



UF

Final Status Report:

FHWAs Triennial Noise Abatement Inventory Submission:

FDOT Noise Barrier Reporting 2020-2022

Kate Norris, Assistant Scholar
Geospatial Data Manager & Senior GIS Specialist
University of Florida GeoPlan Center
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About the GeoPlan Center

The **GeoPlan Center** is a Geographic Information Systems (GIS) research and teaching center, housed in the School of Landscape Architecture and Planning at the University of Florida (UF).

The UF GeoPlan Center works to support land use, transportation, and environmental planning in the State of Florida by providing geospatial and planning expertise, data, training, and education to the stakeholders involved in the planning process.



Final Status Report

Introduction

In this project, UF GeoPlan Center is providing GIS technical assistance:

- Update and maintain the noise barrier inventory for the Florida Department of Transportation (FDOT) Office of Environmental Management (OEM).
- The inventory consists of all noise barriers constructed by FDOT, statewide, and provides the basis for meeting established triennial reporting requirements from the Federal Highway Administration (FHWA).
- This final report addresses details of the project's progress to date.

In summary, Tasks 1-4 are Complete.



Background

The Federal Highway Administration's (FHWA) highway noise regulation (23 CFR 772.13(f)) requires each state highway agency (SHA) to maintain an inventory of all constructed noise abatement measures.

The inventory must include the following:

- type of abatement;
- cost (overall cost, unit cost per/sq. ft.);
- average height;
- length;
- area;
- location (State, county, city, route);
- year of construction;
- average insertion loss/noise reduction as reported by the model in the noise analysis;
- NAC category(s) protected;
- material(s) used (precast concrete, berm, block, cast -in-place concrete, brick, metal, wood, fiberglass, combination, plastic (transparent, opaque, other));
- features (absorptive, reflective, surface texture);
- foundation (ground mounted, on structure);
- project type (Type I, Type II, and optional project types such as state funded, county funded, tollway/turnpike funded, other, unknown).

Task 1: Review and Update Existing 2019 Inventory

Review and Update Existing 2019 Inventory, this task has two subtasks (Parts a, and b). The previously submitted 2019 noise barrier inventory contained 1317 records in four 'TYPE' categories:

1. Constructed: 955 records (submitted to FHWA in 2020)
2. Recommended: 341 records
3. Replaced: 6
4. Removed: 15

Task 1a: Review existing constructed barriers, with available imagery and google street view that were previously identified as 'not verified' in 2019 report.

Task 1b: Review and re-verify existing constructed barriers, with available imagery and google street view that were previously identified as 'verified' in 2019.

Deliverables: Updated 2019 Inventory

Status: Task 1 is Complete

Task 2: Inventory Collection and Coordination

GeoPlan will coordinate with OEM and the eight FDOT Districts to obtain new and updated noise barrier data consistent with the reporting requirements as stipulated by FHWA.

GeoPlan will request the required attributes for all noise barriers constructed statewide since 2019.

Deliverables: Verification of 2022 Inventory

Status: Task 2 is Complete



Task 3: Update Noise Barrier Inventory

GeoPlan will add the new records and attributes collected from Task 2 to the existing noise barrier inventory. During the process of updating and adding records to the noise barrier inventory, GeoPlan will coordinate with FDOT staff to ensure that the records are being collected and captured and attributed correctly. This task has three subtasks (Parts a, b, and c).

Task 3a: Standardize the new inventory records collected to meet FHWA tabular and reporting requirements.

Task 3b: Compare newly collected data with 2019 version ‘Recommended’ records that have not been verified and update where needed. Add new additional ‘Recommended’ records since the 2019 update.

Task 3c: Create required excel table data to FHWA specification for submission.

