

Traffic Noise Modeling with FHWA TNM[®] 2.5 Training Course, May 14-18, 2018

Why attend this course?

You will learn the correct way to model traffic noise in the context of doing a noise study. Some state highway agencies require traffic noise training for pre-qualification. Bowlby & Associates is the only organization that offers this particular training.

We have trained over 1,100 professionals in traffic noise fundamentals and the use of TNM since the program's initial release in 1998. Participants have come from over 50 State, Federal, local and Canadian transportation agencies, and numerous consulting firms. Simply put, we enjoy teaching and sharing what we know!

- ✓ **A computer for each participant to use**
- ✓ **One-on-one assistance from course instructors**
- ✓ **Hands-on work with real-world problems**
- ✓ **Participants use comprehensive course workbooks**

We focus on the prediction model currently required by the Federal Highway Administration (FHWA): FHWA Traffic Noise Model[®] Version 2.5. We will also introduce you to some of the features of TNM 3.0. The FHWA released a "draft" version of TNM 3.0 in March 2017, for a 6-month comment period. After that period, the FHWA will make any needed changes to the program before releasing it as a "final" version. Following its release, there will be a period of transition during which use of TNM 3.0 on Federal-aid highway projects will be optional at the discretion of the state DOTs before a likely rule change occurs that would require its use.

Who should attend?

Professionals who use TNM on project studies or who supervise or review TNM modeling conducted by others. Many course attendees have little or no experience in traffic noise modeling. For them, we highly recommend our optional one-day **Fundamentals** front-end session.

Our instructors:

Dr. William Bowlby, P.E., Dr. Darlene Reiter, P.E., and Mr. Geoffrey Pratt, P.E. teach the course. Together, they have over 80 years of combined experience in traffic noise work. Dr. Bowlby was part of the original TNM development team and led the development of the *TNM Trainer* tool for USDOT. He and Mr. Pratt were key researchers for NCHRP Report 791, *Supplemental Guidance on the Application of FHWA's TNM*. He also led FHWA studies on *Sensitivity Test Case Results Comparing FHWA TNM 2.5 and TNM 3.0* and a *Consistency Test Suite for TNM 3.0*. Dr. Reiter has used TNM on hundreds of highway projects – many being extremely complex. She and Dr. Bowlby were key researchers on recent FHWA policy studies, *23 CFR 772 Streamlining, Analysis and Outreach Phases I and II*. Mr. Pratt is also an experienced user of TNM, MicroStation[®] and ArcGIS[®].

"Best noise course I have ever taken. Extremely knowledgeable instructors. Very useful discussions. Nice classroom rapport. Well done, Bowlby & Associates." -- Erich Thalheimer, Parsons Brinckerhoff

"I didn't think this course could be as great as it was but I was very impressed by the presentation of the material" -- Rachel Saunders, CH2M Hill

"The TNM 2.5 course's comprehensive approach to noise modeling and policy is sure to be applied in my career and state DOT moving forward. Great Job! Thank you!" -- Paul Moch, North Dakota DOT

"This course opened up so many new doors for me in my career. I really value all of the effort and detail. Lots of visual learning, which is how I learn best. Highly recommend!" -- Amber Taylor, TranSystems

Course Content

Optional Traffic Noise Fundamentals Session: Monday, 8 a.m. to 5 p.m. (7.5 PDH units)

- **Concepts of Sound and Traffic Noise**, with the Interactive Sound Experience (ISe) demonstrations
- **FHWA Noise Regulation, Policy & Procedures**, including a detailed exploration of 23 CFR 772
- **Conducting & Reporting a Traffic Noise Study**

TNM 2.5: Tuesday - Thursday, 8 a.m. to 5 p.m.; Friday 8 a.m. to approx. 4 p.m. (29 PDH units)

