

Slide 1 - Slide 1

Course 200: Traffic Noise Analysis Process Validate the TNM

Module 3: Validate the TNM

Step	Duration	Task
1	~10 Mins	Determine Study Area Limits
2	~15 Mins	Build the TNM
3	~15 Mins	Validate the TNM
4	~5 Mins	Predict Noise Levels and Impacts
5	~15 Mins	Evaluate Noise Abatement
6		Assess Construction Noise
7	~10 Mins	Provide Information to Local Officials
8		Prepare a Noise Report

You will be able to:

- Define a traffic noise study area
- Obtain data for noise analysis
- Identify noise-sensitive receptors
- Demonstrate modeling point placement
- Gather field noise measurements**
- Validate the TNM**
- Predict traffic noise levels and impacts
- Determine where to place noise barriers
- Analyze traffic noise abatement measures
- Evaluate and control construction noise
- Provide information to local officials for undeveloped lands
- Prepare a noise report to NDOT standards

Slide 1 - Slide 1

Course 200: Traffic Noise Analysis Process
Validate the TNM

Module 3: Validate the TNM

1	2	3	4	5	6	7	8
Determine Study Area Limits	Build the TNM	Validate the TNM	Predict Noise Levels and Impacts	Evaluate Noise Abatement	Assess Construction Noise	Provide Information to Local Officials	Prepare a Noise Report

You will be able to:

<ul style="list-style-type: none"> ◆ Define a traffic noise study area 	<ul style="list-style-type: none"> ◆ Obtain data for noise analysis ◆ Identify noise-sensitive receptors ◆ Demonstrate modeling point placement 	<ul style="list-style-type: none"> ◆ Gather field noise measurements ◆ Validate the TNM 	<ul style="list-style-type: none"> ◆ Predict traffic noise levels and impacts 	<ul style="list-style-type: none"> ◆ Determine where to place noise barriers ◆ Analyze traffic noise abatement measures 	<ul style="list-style-type: none"> ◆ Evaluate and control construction noise 	<ul style="list-style-type: none"> ◆ Provide information to local officials for undeveloped lands 	<ul style="list-style-type: none"> ◆ Prepare a noise report to NDOT standards
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Audio Script and Notes to Reviewers

Welcome to Module Three, Validate the T-N-M. After completing this module, you will be able to gather field measurements and validate the T-N-M.

Text Captions

Validate the TNM

Module 2: Build the TNM

You will be able to:

Validate the TNM

- ◆ Gather field noise measurements
- ◆ Validate the TNM

Determine Study Area Limits

- ◆ Define a traffic noise study area

Build the TNM

- ◆ Obtain data for noise analysis
- ◆ Identify noise-sensitive receptors
- ◆ Demonstrate modeling point placement

Predict Noise Levels and Impacts

- ◆ Predict traffic noise levels and impacts

Evaluate Noise Abatement

- ◆ Determine where to place noise barriers
- ◆ Analyze traffic noise abatement measures

Assess Construction Noise

- ◆ Evaluate and control construction noise

Provide Information to Local Officials

- ◆ Provide information to local officials for undeveloped lands

Prepare a Noise Report

- ◆ Prepare a noise report to NDOT standards

Slide 2 - Slide 2



Audio Script and Notes to Reviewers

Remember from the introductory course that you need to gather noise monitoring data to validate the T-N-M.

Text Captions

Conduct Field Monitoring

Remember from the introductory course that you need to gather noise monitoring data to validate the TNM.

Slide 3 - Slide 3

Course 200: Traffic Noise Analysis Process

Validate the TNM

Conduct Field Monitoring

We also take field measurements to determine existing noise levels for projects on a new alignment.

A composite image for a presentation slide. On the left, a photograph shows a dirt road under construction in a green, hilly landscape. Two yellow construction vehicles, a bulldozer in the foreground and a grader in the background, are working on the road. On the right, a man with a beard, wearing a yellow short-sleeved button-down shirt and dark trousers, stands against a blue background. He is gesturing with his right hand towards the construction site. A dark blue speech bubble is positioned between the man and the construction site, containing white text. The slide has a dark blue header with white text and a small white square icon in the top right corner.

Audio Script and Notes to Reviewers

In addition to validation purposes, we also take field measurements to determine existing noise levels for projects on a new alignment.

Text Captions

Conduct Field Monitoring

We also take field measurements to determine existing noise levels for projects on a new alignment.

Slide 4 - Slide 4



Take measurements at locations representative of receptors in the project area.

However, not all locations included in the TNM need to be field monitored. Focus on locations that best represent the study area.

Audio Script and Notes to Reviewers

Take measurements at locations representative of receptors in the project area, such as residences, schools, churches, libraries, etcetera. However, not all locations included in the T-N-M need to be field monitored. Focus on locations that best represent the study area.

Text Captions

Conduct Field Monitoring

Take measurements at locations representative of receptors in the project area.

However, not all locations included in the TNM need to be field monitored. Focus on locations that best represent the study area.

Slide 5 - Slide 5

Course 200: Traffic Noise Analysis Process Validate the TNM

Conduct Field Monitoring

For example, we generally select locations where there are significant changes in traffic and topography.

For lengthy corridors, use locations that are spread out enough to adequately cover the study area.

A man in a yellow short-sleeved button-down shirt and blue jeans stands on a paved road. To his right is a black tripod with a red and white microphone on top. The background shows a road with a guardrail and trees. The slide has a dark blue header with the course name and a light blue sub-header with the topic. Two speech bubbles are overlaid on the image, one dark blue and one light blue, containing text.**Audio Script and Notes to Reviewers**

For example, we generally select locations where there are significant changes in traffic and topography. For lengthy corridors, use locations that are spread out enough to adequately cover the study area.

