



Project Development & Environment Study

I-75 (SR 93A)

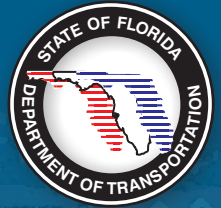
From South of US 301 (SR 43) to North of Fletcher Avenue (CR 482A), Hillsborough County



Work Program Item Segment Number: 419235-3

DRAFT Air Quality Technical Memorandum

Prepared for
**Florida Department
of Transportation**
District Seven



Manuel Santos, E.I.
FDOT Project Manager

April 2010

INTERSTATE 75



Project Development & Environment Study

I-75 (SR 93A)

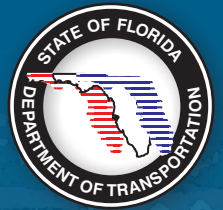
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Prepared by
PB Americas, Inc.

Manuel Santos, E.I.
FDOT Project Manager

April 2010

INTERSTATE 75

DRAFT TECHNICAL MEMORANDUM

AIR QUALITY SCREENING TEST

Date: April 13, 2010

Subject: FDOT WPI Segment Number: 419235-3
Interstate 75 (I-75) PD&E Study, from South of US 301
to North of Fletcher Avenue, Hillsborough County, Florida

The referenced project is in Hillsborough County, an area that is currently designated as being in attainment.

The preferred Build alternative was 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 2004 (released September 7, 2004) uses the US Environmental Protection Agency approved software (**MOBILE6 and CAL3QHC**) to produce estimates of one-hour and eight-hour CO levels at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the one- and eight-hour **NAAQS** for CO that are 35 parts per million (ppm) and 9 ppm, respectively.

The ETDM Programming Screen (ETDM #8002) completed in November 2006 identified Air Quality with a low level of importance due to the minimal degree of effect.

The I-75/I-4 interchange is forecast to have the highest total traffic volumes within the project's Project Development and Environment (PD&E) Study limits. This interchange was subjected to a CO screening within the CO Florida 2004 Screening Model. The Build and No-Build scenarios for the design year (2035) were evaluated using PM peak hour volumes. Traffic volumes were obtained from the Design Traffic Technical Memorandum Technical Report No. 2 Evaluation of Build Alternative Concepts (September 2009).

