AIR QUALITY TECHNICAL MEMORANDUM

Florida Department of Transportation

District 1

SR 70

Limits of Project: from Lorraine Road to CR 675/Waterbury Road

Manatee County, Florida

Financial Management Number: 414506-2

ETDM Number: 14263

Date: MARCH 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.

Date: March 18, 2019

To: Mark Easley (Kisinger, Campo & Associates)

From: Wayne Arner (KB Environmental Sciences, Inc.)

Subject: Air Quality Technical Memorandum
SR 70 from Lorraine Road to CR 675
Statewide Accelerated Transformation (SWAT) Study
Manatee County, Florida
FPID Number: 414506-2-22-01

National Ambient Air Quality Standards (NAAQS)

The subject project is located in Manatee County, Florida (**Figure 1**), an area currently designated by the US Environmental Protection Agency (EPA) as being an attainment area for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter ($PM_{2.5}$ and PM_{10}), and sulfur dioxide (SO_2). Because the project is in an attainment area and would reduce traffic congestion, it is not likely that the proposed improvements will have an impact on local or regional totals of air pollutants or pollutant precursor emissions, or on concentrations of the pollutants in the ambient air.

The project Build and No-Build alternatives were analyzed for both the opening year and design year of the project using the Florida Department of Transportation's (FDOT's) air quality screening model, CO Florida 2012. 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 National Ambient Air Quality Standards (NAAQS) for CO (35 and 9 parts per million [ppm], respectively).

The intersection forecasted to have the highest approach traffic volume for the No-Build and Build Alternatives for both the opening year (2025) and the design year (2045) is the SR 70 at Lorraine Road intersection. Estimates of CO concentrations were predicted at default receptor locations along each leg of the intersection.

Based on the results from the screening model, the highest predicted CO one- and eight-hour concentrations would not exceed the NAAQS for this pollutant regardless of alternative or year of analysis (**Table 1**). Therefore, the project "passes" the screening test. The traffic data and the CO Florida 2012 output files are attached to this memorandum.

