WHAT'S BEHIND A DESIGN-BUILD NOISE WALL?

Paul M. Kohler – VDOT
Noise Abatement Program Manager

Josh Wilson – McCormick Taylor, Inc.
Senior Noise Analyst/Project Manager

OVERVIEW

- Design-Build (DB) is becoming the trend for large-scale projects.
- Money is the priority, intent of CFR is an afterthought.
- Each party has different directives and motivating factors.
- The DB team modus operandi is the bottom line.
- DB firms dedicate teams of individuals to scrutinize everything to determine that the minimum standards are met especially if substantial money can be saved.
- Noise abatement is often one of these areas to be “trimmed.”

THE “DIRT” OF DESIGN-BUILD

- Noise walls/abatement can and do make up a large portion of the monetary value in DB contracts.
- Noise abatement design and optimization is often subjective and opens itself up to intense scrutiny and potential legal “policy” challenges.
- In most cases, DB contractors receive contract award based on low-bid.

IMPROVING COMMUNICATION

- Coordination between noise analyst, the DOT and the DB contractor must improve.
- Potential to create strained relationships between all parties.
- Increased coordination and more strict technical requirements/noise abatement performance specifications may help to avoid this.
- Ensure everyone is on the same page – this job often falls on the noise analyst.

NOISE ABATEMENT SUBJECTIVITY

- Subjectivity of noise abatement optimization is a challenging area
  - Project Example (2014 VDOT Noise Abatement Guidance)
    - Requires 5 dB(A) at 50% of impacts
    - 7 dB(A) at one impacted receptor as a design goal
  - Contractor may try to meet minimums and not fulfill the intent of the regulations.
  - Feasibility and/or Reasonableness is not a standard, it's a minimum threshold.
  - Policy and guidance is not intended to be black/white.

NOISE ABATEMENT SUBJECTIVITY

- How can a DOT be assured that it will get the desired outcome for noise abatement deisgn?
  - 23 CFR 772.13(i)
    - *For design-build projects, the preliminary technical noise study shall document all considered and proposed noise abatement measures for inclusion in the NEPA document. Final design of design-build noise abatement measures shall be based on the preliminary noise abatement design developed in the technical noise analysis. Noise abatement measures shall be considered, developed, and constructed in accordance with this standard and in conformance with the provisions of 40 CFR 1506.5(c) and 23 CFR 636.109.*

VDOT GUIDANCE MANUAL LANGUAGE

1. **Note:** Although the guidance in this Manual may cite a specific criterion or measure, requirements herein may be further modified for a specific project through the application of available industry wide practices and procedures. As such, any specific criterion or measure cited in this Manual shall not be viewed as a restriction on VDOT's authority to require further analysis beyond a stated minimum standard.
2. **Note:** Barrier Optimization - Similar to other environmental mitigation features, the goal to noise abatement is to achieve 100% effectiveness, i.e., provide benefits to every impacted noise sensitive receptor. However, it is not always possible to benefit every impacted receptor for different reasons.

VDOT CONTRACT LANGUAGE

- There is a need to develop strong contractual language included in the technical requirements.
- The DOT noise analyst needs to be part of the review to help the contract and to provide new language in the Guidance Manual and contract.
  - VDOT is developing new contract language that may alleviate future issues.

VDOT CONTRACT LANGUAGE

- Noise walls, as shown on the RFP Conceptual Plans and/or the Preliminary Noise Analysis, shall be utilized for proposal preparation purposes.
- The Offeror's proposal shall include the worst-case scenario if the amount and/or length of walls differ between the RFP Conceptual Plans and the Preliminary Noise Analysis.
- A post-award Final Design Noise Analysis, consisting of a re-analysis of all noise sensitive receptors identified in the project area, will be required to confirm if noise mitigation is required.
- Based on results of the final noise analysis, one of the following scenarios will occur:

VDOT CONTRACT LANGUAGE

1. If the final noise analysis indicates additional noise walls are required in excess of the Offeror's proposal that's not due to changes in plan and profile as part of the Design-Builder's final design, VDOT shall compensate the Design-Builder for any additional walls above what was proposed.
2. If the final noise analysis indicates a reduction of noise walls than that provided in the Offeror's proposal regardless of any design changes, the Design-Builder shall credit VDOT for the amount of the reduction.
3. If the final noise analysis warrants noise walls but some or all the walls are not desired by the public, the Design-Builder shall credit VDOT for the amount of the reduction.
4. If the final noise analysis does not warrant noise walls but walls are desired by the public, VDOT shall compensate the Design-Builder for any additional walls above what was proposed.

OTHER CONSIDERATIONS

- May need to address berm language if contractor agrees to supply $X of abatement and opts to use cheaper berm/fill material but still maintains acoustic performance standards.
- Line of sight methodologies could be considered with other design techniques.
- Acoustic performance standards may be an option for Design-Build projects. Depending on the level of detail from the preliminary analysis, the environmental document may be substandard to identify performance.
- Strong contractual language can be your most effective tool.

SUMMARY

- Increase involvement of DOT noise analyst in review and development of contractual language
- Stricter policy and guidance language
- Improve communication
- Demand, review, and learn the technical requirements for the project
- Request open communication directly with DOT noise staff
- Learn how to “mediate”

QUESTIONS?
COMMENTS?

Paul M. Kohler – VDOT
Noise Abatement Program Manager

Josh Wilson – McCormick Taylor
Senior Noise Analyst/Project Manager