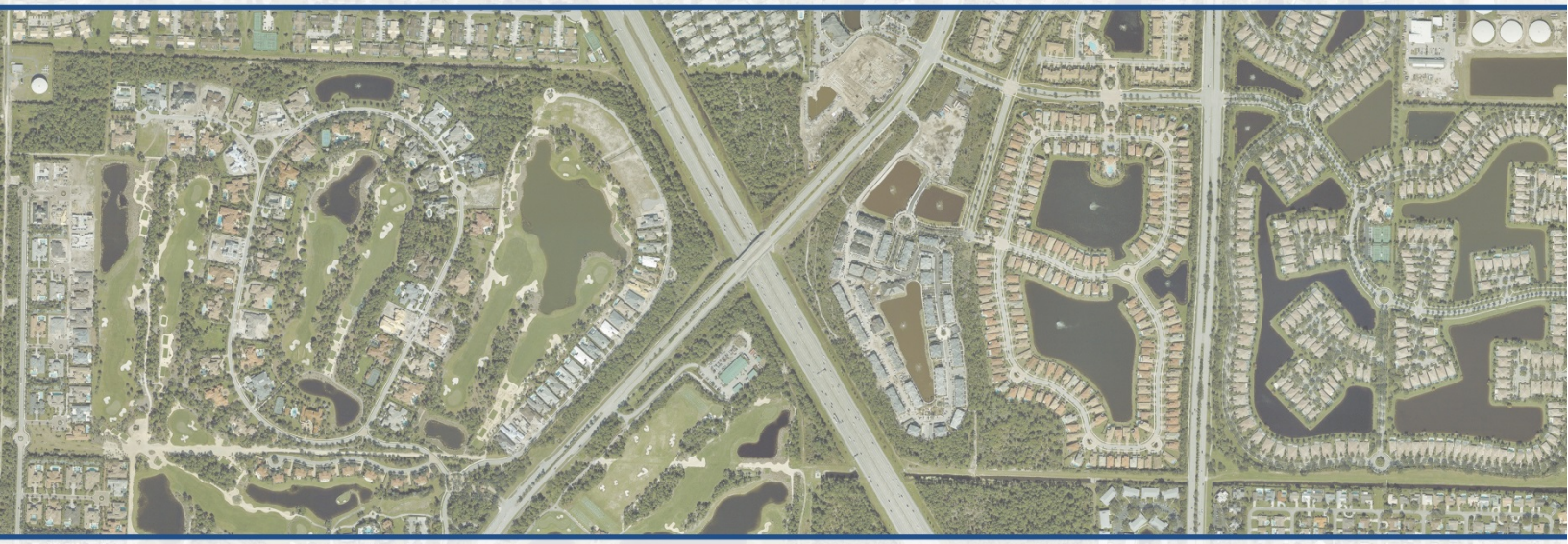
Final Air Quality Memorandum

SR 9/I-95 at Central Boulevard Interchange PD&E Study

I-95 from north of PGA Boulevard (MP 36.783) to Donald Ross Road (MP 40.163)

ETDM 13748 • Palm Beach County • Financial Management Number: 413265-1-22-01 • Federal Aid Project No: N/A



FDOT

Prepared for:

FDOT District 4
3400 West Commercial Blvd.
Fort Lauderdale, Florida 33309

October, 2016

Final Air Quality Memorandum

SR 9/I-95 at Central Boulevard Interchange PD&E Study

I-95 from north of PGA Boulevard (MP 36.783) to Donald Ross Road (MP 40.163)

ETDM 13748 • Palm Beach County • Financial Management Number: 413265-1-22-01 • Federal Aid Project No: N/A

FDOT

Prepared for:

FDOT District 4
3400 West Commercial Blvd.
Fort Lauderdale, Florida 33309

October, 2016

ESA

4200 West Cypress Street
Suite 450
Tampa, FL 33607
813.207.7200 phone
813.207.7201 fax

www.esassoc.com

memorandum

date July 11, 2016 (Revised October 3, 2016)

to Project File

from Michael Mulbarger

subject FM No. 413265-1-22-01
ETDM 13748
SR 9/I-95 at Central Boulevard Interchange PD&E Study, Palm Beach County
Final Air Quality Memorandum

The Florida Department of Transportation (FDOT) is currently evaluating the preliminary engineering concept of constructing a new interchange at I-95 and Central Boulevard in Palm Beach County, FL. This Project Development and Environment (PD&E) Study includes the I-95 corridor from north of PGA Boulevard to Donald Ross Road. The project is located in an area that is primarily residential with commercial uses as well. This Air Quality Memorandum presents the results of the screening analysis conducted for the proposed project.

