

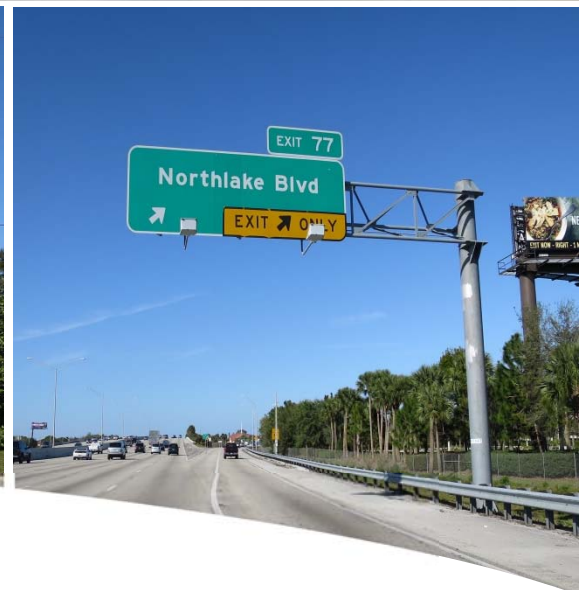
Project Development & Environment (PD&E) Study For SR 9/1-95 @ Northlake Boulevard Interchange In Palm Beach County



Air Quality Memorandum Draft

FM No: 435803-1-22-02

ETDM No: 14182



August 2017



MEMO

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TO: Project File

DATE: August 4, 2017

FROM: Linda Ferreira, PE

SUBJECT: FM No. 435803-1-22-02
ETDM 14182
SR 9/I-95 at Northlake Boulevard Interchange
PD&E Study, Palm Beach County
Draft Air Quality Screening Technical Memorandum

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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 FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016, and executed by FHWA and FDOT.

9 The Project Development and Environment Study for I-95 at Northlake Boulevard was programmed
10 under Financial Management (FM) number 435803-1-22-02 and the Final Programming Report was
11 published on 5/27/2015 under Efficient Decision Transportation Making (ETDM) number 14182. The
12 SR-9/I-95 at Northlake Boulevard interchange is located on SR-9/I-95 between the PGA Boulevard
13 interchange (1.73 miles to the north) and the Blue Heron Boulevard (SR 708) interchange (1.76 miles to
14 the south) within the City of Palm Beach Gardens in eastern Palm Beach County. This interchange project
15 proposes to improve interchange operations to address traffic spillback onto the SR-9/I-95, reduce
16 congestion, and increase safety. Adjacent land use to the project area is predominantly commercial.

17 An air quality review was conducted following procedure documented in Part 2, Chapter 16 (Air Quality)
18 of the Florida Department of Transportation (FDOT) Project Development and Environment (PD&E)
19 Manual (August 24, 2016).

20 The project is located in Palm Beach County, an area currently designated as being attainment for the
21 following criteria air pollutant(s) ozone/nitrogen dioxide/particulate matter (2.5 microns in size and 10
22 microns in size)/sulfur dioxide/carbon monoxide/lead. The project is located in an area which is
23 designated attainment for all of the National Ambient Air Quality Standards under the criteria provided
24 in the Clean Air Act. Therefore, the Clean Air Act conformity requirements do not apply to the project.

25 The project alternatives were subjected to a carbon monoxide (CO) screening model that makes various
26 conservative worst-case assumptions related to site conditions, meteorology and traffic. The Florida
27 Department of Transportation's (FDOT's) screening model for CO uses the latest United States
28 Environmental Protection Agency (USEPA)-approved software to produce estimates of one-hour and
29 eight-hour CO at default air quality receptor locations. The one-hour and eight-hour estimates can be
30 directly compared to the current one-and eight-hour National Ambient Air Quality Standards (NAAQS)
31 for CO.

1 Estimates of CO were predicted for the default receptors which are located 10 feet to 150 feet from the
2 edge of the roadway. Based on the results from the screening model, the highest project-related CO one-
3 and eight-hour levels are not predicted to meet or exceed the one- or eight-hour National Ambient Air
4 Quality Standards (NAAQS) for this pollutant with either the No-Build or Build alternatives. As such,
5 the project “passes” the screening model. The results of the screening model are attached to this
6 memorandum.

