I-465 Reconfiguration

Noise Meeting

August 29, 2019

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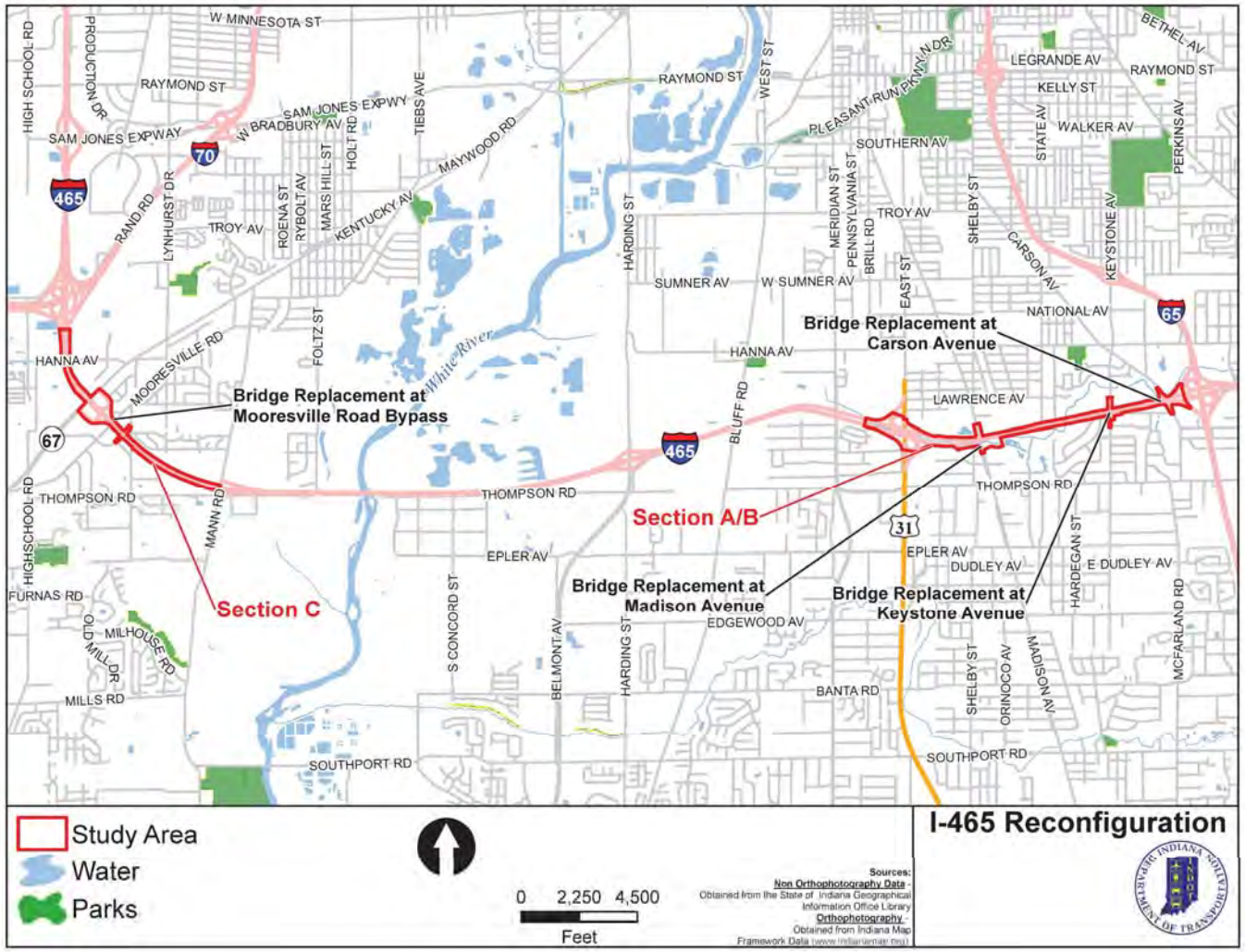
Agenda

- Introductions
- Project overview and status
- Noise basics
- Noise analysis process
- Noise barrier evaluation
- Proposed noise barrier locations
- Property owner survey

