248TH AVENUE
103RD STREET TO 95TH STREET
Phase I Study

2050 Projected Traffic

Initial CMAP 2050 Build Projection

- Included overall growth and development
  - Not at the size of the ICN fully built
- Base projections used for the ICN TIS

CMAP Advised to Update 2050 Build Volumes

- Modifications to the Design Hourly Volume
- Traffic and Geometric Analysis Update
  - Alternative 2 remains the Preferred Alternative following the updated traffic and geometric analysis.
- Highway Noise Analysis to be reanalyzed - **IDOT/FHWA review/approval required**

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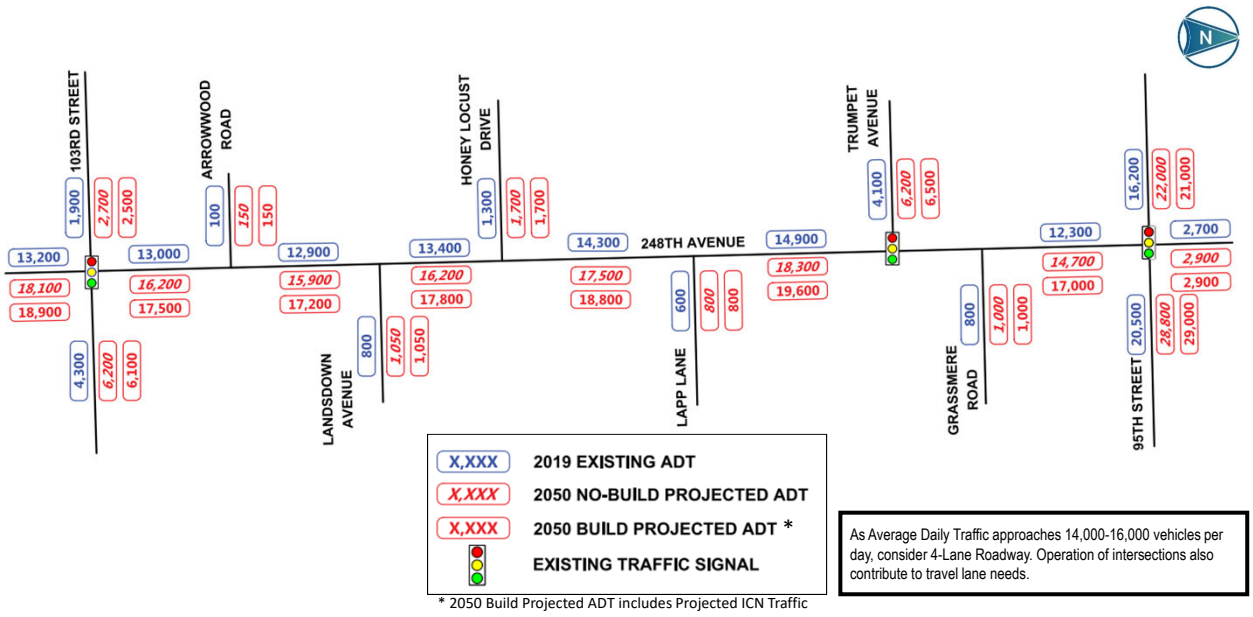
Existing and 2050 Traffic Volumes



* 2050 Build Projected ADT includes Projected ICN Traffic

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Highway Traffic Noise Analysis

Purpose of a Highway Traffic Noise Analysis

✓ 1. Identify where traffic noise impacts will occur in the future design year with the proposed project.

TBD 2. Where impacts are identified, evaluate and recommend the installation of noise barrier where they are found to be feasible and reasonable.

Highway Traffic Noise Policy

- U.S. Code of Federal Regulations (23 CFR 772)
- IDOT Bureau of Local Roads and Streets Manual

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Highway Traffic Noise Analysis

Decibels, or dB

Traffic Noise Impact Threshold

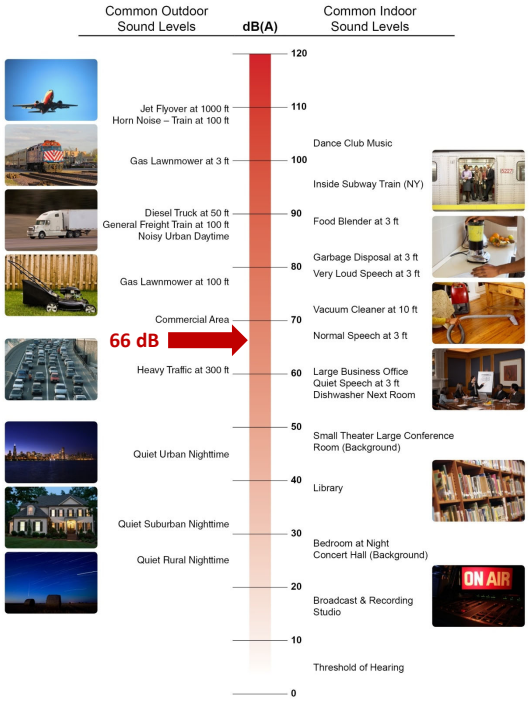
- 66 decibels or more
- At receptor location
- 2050 Build Condition, PM peak hour

