packages were assembled per Step 3 of the Level 3 evaluation methodology described in **Section 2.3**. Secondary intersection improvements were identified that would be consistent with each package's access management strategy and the primary intersection alternatives within each package.

Summary of Comments for Planning Segment 13 – Allen East

The following bullet points summarize the range of public comments received for this planning segment through the Level 2 Screening step:

- Match Ohio's speed limit for US 30 for better mobility.
- Crossing US 30 by bicycle is dangerous.
- Conflicting opinions: Turn US 30 into a freeway from New Haven to the Ohio state line / US 30 is how most rural residents travel around Allen County, and therefore should not become a freeway.
- Look at what Ohio did on US 30 and do that in Indiana.
- Semitrucks use US 30 to bypass the northern toll road.
- Eliminate all stop lights to the Ohio state line and build this into a 4-lane roadway.
- Conflicting opinions: The Reduced Conflict Intersection (RCI) at SR 101 works very well / RCIs are difficult for farmers to navigate around with farming equipment.
- Afternoon-evening hours along US 30 are dangerous for farmers and moving farming equipment.
- Access could be reduced/eliminated at Termet Road to improve safety.
- Create an overpass or full interchange at Webster Road, Ryan Road and/or SR 101.

3.13.2. IMPROVEMENT PACKAGES

Five packages of improvements were identified for planning segment 13 and are characterized as follows:

Table 3.13-1 – Packages of Improvements - Planning Segment 13 - Allen East

Package	Facility	Flow Condition	Access Control	Description
No Build	Arterial	Free Flow	Minimal	No Build represents existing conditions against which each package is compared to.
1	Arterial	Free Flow	Minimal	A low-cost, low-impact package consisting of minor programmatic safety improvements without adjusting access or traffic control. This option maintains existing access and free flow conditions along US 30.
2	Arterial	Free Flow	Partial	This low-cost, low-impact safety improvement package converts State Line Road to an RCI and removes stop-controlled intersection conditions at all locations except Lortie Road and Morgan Road to maintain full access at these locations between the RCI intersections.
3	Expressway Lite	Free Flow	Partial	This expressway lite package is similar to Package 2 but eliminates the remaining stop-controlled conditions at Lortie and Morgan Roads by converting them to RIRO access only. As an expressway lite option, existing driveway access would also be limited to RIRO access.

4	Expressway	Free Flow	Partial	This package follows the same intersection configurations as package 3 but increases access controls by prohibiting driveway connections and median openings between intersections.
5	Freeway	Free Flow	Full	This highest-cost, highest-impact package converts US 30 into a limited-access freeway adding an interchange at SR 101, an overpass at State Line Road, and realigning Lincoln Highway to connect with State Line Road.

As mentioned in **Section 2.2**, some alternative concepts identified from Level 2 were found not to be appropriate at specific locations when included as part of a package of improvements. Also, some additional concepts may have been added upon further investigation in Level 3. The following table summarizes which concepts were included in the packages of improvements for this planning segment, and those from Level 2 that were ultimately not included.

