PROPEL INDY

Smarter Transportation. Stronger Communities.

Universe of Concepts Screening Report

DRAFT

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Prepared By:

HNTB

INDIANA DEPARTMENT OF TRANSPORTATION

NextLevel ROADS

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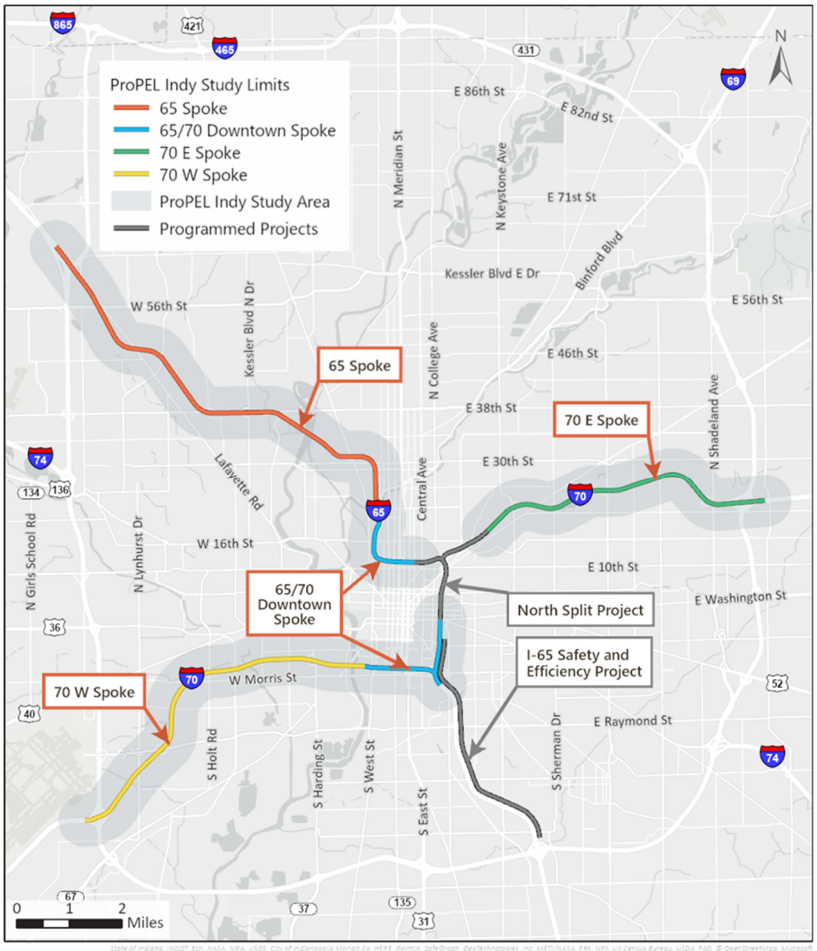
Executive Summary

The Indiana Department of Transportation (INDOT) has initiated ProPEL Indy, a Planning and Environment Linkages (PEL) study on I-65 and I-70 within the urbanized area of Indianapolis, Indiana. All segments of I-65 and I-70 inside I-465 are included in this study, except the project areas for two federally funded projects – the recently completed I-65/I-70 North Split interchange and the I-65 Safety and Efficiency project between the South Split interchange and I-465 south of downtown. Study limits are shown in **Figure 1**.

Analysis and planning activities are being conducted in coordination with resource agencies, stakeholders, and the public. Transportation planning documents from this PEL study will shape and inform subsequent environmental reviews conducted in accordance with the National Environmental Policy Act (NEPA) for specific projects.

Figure 1: Project Location



This Universe of Concepts report documents the first step of a two-step alternatives development and screening process. In this step, concepts that may address the transportation needs identified in the *ProPEL Indy Purpose and Need Report* are defined at a broad level of detail. These transportation improvement concepts are not location-specific and could potentially be implemented throughout the study limits. The concepts are then reviewed to confirm their potential to meet study needs and determine if there are known fatal flaws. Concepts that do not satisfy the screening criteria are eliminated.

In addition to transportation improvement concepts, potential design toolbox improvements that address quality of life concerns were identified through coordination with the public and stakeholders. Design toolbox improvements are not considered as stand-alone concepts; instead, they may be used in conjunction with concepts and include elements such as wayfinding signage, gateway elements, lighting improvements, pavement markings, landscaping, and aesthetic design packages. The design

toolbox improvements could address community goals and are being carried forward for further consideration in this study.

Concepts carried forward from this phase will be evaluated in the next screening phase at specific locations in the ProPEL Indy study area. The concepts should be viewed as building blocks and may be combined into PEL alternatives depending on the needs at a specific location. These PEL alternatives will be evaluated in terms of ability to meet the purpose and need, feasibility, benefits, impacts, costs, and achievement of community goals. Public and stakeholder input will be sought at each screening step. The output of this process will be a set of reasonable alternatives that could be studied as projects move forward into development.

As part of the Universe of Concepts screening, 24 transportation improvement concepts, including the No-Build concept, have been considered for the ProPEL Indy study area. These concepts were derived from previous studies, agency and public input received to date, and study needs documented in the *ProPEL Indy Purpose and Need Report*. These concepts have been qualitatively evaluated against the study area purpose and need, as well as evaluated against fatal flaw screening criteria.

Ten concepts that do not meet any of the study area needs and/or are determined to fail one of the fatal flaw criteria have been eliminated from further consideration.

Fourteen concepts were found to meet one or more of the study area needs with no fatal flaws identified at this stage of screening. These concepts will be advanced into the next level of screening for further refinement and evaluation. These 14 concepts may be implemented individually at a specific location or used in combinations to meet the identified transportation needs or community goals.

Concepts advancing to the next level of screening are depicted by a green checkmark in **Table 1** and the concepts eliminated from further consideration are identified with a red "X." The No-Build concept will be advanced throughout the ProPEL Indy study and throughout any ensuing NEPA analysis for comparison purposes.

Table 1: Universe of Concepts Screening Results

#	Concept	Advance to Next Level of Screening
Interstate Modification Concepts		
1	No-Build	✓
2	Rebuild with Modern Design / Materials	✓
3	Address Geometric Deficiencies	✓
4	Auxiliary/C-D Lanes	✓
5	Interstate Access Modifications	✓
6	Interchange Improvements	✓
7	Added Travel Lanes	✓
Major Interstate Reconstruction Concepts		
8	Viaduct	✓
9	Recessed Roadway	✓
10	Tunnel	☒
11	Signature Bridge	✓
Traffic Management Concepts		
12	Transportation System Management (TSMO)	✓
13	Managed Lanes	✓
14	Reroute Through Traffic to I-465	☒

#	Concept	Advance to Next Level of Screening
System-Level Interstate Concepts		
15	Remove Segment(s) of Interstate	☒
16	Add Interstate Spur	☒
17	Parallel Route	☒
Local System Roadway Concepts		
18	Local Mobility/Connectivity Improvements	✓
19	Local Road Intersection Improvements	✓
20	Railroad Crossing Improvements	☒
Strategies Independent of INDOT		
21	Bus Transit	☒
22	Passenger Rail	☒
23	On-Demand Transportation Service	☒
24	Increased Freight Rail Service	☒

1 Introduction

1.1 What is ProPEL Indy?

The Indiana Department of Transportation (INDOT) has initiated ProPEL Indy, a Planning and Environment Linkages (PEL) study on I-65 and I-70 within I-465 in Indianapolis. Analysis and planning activities are being conducted in coordination with resource agencies, stakeholders, and the public. Planning documents from the PEL study will shape and inform subsequent project-specific environmental reviews conducted in accordance with the National Environmental Policy Act (NEPA).

ProPEL Indy is a unique opportunity for Indianapolis residents to envision the future of the urban interstate system. The goal of ProPEL Indy is to identify transportation needs and community goals along I-65 and I-70 inside I-465. This study will inform the next 20 years of investment as INDOT identifies ways to modernize these interstates and improve the region's overall mobility, equity, economic opportunity, and quality of life.

The ProPEL Indy study limits include approximately 11 miles of I-65, 14 miles of I-70, and one mile where I-65 and I-70 overlap. The study limits are broken into the following four "spokes" as an organizational tool depicted in **Figure 2** and summarized below:

- **65 Spoke** – From the I-465/I-65 interchange on the northwest side to the 21st Street interchange.
- **65/70 Downtown Spoke** – I-65 from the 21st Street interchange south to Alabama Street (west end of North Split project), I-65/I-70 from Washington Street (south end of North Split project) south to the South Split interchange, and I-70 from just west of the West Street interchange east to the South Split interchange.
- **70 West (W) Spoke** – From the I-465/I-70 interchange on the west side to just west of the West Street interchange.
- **70 East (E) Spoke** – From just west of the Keystone Avenue/Rural Street interchange (east end of North Split project) to the I-465/I-70 interchange on the east side.

The study area includes I-65 and I-70 within the study limits described above and local road intersections that influence or are influenced by the interstates.

The study limits extend slightly beyond I-465 and the I-65/I-70 South Split interchange to consider the potential influence of those system interchanges. Otherwise, two federally funded projects recently constructed (I-65/I-70 North Split) or in NEPA (I-65 Safety and Efficiency) are largely excluded from the study limits. ProPEL Indy does overlap with the I-65 Safety and Efficiency project on the southeast side of Indianapolis, from north of Fletcher Avenue on I-65/I-70 to the South Split interchange ending south of Morris Street along I-65. The remainder of the I-65 Safety and Efficiency project area, which extends south on I-65 to I-465, is excluded from the study limits.

Figure 2: ProPEL Indy Study Spokes

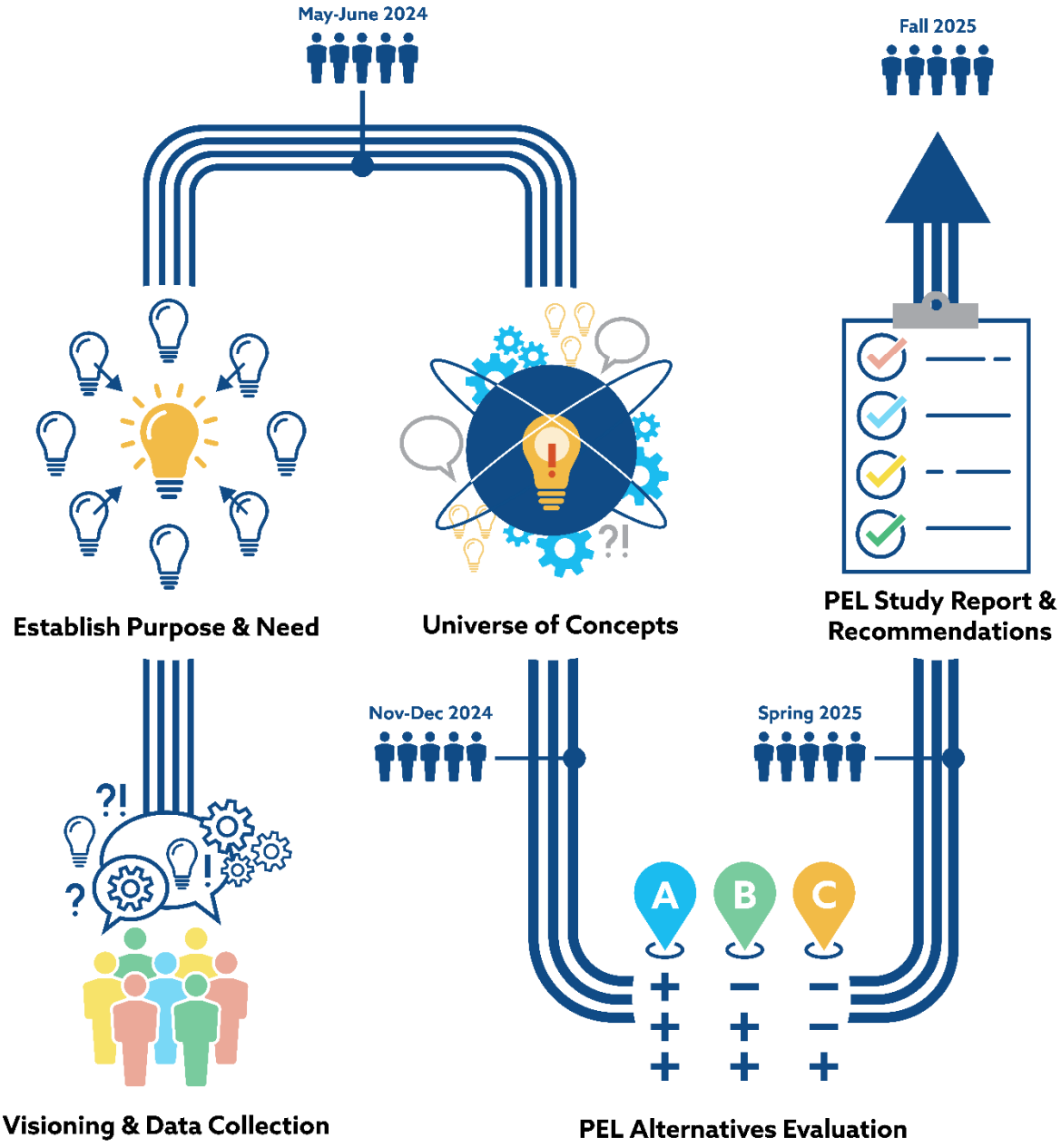
1.2 Background and Study Process

This report documents the identification and initial screening of concepts that may address the transportation needs identified in the *ProPEL Indy Purpose and Need Report.* The concepts evaluated are referred to as the Universe of Concepts. The Universe of Concepts represents the first step in a two-step alternatives development and screening process. **Figure 3** shows how this process fits into the overall ProPEL Indy study.

The ProPEL Indy Universe of Concepts represents a wide range of possible solutions to address the transportation needs in the study area. The Universe of Concepts was derived from previous studies, public and stakeholder input, and Federal Highway Administration (FHWA) guidelines. Concepts were subject to a high-level qualitative screening process to identify those that meet the purpose and need and have no fatal flaws identifiable at this stage of the study. Concepts that do not satisfy the screening criteria are eliminated from consideration, while successful concepts will be carried forward and evaluated at specific locations in the ProPEL Indy study area. Multiple concepts may be combined into PEL alternatives at specific locations along the interstates depending on the needs at that location.

In the next step of the study, the evaluation of the PEL alternatives in terms of feasibility, benefits, costs, and potential impacts will be performed at a greater level of detail. An evaluation of the PEL alternatives' ability to meet the purpose and need and community goals will be completed in the next level of screening. Public and stakeholder input will be sought at each step in the screening process. The PEL alternatives that are carried forward from the next step of the study will be recommended reasonable alternatives to be studied as projects move forward into development.

Figure 3: ProPEL Indy Study Process



2 Purpose, Needs, and Community Goals

The *ProPEL Indy Purpose and Need Report* identifies the transportation problems or needs to be addressed and describes the desired outcomes or purposes for the study. A purpose and need statement is a requirement of the federal environmental review process (NEPA), and is included in this PEL to be consistent with future NEPA reviews for projects recommended in the study.

2.1 Purpose and Need

The purpose and need statement identifies "why" a study or project is being conducted and sets the foundation for the development and screening of alternatives. In the NEPA process, alternatives not meeting the purpose and need are eliminated from further consideration. Likewise, concepts determined not to meet the purpose and need will not be carried forward in this study.

The needs, purpose, and community goals identified in the *ProPEL Indy Purpose and Need Report* are summarized below.

2.1.1 Needs

A detailed analysis of transportation needs has been conducted for the ProPEL Indy study area. Residents, neighborhood groups, commuters, businesses, stakeholders, and local planning agencies have been engaged to help identify, confirm, and clarify transportation needs within the study area. Based on an analysis of the study area's existing conditions and stakeholder input received, the following were identified as transportation needs:

- Deteriorated bridge and pavement condition;
- Roadway safety;
- Roadway mobility; and
- Limited multimodal and neighborhood connections.

2.1.2 Purpose

To address the transportation needs, the purpose of the ProPEL Indy study is to identify transportation alternatives that:

- Improve deteriorated bridge and pavement condition;
- Improve safety along and at intersections near the interstates by reducing the number and severity of crashes within the study area;
- Improve mobility by reducing congestion or eliminating geometric deficiencies that contribute to congestion; and,
- Improve multimodal connectivity across and near the interstates.

2.2 Community Goals

Community goals guide the development and screening of potential alternatives along with other factors that are more quantifiable, such as transportation performance, environmental impacts, benefits, and cost.

As described in **Section 2.1.1**, the term "needs" has special meaning in PEL and in NEPA, referring to conditions that must be addressed for an alternative to be carried forward and implemented. Community goals represent overarching outcomes that are desirable, but not specifically required outcomes of a study or project.

Community goals were identified primarily through public and stakeholder feedback and are grouped within four study pillars: quality of life and livability, economic growth and opportunity, transportation and mobility, and equity. Community goals are shown in **Table 2.**

This Universe of Concepts Screening Report presents a review of concepts based on study purpose and need and fatal flaws. Community goals are not used for screening at this level, for reasons described in **Section 3.4**. As the study goes forward, community goals will be used, along with purpose and need, to guide the development and evaluation of alternatives.

Table 2: Community Goals by Study Pillar

Pillar	Community Goal
Quality of Life and Livability	Identify community enhancements that improve the quality of life of adjacent neighborhoods. This could include improving or adding lighting; reducing visual, noise, and air pollution impacts; providing wayfinding and points of interest signage; landscaping; and considering placemaking opportunities.
	Avoid and/or minimize impacts to the natural and human environment.
Economic Growth and Opportunity	Provide transportation infrastructure to support local, regional, and statewide economic development goals.
	Ensure efficient and reliable transportation to support the visitor experience, enhancing Indianapolis as a world-class destination for economic and cultural activities.
Transportation and Mobility	Support emerging technologies and related infrastructure, such as electric and autonomous vehicles, and consider the role technology could play in incident management, speed enforcement, and emergency response.
	Consider INDOT's Carbon Reduction Strategy, National Electric Vehicle Infrastructure (NEVI) Plan, and future Resilience Plan (if available) during alternative development.
Equity	Actively engage stakeholders who use, cross, work, or live near the interstates throughout the study to provide input into decision-making.
	Provide accessible, fair, safe, affordable, reliable, and sustainable mobility along and across the interstates for community members based on identified needs and input received. This includes consideration of pedestrian, bicycle, transit, ride-hailing apps, or other modes of transportation.

3 Universe of Concepts Screening Process

The Universe of Concepts represents the first step in a two-step alternatives development and screening process. The results of this process will be made available for public comment at each step, and any feedback received will be considered before the second alternatives screening report is developed and published.

A qualitative screening process is used here to evaluate the concepts. This process evaluates the ability of concepts to address the study purpose and need, and it ensures concepts with fatal flaws identifiable at this early stage are eliminated from further consideration.

3.1 Identification of Concepts

The ProPEL Indy Universe of Concepts was derived from previous studies, public and stakeholder input, and FHWA guidelines. Sources included, but were not limited to:

- Concepts presented to date by agencies, stakeholder groups, and the public
- FHWA publications and websites on the following topics
    - Proven safety countermeasures
    - Transportation Systems Management Operations (TSMO) strategies
    - Managed lanes
    - Innovative intersections
- Freeway improvements implemented in other states as identified from observations and research
- ProPEL Indy reports completed to date listed below (available at https://propelindy.com/resources):
    - *ProPEL Indy Summary of Previous Studies Report*;
    - *ProPEL Indy Environmental Constraints Report*;
    - *ProPEL Indy Existing Transportation Conditions Report*;
    - *ProPEL Indy Resource Agency, Stakeholder & Public Involvement Summary #1* (RASPI);
    - *ProPEL Indy Purpose and Need Report*; and
    - *ProPEL Indy Resource Agency, Stakeholder & Public Involvement Summary #2* (RASPI).

