

FINAL AIR QUALITY MEMORANDUM

**Florida Department of Transportation
District Seven**

SR 600 (US 92) Project Development & Environment Study Re-evaluation

**From East of I-4 to East of County Line Road
Hillsborough County, Florida**

**Work Program Item Segment No.: 435749-1
Federal Aid Project No.: MAF-212-1(34)**

The Florida Department of Transportation, District Seven, conducted a Project Development and Environment Study Re-evaluation for the proposed widening of State Road 600 (US 92) from east of Interstate 4 to east of County Line Road in Hillsborough County, Florida. The total project length is approximately 18.1 miles. The environmental document that was reevaluated is a Type 2 Categorical Exclusion (Approved by the FHWA on March 24, 1994).

April 2017

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

April 2017

Any reference contained herein to the Project Development & Environment Manual is referring to the 2016 revision.

Date: April 17, 2017

To: Robin Rhinesmith, Florida Department of Transportation (FDOT)

From: Lindsay Baumaister, KB Environmental Sciences, Inc.

cc: Alex Hull P.E., Inwood Consulting Engineers

**Subject: Final Air Quality Memorandum
SR 600 (US 92) Project Development & Environment Study
From East of I-4 to East of County Line Road
Hillsborough County, Florida
Work Program Item Segment No: 435749-1**

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment Study Re-evaluation for the proposed widening of State Road 600 (US 92) from East of I-4 to east of County Line Road. The total project length is approximately 18.1 miles. This segment of US 92 is located in Hillsborough County, Florida, an area currently designated by the US Environmental Protection Agency (EPA) as being attainment for all of the National Ambient Air Quality Standards (NAAQS). Because the project is in an attainment area and the project would reduce congestion, it is not likely that the proposed improvements will have an impact on local or regional air pollutant/pollutant precursor emissions or concentrations.

The project Build and No-Build alternatives were analyzed for both the project's opening year and design year using the FDOT's air quality screening model, CO Florida 2012 (approved by the Federal Highway Administration (FHWA) on April 12, 2013). CO Florida 2012 uses the EPA's MOVES and CAL3QHC emission rate and dispersion models to produce estimates of one- and eight-hour concentrations of carbon monoxide (CO) at default receptor locations. These concentrations can be directly compared to the one- and eight-hour NAAQS for CO (35 and 9 parts per million [ppm], respectively).

In the opening year (2020), the intersection forecasted to have the highest approach traffic volume for both the No-Build and Build alternatives was the US 92/Thonotosassa Road/Lemon Street intersection. In the design year (2040) the intersection forecast to have the highest approach traffic volume with the alternatives was the US 92/Williams Road intersection.

Estimates of CO were predicted at default receptor locations in all quadrants of the US 92/Thonotosassa Road/Lemon Street and US 92/Williams Road intersections. Based on the results from the screening model, shown in **Table 1**, the highest predicted CO one- and eight-hour concentrations would not exceed the NAAQS for this pollutant regardless of

alternative or year of analysis. Therefore, the project “passed” the screening test. The CO Florida 2012 output files are attached to this memorandum.

Table 1
CO Screening Results for the No-Build and Build Alternatives
Opening Year (2020) and Design Year (2040)

Year	Alternative	Maximum Predicted CO Levels (ppm)		Passes Screening Test?
		NAAQS One-Hr/ Project One-Hr	NAAQS Eight-Hr/ Project Eight-Hr	
2020 ^a	No-Build	35 / 7.0	9 / 4.2	Yes
	Build	35 / 7.0	9 / 4.2	Yes
2040 ^b	No-Build	35 / 7.6	9 / 4.6	Yes
	Build	35 / 7.5	9 / 4.6	Yes

^a Results for the year 2020 are for the US 92/Thonotosassa Road/Lemon Street intersection.
^b Results for the year 2040 are for the US 92/Williams Road intersection.

Notably, because the US 92 project is in an area that is designated attainment for all the NAAQS, the conformity requirements of the Clean Air Act were not applicable to the proposed improvements.

Green House Gas (GHG) Emissions

GHG emissions 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 for 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 (CO₂) 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.

