Kimley»Horn

MEMORANDUM

To:	File
From:	Clif Tate, P.E.
Date:	December 1, 2015
Subject:	Financial Project ID Number 432134-1-22-01, PS: 433204-1-28-01 Air Quality Screening Test Carroll Street, from John Young Parkway to Michigan Avenue Osceola County, Florida

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The referenced proposed project is located in Osceola County, an area currently designated as being attainment for air pollutants.

The project 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 Florida Department of Transportation's (FDOT's) screening model, CO Florida 2012 (released January 9, 2012) uses the latest United States Environmental Protection Agency (USEPA) Motor Vehicle Emission Simulator (MOVES 2010a) to produce estimates of one-hour and eight-hour CO at default air quality receptor locations.

As a screening model, CO Florida 2012 incorporates conservative assumptions including peak hour traffic, January time-frame temperatures, worst-case meteorology (wind speed, stability class, and wind angle search), and very close-in receptors. The philosophy of a screening model is that if these worst-case assumptions do not produce an exceedance, then none of the normal conditions encountered during the year will either. The one-hour and eight-hour estimates can be directly compared to the one-and eight-hour National Ambient Air Quality Standards (NAAQS) for CO.

The roadway intersection forecast to have the highest total approach traffic volume was Carroll Street at US 441. The Build and No-Build scenarios for both the opening year (2020) and the design year (2040) were evaluated. The traffic data input used in the evaluation is attached to this memorandum.

Estimates of CO were predicted for the default receptors which provide a comprehensive 360° representation of potential near-road CO concentrations. Based on the results from the screening model, the highest project-related CO one- and eight-hour levels are not predicted to meet or exceed the one- or eight-hour National Ambient Air Quality Standards (NAAQS) for this pollutant with either the No-Build or Build alternatives. As such, the project "passes" the screening model. The results of the screening model are attached to this memorandum.

TRAFFIC DATA FOR AIR QUALITY ANALYSIS

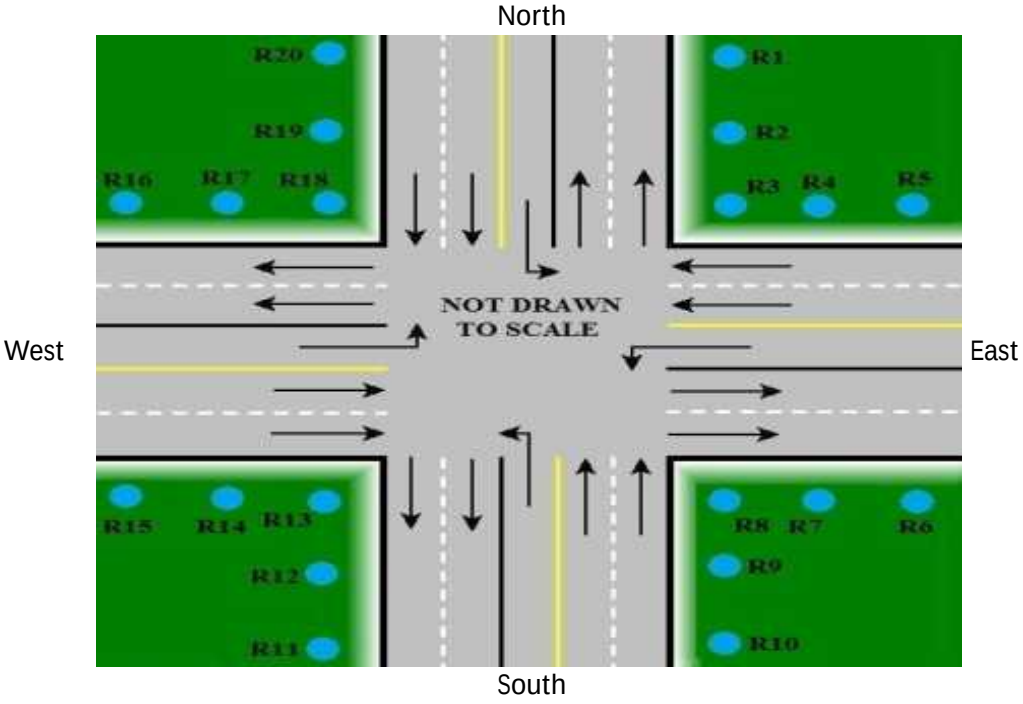
Financial Project ID Numbers: FM 433204-1-28-01; FPID 432134-1-22-01
Federal Aid Number:
Project: Carroll Street PD&E Study
John Young Parkway to Michigan Avenue
Osceola County, Florida
Opening Year: 2020
Intersection: Carroll Street at US 441
Land Use: Urban
Period: PM Peak Hour

