

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 (MOU) dated December 14, 2016 and executed by the Federal Highway Administration and FDOT.

Date: June 1, 2017

To: Marty Peate, AECOM

From: Wayne Arner, KB Environmental Sciences, Inc.

**Subject: Draft Air Quality Technical Memorandum
State Road (SR) 29 Project Development & Environment (PD&E)
Study
From south of County Road (CR) 80A (Cowboy Way) to north of CR
731 (Whidden Road)
Hendry and Glades Counties, Florida
FPID Number: 417878-1-22-01**

Introduction

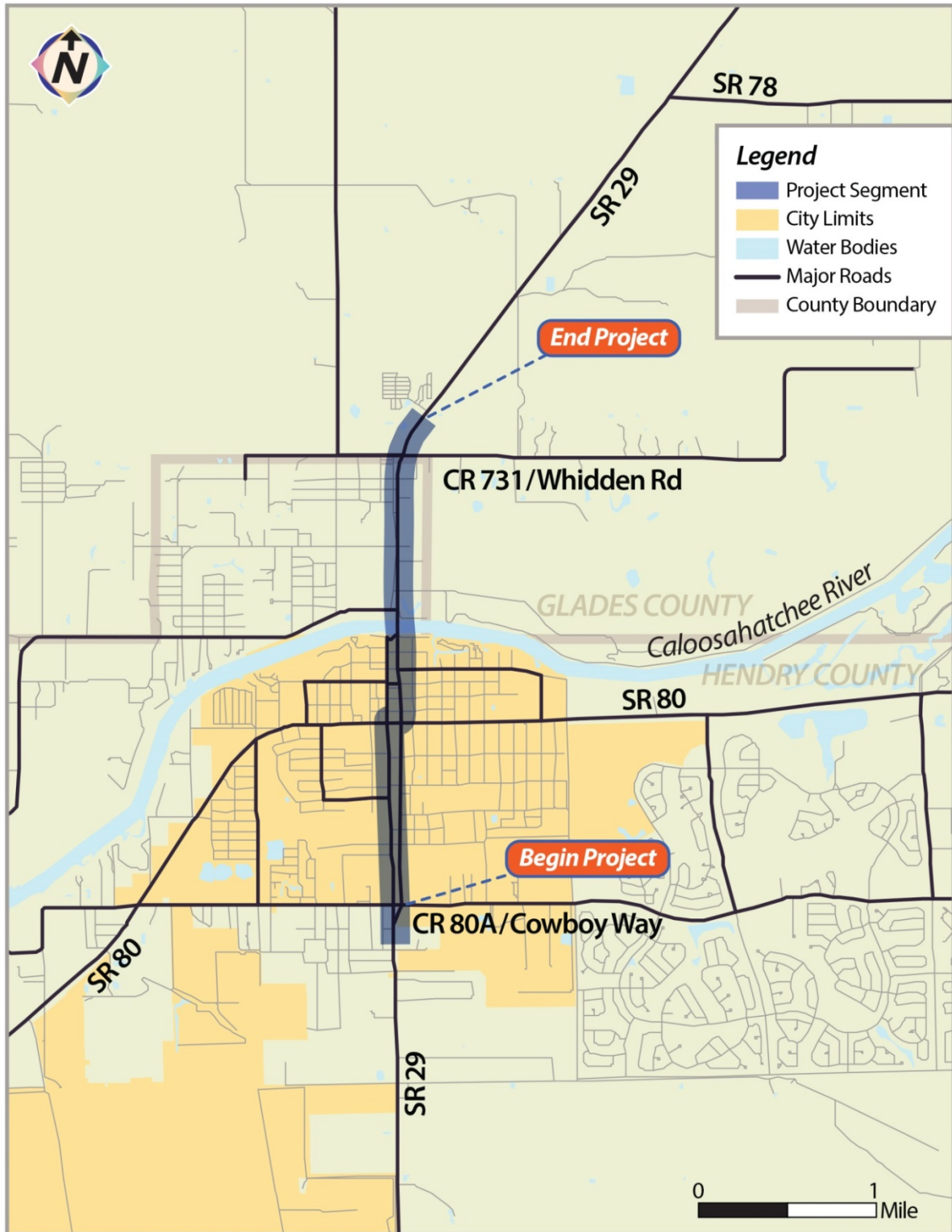
The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) Study to evaluate options for improvements to SR 29 in LaBelle, and Hendry and Glades Counties, Florida. The study limits extend from south of CR 80A (Cowboy Way) to north of CR 731 (Whidden Rd.), a distance of approximately 3 miles (see **Figure 1**). The purpose of the project is to provide capacity and operational improvements to the existing facility by upgrading to a four-lane facility, including the addition of a new bridge over the Caloosahatchee River.

SR 29 traverses the central business district (CBD) of the City of LaBelle and continues across the Caloosahatchee River. Existing land use in the project area includes commercial business, residential, agricultural, public use, planned development, institutional and light industrial business. Commercial land uses south of the river are mixed with residential and the depth of commercial development is shallow with residential apartments and single-family homes behind the commercial property. North of the Caloosahatchee River, land uses are primarily residential to the west of SR 29 and commercial and agriculture to the east. In the urban and suburban roadway sections through LaBelle, sidewalks will be included with any improvement, consistent with local residential land uses.

National Ambient Air Quality Standards

The subject project is located in Hendry and Glades Counties, 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 would maintain an acceptable level of service in the project area, it is not likely that the proposed improvements will have an impact on local or regional air pollutant/pollutant precursor emissions or concentrations.

