AIR QUALITY REPORT

COBB ROAD (CR 485) / US 98 PD&E STUDY

From SR 50 to Suncoast Parkway in Hernando County, Florida

WPI Nos. 257299 1 & 405017 1; FAP Nos: 2891 007 P & 2891 008 P

Florida Department of Transportation

District Seven

April 2003

AIR QUALITY REPORT

Cobb Road (CR 485) / US 98
Project Development and Environment Study

Cobb Road (CR 485), from SR 50 to US 98
and
US 98, from Cobb Road to Suncoast Parkway
Hernando County, Florida

WPI Segment Nos.: 257299 1 & 405017 1
FAP Nos.: 2891 007 P & 2891 008 P

This proposed action consists of capacity and safety improvements to Cobb Road (CR 485), a two-lane undivided arterial, from SR 50 to US 98 and US 98, a two-lane undivided arterial, from Cobb Road to the Suncoast Parkway

FLORIDA DEPARTMENT OF TRANSPORTATION
District Seven

April 2003

TABLE OF CONTENTS

LIST OF EXHIBITS

LIST OF TABLES

1.0 PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate proposed improvement alternatives and environmental effects along Cobb Road (CR 485) from SR 50 to US 98, and along US 98 from Cobb Road to the Suncoast Parkway, west of the City of Brooksville in Hernando County, Florida. The existing Cobb Road and US 98 are currently two-lane undivided arterials within the project limits. Planned improvements to these existing rural roadways consist of widening to a four-lane divided facility.

The improvements are being planned to serve as a by-pass route for heavy trucks and other vehicles that do not have a need to travel through the Brooksville central business district via US 98 east of the Cobb Road intersection. It is anticipated that when the planned project is constructed, Cobb Road will be re-designated and signed as US 98 to route traffic around the west side of Brooksville.

For this PD&E Study, the project was divided into segments for analysis. The segments of Cobb Road were chosen based on surrounding characteristics such as land use and environmental constraints, as well as the potential need for realignments. The segments of US 98 were chosen to match FDOT resurfacing project limits for consistency. The map shown in Exhibit 1.1 shows the project study limits and project segmentation.

2.0 AIR QUALITY ANALYSIS

This Air Quality Report is one in a series of technical reports prepared as part of the Project Development and Environment (PD&E) study undertaken by the Florida Department of Transportation for the planned improvements. The project is in an area that has been designated as attainment for all the air quality standards under the criteria provided in the Clean Air Act Amendments of 1990; therefore, conformity does not apply.

A computer analysis has been performed using the FDOT Intersection Air Quality Carbon Monoxide Screening Model (COSCREEN98 (Rev.)), which utilizes the Federal Highway Administration (FHWA) and United States Environmental Protection Agency's (USEPA) accepted MOBILE Series emissions model and the CAL3QHC (Version 2) carbon monoxide (CO) dispersion model. Analyses were performed for the No Build and Build Alternatives, in the opening and design years, 2005 and 2025, respectively.

Input for the model included the region of the state, year, vehicle speed, traffic volume, and receptor location. The traffic parameters for both the Cobb Road at Yontz Road worst-case intersection, and the Cobb Road at SR 50 intersection, just south of the begin project limits, were taken from the traffic data provided in the Traffic Report (H.W. Lochner, Inc., April 2003). While there are no improvements proposed for the Cobb Road at SR 50 intersection as part of this study, it was included as a secondary intersection because of its close proximity to the beginning of the project. The expected traffic volumes and average operational link speeds for the Build and No Build Alternatives within the project limits are shown in Table 2.1. The screening model for Suburban or Urban areas was used in this analysis for the Build or No Build Alternative, as noted in Table 2.1.

A receptor location for air quality impact analysis is defined as a location where people can reasonably be expected to spend a significant amount of time. Generally, the combination of low

operating speed and high traffic volume yields the highest impact to air quality, due to traffic, and receptors near intersections are normally chosen for air quality analysis. Two residences were chosen to be the closest (worst-case) receptors. The first receptor is located approximately 420 feet east of the existing edge of travel lane for Cobb Road's closest northbound travel lane and 110 feet north of the westbound Yontz Road edge of travel lane. The second receptor is located approximately 50 feet west of the existing edge of travel lane for Cobb Road's closest southbound travel lane and 280 feet north of the westbound SR 50 edge of travel lane. These receptor locations are shown in Exhibits 2.1 and 2.2, respectively.

