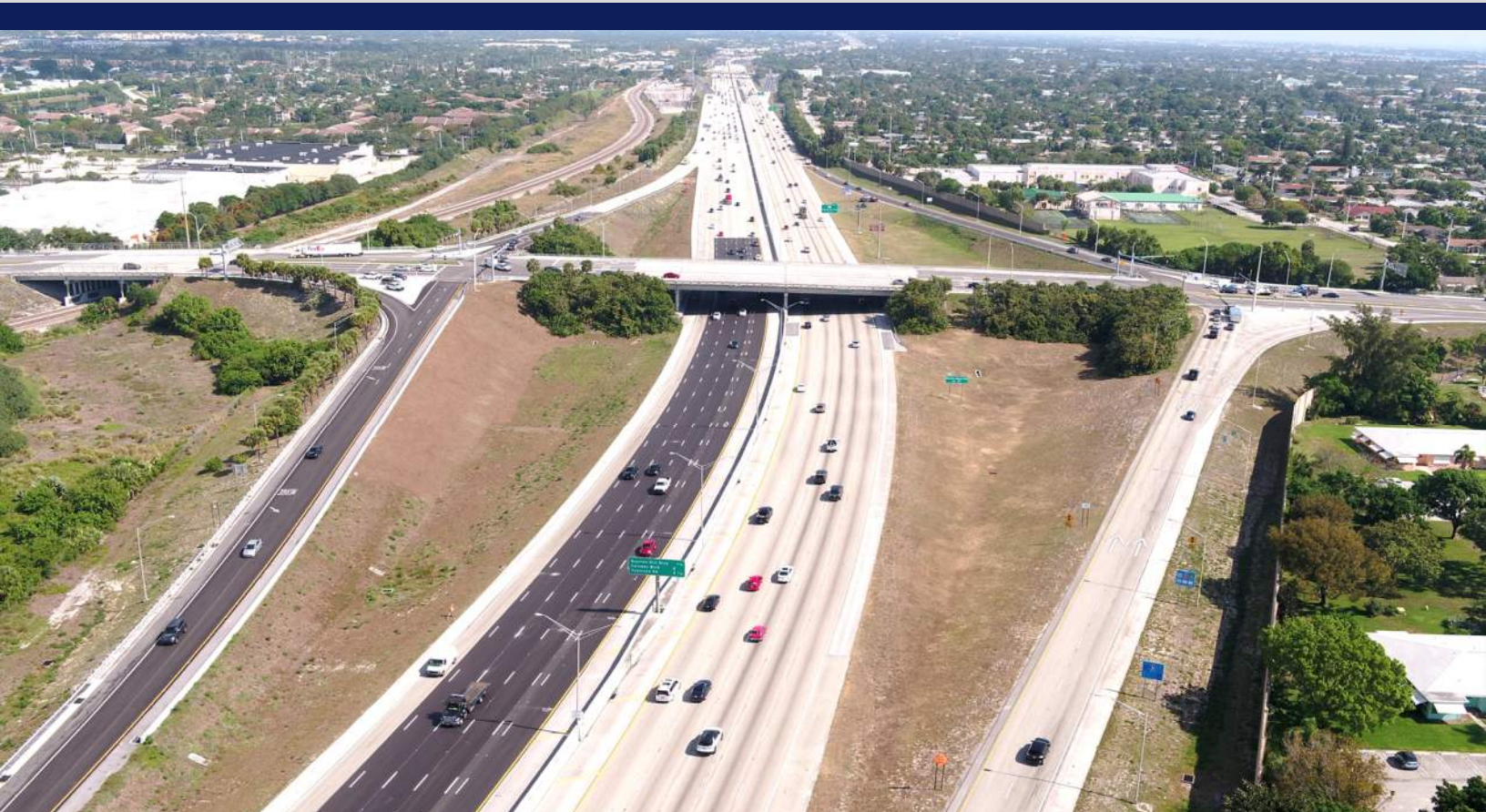




**SR 9/I-95 Project Development and Environment (PD&E) Study
from S. of Woolbright Road to N. of Woolbright Road
Palm Beach County, Florida**

FPID No.: 437279-1-22-02 | ETDM No.: 14341



AIR QUALITY TECHNICAL MEMORANDUM

August 2020

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.

