

AIR QUALITY SCREENING ANALYSIS TECHNICAL MEMORANDUM

NEPTUNE ROAD PD&E STUDY

from Partin Settlement Road to Old Canoe Creek Road

FPID: 445415-1

Prepared For:

Osceola County, Florida

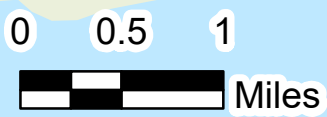
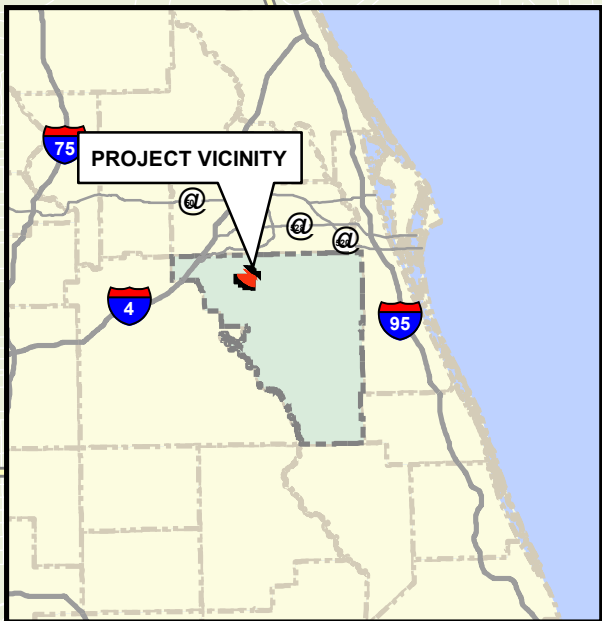


July 2019

This project involves a 3.9-mile segment of Neptune Road extending from Partin Settlement Road to US 192 in Osceola County. The section east of the St. Cloud canal (Canal C-31) (approximately 1.1 miles in length) is within the City of St. Cloud. From Partin Settlement Road to Old Canoe Creek Road, the proposed project improves the existing 2-lane roadway to a 4-lane, divided roadway with a curbed median, with bicycle and pedestrian facilities (i.e., bike lanes and multiuse paths). From Old Canoe Creek Road to US 192, the project widens the existing 2-lane roadway to either 4-lanes or 5-lanes with a multiuse path on the north side and a sidewalk on the south side. Bridge structures are to be replaced and stormwater management ponds will be constructed. **Figure 1** illustrates the project location.

An air quality review of the subject project was conducted following standard Florida Department of Transportation (FDOT) procedures. This project is located in Osceola County, which has been designated as attainment for all the air quality standards under the criteria provided in the Clean Air Act Amendments of 1990, and as such, conformity does not apply.

To ensure that no air quality standard violations will result from the construction and operation of this project, the FDOT Air Quality Screening Model, CO Florida 2012, was used to evaluate a representative interchange location. The CO Florida 2012 Screening Model uses information from the U.S. Environmental Protection Agency's (EPA) Motor Vehicle Emission Simulator (MOVES) version 2010a and CAL3QHC to produce an estimate of the carbon monoxide (CO) levels that might result from the operation of the project. The interchange of Neptune Road and Old Canoe Creek Road was utilized as a representative site based on the high traffic volumes associated with US 17/92. Based on the input values shown in **Table 1**, receptors placed in close proximity to the interchange of Neptune Road and Old Canoe Creek Road were modeled to evaluate maximum one- and eight-hour CO concentrations. The results are provided in **Table 2**.

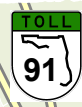


EAST LAKE TOHOPEKALIGA

PROJECT BEGIN



PARTIN SETTLEMENT RD



KINGS HWY

NEPTUNE RD


LAKESHORE BLVD

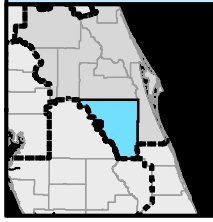
PROJECT END

LAKE TOHOPEKALIGA

OLD CANOE CREEK RD

Legend

 PROJECT LIMITS



Neptune Road
Air Quality Technical Memorandum
 From Partin Settlement Road
 to US 192
 Osceola County, Florida
 Financial Project ID: 445415-1

**PROJECT
 LOCATION MAP**

Figure
1

Table 1 - CO Florida 2012 Input Data *

Year	Facility	Peak Hour Approach Traffic Volumes				Approach Speed (mph)
		Eastbound	Westbound	Northbound	Southbound	
2045	Neptune	1910	1910	NA	NA	35/45
	Old Canoe Creek Road	NA	NA	1910	1910	35/45
* Source: Neptune Road PD&E Project Traffic Analysis Report, Prepared by Kimley-Horn and Associates, Inc., April 2019						

Table 2 - Predicted Maximum One- and Eight-Hour CO Concentrations

Year	Scenario	Maximum CO Concentration (ppm)*	
		1-Hour	8-Hour
		Build	5.5
* Parts per Million			

As shown in Table 2, the operations of the proposed facility are anticipated to result in maximum one-hour CO concentrations of 5.5 ppm and maximum eight-hour CO concentrations of 3.3 ppm. Since these values do not exceed the National Ambient Air Quality Standards (NAAQS) established by the EPA of 35 ppm for a one-hour concentration and 9 ppm for an eight-hour concentration, no adverse air quality impact is predicted from the operation of this project. The CO Florida 2012 Screening Model output files are attached as **Appendix A**.

Construction activities may cause minor short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts can be minimized by adherence to all applicable State regulations and application of appropriate construction specifications.

Appendix A
CO Florida 2012 Data

CO Florida 2012 - Results
Monday, July 22, 2019

Project Description

Project Title Neptune Road PD&E Study
Facility Name Neptune Road
User's Name Jeff Jones
Run Name Old Canoe Creek Road Screening
FDOT District 5
Year 2019
Intersection Type 4 X 4
Speed Arterial 35 mph
Approach Traffic Arterial 1910 vph

Environmental Data

Temperature 47.8 °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	5.1	3.1
2	5.2	3.1
3	5.4	3.2
4	5.1	3.1
5	4.8	2.9
6	5.0	3.0
7	5.2	3.1
8	5.4	3.2
9	5.1	3.1
10	4.8	2.9
11	5.0	3.0
12	5.2	3.1
13	5.5	3.3
14	5.0	3.0
15	4.8	2.9
16	5.0	3.0
17	5.2	3.1
18	5.5	3.3
19	5.1	3.1
20	4.8	2.9

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