Following the National Environmental Policy Act (NEPA), detailed environmental analysis should be focused on issues that are significant and meaningful to decision-making (Title 40 of the Code of Federal Regulations (CFR) Parts 1500.1(b), 1500.2(b), 1500.4(g), and 1501.7). FHWA has concluded, based on the nature of GHG emissions and the exceedingly small potential GHG impacts of the proposed action that the GHG emissions from 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)).

Attachments

- 1. Traffic Data for Air Study Screening Test**
- 2. Carbon Monoxide Screening Test Results**

**PD&E
TRAFFIC DATA FOR AIR STUDY SCREENING TEST**

DATE: 9-Mar-16
PREPARED BY: AMH

Financial Project Number(s): 435749 1 22 01
Work Program Item No.: _____
Federal Aid Numbers (s): _____
Project Description: SR 600 (US 92) from East of I-4 to East of County Line Road

NOTE: The most congested signalized intersection is the intersection with the highest total volume and lowest departure speeds and it could be two different intersections based on the "Build" vs. "No-Build" alternatives. The traffic volumes are to be the vph of the most congested leg approaching the intersection. The speeds are to be the cruise speed, also known as mid-block speed, for the most congested leg. If cruise speed is unknown, use the speed limit.

OPENING YEAR: 2020

<u>"Build"</u>		<u>"No-Build"</u>	
Most Congested Signalized Intersection:		Most Congested Signalized Intersection:	
<u>US 92 @ Thonotosassa Rd/Lemon ST</u>		<u>US 92 @ Thonotosassa Rd/Lemon ST</u>	
Peak hour traffic for	<u>AM</u>	Peak hour traffic for	<u>AM</u>
most congested approach leg:	<u>1393</u> vph	most congested approach leg:	<u>1393</u> vph
Specify leg (NB, SB, EB, WB):	<u>WB</u>	Specify leg (NB, SB, EB, WB):	<u>WB</u>
Cruise Speed:	<u>45</u> mph	Cruise Speed:	<u>45</u> mph

DESIGN YEAR: 2040

<u>"Build"</u>		<u>"No-Build"</u>	
Most Congested Signalized Intersection:		Most Congested Signalized Intersection:	
<u>US 92 @ Falkenburg Rd</u>		<u>US 92 @ Falkenburg Rd</u>	
Peak hour traffic for	<u>AM</u>	Peak hour traffic for	<u>AM</u>
most congested approach leg:	<u>1893</u> vph	most congested approach leg:	<u>1893</u> vph
Specify leg (NB, SB, EB, WB):	<u>WB</u>	Specify leg (NB, SB, EB, WB):	<u>WB</u>
Cruise Speed:	<u>45</u> mph	Cruise Speed:	<u>50</u> mph

**PD&E
TRAFFIC DATA FOR AIR STUDY SCREENING TEST**

DATE: 9-Mar-16
 PREPARED BY: AMH

Financial Project Number(s): 435749 1 22 01
 Work Program Item No.: _____
 Federal Aid Numbers (s): _____
 Project Description: SR 600 (US 92) from East of I-4 to East of County Line Road

NOTE: The most congested signalized intersection is the intersection with the highest total volume and lowest departure speeds and it could be two different intersections based on the "Build" vs. "No-Build" alternatives. The traffic volumes are to be the vph of the most congested leg approaching the intersection. The speeds are to be the cruise speed, also known as mid-block speed, for the most congested leg. If cruise speed is unknown, use the speed limit.

OPENING YEAR: 2020

<u>"Build"</u>		<u>"No-Build"</u>	
Most Congested Signalized Intersection:		Most Congested Signalized Intersection:	
<u>US 92 @ Williams Road</u>		<u>US 92 @ Williams Road</u>	
Peak hour traffic for	PM	Peak hour traffic for	PM
most congested approach leg:	<u>1112</u> vph	most congested approach leg:	<u>1112</u> vph
Specify leg (NB, SB, EB, WB):	<u>EB</u>	Specify leg (NB, SB, EB, WB):	<u>WB</u>
Cruise Speed:	<u>45</u> mph	Cruise Speed:	<u>50</u> mph