Text Captions

Conduct Field Monitoring

For example, we generally select locations where there are significant changes in traffic and topography.
For lengthy corridors, use locations that are spread out enough to adequately cover the study area.

Slide 6 - Slide 6

Course 200: Traffic Noise Analysis Process

Validate the TNM

Conduct Field Monitoring

Here's an example for a different project. The yellow dots are potential receptors within residential areas, also shaded yellow.

The blue pentagons show locations of field measurements.

Audio Script and Notes to Reviewers

Here's an example for a different project. The yellow dots are potential receptors within residential areas, also shaded yellow. The blue pentagons show locations of field measurements.

Text Captions

Conduct Field Monitoring

Here's an example for a different project. The yellow dots are potential receptors within residential areas, also shaded yellow.

The blue pentagons show locations of field measurements.

Slide 7 - Slide 7

Course 200: Traffic Noise Analysis Process
Validate the TNM

Conduct Field Monitoring

Perform all noise monitoring in accordance with methodology presented in FHWA's *Measurement of Highway Related Noise*.

Use an ANSI Type 1 or Type 2 noise meter



Audio Script and Notes to Reviewers

Perform all noise monitoring in accordance with methodology presented in F-H-W-A's "Measurement of Highway Related Noise." Use an Ansee Type One or Type Two noise meter.

Text Captions

Conduct Field Monitoring

Perform all noise monitoring in accordance with methodology presented in FHWA's *Measurement of Highway Related Noise*.

Use an ANSI Type 1 or Type 2 noise meter

Slide 8 - Slide 8

Course 200: Traffic Noise Analysis Process Validate the TNM

Conduct Field Monitoring



Take field measurements at exterior areas of frequent human use or at the right-of-way line if there is no outdoor use.



Audio Script and Notes to Reviewers

Take field measurements at exterior areas of frequent human use, or at the right-of-way line if there is no outdoor use.

Text Captions

Conduct Field Monitoring

Take field measurements at exterior areas of frequent human use or at the right-of-way line if there is no outdoor use.

Slide 9 - Slide 9

Course 200: Traffic Noise Analysis Process

Validate the TNM

Conduct Field Monitoring

Do not take noise meter readings in wind speeds that are 12 miles per hour or greater.

The meter will pick up the wind noise.



The slide features a man in a yellow shirt on the left and a woman in a red jacket on the right, both appearing to be in windy conditions. A video player in the bottom right corner shows a street scene with cars, illustrating windy conditions. The slide has a blue and yellow background.

Audio Script and Notes to Reviewers

Do not take noise meter readings in wind speeds that are twelve miles per hour or greater. The meter will pick up the wind noise.

Reviewer: This slide includes a video of windy conditions.

Text Captions

Conduct Field Monitoring

Do not take noise meter readings in wind speeds that are 12 miles per hour or greater.

The meter will pick up the wind noise.

Slide 10 - Slide 10



Audio Script and Notes to Reviewers

This location is a Category “C” receptor. I took three fifteen-minute measurements at each location, which is usually sufficient. Although three measurements are recommended, in some instances, two readings may be sufficient if terrain is relatively flat and noise levels are consistent. Long-term, twenty-four-hour modeling is typically not necessary and requires coordination with N-dot P-Q-S to develop a monitoring plan.

Text Captions

Conduct Field Monitoring

This location is a Category C receptor.

I took three 15-minute measurements at each location, which is usually sufficient.


Two readings may be sufficient if terrain is relatively flat and noise levels are consistent.

Long-term, 24-hour modeling is typically not necessary and requires coordination with NDOT PQS to develop a monitoring plan.

Slide 11 - Slide 11

Course 200: Traffic Noise Analysis Process
Validate the TNM

Conduct Field Monitoring



Manually count traffic on the road as well as adjacent streets.

You may need to use video equipment to document high traffic volumes for counting traffic at a later date.

Audio Script and Notes to Reviewers

Manually count traffic on the road as well as adjacent streets. You may need to use video equipment to document high traffic volumes for counting traffic at a later date.

Note: Possibly add video here.

Text Captions

Conduct Field Monitoring

Manually count traffic on the road as well as adjacent streets.

You may need to use video equipment to document high traffic volumes for counting traffic at a later date.

Slide 12 - Slide 12

Course 200: Traffic Noise Analysis Process

Validate the TNM

Conduct Field Monitoring

Include the number of automobiles, medium trucks, and heavy trucks.

Audio Script and Notes to Reviewers

Include the number of automobiles, medium trucks, and heavy trucks. Also count motorcycles and buses to validate the model.

Text Captions

Conduct Field Monitoring

Include the number of automobiles, medium trucks, and heavy trucks.

