

I-465 Northwest Project


Public Information Meeting #2

October 24, 2022



Recorded Session

Project Team Introductions



Jonathan Wallace, PMP
INDOT Project Manager



Mark Perron, P.E.
Consultant Project Manager



Adin McCann, P.E.
Environmental Lead

Rich Connolly
Environmental



Alex Lee, AICP
Public Involvement Lead



Public Information Meeting #2

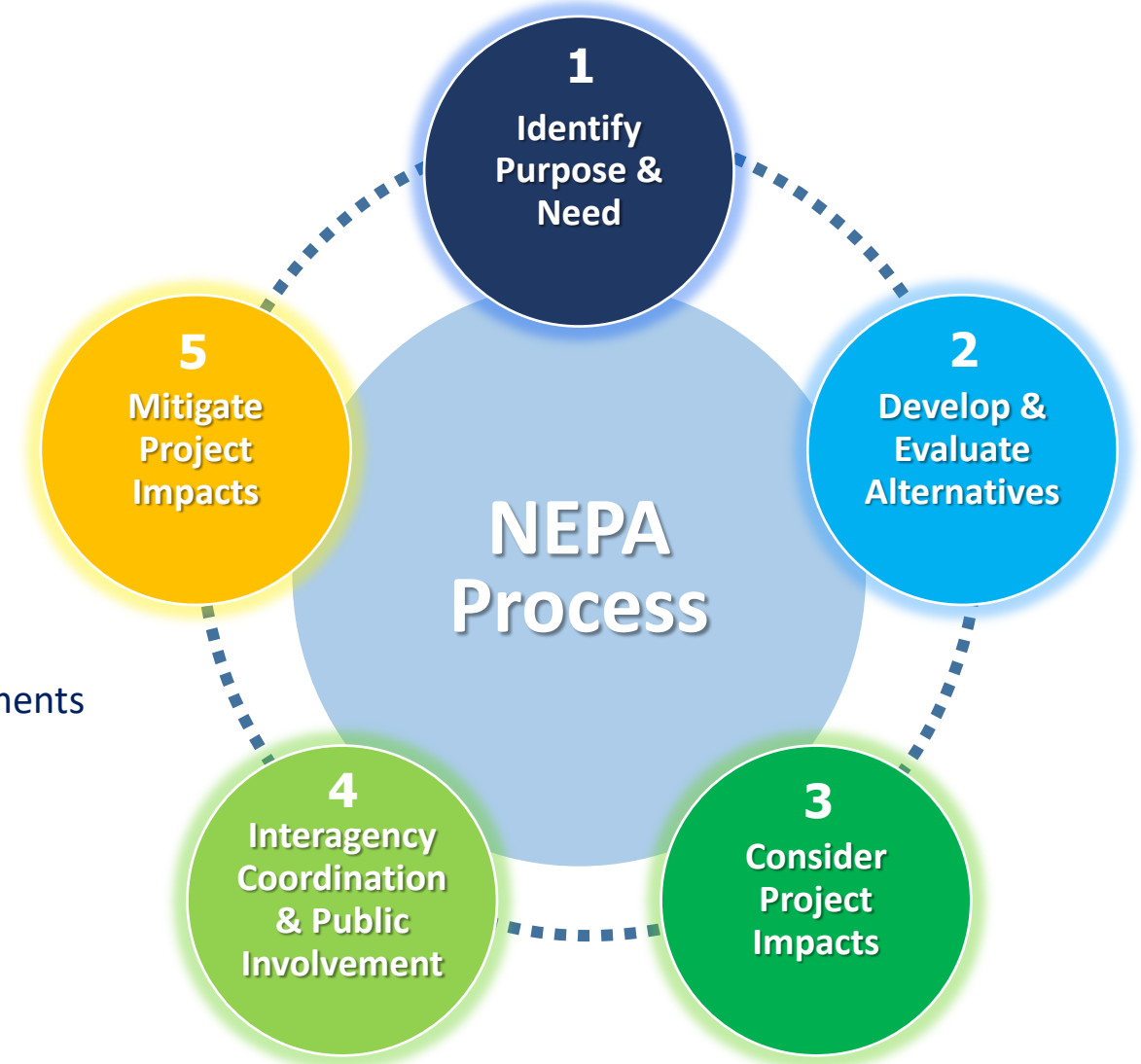
- Welcome & Introductions
- Environmental Study Process
- Regional Projects
- Project Overview
- Project Need & Objectives
- Questions & Discussions



Please note: the data and maps shown are preliminary and in draft form

National Environmental Policy Act (NEPA)

- Define Purpose & Need
 - Why is a project needed?
- Develop and Evaluate Alternatives
 - Reasonable solutions based on purpose and need
- Consider Project Impacts
 - Environmental, Social, & Economic Effects
- Interagency Coordination & Public Involvement
 - Federal, state, and local partners, as well as Tribal governments
 - Opportunities to meaningfully participate and comment
- Mitigate Unavoidable Impacts
 - Primary focus is on avoidance and minimization

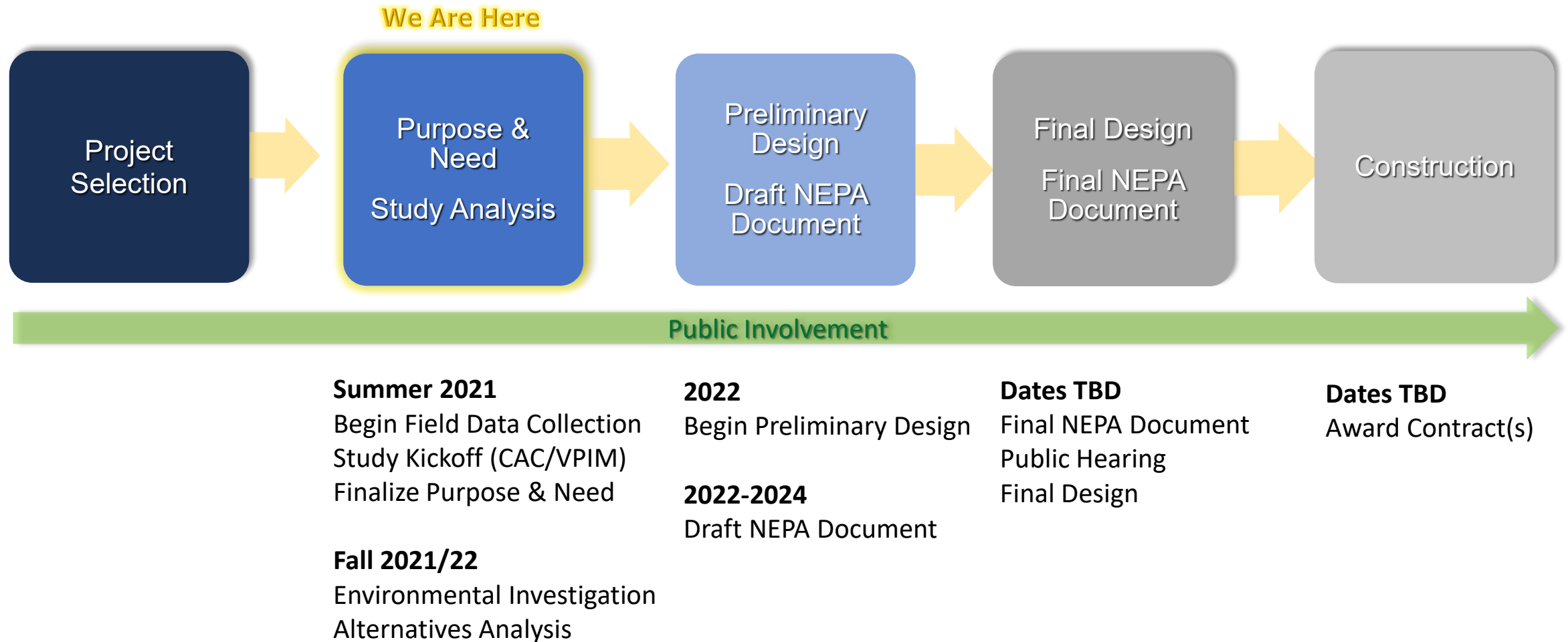


Resources Evaluated during NEPA Process:

- Streams, Wetlands & Other Waters
- Floodplains
- Endangered & Threatened Species
- Cultural Resources
- Parks, Trails & Recreational Lands
- Air Quality
- Right-of-Way/Relocations
- Hazardous Materials
- Noise
- Permits
- Community Impacts
- Environmental Justice (EJ)
- Public Involvement
- Mitigation

