



Clear Path 465
I-465/I-69 Interchange
Reconstruction & ATL
Noise Meeting
August 7, 2019

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)**

- Runfa Shi, Project Manager
- Brandon Miller, Environmental Services
- Rickie Clark, INDOT Public Involvement Manager

- **Parsons project team**

- Mark Perron, Project Manager
- Dan Miller, Environmental Services Manager
- Tony Pakeltis, Noise Analyst

Clear Path 465 Project Overview

- **Reconstruct I-465 from White River to Fall Creek**
- **Reconstruct I-69 / Binford Boulevard from 75th Street to 86th Street**
 - I-465 / I-69 Interchange Modification
 - Partial Ramp Reconstruction at I-465 / Allisonville Road and I-69 / 82nd Street
 - I-465 and I-69 Added Travel Lanes
- **Purpose and Need**
 - Improve overall traffic operations by increasing capacity
 - Improve safety
 - Reduce total number of crashes and crash rates (crashes / mile / year)
 - Decrease the fatality / injury severity percentages

Project Area





Project Limits:

- White River bridge to Fall Creek bridge

Number of Lanes:

- Existing: 3 through-lanes + 1 auxiliary lane between interchanges
- Proposed: 4 through-lanes + 1-2 auxiliary lanes between interchanges

Key Features:

- Reconstruct inside shoulders and construct lanes to outside
- I-465 constructed off-line through I-69 interchange
- No work to existing overpass bridges carrying Allisonville Road, 82nd Street, and 75th Street
- No major work to existing Allisonville Road interchange



Project Limits:

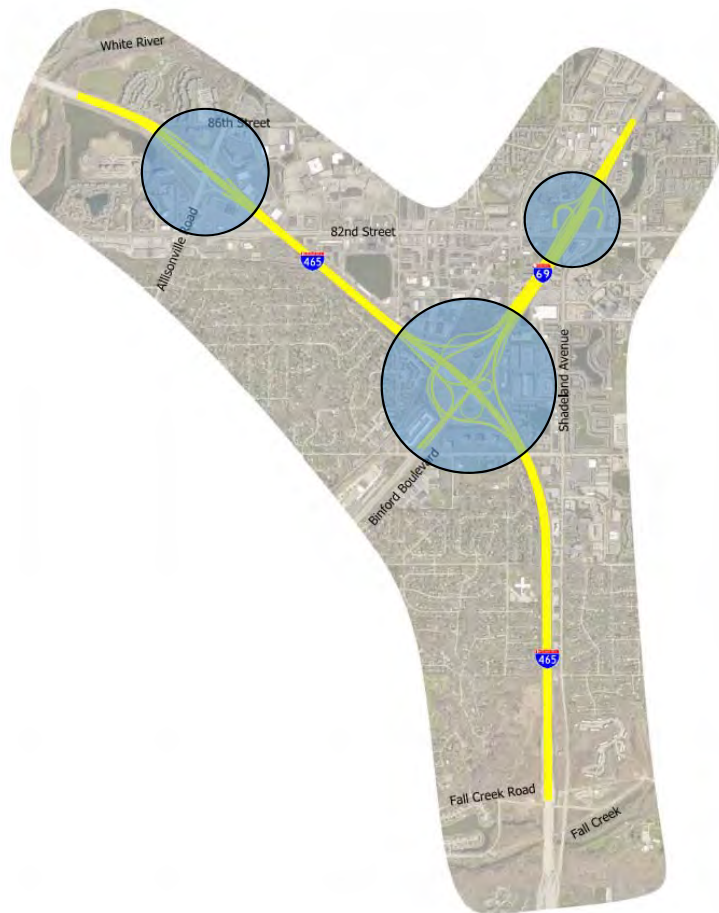
- 75th Street to north of 82nd Street

Number of Lanes:

- Existing: 4 through-lanes + 0-1 auxiliary lane between interchanges
- Proposed: 4 through-lanes + Collector/Distributor (C/D) roadway

Key Features:

- Movements to 82nd Street and Binford Boulevard on C/D roadway
- SB Binford Boulevard now exits off I-69 before 82nd Street



I-465 and I-69

- Partial cloverleaf with semi-directional ramps
- New high-speed ramp for EB I-465 to NB I-69
- Increased ramp capacity with more lanes
- Separating interstate from local traffic (i.e., EB exit to NB I-69 is separated from exit to 82nd Street C/D roadway).

