

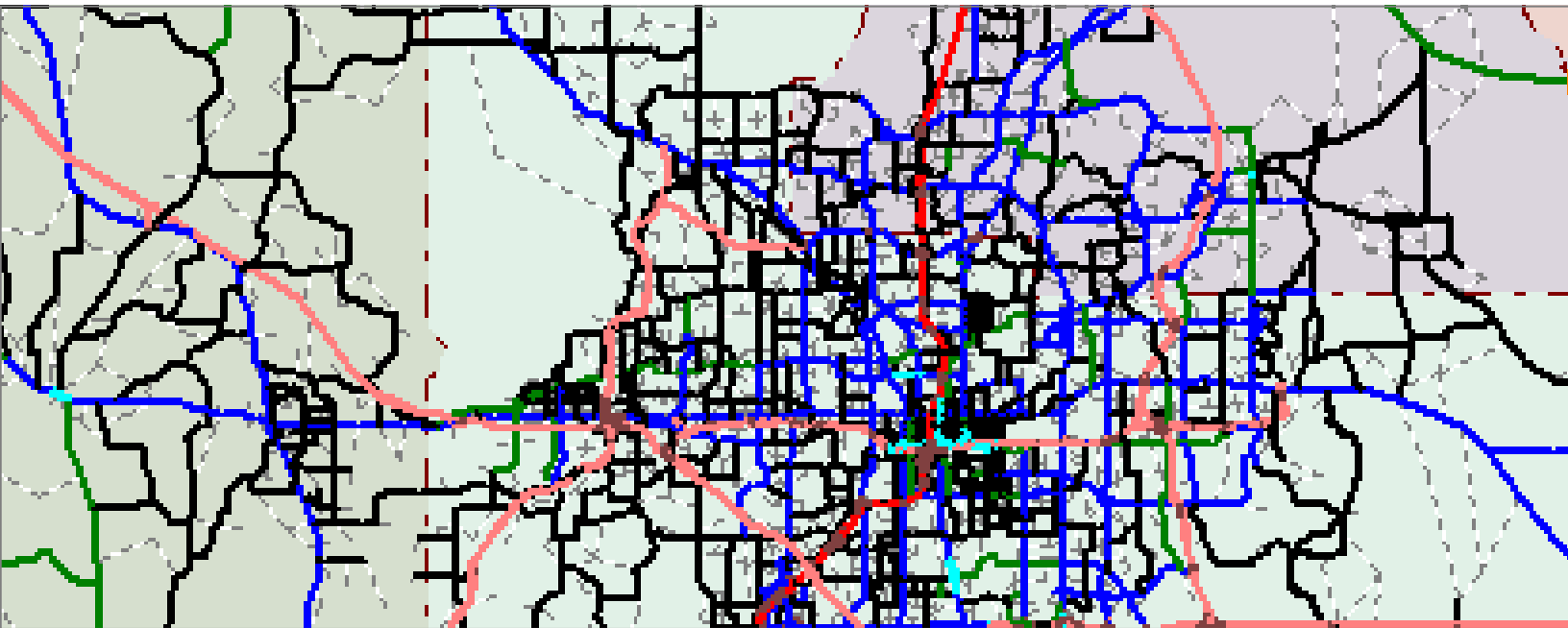


2040 Long Range Transportation Plan

Technical Report 8:
**Model Development
and Application
Guidelines**

Final Adopted Plan

January 2016



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Table of Contents

1.0	INTRODUCTION	1
1.1	Report Overview	1
1.2	Background of Year 2009 Model	1
1.3	Florida's Standard Model	2
1.3.1	Highway and Transit Options	2
1.3.2	OUATS Model Process	5
2.0	EXTERNAL TRIP MODEL	5
2.1	External Trip Development	10
2.1.1	Auto External Trips	10
2.1.2	Truck External Trips	10
2.1.3	Special Attraction External Trips	10
2.2	External Trip Summary	11
3.0	TRIP GENERATION MODEL	11
3.1	Trip Generation Model Overview	12
3.2	Trip Generation Model Input Data and Parameters	15
3.2.1	Socioeconomic Data	15
3.2.2	Special Attractions Socio-Economic Data	16
3.2.3	Input Variables and Parameters	17
3.3	Truck Generation Program	20
3.4	Special Attractions Program	20
3.4.1	Special Trip Generation Methodology	20
3.4.2	Special Attractions Program Summary	21
3.5	Trip Generation Results	21
4.0	TRIP DISTRIBUTION MODEL	23
4.1	Trip Distribution Model Overview	23
4.2	Gravity Model Methodology and Operation	24
4.3	Gravity Model Inputs and Variables	26
4.4	Special Trips Development	26
4.4.1	Special External Trip Development	26
4.4.2	Special Internal Trip Development	27
4.5	Trip Distribution Results	28

Table of Contents (Cont'd)

5.0	MODE CHOICE MODEL.....	29
5.1	Default Mode Choice Model	31
5.2	Mode Choice Model Operation.....	32
5.3	Mode Choice Special Purposes.....	32
5.4	Changes to the Mode Choice Program.....	33
5.5	Mode Choice Output	34
6.0	HIGHWAY ASSIGNMENT AND EVALUATION MODELS.....	36
6.1	Highway Assignment Model	36
6.1.1	Highway Assignment Model Overview.....	36
6.1.2	Highway Assignment Model Methodology & Operation	37
6.2	Highway Assignment Results.....	37
6.3	Highway Evaluation Model	37
6.3.1	Highway Evaluation Model Overview.....	37
6.3.2	Highway Evaluation Model Methodology & Operation .	39
6.4	Highway Evaluation Results.....	42
7.0	TRANSIT ASSIGNMENT MODEL	44
7.1	Transit Network Development.....	45
7.2	Transit Assignment Model Methodology & Operation	45
7.3	Transit Assignment Results.....	46
8.0	APPLICATION GUIDELINES.....	49
8.1	Minimum System Requirements	49
8.2	Directory Structure.....	49
8.2.1	Base Folder	50
8.2.2	Parameters Folder	52
8.2.3	User.prg Folder.....	52
8.2.4	Applications Folder	53
8.2.5	GIS Folder	53
8.3	Scenario Setup	53
8.3.1	Scenario Selection	53
8.3.2	Creating a Scenario.....	54
8.4	Running the Model	56

LIST OF TABLES

1. External Station Trip Purposes	7
2. External Station Numbers and Locations.....	8
3. Year 2009 Production Variables Summary	15
4. Year 2009 Attraction Variables Summary	16
5. Year 2000 Special Generators	16
6. Year 2009 Special Attraction Trip Generation Attractions Summary	17
7. Year 2009 Special Attraction Trip Generation Productions Summary	18
8. Year 2000 CTPP Journey-to-Work Trips	19
9. Special Attractions Productions and Attractions Trip Purposes	21
10. Year 2009 Trip Generation Model Output	22
11. Year 2009 Trip Generation Statistics.....	23
12. Daily Trip Distribution Summary	28
13. Total Mode Choice Output	35
14. Traffic Assignment Accuracy Levels	41
15. Screenline/Cutline Summaries	42
16. HEVAL.PRN Statistics	43
17. Percent Root Mean Squared Error (% RMSE) Summary	43
18. Transit Assignment Ridership by Route For 2009	47

LIST OF FIGURES

1. Geographic Area Covered by the OUATS Model	3
2. Overall Model Chain.....	4
3. Model Flow Chart	6
4. External Station Locations	9
5. TRIP GENERATION Flow Chart	14
6. TRIP DISTRIBUTION Flow Chart	24
7. MODE Flow Chart	29
8. OUATS Mode Choice Nesting Structure	30
9. HIGHWAY ASSIGNMENT Flow Chart	36
10. Time Penalty Locations	38
11. HIGHWAY EVALUATION Flow Chart	39
12. Year 2009 Screenline and Cutline Locations	40
13. TRANSIT ASSIGNMENT Flow Chart	44
14. TRANSIT ASSIGNMENT Results Visualization	46
15. File Folder Tree	50

LIST OF FIGURES (Cont'd)

16. Main OUATS Model Screen	52
17. User Specific Parameters Screen	54
18. Scenario Tree	55

APPENDICES

Appendix A: External Trips	57
Appendix B: Socio-Economic Data	60
Appendix C: Trip Generation	73
Appendix D: Mode Choice	82

1.0 Introduction

MetroPlan Orlando, as part of the Year 2040 Long Range Transportation Plan (LRTP), updated the Orlando Urban Area Transportation Study (OUATS) travel demand forecasting model in Phase I of the project. The previous base year (2004) model validation used for the 2030 LRTP was used as the starting point for the year 2009 model validation effort. This Technical Report No. 8, titled "*Model Development and Application Guidelines*," is designed to document the Year 2009 OUATS model validation and calibration process. In addition, information regarding model setup and use is included as an application guideline.

Report Overview

This section (Section 1.0) provides the general introduction for this Technical Report. Section 2.0 provides details of the external trip model, the external trips development, and the results of the OUATS year 2004 external trips. Section 3.0 provides details of the trip generation process. Section 4.0 provides details of the trip distribution process. Section 5.0 provides information regarding the mode choice model. Section 6.0 presents information regarding the highway assignment process and evaluation models. Section 7.0 details the transit assignment process. Sections 3.0 through 7.0 include the incorporation of the Low, Medium, and High income level procedure developed as part of the "*Trip Characteristics Study*" done by Leftwich Consulting Engineers, Inc. for MetroPlan Orlando as part of the 2030 LRTP model development. Section 8.0 details the proper steps to take into consideration to correctly use the travel demand model.

Background of the Year 2009 Model

The Orlando Urban Area Transportation Study (OUATS) year 2009 model includes the geographic area covered by the Orlando Urban Area (i.e., Orange, Osceola and Seminole counties) as well as the western portion of the Volusia County network, the Lake County network, and northeastern portion of the Polk County network (see Figure 1).

As part of the 2030 LRTP model validation effort, the model went through a complete overhaul. The base year 2000 model, which was in place prior to the 2030 LRTP, referenced the Florida Standard Urban Transportation Model Structure (FSUTMS) procedures using the TRANPLAN suite of programs. The 2030 LRTP base year 2004 model was then updated to use the CUBE/Voyager software (licensed by Citilabs) that the State of Florida has adopted as the travel demand models "engine" across the state. Both Highway and Transit networks, the basis for this model, were coordinated with Geographic Information System (GIS) data using

the CUBE/Voyager software. The CUBE/Voyager software continues to be the premise for the base year 2009 model validation performed for the 2040 LRTP model development.

1.3 Florida's Standard Model

The Florida Standard Urban Transportation Model Structure (FSUTMS), developed and maintained by the Florida Department of Transportation (FDOT), is the standard model process used for transportation planning in Florida. FSUTMS is a versatile process that can be used to model highway and transit systems. It provides four (4) options relative to the modes of transportation to be considered: Highway-Only Process, Single-Path Transit Process, Multi-Path Transit Process, and Multi-Path Multi-Period Transit Process.

1.3.1 Highway and Transit Options

The Highway-Only Process is used in smaller urbanized areas that either do not currently have transit service or have very minor transit that cannot be effectively modeled. The Single-Path Transit Process is used in small to medium urbanized areas with no appreciable difference between the peak and off-peak transit routes and route headways. The Multi-Path Single-Period Transit Process is applied to urbanized areas that have expanded systems, and several types of transit services, with no significant difference in the peak and off-peak services. Finally, the Multi-Path Multi-Period Transit Process is used for urbanized areas that have expanded systems and several types of transit services with significant difference in the peak and off-peak period services. The OUATS model follows the multi-path multi-period process. The overall model chain can be summarized as depicted in Figure 2.

FIGURE 1: GEOGRAPHIC AREA COVERED BY THE OUATS MODEL

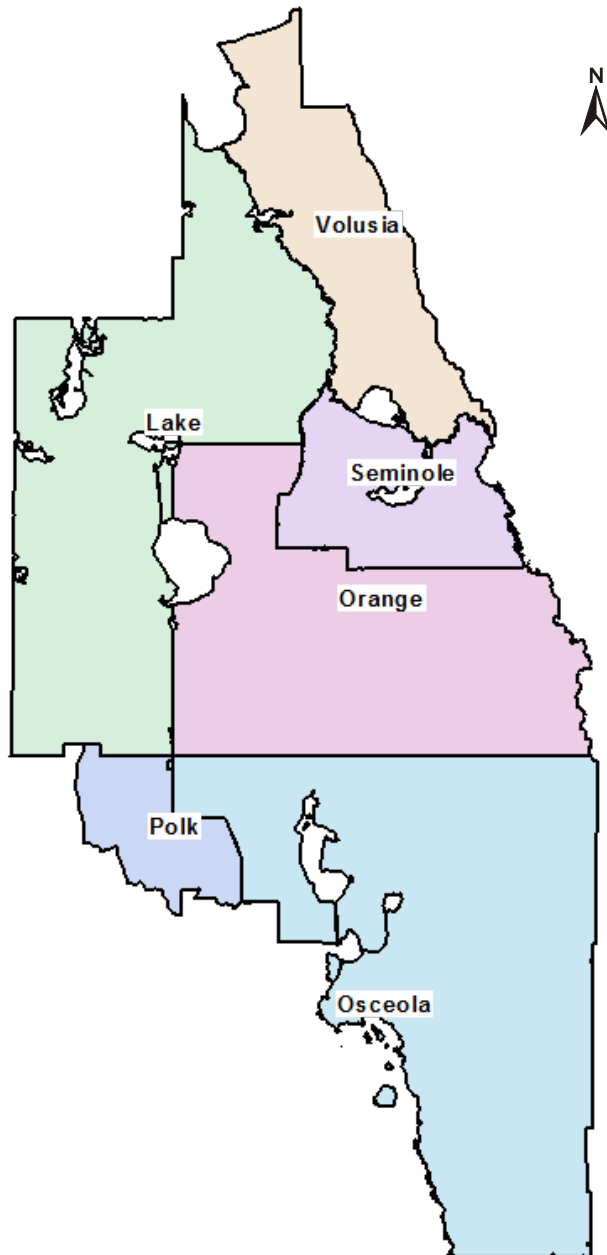
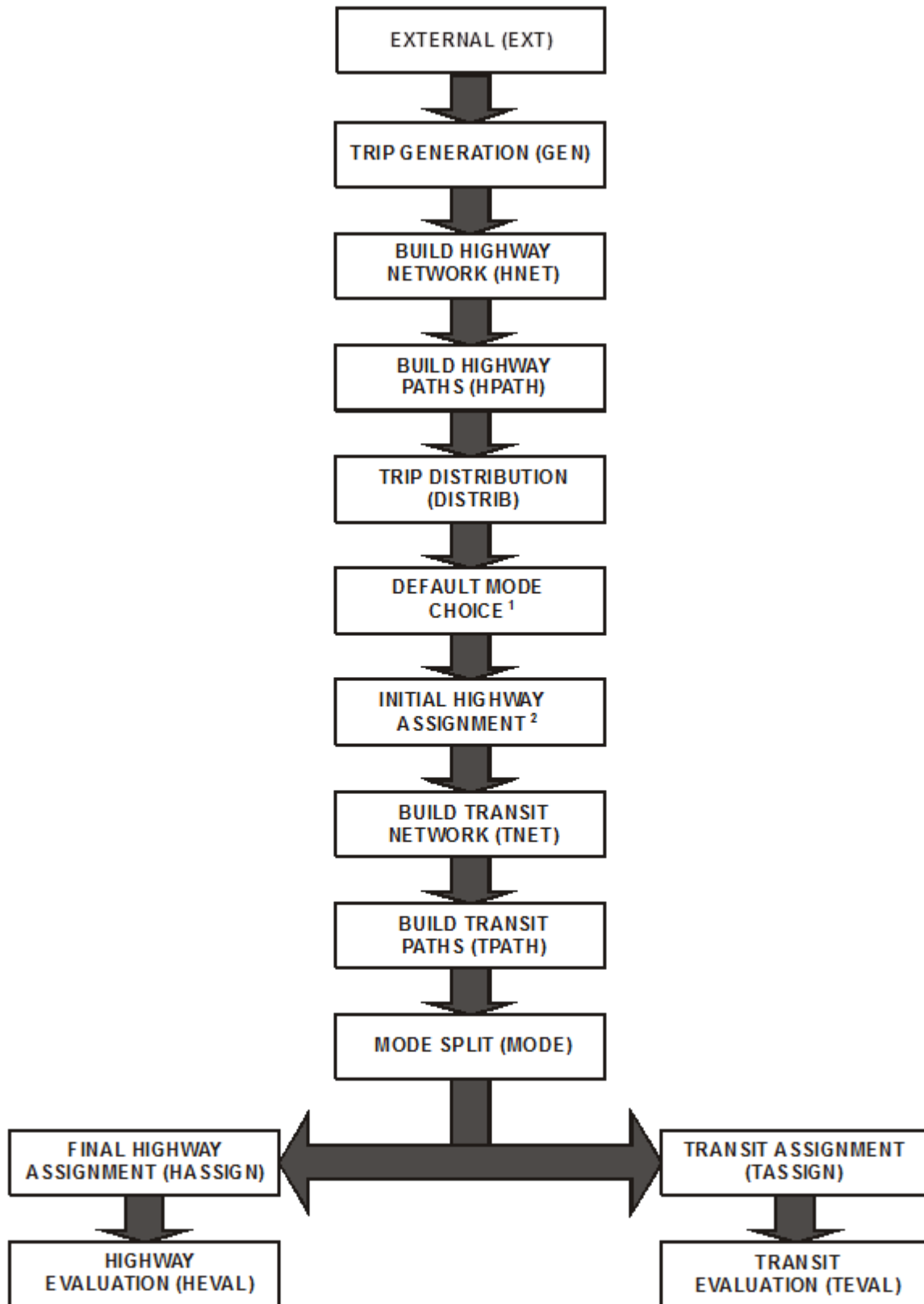


FIGURE 2: OVERALL MODEL CHAIN



Note: (1) Used to convert person trips into vehicle trips that are assigned to the highway network in the first highway assignment.
(2) This step is used to estimate congested travel speeds needed by the mode choice model.

1.3.2 OUATS Model Process

The OUATS model has evolved over the past 30 years to a modified version of the multi-path, multi-period process that includes trip purposes for special attractions (such as Walt Disney World, Universal Studios, Sea World, Orlando International Airport, the Orange County Convention Center, etc.). In addition, a truck model was incorporated during the year 2000 validation effort. For the year 2004 validation effort a “Trip Characteristics” component was added to the process. For the home-based work (HBW) purpose, the generation of productions and attractions is based on three (3) income level groups (i.e. Low, Medium, and High), that are based on property values.

Validation/Calibration of the OUATS model was performed using the Nested Logit Multi-Path, Multi-Period Transit process. This process is shown in the OUATS Model Flow (see Figure 3) from the CUBE/Voyager software.

The main, also referred to as the Parent level, application modules of the OUATS CUBE/Voyager model are:

- TRIP GENERATION - Builds external trip table and generates internal trips (productions and attractions)
- NETWORK - Highway network processing and paths
- DISTRIBUTION - Gravity models, pre-mode choice, and pre-highway assignment
- TRANSIT - Develops transit networks, paths, and skims
- MODE - Modal choice, converts matrices from Productions/Attractions (P/A) to balanced Origin/Destination (O/D), and combines trips for assignment
- ASSIGNMENT - Highway assignment and transit assignment
- POST PROCESSING - Highway evaluation

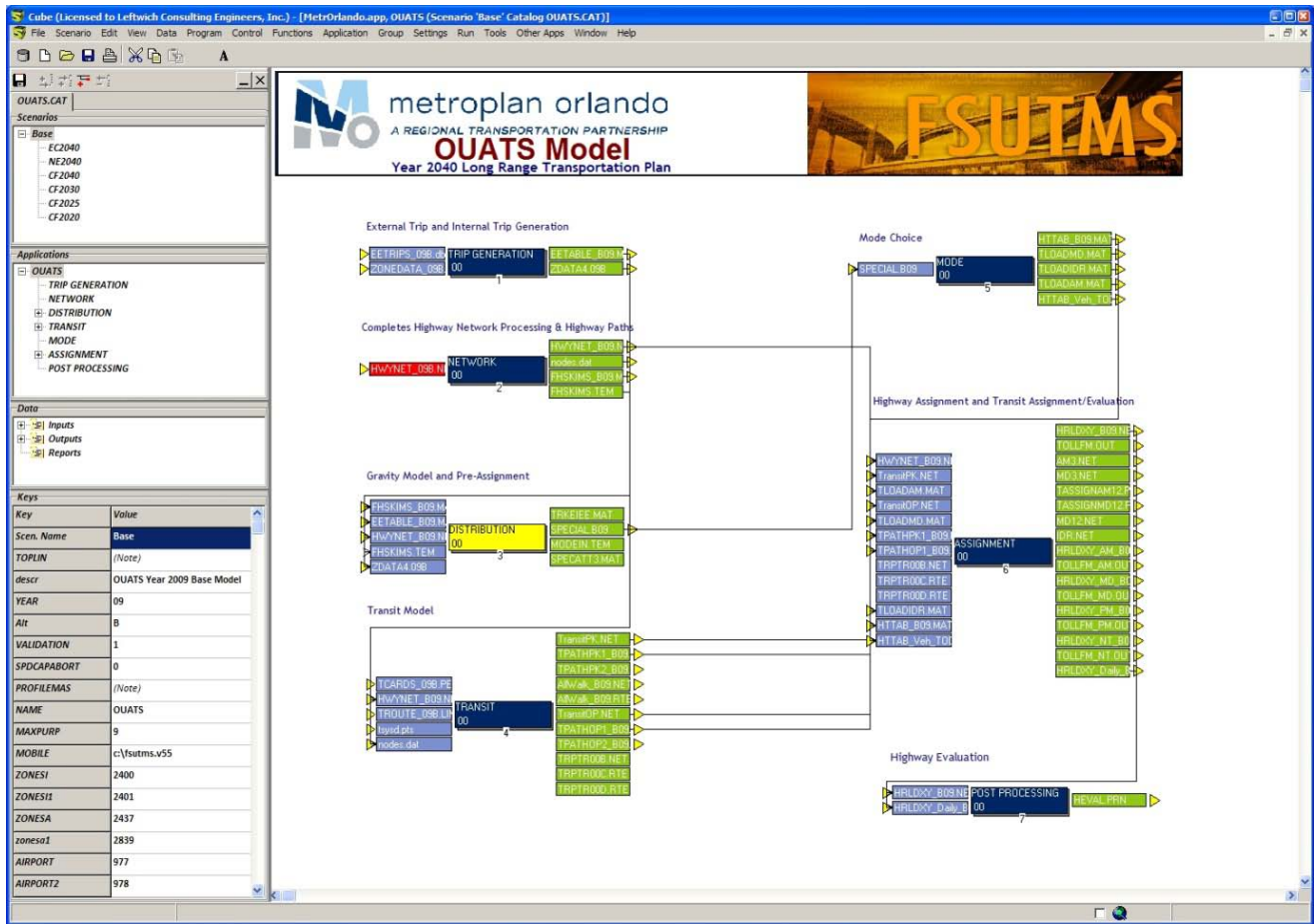
Each application has one, or in some cases two, additional application levels.

2.0 External Trip Model

The Year 2009 OUATS model is based on the latest land use data approved by MetroPlan Orlando, updates to the year 2004 highway and transit networks, and toll data for the region’s expressways and Turnpike. This model also includes all of the survey information from the Florida Department of Transportation’s (FDOT) Non-Residential Travel Survey data as well as information from the year 2000 Census.

This section describes the external trip models and the development of the external trips. This model is unique in that there are several trip types at each external station to the model. The OUATS model includes eighteen (18) separate trip purposes at these stations.

Figure 3: Model Flow Chart



Vehicles are broken down into Low or High occupant vehicles that are External-Internal (EI) or External-External (EE) trips. Light and Heavy Trucks are split into EI and EE trips. Major trip generators (Orlando International Airport, Orange County Convention Center, Universal Orlando, Sea World, and Walt Disney World) that have shown an influence on external trips have also been separated from the standard EI and EE trips and split into LOV/HOV. Table 1 describes these external station based trips.

TABLE 1: EXTERNAL STATION TRIP PURPOSES

Auto - External-to-Internal (EI) - Low Occupancy Vehicle (LOV)
Auto - External-to-Internal (EI) - High Occupancy Vehicle (HOV)
Auto - External-to-External (EE) - Low Occupancy Vehicle (LOV)
Auto - External-to-External (EE) - High Occupancy Vehicle (HOV)
Light Truck - External-to-Internal (EI)
Light Truck - External-to-External (EE)
Heavy Truck - External-to-Internal (EI)
Heavy Truck - External-to-External (EE)
Airport - External-to-Internal (EI) - Low Occupancy Vehicle (LOV)
Airport - External-to-Internal (EI) - High Occupancy Vehicle (HOV)
Convention Center - External-to-Internal (EI) - Low Occupancy Vehicle (LOV)
Convention Center - External-to-Internal (EI) - High Occupancy Vehicle (HOV)
Universal Orlando - External-to-Internal (EI) - Low Occupancy Vehicle (LOV)
Universal Orlando - External-to-Internal (EI) - High Occupancy Vehicle (HOV)
Sea World - External-to-Internal (EI) - Low Occupancy Vehicle (LOV)
Sea World - External-to-Internal (EI) - High Occupancy Vehicle (HOV)
Walt Disney World - External-to-Internal (EI) - Low Occupancy Vehicle (LOV)
Walt Disney World - External-to-Internal (EI) - High Occupancy Vehicle (HOV)

Notes: LOV for this model represents Drive-Alone (1).
HOV for this model represents Driver plus one or more passengers (2+).

The trips for each external station were derived from vehicle classification counts and surveys taken by FDOT. The results of the surveys refined the external trip travel for this model. The 2009 OUATS model contains thirty seven (37) external stations. Table 2 describes these locations and Figure 4 shows the location of the external stations.