Project Development Process

Environmental Document – Classification currently undetermined

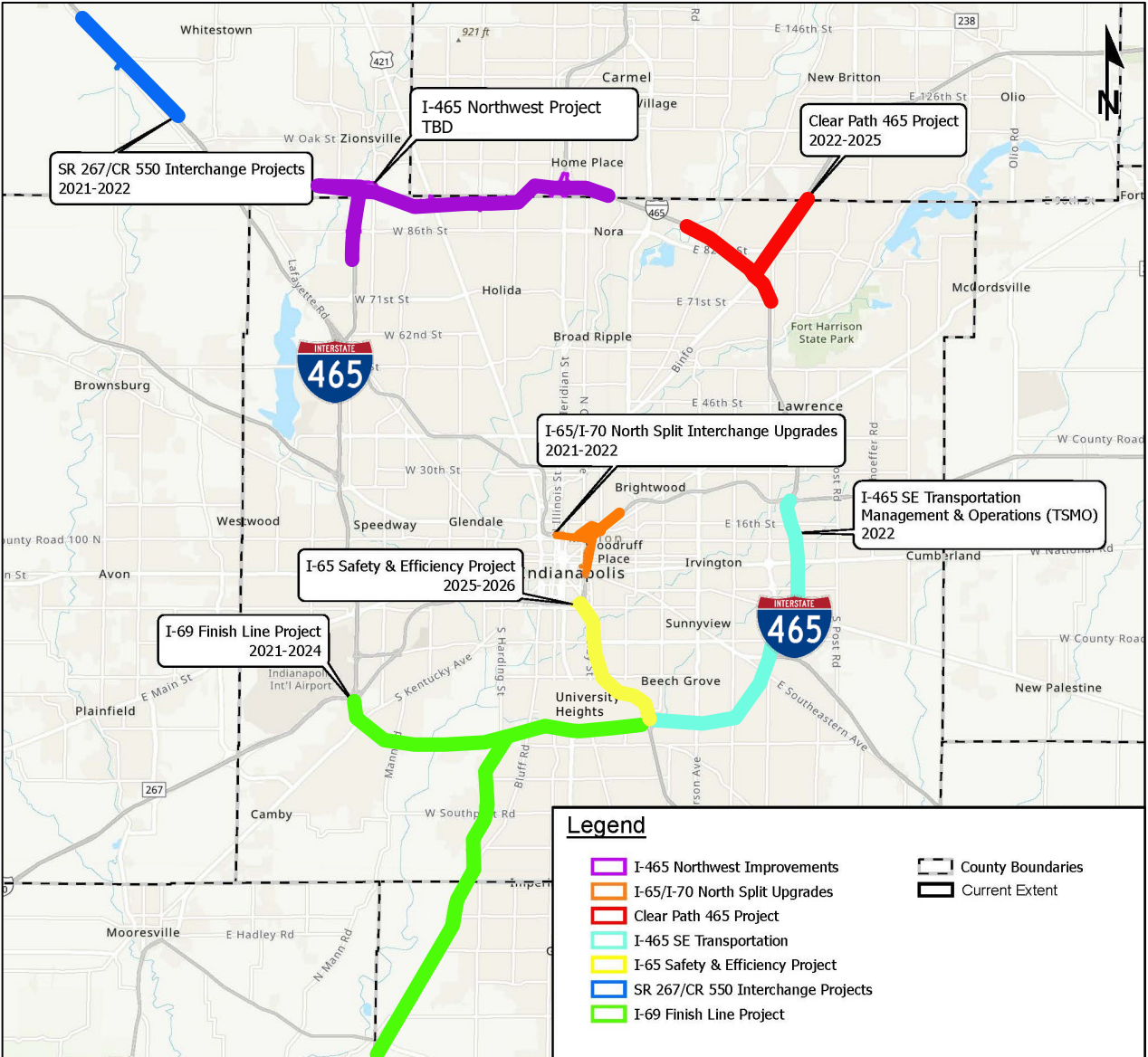


Regional Projects Overview



I-465 Northwest Project is one of 7 critical infrastructure projects planned for central Indiana

-  **SR 267/CR 550 Interchange (2021-2022)**
-  **I-465 Northwest Project (TBD)**
-  **Clear Path I-465 Project (2022-2025)**
-  **North Split Interchange Reconstruction (2021-2022)**
-  **I-465 SE Transportation Management & Operations (TSMO) (2022)**
-  **I-65 Safety & Efficiency Project (2025-2026)**
-  **I-69 Finish Line Project (2021-2024)**



Study Area



Project Location: I-465: W. 86th St. to 2,000 ft east of College Ave; US 31: I-465 to 116th St.

Study Area covers 3 Counties (Boone, Hamilton, Marion) and 3 Cities (Carmel, Indianapolis, Zionsville)

8.0 miles along I-465

0.5 mile along I-865

2.0 miles along US 31

3 Interchanges on I-465

- I-865
- US 421
- US 31

Reconstruct 3 Local Roads

- Ford Road
- Township Line Road
- Spring Mill Road



Project Purpose & Need

Purpose is to address 4 primary needs:

1. Traffic Operations & Congestion
2. Recurring Safety Concerns
3. Deteriorated Bridges
4. Undesirable Geometry



Project Need – Traffic Operations & Congestion

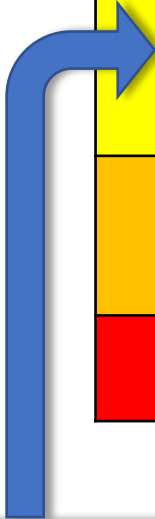
- **Level of Service (LOS)**

- Uses “grades” on a letter scale - A (best) to F (worst)
- Relates to traffic operations **not** the physical condition of the roadway

- **Current & Future LOS Conditions**

- **Current:** Numerous locations operate at LOS D or worse in **one or both** peak periods
- **Future:** By 2045, it is anticipated that most of the corridor will operate at LOS F (worst) during **both** peak periods

Level of Service (LOS)	Description of Operations
A	Traffic is free-flowing with almost complete freedom to maneuver.
B	Traffic is reasonably free-flowing with slightly reduced freedom to maneuver.
C	Traffic is stable, but freedom to maneuver is noticeably restricted.
D	Traffic flow is stable but freedom to maneuver is more noticeably restricted. Small incidents result in reduced speeds and backups (queuing).
E	Traffic is unstable with reduced speeds and no gaps between vehicles. Small incidents cause major queuing.
F	Traffic flow has broken down. Traffic volumes are high with long queues and stop-and-go conditions.



Minimum target for the I-465 Northwest Project is LOS D (Desired target is LOS C)

Project Need – Traffic Operations & Congestion



I-465 Mainline Level of Service Summary – Current vs Future Traffic Volumes

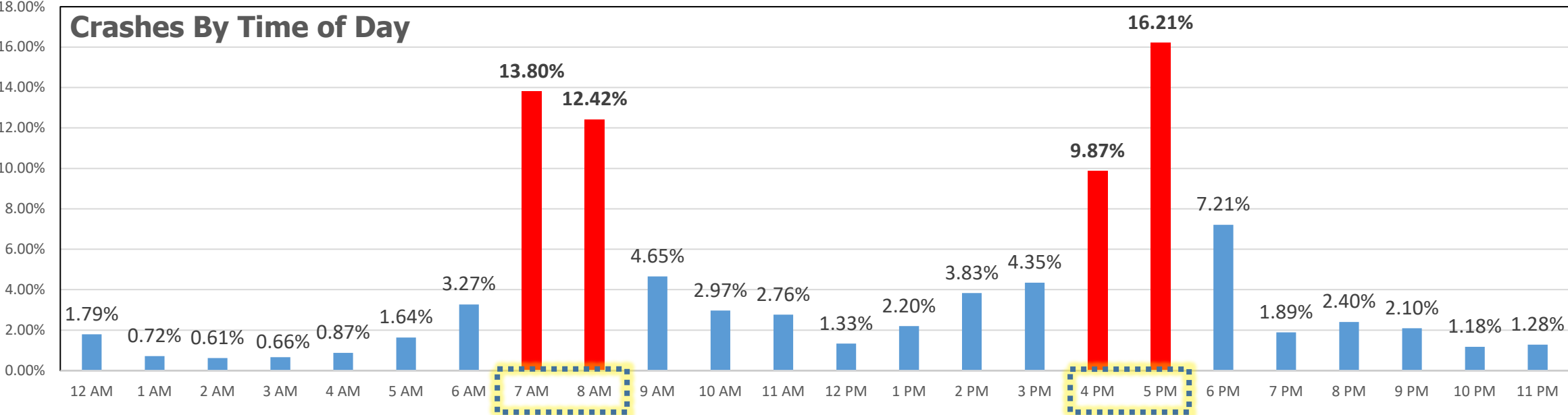
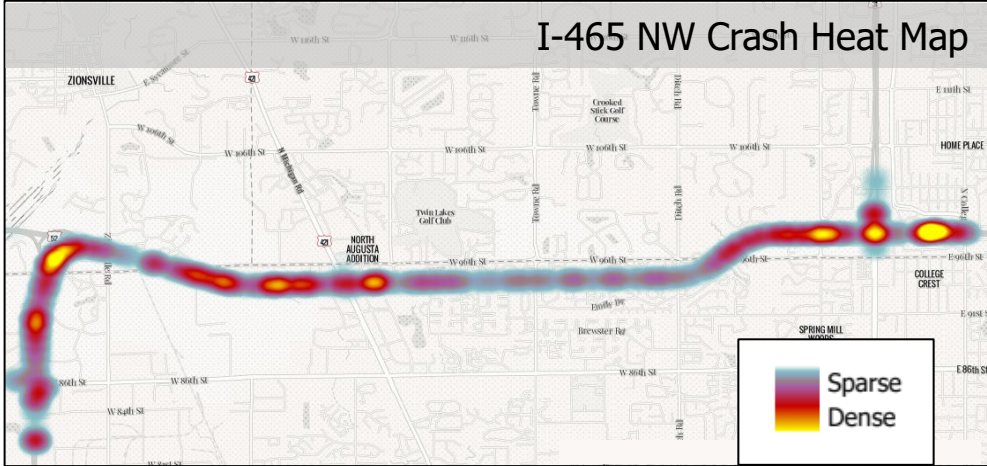
Northbound to Eastbound I-465 Mainline Movements		Level of Service (LOS)			
		Base Year (2020)		Design Year (2045)	
Location	# of Existing Lanes	A M	P M	A M	P M
Between 86 th St & I-865 (weave)	3	C	D	E	E
Inside I-865 Interchange	2	E	E	F	F
Between I-865 & US 421	3	D	D	F	F
Exit to US 421	1	D	D	F	F
Inside US 421 Interchange	3	C	C	F	E
Entrance from US 421	3	D	D	F	F
Between US 421 & US 31	3	D	D	F	F
Inside US 31 Interchange	3	C	C	D	D

Westbound to Southbound I-465 Mainline Movements		Level of Service (LOS)			
		Base Year (2020)		Design Year (2045)	
Location	# of Existing Lanes	A M	P M	A M	P M
Inside US 31 Interchange	3	C	C	D	D
Entrance from US 31	1	D	D	F	F
US 31 to US 421	3	D	D	F	F
Exit to US 421	1	E	D	F	F
Inside US 421 Interchange	3	C	C	D	E
Between US 421 & I-865	3	E	F	F	F
Inside I-865 Interchange	2	E	E	F	F
Between I-865 & 86 th Street	3	C	C	D	D