Introductions

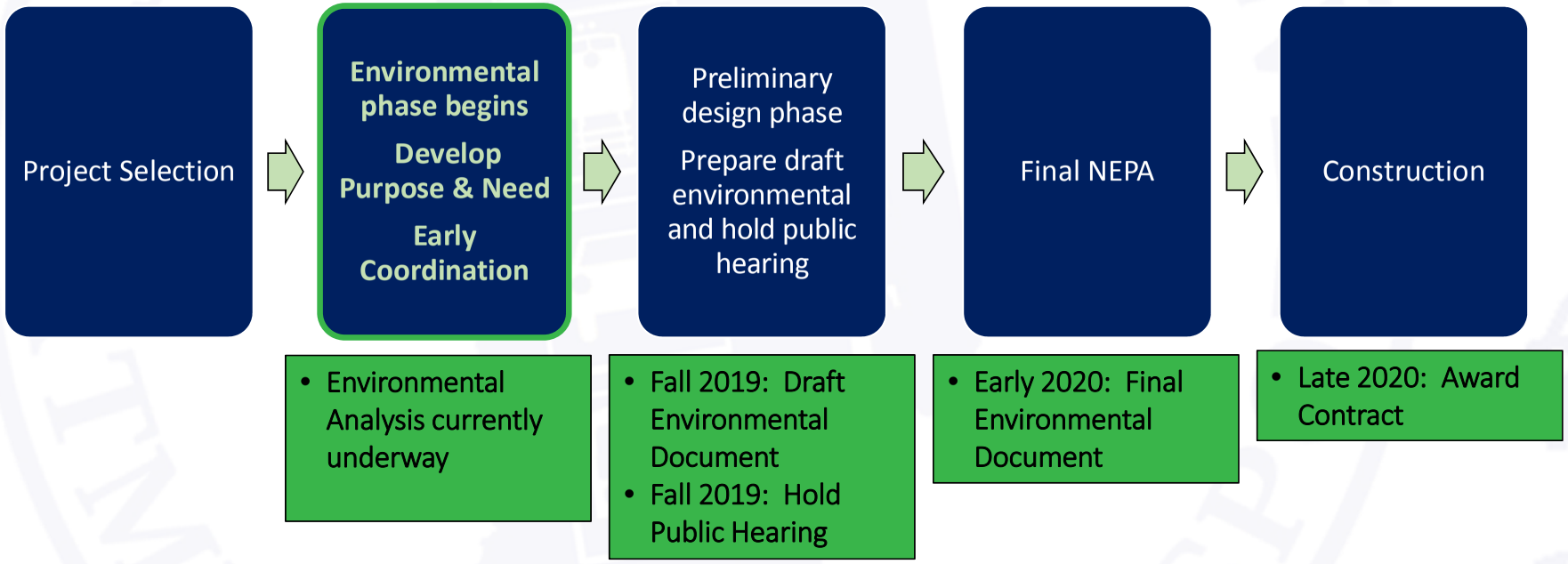
- Indiana Department of Transportation (INDOT)
  - Brian Shattuck, Project Manager
  - Brandon Miller, Environmental Services
  - Rickie Clark, INDOT Public Hearing Manager
- Parsons Project Team
  - John LaBlonde, Project Manager
  - Dan Miller, Environmental Services Manager
  - Tony Pakeltis, Noise Analyst

Project Location



Project Development

Categorical Exclusion – Level 4 (CE-4) Project



Reasons for the Project (Needs)

- Capacity - insufficient capacity creates congestion and excessive delays.
  - Inadequate I-465 capacity to accommodate existing and future traffic.
  - Interchange ramp lengths do not meet current standards.
  - Capacity issues need to be addressed prior to the programmed I-69 Section 6 project.
- Safety – 410 crashes occurred between 2015 and 2017. The primary types are rear end, ran off road, and same direction sideswipe.
  - Capacity, merging, and weaving movements likely contribute to the safety issues.