Figure 1
Project Location Map



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 intersection forecasted to have the highest approach traffic volume for the No-Build Alternative for both the opening year (2020) and the design year (2040) is the SR 29 (Bridge Street) at SR 80 intersection. The intersections forecasted to have the highest approach traffic volume for the Build Alternative for the opening year is the SR 29 (Main Street) at CR 80A intersection and for the design year is the SR 29 (Main Street) at SR 80 intersection. Estimates of CO concentrations were predicted at default receptor locations along each leg of the intersection.

Notably, with the Build Alternative for the opening year, a modern roundabout is proposed to be constructed at the SR 29/CR 80A intersection. According to the FHWA, roundabouts often provide air quality benefits by reducing vehicle delay and the number and duration of stops compared with signalized or all-way stop-controlled alternatives. Even when there are heavy volumes, vehicles continue to advance slowly in moving queues rather than coming to a complete stop. This can reduce air quality impacts and fuel consumption significantly by reducing the number of acceleration/deceleration cycles and the time spent idling. Since the screening model evaluates only signalized intersections, roundabout intersections are not evaluated and are presumed to benefit air quality.

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. 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 and Build Alternatives for the Opening Year (2020) and the Build Year (2040)

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 / 4	9 / 3	Yes
	Build	35 / N/A	9 / N/A	N/A
2040	No-Build	35 / 5	9 / 3	Yes
	Build	35 / 5	9 / 3	Yes

N/A Not applicable. The intersection forecasted to have the highest approach traffic for the opening year Build alternative is a roundabout.

Notably, because the SR 29 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 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 for GHGs, nor has EPA established criteria or thresholds for ambient GHG emissions. 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)).

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: 27-Apr-17
PREPARED BY: AECOM

Financial Project Number(s): 417878-1
Work Program Item No.: _____
Federal Aid Numbers (s): _____
Project Description: SR 29

NOTE: The most congested 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 approach speed for the most congested leg no closer than 152.4 m (500') from the intersection.

OPENING YEAR: 2020

"Build"

Signalized Intersection:
SR 29 (Main St) at CR 80A (Cowboy Way)
Design or Peak Hour Traffic
for most congested leg: 612 vph
Specify leg: SR 29 (Main St) southbound
Approach Speed: 45 mph

"No-Build"

Signalized Intersection:
SR 29 (Bridge St) at SR 80 (Hickpochee Ave)
Design or Peak Hour Traffic
for most congested leg: 611 vph
Specify leg: SR 29 (Bridge St) southbound
Approach Speed: 35 mph

DESIGN YEAR: 2040

"Build"

Signalized Intersection:
SR 29 (Main St) at SR 80
Design or Peak Hour Traffic
for most congested leg: 1497 vph
Specify leg: SR 29 (Main St) southbound
Approach Speed: 45 mph

"No-Build"

Signalized Intersection:
SR 29 (Bridge St) at SR 80 (Hickpochee Ave)
Design or Peak Hour Traffic
for most congested leg: 1354 vph
Specify leg: SR 29 southbound (Bridge St)
Approach Speed: 35 mph

CO Florida 2012 - Results
Monday, May 15, 2017

Project Description

Project Title SR 29 (Bridge St) at SR 80
Facility Name SR 29 from CR 80A to CR 720
User's Name Wayne Arner, KBE
Run Name Opening Year, No-Build
FDOT District 1
Year 2020
Intersection Type E-W Freeway 4 X 4
Arterial Speed 35 mph
Max Approach Traffic 611 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	3.8	2.3
2	3.9	2.3
3	4.2	2.5
4	4.1	2.5
5	3.7	2.2
6	3.8	2.3
7	3.9	2.3
8	4.2	2.5
9	4.1	2.5
10	3.7	2.2
11	3.8	2.3
12	3.9	2.3
13	4.2	2.5
14	4.1	2.5
15	3.7	2.2
16	3.8	2.3
17	4.0	2.4
18	4.2	2.5
19	4.1	2.5
20	3.7	2.2

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

CO Florida 2012 - Results
Monday, May 15, 2017

Project Description

Project Title SR 29 (Bridge St) at SR 80
Facility Name SR 29 from CR 80A to CR 720
User's Name Wayne Arner, KBE
Run Name Design Year, No-Build
FDOT District 1
Year 2040
Intersection Type E-W Freeway 4 X 4
Arterial Speed 35 mph
Max Approach Traffic 1354 vph

Environmental Data

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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	4.2	2.5
2	4.4	2.6
3	4.7	2.8
4	4.3	2.6
5	4.2	2.5
6	4.2	2.5
7	4.4	2.6
8	4.6	2.8
9	4.3	2.6
10	4.2	2.5
11	4.2	2.5
12	4.4	2.6
13	4.6	2.8
14	4.3	2.6
15	4.2	2.5
16	4.2	2.5
17	4.5	2.7
18	4.6	2.8
19	4.4	2.6
20	4.2	2.5

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

CO Florida 2012 - Results
Monday, May 15, 2017

Project Description

Project Title SR 29 (Main St) at SR 80
Facility Name SR 29 from CR 80A to CR 720
User's Name Wayne Arner, KBE
Run Name Design Year, Build
FDOT District 1
Year 2040
Intersection Type E-W Freeway 4 X 4
Arterial Speed 45 mph
Max Approach Traffic 1497 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	4.8	2.9
2	4.9	2.9
3	5.2	3.1
4	4.7	2.8
5	4.4	2.6
6	4.8	2.9
7	4.9	2.9
8	5.1	3.1
9	4.7	2.8
10	4.4	2.6
11	4.8	2.9
12	4.9	2.9
13	5.1	3.1
14	4.7	2.8
15	4.4	2.6
16	4.8	2.9
17	5.0	3.0
18	5.1	3.1
19	4.8	2.9
20	4.4	2.6

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