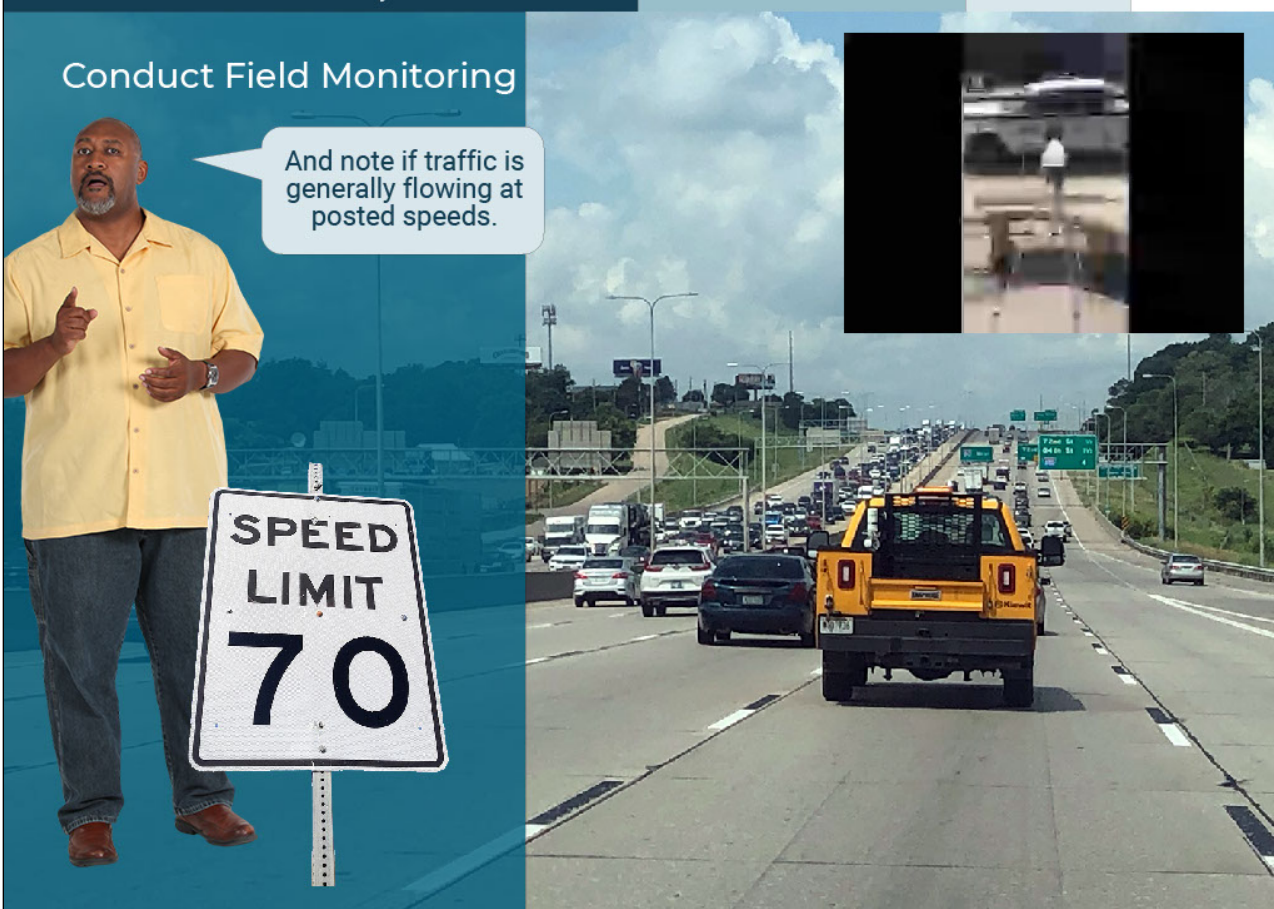
Slide 13 - Slide 13

Course 200: Traffic Noise Analysis Process

Validate the TNM

Conduct Field Monitoring

And note if traffic is generally flowing at posted speeds.



The slide features a man in a yellow shirt on the left, gesturing towards a speed limit sign that reads "SPEED LIMIT 70". The background is a photograph of a multi-lane highway with a yellow truck in the foreground. An inset video in the top right corner shows a blurred scene of traffic. The slide is titled "Conduct Field Monitoring" and includes a speech bubble with the text "And note if traffic is generally flowing at posted speeds." The slide is part of "Course 200: Traffic Noise Analysis Process" and is titled "Validate the TNM".

Audio Script and Notes to Reviewers

And note if traffic is generally flowing at posted speeds.

Text Captions

Conduct Field Monitoring

And note if traffic is generally flowing at posted speeds.

Slide 14 - Slide 14

Course 200: Traffic Noise Analysis Process
Validate the TNM

Conduct Field Monitoring

Date: 5/23/13 Project: I-680 Omaha, NE

Monitoring Location: M4 S 110th St. (SF Res. 1230 110th St.)

Equipment: *2271 201512 844 4231 Calibrator SW: 2010154*

Weather: Sunny

Temp: 62°F

Wind (direction and velocity): 5-8 mph NE

Measurement Start Time	Duration	dBA			Traffic Counts					
		Leq	Lmin	Lmax	Autos		Medium Trucks		Heavy Trucks	
					NB	SB	NB	SB	NB	SB
11:20 am	15 min.	73.1	65.5	76.5	699	740	23	15	41	49
11:35 am					99	110	6	3	2	0

Calibration Factor: 2.3

Posted Speed Limit: 60 mph

Notes (site characteristics, pertinent distances, elevations, etc):

- Traffic is dominant noise source
- meter approx. 25-30' above roadway
- birds chirping

← SB

→ NB

→ Ramp

⊙ I-680 - chiswick

← 110th St.

Time, duration

Weather, wind

Traffic count by vehicle type

Document the monitoring conditions on a log like this.

Audio Script and Notes to Reviewers

Document the monitoring conditions on a log like this. Include notes about weather and wind, the time and duration of each recording, and the traffic count by vehicle type. Also make note of anything else that could affect the noise data you're gathering, such as birds chirping. If an unusually loud event occurs, such as emergency vehicles passing by, jets flying overhead, or dogs barking, you may need to re-take the measurements.

Text Captions

- Conduct Field Monitoring
- Document the monitoring conditions on a log like this.
- Weather, wind
- Time, duration
- Traffic count by vehicle type

Slide 15 - Slide 15

Course 200: Traffic Noise Analysis Process
Validate the TNM

Question 1 of 8

Knowledge Check

Which of the following is true when conducting field monitoring?
Select all answers that apply.