The available Florida Department of Transportation (FDOT) year 2009 traffic counts at corresponding OUATS external station locations served as the basis for the development of the external trip totals (EE plus EI trips) at each of the model’s external station TAZs. If FDOT District 5 counts were not available, then counts from surrounding FDOT Districts

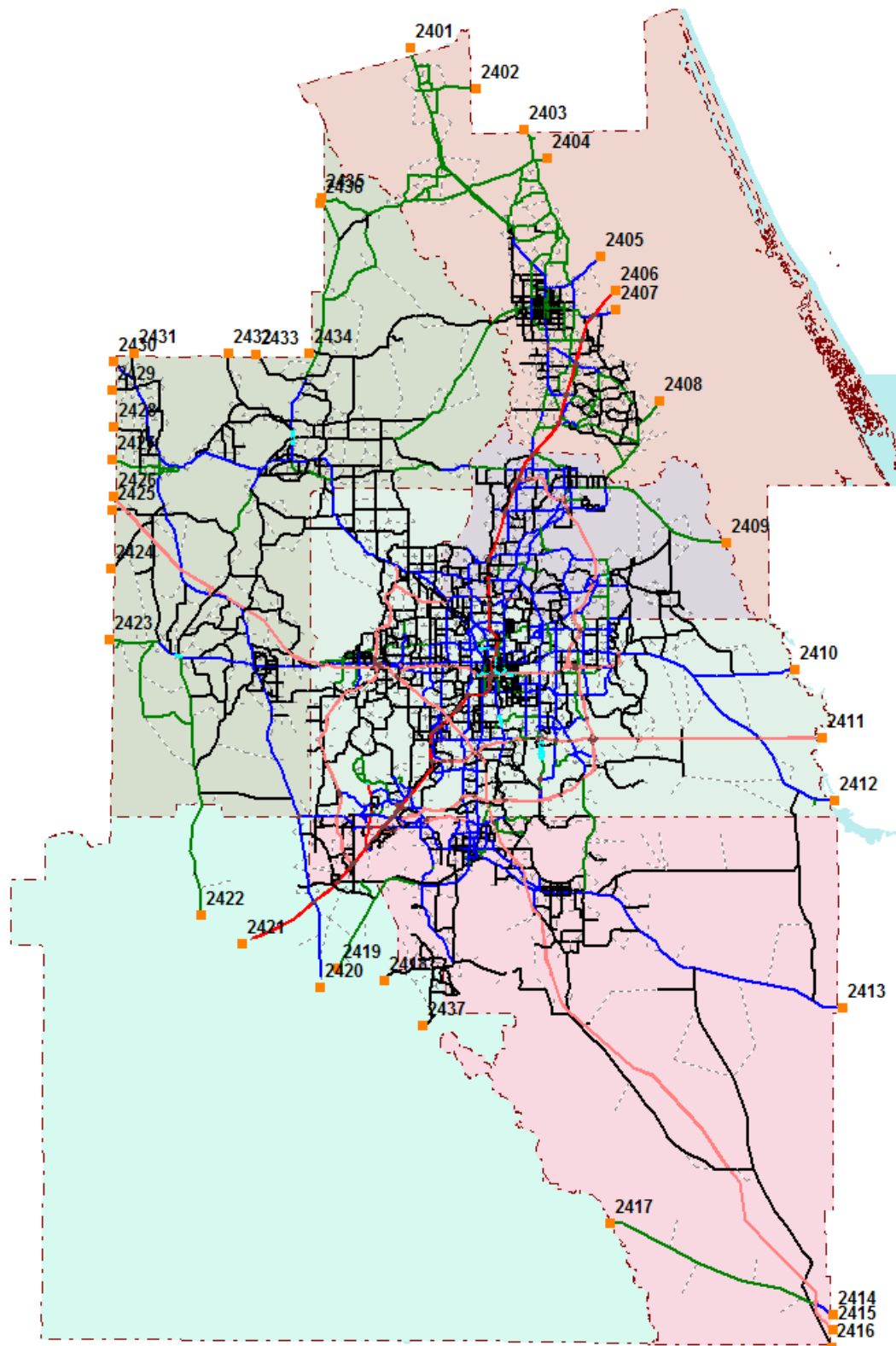
were used. If FDOT counts were still not available, then counts available from county agencies were used. The counts were converted to Peak Season Weekday Average Daily Traffic (PSWADT) either by applying the Model Output Conversion Factors (MOCF) or Peak Season Conversion Factors (PSCF) to Annual Average Daily (AADT) counts and Average Daily Traffic (ADT) counts, respectively. The survey study data at the external stations was used to accurately proportion the amount of EE and EI trips to each external station of the model.

TABLE 2: EXTERNAL STATION NUMBERS AND LOCATIONS

External Station TAZ No.	Roadway and Location	External Station TAZ No.	Roadway and Location
2401	U.S. 17 @ Putnam County Line	2420	U.S. 27 @ Polk Study Boundary
2402	C.R. 305 @ Flagler County Line	2421	I-4 West of S.R. 557
2403	S.R. 11 @ Flagler County Line	2422	S.R. 33 North of S.R. 559
2404	S.R. 40 @ W Volusia Study Boundary	2423	S.R. 50 @ Sumter County Line
2405	U.S. 92 @ W Volusia Study Boundary	2424	C.R. 48 @ Sumter County Line
2406	I-4 @ W Volusia Study Boundary	2425	C.R. 470 @ Sumter County Line
2407	S.R. 44 @ W Volusia Study Boundary	2426	S.R. 91 @ Sumter County Line
2408	S.R. 415 @ W Volusia Study Boundary	2427	S.R. 44 @ Sumter County Line
2409	S.R. 46 @ Volusia County Line	2428	C.R. 466A @ Sumter County Line
2410	S.R. 50 @ Brevard County Line	2429	C.R. 466 @ Sumter County Line
2411	S.R. 528 @ Brevard County Line	2430	U.S. 27 @ Marion County Line
2412	S.R. 520 @ Brevard County Line	2431	C.R. 25 @ Marion County Line
2413	U.S. 192 @ Brevard County Line	2432	C.R. 452 @ Marion County Line
2414	S.R. 60 @ Indian River County Line	2433	C.R. 450 @ Marion County Line
2415	S.R. 91 @ Indian River County Line	2434	C.R. 42 @ Marion County Line
2416	U.S. 441 @ Okeechobee County Line	2435	S.R. 19 @ Marion County Line
2417	S.R. 60 @ Polk County Line	2436	S.R. 40 @ Marion County Line
2418	C.R. 580 @ Polk Study Boundary	2437	Poinciana Parkway @ Polk Study Boundary
2419	U.S. 17-92 @ Polk Study Boundary		

Note: TAZ = Traffic Analysis Zone.

FIGURE 4: EXTERNAL STATION LOCATIONS



2.1 External Trip Development

In the Year 2009 OUATS model, most of the external trips are developed within the DISTRIBUTION application with the exception of the External-External trips which are processed first in the TRIP GENERATION application using the EETRIPS_09b.dbf input file.

2.1.1 Auto External Trips

Auto (no-trucks) external trips are broken down into high occupancy vehicle (HOV), and low occupancy vehicle (LOV). This break down is accomplished with the use of the EXTHOV.dbf file (in the Parameters folder) which applies the percentage of HOV trips to the auto trip table. These trips are then subtracted from the total auto external trips to obtain the LOV trips. This is done for both the EE and the EI trips.

2.1.2 Truck External Trips

Truck trips at the external stations are initially determined through classification counts at the external stations to the model. These counts provide the information for breaking out light and heavy trucks. After this, these trucks are further divided by EE and EI trips based on the percentage splits of EE and EI at each external station. The result is four (4) external trip purposes at each external station. These are Light Trucks EE, Light Trucks EI, Heavy Trucks EE, and Heavy Trucks EI. A file called TRUCK.dbf (located in the Parameters folder) is used to break down these truck trips for the external stations. The file is first used to create four (4) external trip tables for the trucks, two (2) for EE and two (2) for EI. Then the file is used to develop, from the four (4) trip tables, a breakdown of Light and Heavy trucks.

2.1.3 Special Attraction External Trips

The 2009 OUATS model also includes a refined external trip model for the special attractions. This is accomplished by using the data from FDOT's non-resident travel survey done for specific special attractions in the Central Florida area. These surveys included information for determining LOV (drive alone) and HOV (driver plus one or more passengers) trips at each external station from these special attractions. The special attractions used in the OUATS model are as follows:

- Orlando International Airport (OIA)
- Orange County Convention Center (OCCC).
- Universal Orlando (UNI). Universal theme parks include Universal Studios Florida and Islands of Adventure.
- Sea World (SEAW)+
- Walt Disney World (DIS). Disney theme parks include Magic Kingdom, EPCOT Center, Disney's Hollywood Studios, Animal Kingdom, Pleasure Island/Downtown Disney, Blizzard Beach, and Typhoon Lagoon.

2.2 External Trip Summary

After all of these external trip purposes are developed, they are converted to vehicle trips by use of auto occupancy factors, and are then combined into a special external trip table containing all of these trip purposes. For a complete breakdown, by purpose, of the external trips, both EE and EI, for the year 2009 OUATS travel demand forecasting model see Appendix Tables A-1 and A-2.

The resulting trip tables for EE and EI trips get stored into two (2) files. For the EE trips, a matrix file called EETABLE_b09.mat (placed in the Scenario\Output folder) is created. A file called SPECIAL.b09 (placed in the Applications folder) contains all of the EI trip purposes combined into LOV and HOV.

3.0 TRIP GENERATION MODEL

The Year 2009 OUATS model is based on the latest land use data approved by MetroPlan Orlando, updates to the year 2004 highway and transit networks, and toll data for the region's expressways and Turnpike. This model includes all the survey information from the Florida Department of Transportation's (FDOT) Non-Residential Travel Survey data, as well as information from the year 2000 U.S. Census.

This section describes the trip generation model and the development of the internal trips. The OUATS Trip Generation Model includes the ability to vary the production and attraction rates by county. Trip interchanges within and between counties are regulated, to some extent, by the use of an input file (CTPP.dbf located in the Parameters folder) which contains inter-county and intra-county trips (Home-based Work) as determined by the Journey-to-Work (JTW) survey completed as part of the 2000 Census Transportation Planning Package (CTPP). The CTPP is a set of special tabulations from the decennial Census designed for transportation planners. CTPP contains tabulations by place of residence; place of work, and for flows between home and work.

3.1 Trip Generation Model Overview

In the Year 2009 OUATS model, the internal trips are developed within the TRIP GENERATION application. The trip generation application is the first step in the OUATS model flow chart (previously shown in Figure 3), and develops the productions and attractions, which are utilized in the trip distribution (DISTRIBUTION) application in the model chain.

Trip generation estimates the total number of trips made during an average day in the peak season using traffic analysis zone (TAZ) socio-economic (SE) characteristics. The year 2009 SE data has been divided into the three (3) income level groups (High, Medium, and Low) and the data is contained in a file called ZONEDATA_09b.dbf (in the Scenario\Input folder). Please refer to Appendix Tables B-1 through B-6. The definition of zone data variables is provided in Appendix B, as well.

Each trip has two (2) trip-ends, with trip productions being the home-end of the trip and trip attractions the non-home-end of the trip. This process is reversed for the special attraction trips. These trips have their productions at the special attractions, and the attraction side of the equation is the housing, hotels, and external stations. Trips that neither begin nor end at home are considered non-home based trips.

Productions and attractions are defined by trip purposes. The previously used GENOUATS.exe program (written in FORTRAN) was replaced with a Voyager script based program. This was implemented as part of the 2030 LRTP model development and corresponding Year 2004 model validation. The generation model produces the following seven (7) trip purposes with variable production and attraction rates for each county:

1. Home Based Work (HBW)
2. Home Based Shopping (HBSH)
3. Home Based Social Recreation (HBSR)
4. Home Based Other (HBO)
5. Non-Home Based (NHB)
6. Truck and Taxi (TT)
7. Internal to External (IE)

Based on the efforts prepared as part of the Year 2004 model validation, the trip generation model procedure is run three (3) additional times for High, Medium, and Low income groups. In addition, a separate Truck/Taxi program calculates trucks and resultant taxi trips. This program (TRKTAXI2.exe in the User.prg folder), updates the production and attraction files from the trip generation program and produces revised production and attraction files. The output result is nine (9) trip purposes after the trucks and taxis have been separated. The following trip purposes are created for total (all) and for high (HI), Medium (ME), and Low (LO) income groups.

1. Home Based Work (HBW)
2. Home Based Shopping (HBSH)
3. Home Based Social Recreation (HBSR)
4. Home Based Other (HBO)
5. Non-Home Based (HNB)
6. Light Truck (LT)
7. Heavy Truck (HT)
8. Taxi
9. Internal to External (IE)

The process flow for the trip generation application is shown in Figure 5. The truck generation program is described in detail in Section 3.3.0 of this technical report.

In addition to these nine (9) trip purposes, the 2009 OUATS model, with the special attraction trip purposes, includes fifteen (15) additional trip purposes to simulate travel to and from the Orlando International Airport, the Orange County Convention Center, Universal Studios theme parks, Sea World, and the Walt Disney World theme parks.

The previously used executable program SPECAT15.exe has been replaced with a CUBE/Voyager script, as detailed in Section 3.2.0 of this technical report. These additional trip purposes are as follows:

1. Orlando International Airport (Tourist)
2. Orlando International Airport (Resident)
3. Orlando International Airport (EI)
4. Orange County Convention Center (Tourist)
5. Orange County Convention Center (Resident)
6. Orange County Convention Center (EI)
7. Universal Studios (Tourist)
8. Universal Studios (Resident)
9. Universal Studios (EI)
10. Sea World (Tourist)
11. Sea World (Resident)
12. Sea World (EI)
13. Walt Disney World (Tourist)
14. Walt Disney World (Resident)
15. Walt Disney World (EI)

3.2 Trip Generation Model Input Data and Parameters

This section describes the input data used for the Trip Generation Model, as well as, the input parameters used in this OUATS model validation effort. It also summarizes the input socioeconomic data, and the second section shows the input parameters and variables.

3.2.1 Socio-Economic Data

The socio-economic (SE) data for the 2009 OUATS model validation was developed by Data Transfer Solutions (DTS) in close coordination with MetroPlan Orlando's Land Use subcommittee. This land use data was approved by the Land Use subcommittee, the Citizens Advisory Committee (CAC), the Transportation Technical Committee (TTC), and the MPO Board and it represents the most precise data to date, derived from parcel level data and aggregated into traffic analysis zones (TAZs).

The socioeconomic data summaries for each county, including regional totals, are shown in Tables 3 and 4 for productions variables and attraction variables, respectively. Appendix Figures B-1 through B-6 illustrate the TAZ boundaries applicable to the Year 2040 LRTP Update. Appendix Table B-7 provides the correlation between the previous LRTP TAZ ranges in relation to the 2040 LRTP TAZs, on a county-by-county basis.

TABLE 3: YEAR 2009 PRODUCTION VARIABLES SUMMARY

Variable	County						Model Totals
	Seminole	Orange	Osceola	Lake	Volusia	Polk	
SINGLE FAMILY							
Total DUs	113,980	299,681	92,597	130,852	78,057	29,342	744,509
Occupied DUs	106,620	283,163	78,162	113,618	73,093	22,899	677,555
Population	306,492	794,966	229,778	273,838	187,632	56,310	1,849,016
Autos	216,676	547,582	148,740	201,870	136,151	40,688	1,291,707
MULTI FAMILY							
Total DUs	67,327	167,350	31,843	18,736	9,099	9,692	304,047
Occupied DUs	58,284	150,302	25,213	15,664	8,139	7,077	264,679
Population	113,073	328,005	58,860	39,537	15,496	14,127	569,098
Autos	95,978	225,333	39,338	21,834	10,555	12,495	405,533
TOTALS							
Total DUs	181,307	467,031	124,440	149,588	87,156	39,034	1,048,556
Occupied DUs	164,904	433,465	103,375	129,282	81,232	29,976	942,234
Population	419,565	1,122,971	288,638	313,375	203,128	70,437	2,418,114
Autos	312,654	772,915	188,078	223,704	146,706	53,183	1,697,240
HOTEL/MOTEL							
Units	3,677	89,833	33,133	2,979	1,102	3,276	134,000
Occupied Units	2,705	105,642	38,980	3,649	1,352	3,372	155,699
Occupants	5,520	215,598	79,551	7,448	2,759	6,881	317,757

Notes: DUs denote Dwelling Units.

Data reflects only the western portion of Volusia County and the northeastern part of Polk County.

TABLE 4: YEAR 2009 ATTRACTION VARIABLES SUMMARY

Variable	County						Model Totals
	Seminole	Orange	Osceola	Lake	Volusia	Polk	
SINGLE FAMILY							
Industrial Employment	26,124	71,909	7,018	16,381	8,713	1,538	131,683
Commercial Employment	53,737	207,901	27,031	25,784	14,425	2,841	331,719
Service Employment	145,398	534,074	54,308	73,036	39,329	4,759	850,904
Employment Totals	225,259	813,884	88,357	115,201	62,467	9,138	1,314,306
School Enrollment	93,447	335,702	66,859	53,064	39,258	4,978	593,308

Note: Data reflects only the Western portion of Volusia County and the Northeastern part of Polk County.

In addition to the SE (production and attraction variables), a special generator file (SPECGEN_09B.DBF in the Scenario\Input folder) was used. Special generators are major land use activity centers that have unique trip generation characteristics that cannot be accurately emulated using the trip rate tables or trip attraction formulas. The data included in the special generator file used in the 2009 OUATS model validation is shown in Table 5.

TABLE 5: YEAR 2009 SPECIAL GENERATORS

TAZ No.	Description of Special Generator	P/A	No. of Trips	% HBW	% HBSH	% HBSR	% HBO	% NHB
499	University of Central Florida	A+	86,000	0	0	0	0	100
630	Valencia Community College East	A+	28,700	0	0	0	0	100

Note: P/A refers to the production (P) or attraction (A) and is either added (+) or subtracted (-) to or from the corresponding trip purpose (HBW, HBSH, HBSR, HBO, and NHB) total in that zone by the percentage of the designated purpose.

3.2.2 Special Attractions Socioeconomic Data

The special attractions are no longer run as their own trip generation program, previously SPECAT15.exe which used the input file SPECAT15_09b.dat. The updated OUATS model setup includes script enhancements instead, which rely on SPECATR1_09b.dbf and SPECATR2_09b.dbf files stored in the Scenario\Input folder (see Appendix C-8 for printouts). The updated procedure creates production files, PRODSP1.b09 (text) and PRODSP1_B09.dbf, and attraction files ATTRSP1.b09 (text) and ATTRSP1_b09.dbf. The summary for the trip attraction files are shown in Table 6.

**TABLE 6: YEAR 2009 SPECIAL ATTRACTION
TRIP GENERATION ATTRACTIONS SUMMARY**

Trip Purpose	Attraction Totals
Orlando International Airport	105,270
Orange County Convention Center	29,150
Orange County Convention Center Expansion	29,150
Universal Orlando	65,850
Sea World	37,420
Typhoon Lagoon	8,800
Pleasure Island / Downtown Disney	10,000
MGM Studios	43,500
Animal Kingdom	40,614
EPCOT Center	42,788
Blizzard Beach	9,780
Magic Kingdom	75,280

Table 7 shows the trip production summary of the trip generation process for the special attractions based on the latest attraction survey.

3.2.3 Input Variables and Parameters

This version of the OUATS model validation includes a variable trip rate, trip generation model. This program was developed specifically for the Orlando region in Voyager scripting language and allows greater flexibility for applying different trip rates to different counties based on their unique travel pattern characteristics. To validate this procedure, a target “trip table” was developed from the Center for Urban Transportation Research (CUTR) Journey-to-Work data as well as the Census Transportation Planning Package (CTPP). The Journey-to-Work data files were compiled from STF-S-5, Census of Population 1990: Number of Workers by County of Residence by County of Work. A table was created to show the county-to-county work flows using the counties in the OUATS model area. Since these work flow numbers were from the 1990 Census, they were expanded to the year 2000 based on the population from the year 2000 Census. Table 8 shows the CTPP.dbf (in the \Parameters folder) file values for year 2000 Journey-to-Work numbers. These values are used by the trip generation program as intra-county and inter-county control totals.

**TABLE 7: YEAR 2009 SPECIAL ATTRACTION
TRIP GENERATION PRODUCTIONS SUMMARY**

TAZ	Special Attraction	Trip Purpose	Person
977	Orlando International Airport	Tourist	72,426
		Resident	20,907
		External-to-Internal	11,938
928	Orange County Convention Center	Tourist	10,121
		Resident	8,634
		External-to-Internal	10,345
930	Orange County Convention Center Expansion	Tourist	10,121
		Resident	8,634
		External-to-Internal	10,345
801	Universal Orlando	Tourist	71,945
		Resident	11,751
		External-to-Internal	12,154
931	Sea World	Tourist	23,313
		Resident	7,439
		External-to-Internal	6,668
908	Typhoon Lagoon	Tourist	7,145
		Resident	886
		External-to-Internal	769
902	Pleasure Island / Downtown Disney	Tourist	6,770
		Resident	2,558
		External-to-Internal	672
905	MGM Studios	Tourist	40,381
		Resident	1,840
		External-to-Internal	1,279
900	Animal Kingdom	Tourist	36,420
		Resident	2,012
		External-to-Internal	2,138
903	EPCOT Center	Tourist	38,620
		Resident	1,985
		External-to-Internal	2,182
899	Blizzard Beach	Tourist	8,208
		Resident	4,747
		External-to-Internal	825
897	Magic Kingdom	Tourist	68,339
		Resident	3,960
		External-to-Internal	2,981

TABLE 8: YEAR 2000 CTPP JOURNEY-TO-WORK TRIPS

County (Origin/Destination)	Seminole	Orange	Osceola	Lake	Volusia*	Polk*	Other	Totals
Seminole	127,110	113,990	1,876	1,160	1,928	189	6,998	253,251
Orange	36,599	512,554	10,456	2,734	1,083	688	12,557	576,671
Osceola	1,087	31,472	42,325	101	40	436	2,051	77,512
Lake	2,243	13,748	660	65,487	1,811	201	3,623	87,773
Volusia*	13,927	10,841	237	568	34,430	61	2,010	62,074
Polk*	57	2,214	1,162	92	0	604	0	4,129
Other	5,510	30,285	5,366	8,741	6,382	0	0	56,284
Totals	186,532	715,104	62,082	78,884	45,673	2,181	27,239	1,117,695

Notes: (1) = Journey-to-Work (JTW) from year 2000 CTPP.

* = Only the west side of Volusia County and a small northeast portion of Polk County.

Since the Census information only dealt with the Home-Based Work Trip (HBW), the factors that were applied to Home-Based Work were also applied to Home-Based Shopping (HBSH), Home-Based Social-Recreation (HBSR), Home-Based Other (HBO), and the Non-Home-Based (NHB), trip purposes to maintain the inter-county relationships. The input parameter files needed for this variable trip production and attraction rate model are the GENRATES_P.dbf (productions rates) and GENRATES_A.dbf (attraction rates). Both files need to be located in the Parameters folder. The Voyager scripting uses the two (2) files to develop seven (7) text files that are used by the MODE CHOICE program (in FORTRAN) in later steps. The seven (7) files created (in the Applications folder) are named:

1. GRATESE.SYN (for Seminole County)
2. GRATEOR.SYN (for Orange County)
3. GRATEOS.SYN (for Osceola County)
4. GRATELA.SYN (for Lake County)
5. GRATEVO.SYN (for Volusia County)
6. GRATEPO.SYN (for Polk County)
7. GRATES.SYN

The OUATS Trip Generation Model also uses a dwelling unit occupancy distribution input file (DUWEIGHTS.dbf located in the Parameters folder) which is used to disaggregate the dwelling unit distribution based on household occupancy rates and persons-per-household. This file is summarized as shown in Appendix Table C-1.

The final validated production and attraction rates for each county are provided in Appendix Tables C-2 through C-7.

3.3 Truck Generation Program

The truck trip generation program used in this model validation, as in the year 2004 model validation efforts, is based on procedures developed for the Greater Vancouver (British Columbia, Canada) Regional District (GVRD) truck model. That model was developed to estimate 24-hour light and heavy truck travel demand for current and future years. Light trucks are classified as having a gross vehicle weight (GVW) of 4,500-20,000 kilograms (kg). Trucks over 20,000 kg are classified as heavy trucks. The Federal Highway Association (FHWA) vehicle classification types 5 through 7 represent light trucks and 8 through 13 represent heavy trucks. Each weight class has different trip generation and distribution characteristics as described below.

The trip generation for this process estimates the number of truck trips produced and attracted by each traffic zone based on population, wholesale, manufacturing, and non-wholesale employment for that zone. The trip generation equations for light and heavy trucks are as follows:

*Light Truck (Productions/Attractions) = (0.018 * Total Population) + (0.528 * Commercial Employment) + (0.0373 * Industrial and Service Employment)*

*Heavy Truck (Productions/Attractions) = (0.287 * Commercial Employment) + (0.116 * Industrial Employment)*

3.4 Special Attractions Program

An improved process was developed for the year 2000 OUATS model validation effort for special attractions. The additional purposes provided a better model validation, as well as the capability to analyze trips separately going to and from the airport as well as the major area theme parks. This program was revised and updated during the 2000 modeling effort to include additional attractions and to include a detailed external station analysis. This information was derived from the non-resident surveys conducted by FDOT. The revised program (SPECAT15.exe) has since been replaced as part of the year 2009 validation effort as mentioned in Section 3.2.2 of this report. The program now uses a set of database input files (SPECATR1_09b.dbf and SPECATR2_09b.dbf) that are processed in the script setup.