Project Purpose

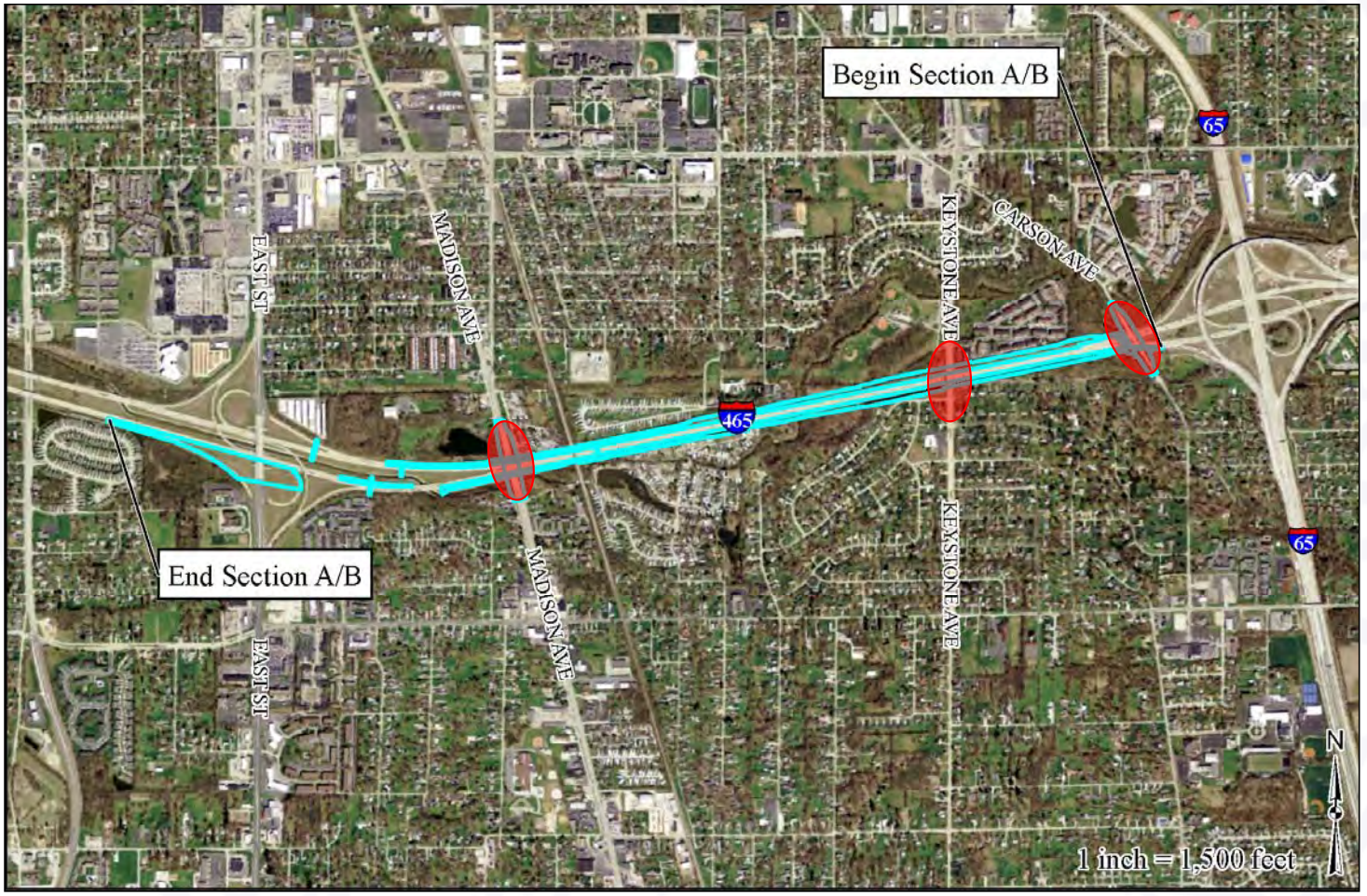
- The purpose of the I-465 Reconfiguration Project is to improve overall traffic operation within these sections of I-465 by improving level of service to at least LOS D for the design year (2045), meeting current standards for ramp lengths, and improving safety.

Project Scope Work – Recommended Alternative

Section A/B

- Added auxiliary lanes on eastbound/westbound I-465 (to the outside)
- Reconfiguring eastbound I-465 to northbound US 31 exit ramp
- Extending southbound US 31 to eastbound I-465 merge area
- Extending southbound US 31 to eastbound I-465
- Bridge replacements at Carson Avenue, Keystone Avenue, and Madison Avenue

Section A/B



Bridge Replacement

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Project Scope Work – Recommended Alternative

Section C

- Added travel lanes eastbound/westbound I-465 (to the inside)
- Tie-in to I-69 Section 6 Project west of Mann Road
- Bridge replacement at Mooresville Road Bypass