An air quality review of the subject project was conducted following procedures documented in Part 2, Chapter 16 (Air Quality) of the Florida Department of Transportation (FDOT) Project Development and Environment (PD&E) Manual (September 13, 2006). The proposed project is located in Palm Beach County, an area currently designated as being in attainment for all of the National Ambient Air Quality Standards (NAAQS) under the criteria provided in the Clean Air Act. Therefore the Clean Air Act conformity requirements do not apply to this project.

Carbon Monoxide

The preferred alternative for the project was 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 (COFL 2012) uses the latest United States Environmental Protection Agency (EPA) approved software to produce estimates of one-hour and eight-hour CO concentrations at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the current one-and eight-hour NAAQS for CO, which are 35 parts per million (PPM) and 9 PPM, respectively.

The signalized roadway intersection forecast to have the highest total approach traffic volume was the intersection of PGA Boulevard and Military Trail. The Build and No-Build scenarios for both the

opening year (2020) and the design year (2040) were evaluated. The traffic data input used in the evaluation is attached to this memorandum.

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

Greenhouse Gases

Greenhouse gases (GHG) cause a global phenomenon in which heat is trapped in the earth's atmosphere. Because the atmospheric concentration of GHGs continues to climb, our planet will continue to experience climate-related phenomena. For example, warmer global temperatures can cause changes in precipitation and sea levels. The burning of fossil fuels and other human activities are adding to the concentration of GHGs in the atmosphere. Many GHGs remain in the atmosphere for time periods ranging from decades to centuries.

To date, no national standards have been established regarding GHGs, nor has EPA established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for Carbon Dioxide (CO_2) under the Clean Air Act. GHGs are different from other air pollutants evaluated in the federal environmental reviews because their impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is characteristic of these gases. The affected environment for CO2 and other GHG emissions is the entire planet. In addition, from a quantitative perspective, global climate change is the cumulative result of numerous and varied emissions sources (in terms of both absolute numbers and types), each of which makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad scale actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to isolate and understand the GHG emissions impacts for a particular transportation project. Furthermore, presently there is no scientific methodology for attributing specific climatological changes to a particular transportation project's emissions.

Under the National Environmental Policy Act (NEPA), detailed environmental analysis should be focused on issues that are significant and meaningful to decision-making (40 CFR 1500.1(b), 1500.2(b), 1500.4(g), and 1501.7). The Federal Highway Administration (FHWA) has concluded, based on the nature of GHG emissions and the exceedingly small potential of GHG impacts of the proposed action will not result in "reasonably foreseeable significant adverse impacts on the human environment" (40 CFR 1502.22(b)). The GHG emission from the project build alternatives will be insignificant, and will not play a meaningful role in a determination of the environmentally preferable alternative or the selection of the preferred alternative. More detailed information on GHG emissions "is not essential to a reasoned choice among reasonable alternatives" (40 CFR 1502.22(a)) or to making a decision in the best overall public interest based on a balanced

consideration of transportation, economic, social, and environmental needs and impacts (23 CFR 771.105(b)).

This document does not incorporate an analysis of the GHG emissions or climate change effects of each of the alternatives because the potential change in GHG emissions is very small in the context of the affected environment. Because of the insignificance of the GHG impacts, those local impacts will not be meaningful to a decision on the environmentally preferable alternative or to a choice among alternatives.

For these reasons, no alternatives-level GHG analysis has been performed for this project.

Traffic Data for Air Quality Screening Analysis

DATE: June 14, 2016

PREPARED BY: Gavin Jones, PE, AICP

Financial Project Number(s): 413265-1-22-01

Work Program Item No:

Federal Aid Numbers:

Project Description: I-95 at Central Boulevard Interchange PD&E

NOTE: The most congested intersection is the intersection with the highest total volume and lowest approach speeds and it could be two different intersections based on the "Build" vs. "No-Build" alternatives. The traffic volumes are to be the vehicles per hour (vph) approaching the intersection during peak hour for each corresponding leg. The speeds are to be the cruise speed as vehicles approach the intersection before entering the queue – sometimes referred to as "mid-block" speed.