- **Introduction to TNM:** Concepts; emission levels; propagation and attenuation algorithms
- PowerPoint Presentations on **Site Modeling Prior to Using TNM, Noise Barrier Design Considerations and NCHRP Report 791 (Supplemental Guidance on the Application of TNM)**
- **Input Data Objects and Concepts:** Roadways (free flow, on structure and interrupted flow); receivers; barriers; building rows; terrain lines; ground zones; tree zones
- **Noise Barrier Concepts:** Barriers on structure; earth berms; line of sight check; interactive barrier design process; sound reflection and absorption; parallel barrier analysis
- **Data Input and Editing:** Input dialog boxes; graphical editing; “heads-up” digitizing; creating TNM runs from CAD and GIS, including importing DXF files
- **Data Display and Output:** Plan, profile, skew-section and perspective views; input and results tables; sound level contours; printing and plotting
- **Workshops** on simple, intermediate and complex problems, including real-world site modeling exercises

Registration

Location: The course location is the Williamson County Association of Realtors (WCAR) training center, 1646 Westgate Circle, Brentwood, TN 37027.

Cost: The 5-day Fundamentals and TNM course is offered at the discounted rate of \$2,200. Tuition for the 4-day Traffic Noise Modeling course is only \$1,900; the 1-day Fundamentals only course is \$400.

Registration: To register for the course, please send a completed registration form and check or purchase order for the full amount of tuition to Ruth Rock at Bowlby & Associates, Inc.

Privacy Policy: We respect your privacy. Any information collected by Bowlby & Associates, Inc. is for our internal use only. We do not share or sell information. We do hand out a roster with contact information for attendees only.

Please complete the remainder of this form and send with payment in advance of the course to:
Ruth Rock, Bowlby & Associates, Inc., 504 Autumn Springs Court, Suite 11, Franklin, TN 37067-8278
rrock@bowlbyassociates.com.

Check one: 4-day (Tues.-Fri., May 15-18, 2018), TNM only (\$1,900)
 5-day (Mon.-Fri., May 14-18, 2018), TNM + Fundamentals (\$2,200)
 1-day (Mon., May 14, 2018), Fundamentals only (\$400)

Check # _____ is enclosed. Purchase order # _____ is enclosed.

Please fill in:	Course Attendee
Full Name	
Preferred name	
Firm/Organization	
Organization Street Address	
Organization City, State, Zip	
Organization phone	
Registrant's cell phone	
Registrant's e-mail	

For more information, please contact Ruth Rock: rrock@bowlbyassociates.com.

Logistics and Course Policies

Registration Policy - To complete registration, please submit both registration form and check or purchase order to Ruth Rock at Bowlby & Associates well in advance of the course dates.

Cancellation Policy - To cancel registration, please contact Ruth Rock or Dr. Darlene Reiter at your earliest convenience. Refunds, net of a \$100 administration fee, may be issued when cancellation is confirmed more than two weeks in advance of the course start date or when registration is replaced with another participant. Exceptions may be made for special circumstances.

Certificate Reissuance Policy - Please retain course certificates for professional continuing education confirmation. Certificate reissuance is generally limited to a letter from course instructors confirming attendance.

Course location: Williamson County Association of Realtors (WCAR) training center
1646 Westgate Circle, Suite 104, Brentwood, TN 37027.

Office location: **Bowlby & Associates, Inc.**
504 Autumn Springs Court, #11, Franklin, TN 37067-8278
Phone: 615-771-3006
Fax: 615-771-3406
www.bowlbyassociates.com

Ground Transportation - Rental cars are available at Nashville International Airport. Cool Springs Limo (615-456-4979) provides service to and from the airport. (<http://www.coolspringslimo.com>) Uber, Lyft and local cab companies are also available.

Lodging - Accommodations are available at these and other nearby hotels:

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| • Holiday Inn Franklin - Cool Springs | 1738 Carothers Pkwy., Brentwood, TN 37027 | 615-277-8700 | 0.7 mi. |
| • Hilton Garden Inn | 9150 Carothers Pkwy., Franklin, TN 30767 | 615-656-2700 | 0.8 mi. |
| • Holiday Inn Express | 8097 Moores Lane, Brentwood, TN 37027 | 615-309-8860 | 1.0 mi. |
| • Hyatt Place | 650 Bakers Bridge Ave., Franklin, TN 37067 | 615-771-8900 | 1.2 mi. |
| • Courtyard by Marriott | 2001 Meridian Blvd., Franklin, TN 37067 | 615-778-0080 | 1.7 mi. |