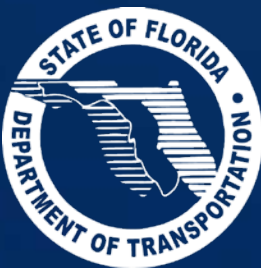


Air Quality Memorandum

SR 7 Extension Project Development and Environment (PD&E) Study
From SR 704 (Okeechobee Boulevard) to CR 809A (Northlake Boulevard)
MP 0.000 to MP 8.536
Palm Beach County, Florida
Financial Project ID No. 229664-2-22-01
Federal Aid Project No. 4752-030-P
ETDM No. 8127



Florida Department of Transportation
District 4
July 2014

AIR QUALITY ANALYSIS TECHNICAL MEMORANDUM

DATE: June 12, 2014

PREPARED BY: Courtney Arena & Rachel Krasna
Stanley Consultants, Inc.

SUBJECT: SR 7 Corridor Extension Project Development & Environment (PD&E) Study
Air Quality Screening & Technical Memorandum
From Okeechobee Blvd. to Northlake Blvd.
FM: 229664-2-22-01
Federal Aid Number: 4752-030-P
ETDM: 8127

Introduction

The Florida Department of Transportation (FDOT), District Four, conducted a Project Development & Environment (PD&E) Study that proposes to extend SR 7 from Okeechobee Boulevard (SR 704) to Northlake Boulevard in Palm Beach County, Florida. The purpose of the PD&E Study is to evaluate engineering and environmental data and document information that will aid in determining the type, preliminary design, and location of the proposed roadway extension. The study meets the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules and regulations.

This project proposes to extend SR 7 from its current termination point at Okeechobee Boulevard to Northlake Boulevard in Palm Beach County for a distance of 8.5 miles. The project is located west of the Florida's Turnpike between the Village of Royal Palm Beach and the City of West Palm Beach. The existing land use along the roadway is primarily residential with some commercial, undeveloped, and conservation lands.

Land Use

The project is located in an area which is designated as 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 the project. The project was reviewed for air quality impacts consistent with the guidance provided by the Federal Highway Administration (FHWA).

The project area is currently designated as being attainment for the following criteria air pollutant(s): ozone, nitrogen dioxide, particulate matter (2.5 microns in size and ten microns in size), sulfur dioxide, carbon monoxide and lead. This has been verified by review of the project area on the Environmental Protection Agency (EPA) Green Book website.

Methodology

The analysis was conducted according to Part 2, Chapter 16 for Air Quality (version 9/13/2006) of the PD&E Manual. The project alternatives were subjected to a Carbon Monoxide (CO) screening model that

considers various conservative worst-case assumptions related to site conditions, meteorology and traffic. The FDOT's screening model, CO Florida 2012 (version 1.01, released January 9, 2012) uses the latest United States Environmental Protection Agency (USEPA)-approved software (MOBILE6 and CAL3QHC) to produce estimates of one-hour and eight-hour CO at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the one-hour and eight-hour NAAQS for CO, which are 35 parts per million (ppm) and 9 ppm, respectively.

The CO Florida 2012 Traffic Model was utilized to determine the traffic loads for 2020 and 2040 Build and No-Build alternatives, which consisted of four data trials and reports. The intersection of SR 7 and Okeechobee Boulevard was identified as the intersection with the highest vehicle traffic. The traffic data input used in the evaluation was the forecasted PM peak hour volumes taken from the PD&E Design Traffic Study. The proposed posted speed limit of 45 mph for the intersection approaches was used for the analysis. The traffic data input is included in this memorandum. Estimates of CO were predicted for the default receptors which are located from 10 feet to 150 feet from the edge of the roadway.

Results

Results from the Air Quality Screen model for the Build and No-Build alternatives are attached to this Memorandum. 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-Build or Build alternatives for the analyzed intersection. As such, the project "passes" the screening model.

Construction Impacts

Construction activities may cause temporary 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 Standard Specifications for Road and Bridge Construction*.

Green House Gas Emissions

Green House Gasses (GHG) cause a global phenomenon in which heat is trapped in the earth's atmosphere. Because 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 United States Environmental Protection Agency (EPA) established criteria or thresholds for ambient GHG emissions pursuant to its authority to establish motor vehicle emission standards for 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.

Under 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). 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)).

Summary

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 ANALYSIS

Date: June 12, 2014

Prepared by: Stanley Consultants, Inc.

FM Number: FM 229664-2-22-01

Federal Aid Number: 4752-030-P

Project Description: SR 7 Corridor Extension PD&E Study

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Opening Year: 2020

Intersections: Build SR 7 & Okeechobee Blvd. No-Build SR 7 & Okeechobee Blvd.

