NOISE ANALYSIS PROCESS

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

**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

**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)

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

**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**

**Location and Design Public Hearing | September 2017**