The screening model results include the one-hour and eight-hour CO concentrations (including background concentrations) at the receptor locations. The input data, screening test used, one-hour and eight-hour CO National Ambient Air Quality Standards (NAAQS), and results for the closest receptor locations are shown in Table 1.1, and the COSCREEN98 (Rev.) output files are included in Appendix A. Since the one-hour and eight-hour CO concentrations at the closest receptor locations do not equal or exceed the NAAQS, this project will not have a significant impact on air quality.

Construction activities will cause minor short-term air quality impacts in the form of dust from earthwork and unpaved roads and smoke from open burning. These impacts will be minimized by adherence to all State and local regulations and to the FDOT Standard Specifications for Road and Bridge Construction.

All state and local agencies were provided with an opportunity to comment on this project. There were no adverse comments regarding air quality.

As noted above, this project is in an area that has been designated as attainment for all the air quality standards under the criteria provided in the Clean Air Act Amendments of 1990; therefore, conformity does not apply.

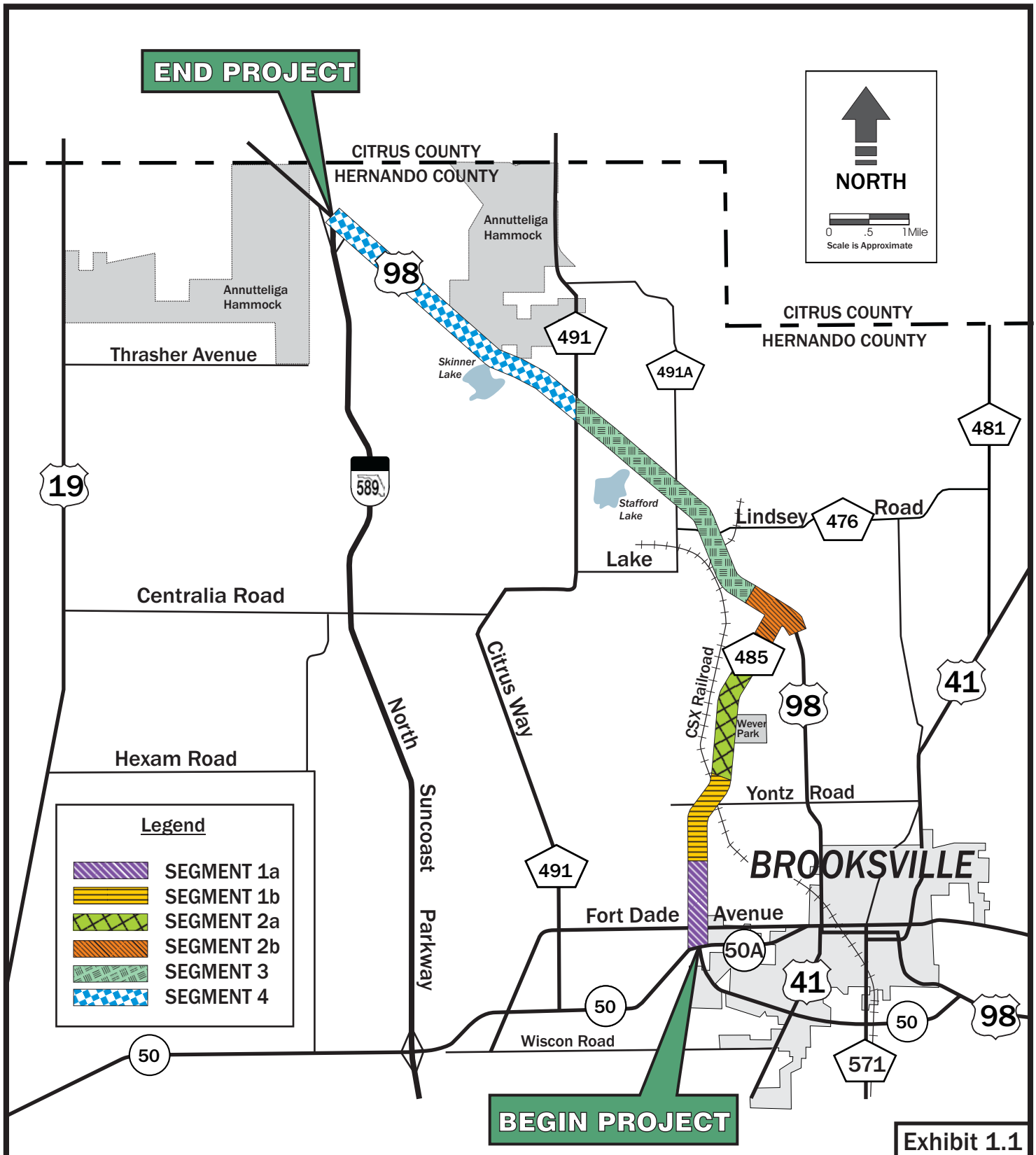
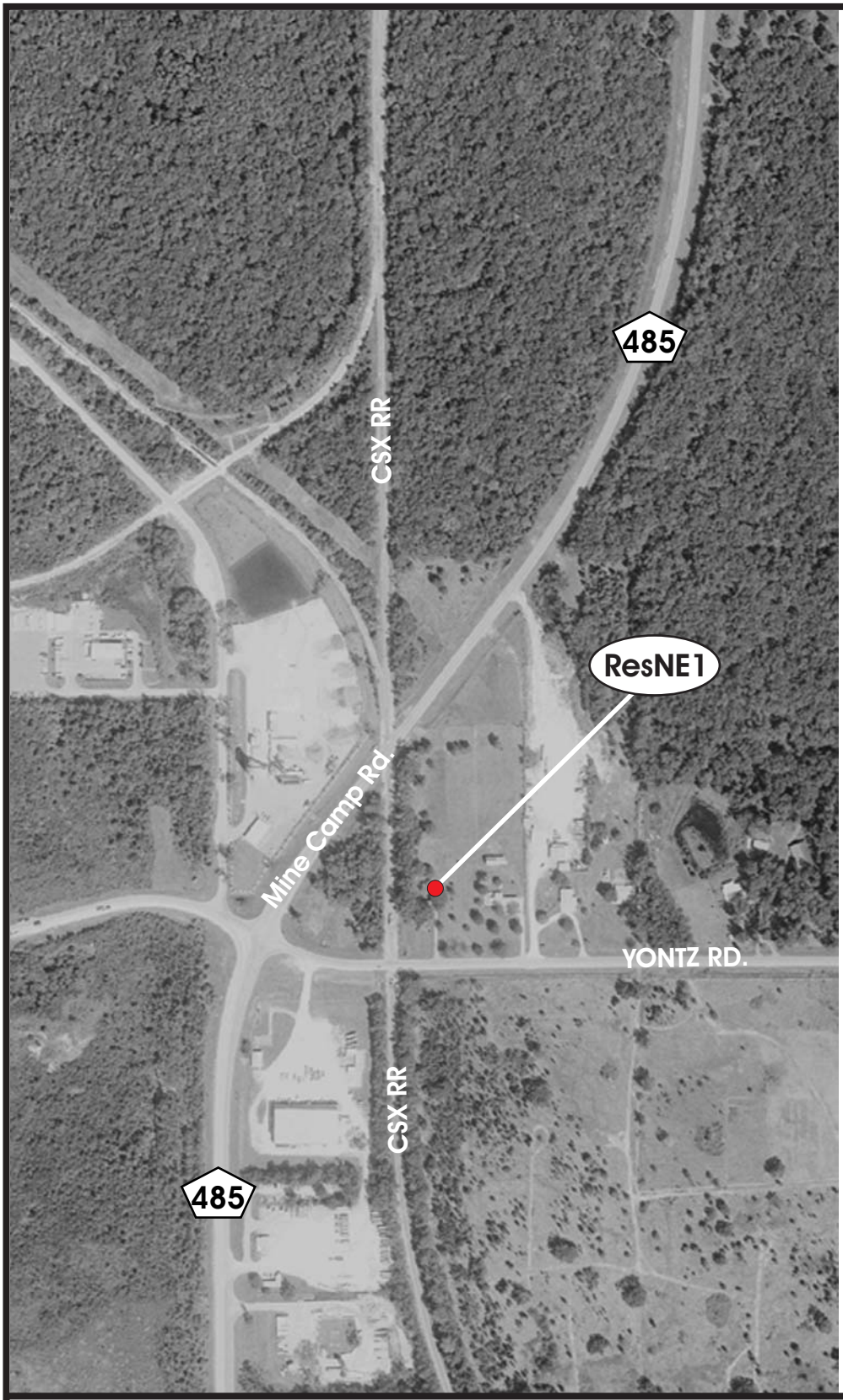