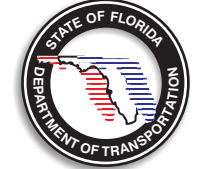
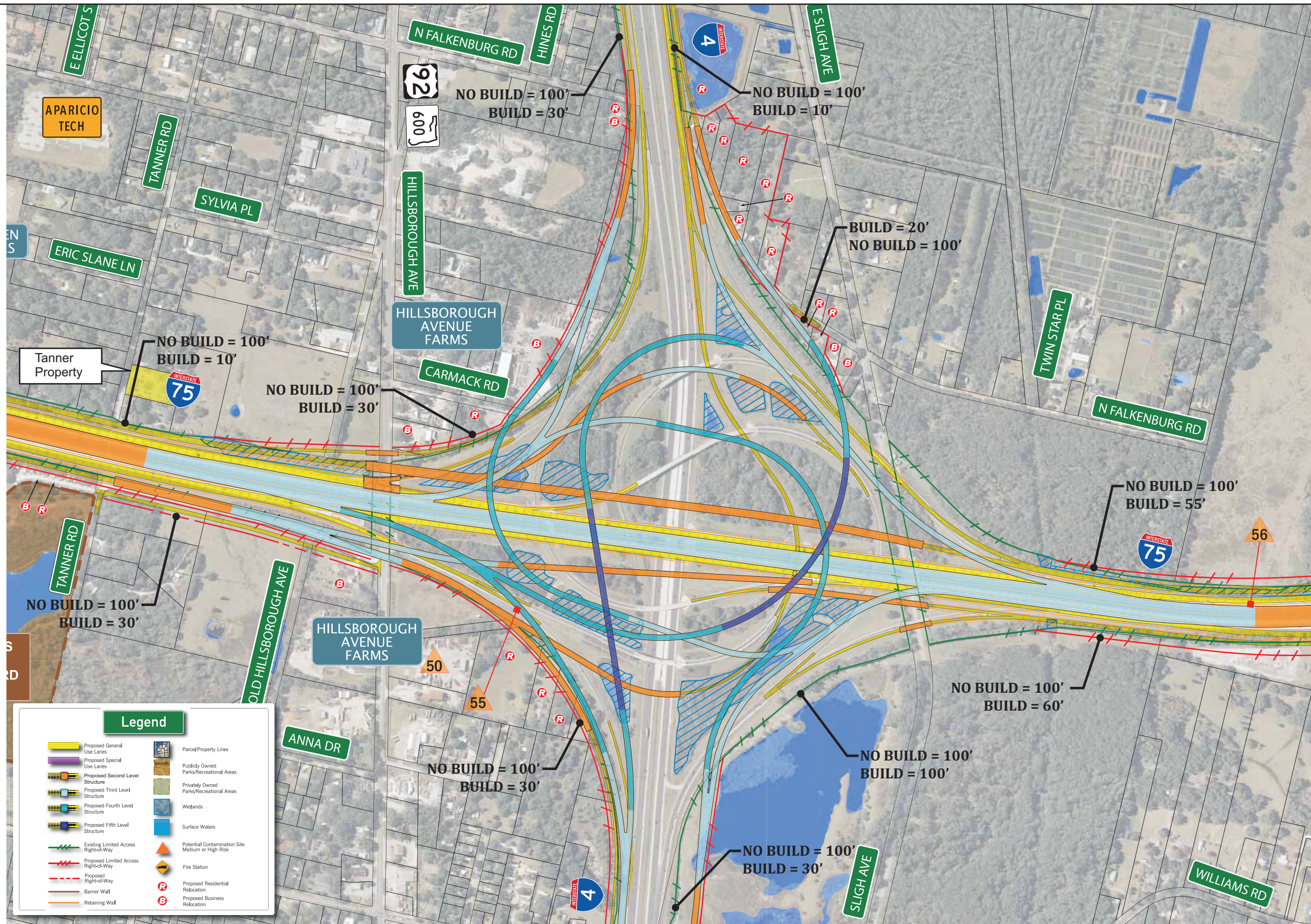
The closest residences (receptors) that are located adjacent to the interchange's existing right-of-way are proposed for relocation in the Build scenario. As a result, the nearest air quality receptor is a residence on the Tanner property. The residence would be located approximately 150 feet from the existing right-of-way for the Build scenario. No other receptors would be closer than the Tanner Residence after the project's right of way acquisition process is completed.

The Tanner property, located south of the I-4 interchange, was modeled as an actual air quality receptor with measured distances of approximately 150 feet west of the I-75 existing right-of-way. In a letter dated on January 19, 2010 the State Historic Preservation Officer identified the Tanner property as eligible for listing on the National Register of Historic Places. The air quality receptor that represents the Tanner property was evaluated for the No-Build and Build scenarios. For the No-Build Alternative at a distance of 250 feet from the nearest lane of travel, the Tanner property had predicted CO concentration of 7.0 ppm and 4.2 ppm for the one- and eight-hour levels, respectively. For the Build Alternative at a distance of 160 feet from the nearest lane of travel, the Tanner property had predicted CO concentration of 7.2 ppm and 4.3 ppm for the one- and eight-hour levels, respectively. Based on these results, CO concentrations at the residence located on the Tanner property are not predicted to meet or exceed the one- or

eight-hour **NAAQS** for this pollutant with either the No-Build or Build scenario. Therefore, a detailed air quality study is not required for the project's PD&E Study.