- Use an ANSI Type 1 or Type 2 meter.
- Take field measurements at all receptor locations identified in the TNM.
- Take field measurements at exterior areas of frequent human use or the right-of-way line.
- Conduct field monitoring when traffic is light for safety reasons.

Submit

Review Area

Correct feedback: Correct - Use an ANSI Type 1 or 2 meter and only take field measurements at representative locations at exterior areas of frequent human use or the right-of-way line. Click anywhere or click the Forward button to continue.

Audio Script and Notes to Reviewers

Which of the following is true when conducting field monitoring?

Text Captions

Knowledge Check

Which of the following is true when conducting field monitoring?

Select all answers that apply.

Correct feedback: Correct - Use an ANSI Type 1 or 2 meter and only take field measurements at representative locations at exterior areas of frequent human use or the right-of-way line. Click anywhere or click the Forward button to continue.

1st incorrect feedback: Incorrect. You must use a specific meter type and take measurements at specific locations. Click anywhere and try again.

2nd incorrect feedback: Incorrect - Use an ANSI Type 1 or 2 meter and only take field measurements at representative locations at exterior areas of frequent human use or the right-of-way line. Click anywhere or click the Forward button to continue.

Slide 16 - Slide 16

Audio Script and Notes to Reviewers

Complete the sentence below by filling in the blank.

Text Captions

Knowledge Check

Complete the sentence below by filling in the blank.

Do not take noise measurements when wind speeds are above ____ miles per hour.

Correct feedback: Correct - Do not take noise meter readings if wind speeds are 12 miles an hour or greater. Click anywhere or click the Forward button to continue.

1st incorrect feedback: Incorrect - Do not take noise meter readings if wind speeds are somewhere between 10 and 15 miles an hour. Click anywhere and try again.

2nd incorrect feedback: Incorrect - Do not take noise meter readings if wind speeds are 12 miles an hour or greater. Click anywhere or click the Forward button to continue.

Slide 17 - Slide 17

Course 200: Traffic Noise Analysis Process
Validate the TNM

Question 3 of 8

Knowledge Check

How many field measurements should you take at each field monitoring location?

- Three
- One
- As many as you have time for
- At least five

Submit

Review Area
 Correct. Take three field measurements at each location. Two measurements are typically sufficient if terrain is flat and noise levels are consistent. Click anywhere or click the Forward button to continue.

Audio Script and Notes to Reviewers

How many field measurements should you take at each field monitoring location?

Text Captions

Knowledge Check

How many field measurements should you take at each field monitoring location?

Correct feedback: Correct - Take three field measurements at each location. Two measurements are typically sufficient if terrain is flat and noise levels are consistent. Click anywhere or click the Forward button to continue.

1st incorrect feedback: Incorrect. You should typically take more than one but less than five field measurements. Click anywhere and try again.

2nd incorrect feedback: Incorrect - Take three field measurements at each location. Two measurements are typically sufficient if terrain is flat and noise levels are consistent. Click anywhere or click the Forward button to continue.

Slide 18 - Slide 18

Course 200: Traffic Noise Analysis Process
Validate the TNM

Question 4 of 8

Knowledge Check

Complete the sentence below by filling in the blank.

Take noise measurements for at least minutes each.

Submit

Incorrect - Record noise measurements for a time period between 10 and 20 minutes. Click anywhere and try again.

Audio Script and Notes to Reviewers

Complete the sentence below by filling in the blank.

Text Captions

Knowledge Check

Complete the sentence below by filling in the blank.

Take noise measurements for at least _____ minutes each.

Correct feedback: Correct - Take noise measurements for at least 15 minutes at each monitoring location. Click anywhere or click the Forward button to continue.

1st incorrect feedback: Incorrect - Record noise measurements for a time period between 10 and 20 minutes. Click anywhere and try again.

2nd incorrect feedback: Incorrect - Take noise measurements for at least 15 minutes at each monitoring location. Click anywhere or click the Forward button to continue.

Slide 19 - Slide 19

Course 200: Traffic Noise Analysis Process Validate the TNM

Question 5 of 8

Knowledge Check

Which of the following must you document when manually counting traffic?
Select all that apply.

- The number of automobiles, medium trucks, and heavy trucks
- Weather and wind conditions
- The number of passengers per vehicle
- Approximate traffic speeds

Submit

Incorrect. Consider the vehicle mix and speeds, and atmospheric conditions that could affect noise. Click anywhere or click the Forward button to continue.

Audio Script and Notes to Reviewers

Which of the following must you document when manually counting traffic?

Text Captions

Knowledge Check

Which of the following must you document when manually counting traffic?

Select all that apply.

Correct feedback: Correct - Count the types of vehicles that pass, note their approximate speed, and record weather and wind conditions. Click anywhere or click the Forward button to continue.

1st incorrect feedback: Incorrect. Consider the vehicle mix and speeds, and atmospheric conditions that could affect noise. Click anywhere and try again.

2nd incorrect feedback: Incorrect - Count the types of vehicles that pass, note their approximate speed, and record weather and wind conditions. Click anywhere or click the Forward button to continue.

Slide 20 - Slide 20

Course 200: Traffic Noise Analysis Process Validate the TNM

Validate the TNM

Now that you have field monitoring data, use it to validate the TNM.

	Vehicle Type	Vch/hr	Speed (mph)
1	Auto	7872	60.00
2	Medium Truck	92	60.00
3	Heavy Truck	236	60.00
4	Buses	0	0.00
5	Motorcycle	0	0.00

Enter traffic data, including volumes, composition, and speed, collected during noise monitoring into the TNM.

If 15-minute field readings were taken, multiply traffic number counts by 4 to get an hourly equivalent.