Section C

Bridge Replacement

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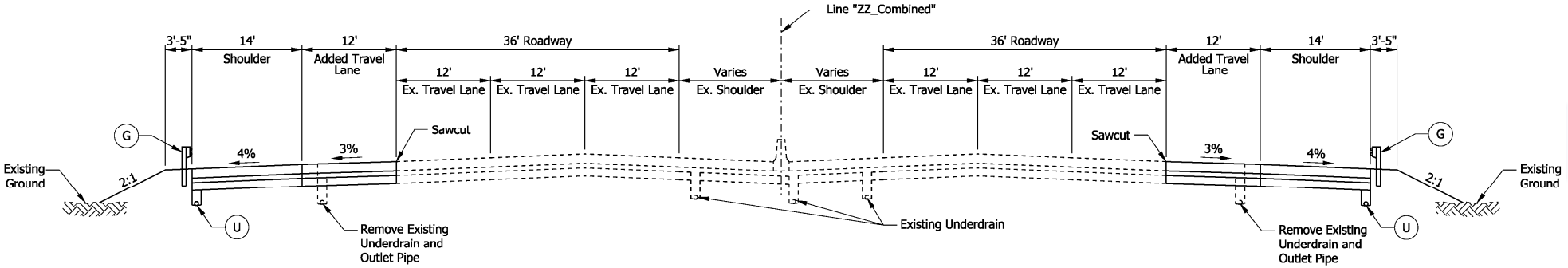
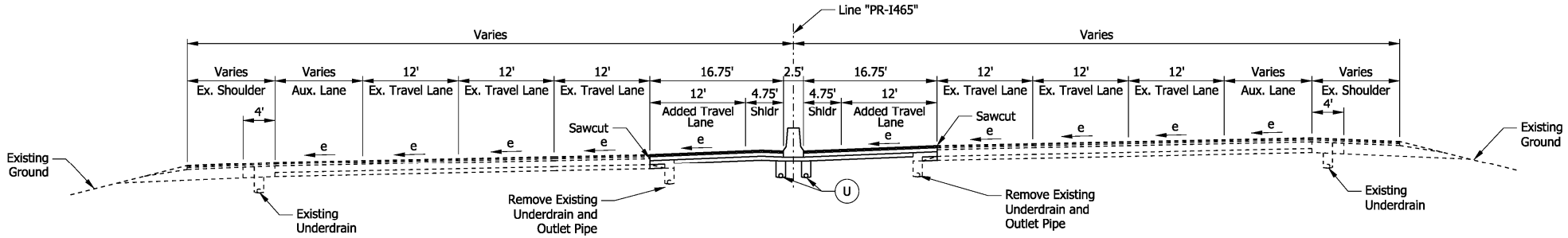
I-465 Typical Sections



PROPOSED TANGENT TYPICAL SECTION PROJECT A (US 31 TO I-65)



SUPERELEVATED TYPICAL SECTION PROJECT C

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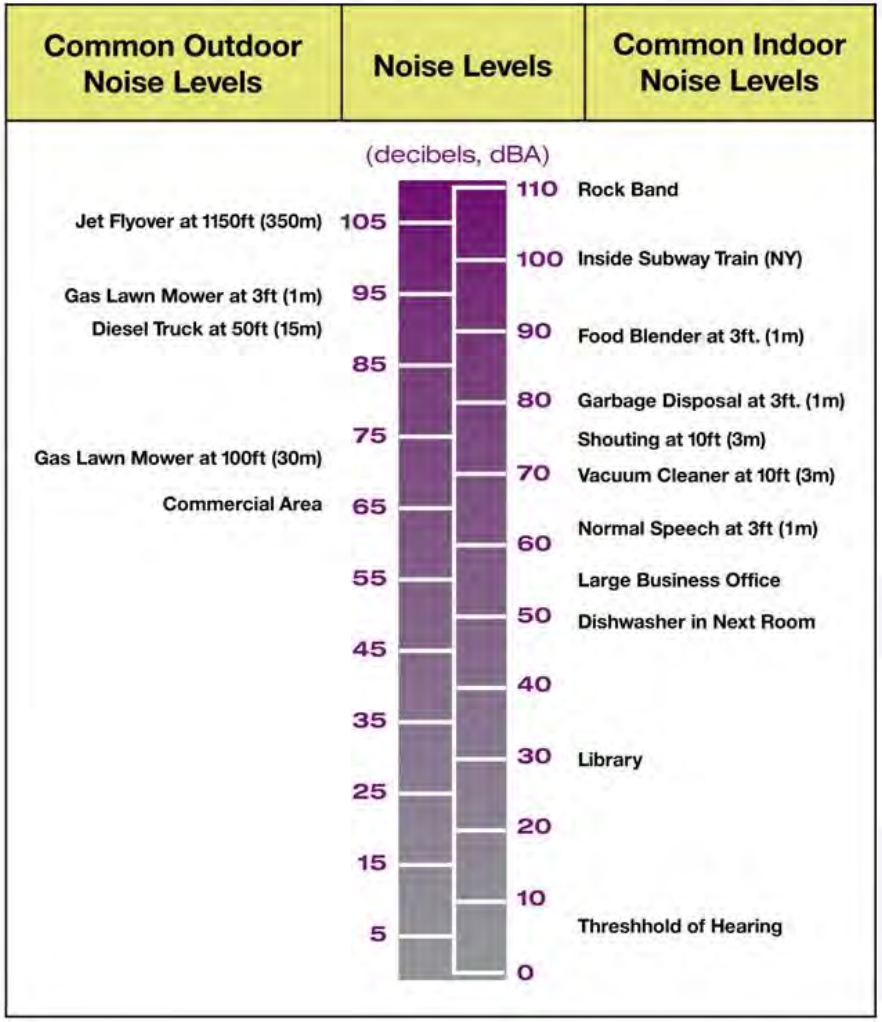
Environmental Analysis