3.4.1 Special Trip Generation Methodology

The development of internal productions and attractions for the special trip purposes, Orlando International Airport, Orange County Convention Center, Universal Orlando, Sea World, Typhoon Lagoon, Pleasure Island/Downtown Disney, Disney/MGM Studios, Animal Kingdom, EPCOT Center, Blizzard Beach, and the Magic Kingdom, are now included in the Model's script and uses the input files, SPECATR1_09b.dbf and SPECATR2_09b.dbf (located in Scenario\input folder) that is part of the DISTRIBUTION application. The file is also used for the development of EI trips for the special attractions.

3.4.2 Special Attractions Program Summary

The output of the special attractions trip generation process is the development of the person trip production file PRODSP1_b09.dbf and the person trip attraction file ATTRSP1_b09.dbf. Both files contain fifteen (15) trip purposes. These trip purposes are shown in Table 9 and the results of this program have been shown previously in Tables 6 and 7.

TABLE 9: SPECIAL ATTRACTIONS PRODUCTIONS AND ATTRACTIONS TRIP PURPOSES

PRODSP1 & ATTRSP1 Trip Purpose
Orlando International Airport - Tourist
Orlando International Airport - Resident
Orlando International Airport - EI
Orange County Convention Center - Tourist
Orange County Convention Center - Resident
Orange County Convention Center - EI
Universal Orlando - Tourist
Universal Orlando - Resident
Universal Orlando - EI
Sea World - Tourist
Sea World - Resident
Sea World - EI
Disney - Tourist
Disney - Resident
Disney - EI

3.5 Trip Generation Results

After the trip generation program and truck trip generation program (TRKTAXI2.exe) is run, a nine (9) purpose attractions file (ATTRS_T.dbf) and a nine (9) purpose productions file (PRODS_T.dbf) are produced which are used as input to the TRIP DISTRIBUTION application. The process is repeated three (3) times for the High (ATTRSA_T.dbf and PRODSA_T.dbf), Medium (ATTRSB_T.dbf and PRODSB_T.dbf), and Low (ATTRSC_T.dbf and PRODSC_T.dbf) data variables from the ZONEDATA_09b.dbf.

Table 10 shows the resultant productions and attractions, summarized by county and totaled for the region, which are output from the TRIP GENERATION application. In addition, various Trip Generation statistics are included and are shown in Table 11.

TABLE 10: YEAR 2009 TRIP GENERATION MODEL OUTPUT

County	HBW	HBSH	HBSR	HBO	NHB	LIGHT TRK	HEAVY TRK	TAXI	EI
PRODUCTIONS									
Seminole	141,178	114,341	72,598	236,452	403,128	44,734	18,455	85,895	N/A
Orange	395,098	386,305	307,018	745,352	1,742,275	161,896	68,009	269,214	N/A
Osceola	180,343	186,809	157,251	368,895	278,535	22,968	8,568	80,943	N/A
Lake	103,441	87,399	58,243	174,554	215,933	23,582	9,298	62,107	N/A
Volusia	75,544	61,668	39,996	129,084	119,297	13,705	5,157	34,978	N/A
Polk	14,271	12,457	8,735	23,545	11,632	3,129	995	3,040	N/A
Externals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	393,471
Totals	909,875	848,979	643,841	1,677,882	2,770,800	270,014	110,482	536,177	393,471
% (1)	11.15%	10.40%	7.89%	20.56%	33.95%	3.31%	1.35%	6.57%	4.82%
ATTRACTIONS									
Seminole	151,371	132,894	104,842	267,995	403,128	44,734	18,455	85,895	30,916
Orange	546,930	513,297	366,090	960,556	1,742,275	161,896	68,009	269,214	93,841
Osceola	89,406	100,163	74,589	208,287	278,535	22,968	8,568	80,943	43,700
Lake	77,408	63,762	60,707	145,477	215,933	23,582	9,298	62,107	106,941
Volusia	41,977	35,657	18,812	84,128	119,297	13,705	5,157	34,978	84,140
Polk	2,788	3,179	3,797	7,069	11,632	3,129	995	3,040	33,949
Externals	-	-	-	-	-	-	-	-	-
Totals	909,880	848,952	643,837	1,677,912	2,770,800	270,014	110,482	536,177	393,487
% (2)	11.15%	10.40%	7.89%	20.56%	33.95%	3.31%	1.35%	6.57%	4.82%

TABLE 11: YEAR 2009 TRIP GENERATION STATISTICS

Statistics	County						Model Totals
	Seminole	Orange	Osceola	Lake	Volusia	Polk	
Total Permanent Population	419,565	1,122,971	288,638	304,376	203,128	70,437	2,409,115
Total Population (Permanent + Transient)	428,534	1,363,346	408,497	335,216	211,952	87,917	2,835,463
Total Permanently Occupied Dwelling Units	164,905	433,467	103,375	129,282	81,232	29,977	942,238
Total Occupied (Permanent + Transient) Dwelling	170,170	532,169	150,386	142,650	84,798	38,086	1,118,259
Total Employment	225,259	813,884	88,357	115,201	62,467	9,138	1,314,306
Total Service Employment	145,398	534,074	54,308	73,036	39,329	4,759	850,904
Permanent Population per Permanently Occupied	2.54	2.59	2.79	2.35	2.50	2.35	2.56
Total Population per Total Occupied dwelling Unit	2.52	2.56	2.72	2.35	2.50	2.31	2.54
Total Service Employment per Total Population	0.65	0.66	0.61	0.63	0.63	0.52	0.65
Total Home-Based Productions (Person Trip Ends)	564,569	1,833,773	893,298	423,637	306,292	59,008	4,080,577
Total Home-Based Attractions (Person Trip Ends)	657,102	2,386,873	472,445	348,354	199,974	16,833	4,081,581
Total Productions	1,114,446	4,061,472	1,284,020	733,990	477,726	77,540	7,749,194
Total Attractions	1,237,895	4,708,413	906,867	764,648	455,548	69,314	8,142,685
Total Trips per Permanently Occupied Dwelling Units	6.76	9.37	12.42	5.68	5.88	2.59	8.22
Total Trips per Total Occupied Dwelling Unit	6.55	7.16	6.54	5.15	5.62	2.81	6.68

Note: Volusia and Polk Counties are based on partial data for area in the model.

4.0 TRIP DISTRIBUTION MODEL

This section describes the gravity model and input data used for the OUATS year 2009 Trip Distribution model. This Trip Distribution model creates person trips, runs a default mode split model, and then runs an initial highway assignment to obtain restrained highway skim times for the transit network. This section describes the gravity model's methodology and operation, as well as the input variables and parameters used.

4.1 Trip Distribution Model Overview

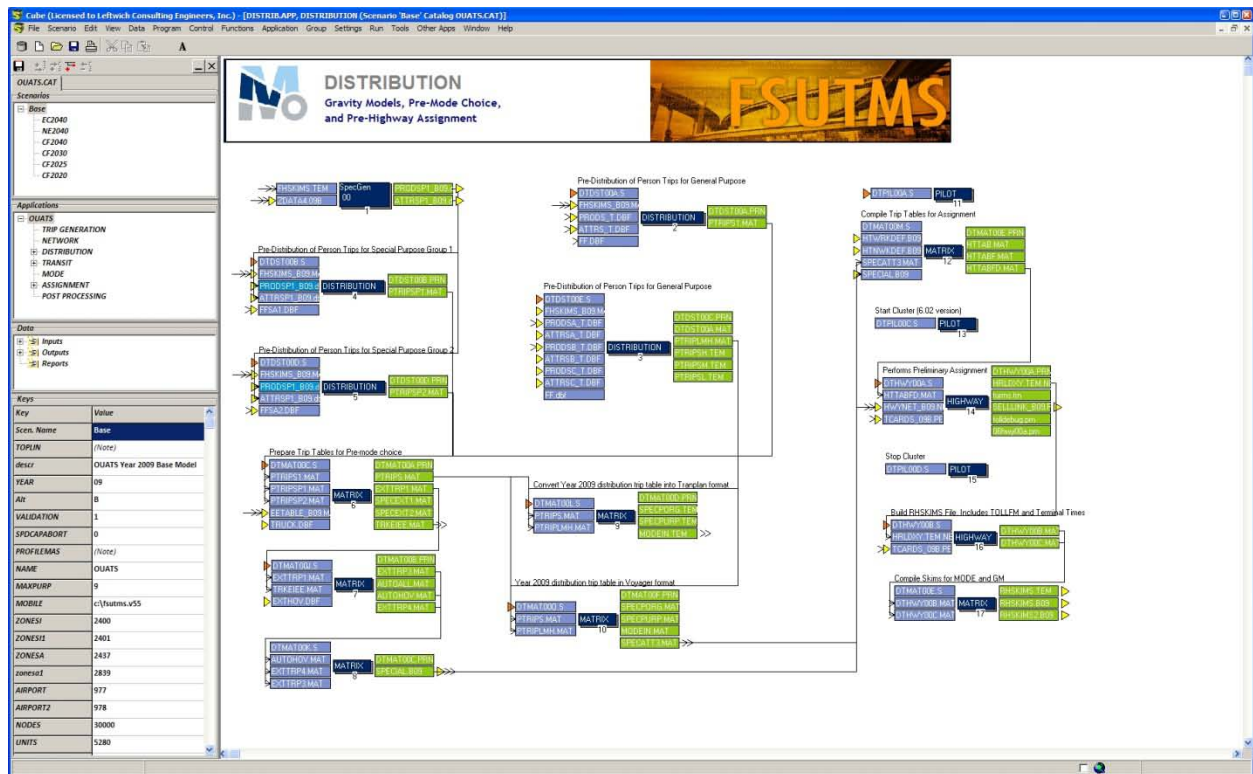
The trip distribution step is the third application in the OUATS model chain (refer to Figure 3) and develops the person trip tables, which are used throughout the rest of the model chain. Trip distribution estimates the flow of traffic between all trip origins and destinations at the traffic analysis zone level.

The distribution model uses this information:

- The number of productions and attractions for each internal and external zone;
- Travel impedances, such as travel time, terminal time, and travel cost, and;
- Trip length frequencies (reflected in friction factors).

FSUTMS uses a gravity model formulation (based on Sir Isaac Newton's Law of Gravity) for the distribution of trips by purpose. Trips are distributed between zones based on the number of productions and attractions generated at each zone and the travel impedances between the zones. A more detailed illustration of the TRIP DISTRIBUTION application's inputs and outputs is shown in Figure 6.

FIGURE 6: TRIP DISTRIBUTION FLOW CHART



4.2 Gravity Model Methodology and Operation

The crucial part of this application is the gravity model. The gravity model accepts zonal trip end productions and attractions stratified by class of trip (purpose, geography, time of day, etc.), travel impedance factors, zone-to-zone travel indices, and generates a zone-to-zone trip table (matrix) file from the Gravity Model distribution formula. The model also checks the acceptability of computed attractions, and if necessary, adjusts the calculated attractions to each zone to equal the sum of the input productions for the area. The Gravity Model originally paralleled Newton's gravitational law. The premise is that all trips starting from a given zone are attracted by various traffic generators in other zones and that this attraction is directly proportional to the relative attraction of the zone and inversely proportional to the separation between the zones in the gravity model.

The measure of separation is generally accepted as the zone-to-zone travel time via the specified transportation network. However, because people as social beings do not order their lives according to exact physical laws, an adjustment was necessary to modify the gravitational concept to fit the travel characteristics of the urban area being studied.

The classical gravitational formula is:

$$f = \frac{m_1 * m_2}{d^2} g$$

where:

f = force

m1, m2 = mass of bodies

d = distance separating 1 and 2

g = gravitational constant

The classical gravitational formula has been restructured for computer use as follows:

- First, the separation is generalized to allow inclusion of any travel index. In FSUTMS, time, distance, cost, or a combination of them may be used. In the OUATS model, time is selected as the indicator of separation.
- Second, the effect of separation for each minute time increment is represented by a table of "friction factors"; this replaces the squared quantity in the denominator. The travel separation function is then more easily represented. Friction factors may be input as explicit values by travel time, by purpose, or by a deterrence coefficient in the formulation $F_{(ti)} = e^{-ut}$, where ti is the travel time in minutes and ut is the deterrence coefficient for a particular purpose.
- Third, a modification in the basic gravitational formulation is made to combine all these effects with the constant of proportionality.

The resultant formula has evolved to resemble Bayes' Theorem of conditional probability and is as follows:

$$T_{(ij)} = \frac{P_i A_j F_{t(i,j)} K_{(i,j)}}{\sum_{x=1} A_x F_{t(i,j)} K_{(i,j)}}$$

where:

$T_{(ij)}$ = trips produced in zone i and attracted to zone j

P_i = trips produced in zone i

A_j = trips attracted to zone j

$t_{(i,j)}$ = travel time in minutes between zone i and zone j

$F_{t(i,j)}$ = empirically derived travel time factor that expresses the average area-wide effect of spatial separation on trip interchanged between zones that are $t_{(i,j)}$ apart.

$K_{(i,j)}$ = specific zone-to-zone adjustment factor to allow for the incorporation of the effect on travel patterns of defined social or economic linkages not otherwise accounted for in the gravity model formulation.

Therefore, in the OUATS FSUTMS gravity models, to balance the attractions, the number of iterations and the convergence criteria are specified and the model iterates until either convergence or the number of iterations specified by the user is met. Attraction iterations are based on individual zonal level adjustments.

4.3 Gravity Model Inputs and Variables

There are four (4) essential inputs to the DISTRIBUTION module:

- A zone-to-zone travel impedance matrix (FHSKIMS.ayy and FHSKIMS2.ayy files)
- Terminal times (included in Keys area and in PROFILE.mas file)
- Trip productions (PRODS_T.dbf, and PRODSP1_b09.dbf) and trip attractions (ATTRS_T.dbf and ATTRSP1_b09.dbf)
- Friction factors (FF.dbf, FFSA1.dbf, and FFSA2.dbf)

4.4 Special Trips Development

The additional fifteen (15) purposes in the 2009 OUATS Trip Distribution Model have been updated using the non-residential travel survey conducted by FDOT in 2001. Section 4.4.1 discusses how the special purpose external-to-internal trips (EI) are developed, followed by section 4.4.2 which deals with the internal trips (Tourist and Resident).

4.4.1 Special External Trip Development

The development of external-internal trips for the special trip purposes (Airport, OCCC, Universal, Sea World, and Disney), occurs in both the external trip module (for HOV calculation) and in the trip distribution module, which combines the LOV and HOV special trip purposes into a multi-purpose trip table.

The external trips for the special purposes are developed in the trip distribution module of the FSUTMS model chain. The procedure was originally developed as part of the 2000 model validation effort and is updated as part of the effort for 2009. These external trips were taken directly from attraction surveys conducted by FDOT in 2001. The special attraction files are used to provide the number of person trips for each special attraction (by each traffic analysis zone). The production end is based on the "capacity target" of the special attraction. For example, the number of passenger enplanements per day is used as the restriction for the OIA. The number is then split into production (file PRODSP1_b09.dbf) and attraction (file ATTRSP1_b09.dbf) purposes (tourist, residential, and external-internal) by the percentages

provided in the SPECATR1_09b.dbf and the SPECATR2_09b.dbf files and distributed based on the procedure described previously.

The procedure to develop these trips starts by extracting the external trip tables for the Orlando International Airport (APT EI), the Orange County Convention Center (OCCC-EI), Universal Orlando (UNI-EI), Sea World (SEAW-EI), and Disney World (DIS-EI) from the twenty four (24) purpose person trips file, PTRIPS.mat (purposes 12,15,18,21, and 24 respectively). Auto occupancy factors are then applied to convert to vehicle trips and the vehicle trips from the external trip module (EETABLE_b09.mat) are then added to obtain total vehicle trips from the external stations.

Once the total external number of trips has been determined, the next step is to separate LOV and HOV external trips. An input file (EXTHOV.dbf in the Parameters folder) contains the percentage of external trips (both EI and EE) that are HOV. These trips are then extracted from the total trips at the external stations to develop separate LOV and HOV trip tables for the external stations.

This process also includes the steps to split out the LOV and HOV EE and EI auto trips and the EE and EI light and heavy truck trips. The resultant trip table (SPECIAL.b09) is then used in subsequent highway trip table development for input into the preliminary highway assignment.

4.4.2 Special Internal Trip Development

The internal trips for the special purposes are handled separately from the other trip purposes for their inclusion into the default mode split model in the trip distribution process. These ten (10) trip purposes are extracted and re-ordered so that each pair has the resident sub-purpose first. This allows the usage of the home based other/non-home based logit in the mode choice model. The output matrix located in applications files for inclusion into the mode choice model are SPECORG.mat and SPECPURP.mat (each file is also created in binary format with extension *.tem for the program to read).

During the default modal choice model, two (2) vehicle trip table files are produced for the nine (9) original purposes for the work trip (HTWRKDEF.b09) and for the non-work trip (HTNWKDEF.b09). These two (2) files have both LOV and HOV trip tables. Additionally, the special purpose files (SPECORG.tem and SPECPURP.tem) have auto occupancy factors applied to them for inclusion into the highway trip table for the initial highway assignment to obtain restrained travel times for the transit network. Subsequent processing of these special internal trip purposes develops both LOV and HOV trip tables.

Files are created and then combined to obtain an initial highway trip table (HTTABFD.mat) which has both LOV and HOV trip purposes, for use in the preliminary highway assignment process.

4.5 Trip Distribution Results

One of the output files from the trip distribution module is a person trip (PTRIPS.mat) file which results from the processing of four (4) gravity models. Important statistics, including total person trips, intra-zonal trips, and average trip lengths, are shown in Table 12.

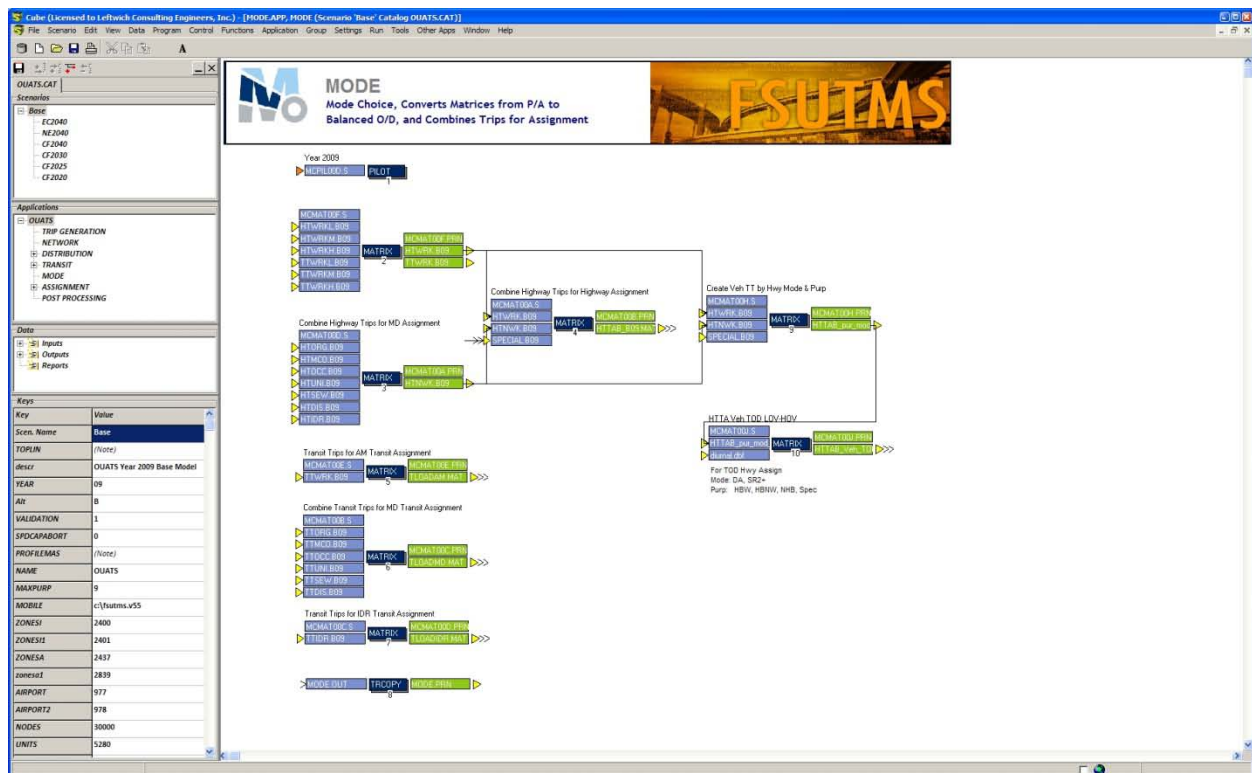
TABLE 12: DAILY TRIP DISTRIBUTION SUMMARY

Trip Purpose	Total Trips	Intrazonal Trips		Average Trip Length (min)
		Trips	% of Total	
STANDARD PURPOSES				
HBW	909,875	26,401	2.9	23.07
HBNW / HBSH	848,979	203,248	23.9	14.86
HBSR	643,841	120,121	18.7	16.54
HBO	1,677,882	388,720	23.2	15.41
HBNW Total	3,170,702	712,089	22.5	N/A
NHB	2,770,800	289,557	10.5	16.31
Subtotals	6,851,377	1,028,047	15.0	N/A
Light Truck	270,014	42,399	15.7	15.52
Heavy Truck	110,482	19,885	18.0	14.70
Taxi	536,177	83,872	15.6	16.69
EI	393,471	N/A	N/A	34.93
SPECIAL PURPOSES				
APT (TOUR)	72,426	210	0.3	28.52
APT (RES)	20,907	0	0.0	36.97
APT (EI)	11,938	0	0.0	49.41
APT Total	105,271	210	0.2	N/A
OCCC (TOUR)	20,242	185	0.9	15.21
OCCC (RES)	17,368	0	0.0	31.16
OCCC (EI)	20,690	0	0.0	53.93
OCCC Total	58,300	185	0.3	N/A
UNI (TOUR)	71,945	1,121	1.6	16.58
UNI (RES)	11,752	0	0.0	28.71
UNI (EI)	12,154	0	0.0	50.73
UNI Total	95,851	1,121	1.2	N/A
SEAW (RES)	7,439	4	0.1	29.55
SEAW Total	37,419	446	1.2	N/A
DIS (TOUR)	209,883	11,139	5.4	19.59
DIS (RES)	13,989	0	0.0	38.88
DIS (EI)	10,845	0	0.0	36.00
DIS Total	230,717	11,139	4.8	N/A
ALL PURPOSES Total	9,216,637	1,200,405	13.0	N/A

and one each for the Orlando International Airport, the Universal Studios theme parks, the Walt Disney World theme parks, the Orange County Convention Center, International Drive, and the Sea World theme park. As before, the HBW trips have been divided into three income markets (high, medium and low).

This section describes the methodologies used and the operation of the 2009 OUATS mode choice model (see Figure 7).

FIGURE 7: MODE FLOW CHART

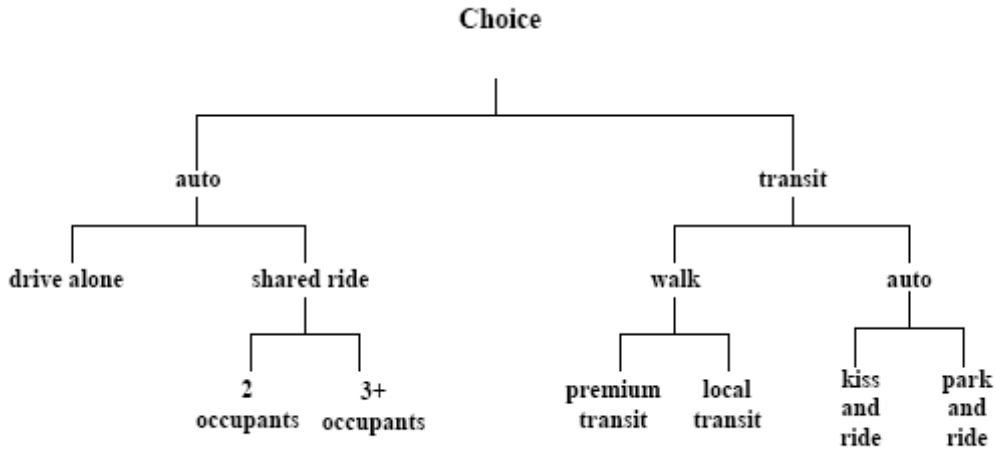


During this process, person trip tables are subdivided by the mode choice model into the following modes:

1. Single-occupant auto (Low Occupant Vehicle, or LOV)
2. Two or more occupant auto (High Occupant Vehicle, or HOV);
3. Local bus
4. Transit (light rail, fixed guideway, express bus, etc.).

The OUATS mode choice model is structured in a nested logit form. The nested structure allows for submodal trade offs to be fairly sensitive to service measures while lessening the impact on other less related sub-modes. This nesting structure is shown in Figure 8.

FIGURE 8: OUATS MODE CHOICE NESTING STRUCTURE



The degree of sensitivity of each nest is measured by the magnitude of its nesting coefficient. The nesting coefficient varies between zero to one. If the nesting coefficient is one then the nesting logit model structure becomes identical to multinomial logit model form. The closer a nesting coefficient is to zero the more elastic that particular nest would become. The most salient features of this nested logit structure are:

- Separation of auto submodes by vehicle occupancy; i.e., drive alone and shared ride. The shared ride category is further subdivided into auto with two occupants and auto with three-or-more occupants.
- Separation of auto access transit trips by park-and-ride (PNR) and kiss-and-ride (KNR) to reflect the kiss-and-ride market within the study area and the need to estimate mode-of-arrival at transit stations.