Project Need – Recurring Safety Issues

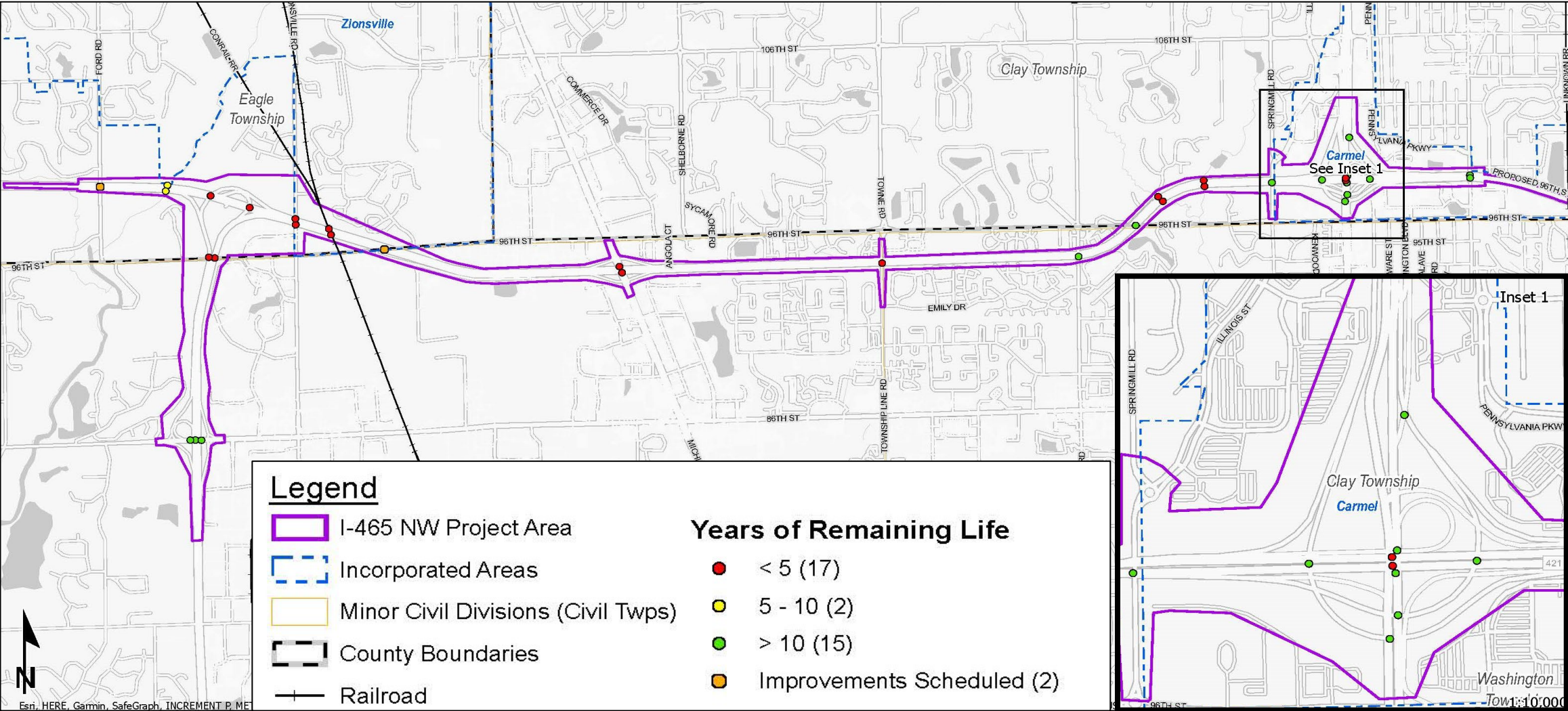


- **I-465 from W. 86th Street to College Avenue**
 - 2017–2019: 1,900+ reported crashes (~2/day)
 - 1,249 rear-end crashes (approx. 64%)
 - 309 side-swipe crashes (approx. 16%)



Project Need – Deteriorating Bridges

Bridges: 17 of 36 have less than 5 years of service life remaining - (47%)



Project Need – Undesirable Geometric Design

- **NB I-465 to WB I-865 Ramp**

- Left-hand exit from NB I-465



NB I-465 to WB I-865 Ramp

- **WB I-465 to WB I-865 Ramp**

- WB to SB I-465 mainline exits on the right
- EB I-865 enters EB I-465 on the left side



WB I-465 to WB I-865 Ramp

Alternative Analysis

1. Initially screen concepts to determine feasibility and how well they meet the Purpose & Need. Feasible concepts will be further developed into alternatives.
2. Evaluate (qualitative, quantitative) and compare each alternative to identify a preliminary recommendation for the most suitable alternative.

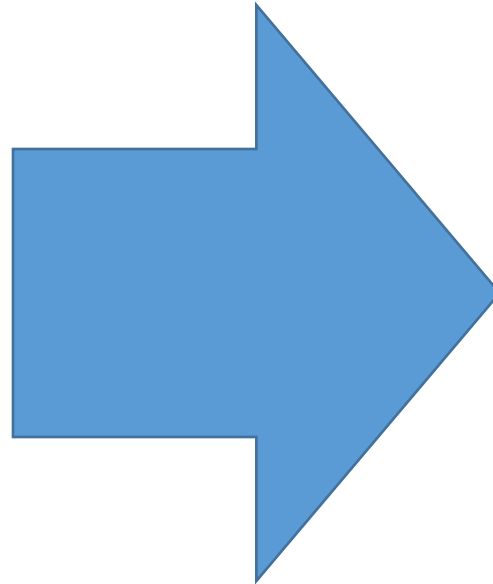
No-Build vs Build Alternatives:

- No-Build (do nothing) Alternative = Maintenance & preservation only, No proposed improvements.
- Build Alternative = Proposed improvements that enhance the corridor beyond maintenance & preservation.
- No-Build and Build Alternatives are evaluated based on how well they satisfy purpose and need.

Initial Concept Screening:

(How well does a concept satisfy Purpose/Need?)

- Initial Analysis of **Traffic Operations & Congestion**
 - Traffic Volumes/Capacity
 - Begin to predict speeds
 - Number of Lanes, Lane Balance
 - Merges/Weave Sections
- **Safety**
 - Any initial safety concerns?
- Improve **Condition of Bridges**
- **Geometry & Driver Expectancy**
 - Entrance/Exit Ramp Locations
 - Does the geometry generally meet design standards?



Alternative Analysis Factors:

- More In-Depth Analysis of Operations
- Perform Safety Analysis (FHWA software)
- Bridge Analysis
- Geometry & Driver Expectancy
 - Start applying standards, prelim calcs
 - Identify Design Exceptions
- Constructability/Maintenance of Traffic
- Long-Term Maintenance
 - Pavement, retaining walls, drainage
- Utility & Pipeline Impacts
- Potential Right of Way Impacts
- Geotechnical Impacts
- Potential Environmental Impacts
 - Historic & Recreational Resources
 - Wetlands/streams/floodplains, forests
 - Noise Impacts (Qualitative)
- Preliminary Construction Costs

Draft Engineering Report – Evaluate Alternatives



Section 1: Project Overview

Section 2: I-465 Mainline Alternatives

- I-465 from 96th St. to East Project Limits

Section 3: I-465/I-865 Interchange

- I-465 from W. 86th St. to EB/WB over 96th St.
- I-465/I-865 Interchange

Section 4: US 31 Corridor

- Add Lanes on I-465 Ramps to NB US 31
- Lane Drops on NB US 31 Corridor

Section 5: I-465/US 421 Interchange

- Concept development underway

Engineering Report

I-465 NW

Des. 1600854 (I-465 NW), 2002530 (US 31)

Indiana Department of Transportation

Federal Highway Administration



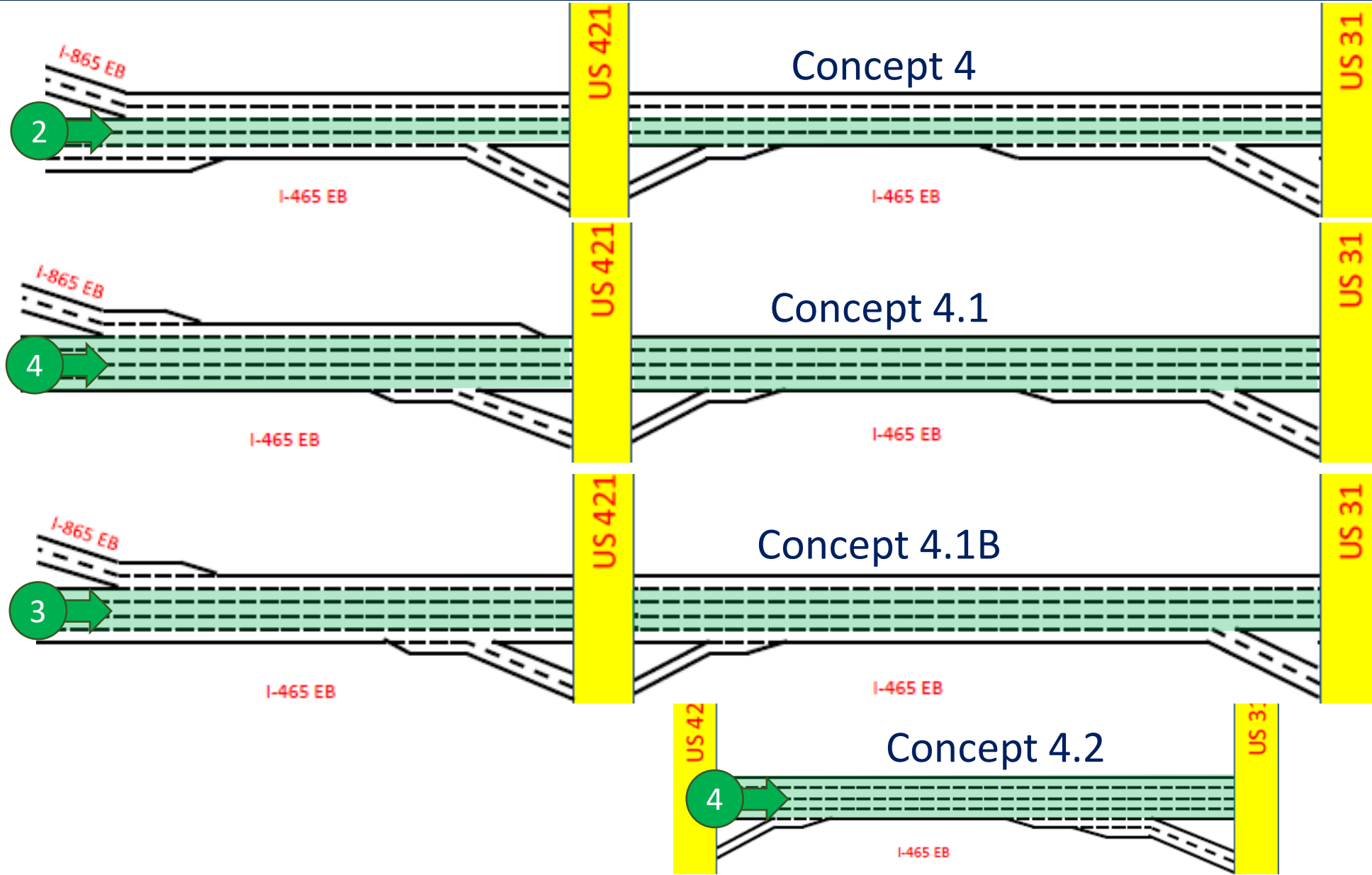
Prepared for INDOT

April 2022 - Draft



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Section 2: I-465 Mainline - EB Lane Balance Diagrams