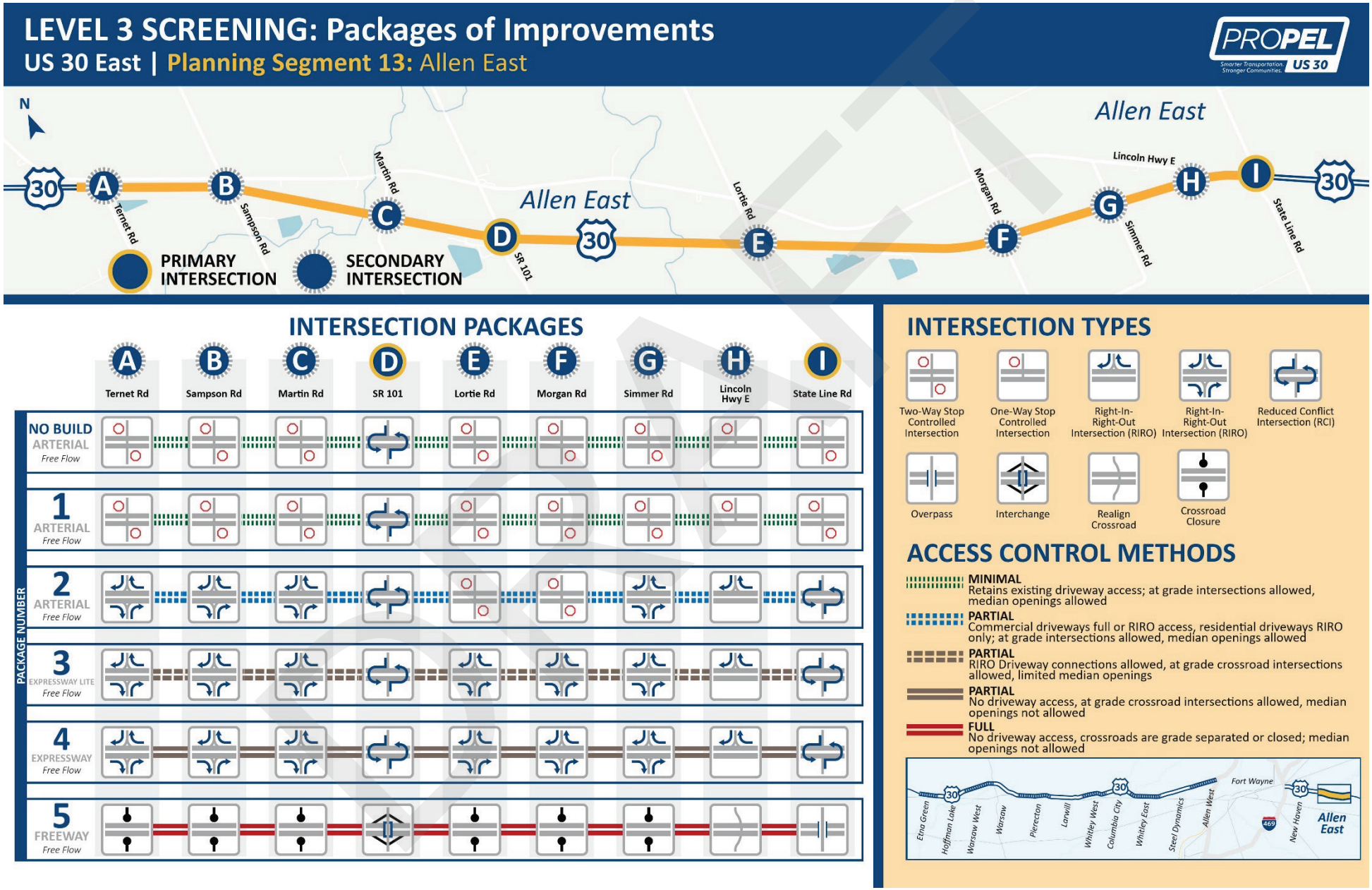
Table 3.13-2 – Level 2 Concepts in Level 3 - Planning Segment 13 – Allen East

Primary Intersection			SR 101	State Line Road
		Existing Traffic Control	STOP	STOP
Primary Concepts	Unsignalized Improvements	Roundabout		
		RCI - Reduced Conflict Intersection	1,2,3,4	2,3,4
		RCI - Variant		⊗
	Signalized Improvements	Traffic Signal Improvements		
		Green-T Intersection		
		Partial Median U-Turn		
		RCUT - Restricted Crossing U-turn		
		Boulevard Left		
	Other	Interchange	5	
		Access Management - RIRO or Closed		⊗
		Access Management – Directional		
		Add or Lengthen Turn Lanes		
Complementary Concepts		Overpass/Underpass		5
		Adjacent Intersection Improvements		
		Realign Skewed Intersection		
		Add / Extend Accel. / Decel. Lanes		●
		Warning Systems	●	●

⊗ Identified in Level 2 but not included in Level 3 package.
1,2 Level 3 package number
● Identified in Level 2, to be considered in subsequent planning phases as part of more detailed development.
(Blank) Not identified in Level 2 or 3 as applicable at this location.

Figure 3.13-1 provides a diagram of existing conditions and each improvement package, indicating the concept assumed at each primary and secondary intersection within each package, as well as the access control and flow condition assumptions between the intersections.

Figure 3.13-1 – Planning Segment 13: Allen East - Packages of Improvements Diagrams



3.13.3. EVALUATION

The following table provides a comparison of safety and mobility measures, resource impacts, and costs between the improvement packages considered for this planning segment. Environmental footprint exhibits for each alternative developed are available in **Appendix A**. Below the table is a summary of the findings for each category of measures.