In the primary nest of the 4-level nested structure, total person trips are divided into “Auto” and “Transit” trips. In the secondary nest, the auto trips are split into “Drive Alone” and “Shared Ride” trips, and the transit trips are split into “Walk Access” and “Auto Access (Premium)” trips.

In the third nest, shared ride trips are further divided into “One Passenger (SR2)” and “2+ Passengers (SR3+)”. On the transit side in this third nest, the walk access trips are split into “Local Bus” and “Premium Modes” trips, and the auto access trips are divided into “Park-N-Ride” and “Kiss-N-Ride” trips. In the fourth nest, premium transit trips, if needed, can be further divided into Express Bus, BRT, LRT, and Commuter Rail.

The nesting structure assumes that the elasticity or sensitivity to travel characteristics will be greater at the lower levels of the nest. The sensitivity of each mode is estimated using a nesting coefficient in a range of zero to one. It is inversely proportional to the sequential product of all nesting coefficients of the upper level nests including the current level. Thus, a choice between premium and local transit, for example, at a lower level of the nest, would be quite sensitive to the competition between these submodes. The impact of a change in one submode would be diminished at a higher level of decision (on main mode choice between transit and auto, for example).

The mode choice model operates for 11 trip purposes: three home based work (HBW), home based non-work (HBNW), non-home based (NHB), Disney (DIS), Universal (UNI), Airport (MCO), Orange County Convention Center (OCC), International Drive (I-Drive) and Sea World (SEW).

5.1 Default Mode Choice Model

The default mode choice model, which is run prior to the initial highway assignment, estimates initial auto occupancies to allocate trips between LOV and HOV categories. Unlike the final mode choice model, which includes the additional special purposes, the default mode choice model operates for only three trip purposes: home based work, home based non-work, and non-home based. The analysis is performed using default transit splits with work and non-work auto occupancies estimated using unconstrained highway speeds. The regional mode splits for the default mode choice model are as follows:

- Home Based Work 1.30 %
- Home Based Non-Work 0.40 %
- Non-Home Based 0.20 %

The default mode choice model is designed to develop a reasonable, preliminary allocation between LOV and HOV for the initial equilibrium assignment and capacity-restrained speed determination. The initial highway assignment produces a “loaded” highway network (HRLDXY.TEM) from which the congested highway impedance skims are developed (RHSKIMS.ayy for LOV, and RHSKIMS2.ayy for HOV). The congested skims allow the mode choice model to accurately estimate shifts between available modes in the peak period.

5.2 Mode Choice Model Operation

For the purposes of the Orlando Urban Area Transportation Study, the mode choice model has been divided into 10 parts, three work mode choice models, a non-work mode choice model, and six special purposes; Disney World, Universal Studios, Orlando International Airport, Orange County Convention Center, International Drive and Sea World. These six additional special purposes are run as separate applications of the mode choice model. There are actually 10 purposes, with resident and tourist purposes for each of the six special purposes. Each pair is treated the same way as the HBNW/NHB application of the model, with the resident purpose using the same logic as HBNW and the tourist purpose using the NHB logic.

The mode choice model assumes that work trips occur in the peak period and are subject to congested travel conditions, and non-work trips occur in the off-peak period and are subject to uncongested travel conditions. Therefore, the work mode choice model uses the congested impedance skims where the non-work mode choice model uses the free-flow impedance skims. Congested travel times are estimated by a default mode choice and an initial highway assignment in the Trip Distribution Step of the model chain.

The default mode choice model is a simplified version of the final mode choice model. It uses reasonable, accurate assumptions of estimated modal shifts. The vehicle trip tables created by the default mode choice model are assigned to the highway network. The loaded network is then “skimmed” to create a congested travel time matrix used by the mode choice model. Although the 2000 OUATS model network has no high occupancy vehicle (HOV) facilities (because of the lack of enforcement, the HOV lanes currently designated on I-4 are effectively used as general purpose lanes), the model is structured so that the estimation of highway trips by auto occupancy category is sensitive to different impedances from LOV and HOV networks. Thus, the model is capable of responding to relative differences in LOV and HOV network performances and has the ability to shift trips from one mode to another. HOV skims are developed by the model; however, because there are no coded HOV facilities in the 2009 network, the HOV skims are equal to non-HOV skims in 2004. The OUATS mode choice model’s calibrated coefficients were based on the 2009 LYNX bus ridership results.

5.3 Mode Choice Special Purposes

As indicated in section 5.2, additional consideration and treatment is given to the special purposes added as part of the 2004 OUATS model validation. These special purposes, for the mode choice operation, are as follows:

- Disney Resident
- Disney Non-Resident
- Universal Resident
- Universal Non-Resident
- Airport Resident
- Airport Non-Resident
- Convention Center Resident
- Convention Center Non-Resident
- International Drive Resident
- International Drive Non-Resident
- Sea World Resident
- Sea World Non-Resident

These purposes, as used in the revised modal choice program (MODEORL5.EXE), and are triggered by a new version option in the PROFILE.MAS (the &VERS parameter, which is set to six for Orlando Special Purposes), and by six new “code” flags at the mode choice program

execution time (DIS, UNI, MCO, OCC, and SEW). This means that the mode choice program (MODEORL5.EXE) is executed 11 times in the PILOT script of the mode choice step. An additional feature of this program is the use of individual mode split coefficient files for home based work, non-work and special purposes.

- MODE_H.SYN - High income work trip modal coefficients
- MODE_M.SYN - Medium income work trip modal coefficients
- MODE_L.SYN - Low income work trip modal coefficients
- MODE_NW.SYN - Non-work trip modal coefficients
- MODE9IDR.SYN - I-Drive modal coefficients
- MODE9DIS.SYN - Disney modal coefficients
- MODE9UNI.SYN - Universal modal coefficients
- MODE9MCO.SYN - Airport modal coefficients
- MODE9OCC.SYN - Orange County Convention Center modal coefficients
- MODE9IDT.SYN - International Drive modal coefficients
- MODE9SEW.SYN - Sea World modal coefficients

5.4 Changes to the Mode Choice Program

- The changes made for the 2004 OUATS mode choice model were continued for 2009. These changes are explained here for easy reference. These features make the mode choice program compatible with the current FSUTMS transit framework. The mode choice FORTRAN program is called MODEORL5.EXE, and correspondingly the source code is called MODEORL5.FOR. The FORTRAN code was compiled using Intel's FORTRAN compiler. Important features of MODEORL5.EXE are:
 - The PCWALK file contains a single walk area of 1/2 mile. It computes mode shares across three access categories (can walk, must drive and no access). The code reads the streamlined percent walk data (PCWALK), correctly executes computations across the three access categories, and reports trips from those categories. This procedure replaces the short-/long- walk methodology. Short-walk was defined as 1/3 of a mile and long-walk had a range up to one mile.
 - The AUTOCON program incorporates all station-specific information on the connector, which was done originally to accommodate multi-pathing. In addition, all information on the connector is weighted to in-vehicle time. Mimicking the same functionality, many existing mode choice models perform a transit station lookup to apply the station-specific information (e.g., station parking cost and access time) to the utility equation for auto-access utilities. These models also determine the auto operating cost for the trip using the highway skims.
- All code related to adding station-specific data to the utilities was commented out;

- The station parking costs on the auto-access connector reflect standard HBW and HBO calculations, which means they are divided by two to reflect half of the trip. These costs are typically full value for NHB trips, which may not have a "return" leg. The other half of the parking costs was added to the disutility for NHB trips.
- Since separate KNR connectors are not required as part of the current framework, an adjustment to the weighted station access time was made for KNR utilities.
- The current FSUTMS transit framework specifies mode choice structures and coefficients. The path weights in the transit path building were made consistent with the mode choice coefficients.

Tables for general input values for the 11 purposes in the mode choice model and specific trip purpose input parameters are shown in Appendix D-1 for the Mode Choice Model.

5.5 Mode Choice Output

The output data from the OUATS mode choice model consists of two components, highway trips and transit trips. The highway trips consist of three components:

- Drive Alone
- One Passenger
- Two+ Passengers

While the transit trips consist of four components:

- Walk to local
- Walk to premium
- Park and Ride
- Kiss and Ride

All seven of these components are determined by the mode choice program for the following 15 trip purposes:

- Home Based Work HBWRK
- Home Based Non-Work HBNWK
- Non-Home Based NHB
- Disney Resident DIS RES
- Disney Non-Resident DIS NR
- Universal Resident UNI RES
- Universal Non-Resident UNI NR
- Airport Resident MCO RES

- Airport Non-Resident MCO NR
- Convention Center Resident OCC RES
- Convention Center Non-Resident OCC NR
- I-Drive Resident
- I-Drive Non-Resident
- Sea World Resident SEW RES
- Sea World Non-Resident SEW NR

The summary results of the mode choice model for the 2000 OUATS model validation for these 15 mode choice purposes are shown in Appendix E- "Mode Choice Model" and the final Total Mode Choice Output is shown below in Table 13.

TABLE 13: TOTAL MODE CHOICE OUTPUT

	Highway Trips				Transit Trips				Total
	Person Trips	Drive Alone	One Passenger	Two+ Passenger	Walk to Local	Walk to Premium	Park-Ride	Kiss-Ride	
Zero Car Households	135,204	56,153	39,003	31,521	7,098	66	441	922	8,527
One Car Households	3,065,798	1,274,732	894,637	877,924	15,788	91	1,422	1,204	18,505
Two+ Car Households	4,055,551	2,178,652	1,284,993	575,100	12,984	34	2,213	1,575	16,806
Total	7,256,552	3,509,536	2,218,633	1,484,545	35,869	192	4,076	3,701	43,838
Can Walk	2,034,388	926,770	637,451	431,892	35,869	192	900	1,314	38,275
Must Drive	1,779,159	799,260	503,608	470,728	-	-	3,176	2,387	5,563
No Access	3,443,005	1,783,506	1,077,574	581,925	-	-	-	-	-
Total	7,256,552	3,509,536	2,218,633	1,484,545	35,869	192	4,076	3,701	43,838
Productions:									
CBD	128,578	63,246	38,492	22,179	4,635	9	5	11	4,661
Exurban	3,716,562	1,795,491	1,139,185	766,584	9,901	60	2,637	2,704	15,302
Other	3,411,412	1,650,799	1,040,956	695,783	21,333	123	1,434	985	23,874
Attractions:									
CBD	245,348	113,723	70,403	49,452	9,832	14	867	1,057	11,769
Exurban	3,119,662	1,599,253	994,679	514,894	8,844	45	972	977	10,837
Other	3,891,542	1,796,560	1,153,551	920,200	17,194	133	2,237	1,667	21,231
Total	7,256,552	3,509,536	2,218,633	1,484,545	35,869	192	4,076	3,701	43,838

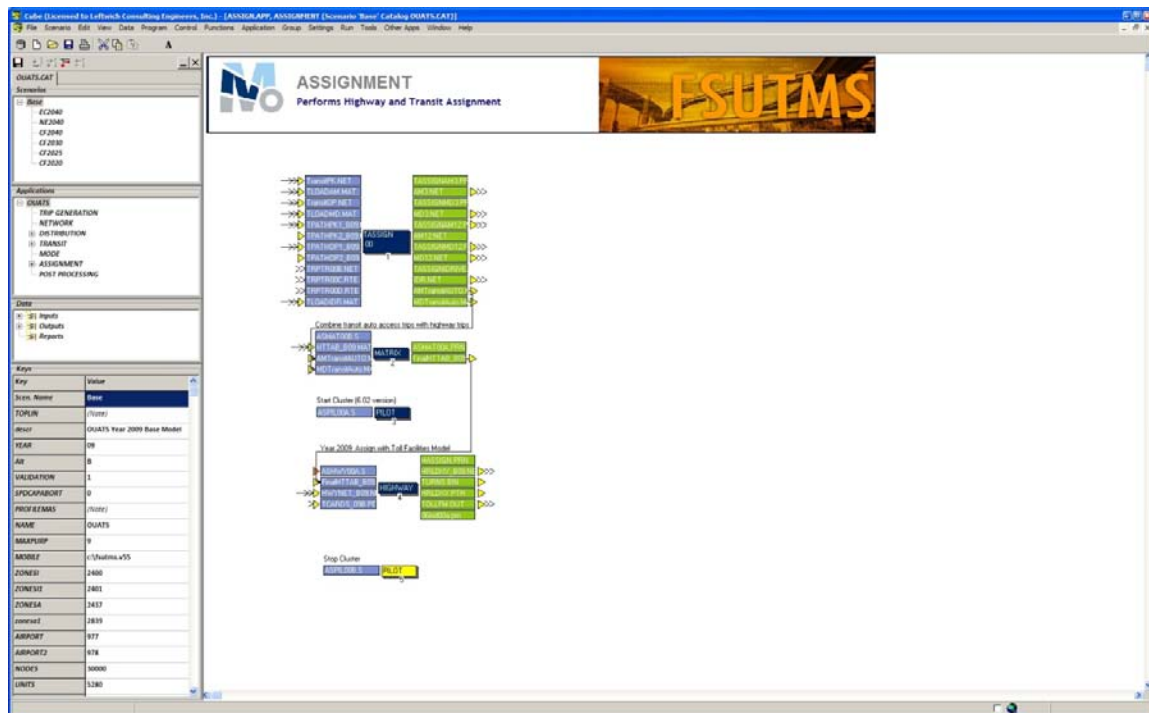
6.0 HIGHWAY ASSIGNMENT AND EVALUATION MODELS

The Year 2009 OUATS model is based on the latest land use data approved by MetroPlan Orlando, updates to the year 2004 highway and transit networks, and toll data for the region's expressways and Turnpike. This model also includes all of the survey information from the Florida Department of Transportation's (FDOT) Non-Residential Travel Survey data as well as information from the year 2000 Census. This section shows the results of the highway assignment and evaluation.

6.1 Highway Assignment Model

This section describes the assigning of the highway trip tables produced by the mode choice model to the highway networks and paths in the OUATS year 2009 Highway Assignment model. The assignment application is the sixth step in the OUATS model flow chart (previously shown in Figure 3), and develops the loaded highway network which is utilized in the highway evaluation (POST PROCESSING) application in the model chain. See Figure 9 for this module.

FIGURE 9: HIGHWAY ASSIGNMENT FLOW CHART



6.1.1 Highway Assignment Model Overview

In the Year 2009 OUATS model, the roadway network is loaded with trips within the HIGHWAY ASSIGNMENT application. A required user supplied file, TCARDS_09b.pen, and other program generated set of files, HWYNET_09b.net and FinalHTTAB_b09.mat, are all inputs to the

HIGHWAY PROGRAM (step 3) of this application. The output of the highway assignment includes the loaded highway network file, HRLDXY_b09.net. Figure 9 shows the various files.

6.1.2 Highway Assignment Model Methodology and Operation

The highway assignment application utilizes the output from the NETWORK application (HWYNET_09b.net) as well as the MODE CHOICE application (HTTAB_b09.mat). The HTTAB_b09.mat is combined with the AMTransitAUTO.mat file and the MDTransitAuto.mat file from the TASSIGN sub-application to form a total highway trip table called FinalHTTAB_b09.mat. This total highway trip table is then assigned to the highway network, HWYNET_09b.net, and TCARDS_09b.pen file. The TCARDS_09b.pen is a user supplied input file that includes turn penalties as well as time penalties. Time penalty locations are depicted in Figure 10.

The output of the highway assignment application includes a “loaded” highway network entitled HRLDXY_b09.net. This file is generated after several iterations of capacity restraint assignments are made using this equilibrium assignment technique. Results of the output are explained further in the following section.

6.2 Highway Assignment Results

The output from the highway assignment module is a loaded network (HRLDXY_b09.net) file. Important attributes from the loaded highway file include capacity, time, speed, vehicle distance traveled, vehicle hours traveled, and volume.

The loaded network file is used as an input for the HIGHWAY EVALUATION application to generate more results as well as statistics to further explain and validate the OUATS year 2009 Model.

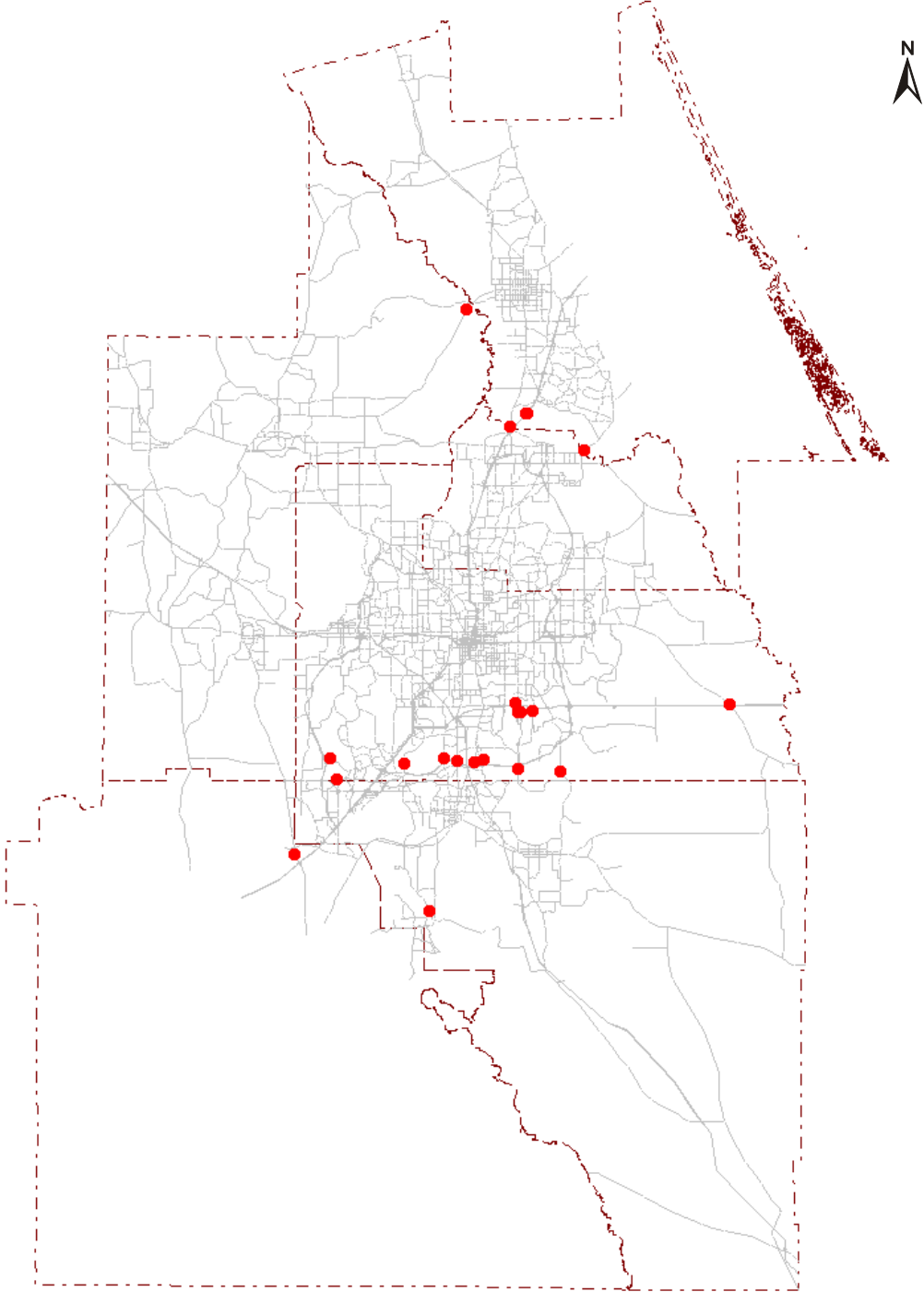
6.3 Highway Evaluation Model

This section describes the evaluation of the loaded highway network produced by the highway assignment model in the OUATS year 2004 Highway Evaluation model.

6.3.1 Highway Evaluation Model Overview

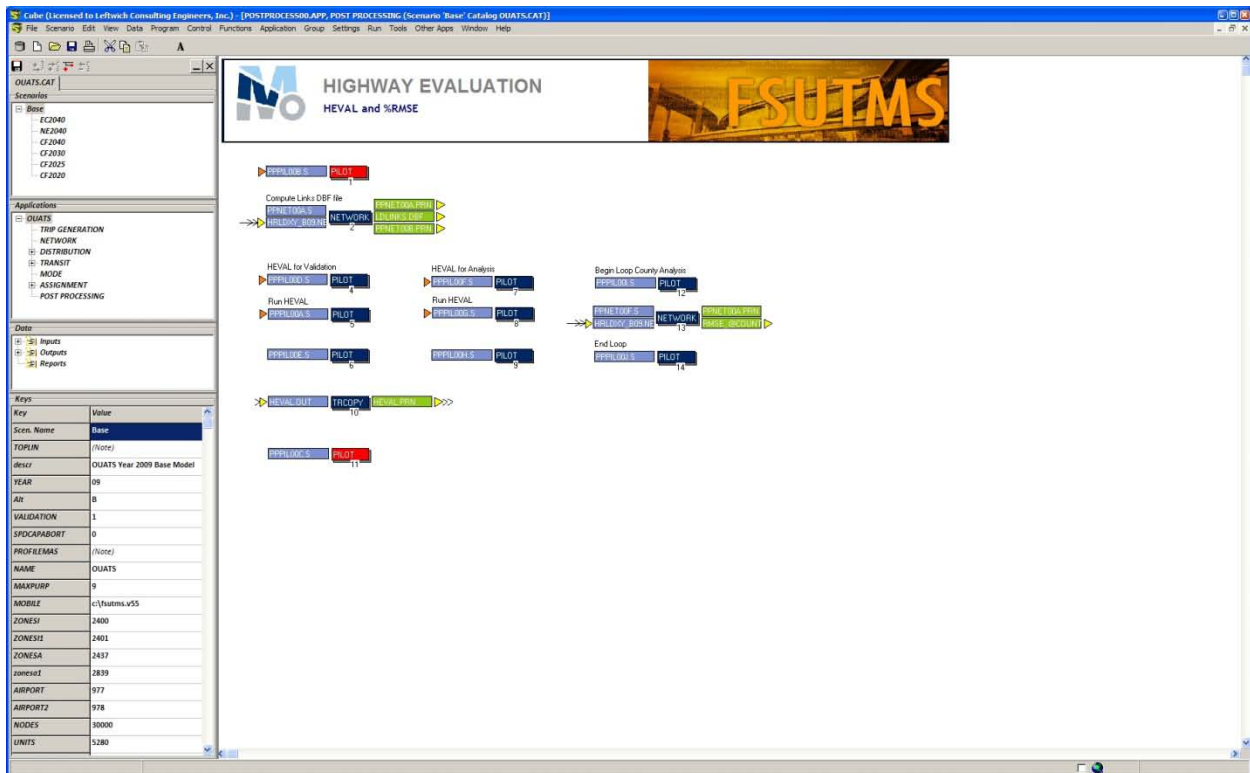
In the Year 2009 OUATS model, the loaded highway network is evaluated for accuracy within the POST PROCESSING application. This application is the seventh and final step in the OUATS model flow chart (previously shown in Figure 3), and calculates the statistics of the loaded highway network, as well as the percentage of error compared to the actual data.

FIGURE 10: TIME PENALTY LOCATIONS



A more detailed illustration of the HIGHWAY EVALUATION application's inputs and outputs is shown in Figure 11.

FIGURE 11: HIGHWAY EVALUATION FLOW CHART



6.3.2 Highway Evaluation Model Methodology and Operation

The highway evaluation application utilizes the output from the ASSIGNMENT application (HRLDXY_b09.net) to validate the assignment model with statistical checks on the relation of assignment volumes to actual ground counts. The incremental summaries report includes a percent root mean square error (% RMSE) by volume groups, by total error, and on a link-by-link basis. Standard statistical measures used to validate the base year model include screenline volume to count (V/C) ratios, areawide vehicle miles of travel (VMT) V/C ratios, and %RMSE.

V/C ratios at predetermined screenlines throughout the highway network provide a measure of general travel patterns within the study area. Screenline and Cutline Locations chosen for the OUATS base year network calibration are represented in Figure 12. Accuracy levels required by FDOT for network calibrations are provided in Table 14.