Land Use: Urban , Suburban X , or Rural

Approach	EB (Okeechobee)		WB (Okeechobee)		NB (SR 7)		SB (SR 7)	
	VPH	Speed	VPH	Speed	VPH	Speed	VPH	Speed
Build*	1210	45	2060	45	680	45	525	45
No-Build*	1280	45	2280	45	375	45	270	45

***PM Peak Traffic**

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Design Year: 2040

Intersections: Build SR 7 & Okeechobee Blvd. No-Build SR 7 & Okeechobee Blvd.

Land Use: Urban , Suburban X , or Rural

Approach	EB (Okeechobee)		WB (Okeechobee)		NB (SR 7)		SB (SR 7)	
	VPH	Speed	VPH	Speed	VPH	Speed	VPH	Speed
Build*	5155	45	4480	45	2830	45	1705	45
No-Build*	4740	45	2635	45	2630	45	975	45

***PM Peak Traffic**

CO Florida 2012 - Results
 Wednesday, June 18, 2014

Project Description

Project Title SR 7 Corridor Extension PD&E
 Facility Name SR 7, Palm Beach County, Florida
 User's Name Courtney Arena
 Run Name Build Alternative (2020)
 FDOT District 4
 Year 2020
 Intersection Type E-W Freeway South Tee
 Arterial Speed 45 mph
 Max Approach Traffic 2060 vph

Environmental Data

Temperature 53.9 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	5.9	3.5
2	5.9	3.5
3	5.9	3.5
4	5.9	3.5
5	5.6	3.4
6	5.1	3.1
7	5.1	3.1
8	5.9	3.5
9	5.9	3.5
10	5.9	3.5
11	4.8	2.9
12	4.5	2.7
13	4.6	2.8
14	5.0	3.0
15	5.6	3.4
16	5.3	3.2
17	4.9	2.9

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

CO Florida 2012 - Results
 Wednesday, June 18, 2014

Project Description

Project Title SR 7 Corridor Extension PD&E
 Facility Name SR 7, Palm Beach County, Florida
 User's Name Courtney Arena
 Run Name No-Build Alternative (2020)
 FDOT District 4
 Year 2020
 Intersection Type E-W Freeway South Tee
 Arterial Speed 45 mph
 Max Approach Traffic 2280 vph

Environmental Data

Temperature 53.9 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	6.2	3.7
2	6.2	3.7
3	6.2	3.7
4	6.2	3.7
5	5.8	3.5
6	5.2	3.1
7	5.2	3.1
8	6.1	3.7
9	6.1	3.7
10	6.1	3.7
11	5.0	3.0
12	4.6	2.8
13	4.7	2.8
14	5.1	3.1
15	5.9	3.5
16	5.5	3.3
17	5.1	3.1

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

CO Florida 2012 - Results
 Wednesday, June 18, 2014

Project Description

Project Title SR 7 Corridor Extension PD&E
 Facility Name SR 7, Palm Beach County, Florida
 User's Name Courtney Arena
 Run Name Build Alternative (2040)
 FDOT District 4
 Year 2040
 Intersection Type E-W Freeway South Tee
 Arterial Speed 45 mph
 Max Approach Traffic 5155 vph

Environmental Data

Temperature 53.9 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	8.9	5.3
2	8.6	5.2
3	8.6	5.2
4	8.6	5.2
5	7.9	4.7
6	6.8	4.1
7	6.6	4.0
8	8.8	5.3
9	8.5	5.1
10	8.5	5.1
11	6.3	3.8
12	5.5	3.3
13	5.6	3.4
14	6.8	4.1
15	7.9	4.7
16	7.2	4.3
17	6.6	4.0

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

CO Florida 2012 - Results
 Wednesday, June 18, 2014

Project Description

Project Title SR 7 Corridor Extension PD&E
 Facility Name SR 7, Palm Beach County, Florida
 User's Name Courtney Arena
 Run Name No-Build Alternative (2040)
 FDOT District 4
 Year 2040
 Intersection Type E-W Freeway South Tee
 Arterial Speed 45 mph
 Max Approach Traffic 4740 vph

Environmental Data

Temperature 53.9 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	8.5	5.1
2	8.2	4.9
3	8.2	4.9
4	8.2	4.9
5	7.5	4.5
6	6.6	4.0
7	6.4	3.8
8	8.3	5.0
9	8.0	4.8
10	8.0	4.8
11	6.1	3.7
12	5.3	3.2
13	5.4	3.2
14	6.5	3.9
15	7.7	4.6
16	6.8	4.1
17	6.3	3.8

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