Table 3.13-3 – Measures Comparison Table - Planning Segment 13 - Allen East

Planning Segment: 13 - Allen East				No Build	Improvement Package					
Measures of Effectiveness			Facility Type -> Traffic Flow -> Access Contol ->	Arterial Free Flow Minimal	1 Arterial Free Flow Minimal	2 Arterial Free Flow Partial Access	3 Expressway Lite Free Flow Partial Access	4 Expressway Free Flow Partial Access	5 Freeway Free Flow Full	
Purpose and Need	Safety	Total Conflict Points	#	376	376	179	84	74	26	
		Crossing Conflict Points	#	198	198	67	8	8	10	
		% Reduction in Crossing Conflict points	%	-	0%	-66%	-96%	-96%	-95%	
		Estimated Crossing Crashes Prevented (20 yrs)	#	-	0	32	46	46	46	
		Cost Effectiveness Index (CEI)		-	-	0.2	0.2	0.2	1.5	
	Mobility	Average Travel Time Along US 30	Min	5.4	5.4	5.4	5.4	5.4	5.4	
		Average Distance Between US 30 Access Points	#	0.6	0.6	0.6	0.6	0.6	5.4	
		Average Distance Between US 30 Crossing Points	#	0.7	0.7	1.4	2.7	2.7	2.7	
		North-South Mobility Compared to No Build		-	Similar	Decreased	Greatly Decreased	Greatly Decreased	Greatly Decreased	
		N-S Delay Per Vehicle	Min	1.1	1.1	1.7	1.7	1.7	0.0	
		Residential Driveways RIRO vs. Full	#	0 / 2	0 / 2	2 / 0	2 / 0	0 / 0	0 / 0	
		Commercial Driveways RIRO vs. Full	#	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	
		Field Access RIRO vs. Full	#	0 / 3	0 / 3	0 / 3	3 / 0	0 / 0	0 / 0	
Environmental Resource Impacts	Natural Resources	NWI Wetlands Impact	Acres	-	0	0	0	0	0	
		Rivers & Streams Impact	Feet	-	0	0	0	0	2,300	
		Floodplain Impact	Acres	-	0	0	0	0	< .5	
		Forested Area Impact	Acres	-	0	0	0	0	0.	
	Cultural Resources	Potential impacts to Above Ground Resources	Yes/ No	-	No	No	No	No	No	
		Potential Impacts to Known Archeological Sites	Yes/ No	-	No	No	No	No	No	
		Cemeteries	Yes/ No	-	No	No	No	No	No	
	Socioeconomic Impacts	Total New ROW Acquisition	Acres		0	0	0	0	25.5	
		Residential Relocations	#	-	0	0	0	2	5	
		Business Relocations	#	-	0	0	0	0	0	
		Farmland Impact	Acres	-	0	0	0	0	15	
		Farmland Access Impact	#	-	No	No	No	Yes	Yes	
		Potential Hazardous Materials Sites	#	-	0	0	0	0	1	
		Potential Impacts to Other Section 4(f) Resources	Yes/ No	-	No	No	No	No	Yes	
		Potential Impacts to Communities with EJ Concerns	Acres	-	0	0	0	0	0	
		Potential Relocations in Communities with EJ Concerns	#	-	0	0	0	0	0	
		Potential Risk of Disproportionate Impact to EJ Populations	Yes/ No	-	No	No	No	No	No	
		Relative Cumulative Change (2022-2045) in Peak Hour GHG Emissions as Compared to NoBuild (Decrease, No Change, Increase)		-	No Change	Increase	Increase	Increase	Decrease	
Costs		Estimated Construction Cost (2024 Dollars)	$M	-	< $1	$6 to $8	$7 to $10	$7 to $10	$57 to $70	
		Estimated Right of Way Cost (2024 Dollars)	$M	-	$0.0	$0.0	$0.0	$0.3 to $0.5	$1.3 to $1.7	
		Estimated Total Package Cost (2024 Dollars)	$M	-	< $1	$6 to $8	$7 to $10	$8 to $11	$58 to $72	
Goals		Economic Development		No Change	Neutral	Neutral	Neutral	Neutral	Diminshes	
		Equity in Transportation		No Change	Neutral	Neutral	Neutral	Neutral	Diminshes	
		Multimodal Access & Connections		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Emerging Technologies		No Change	Neutral	Neutral	Neutral	Neutral	Neutral	
		Fiscal & Environmental Practicality		No Change	Moderate	Moderate	Moderate	Moderate	Low	
		Driver Expectations		No Change	Neutral	Diminshes	Neutral	Neutral	Neutral	
Level 3 Screening Result				Carried Forward	Recommended	Recommended	Carried Forward	Carried Forward	Carried Forward	

