

Draft Air Quality Technical Memorandum

Florida Department of Transportation

District Four

SR 9/I-95 at Lantana Road

Project Development and Environment (PD&E) Study

Limits of Project: High Ridge Road to Andrew Redding Road

Palm Beach County, Florida

Financial Management Number: 413258-1-22-02

ETDM Number: 14338

Date: December 2, 2019

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

To:	File Planning and Environmental Management Office FDOT - District 4 6555 Powerline Road Fort Lauderdale, FL 33309	From:	Timothy W. A. Ogle, MS Env. 901 Ponce de Leon Boulevard, Suite 900, Coral Gables FL 33134-3070
File:	N/A	Date:	December 2, 2019

Reference: Air Quality Technical Memorandum – Lantana Road/I-95 Interchange PD&E Study (FM: 413258-1-22-02; ETDM: 14338)

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

The Florida Department of Transportation (FDOT) District Four is conducting a Project Development and Environment (PD&E) Study for improvements along Lantana Road at the I-95 interchange in Palm Beach County, Florida. The limits of this PD&E Study extend along Lantana Road from High Ridge Road to Andrew Redding Road, a distance of approximately 0.6 miles and along the interchange ramps to/from I-95. This Air Quality Technical Memorandum has been prepared in accordance with Chapter 19 *Air Quality* of Part 2 of the FDOT PD&E Manual (dated January 14, 2019).

Within the project limits, Lantana Road is primarily a four-lane urban principal arterial under the jurisdiction of Palm Beach County, with two through lanes in each direction. The existing interchange is a tight diamond type interchange, with Lantana Road elevated over SR 9/I-95 and the South Florida Rail Corridor (SFRC)/CSX Railroad. In the vicinity of the Lantana Road interchange, SR 9/I-95 is a ten-lane divided urban interstate, providing four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. Auxiliary lanes are provided in both the northbound and southbound direction within the study area. Land use adjacent to the interchange is predominantly commercial with some industrial, institutional and office use.

The proposed improvements will include operational and safety improvements to the interchange including; additional turning storage along Lantana Road, capacity improvements to eastbound and westbound lanes onto the SR 9/I-95 on-ramps, and signal improvements. The project will also include improvements to sidewalks, ADA ramps, guide signs, and designated bicycle lanes. The planned improvements are expected to improve overall traffic operations, thereby relieving congestion within the project study area.

The project is located in an area currently designated as being in attainment for the following criteria air pollutant(s): ozone/nitrogen dioxide/particulate matter (2.5 microns in size and 10 microns in size)/sulfur dioxide/carbon monoxide/lead. The project alternatives were subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology and traffic. The FDOT's screening model for CO uses the latest United States Environmental Protection Agency (USEPA)-approved software to produce estimates of

Reference: Air Quality Technical Memorandum – Lantana Road/I-95 Interchange PD&E Study

one-hour and eight-hour CO at default air quality receptor locations. The predicted CO levels can then be directly compared to the current National Ambient Air Quality Standards (NAAQS) for CO to determine if the project “passes” the screening model, or if exceedances are predicted to occur.

The roadway intersection forecast to have the highest total approach traffic volume was at the I-95/Lantana Road interchange. The No-Action and Build alternatives for both the opening year (2025) and the design year (2045) were evaluated. The traffic data input used in the evaluation is shown below. Traffic data for the No-Action and the Build alternatives are the same.

I-95/LANTANA ROAD INTERCHANGE PEAK HOUR TRAFFIC VOLUMES

Year	Location	Direction	Peak Hour Directional Volume
Opening (2025)	I-95	SB	9,080
		NB	10,695
	Lantana Road	EB	1,671
		WB	1,759
Design (2045)	I-95	SB	10,100
		NB	11,955
	Lantana Road	EB	1,952
		WB	2,573

Estimates of CO were predicted for the default receptors which are located 10 feet to 150 feet from the edge of the roadway. The results of the CO Screening Analysis are presented in the attached COFlorida 2012 output files. Based on the results from the screening model, the highest project-related CO one-hour and eight-hour levels are not predicted to meet or exceed the one-hour or eight-hour NAAQS for this pollutant with either the No-Action or Build alternatives. As such, the project passes the screening model.