Section 2: I-465 Mainline - Dismissed Concepts



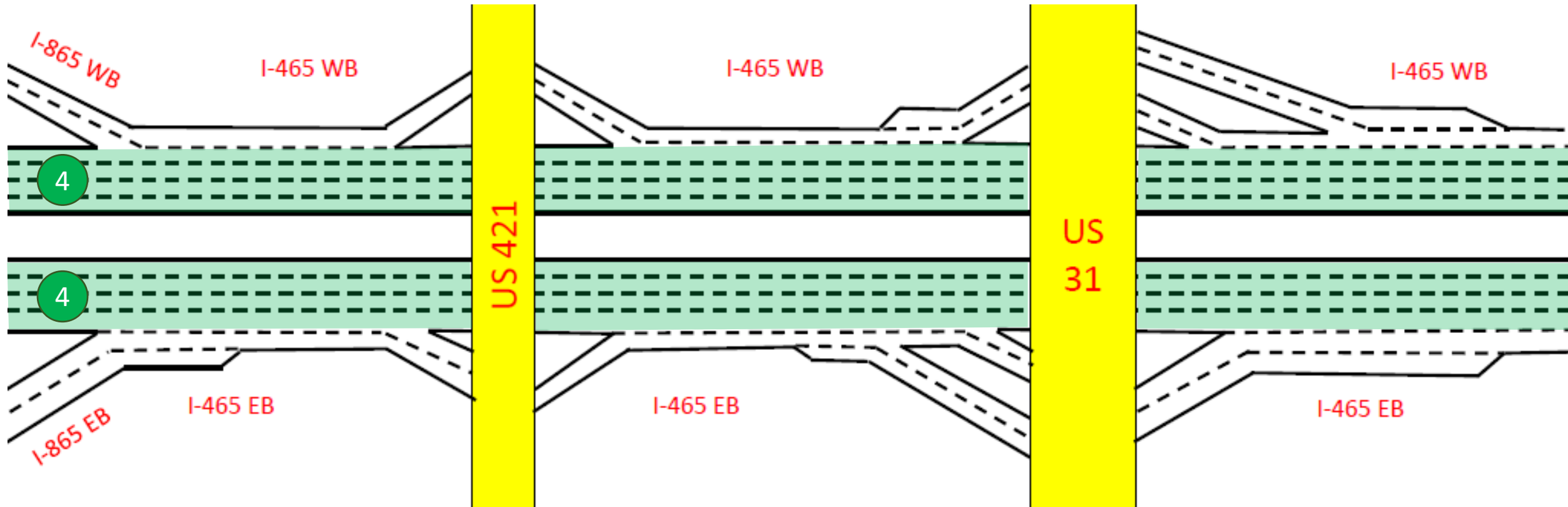
Screened 7 Build Concepts & No-Build (8 total), 6 dismissed, 2 advanced to further analysis

I-465 Mainline Dismissed Concepts		Results of Initial Concept Screening	
		Category	Reason Dismissed
1	Add One I-465 Mainline Lane, No Changes to Ramps - 4 mainline lanes except for inside I-865 interchange which has 3 lanes	Operations Geometry	No additional capacity at US 31 ramps I-465/I-865 Left Hand Ramps, Weaving
2	Add Two I-465 Mainline Lanes, No Changes to Ramps - 5 mainline lanes except for inside I-865 interchange which has 4 lanes	Operations Geometry	No additional capacity at US 31 ramps I-465/I-865 Left Hand Ramps, Weaving
3	I-465 Mainline Series 4 Concepts (Variations 4, 4.1, 4.1B, 4.2) - All with left entrance from EB I-865 to EB I-465 - Various EB I-465 lane configurations (see lane balance diagrams)	Operations Geometry	No additional capacity at US 31 ramps Poor I-465 lane balance (lane changes) I-465/I-865 Left Hand Ramps, Weaving
4	I-465 Mainline Concepts 5.1 and 5.1B (Hard-Shoulder Riding Option) - Five EB I-465 lanes and four WB I-465 lanes - Both with right entrance/exit ramps at I-865 - 5.1B has an EB I-465 auxiliary lane between US 421 and US 31	Operations	No additional capacity at US 31 ramps Inadequate capacity on WB I-465. Did not operate (LOS) as well as the recommended alternative.
5	I-465 Mainline Concept 5.1C - Five EB I-465 and WB I-465 lanes - Both with right entrance/exit ramps at I-865 - Auxiliary lanes in both directions between US 421 and US 31	Operations Geometry	
6	I-465 Mainline Concept 5.2	Operations	Operated well but not quite as efficiently as the recommended alternative.

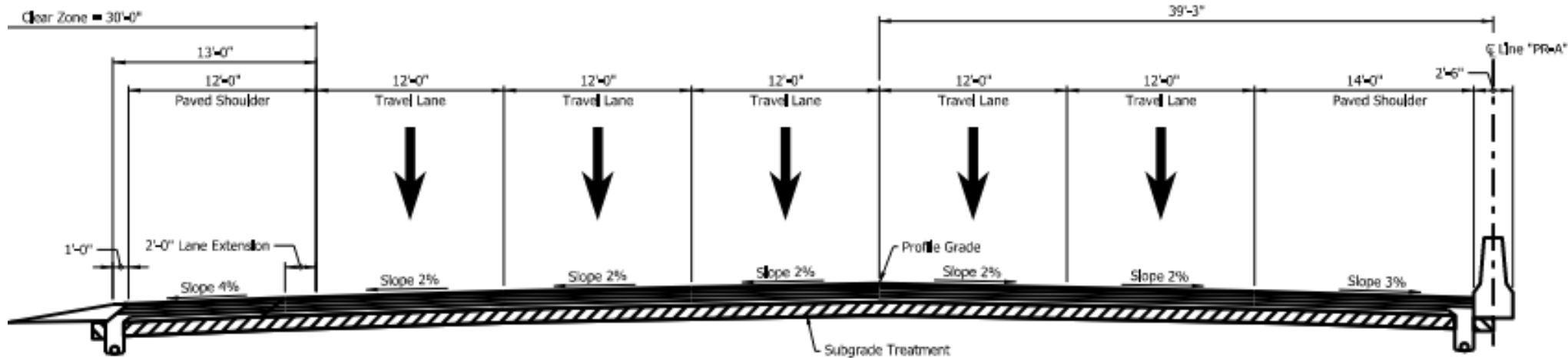
Section 2: I-465 Mainline – Recommended Alt 5.1D



- Four primary lanes in each direction
- Add a 2nd lane to the SB US 31 to WB I-465 ramp
- Two I-465 exits at US 31 in both directions (tie into additional ramp lanes)
- Auxiliary lanes between I-865 and US 421, and from US 421 to US 31
- Right side entrance/exit ramps at I-865