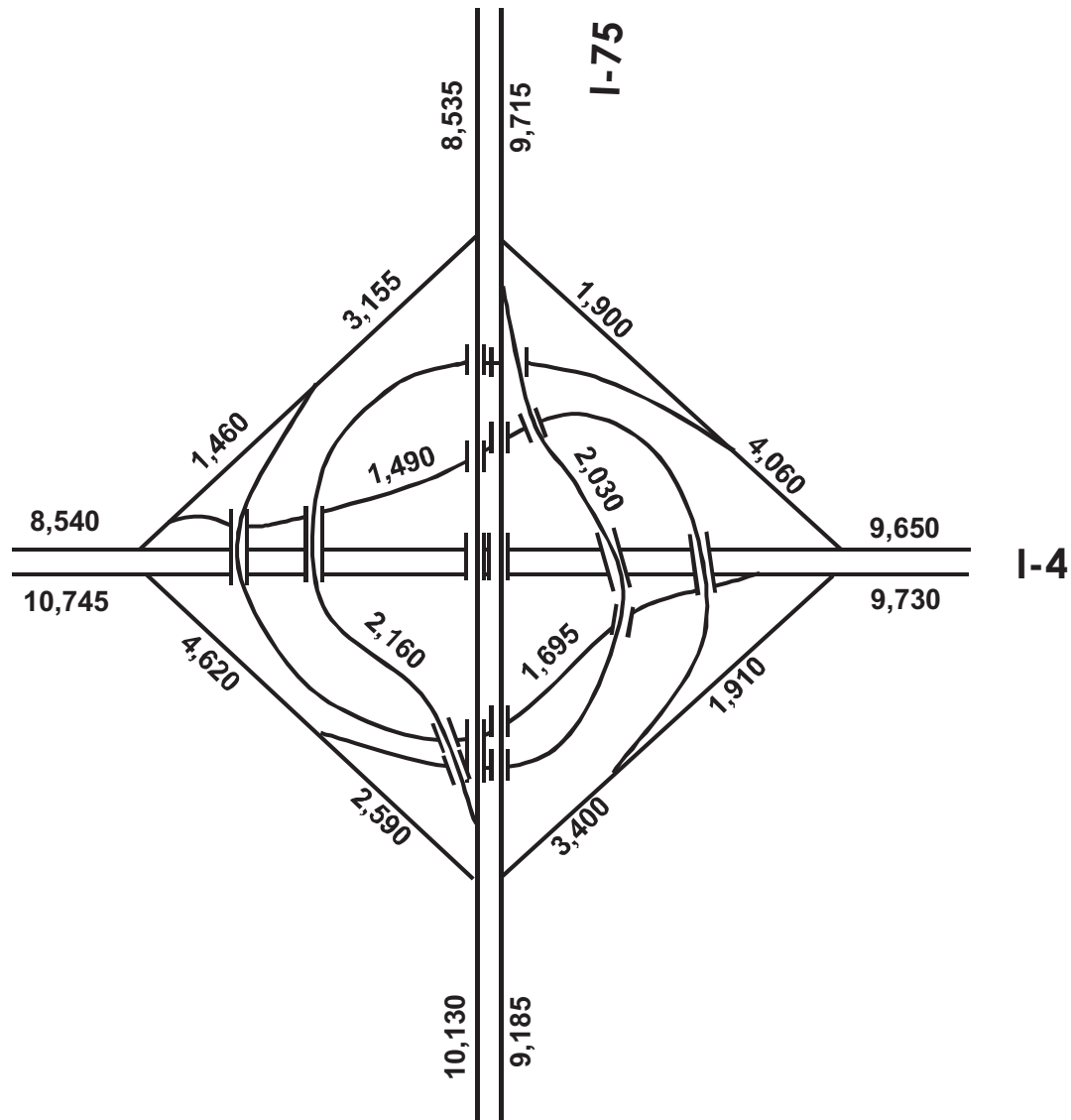
The results of the Screening Model test, along with the traffic data used in the analysis, are attached to this memorandum.

“The project is located in an area which is designated attainment for all of the **National Ambient Air Quality Standards** under the criteria provided in the **Clean Air Act**. Therefore, the **Clean Air Act** conformity requirements do not apply to the project.”



I - 75 (SR 93A) PD&E Study
 From South of US 301 to North of Fletcher Avenue
 WPI Segment No.: 419235-3
 Hillsborough County