AIR QUALITY TECHNICAL MEMORANDUM

SR 9/I-95 Project Development and Environment Study
From South of Woolbright Road to North of Woolbright Road
Boynton Beach, Palm Beach County, Florida
(From Mile Post 13.560 to Mile Post 13.995)

FPID: 437279-1-22-02
ETDM #: 14341

Prepared for:



Florida Department of Transportation
District Four
3400 West Commercial Boulevard
Fort Lauderdale, Florida 33309

Prepared by:
Trace Consultants, Inc.
and
Hanson Professional Services, Inc.

August 2020



Date: August 24, 2020

To: Florida Department of Transportation, District Four

Prepared By: Timothy W.A. Ogle, Trace CI

Reference: Air Quality Technical Memorandum – Woolbright Road/I-95 Interchange PD&E Study (FM: 437279-1-22-02; ETDM: 14341)

The Florida Department of Transportation (FDOT) District Four is conducting a Project Development and Environment (PD&E) Study for improvements along Woolbright Road at the I-95 interchange in the City of Boynton Beach located in Palm Beach County, Florida. The limits of this PD&E Study extend along I-95 from just south of Woolbright Road at SW 23rd Avenue to just north of Woolbright Road approximately 2,000 feet north of the interchange and along Woolbright Road from SW 18th Street to SW 2nd Street. This Air Quality Technical Memorandum has been prepared in accordance with Chapter 19 *Air Quality* of Part 2 of the FDOT PD&E Manual (dated July 1, 2020).

Within the project limits, I-95 is a ten-lane divided interstate freeway providing four general purpose lanes and one high occupancy vehicle (HOV) lane in each direction. The project will be designed to complement the I-95 interim interchange design-build project recently completed, which constructed one additional left-turn lane onto I-95 in both the eastbound and westbound directions; a free-flow right-turn lane from the southbound off-ramp; and designated bicycle lanes along Woolbright Road within the limits of the interchange. Woolbright Road is currently a six-lane urban divided minor arterial to the west of I-95 and a four-lane urban divided minor arterial to the east of I-95. There is a raised median from SW 18th Street west of I-95 to just west of SW 2nd Street east of I-95. At SW 2nd Street, Woolbright Road transitions to a five-lane roadway section with a two-way left-turn lane in the middle. There are sidewalks on both sides of Woolbright Road throughout the project area and designated bicycle lanes within the limits of the interchange. The improvements to the I-95 Interchange at Woolbright Road will provide additional capacity for vehicles travelling east-west as well as operational improvements north-south through the interchange. Local and network connectivity for the City of Boynton Beach will be improved.

The land use adjacent to the interchange is zoned as Public Usage, Single Family, Duplex, Neighborhood Commercial, and Light Industrial. The area southeast of the interchange is zoned

Recreation, Multi Family, Public Usage, and Planned Unit Development. Zoning northwest of the interchange consists of Planned Commercial Development, Planned Unit Development, Light Industrial, Office Professional, Neighborhood Commercial, and Single Family, and southwest of the interchange is zoned Community Commercial, Office Professional, Planned Industrial Development, and Single Family.

The project is located in an area currently designated as being in attainment for the following criteria air pollutant(s): ozone/nitrogen dioxide/particulate matter (2.5 microns in size and 10 microns in size)/sulfur dioxide/carbon monoxide/lead. The No-Build and Recommended Build alternatives were subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology and traffic. The FDOT’s screening model for CO uses the latest United States Environmental Protection Agency (USEPA)-approved software to produce estimates of one-hour and eight-hour CO at default air quality receptor locations. The predicted CO levels can then be directly compared to the current National Ambient Air Quality Standards (NAAQS) for CO to determine if the project “passes” the screening model, or if exceedances are predicted to occur.

The roadway intersection forecast to have the highest total approach traffic volume was at the I-95/Woolbright Road interchange. The No-Build and Recommended Build alternatives were evaluated for both the opening year (2025) and the design year (2045). The traffic data input used in the evaluation is shown below; note that the traffic data for the No-Build and Build alternatives are the same.