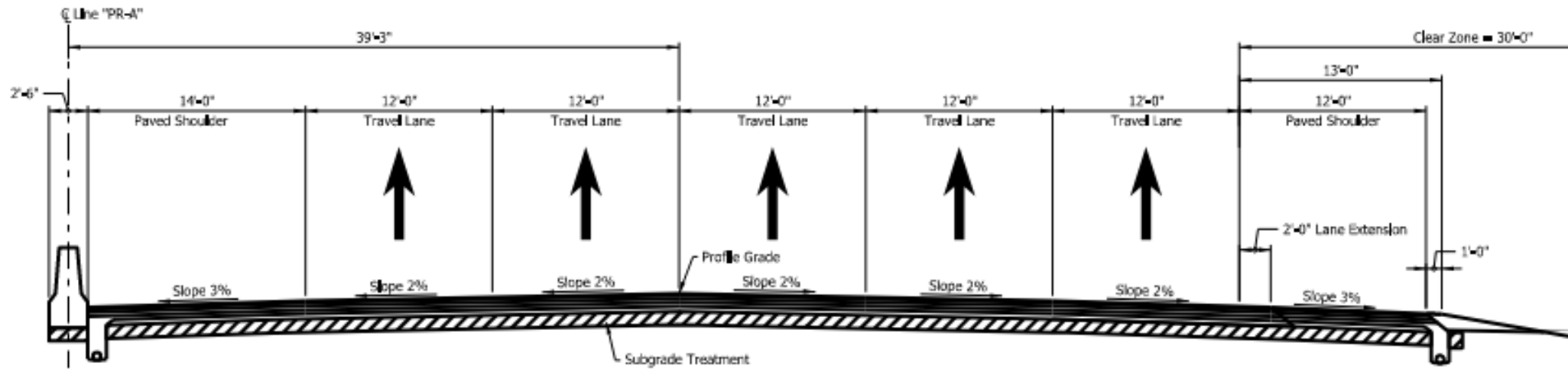


Section 2: I-465 Mainline – Recommended Alt 5.1D



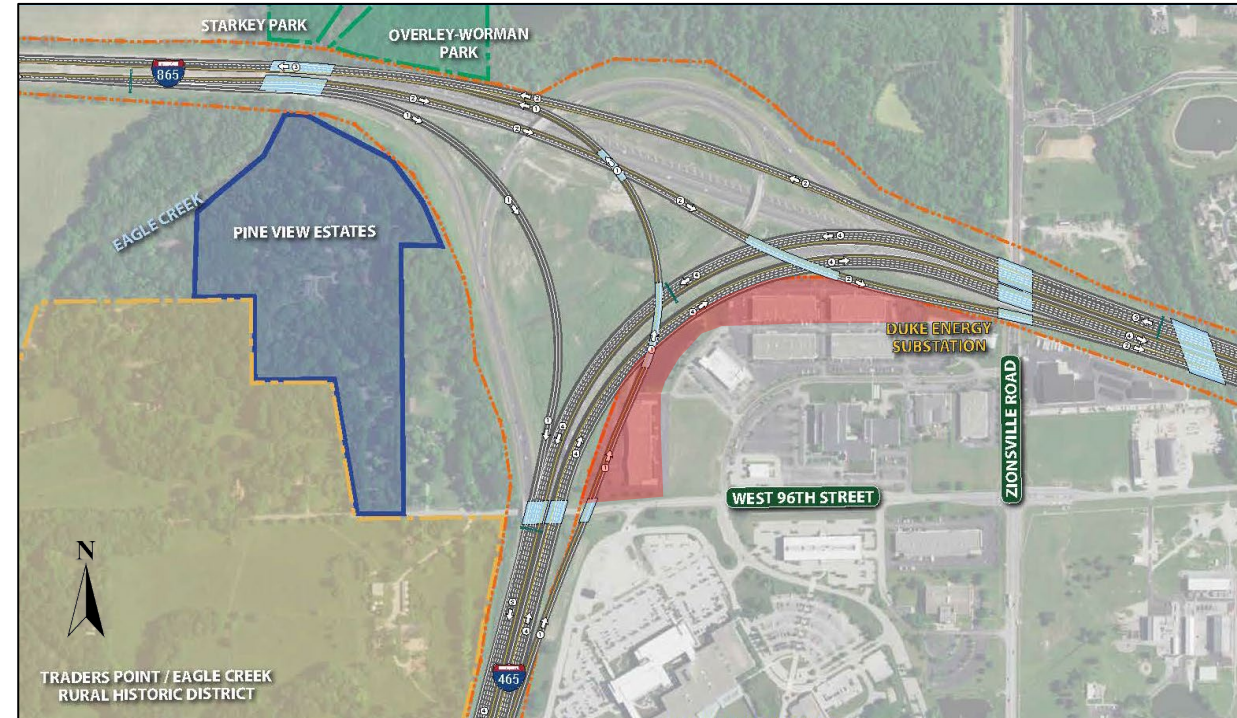
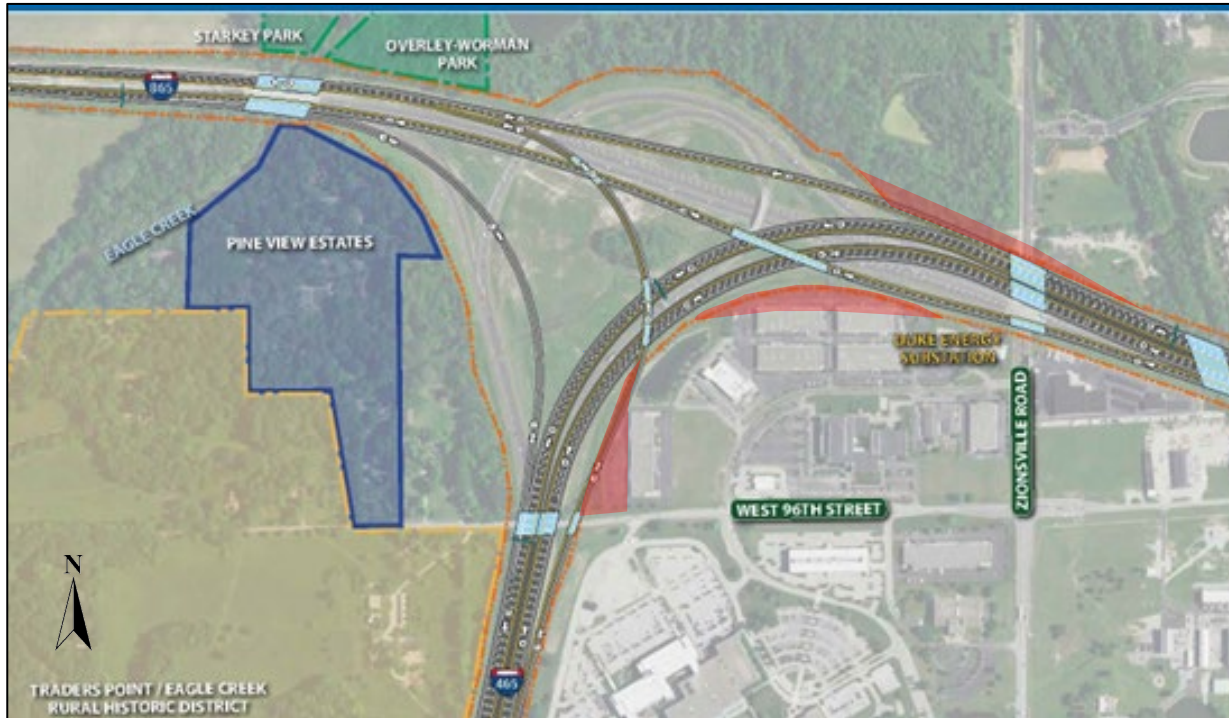
WB I-465


EB I-465



I-465 Typical Section between US 421 and US 31

Section 3: I-465/I-865 – 65 MPH Curves

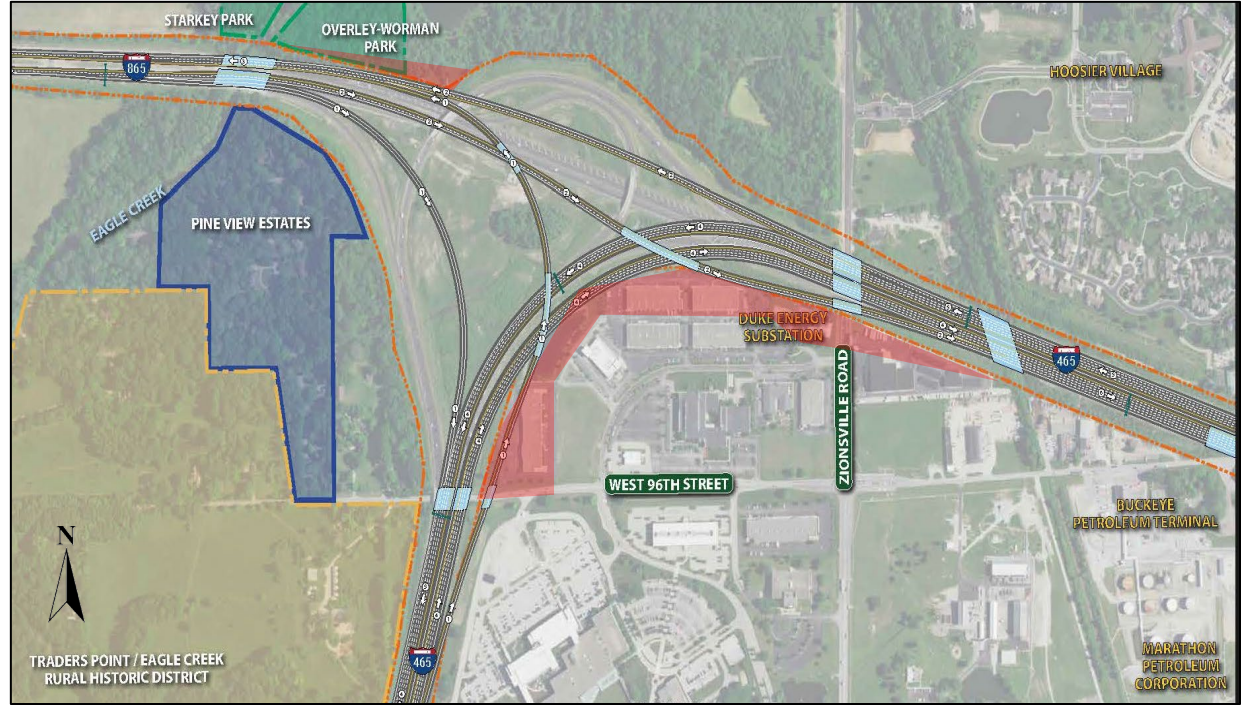
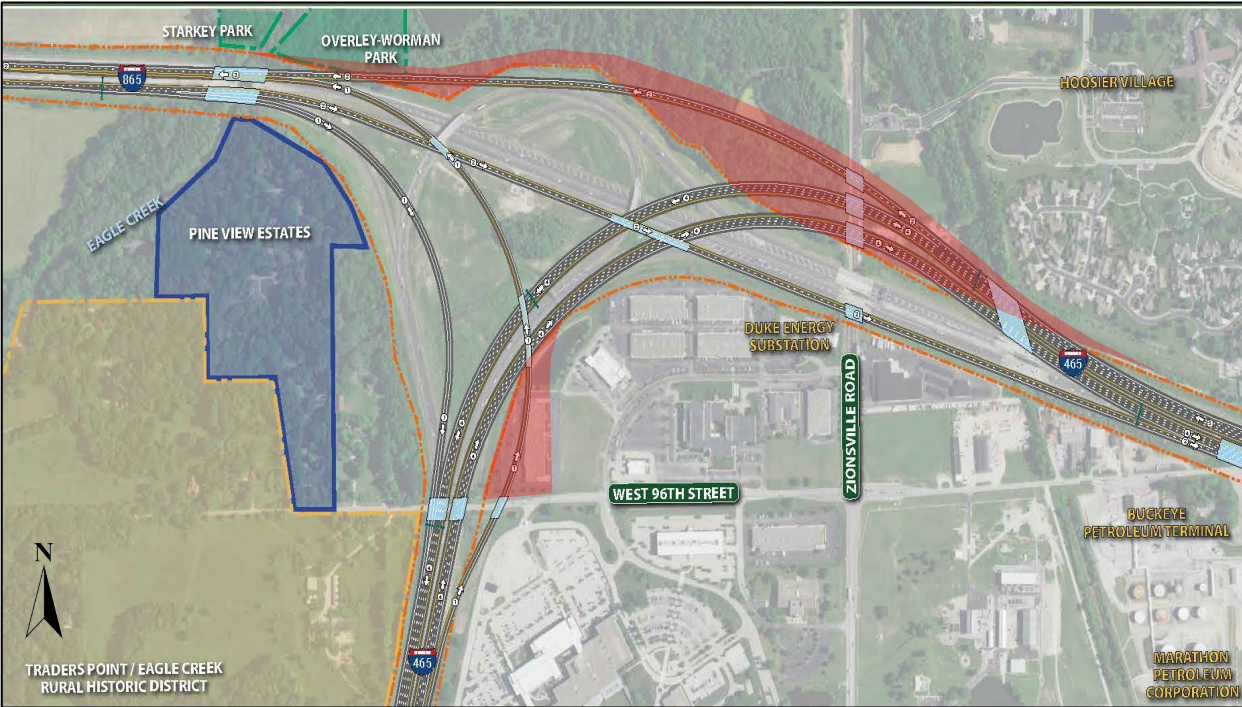