7 Construction activities will cause short-term air quality impacts in the form of dust from earthwork and
8 unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to the
9 FDOT Standard Specifications for Road and Bridge Construction.

10 Greenhouse gases (GHG) cause a global phenomenon in which heat is trapped in the earth’s atmosphere.
11 Because atmospheric concentration of GHGs continues to climb, our planet will continue to experience
12 climate-related phenomena. For example, warmer global temperatures can cause changes in precipitation
13 and sea levels. The burning of fossil fuels and other human activities are adding to the concentration of
14 GHGs in the atmosphere. Many GHGs remain in the atmosphere for time periods ranging from decades
15 to centuries.

16 To date, no national standards have been established regarding GHGs, nor has United States
17 Environmental Protection Agency (EPA) established criteria or thresholds for ambient GHG emissions
18 pursuant to its authority to establish motor vehicle emission standards for CO₂ under the Clean Air Act.
19 GHGs are different from other air pollutants evaluated in the federal environmental reviews because their
20 impacts are not localized or regional due to their rapid dispersion into the global atmosphere, which is
21 characteristic of these gases. The affected environment for CO₂ and other GHG emissions is the entire
22 planet. In addition, from a quantitative perspective, global climate change is the cumulative result of
23 numerous and varied emissions sources (in terms of both absolute numbers and types), each of which
24 makes a relatively small addition to global atmospheric GHG concentrations. In contrast to broad scale
25 actions such as actions involving an entire industry sector or very large geographic areas, it is difficult to
26 isolate and understand the GHG emissions impacts for a particular transportation project. Furthermore,
27 presently there is no scientific methodology for attributing specific climatological changes to a particular
28 transportation project’s emissions.

29 Under NEPA, detailed environmental analysis should be focused on issues that are significant and
30 meaningful to decision-making (40 CFR 1500.1(b), 1500.2(b), 1500.4(g), and 1501.7). FHWA has
31 concluded, based on the nature of GHG emissions and the exceedingly small potential GHG impacts of
32 the proposed action that the GHG emissions from the proposed action will not result in “reasonably
33 foreseeable significant adverse impacts on the human environment” (40 CFR 1502.22(b)). The GHG
34 emission from the project build alternatives will be insignificant, and will not play a meaningful role in a
35 determination of the environmentally preferable alternative or the selection of the preferred alternative.
36 More detailed information on GHG emissions “is not essential to a reasoned choice among reasonable
37 alternatives” (40 CFR 1502.22(a)) or to making a decision in the best overall public interest based on a
38 balanced consideration of transportation, economic, social, and environmental needs and impacts (23
39 CFR 771.105(b)).

1 **Summary**

2 This document does not incorporate an analysis of the GHG emissions or climate change effects of each
3 of the alternatives because the potential change in GHG emissions is very small in the context of the
4 affected environment. Because of the insignificance of the GHG impacts, those local impacts will not be
5 meaningful to a decision on the environmentally preferable alternative or to a choice among alternatives.
6 For these reasons, no alternatives-level GHG analysis has been performed for this project.

TRAFFIC DATA FOR AIR QUALITY ANALYSIS

Date: May 2017 Prepared by: Linda Ferreira, PE

Financial Management Number: 435803-1-22-02

Project Description: SR 9/I-95 at Northlake Blvd Interchange PD&E Study

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Opening Year: 2020

Land Use: Urban , Suburban , or Rural

	EB			WB			NB			SB		
	Spd (mph)	Approach (VPH)	On-Ramp (VPH)	Spd (mph)	Approach (VPH)	On-Ramp (VPH)	Spd (mph)	Approach (VPH)	On-Ramp (VPH)	Spd (mph)	Approach (VPH)	On-Ramp (VPH)
Build	45	2466	1577	45	2072	1221	65	6719	1592	65	8300	1132
No Build	45	2466	1577	45	2072	1221	65	6719	1592	65	8300	1132

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Design Year: 2040

Land Use: Urban , Suburban , or Rural

	EB			WB			NB			SB		
	Spd (mph)	Approach (VPH)	On-Ramp (VPH)	Spd (mph)	Approach (VPH)	On-Ramp (VPH)	Spd (mph)	Approach (VPH)	On-Ramp (VPH)	Spd (mph)	Approach (VPH)	On-Ramp (VPH)
Build	45	2918	1601	45	2604	1803	65	6758	1645	65	9286	1965
No Build	45	2918	1601	45	2604	1803	65	6758	1645	65	9286	1965