Figure 1. Project Location Map

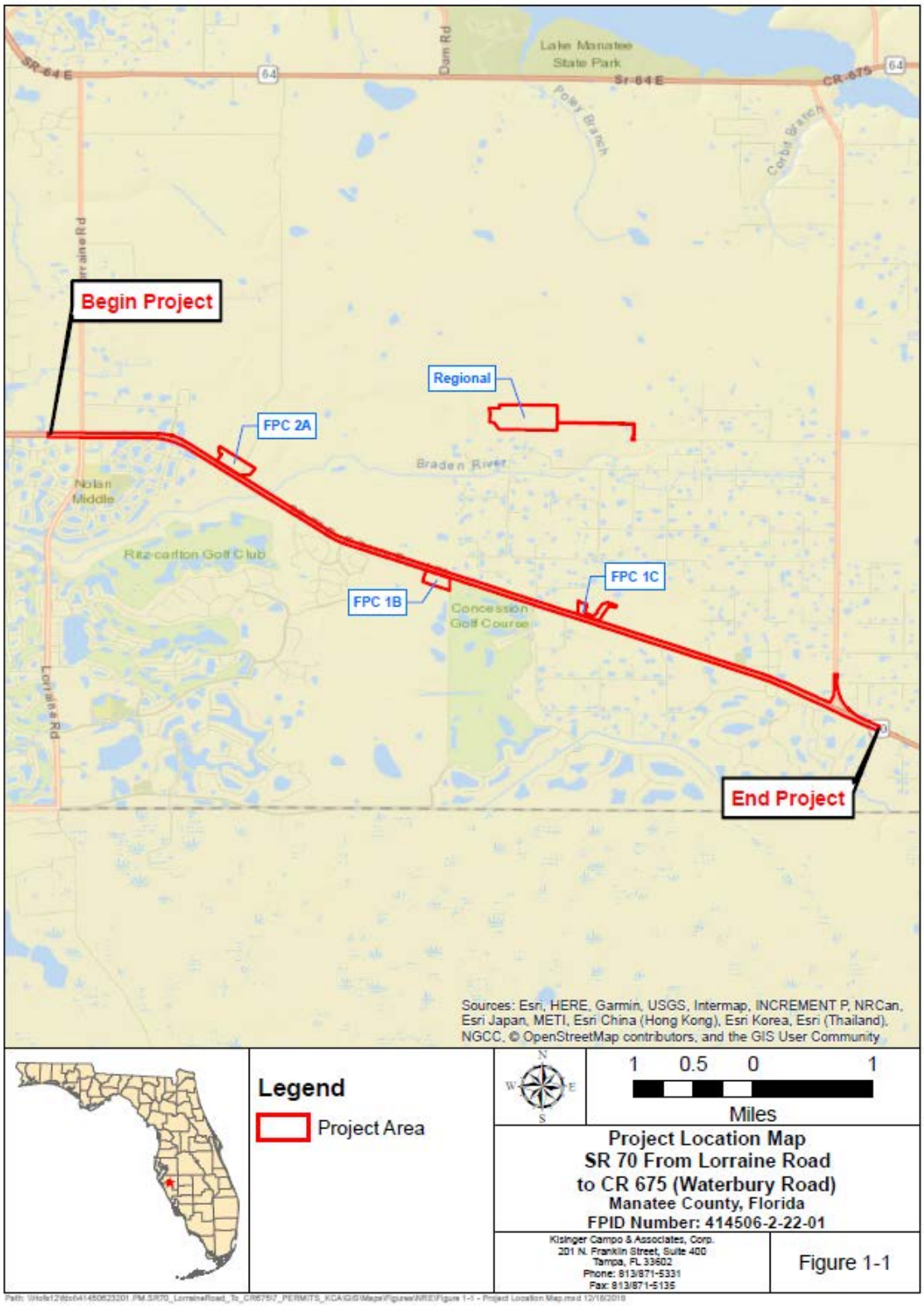

Table 1. Intersection CO Screening Results for the No-Build and Build Alternatives for the Opening Year (2025) and the Build Year (2045)

Year	Alternative	Maximum CO Levels (ppm)		Passes Screening Test?
		NAAQS one-hr/ Project one-hr	NAAQS eight-hr/ Project eight-hr	
2025	No-Build	35 / 5	9 / 3	Yes
	Build	35 / 5	9 / 3	Yes
2045	No-Build	35 / 6	9 / 4	Yes
	Build	35 / 6	9 / 4	Yes

Notably, because the project is in an area that is designated as attainment for all of the NAAQS, the conformity requirements of the Clean Air Act (CAA) do not apply.

Construction Impacts

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 applicable state regulations and to the FDOT Standard Specifications for Road and Bridge Construction.

Attachments

1. **Traffic Data for Air Study Screening Test**
2. **Carbon Monoxide Screening Output Files**

TRAFFIC DATA FOR AIR QUALITY ANALYSIS

Date: 9/6/2018 Prepared by: VHB, Inc

Financial Management Number(s): 414506-2

Federal Aid Number(s): _____

Project Description: **SR 70 Reevaluation - Project Traffic Report**

NOTE: Traffic data should be provided for the intersection that is forecast to have the highest total approach traffic volume. Notably, the intersection may not be the same for the Build and No-Build alternatives. The number of lanes should be the number of intersection approach through lanes. The traffic volumes should be representative of vehicles per hour (vph) and vehicle speeds should be representative of posted speeds if intersection cruise approach speeds are unknown. This traffic data sheet was prepared to assist in obtaining appropriate traffic data for the FDOT CO Florida 2004 Intersection Screening Model. Notably, additional traffic data is required for diamond interchanges (see User's Guide).

==========

Opening Year: 2025

Land Use: Urban X, Suburban_____, or Rural _____

Build/No Build	SR 70 - EB			SR 70 - WB			Lorraine Rd - NB			Lorraine Rd - SB		
	No. of Lanes	VPH	Speed	No. of Lanes	VPH	Speed	No. of Lanes	VPH	Speed	No. of Lanes	VPH	Speed
Build	3	1,677	50	3	929	50	2	849	35	2	369	50
No Build	2	1,603	50	2	871	50	1	851	35	1	369	50

==========

Design Year: 2045

Build/No Build	SR 70 - EB			SR 70 - WB			Lorraine Rd - NB			Lorraine Rd - SB		
	No. of Lanes	VPH	Speed	No. of Lanes	VPH	Speed	No. of Lanes	VPH	Speed	No. of Lanes	VPH	Speed
Build	3	3,226	50	3	1,839	50	2	1,272	35	2	578	50
No Build	2	2,989	50	2	1,651	50	1	1,278	35	1	578	50

CO Florida 2012 - Results
Friday, January 25, 2019

Project Description

Project Title	SR 70 Lorraine Road to CR 675
Facility Name	SR 70 at Lorraine Road intersection
User's Name	WHA
Run Name	2025 Opening Year No-Build
FDOT District	1
Year	2025
Intersection Type	E-W Freeway 4 X 4
Arterial Speed	35 mph
Max Approach Traffic	1603 vph