Deliverables: 2022 Noise Barrier Inventory

Status: Task 3 is Complete

New ID (2019)	Noise Barrier ID (pre-2019)	State	County	City	State Reference Name	Route	Original Construction Cost	Current Year (2022) Cost				
Do Not Fill	Do Not Fill	State/where the	County/where the	City/where the	Open call for State DOT use	Route/where the	Total cost of the					
		Current Year (2022) Unit Cost	Height Ft	Length Ft	Area Sq Ft	Year of Original Construction	Avg Noise Reduction	Primary NAC	Other NAC	Primary Construction Material	Secondary Construction Material	
		Unit cost of the abatement measure in square feet from Construction	Do Not Fill	The mean or modal height of the abatement measure in feet	The length of the abatement measure	The total area of the abatement	Year the abatement was	The overall average noise reduction	The primary land use and activity that is associated	The main construction material for use of the	Any other materials that are attached to the abatement	
				Features	Surface Texture	Foundation	Project Type	Mandate for Construction	GIS Location	Repair Date		
				Any special features such as access doors	Whether the abatement measure is absorptive, reflective, or both	Whether the abatement measure is on the ground or on a structure	The project/building type associated with the abatement measure	With, on	Comments – Other Primary Construction Material	Comments – Other Secondary Construction Material	Comments – Other Feature	Comments – Other Project Type
				Any special features about the primary construction material	Any special features about the secondary construction material	Any other special features such as paint color or project commitments	Any other comments about the project type, such as Design-Build					

Task 3c: FHWA's Triennial Noise Abatement Inventory Submission for Florida

Florida Noise Barrier Inventory (2022) updated excel table for the FHWA submission:

2022_FL_Noise_Barrier_Inventory_20230405.xlsx

- 2020-2022 Update Sheet (125 Newly Constructed Noise Barriers)
- Florida Sheet (961 Previously Existing Noise Barriers, 16 Strike-through records at end of list as required)
- Repairs Sheet (Blank, just like the last submission)
- Demolitions Sheet (16 Removed/Replaced Barriers, 10 at end of the list are new additions)

Statewide GIS Dataset (Filename: noise_barriers_apr23)

Please Note: This dataset contains all of the submission information contained in the excel, plus Recommended (Feasible/Reasonable) barriers that have not yet been constructed. In addition to more tabular information not requested in the submission excel document.

Please Note: For CFX data, most field Information has been based on estimates from Google Maps Imagery and Street View, just like the last submission.