Air Quality Concept Plan



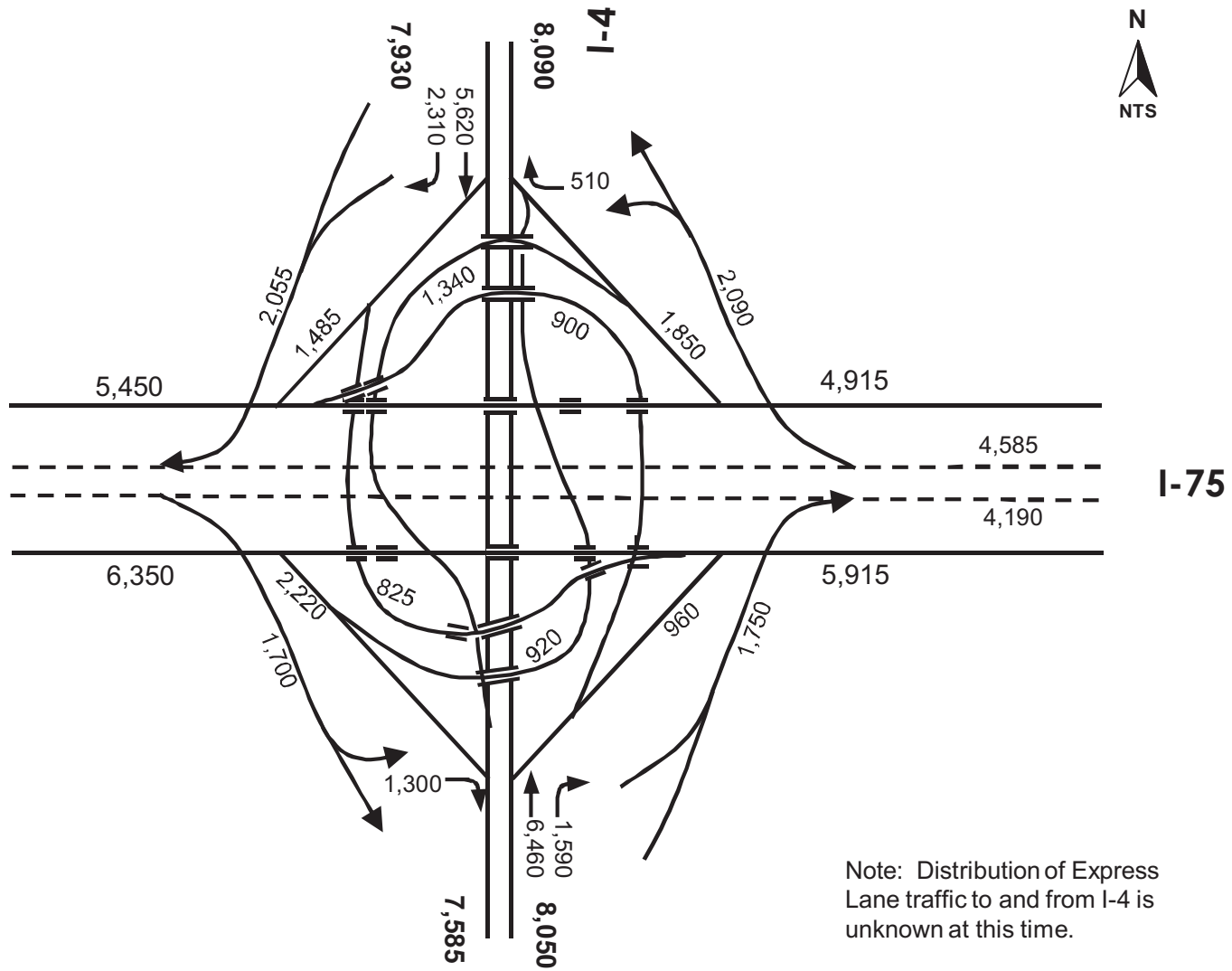
I - 75 (SR 93A) PD&E Study

From South of US 301 to North of Fletcher Avenue

WPI Segment No.: 419235-3

Hillsborough County

**Year 2035 No-Build Alternative
PM Design Hour Volumes**



I - 75 (SR 93A) PD&E Study

From South of US 301 to North of Fletcher Avenue

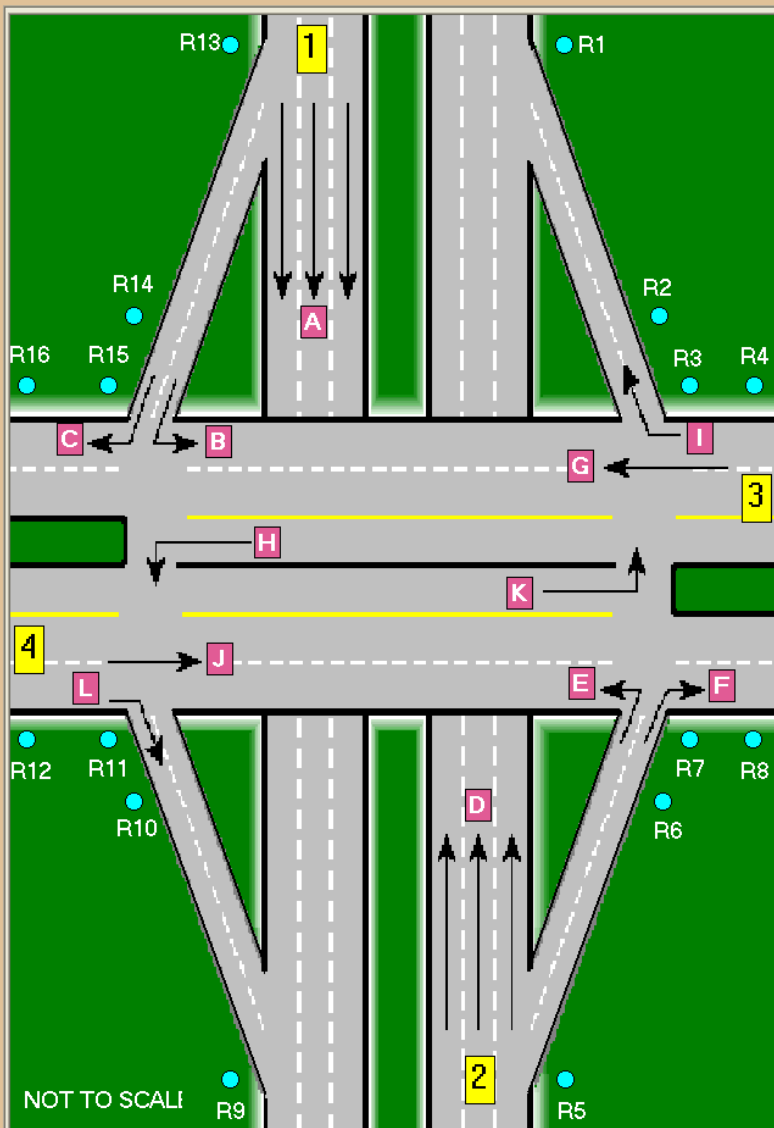
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Hillsborough County

**Year 2035 Build Alternative 3
PM Design Hour Volumes**

I-75 PD&E Study CO Florida 2004 Air Quality Screening
2035 No-Build Inputs

CO Florida 2004 - Intersection - J:\15610_D7_175 PDE\ ENVIRONMENTAL ANALYSES\04 Air Quality\3 Reports\Draft\1 Report\Analysis data and results 2-17-10\I-75NOBUILD@1-4.inp



NOTE:

THROUGH TRAFFIC is volume of NON-TURNING traffic approaching the intersection for the peak Enter value between 1000 and 9999 vehicles per hour.

NOTE:

SPEED is cruise speed as vehicles approach the intersection before entering the queue - sometimes referred to as mid-block speed. If cruise speed is unknown, use the speed limit. Enter value between 15 and 65 mph.

INPUTS:

FREEWAY SPEED, mph

1 "SOUTHBOUND" FREEWAY:

A	THROUGH Traffic, veh/hr	5380
B	EXIT RAMP LEFT, veh/hr	1695
C	EXIT RAMP RIGHT, veh/hr	1460

2 "NORTHBOUND" FREEWAY:

D	THROUGH Traffic, veh/hr	5785
E	EXIT RAMP LEFT, veh/hr	1490
F	EXIT RAMP RIGHT, veh/hr	1910


ARTERIAL SPEED, mph

3 "WESTBOUND" ARTERIAL:


G	THROUGH Traffic, veh/hr	5590
H	LEFT Traffic, veh/hr	2160
I	RIGHT Traffic, veh/hr	4060

4 "EASTBOUND" ARTERIAL:

J	THROUGH Traffic, veh/hr	6125
K	LEFT Traffic, veh/hr	2030
L	RIGHT Traffic, veh/hr	4620