Changes in Sound Level

- Less than 3 dB ***Not Perceptible***
- 3 dB to 5 dB ***Perceptible***
- 10 dB ***Double or Half***

Addition of Sound Levels

- 60 dB + 60 dB = 63 dB ***Not 120 dB***



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Highway Traffic Noise Analysis

Vehicle Volume

- Double Traffic Volume = 3 dB Increase
- Cut Traffic Volume in Half = 3 dB Decrease

- 248th Traffic increases projected to increase 45%-50% between today and the 2050 Build condition
- Associated increases in noise levels along 248th are 2 dB to 5 dB
  - Range from “not perceptible” to “perceptible”
  - Due to combination of volume increase, and roadway widening

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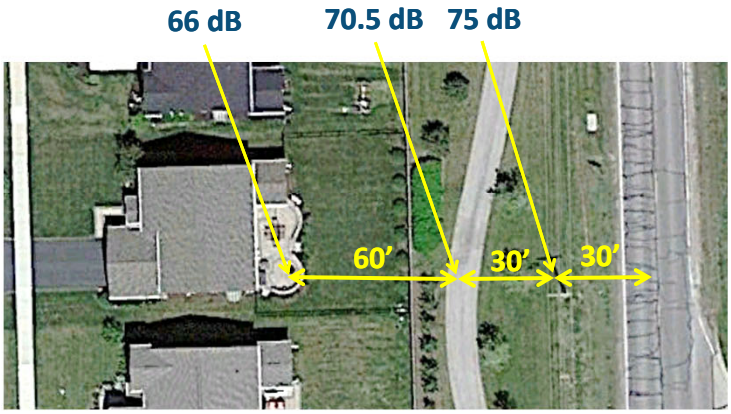
Highway Traffic Noise Analysis

Distance From Roadway

- Doubling distance results in 4.5 dB reduction
  - Noise levels quickly drop off as distance from roadway increases
  - Noise typically not described as an interference 200 to 300 feet away from an arterial roadway



Note: Hypothetical Example, Not Actual Noise Levels

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Highway Traffic Noise Analysis

- **Which locations are predicted to experience a noise impact?**
- **What are the next steps to determine if noise barriers will meet feasibility and reasonableness criteria?**

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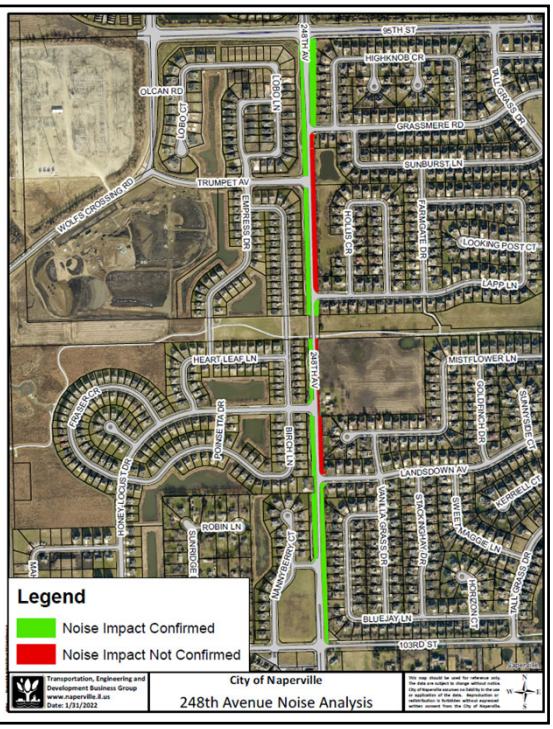
Highway Traffic Noise Analysis

Which locations are predicted to experience a noise impact?

- Addition of ICN Traffic to CMAP 2050 Projections
- Preliminary Findings:
  - Now have noise impacts at several receptor locations
  - Where noise impacts identified, consider if installation of noise barriers meets federal/state criteria
  - Where no impacts identified, no further consideration of barriers is made as part of federal-aid process



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Highway Traffic Noise Analysis

Which locations are predicted to experience a noise impact?

- Addition of ICN Traffic to CMAP 2050 Projections
- Preliminary Findings:
  - Existing Conditions: 61 to 64 decibels
  - 2050 Build Conditions: 62 to 66 decibels, plus one at 68 decibels
  - Of 11 analysis locations, 8 have predicted impacts.
  - Generally 0 to 1 decibel increase with addition of ICN traffic
  - Most increases tenths of a decibel.

