MEMO

Date: June 29, 2015

To: Sara Hall, P.E. and Kirk Bogen, P.E.

From: Wayne Arner and Carrol Fowler, KB Environmental Sciences, Inc.

CC: Matt Wey, P.E. PTOE

Subject: **Air Quality Memorandum**
I-275 Project Development & Environment Study
From South of 54th Avenue South to North of 4th Street North
Pinellas County, Florida
Work Program Item Segment No: 424501-1

National Ambient Air Quality Standards

The referenced proposed improvement is located in Pinellas County, Florida, an area currently designated by the US Environmental Protection Agency (EPA) as being in attainment for all of the criteria air pollutants. 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 opening year and design year of the project using the Florida Department of Transportation's (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 National Ambient Air Quality Standards (NAAQS) for CO (35 and 9 parts per million [ppm], respectively).

The intersections forecasted to have the highest approach traffic volume for the No-Build Alternative is the I-275/Gandy Boulevard intersection for the opening year (2020) and the I-275/22nd Avenue North intersection (west of I-275) for the design year (2040). The intersections forecasted to have the highest approach traffic volume for the Build Alternative is the I-275/Gandy Boulevard intersection for the opening year and the I-275/Roosevelt Boulevard intersection (west of I-275) for the design year.

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 intersection, alternative, or year of analysis. Therefore, the project

"passes" the screening test. The CO Florida 2012 output files are attached to this memorandum.

Table 1
Intersection CO Screening Results for the
No-Build (I-275/Gandy Boulevard - 2020 and I-275/22nd Avenue North - 2040) and Build (I-275/Gandy Boulevard - 2020 and I-275/Roosevelt Boulevard - 2040) Alternatives

Year	Alternative	Maximum CO Levels (ppm)		Passes Screening Test?
		NAAQS one-hr/ Project one-hr	NAAQS eight-hr/ Project eight-hr	
2020	No-Build	35 / 6.8	9 / 4.1	Yes
	Build	35 / 6.8	9 / 4.1	Yes
2040	No-Build	35 / 7.3	9 / 4.4	Yes
	Build	35 / 8.0	9 / 4.8	Yes

Notably, because the I-275 project is in an area that is designated attainment for all the NAAQS, the conformity requirements of the Clean Air Act do not apply.

Green House Gas Emissions

Green House Gasses (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 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 (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 CO_2 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)).

GHG 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.

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: 22-Jun-15
PREPARED BY: Bryan St. George

Financial Project Number(s): 424501-1-22-01
Work Program Item No.:
Federal Aid Numbers (s):
Project Description: I-275 (SR 93) Pinellas PD&E Study

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

"Build"		"No-Build"	
Most Congested Signalized Intersection:		Most Congested Signalized Intersection:	
Gandy Boulevard		Gandy Boulevard	
Peak hour traffic for		Peak hour traffic for	
most congested approach leg:	2480 vph	most congested approach leg:	2480 vph
Specify leg (NB, SB, EB, WB):	WB	Specify leg (NB, SB, EB, WB):	WB
Cruise Speed:	45 mph	Cruise Speed:	45 mph

DESIGN YEAR: 2040

"Build"		"No-Build"	
Most Congested Signalized Intersection:		Most Congested Signalized Intersection:	
Roosevelt (West of I-275)		22nd Avenue North (West of I-275)	
Peak hour traffic for		Peak hour traffic for	
most congested approach leg:	4145 vph	most congested approach leg:	2390 vph
Specify leg (NB, SB, EB, WB):	EB	Specify leg (NB, SB, EB, WB):	EB
Cruise Speed:	55 mph	Cruise Speed:	40 mph

CO Florida 2012 - Results
Monday, June 22, 2015

Project Description

Project Title	I-275: S of 54th Ave S to N of 4th St N
Facility Name	I-275/Gandy Boulevard
User's Name	Wayne Arner, KBE
Run Name	No-Build, Opening Year (2020)
FDOT District	7
Year	2020
Intersection Type	E-W Freeway 4 X 6
Arterial Speed	45 mph
Max Approach Traffic	2480 vph

Environmental Data

Temperature	48.8 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	6.0	3.6
3	6.7	4.0
4	6.1	3.7
5	5.4	3.2
6	6.2	3.7
7	6.4	3.8
8	6.8	4.1
9	6.0	3.6
10	5.2	3.1
11	6.1	3.7
12	6.3	3.8
13	6.6	4.0
14	6.0	3.6
15	5.4	3.2
16	6.2	3.7
17	6.5	3.9
18	6.8	4.1
19	5.9	3.5
20	5.4	3.2

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**********PROJECT PASSES**********
NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED
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Monday, June 22, 2015

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12	6.3	3.8
13	6.6	4.0
14	6.0	3.6
15	5.4	3.2
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Monday, June 22, 2015

Project Description

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Facility Name	I-275/22nd Ave N
User's Name	Wayne Arner, KBE
Run Name	No-Build, Design Year (2040)
FDOT District	7
Year	2040
Intersection Type	E-W Freeway N-S Diamond
Speed	Arterial 40 mph Freeway 65 mph
Approach Traffic	Arterial 2390 vph Freeway 9970 vph

Environmental Data

Temperature	48.8 F
Reid Vapor Pressure	13.3 psi
Land Use	Suburban
Stability Class	D
Surface Roughness	108 cm
1 Hr. Background Concentration	3.3 ppm
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Results
(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	7.3	4.4
2	5.2	3.1
3	5.4	3.2
4	5.3	3.2
5	5.2	3.1
6	5.4	3.2
7	5.5	3.3
8	5.3	3.2
9	4.7	2.8
10	6.9	4.1
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17	5.5	3.3
18	5.4	3.2
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CO Florida 2012 - Results
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Project Description

Project Title	I-275: S of 54th Ave S to N of 4th St N
Facility Name	I-275/Roosevelt Boulevard
User's Name	Wayne Arner, KBE
Run Name	Build, Design Year (2040)
FDOT District	7
Year	2040
Intersection Type	E-W Freeway 4 X 6
Arterial Speed	55 mph
Max Approach Traffic	4145 vph

Environmental Data

Temperature	48.8 F
Reid Vapor Pressure	13.3 psi
Land Use	Suburban
Stability Class	D
Surface Roughness	108 cm
1 Hr. Background Concentration	3.3 ppm
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