OPENING YEAR: 2020

Signalized Intersection: PGA Boulevard at North Military Trail

	Build		No-Build	
Approach	**Approach Traffic Volume**	**Speed**	**Approach Traffic Volume**	**Speed**
Northbound	**1737**	50 mph	**1994**	50 mph
Southbound	**1557**	50 mph	**1713**	50 mph
Eastbound	**1965**	50 mph	**1869**	50 mph
Westbound	**1886**	50 mph	**2174**	50 mph

DESIGN YEAR: 2040

Signalized Intersection: PGA Boulevard at North Military Trail

	Build		No-Build	
Approach	**Approach Traffic Volume**	**Speed**	**Approach Traffic Volume**	**Speed**
Northbound	**2234**	50 mph	**2409**	50 mph
Southbound	**1800**	50 mph	**2022**	50 mph
Eastbound	**2438**	50 mph	**2173**	50 mph
Westbound	**2235**	50 mph	**2664**	50 mph

CO Florida 2012 - Results
Friday, June 17, 2016

Project Description

Project Title	I-95 at Central Blvd. PD&E (413265-1)
Facility Name	PGA Blvd. at Military Trail
User's Name	MSM
Run Name	Opening Year (2020) No-Build
FDOT District	4
Year	2020
Intersection Type	6 X 6
Speed	Arterial 50 mph
Approach Traffic	Arterial 2174 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	7.3	4.4
2	7.5	4.5
3	7.9	4.7
4	7.2	4.3
5	6.9	4.1
6	7.3	4.4
7	7.5	4.5
8	7.9	4.7
9	7.2	4.3
10	7.0	4.2
11	7.3	4.4
12	7.5	4.5
13	7.9	4.7
14	7.2	4.3
15	6.9	4.1
16	7.3	4.4
17	7.5	4.5
18	7.9	4.7
19	7.2	4.3
20	6.9	4.1

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

CO Florida 2012 - Results
Friday, June 17, 2016

Project Description

Project Title	I-95 at Central Blvd. PD&E (413265-1)
Facility Name	PGA Blvd. at Military Trail
User's Name	MSM
Run Name	Opening Year (2020) Build
FDOT District	4
Year	2020
Intersection Type	6 X 6
Speed	Arterial 50 mph
Approach Traffic	Arterial 1965 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	7.1	4.3
2	7.3	4.4
3	7.6	4.6
4	7.1	4.3
5	6.8	4.1
6	7.1	4.3
7	7.3	4.4
8	7.6	4.6
9	7.1	4.3
10	6.9	4.1
11	7.1	4.3
12	7.3	4.4
13	7.6	4.6
14	7.1	4.3
15	6.8	4.1
16	7.1	4.3
17	7.3	4.4
18	7.6	4.6
19	7.1	4.3
20	6.8	4.1

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

CO Florida 2012 - Results
Friday, June 17, 2016

Project Description

Project Title	I-95 at Central Blvd. PD&E (413265-1)
Facility Name	PGA Blvd. at Military Trail
User's Name	MSM
Run Name	Design Year (2040) No-Build
FDOT District	4
Year	2040
Intersection Type	6 X 6
Speed	Arterial 50 mph
Approach Traffic	Arterial 2664 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	7.5	4.5
2	7.5	4.5
3	7.8	4.7
4	7.4	4.4
5	6.8	4.1
6	7.5	4.5
7	7.5	4.5
8	7.8	4.7
9	7.4	4.4
10	6.9	4.1
11	7.5	4.5
12	7.5	4.5
13	7.8	4.7
14	7.4	4.4
15	6.8	4.1
16	7.5	4.5
17	7.5	4.5
18	7.8	4.7
19	7.4	4.4
20	6.8	4.1

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

CO Florida 2012 - Results
Friday, June 17, 2016

Project Description

Project Title	I-95 at Central Blvd. PD&E (413265-1)
Facility Name	PGA Blvd. at Military Trail
User's Name	MSM
Run Name	Design Year (2040) Build
FDOT District	4
Year	2040
Intersection Type	6 X 6
Speed	Arterial 50 mph
Approach Traffic	Arterial 2438 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	7.2	4.3
2	7.3	4.4
3	7.6	4.6
4	7.1	4.3
5	6.7	4.0
6	7.2	4.3
7	7.3	4.4
8	7.6	4.6
9	7.1	4.3
10	6.8	4.1
11	7.2	4.3
12	7.3	4.4
13	7.6	4.6
14	7.1	4.3
15	6.7	4.0
16	7.2	4.3
17	7.3	4.4
18	7.6	4.6
19	7.1	4.3
20	6.7	4.0

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