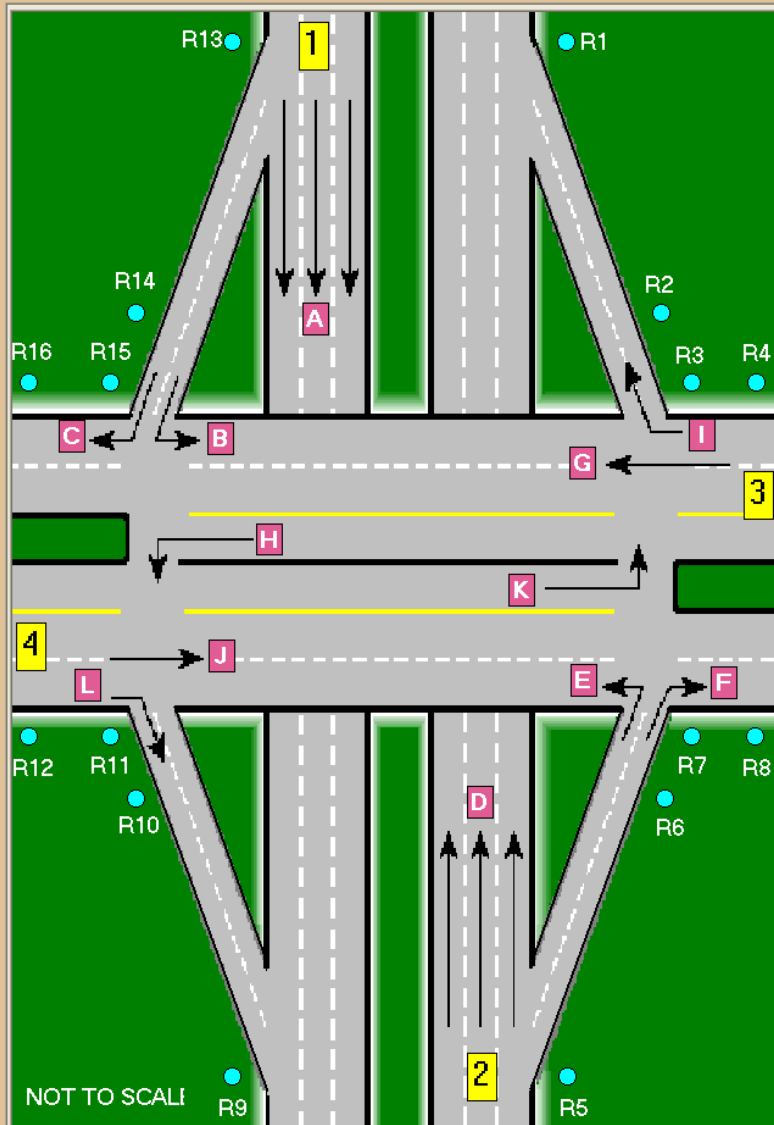
 Title Screen

 Back

 Next

I-75 PD&E Study CO Florida 2004 Air Quality Screening
2035 Build Inputs

CO Florida 2004 - Intersection - J:\15610_D7_175 PDE\ ENVIRONMENTAL ANALYSES\04 Air Quality\3 Reports\Draft\1 Report\Analysis data and results 2-17-10\I-75BUILD@I-4.inp



NOTE:

THROUGH TRAFFIC is volume of NON-TURNING traffic approaching the intersection for the peak Enter value between 1000 and 9999 vehicles per hour.

NOTE:

SPEED is cruise speed as vehicles approach the intersection before entering the queue - sometimes referred to as mid-block speed. If cruise speed is unknown, use the speed limit. Enter value between 15 and 65 mph.

INPUTS:

FREEWAY SPEED, mph 65

1 "SOUTHBOUND" FREEWAY:

A	THROUGH Traffic, veh/hr	5560
B	EXIT RAMP LEFT, veh/hr	1340
C	EXIT RAMP RIGHT, veh/hr	2600

2 "NORTHBOUND" FREEWAY:

D	THROUGH Traffic, veh/hr	6570
E	EXIT RAMP LEFT, veh/hr	920
F	EXIT RAMP RIGHT, veh/hr	3000

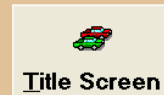
ARTERIAL SPEED, mph 65

3 "WESTBOUND" ARTERIAL:

G	THROUGH Traffic, veh/hr	5500
H	LEFT Traffic, veh/hr	900
I	RIGHT Traffic, veh/hr	2710

4 "EASTBOUND" ARTERIAL:

J	THROUGH Traffic, veh/hr	4390
K	LEFT Traffic, veh/hr	825
L	RIGHT Traffic, veh/hr	3540



CO Florida 2004

Project: I-75 PD&E Study from South of US 301 to North of Fletcher Avenue
 Facility: I-75 NOBUILD 2035 I-4 NW
 Analyst: Ray Magsanoc

Environmental Data:

Temperature: 50 F
 Reid Vapor Pressure: 11.5 psi
 Land Use: Suburban
 Stability Class: D
 Surface Roughness: 108
 Background Concentration: 1-hr = 3.3 ppm 8-hr = 2.0 ppm

Project Data:

Region: 4: Hillsborough / Pinellas
 Year: 2035
 Intersection Type: Diamond Interchange
 Max Freeway Traffic: 9185 veh/hour
 Max Arterial Traffic: 12775 veh/hour
 Freeway Speed: 65
 Arterial Speed: 65

Receptor Data (all distances are in feet):

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
Default Rec 1	100	1020	6
Default Rec 2	100	50	6
Default Rec 3	50	100	6
Default Rec 4	150	100	6
Default Rec 5	100	-1020	6
Default Rec 6	100	-50	6
Default Rec 7	50	-100	6
Default Rec 8	150	-100	6
Default Rec 9	-100	-1020	6
Default Rec 10	-100	-50	6
Default Rec 11	-50	-100	6
Default Rec 12	-150	-100	6
Default Rec 13	-100	1020	6
Default Rec 14	-100	50	6
Default Rec 15	-50	100	6
Default Rec 16	-150	100	6
Tanner Property	-250	-1020	6

RESULTS (including background CO):

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
Default Rec 1	9.0	5.4
Default Rec 2	12.8	7.7
Default Rec 3	11.8	7.1
Default Rec 4	10.5	6.3
Default Rec 5	8.8	5.3
Default Rec 6	12.3	7.4
Default Rec 7	11.5	6.9
Default Rec 8	10.2	6.1
Default Rec 9	9.0	5.4
Default Rec 10	12.8	7.7
Default Rec 11	11.8	7.1
Default Rec 12	10.5	6.3
Default Rec 13	8.8	5.3
Default Rec 14	12.3	7.4
Default Rec 15	11.5	6.9
Default Rec 16	10.2	6.1
Tanner Property	7.0	4.2

 PROJECT PASSES - NO EXCEEDANCES OF NAAQ CO STANDARDS ARE PREDICTED

CO Florida 2004

Project: I-75 PD&E Study from South of US 301 to North of Fletcher Avenue
 Facility: I-75 BUILD 2035 I-4 NW
 Analyst: Ray Magsanoc

Environmental Data:

Temperature: 50 F
 Reid Vapor Pressure: 11.5 psi
 Land Use: Suburban
 Stability Class: D
 Surface Roughness: 108
 Background Concentration: 1-hr = 3.3 ppm 8-hr = 2.0 ppm

Project Data:

Region: 4: Hillsborough / Pinellas
 Year: 2035
 Intersection Type: Diamond Interchange
 Max Freeway Traffic: 10490 veh/hour
 Max Arterial Traffic: 9110 veh/hour
 Freeway Speed: 65
 Arterial Speed: 65

Receptor Data (all distances are in feet):

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
Default Rec 1	10	1020	6
Default Rec 2	10	50	6
Default Rec 3	50	30	6
Default Rec 4	150	30	6
Default Rec 5	10	-1020	6
Default Rec 6	10	-50	6
Default Rec 7	50	-30	6
Default Rec 8	150	-30	6
Default Rec 9	-10	-1020	6
Default Rec 10	-10	-50	6
Default Rec 11	-50	-30	6
Default Rec 12	-150	-30	6
Default Rec 13	-10	1020	6
Default Rec 14	-10	50	6
Default Rec 15	-50	30	6
Default Rec 16	-150	30	6
Tanner Property	-160	-1020	6

RESULTS (including background CO):

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
Default Rec 1	14.9	9.0
Default Rec 2	13.6	8.2
Default Rec 3	13.0	7.8
Default Rec 4	12.5	7.5
Default Rec 5	16.1	9.7
Default Rec 6	13.9	8.4
Default Rec 7	13.3	8.0
Default Rec 8	12.7	7.6
Default Rec 9	14.9	9.0
Default Rec 10	13.6	8.2
Default Rec 11	13.0	7.8
Default Rec 12	12.5	7.5
Default Rec 13	16.1	9.7
Default Rec 14	13.9	8.4
Default Rec 15	13.3	8.0
Default Rec 16	12.7	7.6
Tanner Property	7.2	4.3

PROJECT FAILS SCREENING TEST - DETAILED MODELING IS REQUIRED