Safety

Conflict Point Evaluation

Conflict points analysis evaluates the total and most severe intersection conflict points for each package compared to the No Build condition, providing a general indication of the package's impact on improving safety through a reduction in conflict points. **Table 3.13-3** includes a summary of the improvement packages conflict point evaluation for this planning segment. Four of the five improvement packages in this planning segment would improve safety by reducing the total number of conflict points including severe crash crossing conflict points. Generally, as the level of access control increases (less access to/from US 30) the number of total conflict points decreases. Package 5 (freeway) results in the highest conflict points reduction package due to closures and grade separation alternatives.

Mobility

Regional Mobility

In **Table 3.13-3** the measure used to assess each packages' effect on regional mobility is the Average Travel Time Along US 30 which is measured in estimated number of minutes to travel the length of US 30 in this planning segment. Regional mobility is not a differentiator between packages in this planning segment given that US 30 currently operates as free-flow in this segment. There are no existing traffic signals and the existing conditions for the primary intersections at SR 101 and State Line Rd are a RCI and TWSC.

Local Mobility

In **Table 3.13-3,** several measures can be used to evaluate each packages' effect on Local Mobility. These include:

- Average Distance Between US 30 Access Points,
- Average Distance Between US 30 Crossing Points,
- Driveways RIRO vs. Full,
- and Field Access RIRO vs. Full.

For the distance between access and crossing points measures, the lower the number of miles, the less distance (on average) that needs to be traveled along US 30 between access points, indicating higher level of local access/mobility. Compared to the No Build option, the distance per *access point* remains the same in packages 1-4 but increases to 5.4 miles in freeway package 5, indicating the greatest negative impact on local access to and from US 30.

The distance per *crossing point* also increases in packages 2-5, with the longest distance of 2.7 miles in packages 3, 4, and 5, while package 1 remains unchanged. This shows that as access control levels increase, north-south mobility becomes more restricted, with fewer options for crossing US 30.

There are two residential driveways and three field entrances, with no commercial driveways in this planning segment. All driveways and field entrances currently have full access to US 30. In package 1, all residential driveways would have the same access as the No Build. In packages 2 and 3 residential driveways would be converted to right-in/right-out (RIRO) only access and closed for expressway package 4 and freeway package 5 to accommodate access controls for these facilities. In packages 1 and 2, field entrances would retain the same access to US 30 as the No Build but would be treated similarly as residential driveways in packages 3 thru 5.

Social & Environmental Impacts

The packages in Segment 13 present minimal social and environmental impacts except for packages 4 and 5. Package 5 results in the greatest amount of potential socioeconomic impact due to potential relocations and potential recreational opportunity impacts (potential Section 4(f) resources), alongside potential natural resource concerns. No package is expected to have cultural resource impacts.

Natural Resources

Package 5 is the only package in Segment 13 that has potential impacts to natural resources. There are approximately 2,300 feet of potential impacts to rivers and streams and less than 0.5 acre of potential impacts to floodplains. All other packages are not expected to impact natural resources.

Cultural Resources

There are no direct impacts to known cultural resources within this segment for any of the package options. However, indirect impacts to nearby resources should be considered as solutions are further developed. The following potential historic resource has been identified within ½ mile of an intersection in this segment; if this resource is determined to be historic, additional investigations may be warranted for any projects that move forward adjacent to this site:

- Stephenson Family Cemetery (IHSSI No. 003-692-15042, CR-02-75) approximately 0.22 mile from Simmer Road, approximately 0.41 mile from Lincoln Highway East, and approximately 0.49 mile from Morgan Road