Stakeholder input is a critical component of ProPEL Indy. Since the start of the study in May 2023, stakeholders have had the opportunity to communicate important ideas and visions. As a result, a wide range of concepts were created to capture the community feedback. A full summary of comments are included in the RASPI reports (see above). Common themes from “what we heard” and “what we did” to address these themes during concept development are included in **Figure 4**.

Figure 4: Report Responses to What We Heard

WHAT WE HEARD	WHAT WE DID
Fix congestion during peak periods	Interstate modification concepts ranging from Interstate Access Modifications to Added Travel Lanes focus on congestion relief. Also, since roadway mobility is an identified study need, potential congestion relief is reviewed for all concepts.
Address safety concerns	Interstate Modification and Traffic Management concept groups consider safety components directly. Also, since roadway safety is an identified study need, improved safety is reviewed for all concepts.
Remove the interstates	A Remove Segment(s) of Interstate concept is included.
Recess the interstates	A Recessed Roadway concept is included.
Improve connectivity between neighborhoods	Viaduct, Recessed Roadway, Tunnel, and Local Mobility/Connectivity Improvement concepts are included. Also, since limited multimodal and neighborhood connections is an identified study need, improved connections are reviewed for all concepts.
Bicycle and pedestrian facilities are poor or lacking	Local Mobility/Connectivity Improvement concept is included. Since limited multimodal and neighborhood connections is an identified study need, improved multimodal connections is reviewed for all concepts.
Ease of access to downtown is important for businesses, commuters, and visitors	Interstate Access Modifications and Interchange Improvements concepts are included.
Quality of life and sense of place in neighborhoods are important	Design Toolbox is included, with landscaping, gateway elements, and placemaking opportunities.
Interstate lighting, signage, and pavement markings are poor	Design Toolbox is included, with lighting, pavement markings, and signage treatments.
Improve public transit	Bus Transit, Passenger Rail, and On-Demand Transportation Service concepts are included.
Address the visual, noise, and air quality impacts of interstates	Design Toolbox is included, with visual barriers, landscaping, aesthetic design packages, noise barriers, and quiet pavement.

In addition to input from stakeholders, professional judgment from the ProPEL Indy study team was used in defining concepts. These concepts are general and may be applied at any location throughout the study area to address the transportation needs and community goals. The next level of screening will refine the application of these concepts as PEL alternatives at site-specific locations. Concepts should be viewed as building blocks. Multiple concepts may be combined to create PEL alternatives depending upon the needs at a specific location.

3.2 Evaluation of Needs

The ability of a concept to meet the transportation needs was assessed using performance measures provided in the *ProPEL Indy Purpose and Need Report.* The purpose and needs and corresponding performance measures are provided in **Table 3**.

Table 3: Study Performance Measures

Study Purpose	Performance Measure	Does the Concept…
Improve bridge and pavement condition	Improve deficient pavement condition	Improve pavement condition?
	Improve deficient bridge condition	Improve bridge condition?
Improve safety along the interstates by reducing the number and severity of crashes within the study area	Reduce crash rates and/or severity by applying safety countermeasures	Reduce crash frequency and/or severity?
	Eliminate geometric deficiencies contributing to higher crash rates	Eliminate geometric deficiencies contributing to higher crash rates?
Improve mobility by reducing congestion or eliminating geometric deficiencies that contribute to congestion	Improve interstate operations over No-Build condition	Reduce congestion over the No-Build condition?
	Eliminate geometric deficiencies contributing to congestion	Eliminate geometric deficiencies contributing to congestion?
Improve multimodal connectivity across and near the interstates	Improve existing pedestrian/bicycle connectivity across or near the interstates	Improve pedestrian/bicycle connectivity across or near the interstates?
	Accommodate future planned pedestrian/bicycle connections	Accommodate future planned pedestrian/ bicycle connections?
	Provide new pedestrian/bicycle connectivity across or near the interstates	Provide new pedestrian/ bicycle connectivity across or near the interstates?
	Accommodate existing or future transit connections and stop locations near the interstates	Accommodate existing or future transit connections/bus stops near the interstates?

Questions were developed for each performance measure to support a rating system, with three options as described in **Table 4.** To be carried forward for further consideration in the study, a concept must meet at least one study need by addressing the corresponding performance measure**.**

Table 4: Purpose and Need Evaluation Criteria and Possible Results

Possible Screening Result	Meaning	Criteria
✓	Pass	Concept has the ablity to meet the need in one or more location
☒	Fail	Concept does not have the ability to meet the need OR Concept worsens conditions relative to the need
?	Unknown	Concept cannot be evaluated at this stage due to lack of information OR Concept has both positive and negative characteristics that require evaluation beyond the Universe of Concepts

3.3 Fatal Flaw Evaluation

Each concept was evaluated to determine whether fatal flaws identified at this stage of the screening process would prevent the concept from being implemented. This evaluation used the rating system shown in **Table 5**.

A concept must pass this fatal flaw screening review to move forward in this study. A fatal flaw is any of the following:

- Not appropriate in scope and scale for the transportation problems identified;
- Creates other unacceptable impacts such as severe operational or safety problems;
- Results in unacceptable socioeconomic or environmental impacts; or
- Would require an extraordinarily high cost in comparison with other viable alternatives.

Concepts that fail the fatal flaw screening are considered unreasonable[1] and will not be carried forward in this study or into NEPA. Concepts that pass the fatal flaw screening or with unknown fatal flaw screening results at this stage can be carried forward in this study.

[1] The evaluation of alternatives must consider a reasonable range of options that could fulfill the project sponsor's purpose and need. Reasonable alternatives include those that "are practical or feasible from a technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant" (Council on Environmental Quality, 1981).

Table 5: Fatal Flaw Evaluation Criteria and Possible Results

Possible Screening Result	Meaning	Criteria
✓	Pass	Concept is appropriate in scope and scale for the transportation problems identified AND Concept does not create unacceptable safety or operational impacts AND Concept does not result in unacceptable socioeconomic or environmental impacts AND Concept can be implemented after taking into consideration costs
☒	Fail	Concept is not appropriate in scope and scale for the transportation problems identified OR Concept has unacceptable safety or operational impacts OR Concept will create unacceptable socioeconomic or environmental impacts OR Concept will require an extraordinarily high cost
?	Unknown	Severity of impacts or magnitude of costs is unknown at this stage of the study

3.4 Why aren't Community Goals used to Evaluate Concepts in this Phase?

As described in **Section 2.2**, community goals will be considered in the next screening phase along with purpose and need in evaluating PEL alternatives. Community goals are not evaluated directly in screening potential improvement concepts in this phase for two primary reasons:

1. Building Blocks vs PEL Alternatives. Essentially, concepts at this stage of screening are high-level building blocks that will be adjusted and combined in the next phase to form PEL alternatives. It is possible to evaluate stand-alone concepts for potential achievement of purpose and need, but evaluating high-level concepts by themselves for achieving community

goals has little meaning. Success in achieving community goals will be determined largely by how the individual concepts are combined.

2. Location and Context. Without an understanding of location and context, stand-alone improvement concepts cannot be effectively evaluated with respect to meeting community goals. In the next phase, improvement concepts that meet purpose and need will be developed and combined into PEL alternatives that meet broad community objectives and integrate transportation improvements into the areas actually being served. With this information, achievement of community goals, along with other factors, will be used to evaluate alternatives.

3.5 Presentation of Concept Screening Results

The Universe of Concepts screening results determine if a concept will be carried forward to the next level of screening, as shown in **Table 6**. Concepts that do not meet any study needs or are anticipated to have fatal flaws are eliminated from further consideration.

Table 6: Possible Final Screening Results and Associated Criteria

Possible Result	Meaning	Criteria
✓	CARRY FORWARD	Concept meets at least one need AND Concept passes fatal flaw screening
☒	DO NOT CARRY FORWARD	Concept does not meet at least one need AND/OR Concept does not pass the fatal flaw screening

4 Concepts Evaluated

The Universe of Concepts represents a wide range of possible solutions to address the transportation needs in the study area. Twenty-four improvement concepts are considered in this screening step. The No-Build concept provides a baseline condition that build concepts are compared against to evaluate their effectiveness in addressing the study needs, and their impacts to the environment. The No-Build concept is required to advance in the NEPA process and will remain in consideration in this study.

4.1 Concepts by Category

Concepts are organized into categories to facilitate review and to reduce repetition by allowing observations to be made for concept groups. Concept Snapshots in Appendix A provide a one-page explanation with examples for each concept. The concepts considered in this screening step are listed below.

- **Interstate Modification Concepts**
  These concepts would retain the existing layout of I-65 and I-70, with modifications implemented within the existing interstate study corridors. They range from spot improvements with minimal impact to added travel lanes, depending on the location and problem being addressed. Additional right-of-way may be needed at some locations, but the overall network would remain essentially unchanged. All facilities would be under the jurisdiction of INDOT.

    - No-Build
    - Rebuild With Modern Design/Materials
    - Address Geometric Deficiencies
    - Auxiliary / Collector-Distributer (C-D) Lanes
    - Interstate Access Modifications
    - Interchange Improvements
    - Added Travel Lanes

- **Major Interstate Reconstruction Concepts**
  These concepts would follow the existing general alignment of I-65 and I-70, but the current elevations and major components would be changed. These concepts would require complete replacement of existing infrastructure, while providing similar or improved service compared with existing facilities. Additional right-of-way may be needed at some locations.

    - Viaduct
    - Recessed Roadway
    - Tunnel
    - Signature Bridge

- **Traffic Management Concepts**
  These concepts would require minimal construction and would be implemented by INDOT within the overall state-controlled interstate system. The changes could be permanent or dynamic with respect to location and time, such as in response to changing conditions or special events.

    - Transportation System Management and Operations (TSMO) Improvements
    - Managed Lanes
    - Reroute Through Traffic to I-465

- **System-Level Interstate Concepts**
  These concepts would change the regional travel patterns over a large portion of the transportation network, and impacts would extend well beyond the study area interstate corridors. Close coordination and support would be required from the Indianapolis Metropolitan Planning Organization (MPO) and units of local government for implementation.

    - Remove Segment(s) of Interstate
    - Add Interstate Spur
    - Add or Upgrade Parallel Route

- **Local System Roadways and Connection Concepts**
  These concepts would address conditions on the local roadway system, either at intersections and connections within INDOT jurisdiction at or near ramp terminals or on facilities under the jurisdiction of the local unit of government. Coordination with the local agency may be needed for planning, funding, implementation, and operations.

    - Local Mobility/Connectivity Improvements
    - Local Road Intersection Improvements
    - Railroad Crossing Improvements

- **Concepts Independent of INDOT**
  These concepts could improve operations on facilities controlled by INDOT, but they would not be directly controlled by INDOT. INDOT could support planning and possibly assist in funding, but implementation and operations would be managed by others. INDOT would take a cooperative approach in assisting with the implementation of these concepts.

    - Bus Transit
    - Passenger Rail
    - On-Demand Transportation Service
    - Increased Freight Rail Service

4.2 Design Toolbox

Potential design toolbox improvements were identified through coordination with the public and stakeholders. Design toolbox improvements are not considered as stand-alone concepts; instead, they may be used in conjunction with many different concepts as appropriate. The design toolbox improvements could address community goals and are being carried forward for further consideration in this study. Examples are depicted in the Design Toolbox Concept Snapshot Sheet in Appendix A. Potential improvements may include:

- Wayfinding signs
- Lighting improvements
- Landscaping
- Gateway elements
- Litter removal and mowing
- Quiet pavement
- Pavement markings
- Aesthetic design packages
- Neighborhood signs
- Placemaking opportunities
- Noise barriers (in accordance with INDOT Noise Policy)
- Visual barriers and strategies
- Technology advancements

4.3 Concepts Not Evaluated

In addition to the 24 concepts previously identified, nine potential concepts were identified and eliminated prior to the screening process for one or more of the following reasons:

- Concept is currently in use and routinely evaluated by INDOT;
- Concept does not apply to study area conditions;
- Concept is not enabled by current legislation and/or INDOT has no direct influence over concept deployment conditions.
- Concept has been evaluated in previous INDOT studies and found to be infeasible or ineffective in meeting identified needs.

These concepts and the rationale for not evaluating them are discussed below:

- **Indianapolis Outer Belt Freeway**. INDOT and the Indianapolis MPO have evaluated a potential outer belt freeway in the past and found it would be ineffective in diverting traffic from I-465 and other area freeways. It would have little effect on I-65 and I-70 and would not meet the

purpose and need of this study. Additional information is available in the *Central Indiana Suburban Transportation and Mobility Study (CISTMS)*.[2]

- **Traveler Information Systems**. Traveler information systems consist of tools to collect and distribute current data describing traffic conditions, work zones, and road and weather conditions to motorists via smart phones, radio, message boards, websites, or other devices. INDOT programs already provide information services to motorists within the study area. As a result, traveler information systems were eliminated from the Universe of Concepts screening.

- **Event Management**. Additional traffic generated by planned special events may require operational strategies for managing event-generated and background traffic on the day of the event. This study does not consider special event traffic demand. Events generate unique traffic demands that are best addressed cooperatively with other agencies on a case-by-case basis. As a result, event management was eliminated from the Universe of Concepts screening.

- **Safety Service Protocols**. Roadway safety and motorist assistance programs are considered safety service protocols. Safety services are currently being provided by the Hoosier Helpers program. As a result, safety service protocols were eliminated from the Universe of Concepts screening.

- **Freight Priority System**. A freight priority system is a traffic signal modification that extends the traffic signal phase length to provide additional green time for approaching trucks. Traffic signal modifications are not applicable for interstate mainlines. Implementing this concept on local roads that provide access to study area interstates is beyond the scope of this study. As a result, freight priority systems were eliminated from the Universe of Concepts screening.

- **Travel Demand Management (TDM)**. Travel demand management encompasses a wide array of strategies, including adjusting work hours, telecommuting (i.e., work-from-home), ridesharing, and other commute mode adjustments to reduce vehicular traffic. Potential congestion-reducing benefits of TDM were demonstrated during COVID-19 work-from-home orders. Post-pandemic, concepts including telecommuting have remained in practice for eligible employment sectors, with some employers implementing hybrid work schedules. Traffic patterns have changed, such as reduced levels on Mondays and Fridays, but the needs identified for the I-65 and I-70 study corridors are largely unchanged. TDM concepts are basically driven by decision-making at the individual commuter and organizational level and are not controlled by INDOT. INDOT will continue to monitor traffic conditions and seek opportunities to enhance efficiency while meeting mobility needs on all its facilities, but TDM will not be carried forward as a specific strategy to meet the needs identified for I-65 and I-70 in this study area.

[2] *Central Indiana Suburban Transportation and Mobility Study:* https://www.in.gov/indot/resources/state-transportation-improvement-program-stip/central-indiana-suburban-transportation-and-mobility-study/

- **Enforcement (Red Light Running and Speed).** Red light running enforcement requires extensive labor resources from police or legislation to allow automated enforcement. INDOT does not control enforcement and legislative initiatives, and as a result, enforcement for red light running was eliminated from the Universe of Concepts screening. Speed enforcement can be used to reduce travel speeds along the interstates, which in turn can improve safety. A pilot project for automated speed enforcement in work zones was approved by the legislature in 2023, but additional legislative action would be required for non-work zones. Traditional enforcement, using police officers, is provided by state and local law enforcement and is not controlled by INDOT. Speed enforcement was eliminated from the Universe of Concepts screening for these reasons.

- **Connected and Autonomous Vehicles (CAV) Deployment.** CAV is an emerging technology, including some functions that can replace the driver for some or all driving tasks. Technological advancements and increasing penetration into automobile manufacturing and transportation infrastructure has the potential to improve roadway safety and efficiency. The concept would include vehicle to infrastructure (V2I) modifications and technology installations to help accommodate increased CAV deployment within the study area. While the potential for mass mobility acceptance is increasing as CAV technology advances, INDOT does not influence CAV deployment or market penetration rates. As a result, CAV Deployment was eliminated from the Universe of Concepts screening. However, concepts in this report will not preclude the use of CAV technology as a supporting function in the future. The design toolbox includes the incorporation of technology advancements if they are more widely adopted by the time a project develops.

- **Crash Investigation Sites.** Crash investigation sites provide areas off the freeway mainline, specifically designated and signed, where motorists with partially disabled vehicles, law enforcement, and other roadside assistance services can respond to an accident and exchange information outside the traveled way, thereby reducing the risk of secondary crashes. Crash investigation sites can be particularly useful at locations where there is no shoulder available, which is not the case on most segments of the interstates in the study area. Crash investigation sites might be created to provide a general benefit at locations where INDOT has excess right-of-way, but they do not provide the direct safety benefit of other concepts and are eliminated from the Universe of Concepts screening.

5 Universe of Concepts Screening Results

As part of the Universe of Concepts screening, 24 transportation improvement concepts, including the No-Build concept, have been considered for the ProPEL Indy study area. These concepts have been qualitatively evaluated against the study area purpose and need, as well as screened for fatal flaws based on information available at this stage of study. Concept Snapshots in Appendix A provide a one-page explanation and set of illustrative examples for each concept.

Following is a description of each concept, with a summary of results of the screening process.

5.1 Interstate Modification Concepts

These concepts would retain the existing layout of I-65 and I-70, with modifications implemented within the existing interstate study corridors. Additional right-of-way may be needed at some locations, but the overall network would remain essentially unchanged. All facilities would be under the jurisdiction of INDOT.

Three of the four needs identified in **Section 2.1** (pavement and bridge condition, roadway safety, and roadway mobility) relate directly to the interstate facility itself. Potential concepts might be applied singly or in combination to meet the study purpose and need. Potential concepts to serve safety and mobility needs range from No-Build to added travel lanes.

Community goal achievement will be dependent on the context of improvements as well as the character of improvements themselves. Opportunities for achieving community goals exist to some degree for all concepts that meet the study purpose and need. The degree to which these goals are met will be situationally dependent and will be evaluated for more fully developed alternatives in the next screening phase. (See **Section 3.4**.)

The following sections review potential concepts related to the study area interstates themselves to determine whether they potentially meet the study purpose and needs and have no fatal flaws that prevent them from advancing to the next screening phase.

5.1.1 No-Build

The No-Build concept represents the conditions expected if no improvements are made to interstates within the study area beyond routine maintenance activities and projects programmed in the Indianapolis MPO's Transportation Improvement Program (TIP) and INDOT's Statewide Transportation Improvement Program (STIP). Routine maintenance activities would continue, but new connections, major reconstruction, and additional capacity would not be provided. The No-Build concept may meet interim bridge and pavement condition needs but would not address infrastructure at the end of its useful lifespan for which routine maintenance is no longer sufficient to keep assets in good condition.

The No-Build concept is considered the baseline condition that various build concepts are compared against to evaluate their effectiveness in addressing study area needs and their impacts on human and natural environments. The No-Build concept is required for the PEL screening process and NEPA.

Conclusion: The No-Build concept will be carried forward in the study and into NEPA for any projects that move forward. Currently programmed projects may not address all the infrastructure, safety, operations, and multimodal connectivity needs identified in the study.

Table 7: No-Build Concept Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
?	☒	☒	☒	✓	✓

5.1.2 Rebuild with Modern Design / Materials

A rebuild with modern design / materials concept considers only the replacement of existing assets in a form similar to how they currently exist, without altering the layout and connections. This could include replacement of some or all infrastructure elements such as a bridge deck or superstructure. Over time, rebuilding with modern design / materials can be a normal function of system preservation.

Needs to improve road and bridge and pavement condition would be addressed under this concept. There are opportunities to pair this concept with other concepts to address the roadway safety, roadway mobility, and multimodal connectivity needs. Major reconstruction projects often provide the most cost-effective opportunities to improve safety and mobility deficiencies at the same time.

No fatal flaws are identified for this concept.

Conclusion: The rebuild with modern design / materials concept will be carried forward into the next level of screening. At least one study area need would be addressed by the concept. No fatal flaws are identified for this concept.

Table 8: Rebuild with Modern Design / Materials Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
✓	☒	☒	☒	✓	✓

5.1.3 Address Geometric Deficiencies

Figure 5: Geometric Deficiencies at I-65/West St.