DESIGN YEAR: 2040

<u>"Build"</u>		<u>"No-Build"</u>	
Most Congested Signalized Intersection:		Most Congested Signalized Intersection:	
<u>US 92 @ Williams Road</u>		<u>US 92 @ Williams Road</u>	
Peak hour traffic for	PM	Peak hour traffic for	PM
most congested approach leg:	<u>2159</u> vph	most congested approach leg:	<u>2159</u> vph
Specify leg (NB, SB, EB, WB):	<u>EB</u>	Specify leg (NB, SB, EB, WB):	<u>EB</u>
Cruise Speed:	<u>45</u> mph	Cruise Speed:	<u>50</u> mph

CO Florida 2012 - Results
 Tuesday, September 20, 2016

Project Description

Project Title US 92 PD&E: Garden to E of CL Rd
 Facility Name US 92/Thonotosassa Rd/Lemon St
 User's Name Lindsay Baumaister/KBE
 Run Name 2020 No Build
 FDOT District 7
 Year 2020
 Intersection Type 4 X 4
 Speed Arterial 45 mph
 Approach Traffic Arterial 1393 vph

Environmental Data

Temperature 48.8 °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	6.8	4.1
2	6.8	4.1
3	7.0	4.2
4	6.7	4.0
5	6.3	3.8
6	6.7	4.0
7	6.8	4.1
8	7.0	4.2
9	6.6	4.0
10	6.3	3.8
11	6.7	4.0
12	6.9	4.1
13	7.0	4.2
14	6.6	4.0
15	6.3	3.8
16	6.7	4.0
17	6.9	4.1
18	7.0	4.2
19	6.6	4.0
20	6.3	3.8

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

CO Florida 2012 - Results
Tuesday, September 20, 2016

Project Description

Project Title US 92 PD&E: Garden to E of CL Rd
Facility Name US 92/Thonotosassa Rd/Lemon St
User's Name Lindsay Baumaister/KBE
Run Name 2020 Build
FDOT District 7
Year 2020
Intersection Type 4 X 4
Speed Arterial 45 mph
Approach Traffic Arterial 1393 vph

Environmental Data

Temperature 48.8 °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	6.8	4.1
2	6.8	4.1
3	7.0	4.2
4	6.7	4.0
5	6.3	3.8
6	6.7	4.0
7	6.8	4.1
8	7.0	4.2
9	6.6	4.0
10	6.3	3.8
11	6.7	4.0
12	6.9	4.1
13	7.0	4.2
14	6.6	4.0
15	6.3	3.8
16	6.7	4.0
17	6.9	4.1
18	7.0	4.2
19	6.6	4.0
20	6.3	3.8

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

CO Florida 2012 - Results
 Tuesday, September 20, 2016

Project Description

Project Title US 92 PD&E: Garden to E of CL Rd
 Facility Name US 92/Williams Road
 User's Name Lindsay Baumaister/KBE
 Run Name 2040 No Build
 FDOT District 7
 Year 2040
 Intersection Type 4 X 4
 Speed Arterial 50 mph
 Approach Traffic Arterial 2159 vph

Environmental Data

Temperature 48.8 °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	6.6	4.0
6	7.2	4.3
7	7.3	4.4
8	7.5	4.5
9	7.1	4.3
10	6.6	4.0
11	7.2	4.3
12	7.3	4.4
13	7.6	4.6
14	7.1	4.3
15	6.6	4.0
16	7.2	4.3
17	7.4	4.4
18	7.5	4.5
19	7.2	4.3
20	6.6	4.0

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

CO Florida 2012 - Results
Tuesday, September 20, 2016

Project Description

Project Title US 92 PD&E: Garden to E of CL Rd
Facility Name US 92/Williams Road
User's Name Lindsay Baumaister/KBE
Run Name 2040 Build
FDOT District 7
Year 2040
Intersection Type 4 X 4
Speed Arterial 45 mph
Approach Traffic Arterial 2159 vph

Environmental Data

Temperature 48.8 °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	7.2	4.3
3	7.6	4.6
4	6.9	4.1
5	6.5	3.9
6	7.1	4.3
7	7.2	4.3
8	7.5	4.5
9	6.9	4.1
10	6.5	3.9
11	7.1	4.3
12	7.2	4.3
13	7.5	4.5
14	6.9	4.1
15	6.5	3.9
16	7.1	4.3
17	7.3	4.4
18	7.5	4.5
19	7.0	4.2
20	6.5	3.9

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