Audio Script and Notes to Reviewers

Now that you have field monitoring data, use it to validate the T-N-M. Enter traffic data, including volumes, composition, and speed, collected during noise monitoring into the T-N-M. If fifteen-minute field readings were taken, multiply traffic number counts by four to get an hourly equivalent.

Text Captions

Course 200: Traffic Noise Analysis Process

Validate the TNM

Enter traffic data, including volumes, composition, and speed, collected during noise monitoring into the TNM.

Validate the TNM


Now that you have field monitoring data, use it to validate the TNM.

If 15-minute field readings were taken, multiply traffic number counts by 4 to get an hourly equivalent.

Slide 21 - Slide 21

Course 200: Traffic Noise Analysis Process
Validate the TNM
☐

Validate the TNM



Results of Validation			
Monitoring Location	Measured Leq (dBA)	Predicted Leq (dBA)	Difference (dBA)
M1	67.7	67.4	-0.3
M2	75.2	74.7	-0.5
M3	63.9	66.4	+2.5
M4	73.1	72.4	-0.7
M5	70.7	68.7	-2.0
M6	69.1	67.0	-2.1

Run the model to compare monitored results to modeled noise levels using FHWA TNM.

Noise monitoring results should be within +/-3 dB(A) of the FHWA TNM noise level for the model to be considered validated.

Audio Script and Notes to Reviewers

Run the model to compare monitored results to modeled noise levels using F-H-W-A T-N-M. Noise monitoring results should be within plus-or-minus three D-B-A of the F-H-W-A T-N-M noise level for the model to be considered validated.

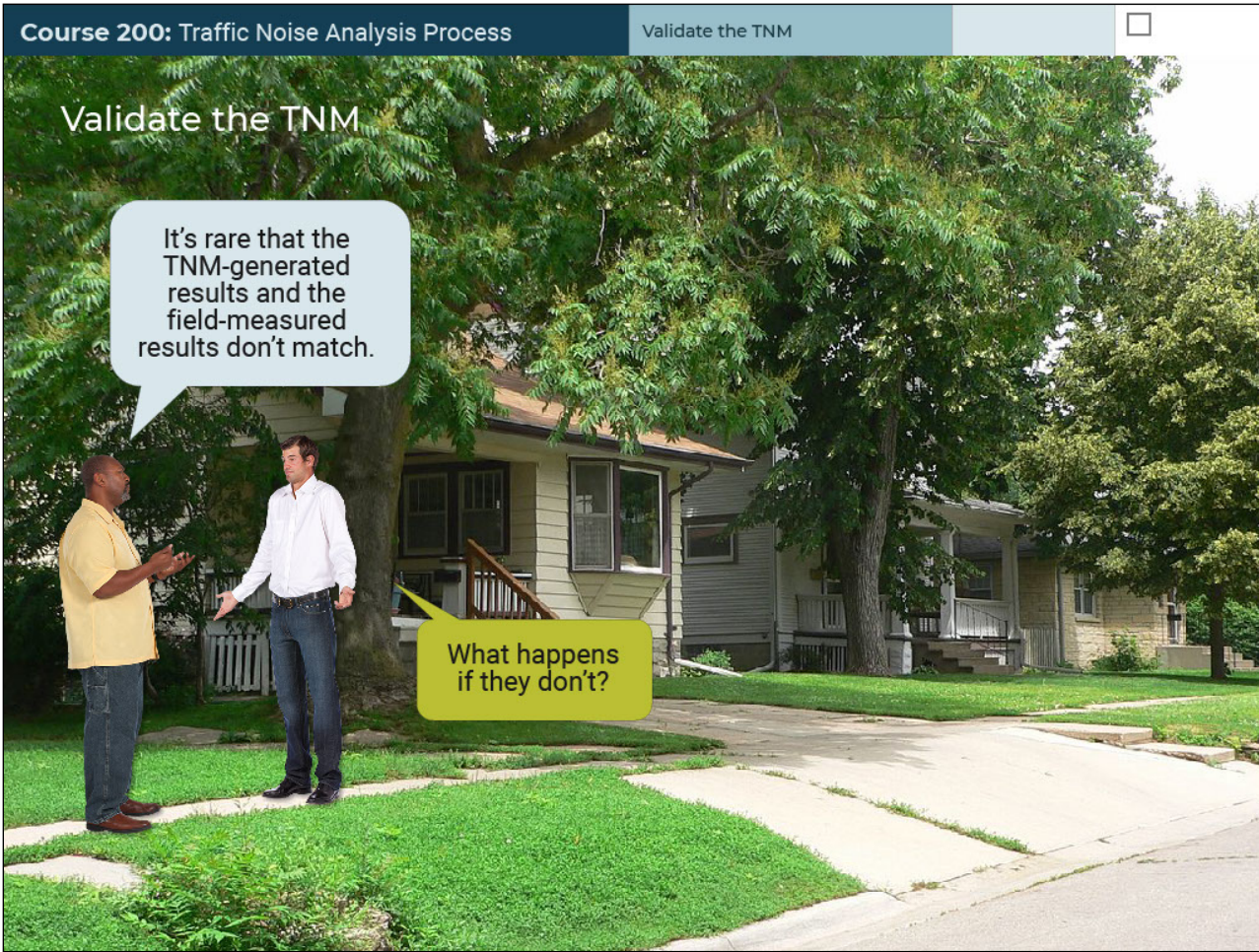
Text Captions

Validate the TNM

Run the model to compare monitored results to modeled noise levels using FHWA TNM.

Noise monitoring results should be within +/-3 dB(A) of the FHWA TNM noise level for the model to be considered validated.