Geometric conditions refer to the dimensions and alignments of roadway features, such as slopes, grades, and curvature. Geometric deficiencies that may impact traffic operations and safety include, but are not limited to, left side exit and entrance ramps, weaving segments, lane drops, and insufficient sight distance. Improvements could include horizontal and/or vertical curve correction, widened shoulders, correction of lane drops, elimination of weaving segments, roadway realignments, or reconfiguration of left side interchange ramps.

Concept details are site-specific and cannot be identified at this stage of the study, but improvements to bridge and pavement condition would be likely where geometric deficiencies are corrected. Roadway safety and mobility would be improved. Multimodal connectivity would typically not be affected by addressing geometric deficiencies.

Fatal flaw screening results are unknown at this stage of the study since geometric deficiency improvements are site-specific and will require additional evaluation.

Conclusion: The address geometric deficiencies concept will be carried forward into the next level of screening since at least two study area needs are addressed. Impacts of this concept will be site-specific and are unknown at this stage, but no fatal flaws are identified based on information available at this screening level.

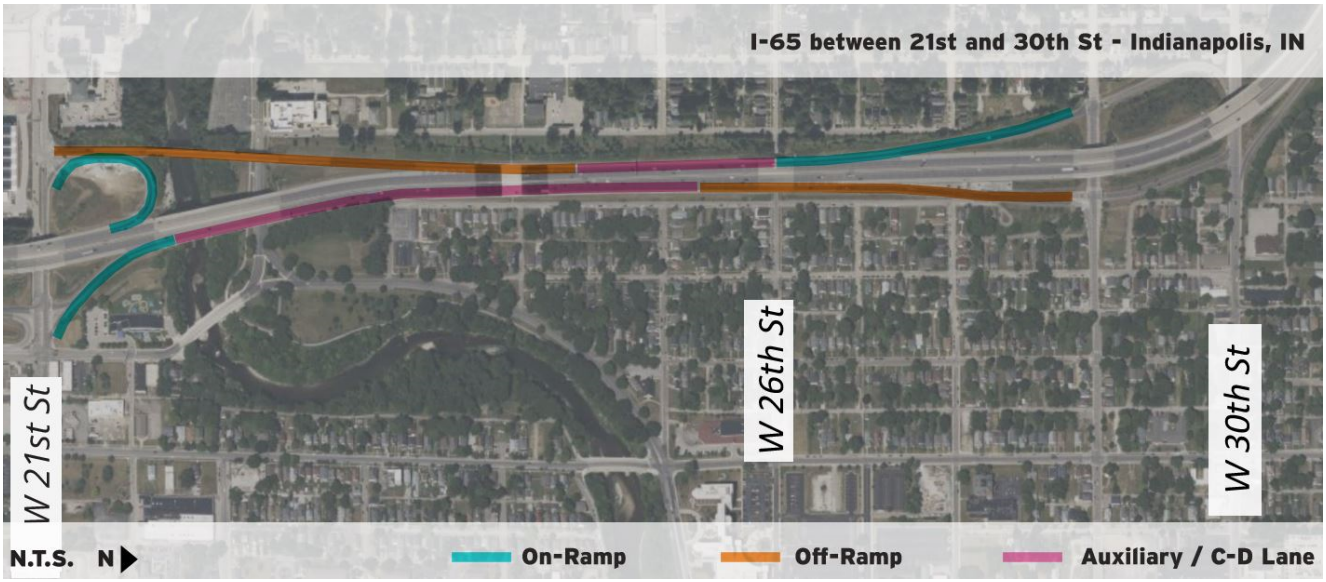
Table 9: Address Geometric Deficiencies Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
?	✓	✓	☒	?	✓

5.1.4 Auxiliary/C-D Lanes

Auxiliary/collector-distributor (C-D) lanes provide additional lanes between interchanges to reduce congestion and/or improve operations in weaving segments. Auxiliary lanes allow for speed changes between freeway entrances and exits. C-D lanes allow entering, exiting, and weaving movements to occur on a separated facility with minimal impacts to the interstate mainline.

Figure 6: Auxiliary/C-D Lanes on I-65



Interstate bridge and pavement conditions would not typically be improved under an auxiliary/C-D lanes concept, but roadway safety and mobility would be improved. Auxiliary lanes would have no benefit to multimodal connectivity.

Fatal flaw screening results are undetermined since impacts would be site-specific and cannot be determined at this stage of the study screening process.

Conclusion: Auxiliary / C-D lanes address at least two study area needs. No fatal flaws are identified based on information available at this screening level. An auxiliary / C-D lanes concept will be carried forward into the next level of screening.

Table 10: Auxiliary/C-D Lanes Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	✓	✓	☒	?	✓

5.1.5 Interstate Access Modifications

Access to the interstate system is provided exclusively at interchanges. The location and configuration of these interchanges is subject to formal approval by FHWA to ensure that mobility objectives are achieved while maintaining safe and efficient operations on the interstates. Interstate access modifications could include the addition or removal of interchange ramps or the removal, relocation, or addition of complete interchanges. Improvements to bridge and pavement condition are often made where modifications are made to interstate access. Concept details are site-specific and cannot be identified at this stage of the study. Roadway safety and mobility would be expected to improve with interstate access modifications, reducing crash exposure and improving traffic operations.

Multimodal connectivity may be improved if a ramp structure with multimodal features is modified. These details would be site-specific and are unknown at this stage.

Figure 7: Example of Interstate Access Modifications

Fatal flaw screening results are undetermined since impacts would be site-specific and cannot be determined at this stage of the screening process.

Conclusion: Interstate access modifications provide an opportunity to improve system mobility and safety of existing facilities. This concept will meet at least two study area needs, and no fatal flaws are identified at this stage. This concept will be carried forward into the next level of screening.

Table 11: Interstate Access Modifications Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
?	✓	✓	?	?	✓

5.1.6 Interchange Improvements

Interchange improvements address safety or operational deficiencies, ranging from modifications to ramp terminal intersections to redesigning the entire interchange. The ability to enter or exit the interstates would remain the same, but the interchange design would change under this concept. Needs for improved roadway safety and mobility would be met with this concept, and modern design standards would be applied. Improvements to bridge and pavement condition are also likely, but these details are site-specific and cannot be identified at this stage of the study.

Figure 8: Interchange Improvements at Keystone Avenue and I-465

Multimodal connectivity may be improved by interchange improvements depending on site-specific conditions and details of the design.

No fatal flaws are identified based on information available at this screening level. Impacts would be site-specific and are undetermined at this stage.

Conclusion: Interchange improvements would address at least two study area needs. Impacts of this concept will be site-specific and are undetermined at this stage, but no fatal flaws were identified based on information available at this screening level. This concept will be carried forward.

Table 12: Interchange Improvements Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
?	✓	✓	?	?	✓

5.1.7 Added Travel Lanes

The added travel lanes concept includes constructing one or more continuous through lanes to selected roadway segments to address existing or forecasted congestion. Added travel lanes are typically

provided where an increase in capacity is needed to meet growing demand and provide improved mobility. In most cases, the added capacity would also improve safety since congestion is closely related to crashes. Pavement and bridge conditions are frequently improved at the same time, depending on localized needs.

This concept could be paired with other concepts to address the multimodal connectivity need. The needs and opportunities would be needs driven and site-specific.

Fatal flaw screening results are unknown since impacts would be site-specific and cannot be determined at this stage of the study screening process.

Conclusion: Adding travel lanes would address two study area needs and may address more needs depending on details of the alternative. Impacts of this concept will be site-specific, but no fatal flaws are identified at this screening level. The added travel lanes concept will be carried forward.

Table 13: Added Travel Lanes Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
?	✓	✓	☒	?	✓

5.2 Major Interstate Reconstruction Concepts

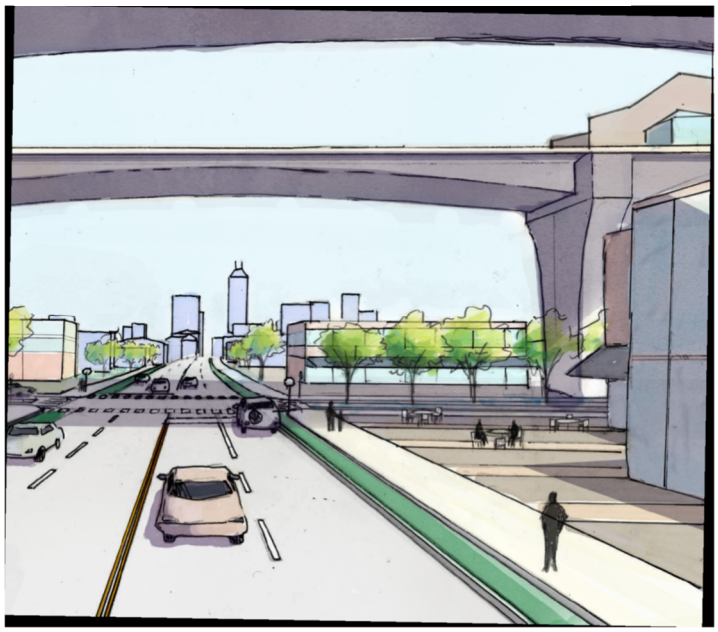
These concepts use the existing alignment of I-65 and I-70, but the configuration of major interstate components would be changed. Existing infrastructure would be replaced with new designs that provide similar or improved service compared to existing facilities. These concepts would be designed to meet study area needs and may be focused on community goals, with elevated or depressed sections, tunnels, and/or signature bridges. Because these concepts represent substantial changes to the interstate system, the construction cost and operations/maintenance costs of these concepts will need to be evaluated carefully in the next screening phase.

Locations for major interstate reconstruction would be dependent on the character and needs of the surrounding areas as well as function provided by the improvements. The degree that community goals are achieved would be situationally dependent and would likely be applicable in limited parts of the corridors. These concepts will be evaluated and more fully developed as alternatives in the next screening phase. (See **Section 3.4**.)

The following sections review potential major interstate reconstruction concepts to determine whether they potentially meet the study purpose and need and have no fatal flaws that prevent them from advancing to the development of PEL alternatives in the next screening phase.

5.2.1 Viaduct

Figure 9: Viaduct Example



Viaducts provide travel lanes that are substantially elevated or raised via bridge structures. The primary purpose of a viaduct is to separate freeway traffic from at-grade street networks, allowing clear unobstructed site lines across the corridor and improving connectivity on either side of the interstate.

Under this concept, it is assumed that existing bridges would be replaced, and new bridges and pavement would be constructed at new viaduct locations. Since infrastructure would be new, bridge and pavement conditions would be improved. This concept could be paired with other concepts to meet the roadway safety and mobility needs.

I-65 and I-70 are already elevated at many locations throughout the study area, which allows crossing roadways to pass under the interstates at street level. These crossings are most closely spaced on the I-65/I-70 inner loop. The viaduct concept would raise the interstates up higher. Potential benefits of viaducts would be explored downtown and at other locations on I-65 and I-70.

A major benefit of viaducts is the continuity of surface space and visibility across the roadway corridor. This creates opportunities for roadways, bicycle/pedestrian facilities, and other connections to continue across the interstate mainline without interruption or need to change elevation. The effects of elevation changes on street continuity and connectivity would require investigation, but since most of the inner loop is already elevated, it is assumed that connectivity would be maintained or improved by this concept.

Fatal flaw screening is unknown because it is possible the cost of a viaduct could be extraordinarily high. Going forward, costs, roadway geometrics, constructability, maintenance of traffic during construction, impacts, and other factors would determine if this concept has fatal flaws that prevent implementation at site-specific locations.

Conclusion: A viaduct concept would provide a substantially elevated roadway that would meet at least two study area needs and provide greater connectivity across the interstate. Fatal flaw screening is

inconclusive since costs could be extraordinarily high, but no fatal flaws for this concept are evident at this stage of the study. A viaduct concept will be carried forward into the next level of screening.

Table 14: Viaduct Screening Results

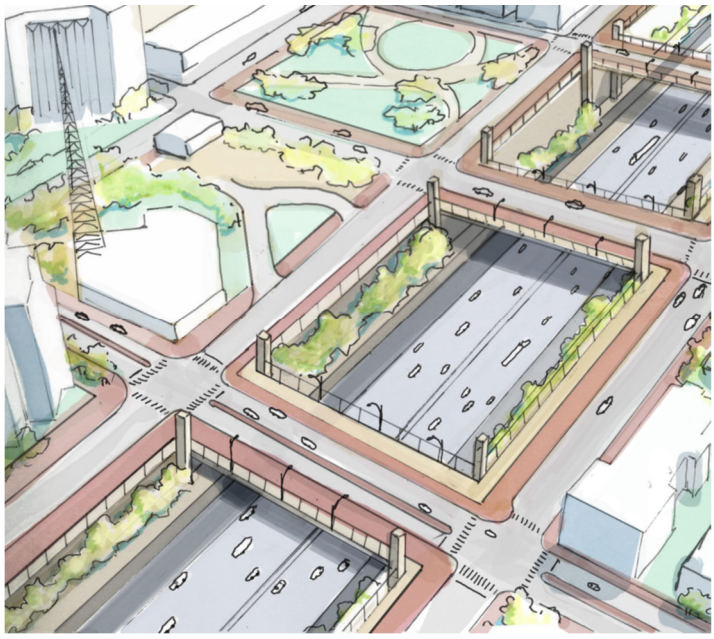
NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
✓	?	?	✓	?	✓

5.2.2 Recessed Roadway

A recessed roadway would provide travel lanes that are lowered or depressed below grade. Recessed roadways separate freeway traffic from at-grade street networks and provide additional connectivity and unobstructed site lines for communities on either side of the interstate. Recessed roadways could also allow construction of a cap or caps across the interstate in the future, an opportunity not provided by viaducts.

Bridge and pavement conditions would be improved since all infrastructure would be new. This concept could be paired with other concepts to meet the roadway safety and mobility needs.

Figure 10: Recessed Roadway Example



Recessed roadways typically provide opportunities to improve multimodal connectivity since they allow for additional roadways or bicycle/pedestrian facilities to cross the interstate with fewer barriers and without the need for changes in elevation. However, space required to transition the interstate into the recessed cross section may impact connectivity across the corridor and the continuity of local streets. In addition, ramp connections would need to be reconfigured and this may also impact local connectivity. The impact of these and other changes would require detailed analysis to understand impacts on safety and mobility.

Impacts of this concept would be site-specific and are undetermined at this stage, but no fatal flaws are identified based on information available at this screening level. The construction and operations and maintenance costs of a recessed concept could be extraordinarily high. The next phase of this study would evaluate roadway geometrics, water table elevation, utilities, maintenance of traffic during construction, costs, impacts, and other aspects to determine whether there are fatal flaws.

Conclusion: A recessed roadway concept meets at least two study area needs and may be a viable option if issues related to local roadway geometrics and connections, local traffic effects, water table elevation, cost, and utilities can be addressed. Impacts of this concept will be site-specific and are unknown at this stage, but no fatal flaws are identified based on information available at this screening level. A recessed roadway concept will be carried forward into the next level of screening.

Table 15: Recessed Roadway Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
✓	?	?	✓	?	✓

5.2.3 Tunnel

A tunnel concept would relocate all or portions of I-65 and/or I-70 underground. Road tunnels are "enclosed roadways with vehicle access that is restricted to portals...not to include enclosed roadway created by highway bridges."[3] Road tunnels require special considerations, including lighting, ventilation, fire protection systems, and emergency egress capacity. Tunnels typically only serve through traffic, with local connections provided separately.

Figure 11: Tunnel Example

Since bridge and pavement sections would be replaced with new infrastructure, the need to improve bridge and pavement conditions would be met with this concept. Tunnel concepts would

[3]FHWA, Technical Manual for Design and Construction of Road Tunnels, FHWA-NHI-09-010, December 2009, p. 1-1. https://www.fhwa.dot.gov/bridge/tunnel/pubs/nhi09010/tunnel_manual.pdf. Definition quoted is provided by the American Association of State Highway and Transportation Officials (AASHTO) Technical Committee for Tunnels (T-20).

require detailed evaluation to determine how roadway mobility and safety would be affected since changes at connection points and local traffic diversions could have far-reaching effects.

Multimodal connectivity would be expected to be improved with this concept since it would allow additional roadway and multimodal connectivity over interstate mainlines that are tunneled.

A number of challenges would be associated with development of a tunnel concept, including roadway geometrics at entry and exit points and site limitations related to water table elevation, utilities, rail crossings, maintenance of traffic during construction, installation cost, and ongoing costs for operation and maintenance. High initial and ongoing maintenance cost, coupled with site limitations, constitutes a fatal flaw for a potential tunnel concept.

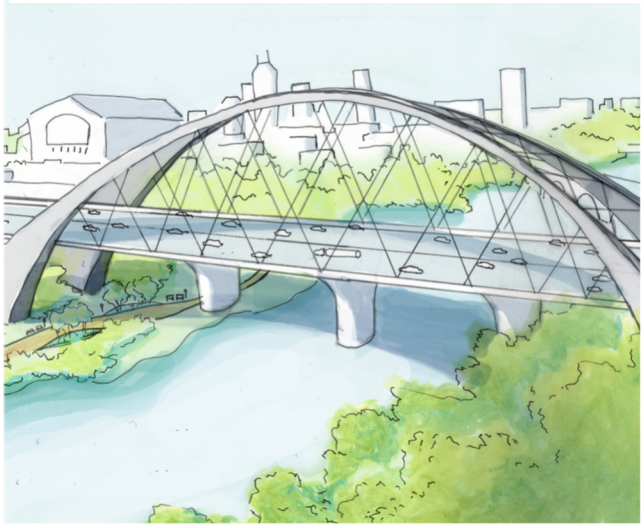
Conclusion: A tunnel concept would be expected to address at least two study area needs, but extraordinarily high costs for construction, operation, and maintenance, coupled with site limitations for implementation, are fatal flaws for this concept. A tunnel concept will not be carried forward into the next level of screening.

Table 16: Tunnel Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
✓	?	?	✓	☒	☒

5.2.4 Signature Bridge

Figure 12: Signature Bridge Example



Signature bridges serve as visual landmarks or iconic structures. They commonly reflect or complement the context, character, or heritage of a community. Signature elements may include bridge type, construction materials, color, lighting, decking, or railing. Consideration for new bridges may include improved hydraulics, longer spans, improved under-bridge experience, and better access to amenities.

Since a signature bridge would be new construction, bridge and roadway condition would be improved. It could be paired with other concepts to meet other study area needs. Multimodal connectivity

improvements would depend on details of the design and could include bicycle and pedestrian features as a part of or companion to the structure.

A signature bridge would be appropriate in scope and scale where gateway elements may be desired by the community, would not create unacceptable safety or operational impacts, and would likely not have unacceptable socioeconomic or environmental impacts. Fatal flaw screening is unknown because it is possible the cost of a signature bridge could be extraordinarily high.

Conclusion: A signature bridge concept would meet at least one study area need and may be an attractive design solution where a community gateway is desired. Impacts of this concept would be site-specific and are undetermined at this stage, but no fatal flaws are identified based on information available at this screening level. A signature bridge concept will be carried forward into the next level of screening.

Table 17: Signature Bridge Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
✓	?	?	?	?	✓

5.3 Traffic Management Concepts

Traffic management strategies are typically used to address two of the four needs (roadway safety and roadway mobility) identified in **Section 2.1**. They are also used to provide motorist information. These concepts are dynamic, require minimal construction, and are typically implemented by INDOT within the overall state-controlled system. Traffic management strategies could be permanent or dynamic with respect to location and time. They are effective for managing changing conditions or special events.

Opportunities to achieve community goals would be evaluated in the next screening phase (See **Section 3.4**). Quality of life, economic growth and opportunity, and transportation and mobility goals have the potential to be advanced to some degree by traffic management concepts.

The following sections review transportation systems management operations, managed lanes, and the potential for rerouting through traffic to I-465 to determine whether these concepts will be advanced to the next screening phase.