Exhibit 1.1

Project Location Map

Cobb Road (CR 485) / US 98 PD&E Study

WPI Segment Nos: 257299 1 & 405017 1
FAP Nos: 2891 007 P & 2891 008 P



NORTH

0 100 200
SCALE IN FEET

Legend

Receptor Location

Receptor Name

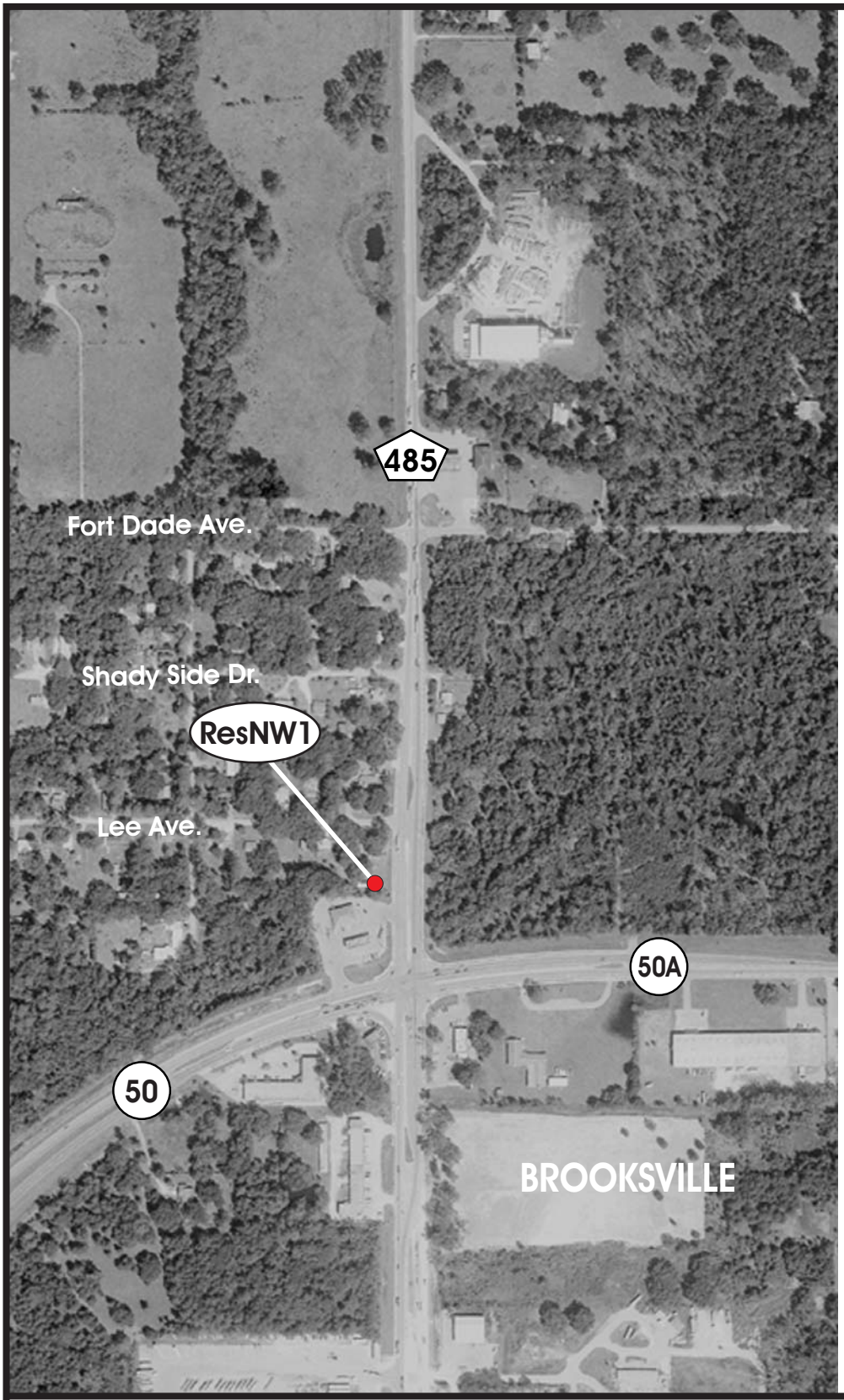
Exhibit 2.1

RECEPTOR LOCATION (YONTZ ROAD)

Cobb Road (CR 485) / US 98 PD&E Study

WPI Segment Nos: 257299 1 & 405017 1

FAP Nos: 2891 007 P & 2891 008 P



NORTH

0 100 200
SCALE IN FEET

Legend

Receptor Location

Receptor Name

Exhibit 2.2

RECEPTOR LOCATION (S.R. 50)