Slide 22 - Slide 22



Audio Script and Notes to Reviewers


It's rare that the T-N-M-generated results and the field-measured results don't match.
What happens if they don't?

Text Captions

Validate the TNM
It's rare that the TNM-generated results and the field-measured results don't match.
What happens if they don't?

Slide 23 - Slide 23

Question 6 of 8



What do you think?

What would you do if the TNM-generated results and the field data don't match?
Select all answers that apply.


- Verify the accuracy of the data you input into the model.
- Determine if any non-traffic noise was present during field data collection.
- Proceed with the noise analysis anyway.
- Determine if road conditions generated excess vehicle noise.

Submit

Review Area:

That's right. Make sure the data you entered into the model is correct, that no non-traffic noise, such as from a lawnmower, was present during field data collection, and that road conditions could have generated excess vehicle noise. Click anywhere or click the Forward button to continue.

Not quite. Make sure the data you entered into the model is correct, that no non-traffic noise, such as from a lawnmower, was present during field data collection, and that road conditions could have generated excess vehicle noise. Click anywhere or click the Forward button to continue.


Audio Script and Notes to Reviewers

What would you do if the T-N-M-generated results and the field data don't match?

Text Captions

What do you think?

What would you do if the TNM-generated results and the field data don't match?

Select all answers that apply.

That's right. Make sure the data you entered into the model is correct, that no non-traffic noise, such as from a lawnmower, was present during field data collection, and that road conditions could have generated excess vehicle noise. Click anywhere or click the Forward button to continue.

Not quite. Make sure the data you entered into the model is correct, that no non-traffic noise, such as from a lawnmower, was present during field data collection, and that road conditions could have generated excess vehicle noise. Click anywhere or click the Forward button to continue.

Slide 24 - Slide 24

Course 200: Traffic Noise Analysis Process

Validate the TNM

Validate the TNM

If results are outside this range...

1. Verify that the model inputs accurately reflect the data collected during field monitoring.
2. Review monitoring data for potential non-traffic noise sources that may have affected the measurements.
3. Review topography to make sure noise shielding is accounted for in the model.

**Audio Script and Notes to Reviewers**

If results are outside this range, verify that the model inputs accurately reflect the data collected during field monitoring. For example, refer to field photos. Review monitoring data for potential non-traffic noise sources that may have affected the measurements. And Review topography to make sure noise shielding is accounted for in the model.

Text Captions

Validate the TNM

If results are outside this range...

1. Verify that the model inputs accurately reflect the data collected during field monitoring.
2. Review monitoring data for potential non-traffic noise sources that may have affected the measurements.
3. Review topography to make sure noise shielding is accounted for in the model.

Slide 25 - Slide 25

Course 200: Traffic Noise Analysis Process

Validate the TNM

Validate the TNM



Examples of non-traffic noise sources that could affect the validation are emergency vehicles, airplanes, and construction noise.

Audio Script and Notes to Reviewers

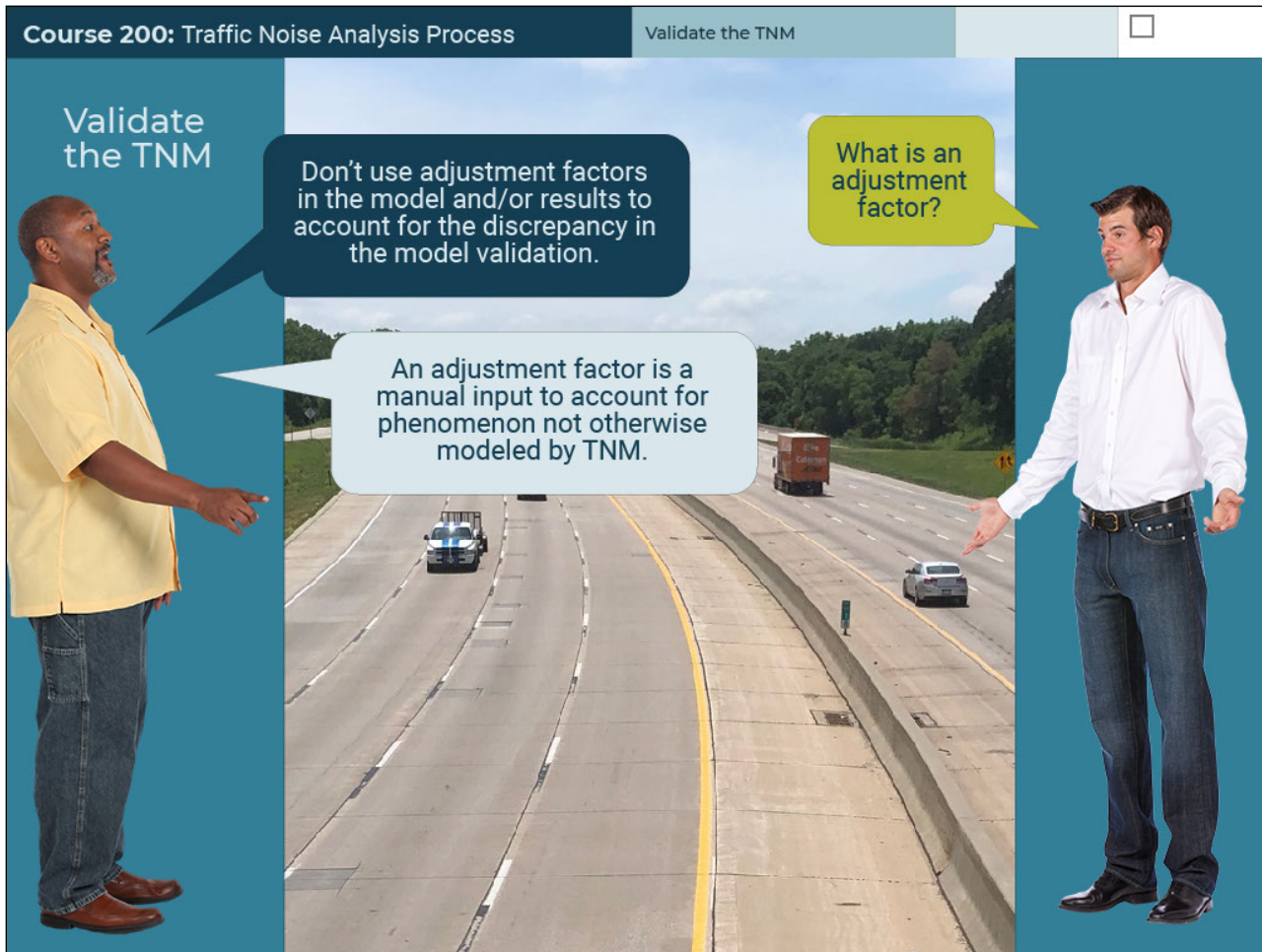
Examples of non-traffic noise sources that could affect the validation are emergency vehicles, airplanes, and construction noise.