5.3.1 TSMO Improvements

Transportation Systems Management and Operations (TSMO) "is a set of strategies that focus on operational improvements that can maintain and even restore the performance of the existing transportation system before extra capacity is needed. The goal here is to get the most performance out of the transportation facilities we already have."[4]

A wide range of TSMO strategies are available. Examples of TSMO strategies include:

- Work zone management
- Ramp metering
- Hard shoulder running
- Truck restrictions (lane or time of day)
- Traffic incident management

Figure 13: Example TSMO Strategy – Ramp Metering

TSMO is an effective tool for optimizing existing transportation resources, particularly in urban areas where space is at a premium. Many of the processes and tools for data gathering, agency and traveler information, incident response, and dynamic traffic management are already being performed by INDOT, in coordination with other agencies at its Traffic Management Center in Indianapolis. TSMO provides a systems perspective, extending beyond one strategy, project, or corridor.

Bridge and pavement condition would not be improved by any type of TSMO concept. Roadway mobility and safety would be improved by this concept, as all TSMO options are intended to address congestion and reduce crashes. Multimodal connectivity would not be improved by a TSMO concept.

No fatal flaws for this concept are evident at this stage of the study. Impacts of these improvements are location-specific but are typically minor.

Conclusion: The TSMO concept would address at least two study area needs. Its impacts would be site-specific and vary for each TSMO option, but no fatal flaws are identified based on information available at this screening level. The TSMO concept will be carried forward into the next level of screening.

[4] "What is Transportation Systems Management and Operations" https://ops.fhwa.dot.gov/tsmo/

Table 18: TSMO Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	✓	✓	☒	?	✓

5.3.2 Managed Lanes

Managed lanes are provided for exclusive use by high-occupancy vehicles (HOV), trucks, tolled vehicles, or some combination of these vehicles. Managed lanes may also include options such as reversible lanes to address unbalanced traffic flows. Managed lanes may be created by repurposing existing lanes or adding new lanes. Motorist information regarding use of the lanes is provided by variable message overhead signing, which can be operator controlled or scheduled for time of day.

Bridge and pavement condition may be improved by this concept, but changes would be site-specific and cannot be determined in this stage of the study. Roadway safety would be expected to improve with this concept as traffic in the managed lanes maintain free-flow conditions, thus reducing the chances for congestion-related crashes. Roadway mobility would be improved at areas where added travel lanes are incorporated into a managed lanes concept.

Multimodal connectivity for bicycles and pedestrians would not be improved under a managed lanes concept since the concept would not create additional multimodal connections. Transit could benefit by the provision of HOV lanes. These benefits would be site-specific.

Figure 14: Example of Managed Lanes – I-635 in Dallas, TX

Impacts of this concept will be site-specific and are undetermined at this stage. Determination of whether it represents the highest and best use of the asset would be site-specific, but no fatal flaws are identified based on information available at this screening level.

Conclusion: Managed lanes have the potential to address multiple study area needs. The managed lanes concept will be carried forward into the next level of screening.

Table 19: Managed Lanes Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
?	✓	✓	☒	?	✓

5.3.3 Reroute Through Traffic to I-465

In this concept, signage and motorist information systems would be used to reroute through traffic from I-65 and/or I-70 to I-465. The intent would be to divert passenger and freight traffic away from the central core of the city. The concept could be applied all or part of the time on a daily basis.

Applying this concept would be difficult to enforce, would have minimal effects on downtown congestion, and would reduce mobility options for some users. Origin destination data provided in the *Existing Transportation Conditions Report* indicates that about 90% of trips on I-65 or I-70 that pass to or through the downtown inner loop during peak periods are local through trips, meaning they begin or end within I-465. These local trips would continue to use I-65 and I-70.

Limitations to the use of I-65 and I-70 would also make little sense with respect to the economy of Central Indiana. Both routes are identified as statewide mobility corridors by INDOT. They serve the highest concentration of employment in the state, with more than 117,900 people employed and 112 venues and attractions downtown.[5] They also serve the highest concentration of advanced manufacturing industries in Indiana as identified by Conexus Indiana.[6]

Although shifting through traffic from I-65 and I-70 to I-465 may not be warranted on a continuous basis, it still might provide benefits as a traffic management concept to be selectively applied. This application is addressed in **Section 5.3.1** describing TSMO concepts.

Bridge and pavement conditions would not be improved by this concept. Roadway safety and mobility would not benefit on a permanent basis, but the concept could be effective as a traffic management tool under certain conditions. Multimodal connectivity would not be affected by this concept.

No fatal flaws are identified based on information available at this screening level.

Conclusion: Rerouting I-65 or I-70 through traffic to I-465 on an ongoing basis would not meet study needs and will not be advanced into the next level of screening.

Table 20: Rerouting Through Traffic Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	☒	☒	☒	✓	☒

[5] Downtown Indy, Inc. "Community Report 2024". https://www.flipsnack.com/BABC5D99E8C/2024-community-report-7hn0jkhbdc/full-view.html

[6] Conexus Indiana and INDOT "Economic Development Along Indiana Roadways". https://www.docdroid.net/T0kovqv/conexus-task-iii-edair-one-sheet-final-2-pdf

5.4 System-Level Interstate Concepts

System-level concepts could contribute to meeting the needs of the study corridors by changing regional travel patterns. Benefits and impacts would extend well beyond the I-65 and I-70 study corridors to affect network operations over a large area.

Given the magnitude of the changes in this category, all community goals could potentially be affected by implementation. Opportunities to achieve community goals will be evaluated in the next screening phase (See **Section 3.4**) for those concepts carried forward from this phase.

System-level interstate concepts reviewed here include removal of interstate segments, development of new interstate spurs, and construction of new or improved parallel routes. Close coordination and support would be required with the Indianapolis MPO and units of local government for implementation.

5.4.1 Remove Segment(s) of Interstate

The remove segment(s) of interstate concept assumes all or part of I-65 and I-70 are removed from the interstate system and replaced with a local road, potentially designed as a boulevard with traffic-calming features and amenities to serve bicyclists, pedestrians, and transit.

Bridge and pavement conditions would be improved by this concept as existing infrastructure would be removed and replaced, but other needs would not be met.

Removing I-65 and I-70 from the downtown interstate system (called decommissioning) was one of the concepts reviewed by INDOT in the System-Level Analysis for Downtown Interstates in 2018[7]. The report was intended to be informational with no recommended plan for implementation. A microsimulation model was used to estimate traffic changes with each concept. Following are the key findings for removing downtown interstates and replacing them with boulevards:

- Although some traffic would divert to I-465, overall traffic demand to and through the downtown would be largely unchanged. Most peak hour trips on interstates are local.
- The total time for travel by all users would be 50% longer in the morning peak hour and 105% higher in the afternoon peak hour.
- Most of the street system downtown would be in a gridlock condition, particularly during the afternoon peak hour, as motorists back up at boulevard intersections trying to leave downtown.
- The boulevards would be at capacity for a six-lane divided arterial, serving about 50,000 vehicles per day. For comparison, West Street downtown carries around 38,000 vehicles per day.

The greatest loss to downtown mobility would result from the creation of intersections at every cross street that currently passes under or over the existing inner loop. All traffic entering or leaving on three

[7] INDOT. "System-Level Analysis for Downtown Interstates". https://northsplit.com/project-documents-2/

sides of downtown would be forced through boulevard intersections operating at or above capacity. The excess number of vehicles delayed at boulevard intersections would back up in parking lots and garages or on side streets downtown, and on local roadways beyond the downtown.

Safety and mobility needs would not be met by this concept. Roadway safety would deteriorate due to the introduction of hundreds of vehicle conflict points that are common on arterial roadways. Safety for bikes and pedestrians would be a concern due to the extensive crossing width at intersections and the overall high volume of traffic. Although transit, bike, and pedestrian features could be provided with the boulevards, potential multimodal benefits would be compromised by large intersection areas, high traffic volumes, and extensive traffic congestion on the boulevards and all crossing streets.

The concept does not pass the fatal flaw analysis due to unacceptable service in the former interstate corridors and the severe safety and mobility impacts to the local road network.

Conclusion: Due to conditions specific to Indianapolis, the negative effects of removing downtown interstates would far outweigh potential benefits. Removing segment(s) of the interstate would result in high levels of congestion and create unacceptable safety and operational impacts on the local road network. Removing segment(s) of interstate did not pass the fatal flaw analysis and will not be carried forward as a concept in this study.

Table 21: Remove Segment(s) of Interstate Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
✓	☒	☒	☒	☒	☒

5.4.2Add Interstate Spur

An interstate spur is a short freeway segment branching off an interstate highway. Unlike a bypass route, it makes only one connection to an interstate and terminates at the other end or connects to a local route. As an example, upgrading a portion of West Street to interstate standards between I-65 and Washington Street would create an I-65 spur.

Constructing an interstate spur would have no direct effect on deficient bridge and pavement conditions on existing interstates, but could have a positive effect on roadway safety and mobility to the degree traffic is diverted from I-65 and I-70. There is not enough information available to assess these effects at this stage of the study.

Multimodal connectivity would be negatively impacted by constructing a new interstate spur by adding a barrier. Additional information would be needed to evaluate local needs and opportunities and assess these effects.

Construction of a new interstate would result in unacceptable environmental and socioeconomic impacts. For this reason, the concept does not pass fatal flaw screening.

Conclusion: This concept does not satisfy any of the identified needs and it did not pass fatal flaw screening. Changed conditions such as a large new high-traffic generating development may warrant reconsideration of the concept in the future, but the concept will not be carried forward to the next screening step of this study.

Table 22: Add Interstate Spur Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	?	?	☒	☒	☒

5.4.3 Parallel Route

The parallel route concept includes the creation of a new parallel interstate route or enhancements to existing route(s) parallel or connecting to I-65 or I-70. The concept is intended to attract trips away from the study corridor(s). Since the parallel route would be outside the I-65 and I-70 corridors and would likely have far-reaching effects on the larger road network, this concept would be defined and reviewed in consultation with the Indianapolis MPO and the City of Indianapolis.

Bridge and pavement conditions on I-65 and I-70 would not be improved directly by a parallel route since the construction would occur outside existing interstate right-of-way. Roadway safety and roadway mobility may be improved by reducing congestion through traffic diversion, but these benefits cannot be assessed without further alternative definition.

Multimodal connectivity would not be addressed by a parallel route concept, with no additional or improved multimodal connections anticipated at existing deficient locations.

Construction of a new interstate route or expansion of an existing parallel route would almost certainly require new right-of-way and would introduce new levels of traffic outside the study area. These impacts would be site-specific and are undetermined at this stage. But given the magnitude of an alternative needed to affect interstate safety and mobility, it is assumed the cost and impacts would constitute a fatal flaw.

Conclusion: Parallel routes may provide operational benefits in some areas. Both the benefits of this concept and its impacts would be site-specific and are unknown at this stage. Due to the overall magnitude of the concept, the cost and impacts are deemed to be a fatal flaw, and the concept will not be carried forward into the next level of screening. Changed conditions such as a large new high-traffic generating development may warrant reconsideration of the concept in the future.

Table 23: Parallel Routes Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	?	?	☒	☒	☒

5.5 Local System Roadways and Connection Concepts

Local roadways interface with I-65 and I-70 at crossing locations and at access points. Bridges across the interstates and interchange ramp termini (typically up to and including the first signalized intersection) are under the jurisdiction of INDOT. Facilities under the jurisdiction of local units of government are also impacted directly and indirectly by INDOT operations. Except at ramp termini and crossing locations, all bicycle and pedestrian facilities are under local jurisdiction.

All community goals would be affected by concepts in this category. Opportunities to achieve community goals will be evaluated in the next screening phase (See **Section 3.4**) for those concepts carried forward from this phase. Coordination with local agencies would be needed for planning, implementation, and operations.

5.5.1 Local Mobility / Connectivity Improvements

Local mobility / connectivity improvements provide or improve the ability for vehicles, bicyclists, and pedestrians to cross the interstate mainline and/or interstate interchange ramps. Local mobility / connectivity improvements could include a new bridge over the interstate, new complete street road connection, new sidewalk or trail at an underpass or overpass, improvements at existing connections, or other site-specific improvements.

Bridge conditions may be improved as part of concepts to accommodate pedestrian or bicycle facilities over or under the interstate, but impacts on deficient bridge and pavement infrastructure cannot be determined at this stage of the study. Roadway safety may be addressed by this concept, but the impacts would be site-specific and cannot be determined at this stage of the study. Improved roadway mobility along the interstates would not be anticipated from local mobility improvements.

Multimodal connectivity would be addressed by local mobility / connectivity improvements at specific locations where existing cross-corridor mobility is insufficient.

No fatal flaws are identified based on information available at this screening level.

Conclusion: Local mobility / connectivity improvements may benefit areas with insufficient and limited multimodal connections. No fatal flaws are identified based on information available at this screening level. This concept will be carried forward into the next level of screening.

Table 24: Local Mobility/Connectivity Improvements Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
?	?	☒	✓	✓	✓

5.5.2 Local Road Intersection Improvements

This concept enhances the local road intersections adjacent to interchanges. These improvements may be necessary to address congestion that influences interchange operations. Potential improvements range from traffic signal adjustments to traffic-calming measures at locations where interstate traffic movements interface with neighborhoods and local streets.

Bridge and pavement condition on the interstate would not be improved by this concept, but roadway safety and mobility would be expected to improve to some degree by reducing conflicts. Multimodal connectivity could be addressed with bicycle and pedestrian enhancements at intersections where needed.

Fatal flaw screening results are favorable, as improvements to local road intersections are appropriate in the scope and scale for the problems identified, are not expected to create unacceptable safety or operational impacts, and are not expected to have substantial environmental or social impacts.

Figure 15: Example of a Local Road Intersection Improvement in Seattle, WA

Conclusion: Local road intersection improvements are expected to address study area needs at selected locations. No fatal flaws are identified based on information available at this screening level. This concept is carried forward into the next level of screening.

Table 25: Local Road Intersection Improvements Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	✓	✓	✓	✓	✓

5.5.3 Railroad Crossing Improvements

Railroads exist close to I-65 and I-70 at various locations in Indianapolis. A CSX mainline parallels I-70 along Massachusetts Avenue east of downtown, passes under I-65 and I-70 downtown, and parallels I-70 west of downtown toward a CSX yard and stops in Avon. The Louisville and Indiana Railroad, Indiana Rail Road, and Indiana Belt Railroad have facilities crossing or located near I-70 on the south leg of the Inner Loop.

The only at-grade railroad crossing within the study limits is a CSX crossing along Oliver Avenue, east of Harding Street near I-70. Based on data provided by the Federal Railroad Administration (FRA), this rail line carries an average of three trains per day between 6:00 a.m. and 6:00 p.m., with a maximum train speed of 10 mph. Aerial photography indicates the typical length of trains to be 20 cars. This length of train is not expected to produce delays along Oliver Avenue or Harding Street that would interfere with interchange operations, and no such operational issues have been documented. Only seven crashes have occurred at this crossing since 1975 per FRA records.

Although railroad crossing improvements might benefit nearby local roadways, the bridge and pavement condition, safety, and mobility on the interstates would not be improved. Multimodal connectivity on the interstates would not be improved by eliminating at-grade crossings.

Conclusion: Railroad crossing improvements could benefit local roadways but would not meet the needs on the interstates in this study. Railroad crossing improvements are not being carried forward into the next level of screening.

Table 26: Railroad Crossing Improvements Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	☒	☒	☒	✓	☒

5.6 Concepts Independent of INDOT

Operations on I-65 and I-70 could be improved by actions outside INDOT's control. Examples include mode shifts to bus transit and other travel modes such as rail. These concepts are reviewed to identify potential opportunities for joint initiatives or agency cooperation. Concepts carried to the next screening phase will be reviewed to identify opportunities to achieve community goals.

INDOT could support planning and possibly assist in funding, but implementation and operations would be managed by others. At a minimum, INDOT could take a cooperative approach in assisting with the implementation of these concepts.

5.6.1 Bus Transit

Bus transit can improve mobility by reducing personal vehicle trips and by providing an option for people who are unable or choose not to drive. Bus transit can target local trips within a community or commuter trips between communities. Fixed route bus service in Central Indiana is provided by IndyGo. In 2024, IndyGo's daily ridership was about 22,500. The most heavily travelled IndyGo route is currently the Red Line, which serves about 6,000 riders per day. This compares to traffic volumes ranging from 102,000 to 160,000 per day on I-65 and I-70.

Figure 16: Example of Bus Transit

Bus transit planning and operations are outside the responsibility of INDOT. Regional transit planning is conducted by the Indianapolis MPO in coordination with IndyGo and the Central Indiana Regional Transportation Authority (CIRTA).

No dedicated facilities exist or are planned for bus operations on local interstates. Private operators have provided express bus service in general purpose lanes of regional interstates with mixed success

over the years. Beginning in 2028, bus rapid transit service is planned on I-70 between Holt Road and Indianapolis International Airport as a part of the Blue Line.

Deficient interstate infrastructure would not be improved by any conceivable bus transit concept. Local bus transit service enhancements would impact roadway safety and mobility on I-65 and I-70 to the extent trips are diverted from roadways to transit, but the effect would be small, given the order-of-magnitude differences in bus ridership and interstate traffic volumes. INDOT will cooperate with IndyGo regarding opportunities to improve multimodal connectivity for buses at ramp termini and crossing locations.

Mode choice of travelers and bus transit operations are outside INDOT's jurisdiction or control, and local agencies and operators have no plans for major changes affecting the overall use of I-65 and I-70. These factors constitute a fatal flaw with respect to including local bus transit as a concept for meeting the purpose and needs of this study. This concept is not appropriate in scope and scale for the transportation problems identified.

Conclusion: Improved bus transit would not address general study area needs regarding bridge and pavement condition, traffic safety, and operations. INDOT would coordinate with the local transit service provider IndyGo and other relevant stakeholders to advance transit in the region, but local bus transit will not be carried forward to meet the purpose and need of I-65 and I-70 in the study area.

Table 27: Bus Transit Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	?	?	✓	☒	☒

5.6.2 Passenger Rail

Passenger rail service can take many forms. Intercity rail serves long distance trips, typically on freight lines in the United States. Commuter rail serves regional trips (i.e. suburb to downtown), with service often limited to peak hours. Light rail transit provides frequent, all-day service within urbanized areas and can operate in dedicated right-of-way or on-street. Street cars serve shorter trips, with slower speeds and frequent stops, and virtually always operate on-street.

The rail service most likely to impact trips on I-65 and I-70 in the study area would be light rail transit (LRT) since it is well suited for serving downtown destinations in urbanized areas. LRT has been studied multiple times by the Indianapolis MPO, most recently for the proposed Green Line in the northeast corridor. This project and other LRT options were rejected with the adoption of a regional bus rapid

transit system in the 2016 Central Indiana Transit Plan prepared by the Indianapolis MPO, IndyGo, and other partner organizations. No local rail projects are expected or planned.

Bridge and pavement condition on I-65 and I-70 would not be affected by a passenger rail concept. Roadway safety and mobility could be positively affected by passenger rail service to the extent vehicular trips and congestion are reduced, and multimodal connectivity could be improved.

This concept did not pass fatal flaw screening since it has been considered and rejected by the Indianapolis MPO, which is responsible for multimodal planning in the region, and IndyGo, the local transit service provider.

Conclusion: Passenger rail did not pass fatal flaw screening, and the concept will not be carried forward. Rail transit options have been studied extensively by local planning agencies and rejected in favor of bus rapid transit investments. Intercity passenger rail may be possible in the future, but it would likely have little effect on local traffic volumes on I-65 and I-70.

Table 28: Passenger Rail Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	?	?	✓	☒	☒

5.6.3 On-Demand Transportation Service

Unlike traditional fixed-route transit systems, which operate on predetermined routes and timetables, on-demand transportation services provide flexibility and convenience to passengers by allowing them to request or schedule rides on an as-needed basis. On-demand transportation service can be accommodated through a combination of shuttle bus (such as IndyGo Access), taxi service, and rideshare companies such as Uber and Lyft. This concept would expand these services.