 Areas of Potential ROW Impacts

Alternative 1A
65-mph mainline curve
Location: Shifted to the north

Alternative 1B
65-mph mainline curve
Location: Shifted to the inside of the curve (SE)

Section 3: I-465/I-865 – 70 MPH Curves



 Areas of Potential ROW Impacts

Alternative 2A
70-mph mainline curve
Location: Shifted to the north

Alternative 2B
70-mph mainline curve
Location: Shifted to the inside of the curve (SE)

Section 3: I-465/I-865 - Dismissed Concepts/Alts



Screened 6 Build Concepts & No-Build (7 total), 2 dismissed, 4 advanced to further analysis

I-465/I-865 Interchange Concepts & Alternatives		Results of Alternatives Analysis	
		Category	Results
1	Alternative 1A - 4 mainline lanes with a 65-mph mainline curve - Located towards the north side of existing right of way	Completed Alternatives Analysis	Preliminary recommendation. Good geometry. Best use of existing right of way. Fewest environmental and utility impacts. Simple bridge geometry. Good MOT.
2	Alternative 1B - 4 mainline lanes with a 65-mph mainline curve - Located towards the inside (SE quadrant) of existing right of way	Completed Alternatives Analysis	Ideal geometry. Significant right of way impacts. More environmental and utility impacts than Alternative 1A.
3	Concept 1C - 4 mainline lanes with a 65-mph mainline curve - Located towards the west side of existing right of way	Right of Way Environmental	Dismissed because alignments offset to the west create significant right of way and environmental impacts
4	Alternative 2A - 4 mainline lanes with a 70-mph mainline curve - Located towards the north side of existing right of way	Completed Alternatives Analysis	Mainline reverse curve. Significant right of way impacts to the north. Higher environmental and utility impacts than Alternative 1A and highest construction costs.
5	Alternative 2B - 4 mainline lanes with a 70-mph mainline curve - Located towards the inside (SE quadrant) of existing right of way	Completed Alternatives Analysis	Ideal geometry. Significant right of way impacts. Most utility/pipeline impacts of all alternatives. More complex bridge construction. Higher construction costs.
6	Concept 2C - 4 mainline lanes with a 70-mph mainline curve - Located towards the west side of existing right of way	Right of Way Environmental	Dismissed because alignments offset to the west create significant right of way and environmental impacts

Section 3: I-465/I-865 – Recommended Alt (1A)

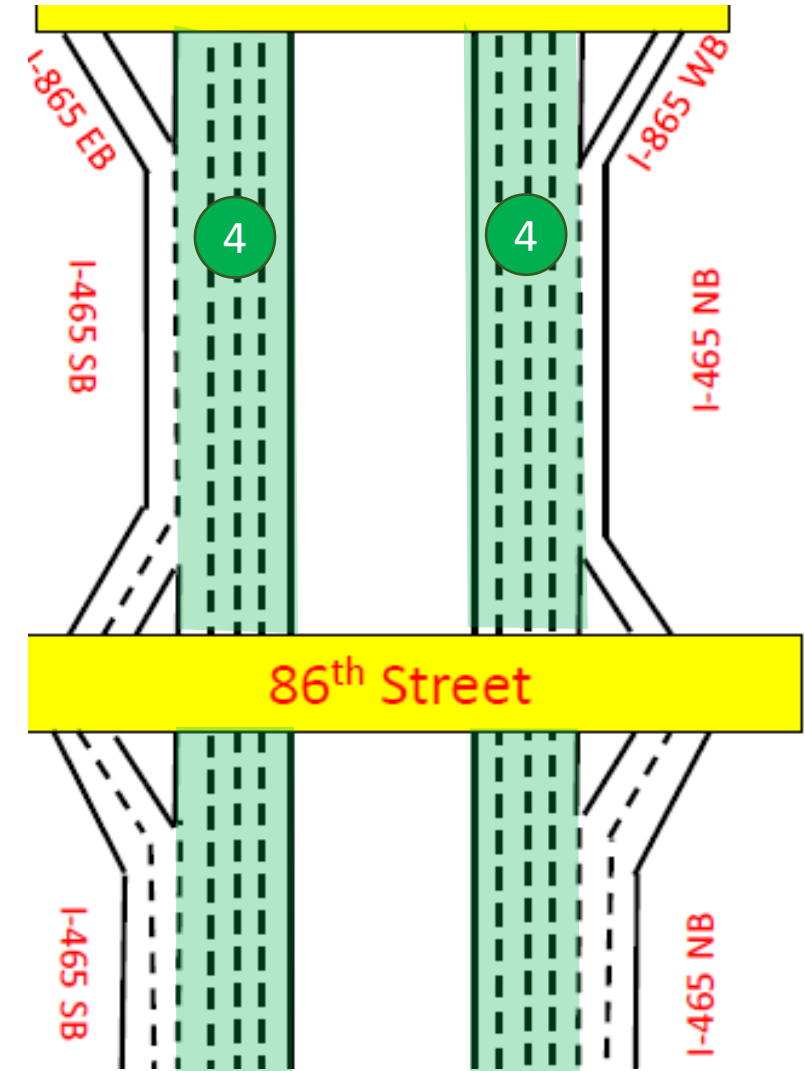


Section 3: I-465/I-865 – Recommended Alt (1A)



I-465 Mainline (South of I-865 Interchange)

- Four I-465 mainline lanes in each direction
- NB I-465 auxiliary lane between W. 86th St. and I-865
- SB I-465 auxiliary lane between I-865 and W. 86th St.
- Adjust the SB I-465 exit ramp to W. 86th St. from a dedicated 2-lane ramp into a 2-lane ramp with an option lane
- Tie proposed lanes into existing lanes at bridge over W. 86th St.



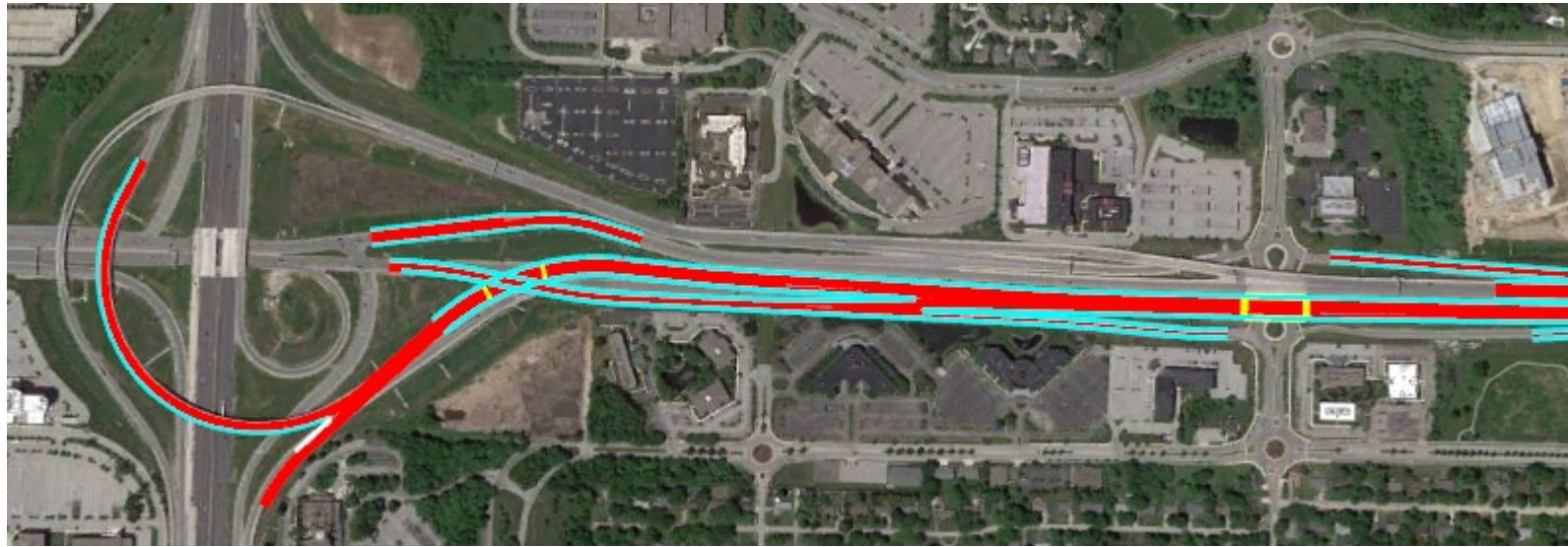
Section 4: US 31 Corridor - Dismissed Concepts



Screened 10 Build Concepts & No-Build (11 total), 9 dismissed, 2 advanced to further analysis