I-69 and 82nd Street

- Folded Diamond
- 82nd Street on-ramp to SB I-69 splits to both I-69 and Binford Boulevard before entering SB I-69. This removes a weaving movement that degrades safety and mobility.

I-465 and Allisonville Road

- Existing single-point interchange
- Minor ramp reconstruction

Project Status

- **Environmental**

- Right-of-Way
 - New Right-of-Way/Relocations
- Streams, Wetlands, and Other Waters
- Cultural Resources (Historical/Archaeological)
- Section 4(f)
 - 71st St. Trail
 - Historic Properties/Districts – No adverse effect
- Environmental Justice (low income & minority populations)
- Noise

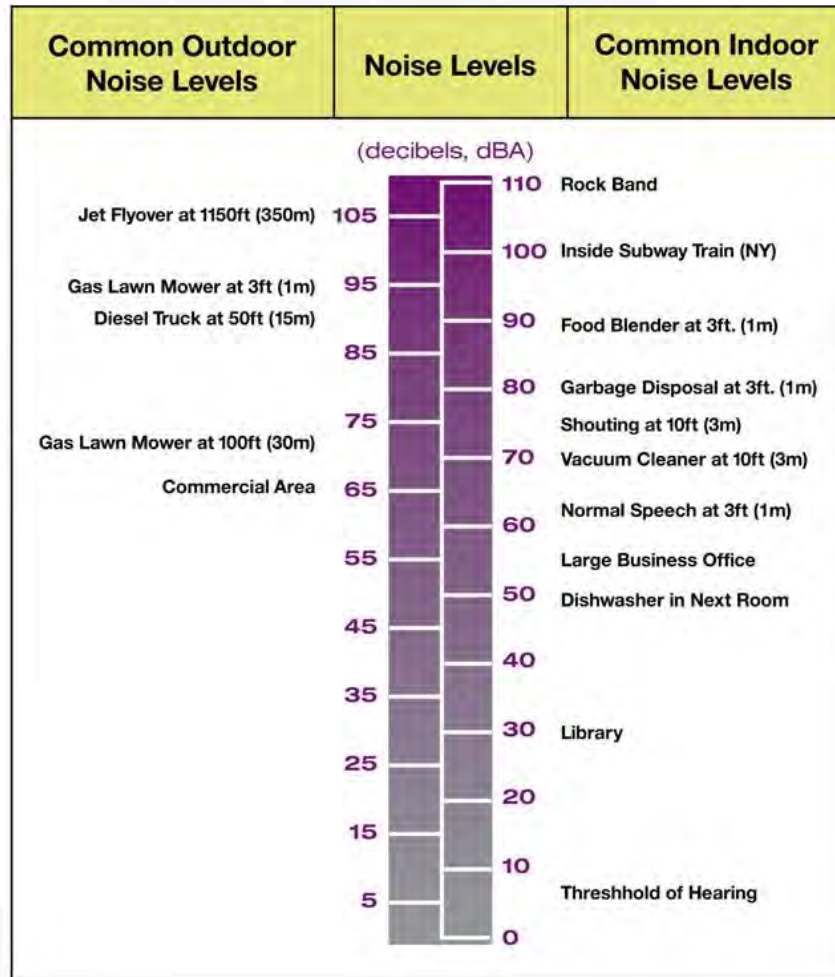
Project Status

- **Late 2019/Early 2020**
 - Finalize Environmental Assessment (EA)
 - Hold Public Hearing
 - Finding of No Significant Impact (FONSI)
- **Construction Letting – Fall 2021**
- **Design Team is working to determine the construction duration.**

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



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.