FIGURE 12: YEAR 2009 SCREENLINE AND CUTLINE LOCATIONS

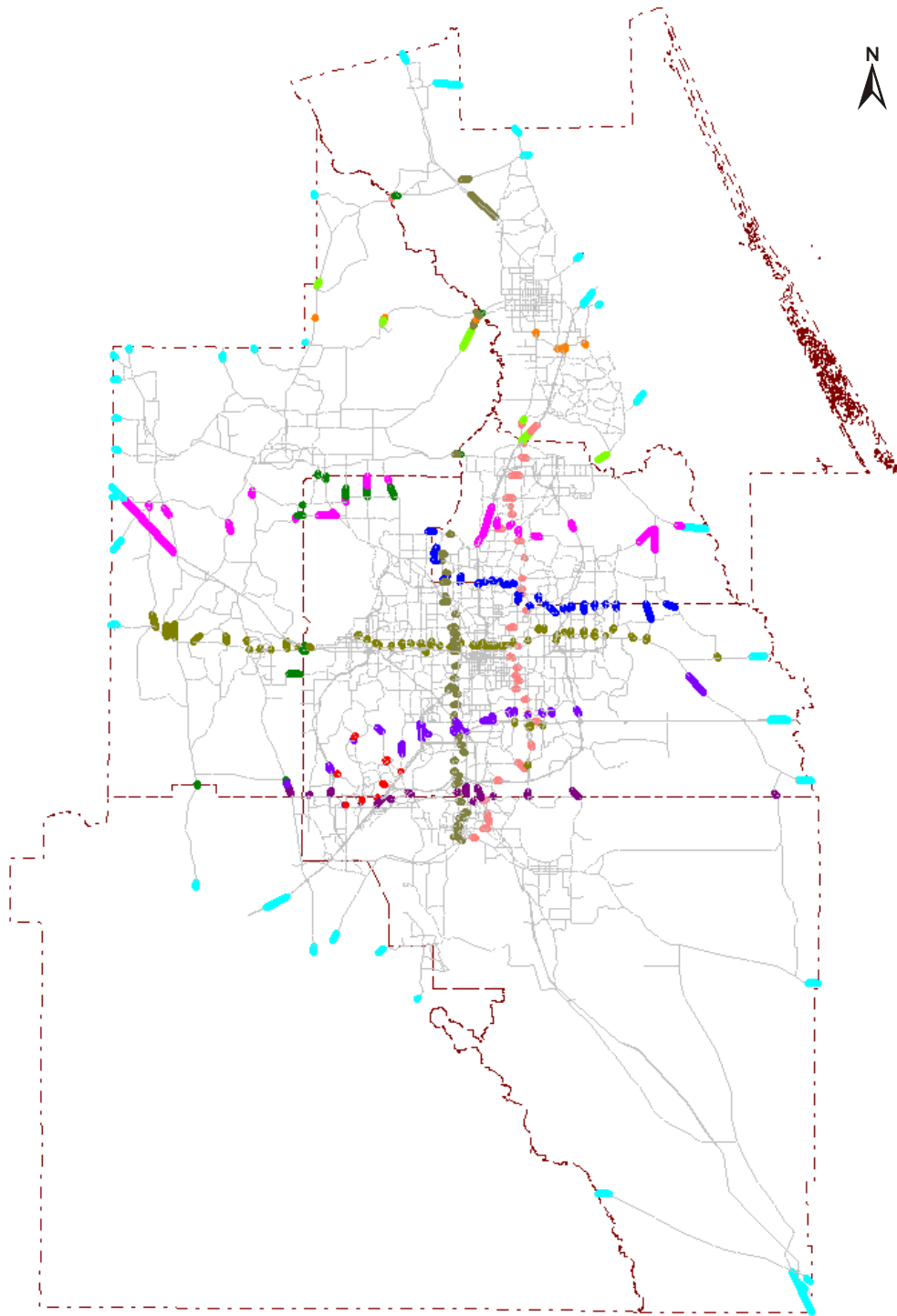


TABLE 14: TRAFFIC ASSIGNMENT ACCURACY LEVELS

Validation Check	Scale of Computation	Level of Accuracy
Assigned VMT/Count VMT	Area	± 5%
Assigned VHT/Count VHT	Area	± 5%
Volume-Count Ratio	Screenlines	± 10% (> 50,000 VPD) ± 20% (< 50,000 VPD)
Volume-Count Ratio	Cutlines	± 10% (> 50,000 VPD) ± 20% (< 50,000 VPD)
Assigned VMT/Count VMT	Facility Type, Area Type, No. of Lanes	± 15% (> 100,000 VPD) ± 25% (< 100,000 VPD)
Assigned VHT/Count VHT	Facility Type, Area Type, No. of Lanes	± 15% (> 20,000 VPD) ± 25% (< 20,000 VPD)
Percent Root Mean Square Error	Area	35% - 50%
Percent Root Mean Square Error	Link Volume Groups	± 10% (> 50,000 VPD) ± 20% (< 50,000 VPD)

Source: Model Update Task C: “Develop Standardized Distribution and Assignment Models,” Table 3.

The %RMSE is perhaps the most representative statistic in assessing the status of network calibration. Every link on the highway network, with a traffic count coded, is analyzed using %RMSE calculation. A comparison is made between the model generated volume and the actual ground count on a link using the following formula:

$$RMSE = \sqrt{\frac{\sum (X_c - X_v)^2}{N - 1}}$$

Where:

X_c = Ground count of link i

X_v = Assigned Volume to link i

N = Total number of links in aggregation group

i = Links 1 through N

The root-mean-square error measures the deviation between two distributions, in this case of traffic volumes. The %RMSE is derived by dividing the RMSE by the average group count for a particular group.

The output of the highway evaluation application includes a HEVAL.PRN file. Results of the output are explained further in the following section.

6.4 Highway Evaluation Results

The output from the highway evaluation module is a file (HEVAL.PRN) that contains statistical measures of the loaded highway network. More specifically, Table 15 provides a comparison of model generated traffic volumes on a daily basis versus the actual peak season traffic counts.

TABLE 15: SCREENLINE/CUTLINE SUMMARIES

Number	Screenline Description	Total Volume	Total Count	Volume Over Count Ratio
1	External Stations	517,800	516,857	1.00
2	Lake/Volusia, Seminole, Orange, and Polk	250,726	250,120	1.00
3	Seminole/Orange Border	713,753	698,724	1.02
4	Orange/Osceola Border	547,041	519,389	1.05
5	N/S Volusia/Lake	160,061	150,630	1.06
6	N/S Seminole/Orange/Lake	448,856	448,502	1.00
7	N/S North of SR 50	959,056	969,514	0.99
8	N/S North of SR 528 (cutline)	828,959	755,038	1.10
9	E/W Near US 441/SR 423/SR 434 (cutline)	996,203	954,950	1.04
10	E/W Near SR 436/US 17-92 (cutline)	956,942	961,947	0.99
12	WDW Cordonline	260,430	242,586	1.07
13	OIA Cordonline	101,721	108,918	0.93
14	Seminole/Volusia Border	171,629	171,874	1.00
99	All other counts	39,039,668	40,084,704	0.97

Moreover, Table 16 details area-wide statistics such as the V/C ratio in terms of Vehicle of Miles Travel (VMT) and Vehicle Hours of Travel (VHT). A $\pm 5\%$ difference (maximum) in VMT and VHT V/C ratio is desirable for calibration. For the OUATS base year network (2009) both the VMT and VHT V/C ratio falls within the guidelines set by FDOT. Additionally, Table 17 shows the results in terms of %RMSE for different volume groups of the final calculation run of the OUATS base year (2009) model.

TABLE 16: HEVAL.PRN STATISTICS

Measurement	Values Measured
TOTAL NUMBER OF LINKS	15,685
TOTAL SYSTEM MILES	3,424.44
TOTAL LANE MILES	10,376.80
TOTAL DIRECTIONAL MILES	6,848.88
TOTAL VMT USING VOLUMES	16,913,036
TOTAL VMT USING COUNTS	17,262,076
TOTAL VMT V/C	0.98
TOTAL VHT USING VOLUMES	655,782.00
TOTAL VHT USING COUNTS	655,303.00
TOTAL VHT V/C	1.00
TOTAL VOLUMES ALL LINKS	268,471,104.00
AVERAGE TOTAL VOLUME	17116.97
TOTAL VMT ALL LINKS	602,380,004
TOTAL VHT ALL LINKS	2,233,475
TOTAL ORIGINAL SPEED (MPH)	35.74
TOTAL CONGESTED SPEED (MPH)	28.92

TABLE 17: PERCENT ROOT MEAN SQUARED ERROR (% RMSE) SUMMARY

Count Range (x1000)	Validation Range (%)*	County						Region	MetroPlan (Tri-County)
		Seminole	Orange	Osceola	Lake	Volusia	Polk		
0 to 5	45 to 55	65.4%	55.7%	50.7%	41.8%	45.2%	5.2%	52.8%	57.7%
5 to 10	35 to 45	37.4%	43.3%	37.3%	32.4%	35.4%	24.2%	39.4%	41.1%
10 to 20	27 to 35	26.3%	28.0%	24.5%	16.1%	15.6%	11.9%	25.9%	27.3%
20 to 30	24 to 27	16.8%	17.4%	13.0%	5.1%	15.1%	6.6%	16.3%	16.7%
30 to 40	22 to 24	10.8%	17.4%	13.4%	n/a	7.6%	8.1%	15.8%	16.4%
40 to 50	20 to 22	n/a	15.8%	8.7%	n/a	n/a	n/a	12.4%	12.4%
50 to 60	18 to 20	10.4%	10.8%	7.9%	n/a	1.9%	25.7%	9.7%	9.7%
60 to 70	17 to 18	13.8%	11.0%	33.4%	n/a	n/a	n/a	15.8%	15.8%
70 to 80	16 to 17	20.0%	8.4%	31.3%	n/a	n/a	n/a	9.8%	9.8%
80 to 90	15 to 16	n/a	7.8%	n/a	n/a	n/a	n/a	9.4%	9.4%
90 to 100	14 to 15	n/a	7.3%	n/a	n/a	n/a	n/a	7.3%	7.3%
100 to 500	<14	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
0 to 500	32 to 39	28.1%	25.3%	24.6%	24.6%	26.7%	16.5%	26.3%	25.8%

*FDOT allowable validation ranges.

The %RMSE for the MetroPlan Orlando counties is 25.8%, which is lower than the minimum acceptable FDOT value for the model.

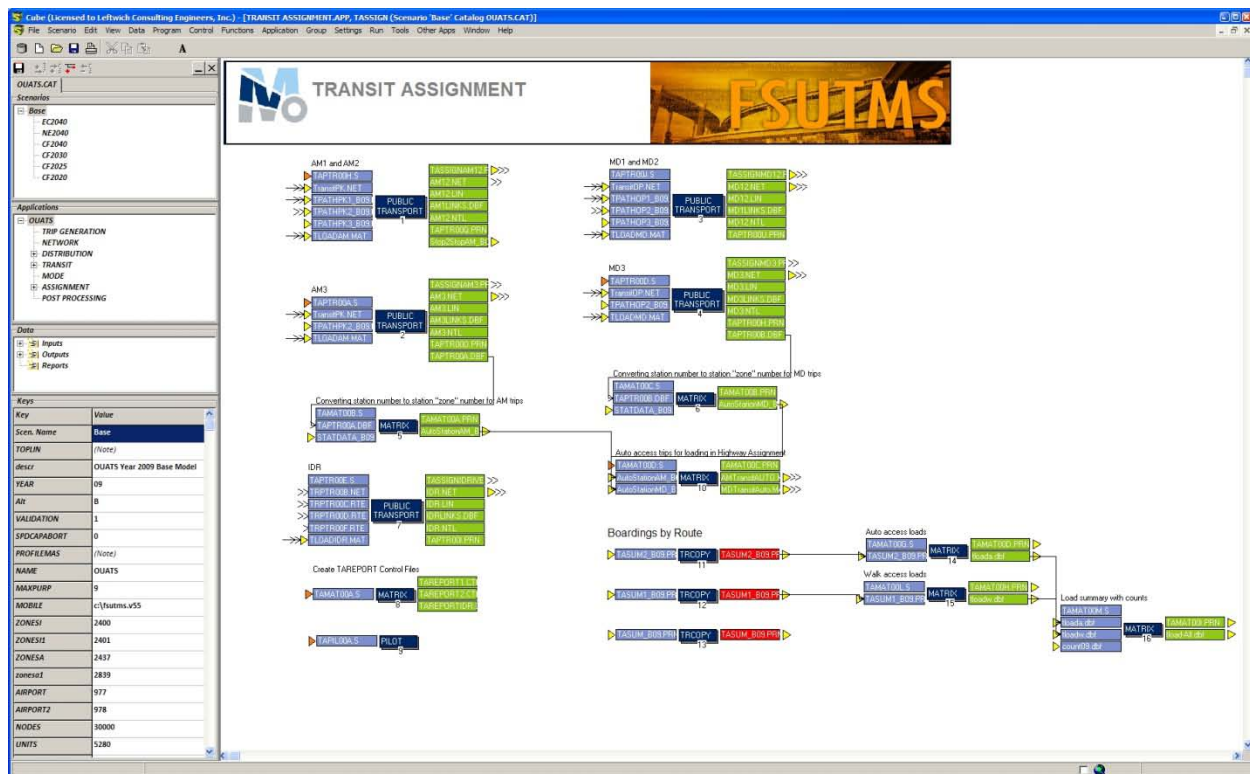
7.0 TRANSIT ASSIGNMENT MODEL

The last transit modeling step is assigning the transit trip tables produced by the mode choice model to the transit networks and paths. The transit trips are assigned to the minimum time path by an all-or-nothing method, which is achieved by using the BESTPATHONLY parameter in the PT factors (*.fac) file, for each combination of mode and access. Unlike trips estimated during the mode choice step, assigned transit trips can be identified on all modes that they use to get to a destination. In other words, transit trips are measured by route and represent unlinked trips by mode.

The transit trips are allocated independently of highway trips. The resulting loads are added together and reported by link and mode using the standard Cube Voyager's Public Transport (PT) program. It should be noted that trips are assigned in production-attraction (P-A) format, as is normal practice for transit analyses, rather than origin-destination (O-D) formats more commonly used in highway assignments.

Again following common modeling practice, all work trips are assigned to the peak network and all non-work trips are assigned to the off-peak network for the 24-hour transit model. The transit assignment is performed in the sixth step in the OUATS model chain. A screenshot of the Transit Assignment application is shown in Figure 13.

FIGURE 13: TRANSIT ASSIGNMENT FLOW CHART



This application assigns the transit vehicle trips to the highway and transit networks for 2009. In this version of the model, transit assignment is performed before highway assignment. The reason for doing this is that the auto access trips, from the home to park-n-ride locations, are recorded in a separate matrix. These trips are then later assigned along with other highway trips during the highway assignment. The Cube Voyager's Public Transport (PT) program is used to perform transit assignment. The procedures are in place to accommodate future modeling applications for fixed guideway, and rail modes.

7.1 Transit Network Development

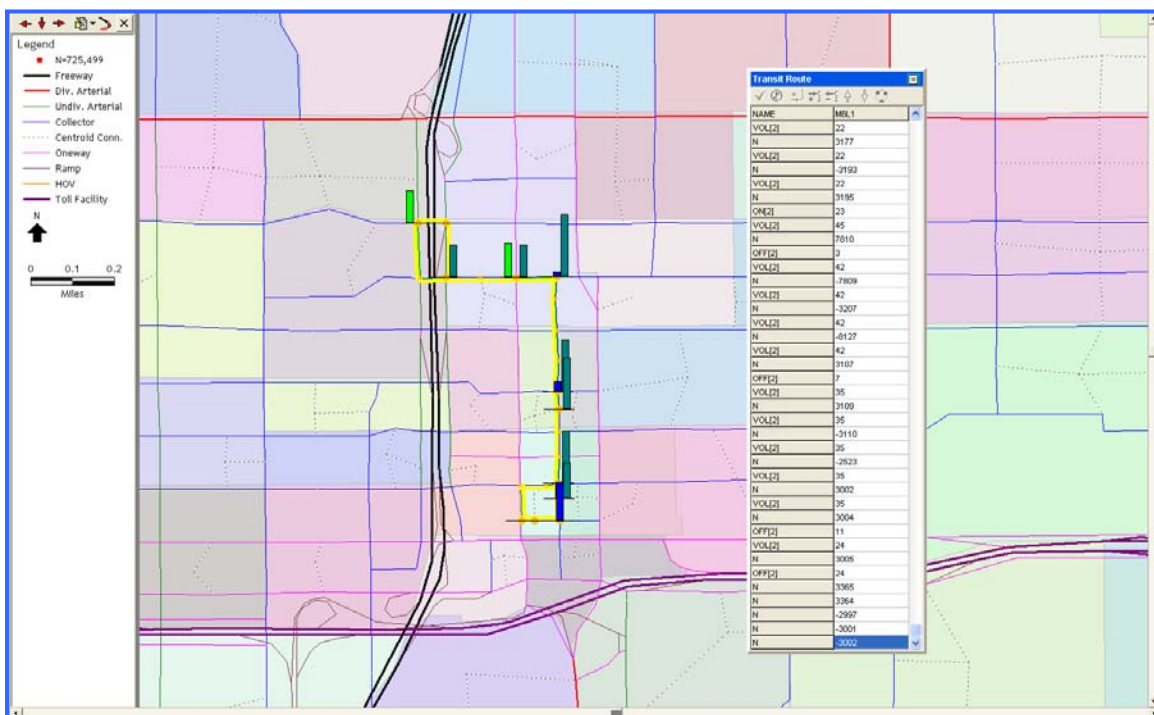
The transit network was coded using the LYNX bus route schedules effective December, 2009. This included coding in the proper headways, bus stop locations, and other various transit route characteristics for each route. Both local bus routes and express bus routes were coded into the network as well as LYMMO, the Downtown Orlando circulator route.

7.2 Transit Assignment Methodology and Operation

The transit assignment process loads a transit passenger trip table onto a transit network. The loading is performed on the minimum paths, which were created for each transit assignment mode -- local bus with walk access, line haul with local bus and walk access, and line haul with auto access -- in the transit application of the OUATS model. Two main options are used in this assignment process. The first of these is the transit line loading, which generates a sorted LEGS file for the future reporting of the transit line loads.

The second is the non-transit link loading, which is reported as a feature of this process. In addition to the above procedures, a mode-to-mode transfer report is generated to show how the walk, auto, and transit modes interact and transfer people from one mode to another. This feature is repeated for each of the transit mode functions (local bus with walk access, line haul with local bus and walk access, and line haul with auto access). In the OUATS model, various input files containing transit operational characteristics are used in building the transit network, skimming the transit paths, and subsequently in the transit assignment process. There are many visualization improvements with the Cube Voyager OUATS transit assignment. One key feature of the transit assignment is the ability to observe the boardings and alightings at every stop of a transit route. Figure 14 shows a screenshot of a downtown route, LYNX's LYMMO system, with the vertical bars representing boardings and de-boardings at every stop of the route.

FIGURE 14: TRANSIT ASSIGNMENT RESULTS VISUALIZATION



7.3 Transit Assignment Results

The primary validation check of the transit assignment process is a comparison of observed vs. modeled boardings. The first step of the validation of a transit assignment occurs during the mode choice model validation. In that step, the mode-specific constants for the region were derived so that the mode-choice model produces the appropriate share of transit trips for the region.

As a first step in the validation of transit assignment results, an evaluation of the operating data and transit attributes was performed. As part of transit model validation efforts, year 2009 transit service characteristics and ridership information for all fixed transit services in the OUATS model region were assembled, and were used to develop transit targets. These targets are used mainly to check the reasonableness of key modeling assumptions and model ridership estimates.

The transit network loading process loads transit trips from 65 bus transit routes, and one LYMMO. The TAREport program was used to compile the route level summaries for all routes. Table 18 shows the transit trips assigned during the transit assignment process for each route and compares them to the LYNX Year 2009 ridership figures.

TABLE 18: TRANSIT ASSIGNMENT RIDERSHIP BY ROUTE FOR 2009

Route No.	Route Name	Average Observed (O) Daily Ridership	Model Estimated (E) Daily Ridership
1	LYMMO - Downtown Circulator	4241	288
3	Link 3 Lake Margaret Out	2135	834
4	Link 4 South US 441/Kissimmee	1544	5407
6	Link 6 Dixie Belle Out	61	254
7	Link 7 South Orange Ave/Florida Mall In	1255	979
8	Link 8 West Oak Ridge Rd/Int Drive - CBD	3378	7490
9	Link 9 N Winter Park/Rosemont - CBD In	167	602
10	Link 10 St Cloud/US192 - Kissimmee WB	137	939
11	Link 11 S Orange Ave/OIA - CBD Out	2552	1197
13	Link 13 University of Central Florida	1680	1083
14	Link 14 North Westmoreland Drive Out	24	79
15	Link 15 Curry Ford Rd/VCC East	921	1731
17	Link 4 N. US 441/Apopka	720	1919
18	Link 18 South Orange Avenue/Kissimmee Ou	1955	1415
20	Link 20 Malibu Street/Pine Hills	3	916
21	Link 21 Universal Studios	2048	2865
23	Link 23 Winter Park/Springs Village	1975	419
24	Link 24 Millenia	123	287
25	Link 25 Mercy Drive/Shader Road	540	1179
26	Pleasant Hill Road	346	597
27	Link 27 Ocoee/Winter Garden Siplin	236	183
28	Link 28 East Colonial Dr/Azalea Park In	956	1627
29	Link 29 East Colonial Dr/Goldenrod In	1144	1425
30	Link 30 Colonial Dr Crosstown	4341	3191
34	Link 34 Sanford/Goldsboro	12	305
36	Link 36 Lake Richmond Out	911	744
37	Link 37 Park Promenade Plaza/Florida Mal	1900	2757
38	Link 38 Downtown Orlando/Intl Dr	1566	511
40	Link 40 Americana Blvd/Universal Orlando	1066	1316
41	Link 41 SR 436 Crosstown NB	7277	5047
42	Link 42 International Drive/OIA WB	1877	3032
44	Link 44 Clarcona/Zellwood	608	636

TABLE 18: TRANSIT ASSIGNMENT RIDERSHIP BY ROUTE FOR 2009 (CONT'D)

Route No.	Route Name	Average Observed (O) Daily Ridership	Model Estimated (E) Daily Ridership
45	Link 45 Lake Mary	103	178
46	Link 46 West SR 46/Seminole Towne Center	145	541
48	Link 48 W Colonial Dr/Pk Promenade Plaza	1459	1947
49	Link 49 West Colonial Dr/Pine Hills Rd I	1557	1699
50	Link 50 Downtown Orlando/Magic Kingdom S	496	1985
51	Link 51 Conway/OIA Out	2782	872
54	Link 54 Old Winter Garden Rd In	305	491
55	Link 55 West U.S. 192/Four Corners Out	298	0
56	Link 56 West US 192/Magic Kingdom WB	595	0
57	Link 57 John Young Parkway	826	0
58	Link 58 Shingle Creek Circulator	60	0
102	Link 102 Orange Ave/South 17-92	7526	2413
103	Link 103 North 17-92 Sanford	1905	1145
111	Link 111 OIA/Disney	667	431
125	Link 125 Silver Star Rd Crosstown	3679	2156
200	Xpress Link 200 I-4 Express	6	52
301	Link 301 - Pine Hills/Animal Kingdom	59	159
302	Link 302 - Rosemont/Magic Kingdom	16	125
303	Link 303 - Washington Shores/MGM	96	98
304	Link 304 - Rio Grands/Vistana Res	4	148
305	Link 305 MetroWest	42	57
306	Link 306 Poinciana/Downtown Disney Tran	7	0
313	Link 313 VA Clinic	299	283
319	Link 19 Richmond Heights Out	909	1374
405	Link 405 Apopka-Park Ave	7	306
426	Link 426 Pleasant Hill Road/Poinciana	487	51
434	Link 434 SR 434 Crosstown	283	127
442	Link 442 Winter Garden Village	62	250
443	Link 443 Lee Road Crosstown	418	934
TOTAL		72797	69076

A script was added to the transit assignment model to automatically generate the comparison of counted and modeled riders by the route.ent process for each route and compares them to the LYNX Year 2009 ridership figures.

8.0 APPLICATION GUIDELINES

This section is intended to provide users of the MetroPlan Orlando travel demand model for the 2040 LRTP, guidance in the installation and usage of the OUATS CUBE/Voyager based model.

It is advised that potential users go through training courses provided by FDOT in the use of the Florida Standard Urban Transportation Structure (FSUTMS) and the CUBE/Voyager software. Information regarding the courses can be obtained from www.FSUTMSOnline.net.

8.1 Minimum System Requirements

In order to run the OUATS 2040 travel demand model, the following minimum specifications for software and hardware should be met:

- Cube Base version 5.1.2,
- Cube Voyager,
- FSUTMS v5.5,
- 2.0 GHz processor,
- 512 MB RAM, and
- 10 GB of disk space

Attempting to run the OUATS 2040 model without adhering to these minimum specifications will possibly lead to the model crashing and/or very long run times.

8.2 Directory Structure

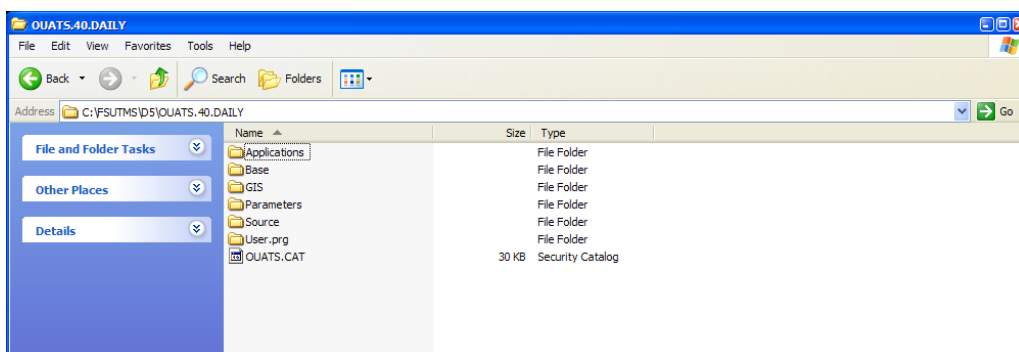
The OUATS 2040 LRTP Model directory is set up consistent with many of the existing regional models across the State of Florida. The main model folder, by default, is located under C:\FSUTMS in the District 5 (d5) folder. The folder structure should look like this c:\FSUTMS\d5\OUATS.40.

After receiving the model DVD from MetroPlan Orlando, the first step is to copy all the model files, ensuring the computer meets the above minimum specifications. The OUATS.40 folder should be copied to the computer's "C" drive. If an FSUTMS\d5 folder does not already exist on the "C" drive, it should be created. The OUATS.40 folder will then need to be copied into C:\FSUTMS\d5 from the DVD. Once the folder has been copied, right-click on the folder and go to "properties." In the General tab, uncheck the "read-only" button and apply, respond

with “OK” to change all files in the folder and subfolders. To open the model, click on the OUATS.cat file. If the model files are in the C:\FSUTMS\d5\OUATS.40 folder, the model is ready to be used. If the model is intended to run off a drive other than “C”, then the drive references must be changed (the user must respond to CUBE/Voyager prompts requesting the acceptance of the alternate folder location).