US 31 Corridor Dismissed Concepts		Results of Initial Concept Screening	
		Category	Reason Dismissed
1	Direct Connect Interchange - Widen the existing EB to NB bridge w/ a direct ramp to 106 th St.	Operations Geometry	Complex curved bridge construction, Difficult vertical grades, High construction cost
2	I-465/US 31 Diverging Crossover Diamond (DCD) Interchange	Operations	NB/SB US 31 traffic volumes exceed DCD max. capacity
3	I-465/US 31 Single Point Urban Interchange (SPUI)	Geometry	Vertical geometry would impact all US 31 ramps
4	US 31 Low-Cost Alt w/ 1 WB I-465 3-Lane Parallel Exit to US 31 (Splits into Two 2-Lane Ramps)	Geometry	Requires seven WB I-465 lanes between Keystone Ave and US 31
5	US 31 Low-Cost Alt w/ 1 WB I-465 3-Lane Option Exit to US 31 (Splits into Two 2-Lane Ramps)	Operations Safety	Back-to-back option lanes in a short distance are difficult to sign and can lead to operational confusion. There is no operational benefit to switching the option lanes.
6	US 31 Low-Cost Alt w/ 1 WB I-465 3-Lane Option Exit to US 31 (Flip)		
7	US 31 Low-Cost Alt w/ WB I-465 Loop Ramp Exit (Back-to-Back Exits)	Operations Geometry	Back-to-back WB exits work well, but the loop ramp exit fails at US 31 intersection. However, an exit lane into a tight loop ramp on a downgrade is undesirable.
8	Drop NB US 31 Lanes (3 Variations)	Operations	These variations were different configurations of lane drops on NB US 31.
9	2 WB I-465 Exit Ramps at US 31 w/ 5-Lane WB I-465 Section	Operations	This concept requires six WB I-465 lanes to operate well.

Section 4: US 31 Corridor – Recommended Alt (Low-Cost)

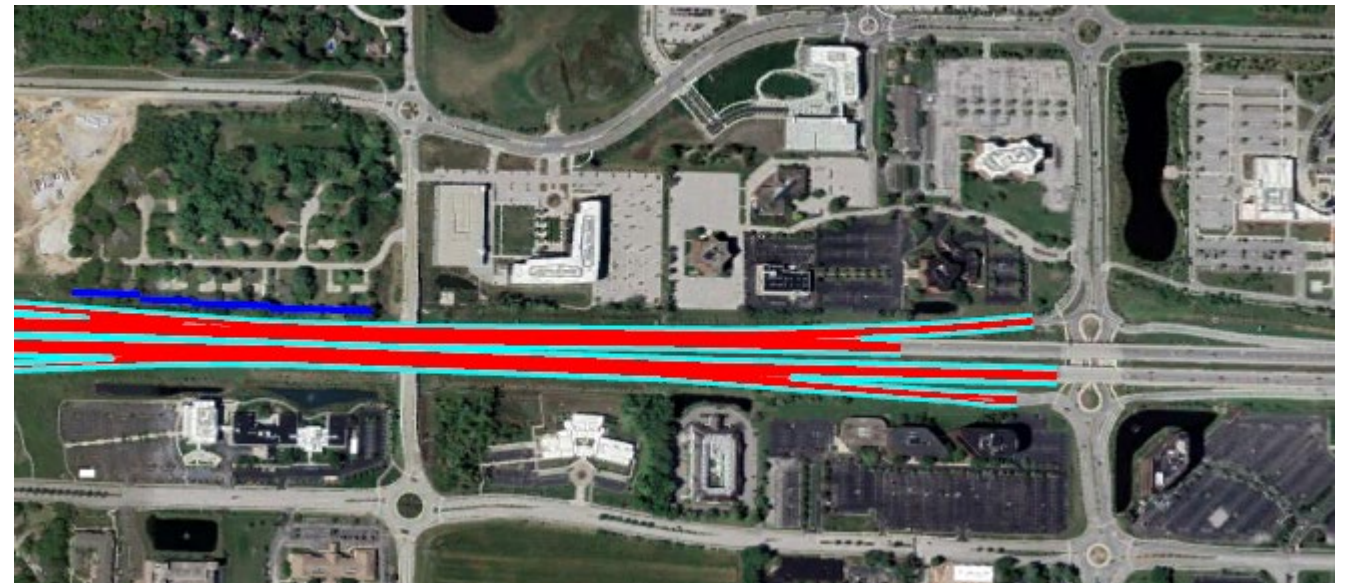


SB US 31

- Add one SB lane on US 31 between 116th Street and 106th Street

NB US 31

- Add 2nd lane on the EB to NB Ramp
- Add 2nd lane on the WB to NB Ramp
- Realign NB Meridian Street to outside of US 31 ramps
- Drop two ramp lanes on NB US 31 (tie in at 116th Street)