Text Captions

Validate the TNM

Examples of non-traffic noise sources that could affect the validation are emergency vehicles, airplanes, and construction noise.

Slide 26 - Slide 26



Audio Script and Notes to Reviewers

Don't use adjustment factors in the model and-or results to account for the discrepancy in the model validation.

What is an adjustment factor?

An adjustment factor is a manual input to account for phenomenon not otherwise modeled by T-N-M, for example, atmospheric conditions.

Text Captions

Validate the TNM

Don't use adjustment factors in the model and/or results to account for the discrepancy in the model validation.

What is an adjustment factor?

An adjustment factor is a manual input to account for phenomenon not otherwise modeled by TNM.

Slide 27 - Slide 27

The screenshot shows a presentation slide with a teal header. The header contains the text 'Course 200: Traffic Noise Analysis Process' on the left and 'Validate the TNM' on the right. The main content area features a background image of a multi-lane highway with traffic. On the left side of the slide, a man in a yellow short-sleeved shirt and blue jeans is speaking. On the right side, a man in a white long-sleeved shirt and blue jeans is listening. Two callout boxes are present: a dark blue one on the left containing the text 'Adjustment factors can be used in specific situations and requires prior approval from the NDOT Noise PQS.' and a yellow one on the right containing the text 'What if the monitored results are still not within 3 dB(A) of the computer-generated results?'. The title 'Validate the TNM' is also displayed in the top left corner of the slide content area.

