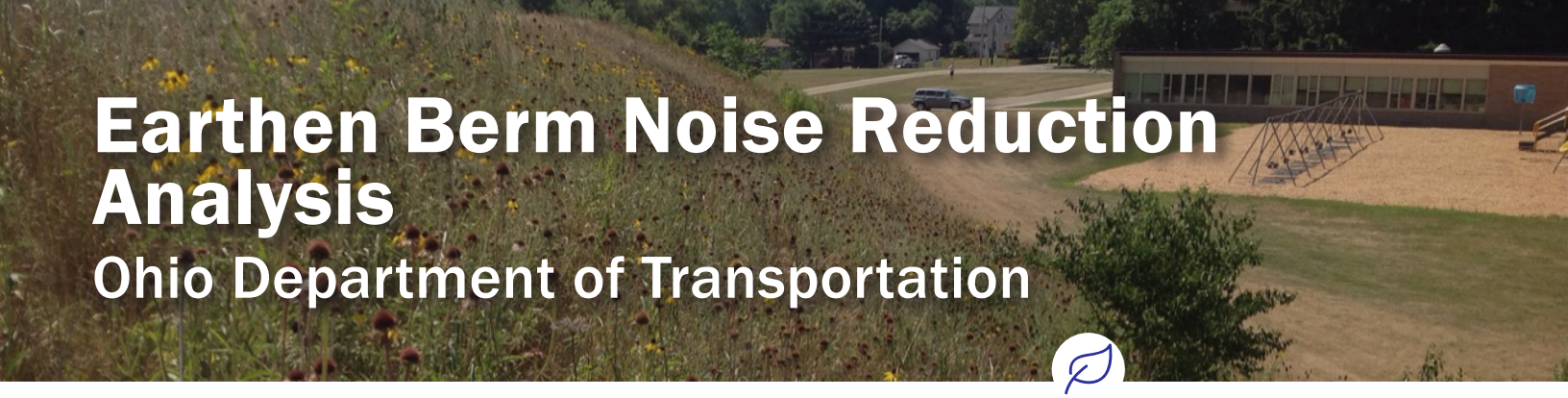

Earthen Berm Noise Reduction Analysis

Ohio Department of Transportation

PROJECT DESCRIPTION

BPS conducted a research project on the noise mitigation effectiveness of earthen berms as compared to structural noise walls. BPS staff collected data for 46 earthen berm and structural wall locations around Ohio, including noise readings, traffic volumes and speed, environmental conditions, construction costs, and property values. Then the staff performed comparative analyses on the results to determine the mitigation effectiveness and full life cycle costs of the earthen berms and structural walls over time, including construction, right-of-way, and maintenance costs.

Potentials users and interested stakeholders of the results of this study include the Ohio Department of Transportation, other state DOTs, FHWA, local municipalities, the TRB Noise & Vibration Committee, professionals performing noise studies or related engineering studies, and members of the public. Successfully utilizing the results of this study should result in a significant annual costs savings for noise barrier construction and noise barrier maintenance. These savings will compound over time when noise berms as constructed in place of structural noise walls. In addition, there are qualitative benefits from earthern mounds, related to a better quality of life for the adjacent residents, motorists, and wildlife that interact with the earthen mound (versus the structural wall).

LOCATION

Statewide, Ohio

HIGHLIGHTS & MAJOR TASKS

- Collected data for 46 earthen berm and structural wall locations around Ohio
- Developed life cycle cost estimates and projections
- Determined that earthen mounds cost less and mitigate noise more effectively than structural walls
- Created an interactive calculator tool to compare noise barrier costs and equivalent heights

FROM THE CLIENT

"BPS made a great effort on this project. I liked the project updates and findings and conclusions the best." Noel Alcala, ODOT Noise & Air Quality Program Manager