- Streams, Wetlands, and Other Waters
- Floodplains
- Endangered and Threatened Species
- Cultural Resources (Historical and Archaeological)
- Parks, Trails and Recreational Lands
- Air Quality
- Right-of-way/Relocations (None)
- Noise
- Community Impacts
- Environmental Justice (EJ): Low Income & Minority Populations
- Hazardous Materials
- Permits
- Mitigation
- Public Involvement

Noise Basics

- Noise is unwanted sound
- Sound is a pressure fluctuation caused by vibration (source)
  - Travels through a medium such as air (path)
  - Capable of causing response in human ear & brain (receiver)
  - Sound levels are measured in decibels



Noise Basics

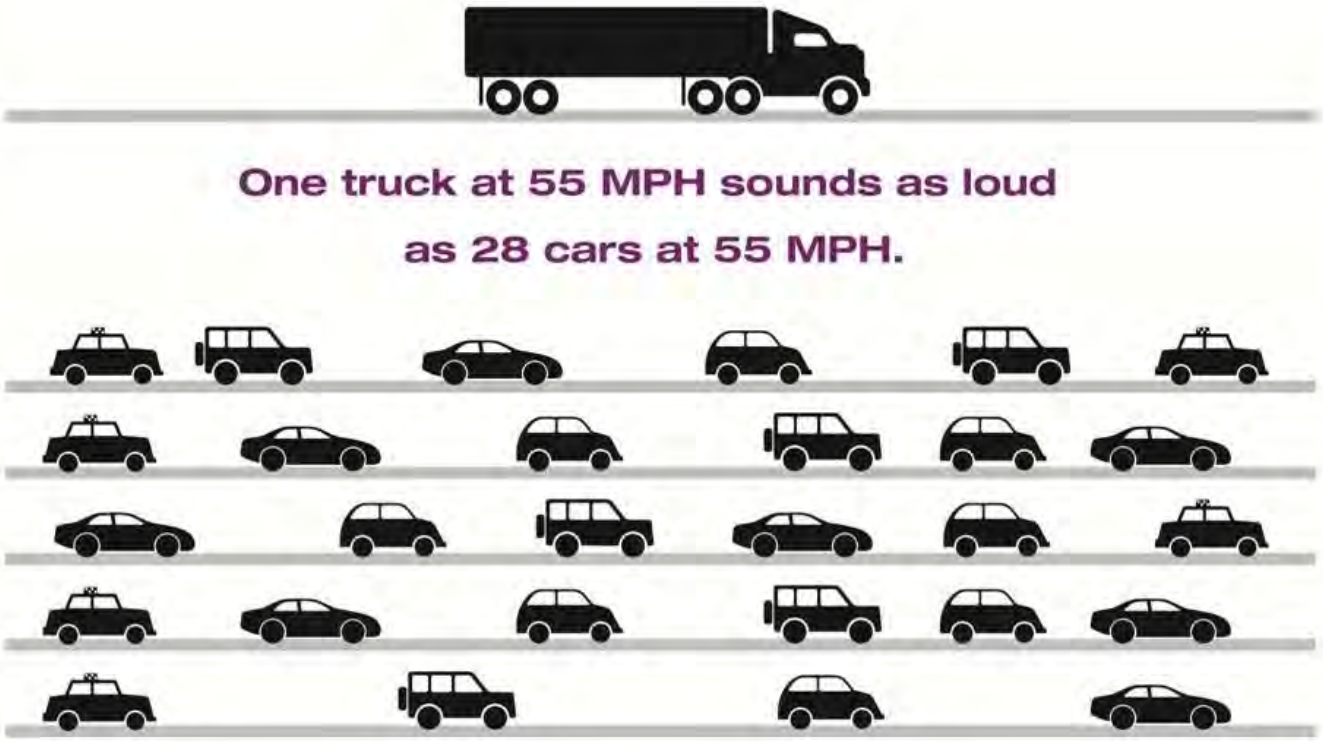
Change in Sound Level	Perception
3 decibels	Barely Perceptible
5 decibels	Clearly Perceptible
10 decibels	Twice as Loud

Noise Basics

2,000 vehicles per hour sound twice as loud (+10 dBA)
as 200 vehicles per hour.

Traffic at 65 MPH sounds twice as loud (+10 dBA)
as traffic at 30 MPH.