I-95/WOOLBRIGHT ROAD INTERCHANGE PEAK HOUR TRAFFIC VOLUMES

Year	Location	Approach Direction	Peak Hour Directional Volume	Speed (MPH)
Opening (2025)	I-95	Southbound	7,660	65
		Northbound	10,742	65
	Woolbright Road	Eastbound	1,861	40
		Westbound	1,952	40
Design (2045)	I-95	Southbound	9,207	65
		Northbound	13,501	65
	Woolbright Road	Eastbound	2,251	40
		Westbound	2,490	40

Estimates of CO were predicted for the default receptors which are located between 10 and 150 feet from the edge of the roadway. The results of the CO Screening Analysis are presented in the table below and also in the attached COFlorida 2012 output files. 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. As such, the project passes the screening model.

PREDICTED CARBON MONOXIDE LEVELS

Year	Maximum CO Levels (PPM)	
	One-Hour (NAAQS – 35 PPM)	Eight-Hour (NAAQS – 9 PPM)
Opening (2025)	9.8	5.9
Design (2045)	10.3	6.2

Notes: CO = Carbon Monoxide, PPM = Parts per million, NAAQS = National Ambient Air Quality Standard. No Build and Build Alternative levels are the same.

Agency coordination to obtain air quality related information occurred through the Efficient Transportation Decision Making (ETDM) Planning and Programming Screens (ETDM #14341) and the Advance Notification (AN) process. The FDOT ETDM and AN package was distributed during the Programming Screening event on October 23, 2017. The ETDM review was completed on December 07, 2017, and the most recent ETDM Programming Screen Summary Report was published on May 3, 2018. The USEPA reviewed the project and commented that the project study area is currently in attainment with the National Ambient Air Quality Standards and the project will likely have a minimal impact on air quality. The USEPA also recommended that the project follow the Florida State Implementation Plan to ensure consistency with the state's emissions levels. The project is located in an attainment area, so criteria pollutants under NAAQS are considered to be at an acceptable level. The summary degree of effect for air quality for all build alternatives was also listed as 'Minimal' in the ETDM Programming Screen Summary Report.

The construction of the planned improvements could cause short-term impacts to air quality through airborne dust and other ambient air pollutants. These impacts will be minimized by adherence to all applicable State and local regulations and to the FDOT's *Standard Specifications for Road and Bridge Construction*.

Attachment: COFlorida 2012 Screening Model Output Data



COFlorida 2012 Screening Model Output

CO Florida 2012 - Results
 Wednesday, August 19, 2020

Project Description

Project Title	Build Year All
Facility Name	I-95/Woolbright Road
User's Name	TO
Run Name	2025 All
FDOT District	4
Year	2025
Intersection Type	E-W Freeway N-S Diamond
Speed	Arterial 40 mph Freeway 65 mph
Approach Traffic	Arterial 1952 vph Freeway 10742 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	9.8	5.9
2	7.5	4.5
3	7.5	4.5
4	7.4	4.4
5	7.0	4.2
6	7.0	4.2
7	7.7	4.6
8	7.6	4.6
9	6.6	4.0
10	9.3	5.6
11	9.8	5.9
12	7.5	4.5
13	7.5	4.5
14	7.4	4.4
15	6.9	4.1
16	7.0	4.2
17	7.7	4.6
18	7.7	4.6
19	6.6	4.0
20	9.4	5.6

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

CO Florida 2012 - Results
 Wednesday, August 19, 2020

Project Description

Project Title	Design Year All		
Facility Name	I-95/Woolbright Road		
User's Name	TO		
Run Name	2045 All		
FDOT District	4		
Year	2045		
Intersection Type	E-W Freeway N-S Diamond		
Speed	Arterial	40 mph	Freeway 65 mph
Approach Traffic	Arterial	2490 vph	Freeway 13501 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	10.3	6.2
2	7.7	4.6
3	7.7	4.6
4	7.5	4.5
5	7.2	4.3
6	7.3	4.4
7	7.8	4.7
8	7.7	4.6
9	6.9	4.1
10	9.8	5.9
11	10.3	6.2
12	7.7	4.6
13	7.7	4.6
14	7.4	4.4
15	7.1	4.3
16	7.3	4.4
17	7.8	4.7
18	7.7	4.6
19	6.9	4.1
20	9.8	5.9

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