In the OUATS.40 folder, there are five (5) subdirectories (Applications, Base, GIS, Parameters, and User.prg), a model catalog file (OUATS.cat), and an image file of the FSUTMS title bar (TITLEBAR.bmp) as shown in Figure 15.

FIGURE 15: FILE FOLDER TREE



8.2.1 Base Folder

The base folder contains all of the various scenarios, model networks, and model data. The standard OUATS model comes with the following folders, each representing a different scenario:

- Base (2009 base year),
- EC2040 (2015 Existing-plus-committed network with 2040 SE data),
- CF2020 (year 2020 Cost Feasible Plan),
- CF2025 (year 2025 Cost Feasible Plan),
- CF2030 (year 2030 Cost Feasible Plan),
- CF2040 (year 2040 Cost Feasible Plan), and
- NE2040 (year 2040 Needs Plan)

The Base folder contains the Base 2009 model scenario with folders housing the input and output files. Also included as child scenarios are all of the future and interim model years, each with its own input and output folders.

8.2.1.1 Input Folder

The input folders are inside the Base folder, and each of the individual scenario folders. All files in the Input folder, with the exception of the PROFILE.mas file, include “yyb” in the name. The “yy” stands for the last two digits of the year and “b” represents a letter used to distinguish different scenarios. The model uses separate folders for each scenario, so it is important to follow this naming convention.

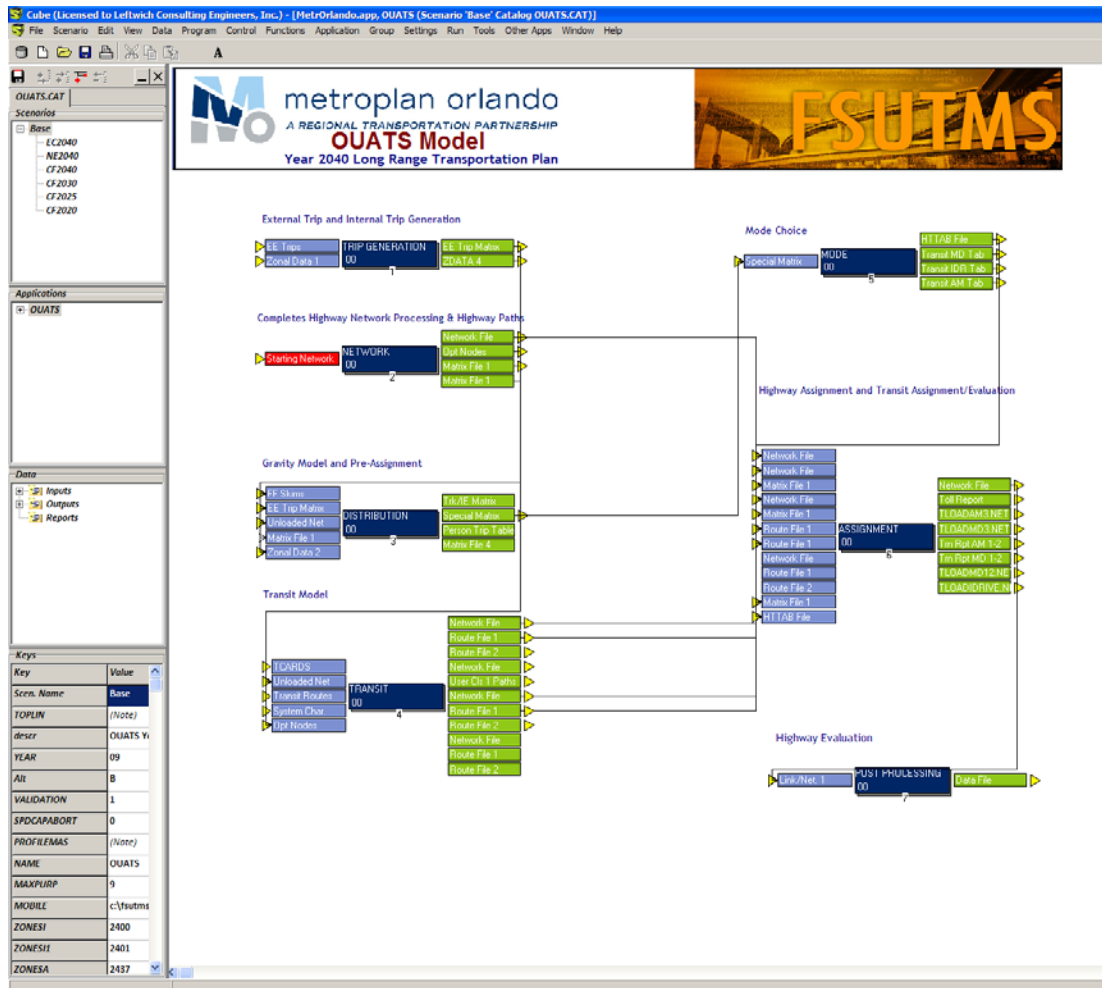
If network changes are to be made or data interpolated to an interim year, a new folder can be created to differentiate between the networks. Make certain any network modifications are done in the “starting network” (box colored in red) for each scenario.

8.2.1.2 Output Folder

The OUATS output folders are contained in the Base parent folder and under each child folder separately. Each scenario, upon completion, will contain all of the reports, trip tables, loaded networks, and other pertinent output data in this folder. The model will automatically carry over the naming convention.

Figure 16 shows the main screen of the OUATS model. It includes a “Scenario” panel, an “Applications” panel, a “Data” panel, and a “Keys” panel. When the “OUATS” application is invoked, the main flow chart appears. The OUATS 2040 Model is ready to be run.

FIGURE 16: MAIN OUATS MODEL SCREEN



8.2.2 Parameters Folder

The "Parameters" folder includes files used by all year models. These files are not year dependent and should remain unchanged to preserve the "calibration/validation" of the model. Files in the "Parameters" folder include the Speed/Capacity lookup table, trip attraction and production rates, friction factor curves, and mode choice constants and coefficients.

8.2.3 User.prg Folder

The "User.prg" folder contains user-written programs that are not part of the Cube/Voyager suite of programs. The programs are mainly written in FORTRAN and are necessary to run the model. These include programs to run special attractions and the mode choice (and related utilities for auto and walk connectors).

The files in the “User.prg” folder should not be changed in any way and should always remain under this folder for the model to run properly.

8.2.4 Applications Folder

The “Applications” folder includes all Voyager scripting (*.s), application (*.app), and TMonitor (*.trf) files. These files are used to run the model. In addition, the folder has intermediate and temporary files created during a model run.

Only experienced model users should modify any of the files in this folder.

8.2.5 GIS Folder

The “GIS” folder contains geographic spatial reference files for the model such as Traffic Analysis Zone (TAZ) boundary, county boundary, hydrology, and street centerline files. The OUATS 2040 LRTP model uses the 1983 North American Datum (NAD) coordinate system (Florida East) in feet.

The CUBE *.vpr files (user defined project files) provided with the OUATS model reference this GIS folder. The user can add files to this folder as needed.

8.3 Scenario Setup

As mentioned earlier, there are various OUATS model scenarios included in the original Catalog file (OUATS.cat). Each one has been created to streamline and simplify the use of the model.

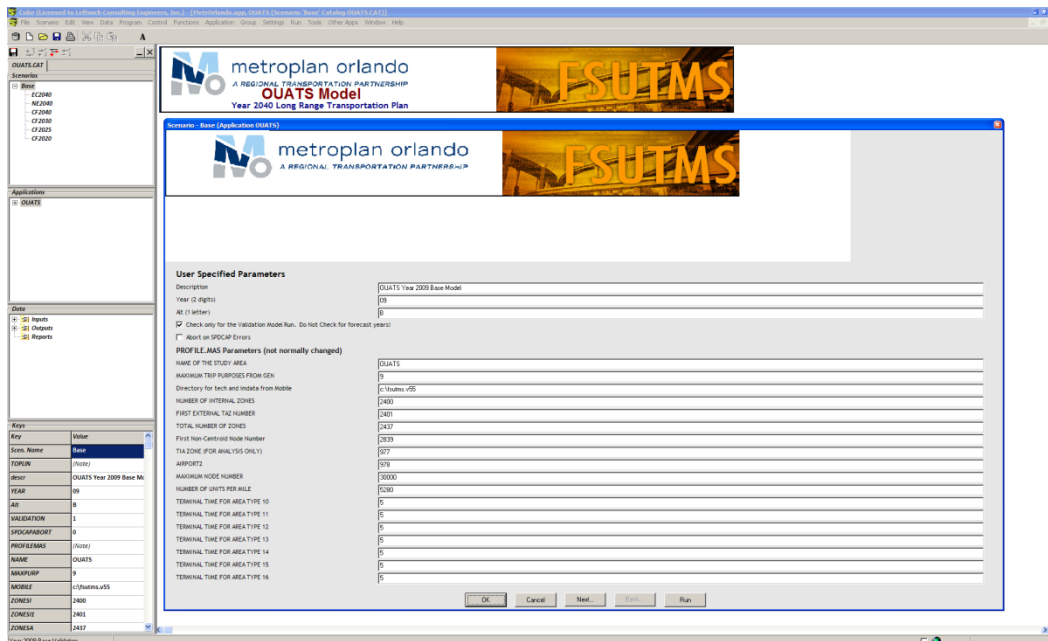
A parent scenario is the basic one and usually differentiated by year. Under a parent there are child scenarios, which can be of the same year or different year as the parent but have different data such as different socio-economic data and/or network adjustments. A sibling is also a child of the parent scenario but different from another child. This nomenclature is commonly used to differentiate the positions relative to each other. Figure 16 shows the “Scenario” panel with the currently available scenario tree where Base is the parent, EC2040, CF2020, CF2025, CF2030, CF2040, and NE2040 are the “children” that are also “siblings” relative to each other.

8.3.1 Scenario Selection

The OUATS 2040 model comes with eight (8) scenarios; a parent Base 2009, and children EC2040, NE2040, CF 2040, and four (4) interim children scenarios (CF2020, CF2025, and CF2030). As a scenario is selected, the input and output files in the flow chart change accordingly.

Once a scenario has been chosen, it must be selected in order to view the user provided parameters. Double left-click to select a scenario in the scenario window. If done correctly it will be highlighted. This brings up the User Specified Parameters screen as shown in Figure 17. The user can change some parameters, but only with care since most of these parameters have been already set with the particular model year in mind (e.g. alternative letter, cost of toll, auto occupancy rates, etc.).

FIGURE 17: USER SPECIFIED PARAMETERS

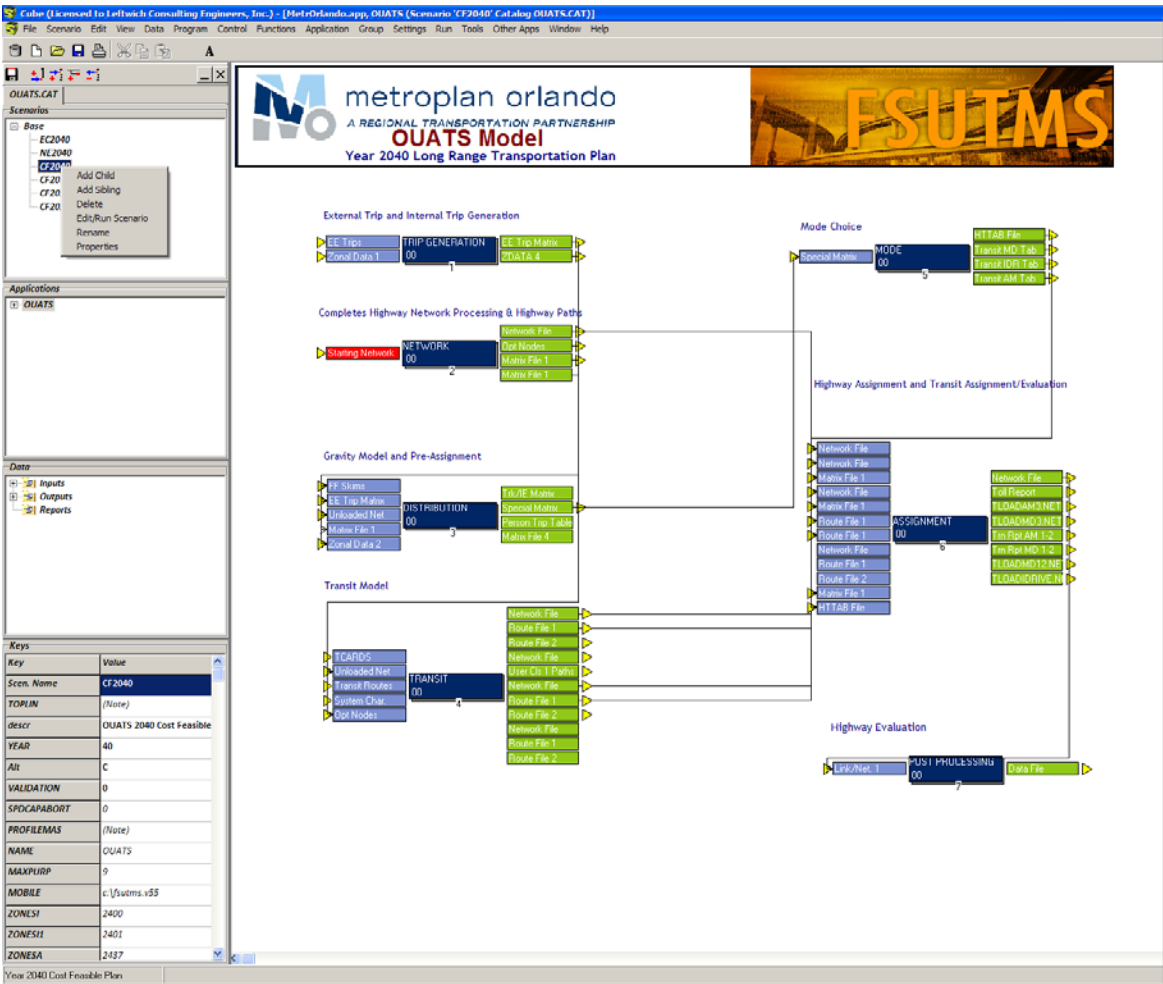


The user can start a complete model run from this point by clicking on “run” or can click on “cancel” and go to the flow chart and run a single or multiple set of processes. In section 8.4, running the model will be explained in more detail.

8.3.2 Creating a Scenario

To create a new scenario, for alternative testing or for a new year, right-click on an existing scenario in the “Scenarios” panel and create a sibling or a child of that scenario (see Figure 18). A new scenario folder is created with the name provided by the user. Add an input and output set of folders under the newly created scenario. Copy the desired input files (ensuring that the alternative letter and year coincide with the scenario) to the “Input” folder, and the scenario is ready to be run.

FIGURE 18: SCENARIO TREE



8.4 Running the Model

Once a scenario has been updated as needed or a new one has been created, the model is ready to be run. Running the model is a simple process; just double click on the desired scenario and when the scenario management interface window opens select the Run button on the lower right corner.

To run just a single step within any process, just select the scenario and then double-click on the desired step or press F2. When the "Run Application" window opens select "Run Application," and only that step will run.

After the model is finished running, all of the outputs will be in the output folder under the appropriate scenario. All files created (text, database, matrix, networks, etc. type files) can be opened using CUBE by double-clicking on the appropriate box in the flow chart.

The 2009 base year model was run on a desktop PC with a single core Xeon machine at 3 GHz clock speed using Windows XP Professional and with 1 GB of memory (RAM). The output folder required 663 MB of hard disk space while the "Applications" folder ended up with an additional 671 MB of disk space. The model ran in just under four (4) hours. The same model on a dual quad core (eight processors at 2 GHz each) machine with Windows XP Professional (64-bit version) with 8 GB of memory (RAM) ran in two (2) hours and 48 minutes.

APPENDIX A: EXTERNAL TRIPS

**Table A-1: SPECIAL ATTRACTION
EXTERNAL STATION PERCENTAGES**

Ext Sta	OIA	OCCC	UNI	SEAW	DIS
2401	0.29%	0.00%	0.00%	0.00%	0.00%
2402	0.08%	0.00%	0.00%	0.00%	0.00%
2403	0.23%	0.00%	0.00%	0.00%	0.00%
2404	0.24%	0.00%	0.00%	0.00%	0.00%
2405	1.82%	0.00%	0.00%	0.00%	0.00%
2406	7.38%	21.05%	27.88%	31.46%	25.41%
2407	2.51%	0.00%	0.00%	0.00%	0.22%
2408	1.58%	0.00%	0.61%	0.00%	0.00%
2409	1.70%	0.00%	0.00%	0.00%	0.00%
2410	4.07%	2.63%	1.21%	2.25%	4.95%
2411	20.71%	0.00%	0.00%	0.00%	0.00%
2412	5.97%	1.75%	5.45%	4.49%	4.11%
2413	0.62%	6.14%	4.85%	4.49%	6.69%
2414	0.23%	0.00%	0.00%	0.00%	0.00%
2415	0.61%	23.68%	13.94%	21.35%	12.80%
2416	0.14%	0.00%	0.00%	0.00%	0.00%
2417	0.04%	0.00%	0.00%	0.00%	0.00%
2418	2.27%	0.00%	0.00%	0.00%	0.00%
2419	3.19%	0.00%	0.61%	0.00%	2.90%
2420	13.16%	0.00%	1.21%	0.00%	1.31%
2421	16.33%	29.83%	23.64%	26.97%	26.41%
2422	0.85%	0.00%	0.00%	0.00%	0.00%
2423	1.31%	0.00%	0.61%	0.00%	0.00%
2424	0.21%	0.00%	0.00%	0.00%	0.00%
2425	0.85%	0.00%	0.00%	0.00%	0.00%
2426	2.57%	14.91%	19.39%	8.99%	15.19%
2427	1.77%	0.00%	0.00%	0.00%	0.00%
2428	1.03%	0.00%	0.00%	0.00%	0.00%
2429	0.78%	0.00%	0.00%	0.00%	0.00%
2430	1.77%	0.00%	0.61%	0.00%	0.00%
2431	0.71%	0.00%	0.00%	0.00%	0.00%
2432	0.67%	0.00%	0.00%	0.00%	0.00%
2433	0.17%	0.00%	0.00%	0.00%	0.00%
2434	0.44%	0.00%	0.00%	0.00%	0.00%
2435	0.14%	0.00%	0.00%	0.00%	0.00%
2436	0.05%	0.00%	0.00%	0.00%	0.00%
2437	3.51%	0.00%	0.00%	0.00%	0.00%

Notes:

OIA Orlando International Airport
OCCC Orange County Convention Center
UNI Universal Studios Orlando
SEAW Sea World Orlando
DIS Walt Disney World

Table A-2: EXTERNAL TRIP BREAKDOWN

Ext Sta	Count	Auto EI	Auto EE	LT EI	LT EE	HT EI	HT EE	OIA EI	OCCC EI	UNI EI	SEAW	DIS EI
2401	5,100	3,527	675	199	3	272	3	35	0	0	0	0
2402	1,150	1,040	57	30	0	30	0	9	0	0	0	0
2403	2,390	2,016	236	166	2	166	2	27	0	0	0	0
2404	5,700	1,863	60	22	2	419	27	28	0	0	0	0
2405	14,250	11,724	2	1,513	0	0	0	218	0	0	0	0
2406	58,334	33,469	4,565	6,642	165	3,322	83	881	4,356	3,388	2,098	2,756
2407	15,100	12,702	178	0	0	1,600	2	299	0	0	0	24
2408	9,000	7,911	23	530	0	466	0	188	0	74	0	0
2409	5,900	4,775	25	380	0	380	0	203	0	0	0	0
2410	12,500	10,229	881	404	2	404	2	486	544	147	150	537
2411	39,814	32,041	1,221	0	0	3,075	17	2,472	0	0	0	0
2412	14,400	11,966	77	480	0	940	0	713	362	662	299	446
2413	6,200	2,408	559	1,046	33	148	5	74	1,271	589	299	726
2414	5,818	1,634	205	377	153	832	338	28	0	0	0	0
2415	27,010	5,411	3,260	958	1,750	1,202	2,195	73	4,901	1,694	1,424	1,388
2416	3,020	1,795	66	31	0	63	0	17	0	0	0	0
2417	6,900	414	0	75	1,484	182	3,556	4	0	0	0	0
2418	6,000	5,254	0	567	0	52	0	272	0	0	0	0
2419	11,086	8,992	0	1,337	0	532	0	381	0	74	0	315
2420	52,198	36,071	5,246	3,248	226	3,712	258	1,571	0	147	0	143
2421	72,872	34,420	6,497	7,189	868	9,743	1,177	1,949	6,171	2,873	1,798	2,864
2422	5,686	3,228	599	324	0	1,275	1	101	0	0	0	0
2423	7,700	4,764	368	2,149	0	0	0	156	0	74	0	0
2424	2,226	1,588	550	44	0	44	0	25	0	0	0	0
2425	5,310	3,858	0	91	0	1,277	0	101	0	0	0	0
2426	37,978	9,446	1,425	3,894	4,470	2,755	3,163	307	3,086	2,356	599	1,647
2427	14,600	11,390	221	930	0	1,516	0	211	0	0	0	0
2428	8,872	8,317	110	222	0	222	0	122	0	0	0	0
2429	7,450	6,966	110	187	0	187	0	93	0	0	0	0
2430	18,700	15,894	534	936	0	346	0	211	0	74	0	0
2431	7,070	5,776	0	350	0	789	0	85	0	0	0	0
2432	5,382	5,108	0	137	0	137	0	80	0	0	0	0
2433	1,396	1,324	0	36	0	36	0	21	0	0	0	0
2434	3,522	2,777	32	127	0	381	0	52	0	0	0	0
2435	2,024	1,545	0	234	0	234	0	17	0	0	0	0
2436	4,600	436	1,023	40	507	165	2,028	5	0	0	0	0
2437	9,600	9,120	0	384	0	96	0	419	0	0	0	0

APPENDIX B: SOCIO-ECONOMIC DATA

Table B-1: YEAR 2009

HIGH PRODUCTION/ATTRACTION VARIABLES SUMMARY

STUDY: OUATS_09B

YEAR: 09B

SECTOR TOTALS FOR THE ZDATA1 RECORDS

SEC	+ SINGLE FAMILY				+ MULTI FAMILY				+ HOTEL MOTEL+	
	TOTAL DUS	OCC DUS	POP	AUTOS	TOTAL DUS	OCC DUS	POP	AUTOS	UNITS	OCCUP
1	16307	15232.	44947	32932.	0	0.	0	0.	569.	854
2	31991	29867.	85181	61965.	0	0.	0	0.	68982.	165555
3	5576	4458.	13643	9166.	0	0.	0	0.	0.	0
4	10230	8945.	22217	16825.	0	0.	0	0.	0.	0
5	1374	1265.	3088	2371.	0	0.	0	0.	0.	0
6	717	648.	1960	1148.	0	0.	0	0.	0.	0

STUDY: OUATS_09B

YEAR: 09B

RATIO ANALYSIS SUMMARY ADJUSTED FOR VACANCIES

LIMITS	SF		MF		TOTRES		TRANSIENT	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
POP/DU	1.00	5.00	1.00	2.50	1.00	3.50	1.00	2.50
AUT/DU	1.00	2.25	1.00	2.25	1.00	2.20	N/A	N/A

SECT	SINGLE POP/DU	FAMILY AUTO/DU	MULTI POP/DU	FAMILY AUTO/DU	TOTAL POP/DU	RES AUTO/DU	TRANSIENT POP/DU
1	2.95	2.20	0.00	0.00	2.95	2.20	1.50
2	2.85	2.13	0.00	0.00	2.85	2.13	2.40
3	3.06	2.09	0.00	0.00	3.06	2.09	0.00
4	2.48	1.94	0.00	0.00	2.48	1.94	0.00
5	2.44	1.95	0.00	0.00	2.44	1.95	0.00
6	3.03	1.87	0.00	0.00	3.03	1.87	0.00

STUDY: OUATS_09B

YEAR: 09B

SECTOR TOTALS FOR THE ZDATA2 RECORDS

SECTOR	** EMPLOYMENT			TOTAL	****SCHOOL**** ENROLLMENT
	INDUSTRIAL	COMMERCIAL	SERVICE		
1	1824	1606	14551	17981	93447
2	5011	6224	53463	64698	335702
3	494	808	5442	6744	66859
4	1308	759	6580	8647	53064
5	510	271	3141	3922	39258
6	107	85	478	670	4978

Table B-2: YEAR 2009

MEDIUM PRODUCTION/ATTRACTION VARIABLES SUMMARY

STUDY: OUATS_09B

YEAR: 09B

SECTOR TOTALS FOR THE ZDATA1 RECORDS

SEC	+ SINGLE FAMILY				+	MULTI FAMILY				+ HOTEL MOTEL+	
	TOTAL DUS	OCC DUS	POP	AUTOS		TOTAL DUS	OCC DUS	POP	AUTOS	UNITS	OCCUP
1	66469	62627.	179774	128953.	46338	40081.	76124	66950.	3108.	4666	
2	152808	144332.	408895	287291.	90066	80495.	174871	124101.	20851.	50043	
3	34407	28135.	81160	55149.	13591	10161.	22557	16448.	33133.	79551	
4	69298	60834.	149346	111704.	10366	8549.	16266	12487.	2979.	7448	
5	24139	22536.	56149	42491.	3271	2953.	5568	4091.	1102.	2759	
6	12783	9700.	23464	17165.	4740	3423.	6815	6021.	3276.	6881	

STUDY: OUATS_09B

YEAR: 09B

RATIO ANALYSIS SUMMARY ADJUSTED FOR VACANCIES

LIMITS	SF		MF		TOTRES		TRANSIENT	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
POP/DU	1.00	5.00	1.00	2.50	1.00	3.50	1.00	2.50
AUT/DU	1.00	2.25	1.00	2.25	1.00	2.20	N/A	N/A