Noise Basics



Noise Basics

- Federal Highway Act of 1970
  - Mandated Federal Highway Administration (FHWA) to develop standards for traffic noise. Regulations are found in 23 CFR 772.
- INDOT Traffic Noise Policy
  - States are required to develop and implement noise policy based on 23 CFR 772 standards. FHWA must review and approve state policies.
  - Noise analysis is required for all Type I highway projects that require FHWA approval. Also applies to all Type I projects on roadways that are part of the Interstate System.
  - The most current update of INDOT's Traffic Noise Policy was July 2017.

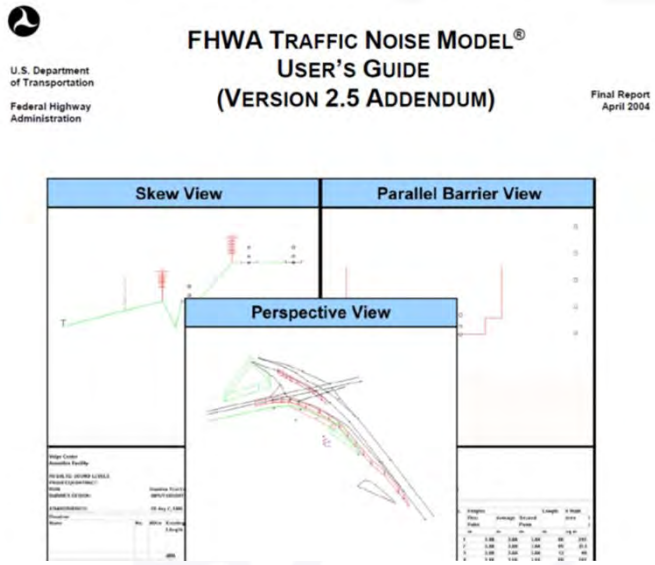
Noise Analysis Process

- Identify areas of frequent outdoor human use
  - Front or backyards of residences, balconies or patios of apartments, outdoor seating at commercial properties, recreational areas
- Field measurement of existing noise levels
- Validate noise model
- Future noise level prediction based on year 2045 traffic forecasts
- Determine impacts
- Evaluate abatement measures for impacts

Noise Analysis Process

FHWA Traffic Noise Model (TNM) 2.5

- 3D modeling software used to analyze existing and projected traffic volumes & speeds
- Roadways, pavement, terrain, grass, and receiver locations are also added to the model
- Generates existing and predicted future noise levels
- Identifies noise impacts
- Evaluates noise barrier effectiveness



Noise Analysis Process

- Noise impacts occur when either
  - Predicted sound level approaches or exceeds Noise Abatement Criteria (NAC)
    - 67 decibels for residences
    - Approach NAC = 66 decibels
  - Predicted sound level substantially exceeds existing sound level
    - 15+ decibels increase

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Noise Barrier Evaluation

- Feasible
  - Acoustic Feasibility: 5 decibel reduction at a majority of impacted receivers
  - Engineering Feasibility: Consider environmental, drainage, safety, and other issues to identify best location for a barrier
- Reasonable
  - Noise Reduction Goal
    - 7 decibel reduction for majority of receivers on property directly adjacent to the roadway.
  - Cost-effectiveness
    - INDOT uses $30/square foot to estimate barrier cost
    - Cost per benefited receptor of $25,000 or less is considered cost-effective. Cost per benefited receptor goes up to $30,000 if the majority of the homes were built prior to initial construction of the roadway.
  - Views of Residents and Property Owners
    - INDOT considers the views of all benefited residents and property owners to determine whether a barrier is appropriate for a given location.

Preliminary Feasible and Reasonable Noise Barriers 1-4

Noise Barrier 1 & 3 (westbound)	
Length: 4,525 ft	Est. Cost: $2.1M
Avg. Height: 15.7 ft	Benefited Receptors: 123

Noise Barrier 2 & 4 (eastbound)	
Length: 3,600 ft	Est. Cost: $1.5M
Avg. Height: 14.2 ft	Benefited Receptors: 119

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Preliminary Feasible and Reasonable Noise Barriers 6 - 8

Noise Barrier 6 (eastbound)	
Length: 2,700 ft	Est. Cost: $1.2M
Avg. Height: 14.4 ft	Benefited Receptors: 63

Noise Barrier 7 (westbound)	
Length: 600 ft	Est. Cost: $0.3M
Avg. Height: 16.0 ft	Benefited Receptors: 38

Noise Barrier 8 (eastbound)	
Length: 675 ft	Est. Cost: $0.4M
Avg. Height: 18.5 ft	Benefited Receptors: 4