CO Florida 2012 - Results
 Wednesday, May 24, 2017

Project Description

Project Title I-95 at Northlake Blvd PD&E Study
 Facility Name I-95
 User's Name L. Ferreira
 Run Name Opening Year - No Build
 FDOT District 4
 Year 2020
 Intersection Type N-S Diamond
 Speed Arterial 45 mph Freeway 65 mph
 Approach Traffic Arterial 2466 vph Freeway 8300 vph

Environmental Data

Temperature 53.9 °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	9.3	5.6
2	7.3	4.4
3	7.9	4.7
4	7.8	4.7
5	7.7	4.6
6	7.8	4.7
7	8.0	4.8
8	7.6	4.6
9	6.7	4.0
10	8.9	5.3
11	9.3	5.6
12	7.3	4.4
13	7.8	4.7
14	7.8	4.7
15	7.7	4.6
16	7.8	4.7
17	8.0	4.8
18	7.7	4.6
19	6.7	4.0
20	9.0	5.4

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

CO Florida 2012 - Results
Monday, July 31, 2017

Project Description

Project Title I-95 at Northlake Interchange
Facility Name I-95 Interchange
User's Name L. Ferreira
Run Name 2040 No Build
FDOT District 4
Year 2040
Intersection Type N-S Diamond
Speed Arterial 45 mph Freeway 65 mph
Approach Traffic Arterial 2918 vph Freeway 9286 vph

Environmental Data

Temperature 53.9 °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
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1	9.2	5.5
2	7.2	4.3
3	7.5	4.5
4	7.5	4.5
5	7.2	4.3
6	7.9	4.7
7	7.9	4.7
8	7.5	4.5
9	6.4	3.8
10	8.7	5.2
11	9.2	5.5
12	7.2	4.3
13	7.5	4.5
14	7.4	4.4
15	7.2	4.3
16	7.9	4.7
17	7.9	4.7
18	7.6	4.6
19	6.5	3.9
20	8.7	5.2

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

CO Florida 2012 - Results
 Friday, May 05, 2017

Project Description

Project Title I-95 at Northlake Blvd PD&E Study
 Facility Name I-95
 User's Name L. Ferreira
 Run Name Opening Year
 FDOT District 4
 Year 2020
 Intersection Type N-S Diamond
 Speed Arterial 45 mph Freeway 65 mph
 Approach Traffic Arterial 2466 vph Freeway 8300 vph

Environmental Data

Temperature 53.9 °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	9.3	5.6
2	7.3	4.4
3	7.9	4.7
4	7.8	4.7
5	7.7	4.6
6	7.8	4.7
7	8.0	4.8
8	7.6	4.6
9	6.7	4.0
10	8.9	5.3
11	9.3	5.6
12	7.3	4.4
13	7.8	4.7
14	7.8	4.7
15	7.7	4.6
16	7.8	4.7
17	8.0	4.8
18	7.7	4.6
19	6.7	4.0
20	9.0	5.4

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

CO Florida 2012 - Results
 Friday, May 05, 2017

Project Description

Project Title I-95 at Northlake Interchange
 Facility Name I-95 Interchange
 User's Name L. Ferreira
 Run Name 2040 Build
 FDOT District 4
 Year 2040
 Intersection Type N-S Diamond
 Speed Arterial 45 mph Freeway 65 mph
 Approach Traffic Arterial 2968 vph Freeway 9286 vph

Environmental Data

Temperature 53.9 °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	9.2	5.5
2	7.2	4.3
3	7.5	4.5
4	7.5	4.5
5	7.2	4.3
6	7.9	4.7
7	7.9	4.7
8	7.5	4.5
9	6.4	3.8
10	8.7	5.2
11	9.2	5.5
12	7.2	4.3
13	7.5	4.5
14	7.4	4.4
15	7.2	4.3
16	7.9	4.7
17	7.9	4.7
18	7.6	4.6
19	6.5	3.9
20	8.7	5.2

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