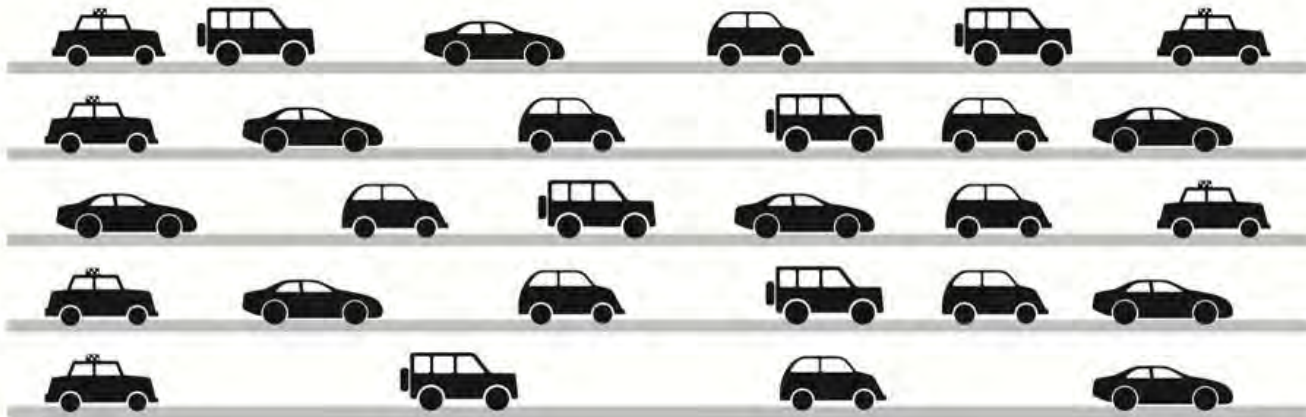
Traffic at 65 MPH sounds twice as loud (+10 dBA)
as traffic at 30 MPH.



Noise Basics



**One truck at 55 MPH sounds as loud
as 28 cars at 55 MPH.**



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 & 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

- **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

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**
- **Future noise level prediction based on year 2040 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 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

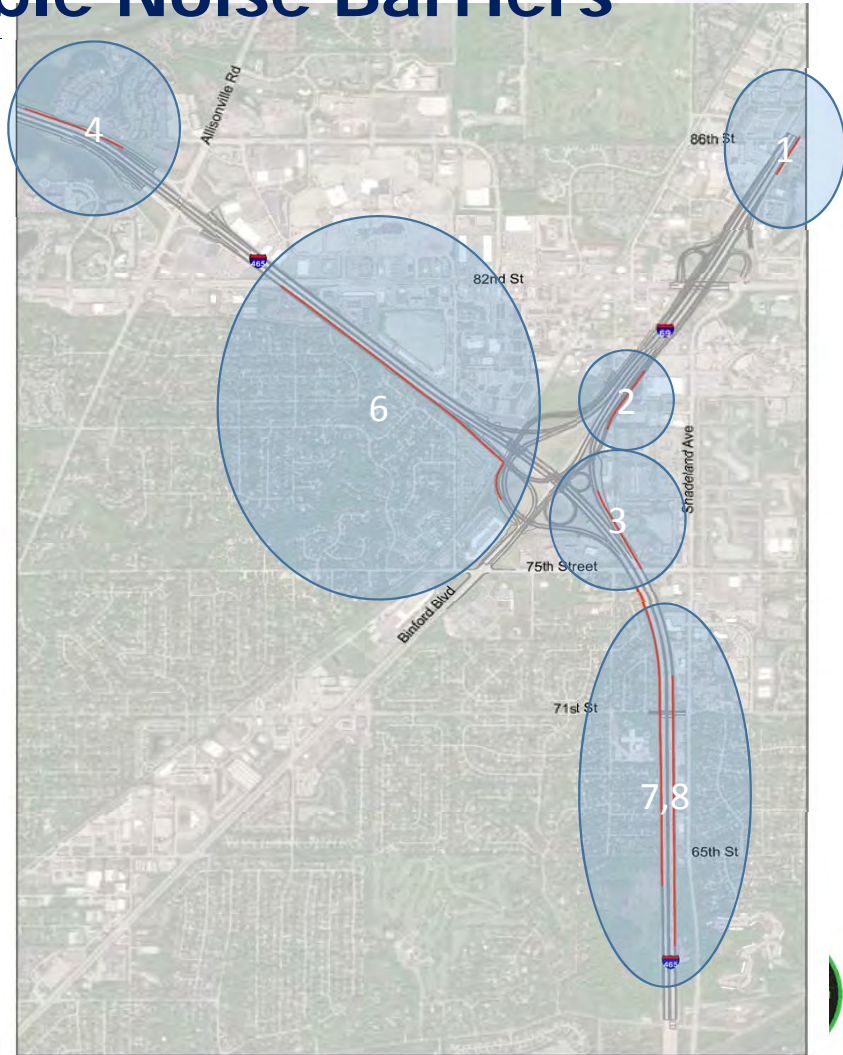
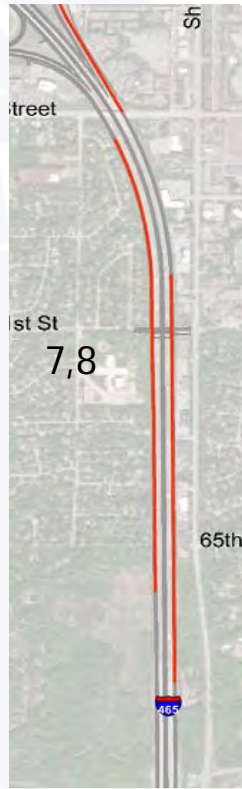
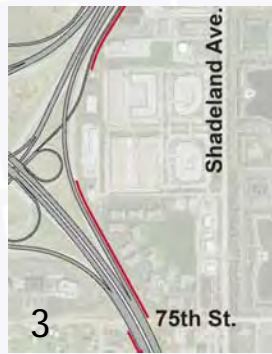
- **Reasonable**