2020 Condition	Eastbound			Westbound			Northbound			Southbound		
	Lanes	VPH	Speed	Lanes	VPH	Speed	Lanes	VPH	Speed	Lanes	VPH	Speed
Build	2	1014	35	2	578	35	2	1557	45	2	1901	45
No Build	1	901	35	1	516	35	2	1558	45	2	1900	45

Design Year: 2040
Intersection: Carroll Street at US 441
Land Use: Urban
Period: PM Peak Hour

2040 Condition	Eastbound			Westbound			Northbound			Southbound		
	Lanes	VPH	Speed	Lanes	VPH	Speed	Lanes	VPH	Speed	Lanes	VPH	Speed
Build	2	1792	35	2	1016	35	2	1855	45	2	2258	45
No Build	1	1224	35	1	698	35	2	1855	45	2	2262	45

Receptor Locations



CO Florida 2012 - Results
Tuesday, December 01, 2015

Project Description

Project Title	Carroll Street PD&E
Facility Name	Carroll Street
User's Name	Clif Tate
Run Name	No Build 2020
FDOT District	5
Year	2020
Intersection Type	4 X 4
Speed	Arterial 35 mph
Approach Traffic	Arterial 1900 vph

Environmental Data

Temperature	47.8 °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	6.7	4.0
2	6.7	4.0
3	6.9	4.1
4	6.7	4.0
5	6.4	3.8
6	6.6	4.0
7	6.7	4.0
8	6.9	4.1
9	6.6	4.0
10	6.4	3.8
11	6.6	4.0
12	6.7	4.0
13	6.9	4.1
14	6.6	4.0
15	6.4	3.8
16	6.6	4.0
17	6.7	4.0
18	7.0	4.2
19	6.7	4.0
20	6.4	3.8

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**********PROJECT PASSES**********
NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED
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CO Florida 2012 - Results
Tuesday, December 01, 2015

Project Description

Project Title	Carroll Street PD&E
Facility Name	Carroll Street
User's Name	Clif Tate
Run Name	Build 2020
FDOT District	5
Year	2020
Intersection Type	4 X 4
Speed	Arterial 35 mph
Approach Traffic	Arterial 1901 vph

Environmental Data

Temperature	47.8 °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	6.7	4.0
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8	6.9	4.1
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10	6.4	3.8
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14	6.6	4.0
15	6.4	3.8
16	6.6	4.0
17	6.7	4.0
18	7.0	4.2
19	6.7	4.0
20	6.4	3.8

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**********PROJECT PASSES**********
NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED
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CO Florida 2012 - Results
Tuesday, December 01, 2015

Project Description

Project Title	Carroll Street PD&E
Facility Name	Carroll Street
User's Name	Clif Tate
Run Name	No Build 2040
FDOT District	5
Year	2040
Intersection Type	4 X 4
Speed	Arterial 35 mph
Approach Traffic	Arterial 2262 vph

Environmental Data

Temperature	47.8 °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	6.5	3.9
2	6.6	4.0
3	7.0	4.2
4	6.6	4.0
5	6.2	3.7
6	6.5	3.9
7	6.6	4.0
8	7.0	4.2
9	6.6	4.0
10	6.2	3.7
11	6.5	3.9
12	6.6	4.0
13	7.0	4.2
14	6.6	4.0
15	6.2	3.7
16	6.5	3.9
17	6.7	4.0
18	7.0	4.2
19	6.7	4.0
20	6.2	3.7

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NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED
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CO Florida 2012 - Results
Wednesday, November 25, 2015

Project Description

Project Title	Carroll Street PD&E
Facility Name	Carroll Street
User's Name	Clif Tate
Run Name	Build 2040
FDOT District	5
Year	2040
Intersection Type	4 X 4
Speed	Arterial 35 mph
Approach Traffic	Arterial 2258 vph

Environmental Data

Temperature	47.8 °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	6.5	3.9
2	6.6	4.0
3	7.0	4.2
4	6.6	4.0
5	6.2	3.7
6	6.5	3.9
7	6.6	4.0
8	7.0	4.2
9	6.6	4.0
10	6.2	3.7
11	6.5	3.9
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16	6.5	3.9
17	6.7	4.0
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NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED
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