

FHWA/FTA/FRA Joint Project Procedures



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Why Revisit the Procedures?

- SAFETEA-LU Legislation
- Need to consider updated policies and prediction procedures of other agencies
 - FHWA, FTA, FRA, CREATE, WsDOT
- Clarify differences between modes, policies and procedures
- Flexibility based on project type and State DOT policies.

SAFETEA-LU projects

- Federal Action: Rail or Transit only
- FHWA often assumes the lead on SAFETEA-LU mandated projects
- Increase in the number of major and inter-modal projects
- State Involvement:
 - Illinois (CREATE)
 - Iowa
 - Virginia

FHWA Procedure

- Based on 1982 procedure
- Analysis for a Federal-aid highway project:
 - FHWA requirements apply (NAC, mitigation)
 - Include all noise sources for:
 - existing and predicted noise levels and
 - feasibility and reasonable determination
 - Rail noise should be calculated using the 1982 hand calculation procedure
 - Convert highway noises from Leq to Ldn
- Analysis for a transit or rail project:
 - FTA or FRA requirements and procedures apply

FTA Procedure

- FTA Transit Noise and Vibration Impact Assessment, 2006 (Chapter 3: Joint Projects)
 - Impact assessment spreadsheet is based on type of project action
 - Has traffic noise prediction method and assumptions involved
 - Other mitigation besides typical FHWA barrier
- http://www.fta.dot.gov/planning/environment/planning_environment_2233.html
- Abbe Marner: 202-366-4317 Abbe.Marner@dot.gov

FTA – Project types

- Rail and Bus Facilities, includes:
 - All rail projects
 - Fixed facilities
 - Rail/transit projects within highway/rail ROW
 - Bus facilities
- Procedure: FTA, the project noise is due to the new transit sources.
- Lead Agency: FTA

FTA – Project types

- Highway/Transit Projects, includes:
 - Transit or HOV as part of new highway construction or modifications to existing highways to increase carrying capacity.
- Procedure the procedure depends on whether the:
 - Highway noise dominates throughout day/night,
 - Transit noise dominates during off-peak and late night hours
 - The appropriate method to use for noise prediction and impact assessment depends on what dominates.
- Lead Agency: FTA or FTA/FHWA joint

FRA Procedure

- FRA follows FTA procedure
- Also has:
 - high speed rail, and
 - rail horn procedures
- <http://www.fra.dot.gov/us/content/253>
- David Valenstein: 202-493-6368
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WsDOT Sound Transit Procedure

- Developed in the late 1990s
- Lead agency, analysis method and procedure based on project action:
- This procedure refers to issues such as:
 - noise source and propagation,
 - noise metric,
 - impact assessment/criteria, and
 - mitigation
- Mitigation cost allowance dependent on absolute noise level

CREATE project (Chicago)

- FRA modified the FTA spreadsheet and prediction procedure to include freight rail sources
- Changed the use of the FHWA NAC Cat. E
 - FHWA: 52 dB(A) impacts only
 - FTA: 65 dB(A) post-mitigation
 - Assumed that $L_{eq} = L_{dn}$
- <http://www.fra.dot.gov/us/content/253>

FTA noise sources

Microsoft Excel - FTANOISE

Source	Number
Electric Loco.	1
Diesel Loco.	2
Comm. Rail Cars	3
RRT/LRT	4
AGT, Steel Wheel	5
AGT, Rubber Tire	6
Monorail	7
Maglev	8
Automobiles	9
City Buses	10
Commuter Buses	11
Rail Yard or Shop	12
Layover Tracks	13
Bus Storage Yard	14
Bus Op. Facility	15
Bus Transit Center	16
Parking Garage	17
Park & Ride Lot	18

CREATE noise sources

Microsoft Excel - 020806 Create Rail Noise Model

Source	Number
Commuter Electric Locomotive	1
Commuter Diesel Locomotive	2
Commuter Rail Cars	3
RRT/LRT	4
AGT, Steel Wheel	5
AGT, Rubber Tire	6
Monorail	7
Maglev	8
Freight Locomotive	9
Freight Cars	10
Hopper Cars (empty)	11
Hopper Cars (full)	12
Crossover	13
Automobiles	14
City Buses	15
Commuter Buses	16
Rail Yard or Shop	17
Layover Tracks	18
Bus Storage Yard	19
Bus Op. Facility	20
Bus Transit Center	21
Parking Garage	22
Park & Ride Lot	23

Freight Locomotive
Freight Cars
Hopper Cars (empty)
Hopper Cars (full)
Crossover

Freight Locomotive
Freight Cars
Hopper Cars (empty)
Hopper Cars (full)
Crossover



Items to Consider

- Standards:
 - FHWA: Based on exterior speech interference
 - FTA: Based on annoyance, especially at night-time where sleep may be interrupted
- Metric:
 - FHWA: $L_{eq}(h)$ for steady state sound
 - FTA/FRA: L_{dn} for annoyance
- Analysis:
 - Include all representative noise sources

Items to Consider cont.

- Impacts:
 - FHWA: Absolute level and substantial increase,
 - FTA/FRA: Combines both on a sliding scale
- Prediction:
 - FHWA requires use of TNM,
 - FTA/FRA can use FTA procedure or CREATE procedure for rail projects
- Noise Abatement:
 - Consider for all noise sources
 - FHWA/FTA: Substantial reduction

Final Thoughts

- Be aware of different:
 - Standards
 - Determining Noise Levels and Impacts
 - Noise Metrics
 - Mitigation Measures
 - Land-Use
- As long as all representative noise sources are considered, a reasonable, available procedure should be followed
- Coordination with all involved modes