- 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.

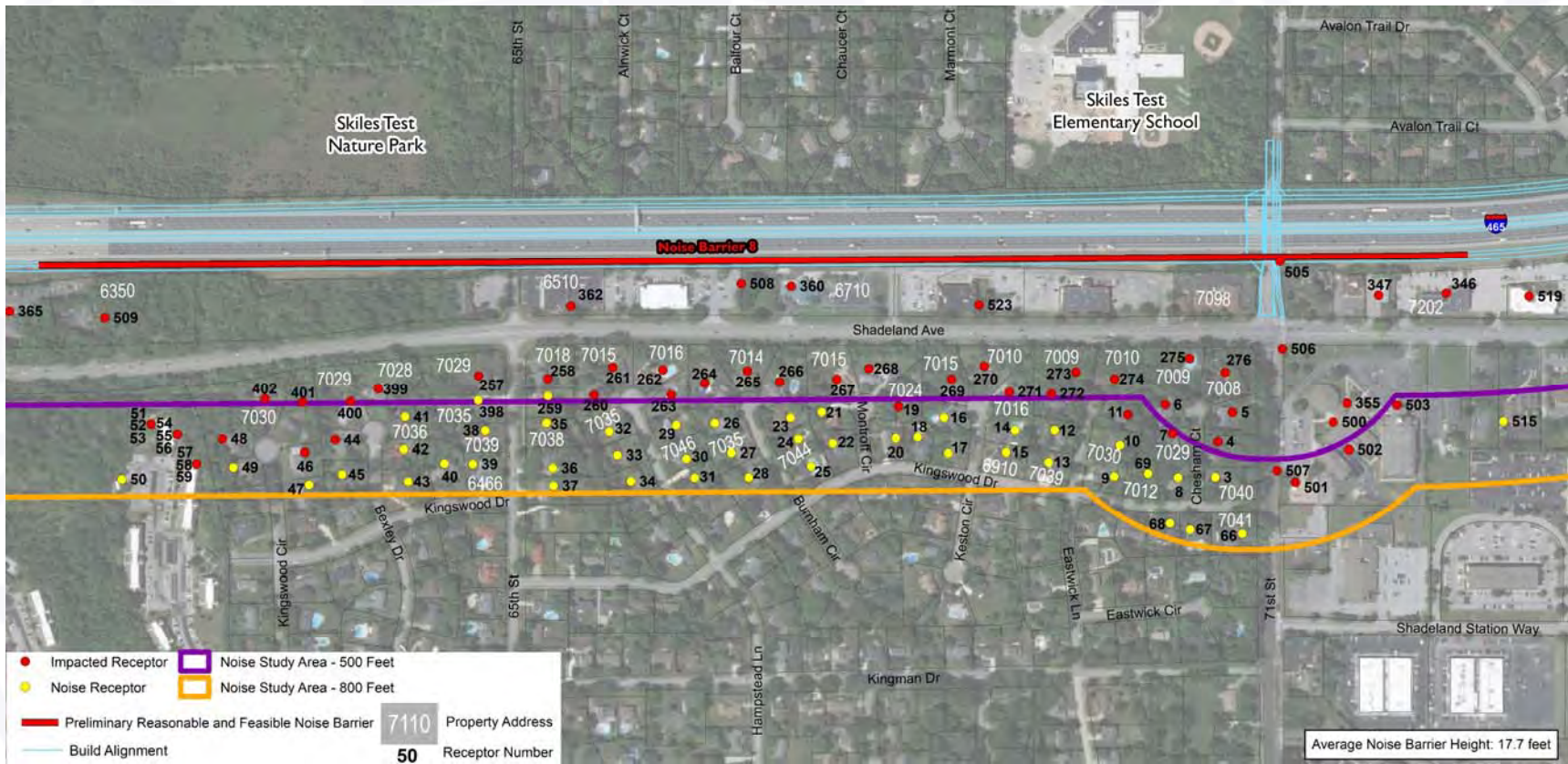
Evaluated Noise Barriers



Preliminary Feasible and Reasonable Noise Barriers



Preliminary Feasible and Reasonable Noise Barrier 8



East side of I-465, near 71st Street

Length: 4,900 feet

Avg. Height: 17.7 feet

Estimated Cost: \$2.6M

Benefited Receptors: 93

Noise Barrier 8 Additional Evaluation

	December 2018	August 2019
Study Area Size	500 feet	800 feet
Number of Residential Receptors Evaluated	28	110
Noise Impacts Identified <i>(greater than 66 decibels at residential receptors)</i>	Yes	Yes
Noise Barrier Analysis - Feasible		
Acoustic Feasibility <i>(5 decibel reduction at majority of impacted receptors)</i>	Yes	Yes
Engineering Feasibility <i>(No major utility, safety, drainage, or environmental conflicts)</i>	Yes	Yes
Noise Barrier Analysis - Reasonable		
Noise Reduction Goal Achieved <i>(7 decibel reduction at majority of first row receptors)</i>	Yes	Yes
Benefited Receptors <i>(5 decibel reduction with barrier)</i> Residential Non-Residential	21 17	83 10
Cost-Effectiveness <i>(Needs to be below \$30,000 per benefited receptor)</i>	\$96,000	\$28,000
Noise Survey Conducted	No	Ongoing
Views of Residents and Property Owners	Not Applicable	To be Determined

Views of Residents and Property Owners

- Noise Barrier #8 noise surveys were mailed on July 18, 2019.
- Noise Barrier #8 survey responses are due by August 21, 2019.
- Greater than 50% response rate required or a second survey will be mailed.
- All benefited residents and property owners were surveyed.
- Per INDOT policy, INDOT will consider the opinions of all survey respondents to determine whether a noise barrier is appropriate for this location.

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

Property Owner Survey

- **Turn in completed survey cards tonight**
- **For questions, email or call:**
daniel.j.miller@parsons.com (317) 616-4663
- **Or mail survey cards, postmarked no later than August 21, 2019:**

IN. Dept. of Transportation
c/o: Parsons
Clear Path 465 Project
Attn: Daniel J. Miller
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Indianapolis, IN 46204

Thank you for Attending!



Contact: Runfa Shi
Email: indot@indot.in.gov

Visit the project website at www.clearpath465.indot.in.gov