Preliminary Only - Subject to Further Analysis and Federal/State Review

CNE No.	West or East Side	Between		Modeled Existing Condition (dBA)	2050 CMAP Traffic + Full Build ICN	
		South	North		2050 Predicted Build Condition (dBA)	Consider Abatement?
1	East	103rd	Landsdown	62	66	Yes
3	West	Arrowwood	Landsdown	62	66	Yes
4	East	Landsdown	Tall Grass Greenway	61	65	No
6	West	Landsdown	Honey Locust	64	68	Yes
9	West	Honey Locust	Com Ed Property	61	66	Yes
10	East	Tall Grass Greenway	Lapp	62	66	Yes
12	East	Lapp	Trumpet	61	65	No
14	West	Com Ed Property	Trumpet	61	66	Yes
15	East	Trumpet	Grassmere	61	62	No
17-21	West	Trumpet	95th	63	66	Yes
18-19	East	Grassmere	95th	64	66	Yes

- 66 decibels is the threshold at which IDOT considers a residential receptor to experience a traffic noise impact in the 2050 design year.
- *Consideration of Abatement* means that analyses must be conducted to determine if the noise barrier is *feasible* and *reasonable* based on Federal/State criteria.

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Highway Traffic Noise Analysis

Which locations are predicted to experience a noise impact?

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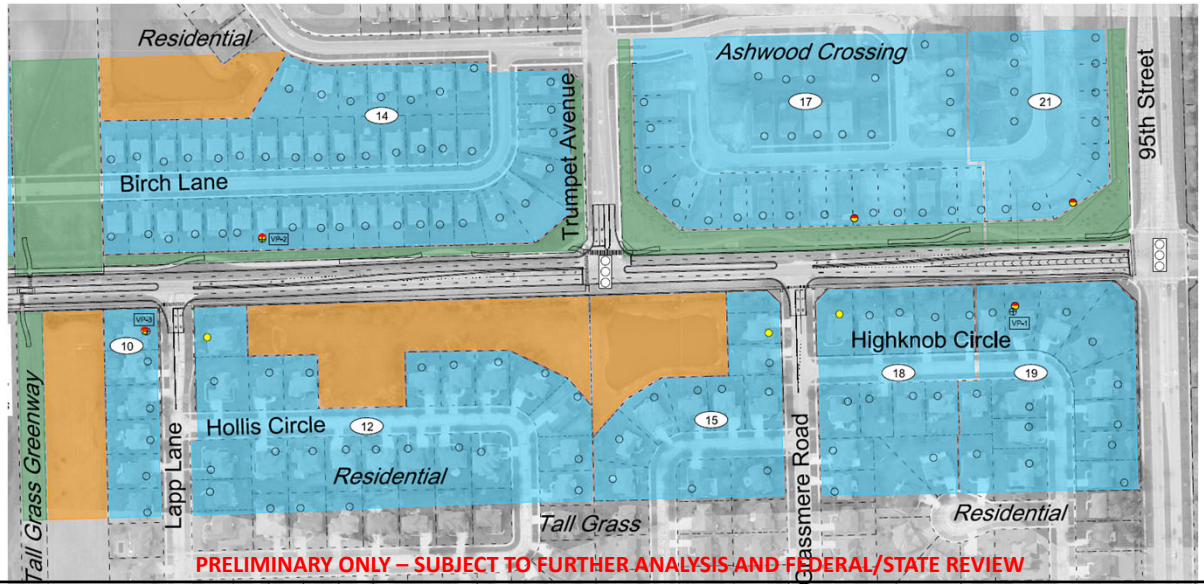
Highway Traffic Noise Analysis

Which locations are predicted to experience a noise impact?



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Highway Traffic Noise Analysis

How do we determine where noise barriers may be installed?

- Where Noise Impacts are expected to occur, a Noise Barrier can only be recommended for construction if it is both Feasible and Reasonable.
- If walls are determined to be Feasible and Reasonable, they will be recommended for installation as part of this Phase I Study.

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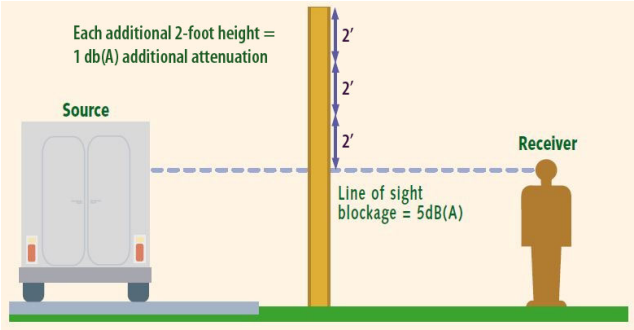
Highway Traffic Noise Analysis

Is a Noise Barrier Feasible?