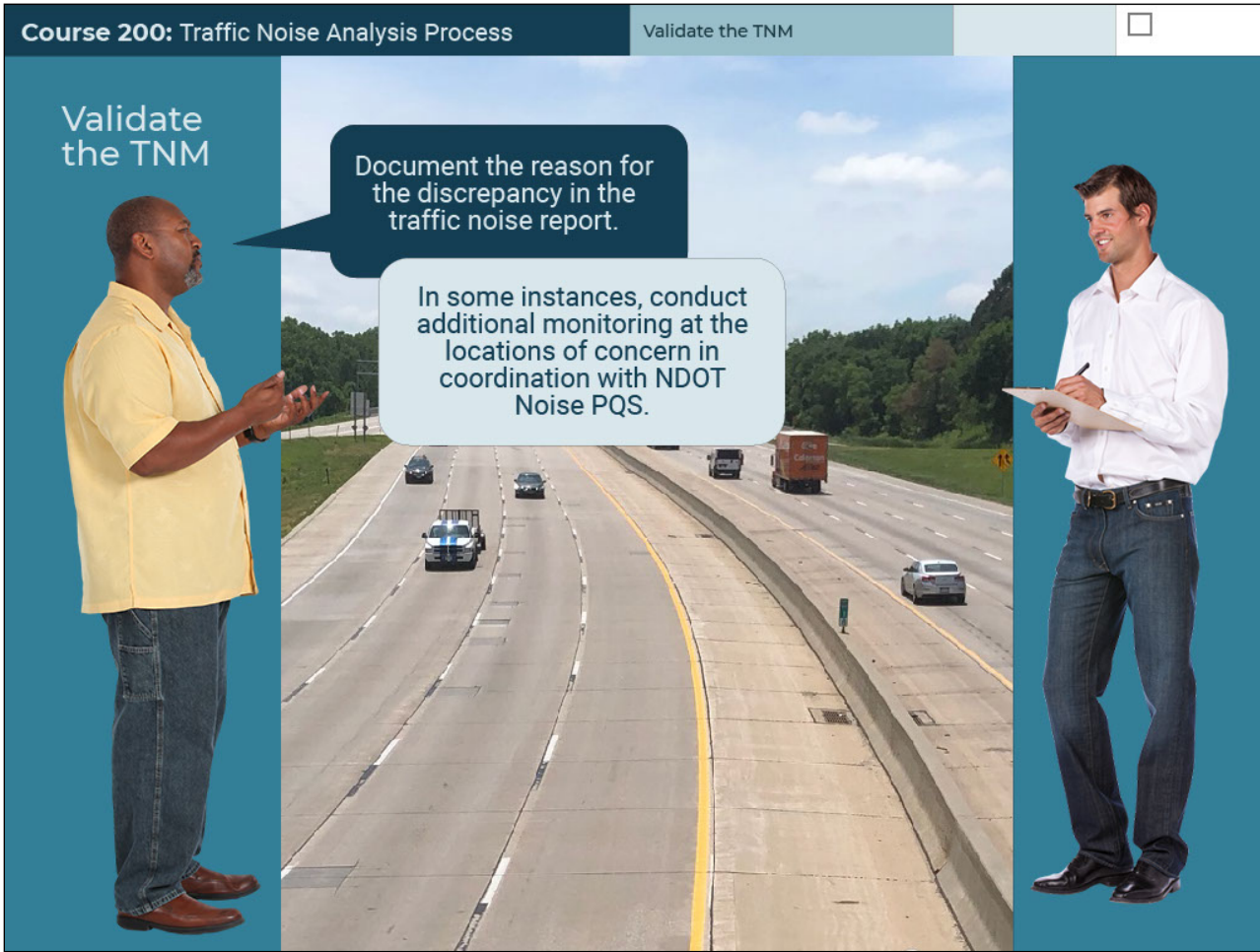
Audio Script and Notes to Reviewers

Adjustment factors can be used in specific situations, for example, deteriorated pavement conditions causing higher than normal noise. Using an adjustment factor requires prior approval from the N-dot Noise P-Q-S.
What if the monitored results are still not within 3 dB(A) of the computer-generated results?

Text Captions

Validate the TNM
Adjustment factors can be used in specific situations and requires prior approval from the NDOT Noise PQS.
What if the monitored results are still not within 3 dB(A) of the computer-generated results?

Slide 28 - Slide 28



Audio Script and Notes to Reviewers

Document the reason for the discrepancy in the traffic noise report. In some instances, conduct additional monitoring at the locations of concern in coordination with N-dot Noise P-Q-S.

Text Captions

Validate the TNM


Document the reason for the discrepancy in the traffic noise report.

In some instances, conduct additional monitoring at the locations of concern in coordination with NDOT Noise PQS.

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Course 200: Traffic Noise Analysis Process
Validate the TNM


Question 7 of 8



Knowledge Check

Complete the sentence below by filling in the blank.

Noise monitoring results should be within +/- dB(A) of the FHWA TNM noise level for the model to be considered validated.



Submit

Incorrect The results must be less than 5 db(A). Click anywhere and try again.
Click anywhere or click the Forward button to continue.

Review Area

Audio Script and Notes to Reviewers

Complete the sentence below by filling in the blank.

Text Captions

Knowledge Check

Complete the sentence below by filling in the blank.

Noise monitoring results should be within +/- _____ dB(A) of the FHWA TNM noise level for the model to be considered validated.

Correct feedback: Correct - The results must be within +/- 3 dB(A) of the FHWA TNM noise level. Click anywhere or click the Forward button to continue.

1st incorrect feedback: Incorrect - The results must be less than 5 db(A). Click anywhere and try again.

2nd incorrect feedback: Incorrect - The results must be within +/- 3 dB(A) of the FHWA TNM noise level. Click anywhere or click the Forward button to continue.

Slide 30 - Slide 30

Course 200: Traffic Noise Analysis Process
Validate the TNM

Question 8 of 8

Knowledge Check

What should you do if the monitored results are still not within 3 dB(A) of the computer-generated results?
Select all that apply.

- Document the reason for the discrepancy in the traffic noise report.
- Possibly conduct additional monitoring at the locations of concern in coordination with NDOT.
- Build the TNM again.
- Continue to apply adjustment factors until the discrepancy is resolved.

Submit

Review Area

Incorrect! Take no further action other than documenting your findings unless special circumstances warrant more modeling. Click anywhere or click the Forward button to continue.

Audio Script and Notes to Reviewers

What should you do if the monitored results are still not within three D-B-A of the computer-generated results?

Text Captions

What should you do if the monitored results are still not within 3 dB(A) of the computer-generated results?

Select all that apply.

Knowledge Check


Correct feedback: Correct - Document the reason for the discrepancy. In certain circumstances, additional monitoring may be required, but only in coordination with the NDOT Noise PQS. Click anywhere or click the Forward button to continue.

1st incorrect feedback: Incorrect. Take no further action other than documenting your findings unless special circumstances warrant more modeling. Click anywhere and try again.

2nd incorrect feedback: Incorrect - Document the reason for the discrepancy. In certain circumstances, additional monitoring may be required, but only in coordination with the NDOT Noise PQS. Click anywhere or click the Forward button to continue.

Slide 31 - Slide 31

Course 200: Traffic Noise Analysis Process
Validate the TNM
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That completes Module 3, Validate the TNM. You learned how to take field measurements and enter traffic data to validate the TNM.

If you're ready to learn how to predict noise levels and impacts, click the Forward button to continue to Module 4. Or use the Back button to review previous material first.

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Validate the TNM

- ◆ Conduct field monitoring using an ANSI Type 1 or Type 2 meter.
- ◆ Take measurements at locations representative of the types of receptors located within the project area.
- ◆ Take measurements at exterior areas of frequent human use or at the right-of-way.
- ◆ Do not take noise meter readings in wind speeds that are 12 miles per hour or greater.
- ◆ Gather three 15-minute measurements at each field monitoring location to validate the TNM or determine the existing noise levels for new alignments.
- ◆ Document concurrent traffic counts by manually counting traffic on the roadway being studied and adjacent streets.
- ◆ Enter traffic data into the model.
- ◆ Run the model to compare monitored results to modeled noise levels using FHWA TNM. Noise monitoring results should be within +/-3 dB(A) of the FHWA TNM noise level.

Audio Script and Notes to Reviewers

That completes Module Three, Validate the T-N-M. In this module, you learned how to gather field noise measurements and enter traffic data to validate the T-N-M. Here's a quick summary. If you're ready to learn how to predict noise levels and impacts, click the Forward button to continue to Module Four. Or use the Back button to review previous material first.

Text Captions

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