



NOISE STUDY REPORT

for the

WEKIVA PARKWAY (SR 429)/SR 46 REALIGNMENT PD&E STUDY

Orange, Lake, and Seminole Counties, Florida

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Executive Summary

The *Noise Study Report* for the Wekiva Parkway (SR 429)/SR 46 Realignment PD&E Study has been prepared in accordance with the requirements of 23 Code of Federal Regulations (CFR), Part 772 – *Procedures for Abatement of Highway Traffic Noise and Construction Noise* and Part 2, Chapter 17 of the Florida Department of Transportation’s (FDOT’s) *PD&E Manual*.

Existing noise level measurements were conducted at a total of 43 sites representative of noise-sensitive locations in the Wekiva Parkway (SR 429)/SR 46 Realignment study area. Simultaneous traffic counts were conducted during the noise level measurements and the information was used to develop a noise model of the existing roadway using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) Version 2.5. Differences between measured noise levels and levels predicted by the computer noise model were examined to determine the validity of the FHWA TNM 2.5 to accurately predict noise levels for this project.

Predicted noise levels determined for the preferred alternative indicate that noise impacts will occur in several areas. **Table ES-1** provides a noise impact summary for the preferred alternative. Noise abatement was evaluated for the preferred alternative and the results are documented in Section 5.4.

The feasibility of providing noise abatement is focused on the ability of the noise barrier to provide a noticeable insertion loss. This requires the barrier to lower noise levels by at least 5 decibels for receivers behind the wall. Reasonableness of constructing a noise barrier is focused on the cost of providing the proposed barrier. The cost of the noise barrier should not exceed \$42,000 per benefited noise sensitive site. This is the reasonable cost limit established by FDOT. A benefited noise sensitive site is defined as a site that would experience at least a 5 dBA reduction as a result of providing a noise barrier. The current unit cost used to evaluate economic reasonableness is \$30 per square foot, which covers barrier materials and labor. After determining the amount of insertion loss that can be provided and the cost of the abatement measure needed to provide that reduction, other factors are considered in determining the feasibility and reasonableness of noise abatement such as constructability and right-of-way issues. Therefore, a total of 88 benefited receivers in three distinct areas met the criteria for a noise barrier. A summary by county is also included in **Table ES-1**.

TABLE ES-1
Summary of Preferred Alternative Noise Impacts

	Existing Residences	Planned/Permitted Residences	Non-Residential (Churches, Schools)	Total	Benefited Receivers
ORANGE COUNTY					
Kelly Park Road Interchange Alignment with Systems Interchange Alternative 1 and Orange County Alternative 1	53	0	0	53	0
LAKE COUNTY WEST					
US 441/SR 46 Interchange Alternative 2 with SR 46 North Widening and Lake County West Alternative 1	62	2	0	64	28
LAKE COUNTY EAST					
Neighborhood Lakes Alternative 1	4	0	0	4	0
CR 46A Alternative 1A	1	0	0	1	0
Southern Alignment Alternative with Service Road	5	0	0	5	0
SEMINOLE COUNTY					
Wekiva Parkway with Frontage Roads, North Widening of SR 46 corridor	98	0	1	99	50
Alternative B Connection to SR 417/I-4 Interchange	22	0	2	24	10