1. Physically Able to Construct?
   - Safety, Sight Distance, Drainage, Utilities, Driveways.
2. 5-decibel Noise Reduction at two receptors?
   - Tall, long enough, dense material, no openings.



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Highway Traffic Noise Analysis

Is a Noise Barrier Reasonable?

1. 8-decibel Noise Reduction?
   - Minimum one receptor, try for as many as possible.
2. Meets Cost-to-Benefit Criteria?
   - Explained in subsequent slide.
3. Do the benefited residents want the wall?
   - A benefited receptor is one that experiences a 5 decibel or more reduction.
   - Explained in subsequent slide.

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Highway Traffic Noise Analysis

Reasonableness: Cost

- The cost of the wall divided by the number of receptors it benefits cannot exceed $30,000.
- Wall cost is $30/SF + any needed right-of-way/easement acquisition
- Example:
  - 1,000 foot long wall at 10 feet tall is 10,000 SF x $30/SF = $300,000
  - Wall must benefit at least 10 houses to meet the $30,000 per benefited resident criterion
  - A receptor is benefited if it receives a 5 decibel or more attenuation
  - Benefited residents are typically the first row adjacent to the wall, sometimes the second row

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Highway Traffic Noise Analysis

At this point, Feasible and Cost-Reasonable barriers must be reviewed and approved by IDOT before moving to the final Reasonableness step:

Reasonableness: Do benefited residents want the wall?

- Receptors (residents) who are benefited by a feasible/reasonable noise barrier will vote on whether they want it installed
- Generally speaking, need 50% or more of benefited receptors to be in favor
- If benefited residents desire wall, it is then considered fully reasonable
- Will be included in Phase I study as "Likely to be installed as part of this project"

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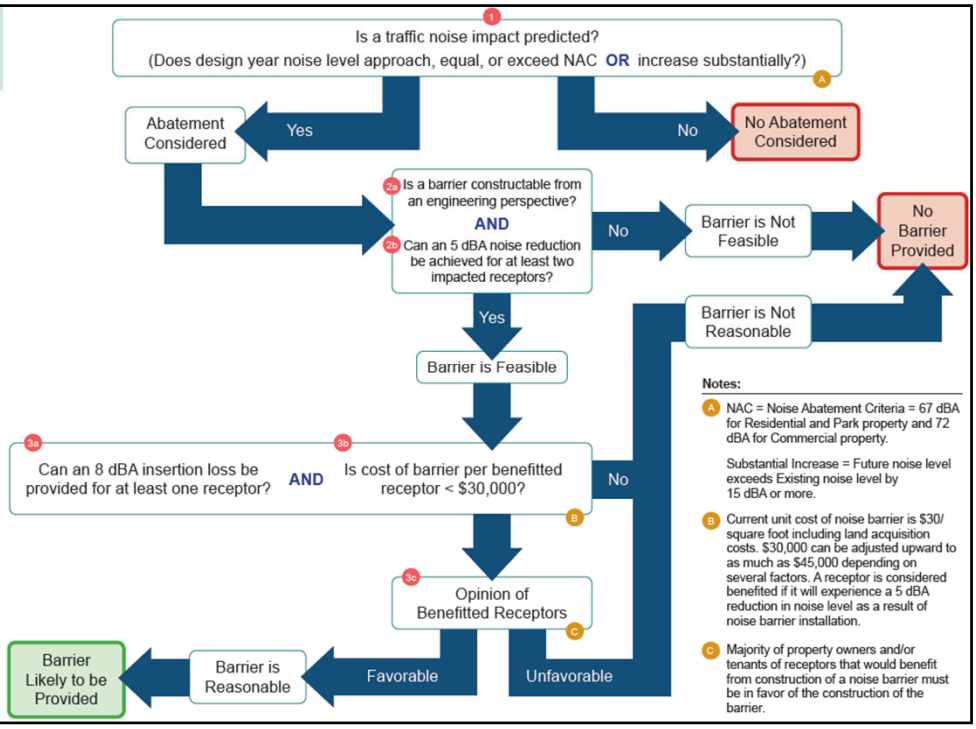
- This is the overall process we just discussed
- Exhibit available on board for review



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Highway Traffic Noise Analysis

What are the next steps in Phase I?

- Finalize models and potential wall locations, through Cost-Reasonable step
- Update the Noise Report as Draft
- IDOT reviews Draft study
- Voting on benefited residents desire for walls after IDOT review
- Add voting results to report, submit for IDOT final approval
- Noise Analysis becomes part of final Phase I report

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THANK YOU!