Figure 17: Example of On-Demand Transportation Service

Bridge and pavement condition would not be improved by an on-demand transportation service concept. Roadway safety would not be improved by this concept as no measurable reduction in crash

risk would be anticipated. Roadway mobility would not be expected to improve with this concept as it serves a small group of travelers and therefore would not provide a substantial reduction in traffic volumes.

Multimodal connectivity across I-65 and I-70 would not be improved by an on-demand transportation service concept.

On-demand transportation is outside INDOT's jurisdiction or control, which constitutes a fatal flaw for implementation by INDOT.

Conclusion: Improved on-demand transportation service does not address any of the study area needs, is outside INDOT control, and will not be carried forward.

Table 29: On-Demand Transportation Service Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	☒	☒	☒	☒	☒

5.6.4 Increased Freight Rail Service

Under this concept, freight currently being moved by trucks on highways would be shifted to trains, thereby reducing truck traffic on the interstate system and providing associated benefits with respect to safety, mobility, and overall operations of Indiana roadways. INDOT's *2023 Indiana Multimodal Freight and Mobility Plan* reviews the role of various modes, including railroads and motor vehicles. The plan makes provision for how the modes interface, including mode transfer facilities, but there is no provision for shifting freight from one mode to another to manage demand levels.

Freight rail is one component of an intermodal system used to move goods and commodities throughout Indiana. Rail service typically involves the movement of bulk commodities and heavy cargo over long-haul distances, with service provided by private operators on tracks owned by the railroads. Trucks interface with railroads and ports, carry smaller loads, and make local deliveries using public roadways. Changing this system would require industry buy-in and could have far-reaching effects.

Bridge and pavement condition would not be improved by increasing freight rail service. Roadway safety could be improved by shifting freight movement from truck to rail, which would reduce truck volumes and the risks of crashes on the interstates, but potential safety benefits could be offset by increased vehicle exposure at railroad grade crossings.

Theoretically, roadway mobility could be improved by shifting freight movement from truck to rail, which would reduce truck volumes on the interstates, but INDOT does not control these choices and in any case, the benefit could be offset by increased costs and delay at railroad grade crossings.

Multimodal connectivity for bicycles/pedestrians and transit vehicles would not be improved by an increased freight rail concept.

The concept does not pass fatal flaw screening because INDOT does not control the choices made by shippers and railroad operators in how best to move their goods. INDOT will continue to play a supportive role with respect to freight railroads, just as it does for ports of Indiana and airports throughout the state.

Conclusion: Increased freight rail service would not address study area needs. Even if the concept had merit, the railroad operators and shippers are not under the control of INDOT. This concept will not be carried forward for further evaluation in this study.

Table 30: Increased Freight Rail Service Screening Results

NEEDS MET?				FATAL FLAW?	ADVANCE TO NEXT LEVEL?
Bridge/Pavement Condition	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
☒	?	?	☒	☒	☒

6 Universe of Concepts Screening Summary

Table 31 provides a summary of Universe of Concepts screening results.

Ten concepts do not meet any of the study area needs and/or fail one of the fatal flaw criteria. These concepts are not carried forward for further evaluation in this study.

Fourteen concepts were found to meet one or more of the study area needs with no fatal flaws identified at this stage of screening. These concepts will be carried forward for further refinement and evaluation in this study.

The No-Build concept will be carried forward throughout the ProPEL Indy study and throughout any ensuing NEPA analysis for comparison purposes.

Concepts carried forward from this phase will be evaluated in the next screening phase at specific locations in the ProPEL Indy study area. The concepts, which are similar to building blocks, may be combined into PEL alternatives depending on the needs at a specific location. PEL alternatives will be evaluated in terms of feasibility, benefits, impacts, cost, and achievement of community goals. Public and stakeholder input will be sought at each screening step. The output of this process will be a set of reasonable alternatives that could be studied as projects move forward into project development.

Table 31: Universe of Concepts – Summary of Screening

	CONCEPT	NEEDS				FATAL FLAW ANALYSIS	SCREENING RESULT
		Bridge & Pavement	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
Interstate Modification Concepts							
1	No-Build	?	☒	☒	☒	✓	✓
2	Rebuild with Modern Design/Materials	✓	☒	☒	☒	✓	✓
3	Address Geometric Deficiencies	?	✓	✓	☒	?	✓
4	Auxiliary / C-D Lanes	☒	✓	✓	☒	?	✓
5	Interstate Access Modifications	?	✓	✓	?	?	✓
6	Interchange Improvements	?	✓	✓	?	?	✓
7	Added Travel Lanes	?	✓	✓	☒	?	✓
Major Interstate Reconstruction Concepts							
8	Viaduct	✓	?	?	✓	?	✓
9	Recessed Roadway	✓	?	?	✓	?	✓
10	Tunnel	✓	?	?	✓	☒	☒
11	Signature Bridge	✓	?	?	?	?	✓
Traffic Management Concepts							
12	TSMO Improvements	☒	✓	✓	☒	?	✓
13	Managed Lanes	?	✓	✓	☒	?	✓
14	Reroute Through Traffic to I-465	☒	☒	☒	☒	✓	☒
System-Level Interstate Concepts							
15	Remove Segment(s) of Interstate	✓	☒	☒	☒	☒	☒
16	Add Interstate Spur	☒	?	?	☒	☒	☒
17	Parallel Route	☒	?	?	☒	☒	☒

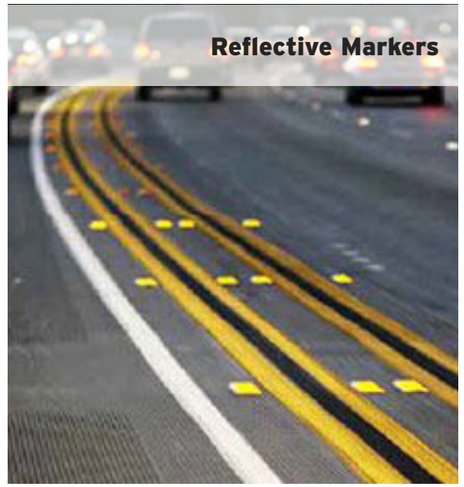
CONCEPT		NEEDS				FATAL FLAW ANALYSIS	SCREENING RESULT
		Bridge & Pavement	Roadway Safety	Roadway Mobility	Multimodal Connectivity		
Local System Roadway Concepts							
18	Local Mobility / Connectivity Improvements	?	?	☒	✓	✓	✓
19	Local Road Intersection Improvements	☒	✓	✓	✓	✓	✓
20	Railroad Crossing Improvements	☒	☒	☒	☒	✓	☒
Concepts Independent of INDOT							
21	Bus Transit	☒	?	?	✓	☒	☒
22	Passenger Rail	☒	?	?	✓	☒	☒
23	On-Demand Transportation Service	☒	☒	☒	☒	☒	☒
24	Increased Freight Rail Service	☒	?	?	☒	☒	☒

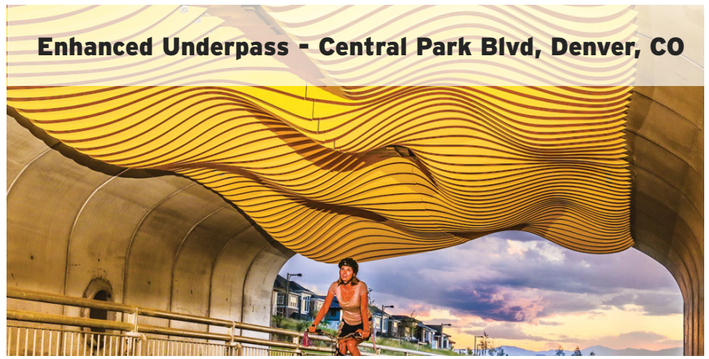
Appendix A: Concept Snapshots

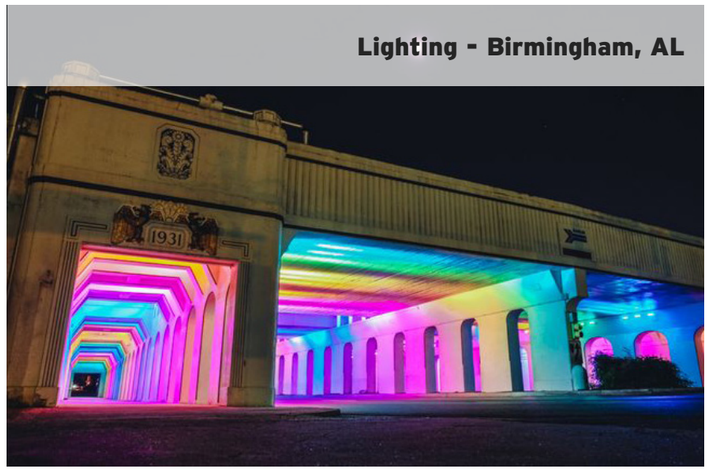
DESIGN TOOLBOX

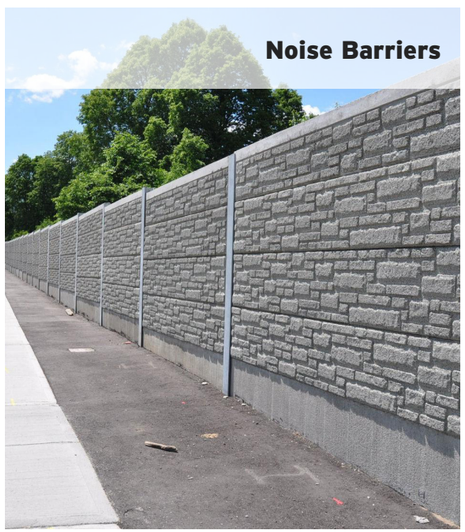
Lighting, wayfinding, signage, quiet pavement, new sidewalks, landscaping, gateways, and other urban design improvements may be considered as design elements in conjunction with the alternative concepts.

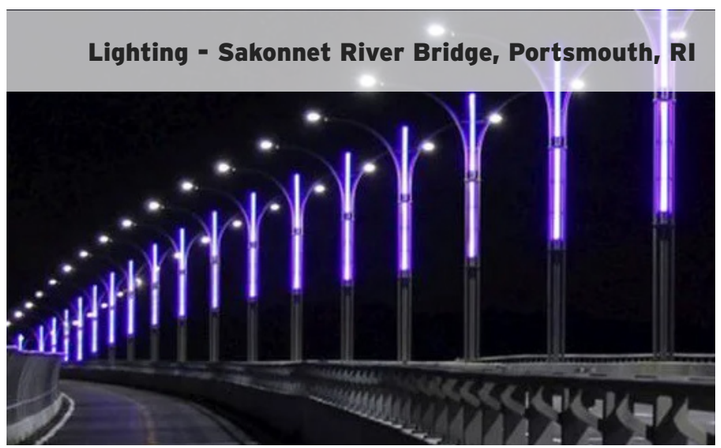
EXAMPLES











CONCEPT SNAPSHOT 1 | No-Build

EXISTING CONDITIONS

I-70 / I-465 Interchange (Airport) - Indianapolis, IN

I-70 / Rural St / Keystone Ave - Indianapolis, IN

I-65 and Pedestrian Bridge - Indianapolis, IN

I-65 / I-70 South Split Interchange - Indianapolis, IN

DESCRIPTION

The No-Build concept represents the conditions expected if no improvements are made to interstates within the study area beyond routine maintenance activities and projects programmed in the Indianapolis Metropolitan Planning Organization's (IMPO's) Transportation Improvement Program (TIP) and INDOT's Statewide Transportation Improvement Program (STIP). Routine maintenance activities would continue, but new connections, major reconstruction, and additional capacity would not be provided. The No-Build concept may meet interim bridge and pavement condition needs but would not address infrastructure at the end of its useful lifespan for which routine maintenance is no longer sufficient to keep assets in good condition.

The No-Build concept is considered the baseline condition that various build concepts are compared against to evaluate their effectiveness in addressing study area needs and their impacts on human and natural environments. The No-Build concept is required for the PEL screening process and NEPA.

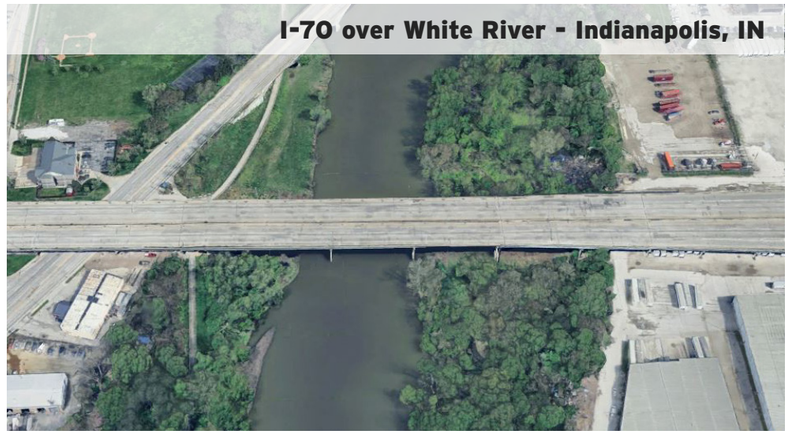
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	?
IMPROVE ROADWAY SAFETY	☒
IMPROVE ROADWAY MOBILITY	☒
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	✓

CONCLUSION	FINAL RESULT
The No-Build concept will be carried forward in the study and into NEPA for any projects that move forward. Currently programmed projects may not address all the infrastructure, safety, operations, and multimodal connectivity needs identified in the study.	✓

CONCEPT SNAPSHOT 2 | Rebuild with Modern Design / Materials

EXISTING CONDITIONS



DESCRIPTION

A rebuild with modern design/materials concept considers only the replacement of existing assets in a form similar to how they currently exist, without altering the layout and connections. This could include replacement of some or all infrastructure elements such as a bridge deck or superstructure. Over time, rebuilding with modern design/materials would be a normal function of system preservation.

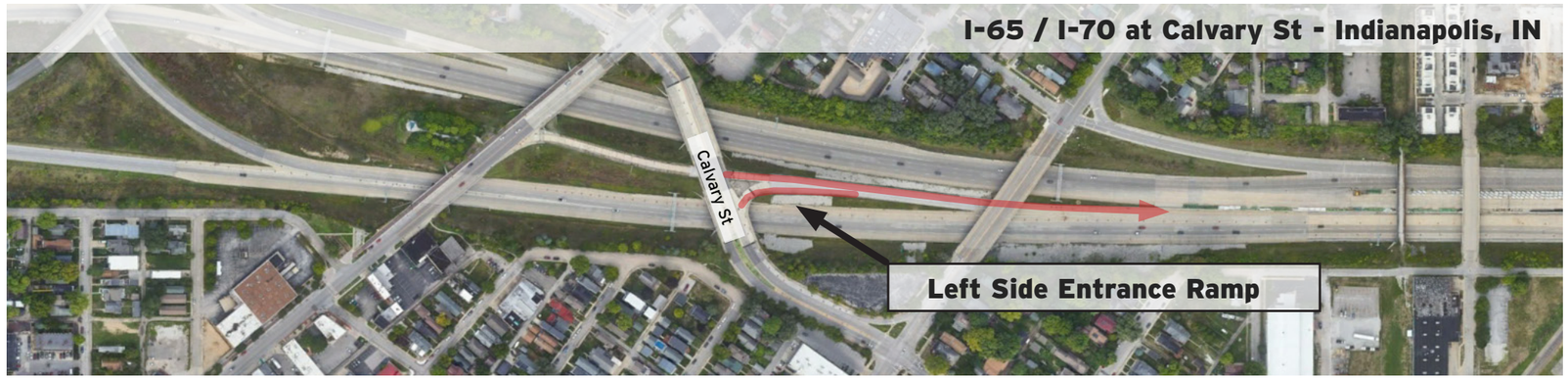
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	✓
IMPROVE ROADWAY SAFETY	☒
IMPROVE ROADWAY MOBILITY	☒
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	✓

CONCLUSION	FINAL RESULT
The rebuild with modern design/materials concept will be carried forward into the next level of screening. At least one study area need would be addressed by the concept. No fatal flaws are identified for this concept.	✓

CONCEPT SNAPSHOT 3 | Address Geometric Deficiencies

EXAMPLES



DESCRIPTION

Geometric conditions refer to the dimensions and alignments of roadway features, such as slopes, grades, and curvature. Geometric deficiencies that may impact traffic and safety operations include, but are not limited to, left side exit and entrance ramps, weaving segments, lane drops, and insufficient sight distance. Improvements could include horizontal and/or vertical curve correction, widened shoulders, correction of lane drops, elimination of weaving segments, roadway realignments, or reconfiguration of left side interchange ramps.

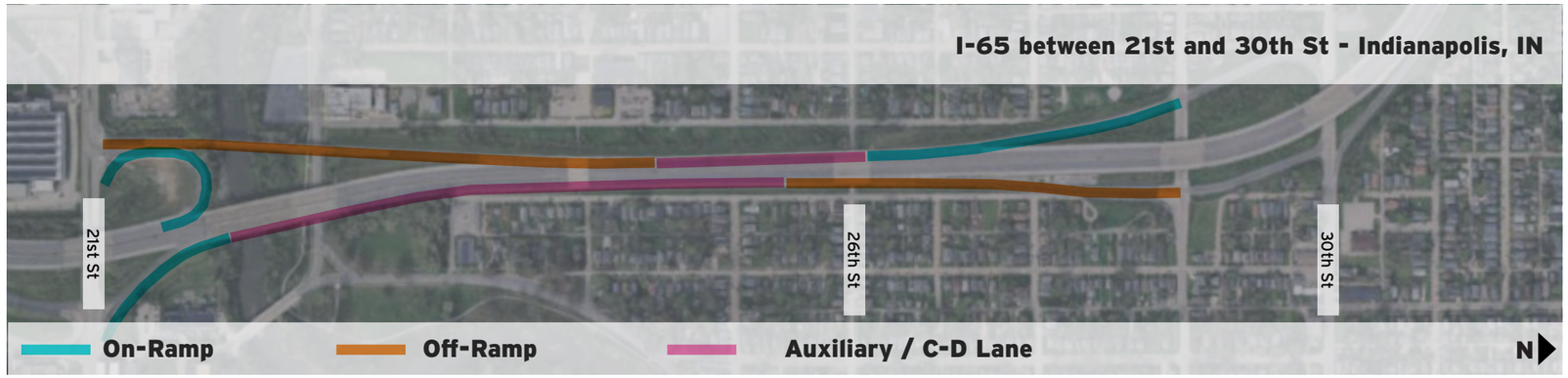
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	?
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	?

