NOISE ANALYSIS PROCESS

NEPA and Preliminary Design

Identify noise receptors
- Identify Common Noise Environments (CNE) (typically within 500 feet of the highway)
- Identify noise sensitive receptors within each CNE

Feb./ March 2017

Perform noise measurements at representative receptors along the corridor

Perform noise modeling
- Develop noise models of existing and future roadway conditions using computer modeling (incorporates roadway design, traffic volumes and speed, receptors, topography, and ground type)
- Validate model with noise measurements data
- Compute existing, no-build and build design-year sound levels

March/ April 2017

Identify impacts (is noise mitigation warranted?)
- Approach or exceed Federal Highway Administration (FHWA) noise abatement criteria (i.e., 67 decibel (dB) for residences, parks, schools) or,
- 10 dB increase above existing year sound levels

Design and assess mitigation (typically noise walls)

Is the wall feasible?
- Does it work acoustically (do 50% or more of the impacted receptors receive a 5 dB or more noise reduction)
- Can it be constructed (e.g. are there safety, drainage, utilities, maintenance issues)

Is the wall reasonable?
- Cost-effectiveness (1,600 maximum square feet or less per benefited receptor)
- Design goal (Provide at least 7 dB or more of noise reduction for at least one impacted receptor)

May 2017

Present noise study results and preliminary noise wall locations at public meetings

Sept. 2017 We Are Here!

Final Design

Complete final design noise analysis once the project has received design approval

Obtain VDOT Chief Engineer approval

Obtain FHWA concurrence

Solicit public input from benefited property owners and renters (voting process)

Incorporate approved noise wall(s) into the final road design construction plans

2018