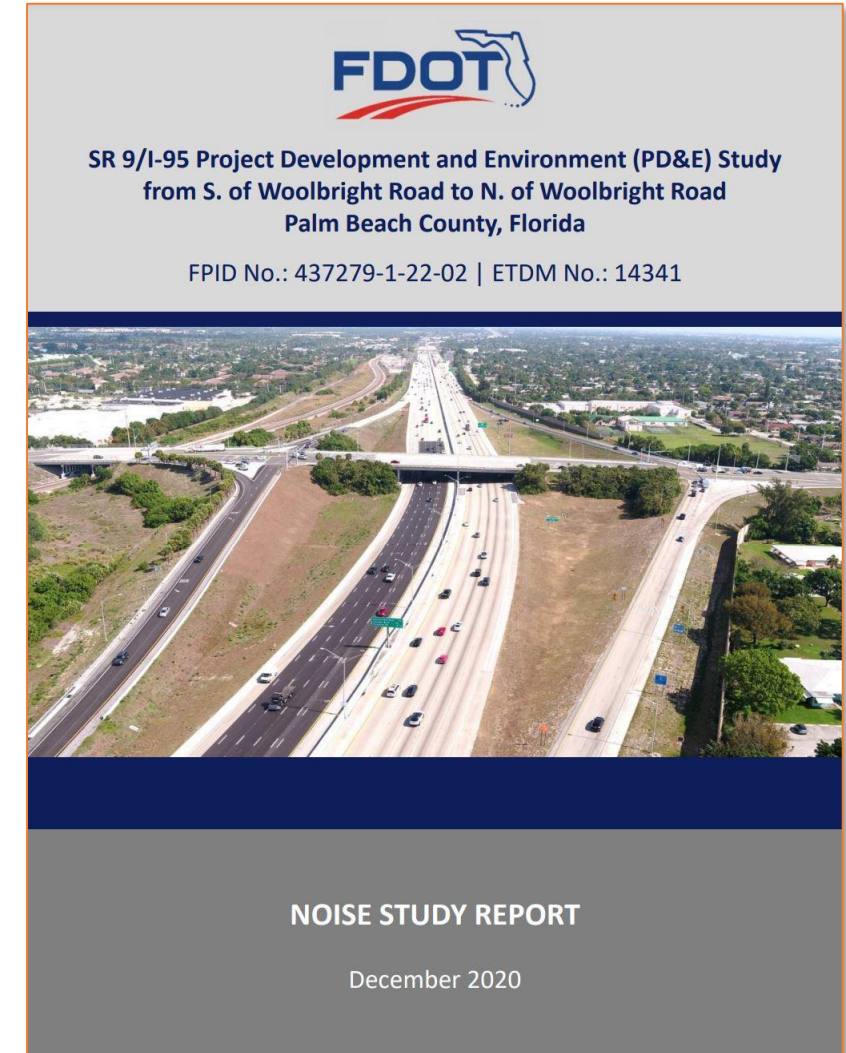
Status: Task 3c is Complete

Task 4: Noise Barrier Inventory Maintained

- GeoPlan will coordinate with OEM and the eight FDOT Districts throughout the to obtain new and updated noise barrier data as it becomes available consistent with the reporting requirements as stipulated by FHWA.
- GeoPlan will maintain the noise barrier inventory and update as Noise Study Report information is received from SWEPT notifications.
- GeoPlan will maintain the noise barrier inventory and update as information is received from the Department.

Deliverables: Updated Noise Barrier Inventory (post 2019)

Status: Task 4 is Ongoing



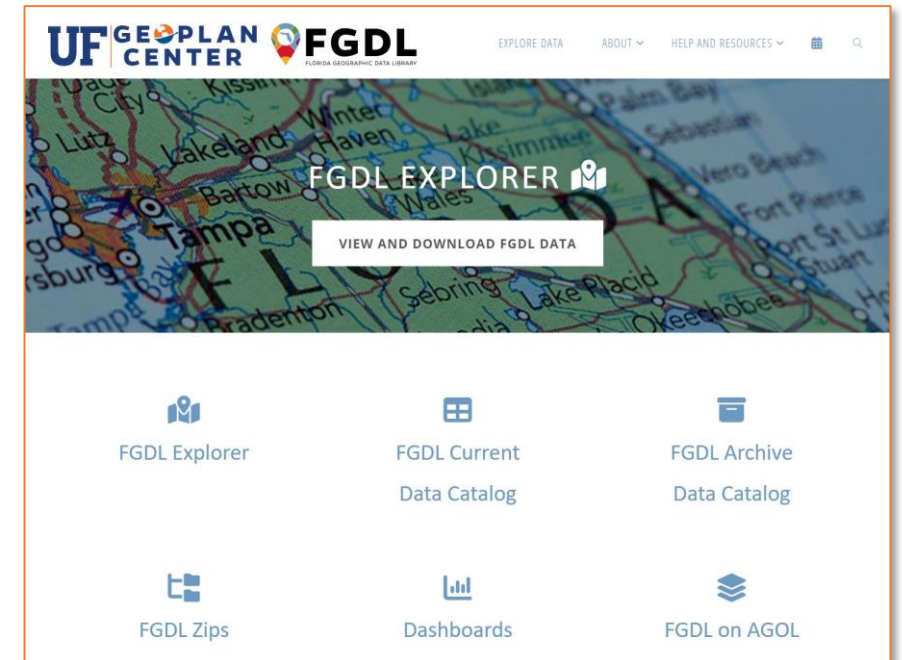
Noise Barrier Inventory 2023 GIS Data Download Location: <https://fgdl.org/>

Florida Department of Transportation Noise Abatement Barriers – 2023

Data Download:

https://fgdl.org/zips/geospatial_data/archive/noise_barriers_apr23.zip

Abstract: This dataset contains the Florida Department of Transportation's (FDOT) Noise Abatement Barriers. Noise barriers are solid obstructions built between the highway and the homes along a highway. They do not completely block all noise they only reduce overall noise levels. Effective noise barriers typically reduce noise levels by 5 to 10 decibels (dB), cutting the loudness of traffic noise by as much as one half. For example, a barrier which achieves a 10-dB reduction can reduce the sound level of a typical tractor trailer pass-by to that of an automobile. Barriers can be formed from earth mounds or "berms" along the road, from high, vertical walls, or from a combination of earth berms and walls. Earth berms have a very natural appearance and are usually attractive. They also reduce noise by approximately 3 dB more than vertical walls of the same height. However, earth berms can require a lot of land to construct, especially if they are very tall. Walls require less space, but they are usually limited to eight meters (25 feet) in height for structural and aesthetic reasons. The Federal Highway Administration's (FHWA) highway noise regulation (23 CFR 772.13(f)) requires each state highway agency (SHA) to maintain an inventory of all constructed noise abatement measures.



Questions & Comments

Kate Norris, Assistant Scholar
Geospatial Data Manager & Senior GIS Specialist
GeoPlan Center, UF
Email: katen@geoplan.ufl.edu