Environmental Data

Temperature	48.3 F
Reid Vapor Pressure	13.3 psi
Land Use	Suburban
Stability Class	D
Surface Roughness	108 cm
1 Hr. Background Concentration	3.3 ppm
8 Hr. Background Concentration	2.0 ppm

Results
(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	4.5	2.7
2	4.7	2.8
3	5.0	3.0
4	4.6	2.8
5	4.6	2.8
6	4.5	2.7
7	4.7	2.8
8	4.9	2.9
9	4.6	2.8
10	4.6	2.8
11	4.5	2.7
12	4.7	2.8
13	5.0	3.0
14	4.6	2.8
15	4.6	2.8
16	4.5	2.7
17	4.8	2.9
18	4.9	2.9
19	4.6	2.8
20	4.6	2.8

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

CO Florida 2012 - Results
Friday, January 25, 2019

Project Description

Project Title	SR 70 Lorraine Road to CR 675
Facility Name	SR 70 at Lorraine Road intersection
User's Name	WHA
Run Name	2025 Opening Year Build
FDOT District	1
Year	2025
Intersection Type	E-W Freeway 6 X 4
Arterial Speed	35 mph
Max Approach Traffic	1677 vph

Environmental Data

Temperature	48.3 F
Reid Vapor Pressure	13.3 psi
Land Use	Suburban
Stability Class	D
Surface Roughness	108 cm
1 Hr. Background Concentration	3.3 ppm
8 Hr. Background Concentration	2.0 ppm

Results
(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	4.6	2.8
2	4.8	2.9
3	5.0	3.0
4	4.7	2.8
5	4.5	2.7
6	4.4	2.6
7	4.7	2.8
8	4.9	2.9
9	4.7	2.8
10	4.6	2.8
11	4.6	2.8
12	4.8	2.9
13	5.0	3.0
14	4.7	2.8
15	4.5	2.7
16	4.4	2.6
17	4.7	2.8
18	4.9	2.9
19	4.7	2.8
20	4.6	2.8

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

CO Florida 2012 - Results
Friday, January 25, 2019

Project Description

Project Title	SR 70 Lorraine Road to CR 675
Facility Name	SR 70 at Lorraine Road intersection
User's Name	WHA
Run Name	2045 Design Year No-Build
FDOT District	1
Year	2045
Intersection Type	E-W Freeway 4 X 4
Arterial Speed	35 mph
Max Approach Traffic	2989 vph

Environmental Data

Temperature	48.3 F
Reid Vapor Pressure	13.3 psi
Land Use	Suburban
Stability Class	D
Surface Roughness	108 cm
1 Hr. Background Concentration	3.3 ppm
8 Hr. Background Concentration	2.0 ppm

Results
(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	5.4	3.2
2	5.6	3.4
3	6.1	3.7
4	5.5	3.3
5	5.1	3.1
6	5.4	3.2
7	5.6	3.4
8	6.0	3.6
9	5.5	3.3
10	5.1	3.1
11	5.4	3.2
12	5.6	3.4
13	6.0	3.6
14	5.5	3.3
15	5.1	3.1
16	5.4	3.2
17	5.7	3.4
18	6.0	3.6
19	5.6	3.4
20	5.1	3.1

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

CO Florida 2012 - Results
Friday, January 25, 2019

Project Description

Project Title	SR 70 Lorraine Road to CR 675
Facility Name	SR 70 at Lorraine Road intersection
User's Name	WHA
Run Name	2045 Design Year Build
FDOT District	1
Year	2045
Intersection Type	E-W Freeway 6 X 4
Arterial Speed	35 mph
Max Approach Traffic	3226 vph

Environmental Data

Temperature	48.3 F
Reid Vapor Pressure	13.3 psi
Land Use	Suburban
Stability Class	D
Surface Roughness	108 cm
1 Hr. Background Concentration	3.3 ppm
8 Hr. Background Concentration	2.0 ppm

Results
(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	5.6	3.4
2	5.8	3.5
3	6.1	3.7
4	5.5	3.3
5	5.3	3.2
6	5.5	3.3
7	5.7	3.4
8	6.1	3.7
9	5.6	3.4
10	5.2	3.1
11	5.6	3.4
12	5.8	3.5
13	6.1	3.7
14	5.5	3.3
15	5.3	3.2
16	5.5	3.3
17	5.7	3.4
18	6.1	3.7
19	5.6	3.4
20	5.2	3.1

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