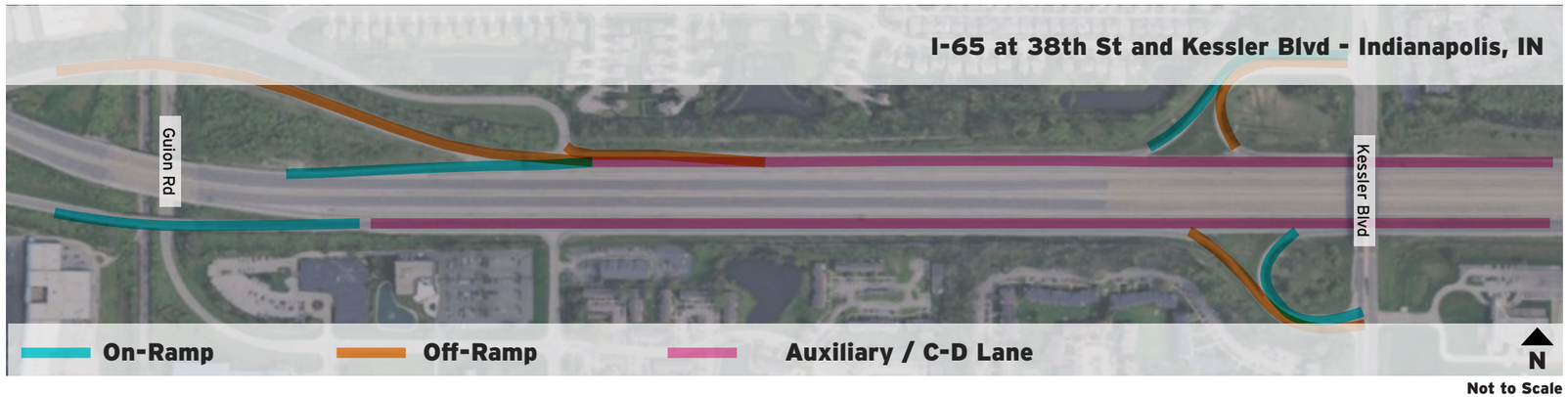
CONCLUSION	FINAL RESULT
The address geometric deficiencies concept will be carried forward into the next level of screening since at least two study area needs are addressed. Impacts of this concept will be site-specific and are unknown at this stage, but no fatal flaws are identified based on information available at this screening level.	✓

CONCEPT SNAPSHOT 4 | Auxiliary / C-D Lanes

EXAMPLES



Not to Scale



Not to Scale

DESCRIPTION

Auxiliary / collector-distributor (C-D) lanes provide additional lanes between interchanges to reduce congestion and/or improve operations in weaving segments. Auxiliary lanes allow for speed changes between freeway entrances and exits. C-D lanes allow entering, exiting, and weaving movements to occur on a separated facility with minimal impacts to the interstate mainline.

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
Auxiliary / C-D lanes address at least two study area needs. No fatal flaws are identified based on information available at this screening level. An auxiliary / C-D lanes concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 5 | Interstate Access Modifications

EXAMPLES

DESCRIPTION

Access to the interstate system is provided exclusively at interchanges. The location and configuration of these interchanges is subject to formal approval by the Federal Highway Administration to ensure that mobility objectives are achieved while maintaining safe and efficient operations on the interstates. Interstate access modifications could include the addition, modification, or removal of interchange ramps or the removal, relocation, or addition of complete interchanges.

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	?
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	?
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
Interstate access modifications provide an opportunity to improve system mobility and safety of existing facilities. This concept will meet at least two study area needs, and no fatal flaws are identified at this stage. This concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 6 | Interchange Improvements

EXAMPLES

DESCRIPTION

Interchange improvements address safety or operational deficiencies, ranging from modifications to ramp terminal intersections to redesigning the entire interchange.

NEEDS AND FATAL FLAW EVALUATION

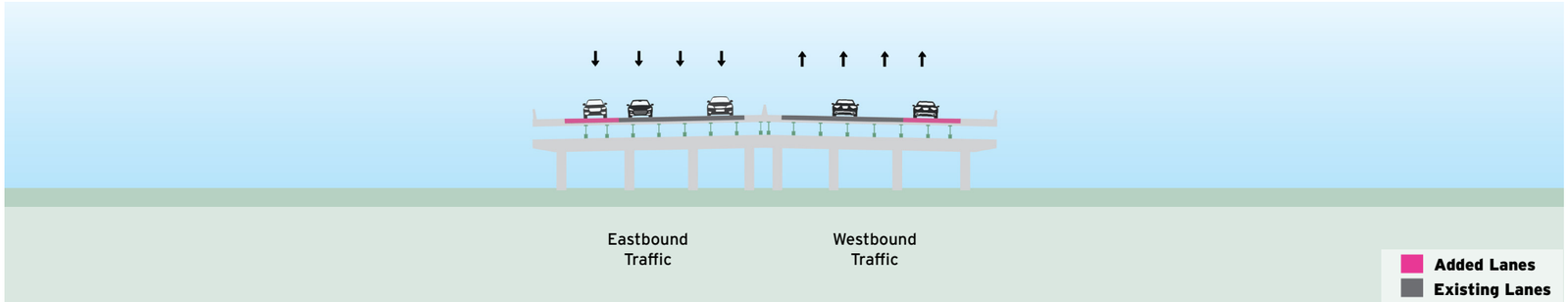
NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	?
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	?
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
Interchange improvements would address at least two study area needs. Impacts of this concept will be site-specific and are undetermined at this stage, but no fatal flaws were identified based on information available at this screening level. This concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 7 | Added Travel Lanes

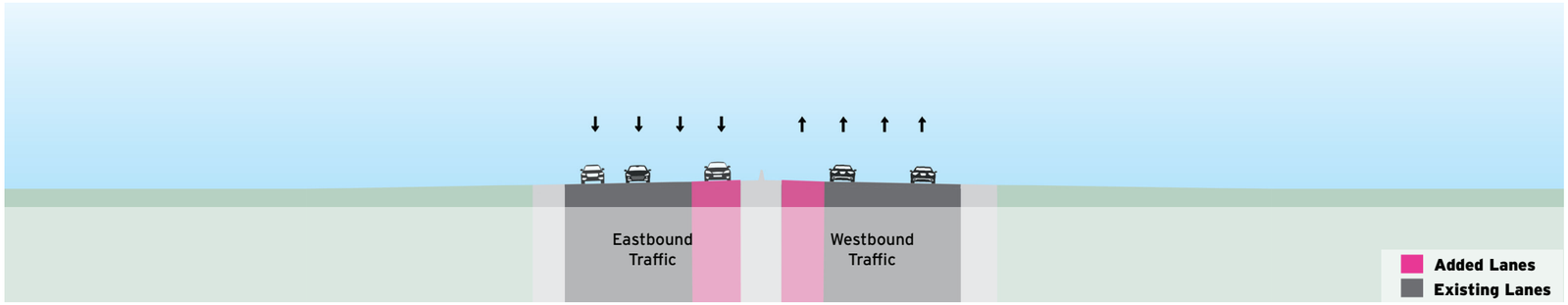
POTENTIAL CONDITION

POTENTIAL ADDED TRAVEL LANES ON ELEVATED STRUCTURE



Not to Scale

POTENTIAL ADDED TRAVEL LANES AT GRADE



Not to Scale

DESCRIPTION

The added travel lanes concept includes constructing one or more continuous through lanes to selected roadway segments to address existing or forecasted congestion. Added travel lanes are typically provided where an increase in capacity is needed to meet growing demand and provide improved mobility. In most cases, the added capacity would also improve safety since congestion is closely related to crashes.

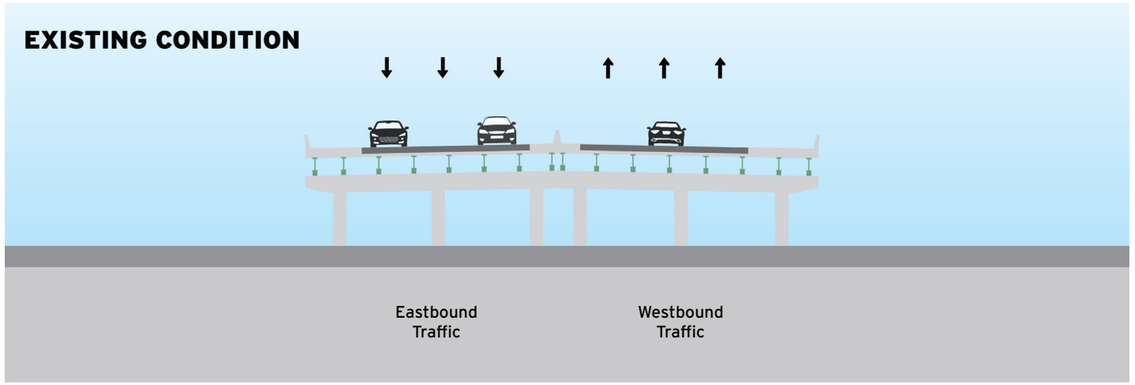
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	?
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
Adding travel lanes would address two study area needs and may address more needs depending on details of the alternative. Impacts of this concept will be site-specific, but no fatal flaws are identified at this screening level. The added travel lanes concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 8 | Viaduct

CURRENT AND POTENTIAL CONDITION



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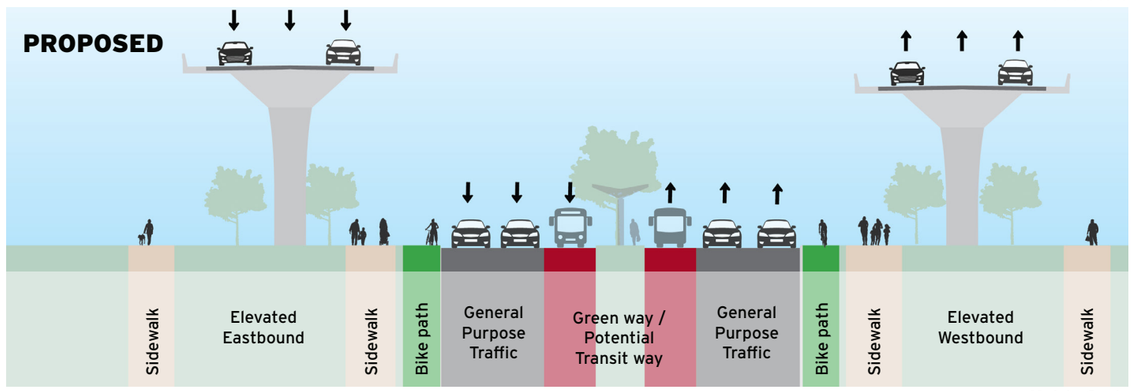
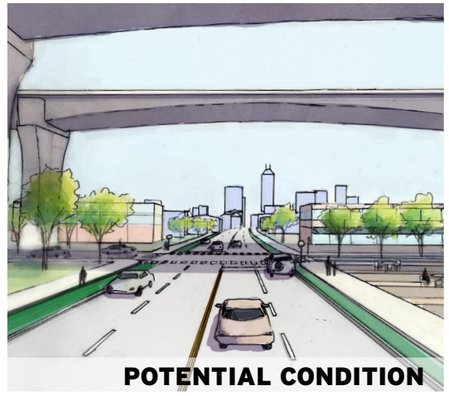


Not to Scale

EXISTING CONDITION



POTENTIAL CONDITION

DESCRIPTION

Viaducts provide travel lanes that are substantially elevated or raised via bridge structures. The primary purpose of a viaduct is to separate freeway traffic from at-grade street networks, allowing clear unobstructed site lines across the corridor, and improving connectivity on either side of the interstate.

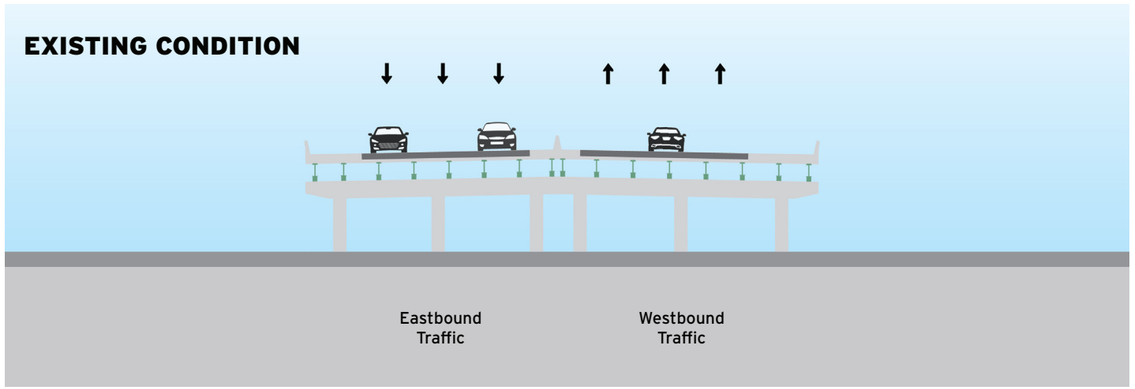
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	✓
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	✓
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
A viaduct concept would provide a substantially elevated roadway that would meet at least two study area needs and provide greater connectivity across the interstate. Fatal flaw screening is inconclusive since cost could be extraordinarily high, but no fatal flaws for this concept are evident at this stage of the study. A viaduct concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 9 | Recessed Roadway

CURRENT AND POTENTIAL CONDITION



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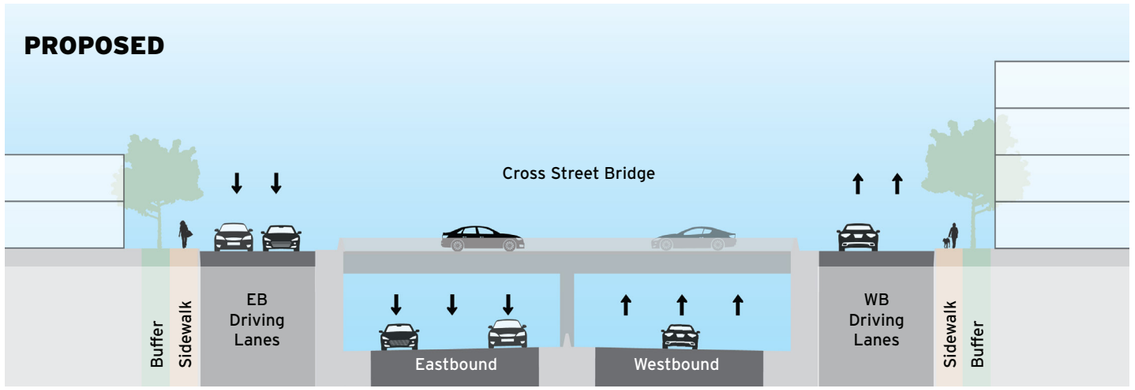

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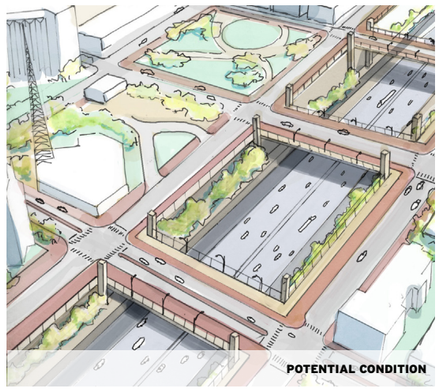
EXISTING CONDITION


POTENTIAL CONDITION

DESCRIPTION

A recessed roadway would provide travel lanes that are lowered or depressed below grade. Recessed roadways separate freeway traffic from at-grade street networks and provide for additional connectivity and unobstructed site lines for communities on either side of the interstate. Recessed roadways could also allow construction of a cap or caps across the interstate in the future, an opportunity not provided by viaducts.

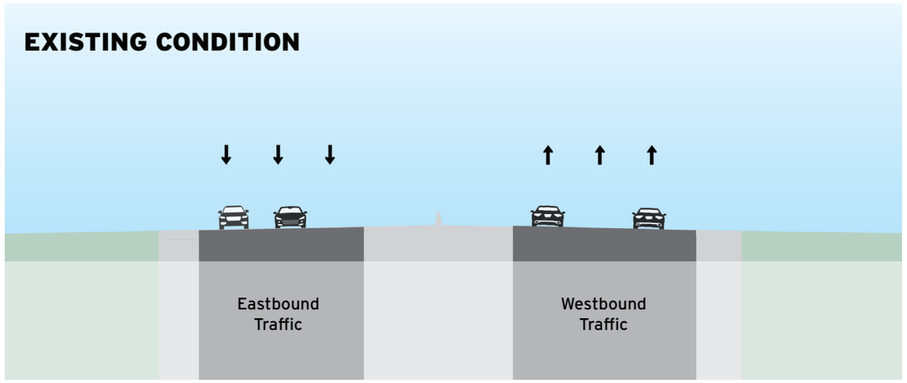
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	✓
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	✓
FATAL FLAW SCREENING	?

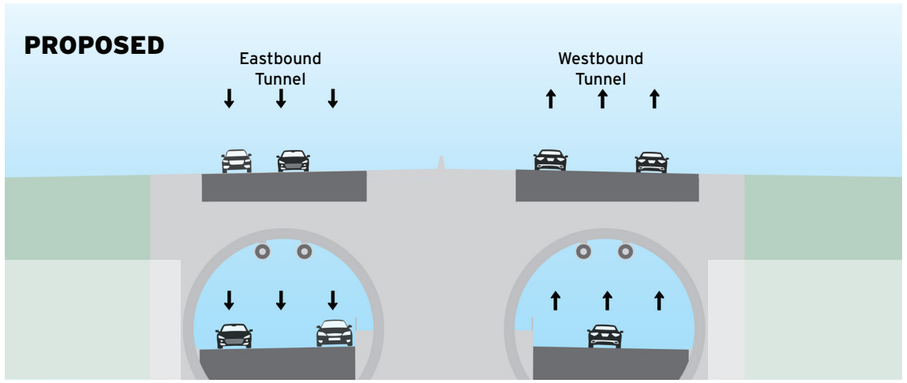
CONCLUSION	FINAL RESULT
A recessed roadway concept meets at least two study area needs and may be a viable option if issues related to local roadway geometrics and connections, local traffic effects, water table elevation, cost, and utilities can be addressed. Impacts of this concept will be site-specific and are unknown at this stage, but no fatal flaws were identified based on information available at this screening level. A recessed roadway concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 10 | Tunnel

CURRENT AND POTENTIAL CONDITION



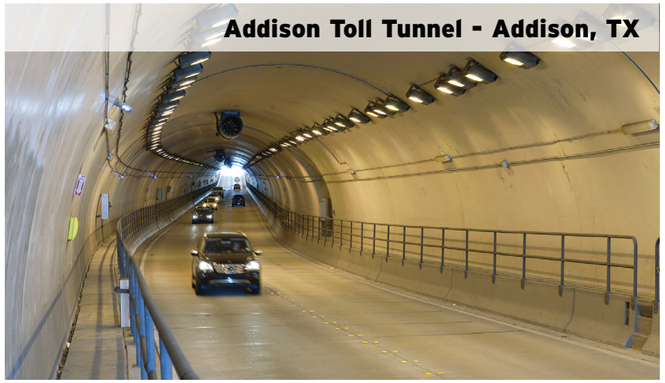
Not to Scale



Not to Scale

EXAMPLES


SR-99 - Seattle, WA


Addison Toll Tunnel - Addison, TX

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	✓
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	✓
FATAL FLAW SCREENING	☒

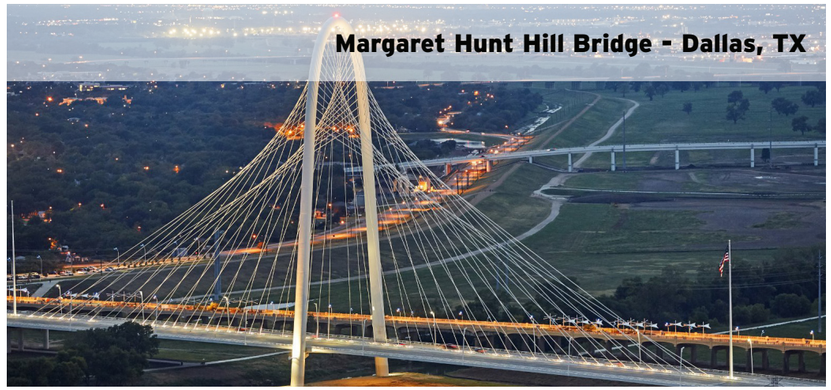
CONCLUSION	FINAL RESULT
A tunnel concept would be expected to address at least two study area needs, but extraordinarily high costs for construction, operation, and maintenance, coupled with site limitations for implementation are fatal flaws for this concept. A tunnel concept will not be carried forward into the next level of screening.	☒

DESCRIPTION

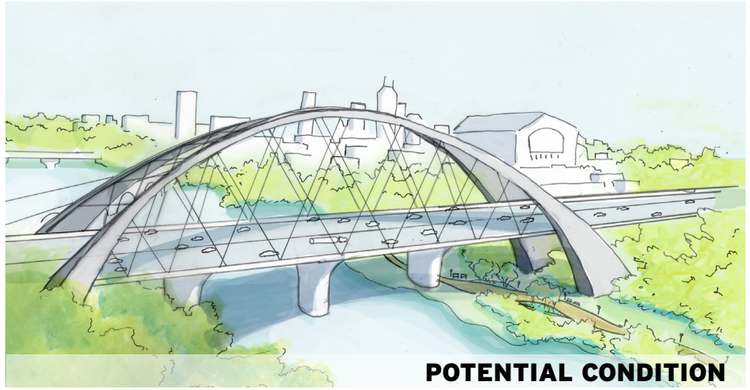
A tunnel concept would relocate all or portions of I-65 and/or I-70 underground. FHWA publications define road tunnels as "enclosed roadways with vehicle access that is restricted to portals…not to include enclosed roadway created by highway bridges." Road tunnels require special considerations including lighting, ventilation, fire protection systems, and emergency egress capacity. Tunnels typically only serve through traffic, with local connections provided separately.