Section 5: I-465/US 421 - Concepts

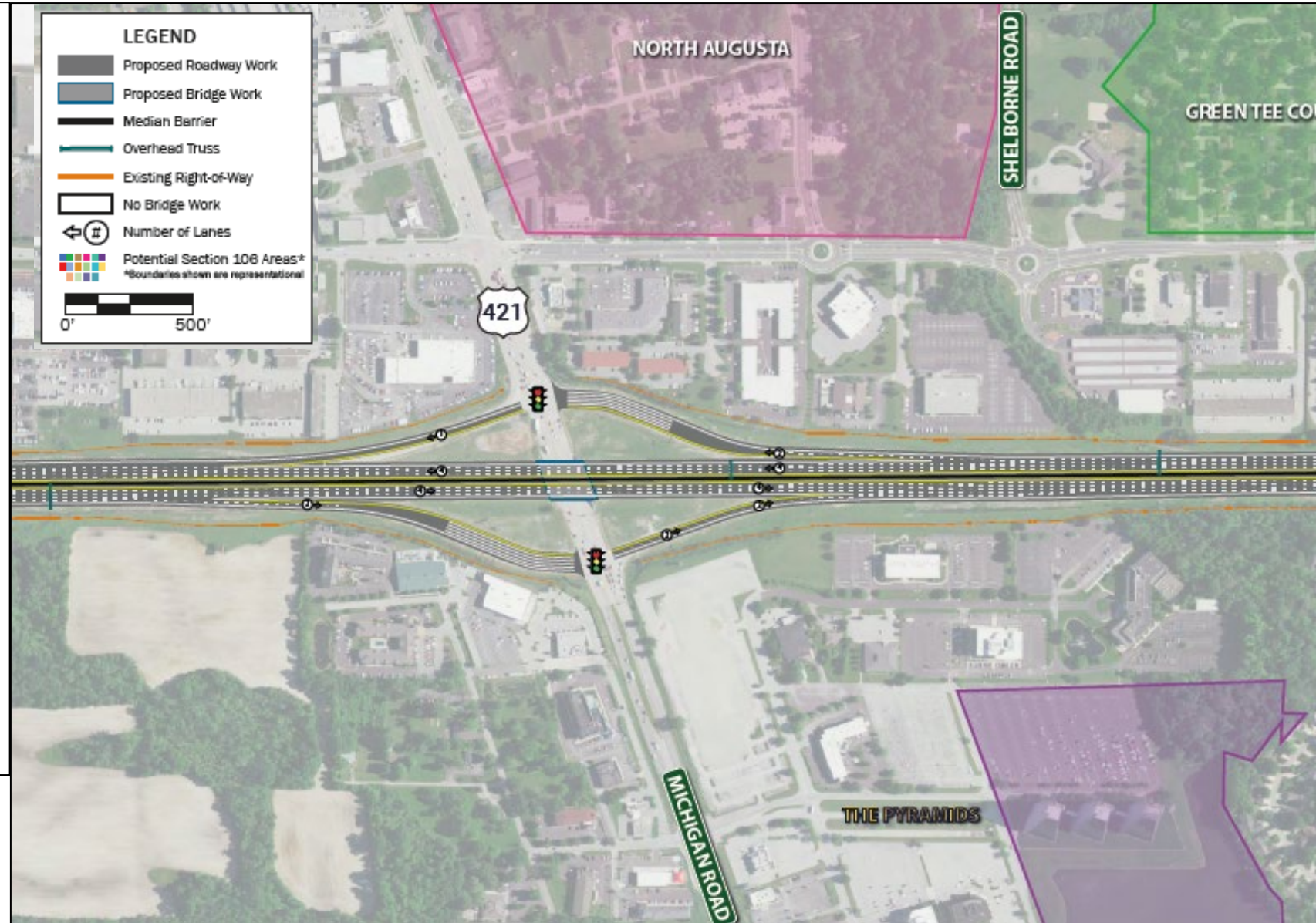
I-465/US 421

Current Recommendation

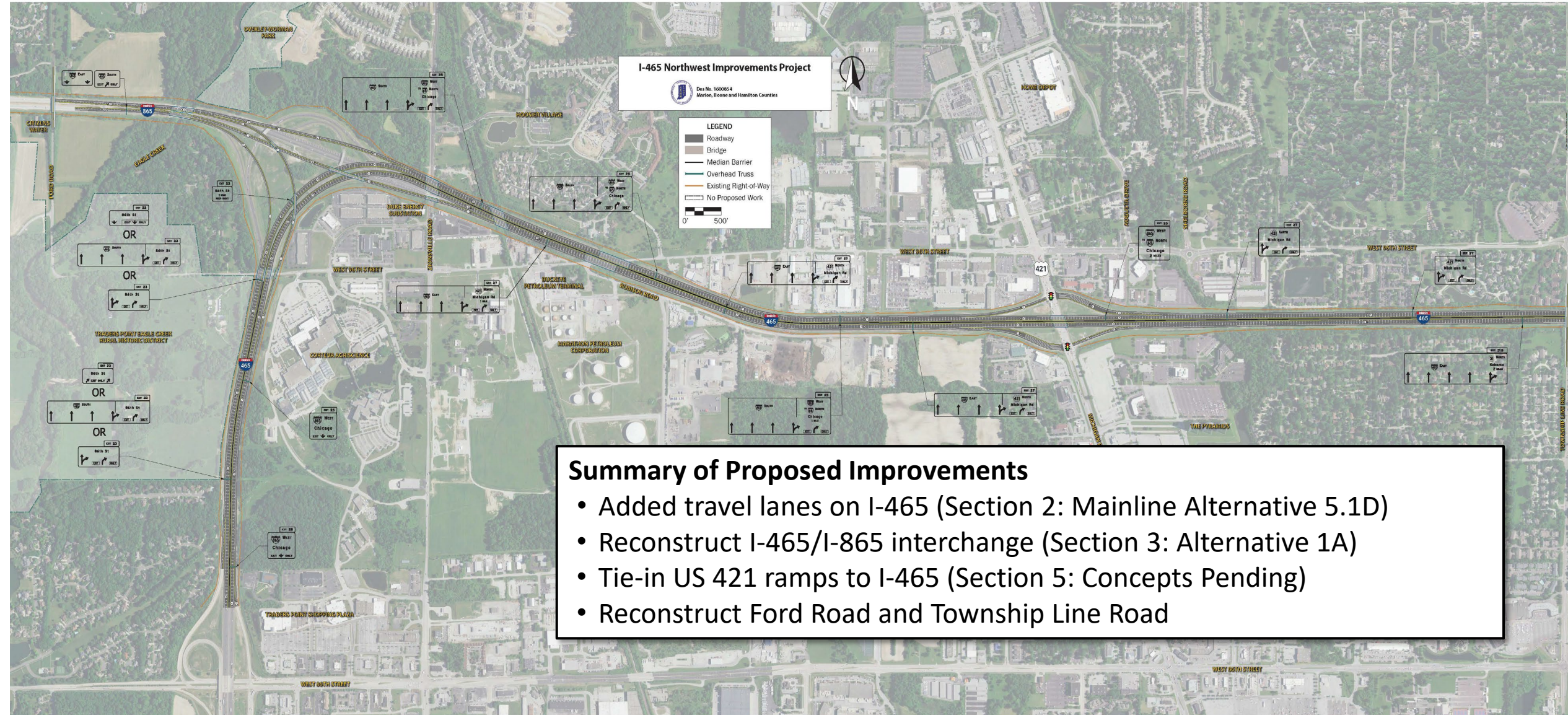
- Reconstruct ramps
- Tie into added lanes

Additional Area of Study

- Performing more traffic modeling
- Concept development is underway
- Revisiting purpose and need for this interchange
- Requesting feedback regarding needs at this interchange



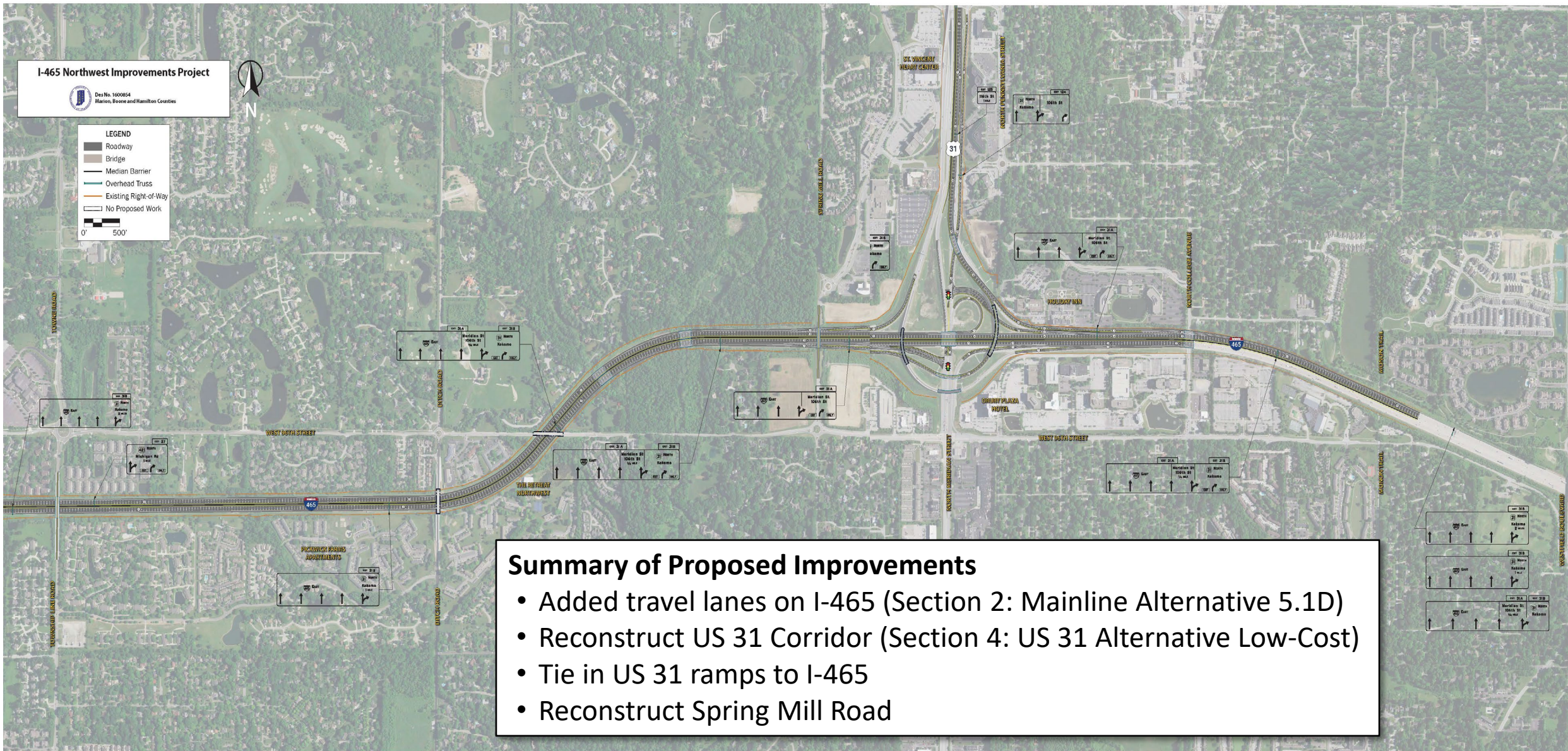
Preliminary Recommendation (I-465 West Section)



Summary of Proposed Improvements

- Added travel lanes on I-465 (Section 2: Mainline Alternative 5.1D)
- Reconstruct I-465/I-865 interchange (Section 3: Alternative 1A)
- Tie-in US 421 ramps to I-465 (Section 5: Concepts Pending)
- Reconstruct Ford Road and Township Line Road

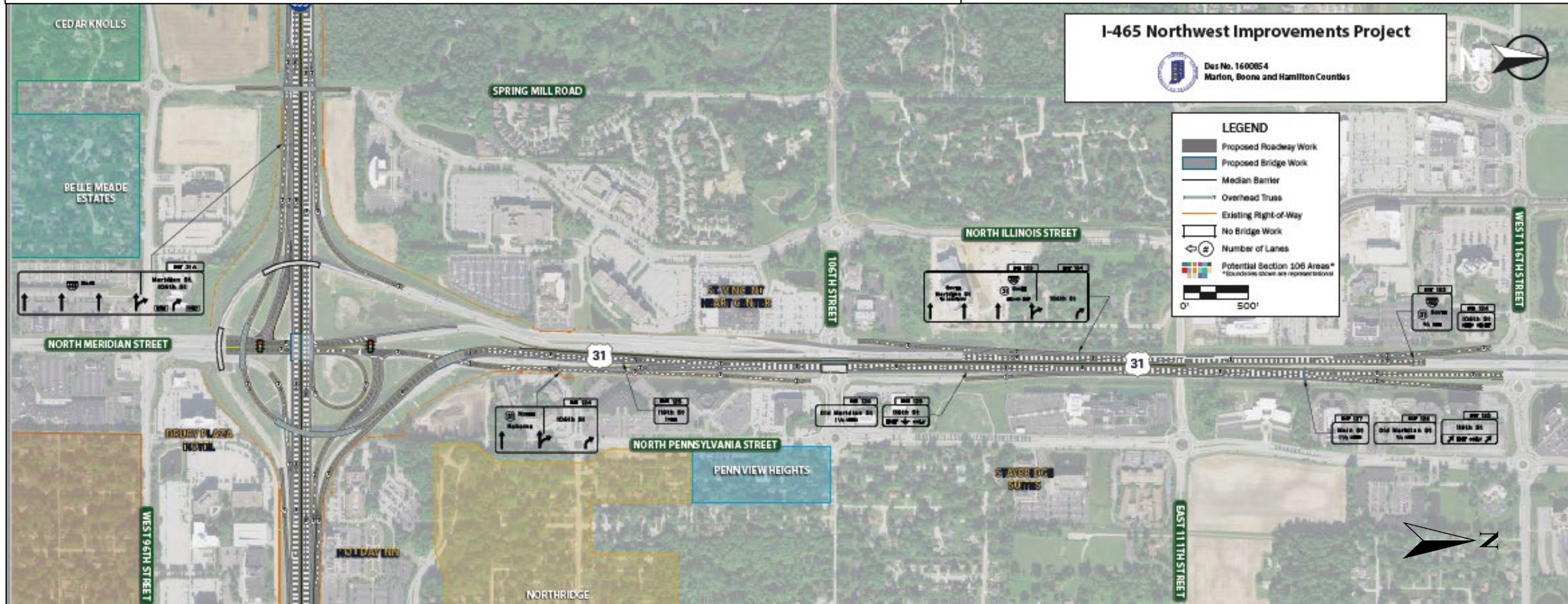
Preliminary Recommendation (I-465 East Section)



Preliminary Recommendation (US 31 Corridor)

Summary of Proposed Improvements

- Added travel lanes on I-465 (Section 2: Mainline Alternative 5.1D)
- Reconstruct US 31 Corridor (Section 4: US 31 Alternative Low-Cost)



We Need Your Input On....

- Corridor issues (needs at I-465 / US 421 interchange)
- Community needs
- Unidentified cultural & sensitive resources
- Unidentified underserved populations
- Public involvement and stakeholders



Please provide your input to
Alex Lee
by November 4, 2022



Please mention "I-465 Northwest" in your correspondence

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Project Information



Project website



www.in.gov/indot/projects/home/i-465-northwest-improvements-project

Please submit comments to:



INDOT Customer Service
855-463-6848
INDOT4U.com

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Please mention "I-465 Northwest" in your correspondence

Questions & Discussion



**Thank You
for Participating!**