Socioeconomic Impacts

Segment 13 is not located in an area with EJ concerns; thus no packages will result in disproportionate EJ impacts. No vulnerable housing populations or community resources are within areas of potential new right-of-way or within 0.1 miles thereof, and thus there will be no impact on housing and community resources for any package in Segment 13. Package 5 presents the potential for five residential relocations, with two a result of being land-locked parcels related to the limited access freeway alternative. Package 4 presents the potential for two residential relocations. While these relocations are not in an area of EJ concern, they nevertheless present a potentially substantial impact. The SR 101 interchange alternative in package 5 crosses a potential Section 4(f) resource with nearly 0.5 mile of intersection between the trail and interchange. However, as the trail is a proposed resource and is not yet existing, the potential effects are limited at this point. All other packages for this segment will likely have minimal socioeconomic impact, but packages 4 and 5 present the most potential impact for Segment 13.

Packages 1, 2, and 3 in Segment 13 are likely to have little to no impact on farmland, however package 5 may potentially affect up to 15 acres of farmland primarily attributed to a new interchange at SR 101.

Goals Assessment

Economic Development

Packages 1, 2, 3, and 4 are rated as neutral for economic development, as they provide safety improvements and regional mobility improvements without impacting local mobility. Package 5 is anticipated to have an improvement in safety and similar regional mobility improvements as package 1. But, due to a larger negative impact to local mobility from reduced access to and across US 30, this package is rated as diminishing economic development.

Equity in Transportation

Like economic development, the equity is rated as neutral in packages 1, 2, 3, and 4 due to minimal impacts to local mobility and improvements to safety. Package 5 is rated as diminishing equity due to access to US 30 being restricted to one location within the planning segment.

Multimodal Access & Connections

As noted in Section 2.7, all packages are considered neutral for Multimodal Access and Connections.

Emerging Technologies

As noted in Section 2.7, the packages would not impact the ability to implement emerging technologies.

Fiscal & Environmental Practicality

Packages 1, 2, 3, and 4 are all rated as moderately practical due to the relatively low cost and high benefits. Package 5 is rated as low practicality due to the higher relative costs and larger amount of right-of-way impacts and potential relocations. Packages 1, 2, 3, and 4 all have extremely low Cost Effectiveness Index (CEI) values, indicating they provide high safety benefits for their costs.

Driver Expectations

Package 2 was rated as diminishing driver expectations due to reduced access along the mostly rural segment of roadway. Package 1 was rated as neutral for driver expectations due to the lack of changes from existing conditions, with only minor safety improvements and no restrictions on local access. Packages 3, 4, and 5 were also rated as neutral for expectations, with offsetting benefits of providing geometric improvements to match the access management restrictions compared to the impacts to local mobility of those restrictions.

3.13.4. FINDINGS AND RECOMMENDATIONS

Free flow package 1 is a low cost and low impact package that maintains the existing free-flow condition of US 30 in this segment and only includes minor programmatic improvements (such as improved signage, pavement markings, and warning systems) at each of the nine intersections in this planning segment. These programmatic improvements at this location could provide an incremental, initial investment to improve safety. This package is '*Recommended*' for further evaluation and coordination as part of subsequent project development studies.

Free flow package 2 is a low cost and low impact package that maintains free-flow conditions while reducing conflict points at six of the nine intersections in this segment. A reduced conflict intersection has already been constructed at SR 101 to address safety as part of a previous, stand-alone project. The combined safety improvements at these locations coupled with the low implementation cost result in this improvement being very cost effective. Although north-south mobility is decreased due to reducing the number of US 30 crossings from eight to four, the number of access points remain the same and driveway access is retained. No new right-of-way would be required with no residential/business relocations and the existing eight driveways and field entrances would be maintained. Improvements at this location could provide an additional investment to improve safety. This package is '*Recommended*' for further evaluation and coordination as part of subsequent project development studies.

Expressway lite package 3 and expressway package 4 are higher cost, higher impact, alternatives that maintain free-flow conditions along US 30 as an expressway by converting all intersections to right-in/right-out or reduced conflict intersections. Local mobility is affected by an increase in the average distance between US 30 crossing points and eliminating existing driveway access to US 30. Because these packages do not include any new and costly

interchanges, the overall cost to implement this package is low, resulting in it being very cost effective. Neither package would require any new right-of-way. The expressway lite package 3 would allow existing driveways to remain as RIRO access only. However, the expressway package 4 would require all driveways to be closed resulting in 2 residential relocations due to loss of access to these parcels. This package is categorized as '*Carried Forward*' for further evaluation and coordination as part of subsequent project development studies.