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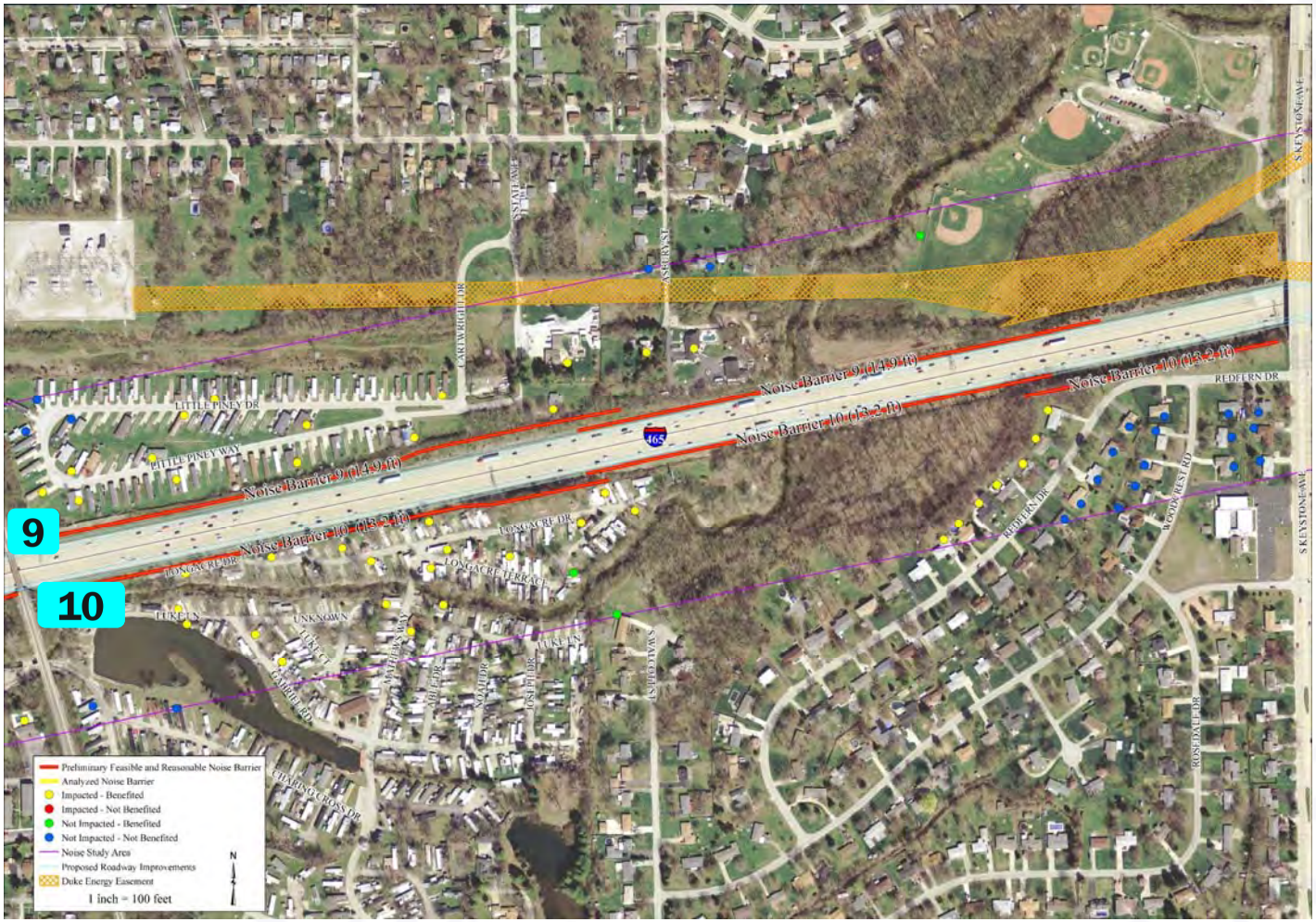
Preliminary Feasible and Reasonable Noise Barriers 9 & 10



Noise Barrier 9 (eastbound)	
Length: 3,850 ft	Est. Cost: $1.7M
Avg. Height: 14.9 ft	Benefited Receptors: 89

Noise Barrier 10 (westbound)	
Length: 4,425 ft	Est. Cost: $1.8M
Avg. Height: 13.2 ft	Benefited Receptors: 166