CONCEPT SNAPSHOT 11 | Signature Bridge

EXAMPLES



EXISTING AND POTENTIAL VIEWS



DESCRIPTION

Signature bridges serve as visual landmarks or iconic structures. They commonly reflect or compliment the context, character, or heritage of a community. Signature elements may include bridge type, construction materials, color, lighting, decking, or railing. Consideration for new bridges may include improved hydraulics, longer spans, improved under-bridge experience, and better access to amenities.

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	✓
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	?
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
A signature bridge concept would meet at least one study area need and may be an attractive design solution where a community gateway is desired. Impacts of this concept would be site-specific and are undetermined at this stage, but no fatal flaws are identified based on information available at this screening level. A signature bridge concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 12 | TSMO Improvements

EXAMPLES

Hard Shoulder Running

Ramp Metering

Hard Shoulder Running

Truck Restrictions

DESCRIPTION

Transportation Systems Management and Operations (TSMO) "is a set of strategies that focus on operational improvements that can maintain and even restore the performance of the existing transportation system before extra capacity is needed. The goal here is to get the most performance out of the transportation facilities we already have." A wide range of TSMO strategies are available. Examples of TSMO strategies include:

- Work zone management
- Hard shoulder running
- Truck restrictions (lane or time of day)
- Traffic incident management
- Ramp metering

TSMO is an effective tool for optimizing existing transportation resources, particularly in urban areas where space is at a premium. Many of the processes and tools and for data gathering, agency and traveler information, incident response, and dynamic traffic management are already being performed by INDOT, in coordination with other agencies, at its Traffic Management Center in Indianapolis. TSMO provides a systems perspective, extending beyond one strategy, project, or corridor.

NEEDS AND FATAL FLAW EVALUATION

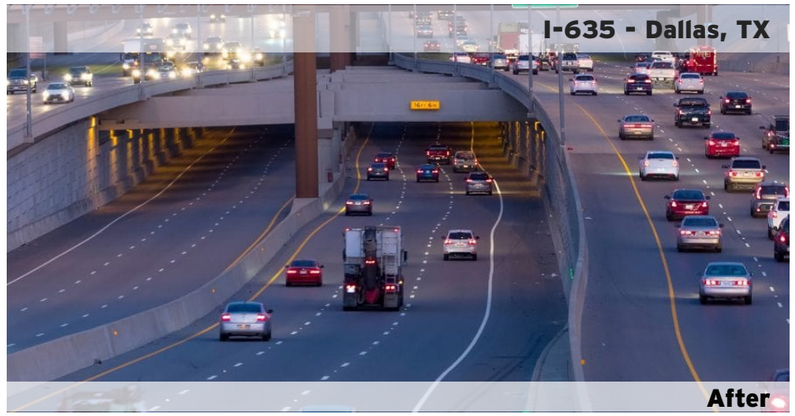
NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
The TSMO concept would address at least two study area needs. Its impacts would be site-specific and vary with each TSMO option, but no fatal flaws were identified based on information available at this screening level. The TMSO concept will be carried forward into the next level of screening.	✓

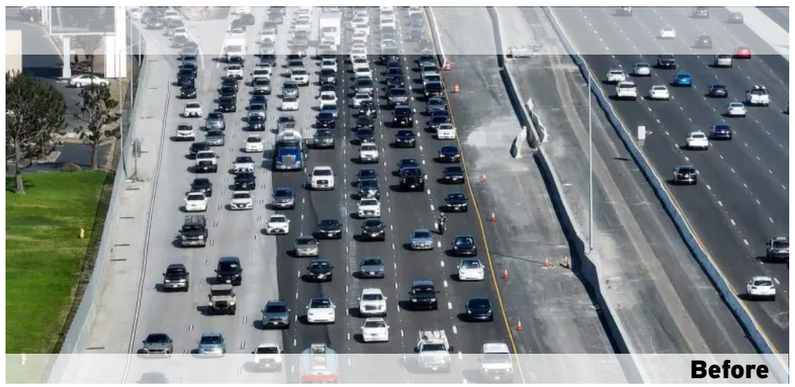
CONCEPT SNAPSHOT 13 | Managed Lanes

EXAMPLES


Before



After


Before

After

DESCRIPTION

Managed lanes are provided for exclusive use by high-occupancy vehicles (HOV), trucks, tolled vehicles, or some combination of these vehicles. Managed lanes may also include options such as reversible lanes to address unbalanced traffic flows. Managed lanes may be created by repurposing existing lanes or adding new lanes. Motorist information regarding use of the lanes is provided by variable message overhead signing, which can be operator controlled or scheduled for time of day.

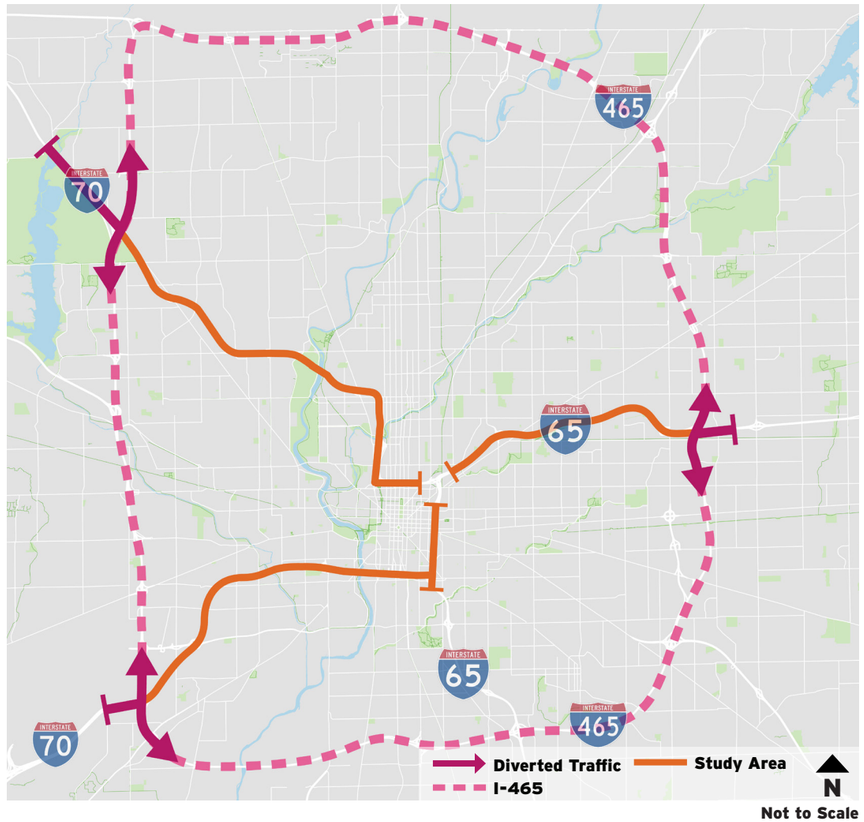
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	?
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	?

CONCLUSION	FINAL RESULT
Managed lanes have the potential to address multiple study area needs. The managed lanes concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 14 | Reroute Through Traffic to I-465

REROUTING TRAFFIC ALONG I-465



Not to Scale

EXISTING LOCATIONS

I-465 & I-70 (East Indianapolis)

I-465 & I-70 (Indianapolis International Airport)

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	☒
IMPROVE ROADWAY MOBILITY	☒
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	✓

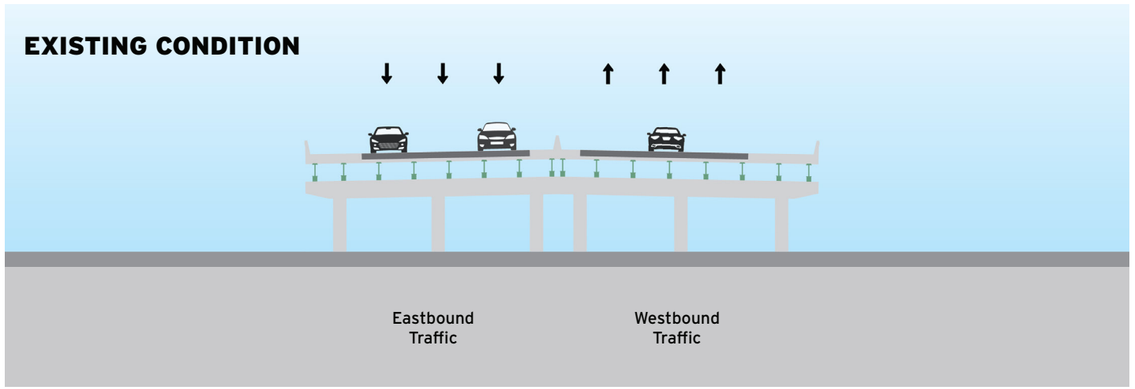
CONCLUSION	FINAL RESULT
Rerouting I-65 or I-70 through traffic to I-465 on an ongoing basis would not meet study needs and will not be advanced into the next level of screening.	☒

DESCRIPTION

In this concept, signage and motorist information systems to would be used to reroute through traffic from I-65 and/or I-70 to I-465. The intent would be to divert passenger and freight traffic away from central core of the city. The concept could be applied all or part of the time on a daily basis.

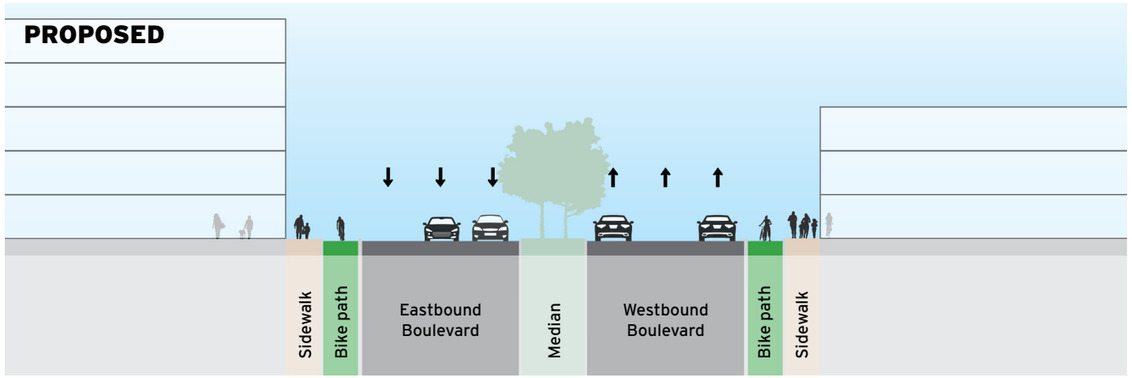
CONCEPT SNAPSHOT 15 | Remove Segment(s) of Interstate

CURRENT AND POTENTIAL CONDITION



Not to Scale


EXISTING CONDITION



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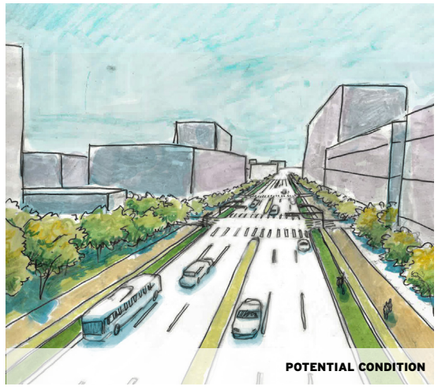

POTENTIAL CONDITION

DESCRIPTION

The remove segment(s) of interstate concept assumes all or part of I-65 and I-70 are removed from the interstate system and replaced with a local road, potentially designed as a boulevard with traffic calming features and amenities to serve bikes, pedestrians, and transit.

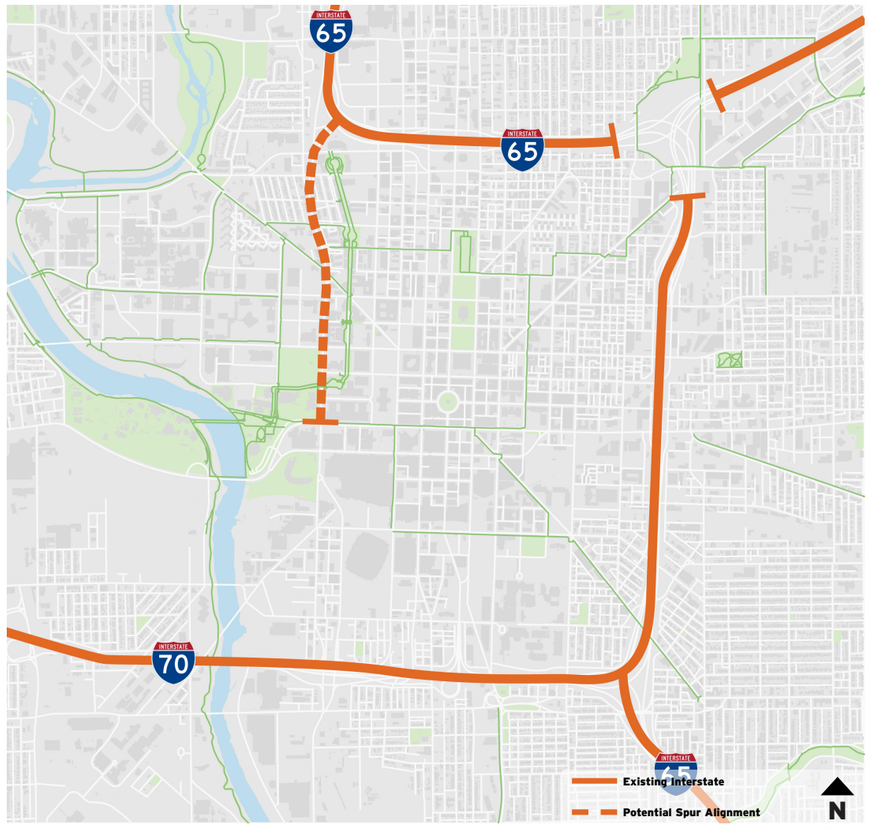
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	✓
IMPROVE ROADWAY SAFETY	☒
IMPROVE ROADWAY MOBILITY	☒
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	☒

CONCLUSION	FINAL RESULT
Due to conditions specific to Indianapolis, the negative effects of removing downtown interstates would far outweigh potential benefits. Removing segment(s) of the interstate would result in high levels of congestion and create unacceptable safety and operational impacts on the local road network. Removing segment(s) of interstate did not pass the fatal flaw analysis and will not be carried forward as a concept in this study.	☒

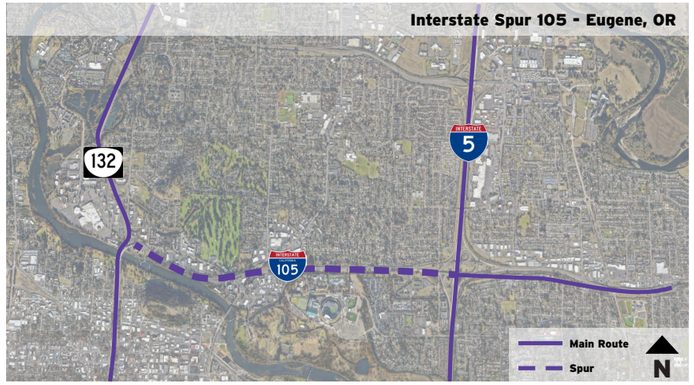
CONCEPT SNAPSHOT 16 | Add Interstate Spur

POTENTIAL INTERSTATE SPUR



Not to Scale

EXAMPLES



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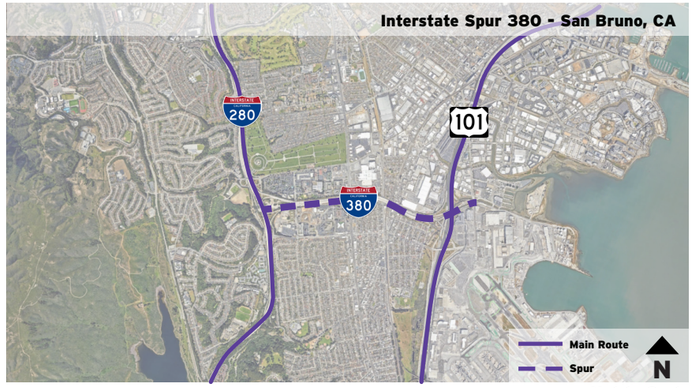


Not to Scale

DESCRIPTION

An interstate spur is a short freeway segment branching off an interstate highway. Unlike a bypass route, it makes only one connection to an interstate and connects to a local route or terminates at the other end. As an example, upgrading a portion of West Street to interstate standards between I-65 and Washington Street would create an I-65 spur.