Freeway package 5 is the highest cost, highest impact package primarily due to a new interchange at SR 101. Although this package results in the best safety performance, its increased costs makes it the least cost effective of the five packages in this segment. Local mobility is reduced as access is limited to an interchange at SR 101. Along with SR 101, a crossing of US 30 is provided at State Line Road to limit impacts to cross-corridor mobility. This package would require approximately 25.5 acres of new right-of-way (15 acres of farmland) and result in five residential relocations. Package 5 would result in higher costs and higher impacts with marginal benefits to safety and mobility as compared to other lower cost, lower impact packages. However, given the role of US 30 in the regional and statewide transportation network, a change in facility type, such as that included in this package, may be considered in the future to achieve broader transportation goals and objectives. The tradeoffs between the potential benefits, impacts and costs would require further analysis in the future to determine if this package is a reasonable solution to the planning segment's transportation needs. For these reasons, package 5 is categorized as *'Carried Forward'*.

4. NEXT STEPS IN THIS PEL STUDY

Cohesive packages based on certain access management strategies are presented in this document to show potential interoperability between intersections and to be able to assess potential impacts relative to each other.

At this time, no decisions have been made about the future of US 30, and no projects related to the PEL study have been funded by INDOT. A stated goal of the PEL process is the identification of a range of reasonable alternatives. Given the needs identified within the study area, a reasonable alternative could consist of improvements at a single intersection; it could also consist of improvements at multiple intersections and/or the roadway sections in between them (i.e., access management). Depending on multiple factors, including statewide priorities and funding availability, improvements considered as part of this PEL study could be combined in different ways in the future to address the identified transportation needs and support the goals of the study area.

It is possible that improvement packages could be mixed and matched across Planning Segments in the future. This means that access management strategies could vary throughout the study area; however, as part of that decision-making process (which may occur subsequent to this PEL study), an assessment will be completed to consider factors such as driver expectation and continuity across the planning segments, as well as the relationship and potential impacts upon other intersections and/or planning segments.

Additionally, one of the purposes of completing a PEL study is the early identification of potential issues that would require further consideration. These will be documented in the final *PEL Study Report* at the end of this study. Additional details and evaluation required to advance potential projects would typically be developed during 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.

4.1. PUBLIC COMMENT PERIOD

Comments on the ProPEL US 30 East Level 3 Screening Report will be received during a comment period following its publication. The opportunity to comment during this time will be is provided via the project website (https://propelus30.com/us-30-east/) and through various community office hours outreach events held by the study team. Dates, times, and locations of community office hours will be announced on the website and through social media channels. Copies of the report will also be available for review throughout the public comment period at the locations listed below:

- Monroeville Public Library, Monroeville, IN
- New Haven Community Center, New Haven, IN
- Northeastern Indiana Regional Coordinating Council, Ft. Wayne, IN
- Peabody Public Library, Columbia City, IN
- Pierceton Public Library, Pierceton, IN
- Warsaw Community Public Library, Warsaw, IN

Comments will also be sought at a public information meeting(s) and at various stakeholder meetings to occur during the public comment period. Dates and venues for these meetings will be provided via public notices and the study website.

At the conclusion of the public comment period, all comments will be responded to, and the Level 3 screening report will be updated as necessary to address comments.

4.2. PEL STUDY REPORT

This PEL study is being conducted in accordance with FHWA's PEL program which was established to help transportation planning agencies develop a collaborative, integrated, and seamless decision-making process that minimizes duplication of efforts between early (i.e., pre-NEPA) transportation planning studies and the NEPA process. The overall goal of this PEL study was to complete planning products such as the purpose and need statement and to develop, analyze, and screen a range of reasonable alternatives in a NEPA-compliant manner. As such, when the NEPA process is initiated, these planning products can be incorporated via reference and the information can be used to develop and inform future projects and NEPA studies as is appropriate under planning regulations (23 CFR 450). These planning products can minimize the need for rework and provide a seamless transition between the PEL study and future NEPA studies.

The final step of the ProPEL US 30 East study will be the development and publication of the PEL Study Report, which will include completion of the FHWA PEL Questionnaire. Like all other planning products for the study, the *PEL Study Report* will be made available for agency and public review. The PEL study report is expected to be published in early of 2025.