SECT	SINGLE FAMILY		MULTI FAMILY		TOTAL RES POP/DU	TRANSIENT POP/DU
	POP/DU	AUTO/DU	POP/DU	AUTO/DU		
1	2.87	2.11	1.90	1.79	2.49	1.50
2	2.83	2.06	2.17	1.71	2.60	2.40
3	2.88	2.02	2.22	1.71	2.71	2.40
4	2.45	1.89	1.90	1.63	2.39	2.50
5	2.49	1.96	1.89	1.71	2.42	2.50 HIGH
6	2.42	1.84	1.99	1.82	2.31	2.10

STUDY: OUATS_09B

YEAR: 09B

SECTOR TOTALS FOR THE ZDATA2 RECORDS

SECTOR	** EMPLOYMENT			TOTAL	****SCHOOL****
	INDUSTRIAL	COMMERCIAL	SERVICE		ENROLLMENT
1	17505	12895	55254	85654	93447
2	48178	49893	202949	301020	335702
3	4695	6487	20637	31819	66859
4	9836	5412	26303	41551	53064
5	5249	2882	13782	21913	39258
6	1033	682	1807	3522	4978

Table B-3: YEAR 2009

LOW PRODUCTION/ATTRACTION VARIABLES SUMMARY

STUDY: OUATS_09B

YEAR: 09B

SECTOR TOTALS FOR THE ZDATA1 RECORDS

SEC	+ SINGLE FAMILY				+ MULTI FAMILY				+ HOTEL MOTEL+	
	TOTAL DUS	OCC DUS	POP	AUTOS	TOTAL DUS	OCC DUS	POP	AUTOS	UNITS	OCCUP
1	31204	28761.	81771	54789.	20991	18205.	36951	29030.	0.	0
2	114882	108963.	300891	198320.	77286	69809.	153134	101232.	0.	0
3	52614	45569.	134975	84422.	18254	15053.	36304	22891.	0.	0
4	51324	43838.	102275	73337.	8370	7115.	14272	9346.	0.	0
5	52544	49291.	128395	91284.	5830	5187.	9933	6466.	0.	0
6	15824	12551.	30886	22375.	4952	3654.	7312	6474.	0.	0

STUDY: OUATS_09B

YEAR: 09B

RATIO ANALYSIS SUMMARY ADJUSTED FOR VACANCIES

LIMITS	SF		MF		TOTRES		TRANSIENT	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
POP/DU	1.00	5.00	1.00	2.50	1.00	3.50	1.00	2.50
AUT/DU	1.00	2.25	1.00	2.25	1.00	2.20	N/A	N/A

SECT	SINGLE FAMILY		MULTI FAMILY		TOTAL RES POP/DU	TRANSIENT POP/DU
	POP/DU	AUTO/DU	POP/DU	AUTO/DU		
1	2.84	1.99	2.03	1.74	2.53	1.89
2	2.76	1.94	2.19	1.67	2.54	1.84
3	2.96	1.94	2.41	1.68	2.83	1.88
4	2.33	1.76	2.01	1.55	2.29	1.73
5	2.60	1.94	1.91	1.54	2.54	1.91
6	2.46	1.85	2.00	1.83	2.36	1.84

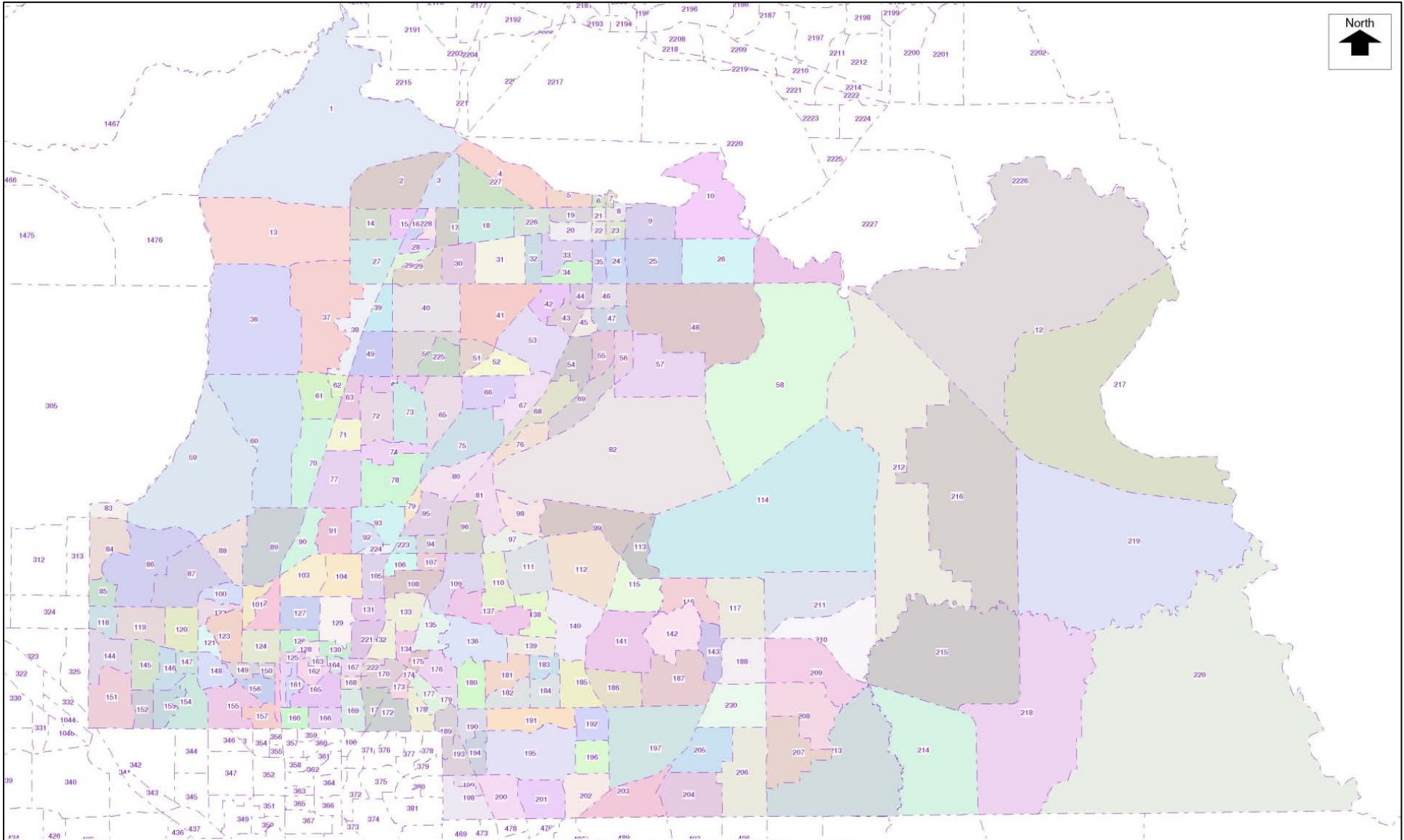
STUDY: OUATS_09B

YEAR: 09B

SECTOR TOTALS FOR THE ZDATA2 RECORDS

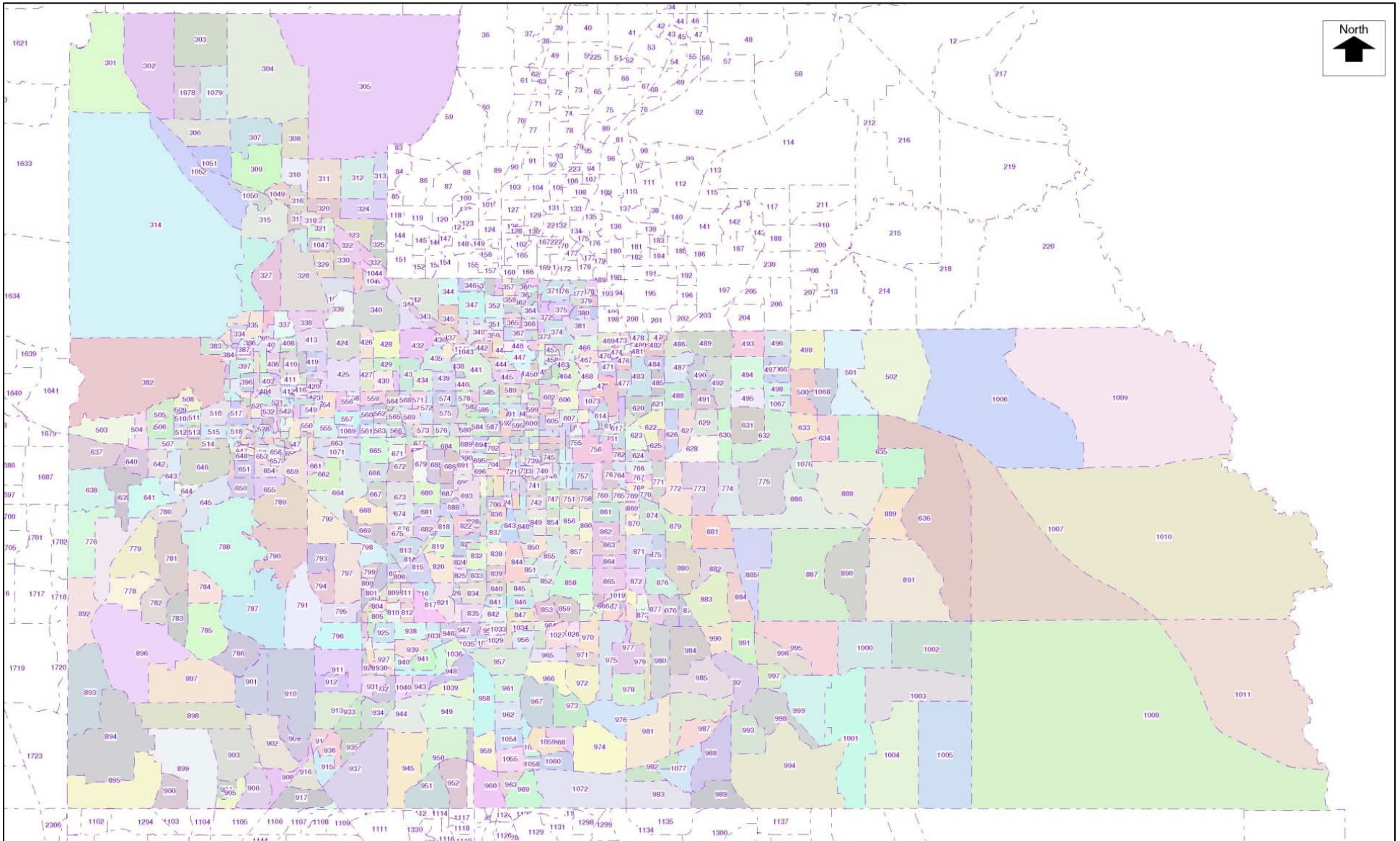
SECTOR	** EMPLOYMENT			TOTAL	****SCHOOL**** ENROLLMENT
	INDUSTRIAL	COMMERCIAL	SERVICE		
1	6795	39236	75593	121624	93447
2	18720	151784	277662	448166	335702
3	1829	19736	28229	49794	66859
4	5237	19613	40153	65003	53064
5	2954	11272	22406	36632	39258
6	398	2074	2474	4946	4978

FIGURE B-1: SEMINOLE COUNTY TAZ MAP



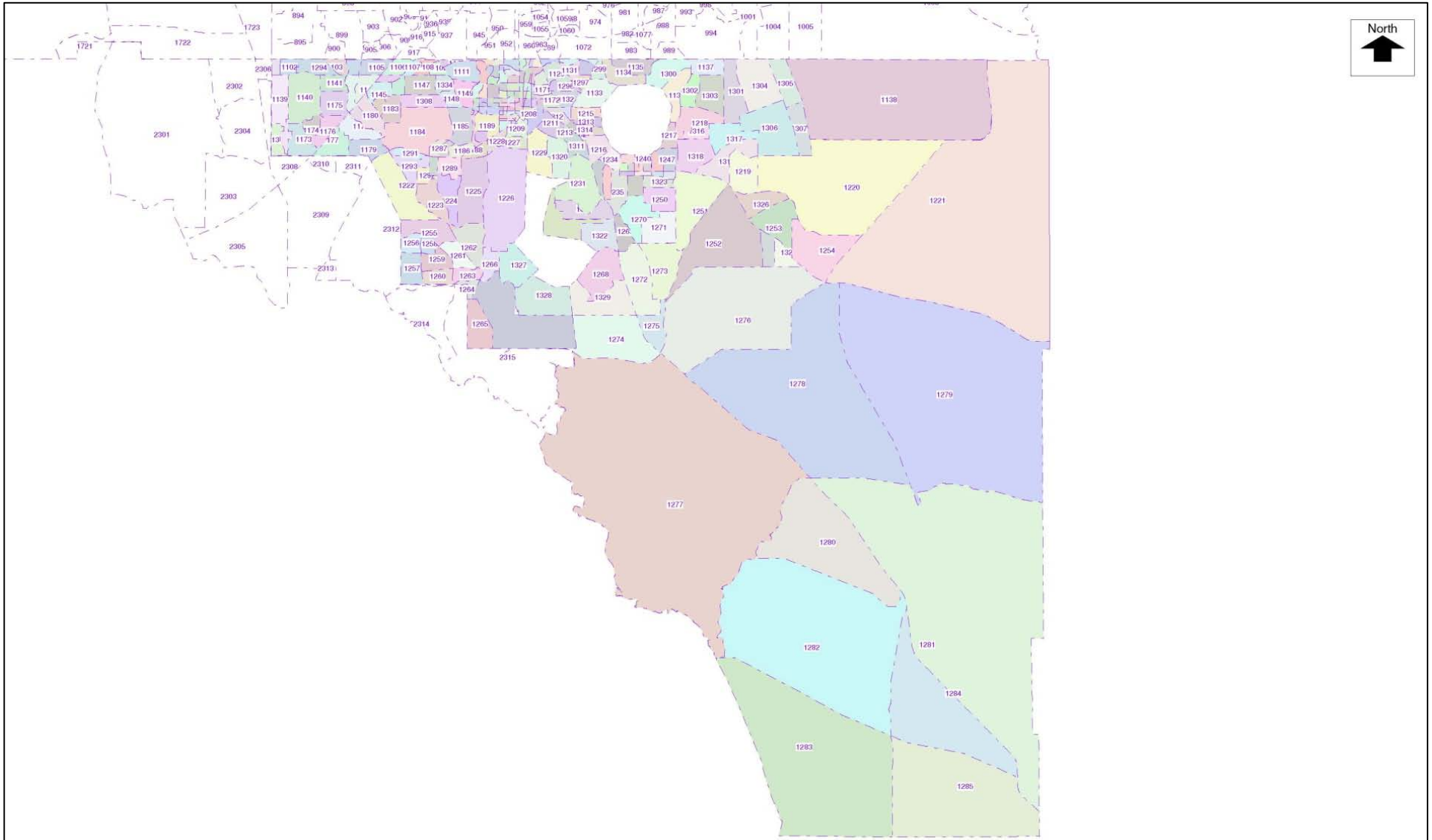
Orlando Urban Area Transportation Study (OUATS) Year 2040 LRTP
Traffic Analysis Zones (TAZs) - Seminole County

FIGURE B-2: ORANGE COUNTY TAZ MAP



Orlando Urban Area Transportation Study (OUATS) Year 2040 L RTP
Traffic Analysis Zones (TAZs) - Orange County

FIGURE B-3: OSCEOLA COUNTY TAZ MAP



Orlando Urban Area Transportation Study (OUATS) Year 2040 LRTP
Traffic Analysis Zones (TAZs) - Osceola County

FIGURE B-4: LAKE COUNTY TAZ MAP

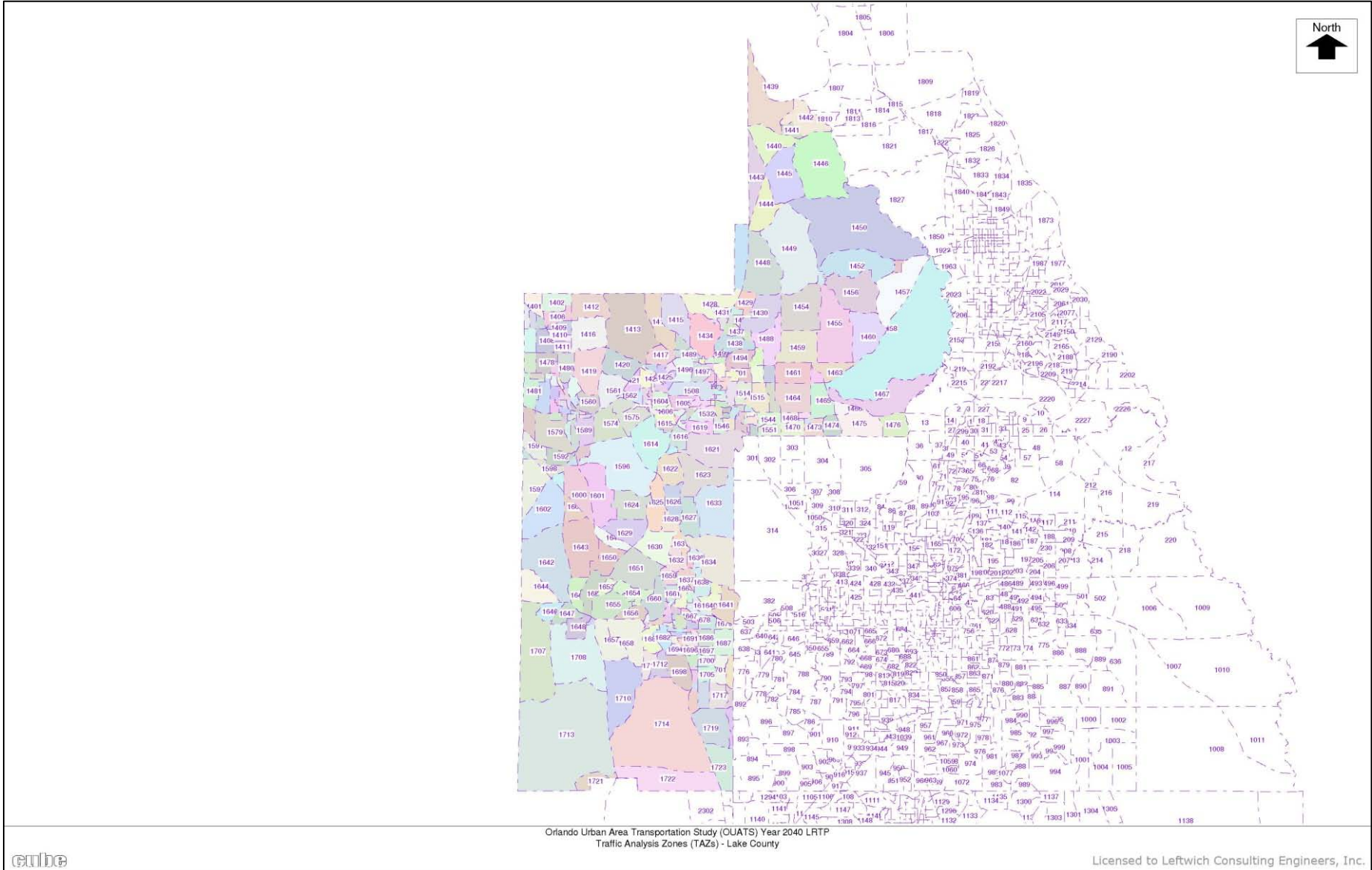
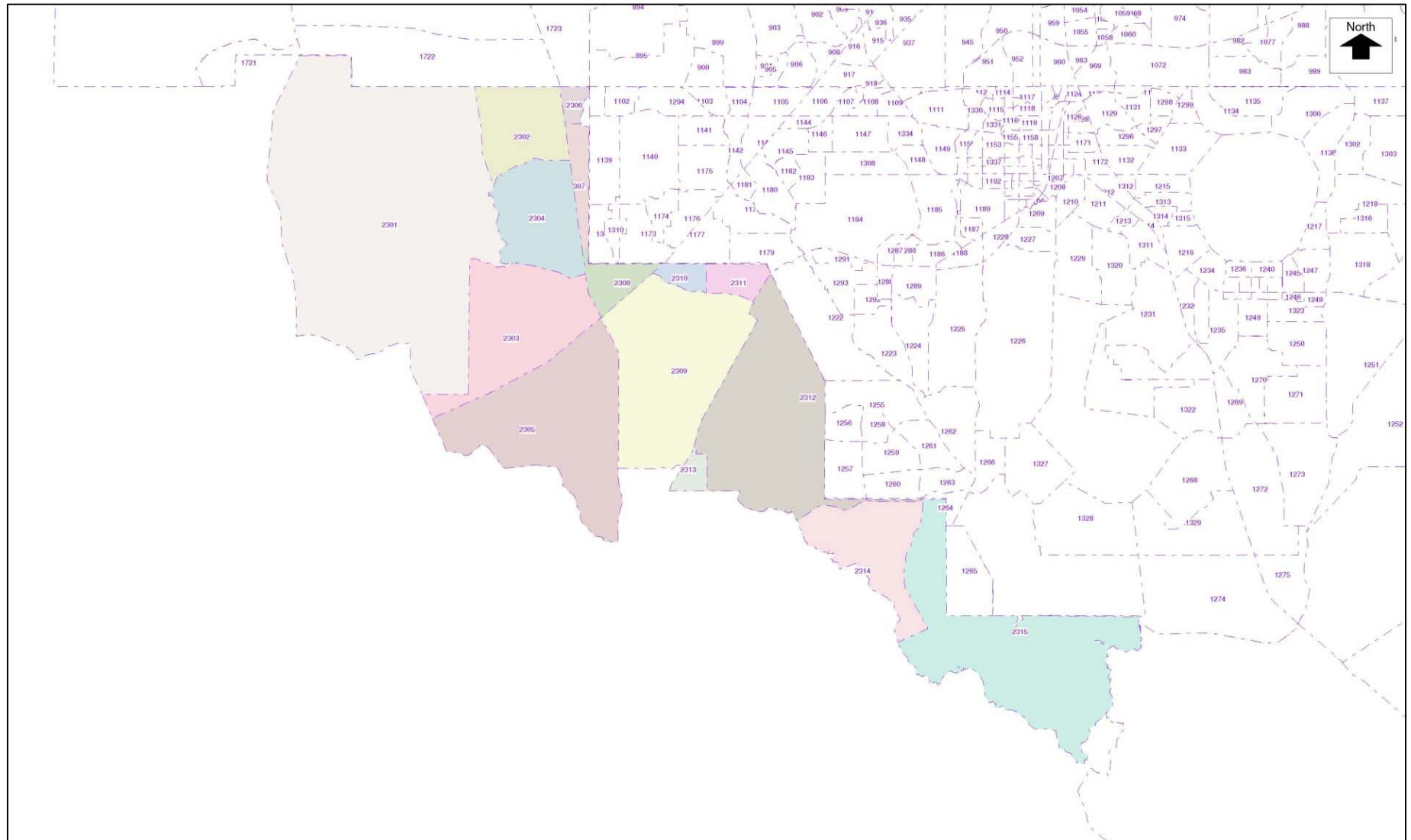


FIGURE B-6: NORTH EAST POLK COUNTY TAZ MAP



Orlando Urban Area Transportation Study (OUATS) Year 2040 LRTP
Traffic Analysis Zones (TAZs) - Polk County

TABLE B-4

ZONEDATA_YYA.DBF FILE VARIABLE DESCRIPTION

Variable Name	Type	Width	Description
Z	Number	9	TAZ Number
CTY	Number	9	County Location
DUS_ALL	Number	9	Total Single-Family Dwelling Units (SF DUs)
PCVTS_ALL	Number	9	Total % Seasonal + Vacant SF DUs
PCVS_ALL	Number	9	Total % Vacant SF DUs
POPS_ALL	Number	9	Total Population in SF DUs
PCAI1_ALL	Number	9	Total % 0 Vehicles in SF DUs
PCAI2_ALL	Number	9	Total % 1 Vehicle in SF DUs
PCAI3_ALL	Number	9	Total % 2+ Vehicles in SF DUs
DUM_ALL	Number	9	Total Multi-Family Dwelling Units (MF DUs)
PCVTM_ALL	Number	9	Total % Seasonal + Vacant MF DUs
PCVM_ALL	Number	9	Total % Vacant MF DUs
POPM_ALL	Number	9	Total Population in MF DUs
PCA21_ALL	Number	9	Total % 0 Vehicles in MF DUs
PCA22_ALL	Number	9	Total % 1 Vehicle in MF DUs
PCA23_ALL	Number	9	Total % 2+ Vehicles in MF DUs
DUH_ALL	Number	9	Total Number of Hotel Rooms
PCOH_ALL	Number	9	Total % Occupied
POPH_ALL	Number	9	Total Population in Hotel Rooms
DUS_HI	Number	9	High Income Single-Family Dwelling Units
PCVTS_HI	Number	9	High Income % Seasonal + Vacant SF DUs
PCVS_HI	Number	9	High income % Vacant SF DUs
POPS_HI	Number	9	High Income Population in SF DUs
PCA11_HI	Number	9	High Income % 0 Vehicles in SF DUs
PCAI2_HI	Number	9	High Income % 1 Vehicle in SF DUs
PCAI3_HI	Number	9	High Income % 2+ Vehicles in SF DUs
DUM_HI	Number	9	High Income Multi-Family Dwelling Units
PCVTM_HI	Number	9	High Income % Seasonal + Vacant MF DUs
PCVM_HI	Number	9	High Income % Vacant MF DUs
POPM_HI	Number	9	High Income Population in MF DUs
PCA21_HI	Number	9	High Income % 0 Vehicles in MF DUs
PCA22_HI	Number	9	High Income % 1 Vehicle in MF DUs
PCA23_HI	Number	9	High Income % 2+ Vehicles in MF DUs
DUH_HI	Number	9	High Income Number of Hotel Rooms
PCOH_HI	Number	9	High Income % Occupied
POPH_HI	Number	9	High Income Population in Hotel Rooms
DUS_ME	Number	9	Medium Income Single-Family Dwelling Units
PCVTS_ME	Number	9	Medium Income % Seasonal + Vacant SF DUs
PCVM_ME	Number	9	Medium Income % Vacant SF DUs
POPS_ME	Number	9	Medium Income Population in SF DUs
PCA11_ME	Number	9	Medium Income % 0 Vehicles in SF DUs
PCAI2_ME	Number	9	Medium Income % 1 Vehicle in SF DUs
PCAI3_ME	Number	9	Medium Income % 2+ Vehicles in SF DUs
DUM_ME	Number	9	Medium Income Multi-Family Dwelling Units
PCVTM_ME	Number	9	Medium Income % Seasonal + Vacant MF DUs
PCVM_ME	Number	9	Medium Income % Vacant MF DUs
POPM_ME	Number	9	Medium Income Population in MF DUs
PCA21_ME	Number	9	Medium Income % 0 Vehicles in MF DUs
PCA22_ME	Number	9	Medium Income % 1 Vehicle in MF DUs
PCA23_ME	Number	9	Medium Income % 2+ Vehicles in MF DUs
DUH_ME	Number	9	Medium Income Number of Hotel Rooms