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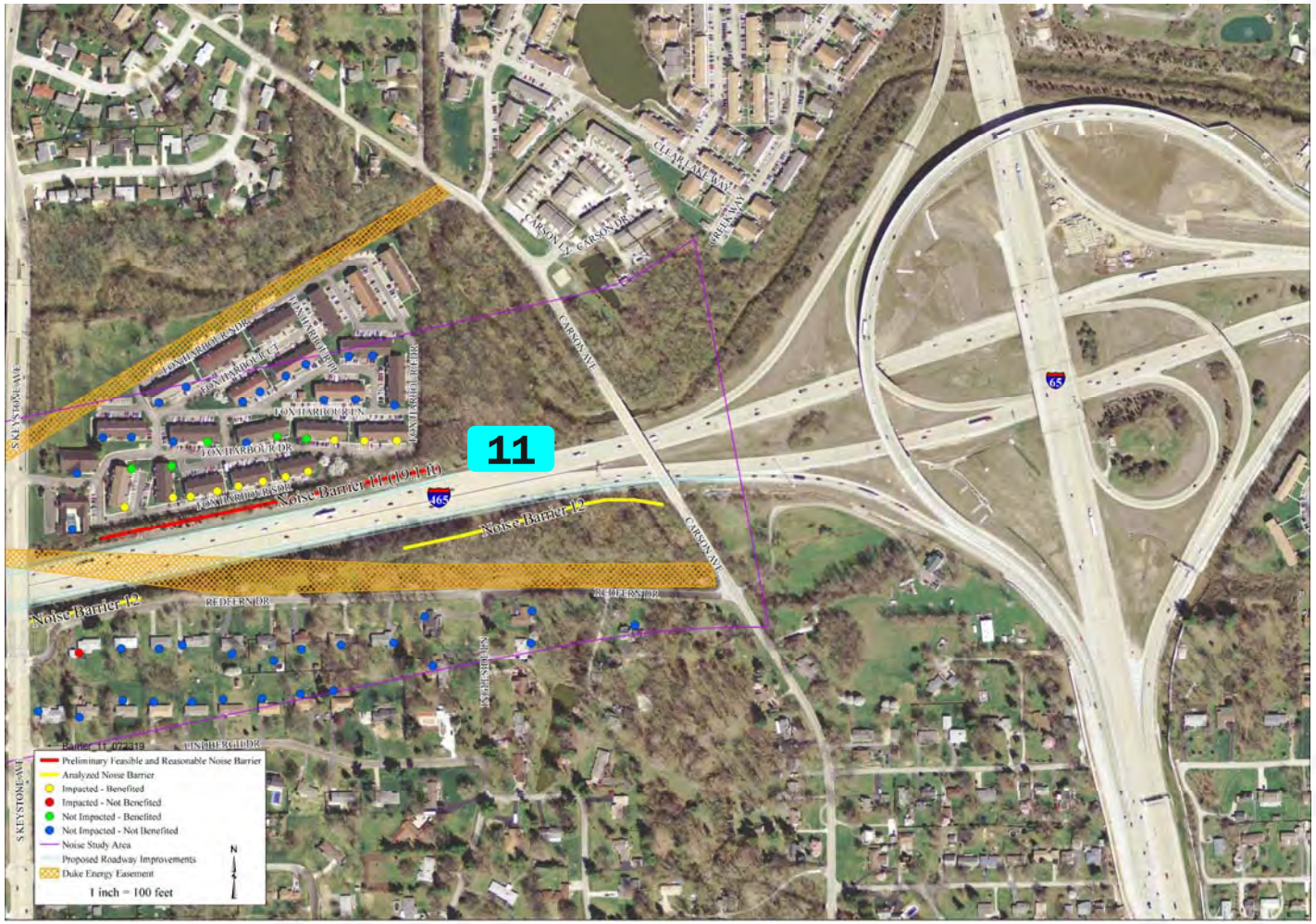
Preliminary Feasible and Reasonable Noise Barrier 11



Noise Barrier 11 (westbound)	
Length: 1,175 ft	Est. Cost: $0.7M
Avg. Height: 19.1 ft	Benefited Receptors: 103

Noise Barrier Types

- Typical noise barrier has a panel design

Noise Barrier Types

- Noise wall texture is usually either block wall design or panel design
- Color and texture determined during final design phase.

Residents and Property Owner Survey

- Turn in completed survey cards tonight
- Or mail survey cards, postmarked no later than September 20, 2019:

  Indiana Department of Transportation
  c/o: Parsons
  465 Reconfiguration Project
  Attn: Daniel J. Miller
  101 West Ohio Street, Suite 2121
  Indianapolis, IN 46204
- Greater than 50% response rate required or a second survey will be mailed.
- For questions, email or call:

  daniel.j.miller@parsons.com (317) 616-4663

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Thank You

Project Website: https://www.in.gov/indot/3961.htm

INDOT Next Level Customer Service

855-INDOT4U (855-463-6848)

www.indot4u.com

indot@indot.in.gov

Please mention "I-465 Reconfiguration Project" in your comments.

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