Agency coordination to obtain air quality related information occurred through the Efficient Transportation Decision Making (ETDM) Planning and Programming Screens (ETDM #14338) and the Advance Notification (AN) process. The ETDM review occurred between November 06, 2017 and December 21, 2017, and the most recent ETDM Programming Screen Summary Report was published on April 26, 2018. The USEPA reviewed the project and commented that the project study area is currently in attainment with the National Ambient Air Quality Standards and the project will likely have a minimal impact on air quality. The construction of the planned improvements could cause short-term impacts to air quality through airborne dust and other ambient air pollutants. Because four (4) schools are located near the project study area and other similar improvements are taking place at the I-95/Woolbright Road interchange and the I-95/10th Avenue North interchange, USEPA recommends conducting an air impact analysis. The USEPA also recommends the use of diesel controls, cleaner fuel, and cleaner construction practices. The USEPA assigned a degree of effect of Minimal.”

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The summary degree of effect for air quality for all build alternatives was also listed as ‘Minimal’ in the ETDM Programming Screen Summary Report.

Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to all applicable State and local regulations and to the FDOT’s *Standard Specifications for Road and Bridge Construction*.

Attachment: COFlorida 2012 Screening Model Data

COFlorida 2012 Screening Model Output

CO Florida 2012 - Results
Monday, November 18, 2019

Project Description

Project Title I-95/Lantana PD&E - Build Year/All
Facility Name I-95/Lantana Road
User's Name Stantec
Run Name No-Build - 2025
FDOT District 4
Year 2025
Intersection Type E-W Freeway N-S Diamond
Speed Arterial 40 mph Freeway 65 mph
Approach Traffic Arterial 1759 vph Freeway 10695 vph

Environmental Data

Temperature 53.9 F
Reid Vapor Pressure 13.3 psi
Land Use Urban
Stability Class D
Surface Roughness 175 cm
1 Hr. Background Concentration 5.0 ppm
8 Hr. Background Concentration 3.0 ppm

Results

(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	9.1	5.5
2	6.9	4.1
3	7.0	4.2
4	7.0	4.2
5	6.8	4.1
6	7.0	4.2
7	7.2	4.3
8	7.0	4.2
9	6.6	4.0
10	9.0	5.4
11	9.1	5.5
12	6.9	4.1
13	6.9	4.1
14	6.9	4.1
15	6.7	4.0
16	7.0	4.2
17	7.2	4.3
18	7.1	4.3
19	6.6	4.0
20	9.1	5.5

*****PROJECT PASSES*****
NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED

CO Florida 2012 - Results
Monday, November 18, 2019

Project Description

Project Title I-95/Lantana PD&E - Build Year/All
Facility Name I-95/Lantana Road
User's Name Stantec
Run Name All - 2045
FDOT District 4
Year 2045
Intersection Type E-W Freeway N-S Diamond
Speed Arterial 40 mph Freeway 65 mph
Approach Traffic Arterial 2573 vph Freeway 11955 vph

Environmental Data

Temperature 53.9 F
Reid Vapor Pressure 13.3 psi
Land Use Urban
Stability Class D
Surface Roughness 175 cm
1 Hr. Background Concentration 5.0 ppm
8 Hr. Background Concentration 3.0 ppm

Results

(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	9.4	5.6
2	7.2	4.3
3	7.1	4.3
4	7.2	4.3
5	6.9	4.1
6	7.3	4.4
7	7.6	4.6
8	7.2	4.3
9	6.7	4.0
10	9.3	5.6
11	9.4	5.6
12	7.2	4.3
13	7.1	4.3
14	7.2	4.3
15	6.9	4.1
16	7.3	4.4
17	7.6	4.6
18	7.2	4.3
19	6.8	4.1
20	9.3	5.6

*****PROJECT PASSES*****
NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED