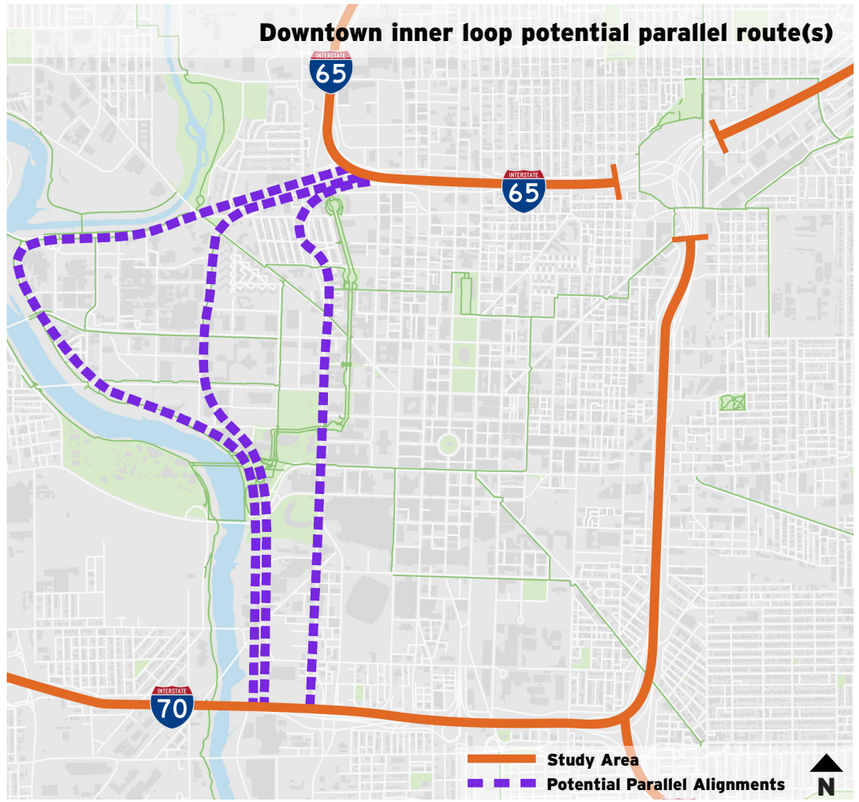
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	☒

CONCLUSION	FINAL RESULT
This concept does not satisfy any of the identified needs and it did not pass fatal flaw screening. Changed conditions such as a large new high-traffic generating development may warrant reconsideration of the concept in the future, but it will not be carried forward to the next screening step of this study.	☒

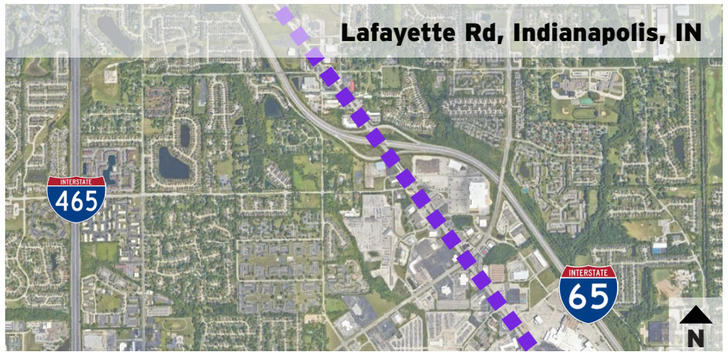
CONCEPT SNAPSHOT 17 | Parallel Route

POTENTIAL PARALLEL ROUTE(S)



Not to Scale

POTENTIAL IMPROVEMENT LOCATIONS



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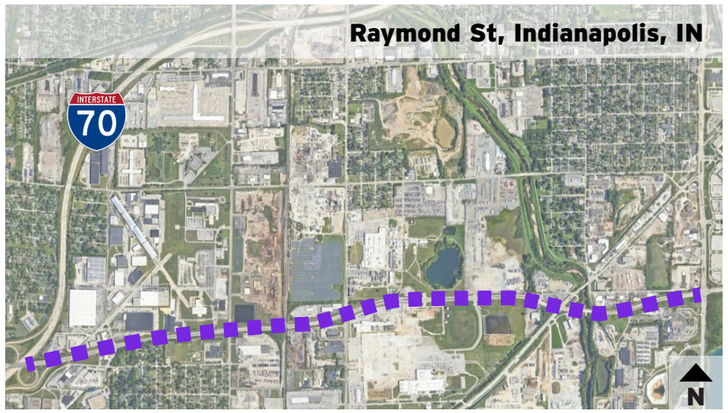


Not to Scale

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	☒

CONCLUSION	FINAL RESULT
Parallel routes may provide operational benefits in some areas. Both the benefits of this concept and its impacts would be site-specific and are unknown at this stage. Due to the overall magnitude of the concept, the cost and impacts are deemed to be a fatal flaw, and the concept will not be carried forward into the next level of screening. Changed conditions such as a large new high-traffic generating development may warrant reconsideration of the concept in the future.	☒

DESCRIPTION

The parallel route concept includes the creation of a new parallel interstate route or enhancements to existing route(s) parallel or connecting to I-65 or I-70. The concept is intended to attract trips away from the study corridor(s). Since the parallel route would be outside the I-65 and I-70 corridors and would likely have far-reaching effects on the larger road network, this concept would be defined and reviewed in consultation with the Indianapolis MPO and the City of Indianapolis.

CONCEPT SNAPSHOT 18 | Local Mobility / Connectivity Improvements

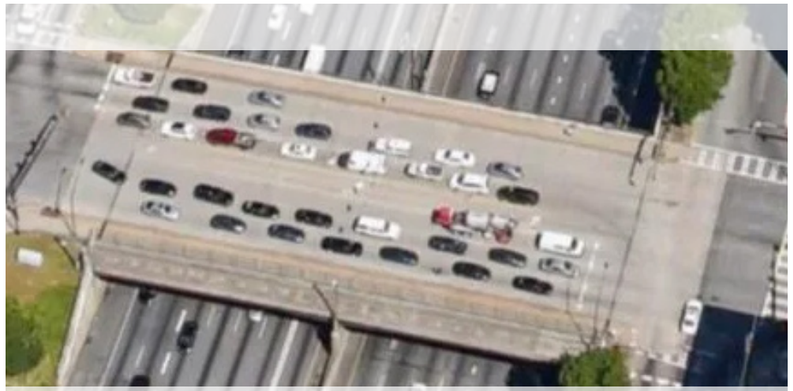
EXAMPLES


Before


After - Daytime


North Split Underpass - Indianapolis, IN

After - Nighttime


Before


Fifth St Bridge, Atlanta, GA

After

DESCRIPTION

Local mobility / connectivity improvements provide or improve the ability for vehicles, bicyclists, and pedestrians to cross the interstate mainline and/or interstate interchange ramps. Local mobility / connectivity improvements could include a new bridge over the interstate, new complete street road connection, new sidewalk or trail at an underpass or overpass, improvements at existing connections, or other site-specific improvements.

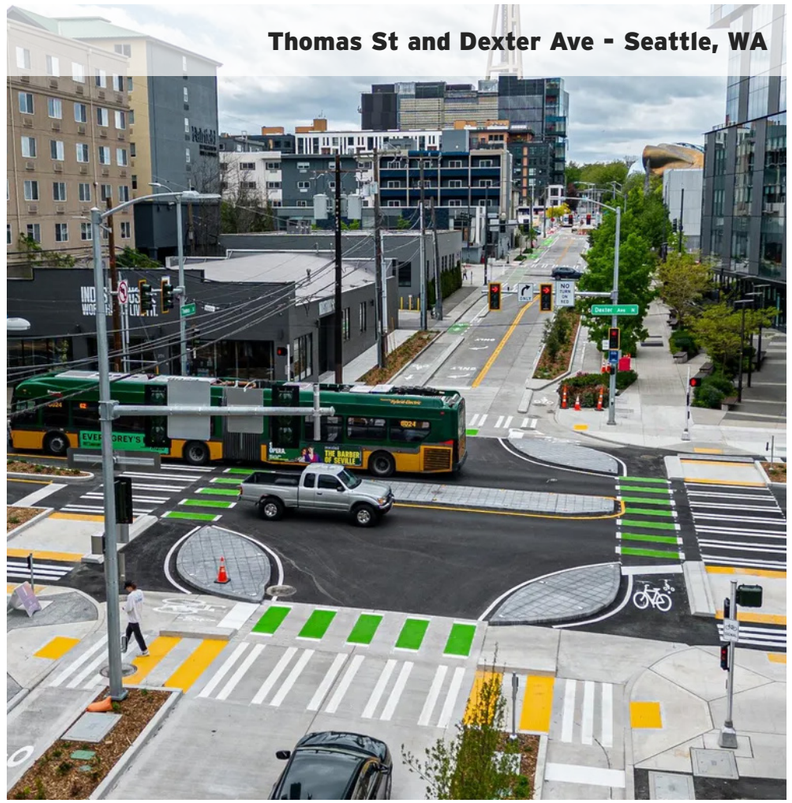
NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	?
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	☒
IMPROVE MULTIMODAL CONNECTIVITY	✓
FATAL FLAW SCREENING	✓

CONCLUSION	FINAL RESULT
Local mobility / connectivity improvements may benefit areas with insufficient and limited multimodal connections. No fatal flaws were identified based on information available at this screening level. This concept will be carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 19 | Local Road Intersection Improvements

EXAMPLES



DESCRIPTION

This concept enhances the local road intersections adjacent to interchanges. These improvements may be necessary to address congestion that influences interchange operations. Potential improvements range from traffic signal adjustments to traffic calming measures at locations where interstate traffic movements interface with neighborhoods and local streets.

NEEDS AND FATAL FLAW EVALUATION

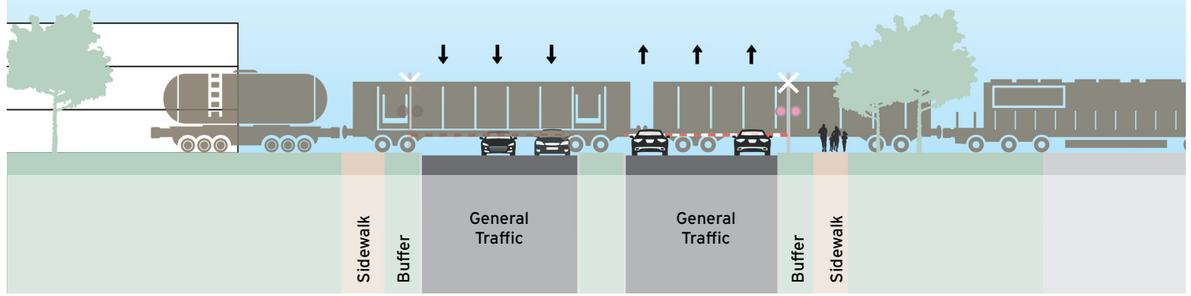
NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	✓
IMPROVE ROADWAY MOBILITY	✓
IMPROVE MULTIMODAL CONNECTIVITY	✓
FATAL FLAW SCREENING	✓

CONCLUSION	FINAL RESULT
Local road intersection improvements are expected to address study area needs at selected locations. No fatal flaws are identified based on information available at this screening level. This concept is carried forward into the next level of screening.	✓

CONCEPT SNAPSHOT 20 | Railroad Crossing Improvements

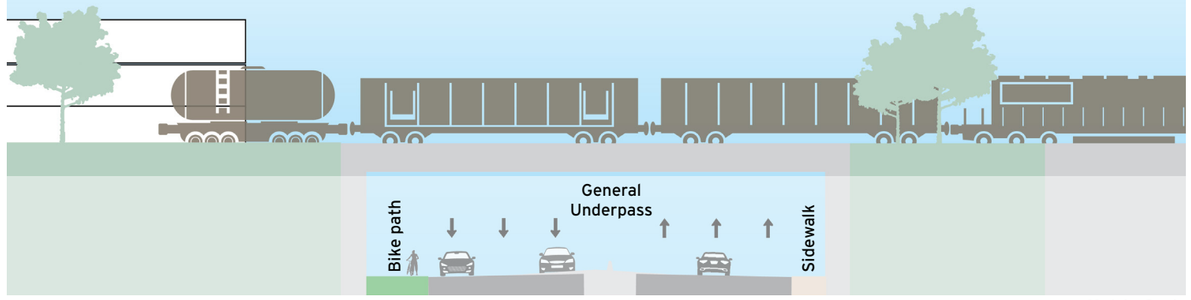
CURRENT AND POTENTIAL CONDITION

EXISTING CONDITION



Not to Scale

POTENTIAL



Not to Scale

EXAMPLES

State Road 60 - Vero Beach, FL

Vine St - Lima, OH

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	☒
IMPROVE ROADWAY MOBILITY	☒
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	✓

CONCLUSION	FINAL RESULT
Railroad crossing improvements could benefit local roadways but would not meet the needs on the interstates in this study. Railroad crossing improvements will not be carried forward into the next level of screening.	☒

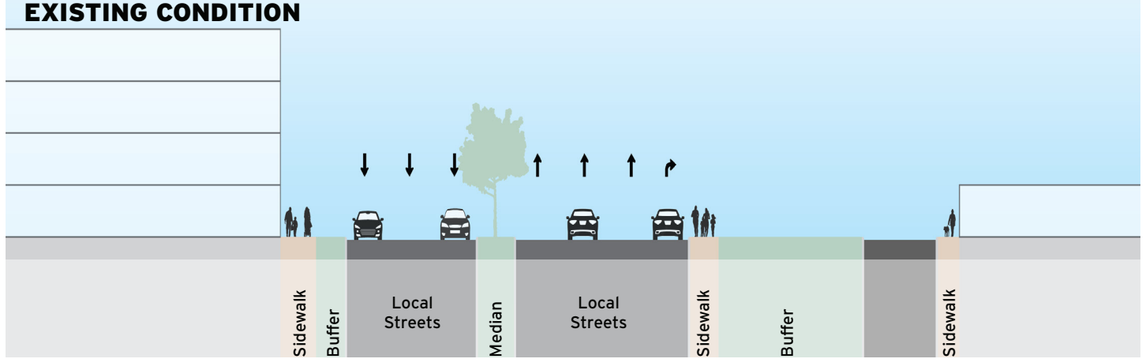
DESCRIPTION

Railroads exist close to I-65 and I-70 at various locations in Indianapolis. A CSX main line parallels I-70 along Massachusetts Avenue east of downtown, passes under I-65 and I-70 downtown, and parallels I-70 west of downtown toward CSX yard and stops in Avon. The Louisville and Indiana Railroad, Indiana Rail Road, and Indiana Belt Railroad have facilities crossing or located near I-70 on the south leg of the Inner Loop.

CONCEPT SNAPSHOT 21 | Bus Transit

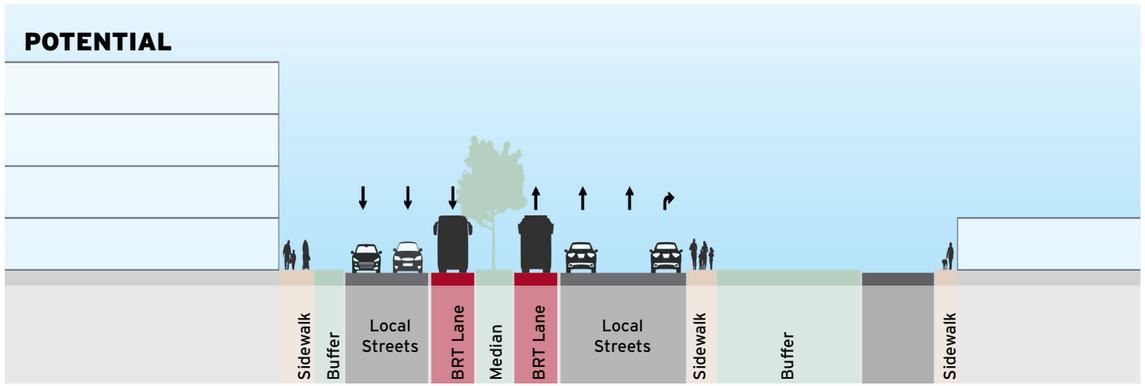
CURRENT AND POTENTIAL CONDITION

EXISTING CONDITION



Not to Scale

POTENTIAL



Not to Scale

EXAMPLES

IndyGo Bus Line - Indianapolis, IN

IndyGo Red Line BRT - Indianapolis, IN

DESCRIPTION

Bus transit can improve mobility by reducing personal vehicle trips and by providing an option for people who are unable or choose not to drive. Bus transit can target local trips within a community or commuter trips between communities. Fixed route bus service in Central Indiana is provided by IndyGo. In 2024, IndyGo's daily ridership was about 22,500. The most heavily travelled IndyGo route is currently the Red Line, which serves about 6,000 riders per day. This compares to traffic volumes ranging from 102,000 to 160,000 per day on I-65 and I-70.

Bus transit planning and operations are outside the responsibility of INDOT. Regional transit planning is conducted by the Indianapolis MPO in coordination with IndyGo and the Central Indiana Regional Transportation Authority (CIRTA).

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	✓
FATAL FLAW SCREENING	☒

CONCLUSION	FINAL RESULT
Improved bus transit would not address general study area needs regarding bridge and pavement condition, traffic safety, and operations. INDOT would coordinate with the local transit service provider IndyGo and other relevant stakeholders to advance transit in the region, but local bus transit will not be carried forward to meet the purpose and need of I-65 and I-70 in the study area.	☒

CONCEPT SNAPSHOT 22 | Passenger Rail

EXAMPLES

DESCRIPTION

Passenger rail service can take many forms. Intercity rail serves long distance trips, typically on freight lines in the United States. Commuter rail serves regional trips (i.e. suburb to downtown), with service often limited to peak hours. Light rail transit provides frequent, all-day service within urbanized areas and can operate in dedicated right-of-way or on-street. Street cars serve shorter trips, with slower speeds and frequent stops, and virtually always operate on-street.

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	✓
FATAL FLAW SCREENING	☒

CONCLUSION	FINAL RESULT
Passenger rail did not pass fatal flaw screening, and the concept will not be carried forward. Rail transit options have been studied extensively by local planning agencies and rejected in favor of bus rapid transit investments. Intercity passenger rail may be possible in the future, but it would likely have little effect on local traffic volumes on I-65 and I-70.	☒

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CONCEPT SNAPSHOT 23 | On-Demand Transportation Service

EXAMPLES

DART GoLink - Dallas, TX

Via On-Demand - Arlington, TX

CIRTA Commuter Connect - Indianapolis, IN

ETS On-Demand Transit - Edmonton, AB

DESCRIPTION

Unlike traditional fixed-route transit systems, which operate on predetermined routes and timetables, on-demand transportation services provide more flexibility and convenience to passengers by allowing them to request or schedule rides on an as-needed basis. On-demand transportation service can be accommodated through a combination of shuttle bus (such as IndyGo Access), taxi service, and ride share companies, such as Uber and Lyft. This concept would expand these services.

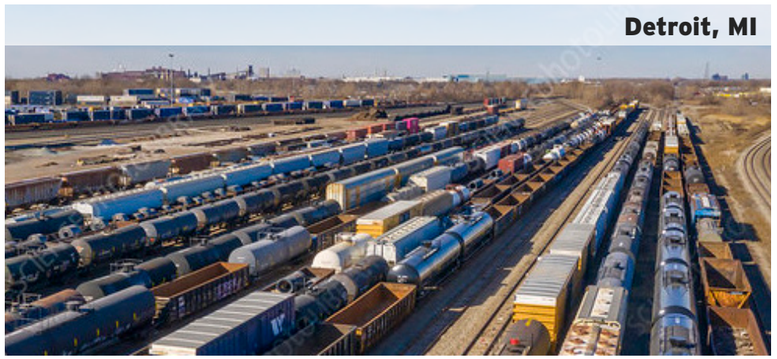
NEEDS AND FATAL FLAW EVALUATION

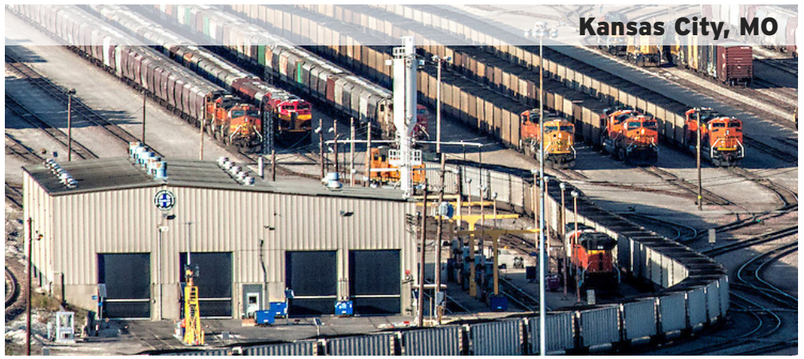
NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	☒
IMPROVE ROADWAY MOBILITY	☒
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	☒

CONCLUSION	FINAL RESULT
Improved on-demand transportation service does not address any of the study area needs, is outside INDOT control, and will not be carried forward.	☒

CONCEPT SNAPSHOT 24 | Increased Freight Rail Service

EXAMPLES





DESCRIPTION

Under this concept freight currently being moved by trucks on highways would be shifted to trains, thereby reducing truck traffic on the interstate system and providing associated benefits with respect to safety, mobility, and overall operations of Indiana roadways. INDOT's 2023 Indiana Multimodal Freight and Mobility Plan reviews the role of various modes including railroads and motor vehicles. The plan makes provision for how the modes interface, including mode transfer facilities, but there is no provision for shifting freight from one mode to another to manage demand levels.

Freight rail is one component of an intermodal system used to move goods and commodities throughout Indiana. Rail service typically involves the movement of bulk commodities and heavy cargo over long-haul distances, with service provided by private operators on tracks owned by the railroads. Trucks interface with railroads and ports, carry smaller loads, and make local deliveries using public roadways. Changing this system would require industry buy-in and could have far-reaching effects.

NEEDS AND FATAL FLAW EVALUATION

NEEDS	RATING
IMPROVE BRIDGE AND PAVEMENT CONDITION	☒
IMPROVE ROADWAY SAFETY	?
IMPROVE ROADWAY MOBILITY	?
IMPROVE MULTIMODAL CONNECTIVITY	☒
FATAL FLAW SCREENING	☒

CONCLUSION	FINAL RESULT
Increased freight rail service would not address study area needs. Even if the concept had merit, the railroad operators and shippers are not under the control of INDOT. This concept will not be carried forward for further evaluation in this study.	☒