Cobb Road (CR 485) / US 98 PD&E Study

WPI Segment Nos: 257299 1 & 405017 1
FAP Nos: 2891 007 P & 2891 008 P

Table 2.1
Input Data and Results of COSCREEN98 Model

Location	Alternative	Year	Screening Test Used	Average Speed (mph)	Peak Traffic Volume (vph)	Closest Receptor (feet)	CO Concentration (ppm)			
							One-Hour		Eight-Hour	
							COSCREEN98	NAAQS	COSCREEN98	NAAQS
Residence	No-Build	2005	Suburban	40	587	110	4.1	35	2.5	9
(NE Quadrant	No-Build	2025	Suburban	40	1050	110	5.1	35	3.1	9
Cobb Road &	Build	2005	Suburban	40	653	110	4.4	35	2.7	9
Yontz Road)	Build	2025	Suburban	40	1450	110	5.8	35	3.5	9
Residence	No-Build	2005	Urban	35	1540	50	8.7	35	5.2	9
(NW Quadrant	No-Build	2025	Urban	35	2700	50	9.8	35	5.9	9
Cobb Road &	Build	2005	Urban	35	1580	50	8.7	35	5.2	9
SR 50)	Build	2025	Urban	35	2940	50	9.9	35	5.9	9

3.0 APPENDIX – Computer Output Files for COSCREEN98 (Rev.) Model

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/ US 98 PD&E Study
Yontz Rd (Suburban), South Leg Cobb Rd, Opening Year, No Build
Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2005
Speed:	40

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	587 veh/hour
Environment:	Suburban
Background Concentration:	1-hr = 3.3 ppm 8-hr = 2.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNE1	420	110	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNE1	4.1	2.5

Maximum concentrations include background CO

****

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/US 98 PD&E Study
Yontz Road (Suburban), South Leg Cobb Rd, Design Year, No Build
Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2020
Speed:	40

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	1050 veh/hour
Environment:	Suburban
Background Concentration:	1-hr = 3.3 ppm
	8-hr = 2.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNE1	420	110	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNE1	5.1	3.1

Maximum concentrations include background CO

****

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/ US 98 PD&E Study
Yontz Rd (Suburban), South Leg Cobb Rd, Opening Year, Build
Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2005
Speed:	40

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	653 veh/hour
Environment:	Suburban
Background Concentration:	1-hr = 3.3 ppm 8-hr = 2.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNE1	420	110	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNE1	4.4	2.7

Maximum concentrations include background CO

****

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/US 98 PD&E Study
Yontz Road (Suburban), South Leg Cobb Rd, Design Year, Build
Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2020
Speed:	40

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	1450 veh/hour
Environment:	Suburban
Background Concentration:	1-hr = 3.3 ppm 8-hr = 2.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNE1	420	110	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNE1	5.8	3.5

Maximum concentrations include background CO

****

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/US 98 PD&E Study
West Leg SR 50 (Urban), Opening Year, Build

Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2005
Speed:	35

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	1580 veh/hour
Environment:	Urban
Background Concentration:	1-hr = 5.0 ppm 8-hr = 3.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNW1	50	280	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNW1	8.7	5.2

Maximum concentrations include background CO

****

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/US 98 PD&E Study
West Leg SR 50 (Urban), Design Year, Build

Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2020
Speed:	35

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	2940 veh/hour
Environment:	Urban
Background Concentration:	1-hr = 5.0 ppm
	8-hr = 3.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNW1	50	280	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNW1	9.9	5.9

Maximum concentrations include background CO

****

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/US 98 PD&E Study
West Leg SR 50 (Urban), Opening Year, No Build
Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2005
Speed:	35

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	1540 veh/hour
Environment:	Urban
Background Concentration:	1-hr = 5.0 ppm
	8-hr = 3.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNW1	50	280	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNW1	8.7	5.2

Maximum concentrations include background CO

****

COSCREEN98
(revised August 2000 to remove I/M options)

Cobb Road/US 98 PD&E Study
West Leg SR 50 (Urban), Design Year, No Build
Analyst: RES/ARP

MOBILE5 Emission Factors Based On:

User-supplied Data:

Region:	3: Central Florida
Year:	2020
Speed:	35

Default Data:

Ambient Temperature:	60
Maximum Temperature:	70
Minimum Temperature:	48

Facility Data:

Max Approach Traffic Volume:	2700 veh/hour
Environment:	Urban
Background Concentration:	1-hr = 5.0 ppm 8-hr = 3.0 ppm

Receptor Data:

Receptor Name	East-West Distance from Intersection	North-South Distance from Intersection	Receptor Height
ResNW1	50	280	6

All distances are in feet

****

RESULTS

Receptor Name	Max 1-Hr Conc (ppm)	Max 8-Hr Conc (ppm)
ResNW1	9.8	5.9

Maximum concentrations include background CO

****