TABLE B-4:(CONT'D)

ZONEDATA_YYA.DBF FILE VARIABLE DESCRIPTION

Variable Name	Type	Width	Description
PCOH_ME	Number	9	Medium Income % Occupied
POPH_M E	Number	9	Medium Income Population in Hotel Rooms
DUS_LO	Number	9	Low Income Single-Family Dwelling Units
PCVTS_LO	Number	9	Low Income % Seasonal + Vacant SF DUs
PCVS_LO	Number	9	Low Income % Vacant SF DUs
POPM_LO	Number	9	Low Income Population in SF DUs
PCA11_LO	Number	9	Low Income % 0 Vehicles in SF DUs
PCAI2_LO	Number	9	Low Income % 1 Vehicle in SF DUs
PCA13_LO	Number	9	Low Income % 2+ Vehicles in SF DUs
DUM_LO	Number	9	Low Income Multi-Family Dwelling Units
PCVTM_LO	Number	9	Low Income % Seasonal + Vacant MF DUs
PCVM_LO	Number	9	Low Income % Vacant MF DUs
POPM_LO	Number	9	Low Income Population in MF DUs
PCA21_LO	Number	9	Low Income % 0 Vehicles in MF DUs
PCA223.0	Number	9	Low Income % 1 Vehicle in ME DUs
PCA23 LO	Number	9	Low Income % 2+ Vehicles in ME DUs
DUHLO	Number	9	Low Income Number of Hotel Rooms
PCOH_LO	Number	9	Low Income % Occupied
POPH_LO	Number	9	Low Income Population in Hotel Rooms
IND_ALL	Number	9	Total Industrial Employment
COM ALL	Number	9	Total Commercial Employment
SVC ALL	Number	9	Total Service Employment
TOEMP_ALL	Number	9	Total Employment
SCHENR	Number	9	Total School Enrollment
IND_HI	Number	9	High Income Industrial Employment
COM HI	Number	9	High Income Commercial Employment
SVC_HI	Number	9	High Income Service Employment
TOEMP_HI	Number	9	High Income Total Employment
IND ME	Number	9	Medium Income Industrial Employment
COM_ME	Number	9	Medium Income Commercial Employment
SVC_ME	Number	9	Medium Income Service Employment
TOEMP_ME	Number	9	Medium Income Total Employment
I ND_LO	Number	9	Low Income Industrial Employment
COM_LO	Number	9	Low Income Commercial Employment
SVC_LO	Number	9	Low Income Service Employment
TOEMPLO	Number	9	Low Income Total Employment

Table B-5: TRAFFIC ANALYSIS ZONE RANGES BY COUNTY

County	2030 LRTP Model TAZ No.	2040 LRTP Model TAZ No.
Seminole	1-300	1-300
Orange	301-1100	301-1100
Osceola	1101-1300	1101-1400
Lake	1301-1600	1401-1800
Volusia	1601-1900	1801-2300
Polk	1901-2000	2301-2400
External Stations	2001-2037	2401-2437

APPENDIX C: TRIP GENERATION

Table C-1: DWELLING UNIT OCCUPANCY DISTRIBUTION

If the Average Occupancy is...			Then the Dwelling Unit distribution is...				
more than	less than	midpoint	1 per HH	2 per HH	3 per HH	4 per HH	5+ per HH
0	1.12	0.56	0.89	0.11	0.00	0.00	0.00
1.13	1.37	1.25	0.76	0.22	0.02	0.00	0.00
1.38	1.62	1.50	0.59	0.34	0.05	0.01	0.01
1.63	1.87	1.75	0.45	0.42	0.07	0.03	0.03
1.88	2.12	2.00	0.32	0.50	0.09	0.05	0.04
2.13	2.37	2.25	0.28	0.44	0.13	0.08	0.07
2.38	2.62	2.50	0.22	0.40	0.17	0.11	0.10
2.63	2.87	2.75	0.18	0.37	0.18	0.13	0.14
2.88	3.12	3.00	0.13	0.34	0.18	0.16	0.19
3.13	3.37	3.25	0.12	0.29	0.18	0.17	0.24
3.38	3.62	3.50	0.08	0.24	0.20	0.20	0.28
3.63	3.87	3.75	0.05	0.20	0.19	0.23	0.33
3.88	4.12	4.00	0.04	0.16	0.17	0.24	0.39
4.13	4.37	4.25	0.02	0.15	0.14	0.21	0.48
4.38	4.62	4.50	0.01	0.15	0.13	0.17	0.54
4.63	5.99	5.31	0.00	0.05	0.07	0.14	0.74
6	N/A	6.00	0.00	0.00	0.02	0.05	0.93

Table C-2: SEMINOLE COUNTY TRIP GENERATION RATES

Production Rates						
Persons Per DU	Autos Per DU	Unit	Trip Purposes			
		Type	HBW	HBSH	HBSR	HBO
1	1	SF	0.147	0.203	0.102	0.203
		MF	0.203	0.203	0.147	0.203
		Hotel	0.124	0.147	0.304	0.253
	2	SF	0.349	0.304	0.304	0.405
		MF	0.455	0.253	0.253	0.405
		Hotel	0.124	0.147	0.304	0.253
	3	SF	0.754	0.585	0.304	0.630
		MF	0.658	0.405	0.304	0.608
		Hotel	0.124	0.147	0.304	0.253
2	1	SF	0.253	0.230	0.124	0.253
		MF	0.304	0.230	0.169	0.349
		Hotel	0.102	0.653	0.838	0.608
	2	SF	0.557	0.557	0.349	0.912
		MF	0.557	0.585	0.327	0.653
		Hotel	0.102	0.653	0.838	0.608
	3	SF	0.962	0.687	0.383	1.013
		MF	0.912	0.709	0.349	0.934
		Hotel	0.102	0.653	0.838	0.608
3	1	SF	0.455	0.253	0.147	0.507
		MF	0.405	0.253	0.203	0.507
		Hotel	0.079	1.013	1.362	1.063
	2	SF	0.754	0.653	0.455	1.648
		MF	0.754	0.754	0.383	1.317
		Hotel	0.079	1.013	1.362	1.063
	3	SF	1.165	0.754	0.507	1.862
		MF	1.063	0.934	0.405	1.772
		Hotel	0.079	1.013	1.362	1.063
4	1	SF	0.608	0.282	0.169	0.754
		MF	0.507	0.282	0.230	0.754
		Hotel	0.045	1.260	1.969	1.670
	2	SF	0.815	0.732	0.557	2.323
		MF	0.815	0.912	0.455	1.817
		Hotel	0.045	1.260	1.969	1.670
	3	SF	1.265	1.013	0.630	2.835
		MF	1.114	1.063	0.529	2.683
		Hotel	0.045	1.260	1.969	1.670
5	1	SF	0.658	0.304	0.203	1.108
		MF	0.557	0.304	0.253	1.013
		Hotel	0.045	1.468	2.987	2.222
	2	SF	0.860	0.754	0.709	3.240
		MF	0.860	0.957	0.608	2.278
		Hotel	0.045	1.468	2.987	2.222
	3	SF	1.317	1.260	0.777	3.640
		MF	1.165	1.137	0.810	3.290
		Hotel	0.045	1.468	2.987	2.222
Attraction Rates						
Purpose	Ind Emp	Com Emp	Svc Emp	Tot Emp	Tot Dus	T/T
HBW	0.00	0.00	0.00	1.74	0.00	0.00
HBSH	0.00	5.90	0.00	0.00	0.00	0.00
HBSR	0.00	1.45	1.45	0.00	0.48	0.00
HBO	0.00	1.26	1.26	0.00	0.20	1.26
NHB	0.00	2.81	1.36	0.00	0.30	0.00
T/T	0.00	0.00	0.00	0.41	0.30	0.00

Table C-3: ORANGE COUNTY TRIP GENERATION RATES

Production Rates						
Persons Per DU	Autos Per DU	Unit	Trip Purposes			
		Type	HBW	HBSH	HBSR	HBO
1	1	SF	0.163	0.222	0.105	0.222
		MF	0.222	0.222	0.163	0.222
		Hotel	0.128	0.163	0.321	0.268
	2	SF	0.373	0.321	0.321	0.432
		MF	0.484	0.268	0.268	0.432
		Hotel	0.128	0.163	0.321	0.268
	3	SF	0.811	0.618	0.321	0.671
		MF	0.706	0.432	0.321	0.642
		Hotel	0.128	0.163	0.321	0.268
2	1	SF	0.268	0.245	0.128	0.268
		MF	0.321	0.245	0.193	0.373
		Hotel	0.105	0.706	0.887	0.642
	2	SF	0.595	0.595	0.373	0.968
		MF	0.595	0.618	0.350	0.706
		Hotel	0.105	0.706	0.887	0.642
	3	SF	1.015	0.723	0.403	1.079
		MF	0.968	0.758	0.373	0.992
		Hotel	0.105	0.706	0.887	0.642
3	1	SF	0.484	0.268	0.163	0.537
		MF	0.432	0.268	0.222	0.537
		Hotel	0.082	1.079	1.453	1.132
	2	SF	0.811	0.706	0.484	1.744
		MF	0.811	0.811	0.403	1.400
		Hotel	0.082	1.079	1.453	1.132
	3	SF	1.237	0.811	0.537	1.989
		MF	1.132	0.992	0.432	1.890
		Hotel	0.082	1.079	1.453	1.132
4	1	SF	0.642	0.292	0.193	0.811
		MF	0.537	0.292	0.245	0.811
		Hotel	0.053	1.348	2.094	1.779
	2	SF	0.863	0.782	0.595	2.468
		MF	0.863	0.968	0.484	1.937
		Hotel	0.053	1.330	2.094	1.779
	3	SF	1.348	1.079	0.671	3.016
		MF	1.184	1.132	0.566	2.858
		Hotel	0.053	1.348	2.094	1.779
5	1	SF	0.706	0.321	0.222	1.184
		MF	0.595	0.321	0.268	1.079
		Hotel	0.053	1.558	3.179	2.368
	2	SF	0.922	0.811	0.758	3.453
		MF	0.922	1.015	0.642	2.427
		Hotel	0.053	1.558	3.179	2.368
	3	SF	1.406	1.348	0.834	3.885
		MF	1.237	1.208	0.858	3.506
		Hotel	0.053	1.558	3.179	2.368
Attraction Rates						
Purpose	Ind Emp	Com Emp	Svc Emp	Tot Emp	Tot Dus	T/T
HBW	0.00	0.00	0.00	1.74	0.00	0.00
HBSH	0.00	5.89	0.00	0.00	0.00	0.00
HBSR	0.00	1.46	1.46	0.00	0.49	0.00
HBO	0.00	1.26	1.26	0.00	0.20	1.26
NHB	0.00	2.81	1.70	0.00	0.29	0.00
T/T	0.00	0.00	0.00	0.43	0.29	0.00

Table C-4: OSCEOLA COUNTY TRIP GENERATION RATES

Production Rates						
Persons Per DU	Autos Per DU	Unit	Trip Purposes			
		Type	HBW	HBSH	HBSR	HBO
1	1	SF	0.265	0.338	0.180	0.338
		MF	0.338	0.338	0.265	0.338
		Hotel	0.212	0.265	0.518	0.445
	2	SF	0.625	0.518	0.518	0.709
		MF	0.784	0.445	0.445	0.709
		Hotel	0.212	0.265	0.518	0.445
	3	SF	1.313	1.006	0.518	1.091
		MF	1.144	0.709	0.518	1.038
		Hotel	0.212	0.265	0.518	0.445
2	1	SF	0.445	0.392	0.212	0.445
		MF	0.518	0.392	0.307	0.614
		Hotel	0.180	1.144	1.451	1.038
	2	SF	0.964	0.964	0.614	1.589
		MF	0.964	1.006	0.572	1.144
		Hotel	0.180	1.144	1.451	1.038
	3	SF	1.662	1.186	0.656	1.736
		MF	1.589	1.229	0.614	1.609
		Hotel	0.180	1.144	1.451	1.038
3	1	SF	0.784	0.445	0.265	0.878
		MF	0.709	0.445	0.338	0.878
		Hotel	0.138	1.736	2.362	1.842
	2	SF	1.313	1.144	0.784	2.849
		MF	1.313	1.313	0.656	2.266
		Hotel	0.138	1.736	2.362	1.842
	3	SF	2.012	1.313	0.932	3.229
		MF	1.853	1.609	0.709	3.060
		Hotel	0.138	1.736	2.362	1.842
4	1	SF	1.058	0.487	0.307	1.313
		MF	0.878	0.487	0.392	1.313
		Hotel	0.074	2.182	3.420	2.902
	2	SF	1.398	1.260	0.964	4.024
		MF	1.398	1.589	0.784	3.155
		Hotel	0.074	2.182	3.420	2.902
	3	SF	2.182	1.736	1.091	4.892
		MF	1.927	1.842	0.932	4.638
		Hotel	0.074	2.182	3.420	2.902
5	1	SF	1.144	0.518	0.338	1.916
		MF	0.964	0.518	0.445	1.736
		Hotel	0.074	2.531	5.156	3.854
	2	SF	1.482	1.313	1.229	5.602
		MF	1.482	1.662	1.038	3.938
		Hotel	0.074	2.531	5.156	3.854
	3	SF	2.276	2.182	1.355	6.289
		MF	2.012	1.969	1.398	5.675
		Hotel	0.074	2.531	5.156	3.854
Attraction Rates						
Purpose	Ind Emp	Com Emp	Svc Emp	Tot Emp	Tot Dus	T/T
HBW	0.00	0.00	0.00	2.62	0.00	0.00
HBSH	0.00	8.84	0.00	0.00	0.00	0.00
HBSR	0.00	2.17	2.17	0.00	0.73	0.00
HBO	0.00	1.88	1.88	0.00	0.29	1.88
NHB	0.00	4.20	2.03	0.00	0.44	0.00
T/T	0.00	0.00	0.00	0.65	0.44	0.00

Table C-5: LAKE COUNTY TRIP GENERATION RATES

Production Rates						
Persons Per DU	Autos Per DU	Unit	Trip Purposes			
		Type	HBW	HBSH	HBSR	HBO
1	1	SF	0.153	0.198	0.099	0.198
		MF	0.198	0.198	0.153	0.198
		Hotel	0.126	0.153	0.297	0.252
	2	SF	0.342	0.297	0.297	0.387
		MF	0.432	0.252	0.252	0.387
		Hotel	0.126	0.153	0.297	0.252
	3	SF	0.720	0.558	0.297	0.612
		MF	0.630	0.387	0.297	0.594
		Hotel	0.126	0.153	0.297	0.252
2	1	SF	0.252	0.216	0.126	0.252
		MF	0.297	0.216	0.171	0.342
		Hotel	0.099	0.639	0.810	0.594
	2	SF	0.522	0.531	0.342	0.882
		MF	0.522	0.558	0.315	0.639
		Hotel	0.099	0.639	0.810	0.594
	3	SF	0.918	0.666	0.369	0.981
		MF	0.873	0.684	0.342	0.909
		Hotel	0.099	0.639	0.810	0.594
3	1	SF	0.432	0.252	0.153	0.486
		MF	0.387	0.252	0.198	0.486
		Hotel	0.072	0.981	1.314	1.026
	2	SF	0.720	0.639	0.450	1.602
		MF	0.720	0.738	0.369	1.278
		Hotel	0.072	0.981	1.314	1.026
	3	SF	1.062	0.738	0.486	1.818
		MF	0.972	0.909	0.387	1.728
		Hotel	0.072	0.981	1.314	1.026
4	1	SF	0.585	0.270	0.171	0.738
		MF	0.486	0.270	0.216	0.738
		Hotel	0.045	1.233	1.926	1.629
	2	SF	0.774	0.702	0.531	2.259
		MF	0.774	0.882	0.450	1.773
		Hotel	0.045	1.233	1.926	1.629
	3	SF	1.206	0.981	0.612	2.754
		MF	1.071	1.026	0.513	2.610
		Hotel	0.045	1.233	1.926	1.629
5	1	SF	0.630	0.297	0.198	1.080
		MF	0.522	0.297	0.252	0.981
		Hotel	0.045	1.431	2.898	2.160
	2	SF	0.819	0.738	0.684	3.141
		MF	0.819	0.936	0.594	2.214
		Hotel	0.045	1.431	2.898	2.160
	3	SF	1.260	1.233	0.765	3.537
		MF	1.116	1.098	0.783	3.195
		Hotel	0.045	1.431	2.898	2.160
Attraction Rates						
Purpose	Ind Emp	Com Emp	Svc Emp	Tot Emp	Tot Dus	T/T
HBW	0.00	0.00	0.00	1.74	0.00	0.00
HBSH	0.00	5.90	0.00	0.00	0.00	0.00
HBSR	0.00	1.46	1.46	0.00	0.49	0.00
HBO	0.00	1.26	1.26	0.00	0.19	1.26
NHB	0.00	2.81	1.35	0.00	0.30	0.00
T/T	0.00	0.00	0.00	0.43	0.30	0.00

Table C-6: VOLUSIA COUNTY TRIP GENERATION RATES

Production Rates						
Persons Per DU	Autos Per DU	Unit	Trip Purposes			
		Type	HBW	HBSH	HBSR	HBO
1	1	SF	0.154	0.220	0.110	0.220
		MF	0.220	0.220	0.154	0.220
		Hotel	0.143	0.154	0.330	0.275
	2	SF	0.385	0.330	0.330	0.440
		MF	0.495	0.275	0.275	0.440
		Hotel	0.143	0.154	0.330	0.275
	3	SF	0.836	0.638	0.330	0.693
		MF	0.726	0.440	0.330	0.671
		Hotel	0.143	0.154	0.330	0.275
2	1	SF	0.275	0.253	0.143	0.275
		MF	0.330	0.253	0.198	0.385
		Hotel	0.110	0.726	0.902	0.671
	2	SF	0.605	0.605	0.385	0.990
		MF	0.605	0.638	0.363	0.726
		Hotel	0.110	0.726	0.902	0.671
	3	SF	1.045	0.748	0.418	1.111
		MF	0.990	0.770	0.385	1.023
		Hotel	0.110	0.726	0.902	0.671
3	1	SF	0.495	0.275	0.154	0.550
		MF	0.440	0.275	0.220	0.550
		Hotel	0.088	1.111	1.496	1.166
	2	SF	0.836	0.726	0.495	1.793
		MF	0.836	0.836	0.418	1.430
		Hotel	0.088	1.111	1.496	1.166
	3	SF	1.265	0.836	0.550	2.046
		MF	1.155	1.023	0.440	1.936
		Hotel	0.088	1.111	1.496	1.166
4	1	SF	0.660	0.297	0.198	0.836
		MF	0.550	0.297	0.253	0.836
		Hotel	0.055	1.386	2.156	1.826
	2	SF	0.880	0.803	0.605	2.541
		MF	0.880	0.990	0.495	2.002
		Hotel	0.055	1.386	2.156	1.826
	3	SF	1.386	1.111	0.693	3.102
		MF	1.210	1.166	0.583	2.926
		Hotel	0.055	1.386	2.156	1.826
5	1	SF	0.726	0.330	0.220	1.221
		MF	0.605	0.330	0.275	1.111
		Hotel	0.055	1.606	3.267	2.431
	2	SF	0.935	0.836	0.770	3.542
		MF	0.935	1.045	0.671	2.486
		Hotel	0.055	1.606	3.267	2.431
	3	SF	1.430	1.386	0.858	3.982
		MF	1.265	1.254	0.891	3.597
		Hotel	0.055	1.606	3.267	2.431
Attraction Rates						
Purpose	Ind Emp	Com Emp	Svc Emp	Tot Emp	Tot Dus	T/T
HBW	0.00	0.00	0.00	1.74	0.00	0.00
HBSH	0.00	5.90	0.00	0.00	0.00	0.00
HBSR	0.00	1.46	1.46	0.00	0.49	0.00
HBO	0.00	1.26	1.26	0.00	0.19	1.26
NHB	0.00	2.81	1.36	0.00	0.29	0.00
T/T	0.00	0.00	0.00	0.43	0.29	0.00

Table C-7: POLK COUNTY TRIP GENERATION RATES

Production Rates						
Persons Per DU	Autos Per DU	Unit	Trip Purposes			
		Type	HBW	HBSH	HBSR	HBO
1	1	SF	0.077	0.110	0.055	0.110
		MF	0.110	0.110	0.077	0.110
		Hotel	0.066	0.077	0.154	0.132
	2	SF	0.187	0.154	0.154	0.209
		MF	0.242	0.132	0.132	0.209
		Hotel	0.066	0.077	0.154	0.132
	3	SF	0.396	0.308	0.154	0.330
		MF	0.341	0.209	0.154	0.319
		Hotel	0.066	0.077	0.154	0.132
2	1	SF	0.132	0.121	0.066	0.132
		MF	0.154	0.121	0.088	0.187
		Hotel	0.055	0.341	0.440	0.319
	2	SF	0.286	0.286	0.187	0.473
		MF	0.286	0.308	0.176	0.341
		Hotel	0.055	0.341	0.440	0.319
	3	SF	0.506	0.363	0.198	0.528
		MF	0.473	0.374	0.187	0.495
		Hotel	0.055	0.341	0.440	0.319
3	1	SF	0.242	0.132	0.077	0.264
		MF	0.209	0.132	0.110	0.264
		Hotel	0.044	0.528	0.715	0.550
	2	SF	0.396	0.341	0.242	0.858
		MF	0.396	0.396	0.198	0.682
		Hotel	0.044	0.528	0.715	0.550
	3	SF	0.605	0.396	0.264	0.990
		MF	0.550	0.495	0.209	0.935
		Hotel	0.044	0.528	0.715	0.550
4	1	SF	0.319	0.154	0.088	0.396
		MF	0.264	0.154	0.121	0.396
		Hotel	0.022	0.660	1.034	0.869
	2	SF	0.418	0.385	0.286	1.221
		MF	0.418	0.473	0.242	0.946
		Hotel	0.022	0.660	1.034	0.869
	3	SF	0.660	0.528	0.330	1.485
		MF	0.583	0.550	0.286	1.408
		Hotel	0.022	0.660	1.034	0.869
5	1	SF	0.341	0.154	0.110	0.583
		MF	0.286	0.154	0.132	0.528
		Hotel	0.022	0.770	1.562	1.166
	2	SF	0.451	0.396	0.374	1.694
		MF	0.451	0.506	0.319	1.199
		Hotel	0.022	0.770	1.562	1.166
	3	SF	0.682	0.660	0.418	1.804
		MF	0.605	0.594	0.418	1.727
		Hotel	0.022	0.770	1.562	1.166
Attraction Rates						
Purpose	Ind Emp	Com Emp	Svc Emp	Tot Emp	Tot Dus	T/T
HBW	0.00	0.00	0.00	0.79	0.00	0.00
HBSH	0.00	2.67	0.00	0.00	0.00	0.00
HBSR	0.00	0.66	0.66	0.00	0.22	0.00
HBO	0.00	0.57	0.57	0.00	0.09	0.57
NHB	0.00	1.27	0.62	0.00	0.13	0.00
T/T	0.00	0.00	0.00	0.20	0.13	0.00

APPENDIX D: MODE CHOICE

TABLE D-1: GENERAL INPUT PARAMETERS

Input Variable	HBWRK	HBNWK	NHB	DIS, UNI, MCO, OCC, SEW, NR	DIS, UNI, MCO, OCC, SEW, RES
Auto Operating Cost - Cents/Mile	9.5	9.5	9.5	9.5	9.5
3+ Auto Occupancy - Persons	3.15	3.45	3.27	4.8	4.8
Park and Ride Auto Occupancy - Persons	1.2	1.2	1.2	1.2	1.2
Average Auto Access Speed - MPH	26	26	26	26	26
Walk to Local Transit, Minimum Run Time - Min	3	3	3	3	3
Walk to Premium Transit, Minimum Run Time - Min	3	3	3	3	3
Minimum Premium Time on Premium Walk Path - Min	3	3	3	3	3
Minimum Premium Saving over Local Walk - Min	3	3	3	3	3
Auto Access Local Transit, Minimum Run Time - Min	30	30	30	30	30
Transit Fare Inflation	1	1	1	1	1
Auto Operating Cost Inflation	1	1	1	1	1
Parking Cost Inflation	1	1	1	1	1
Minimum Transit Mode Split	0.0075	0.0025	0.003	0.0025	0.0025
Kiss and Ride Adjustment Factor	1.5	1.5	1.5	1.5	1.5

**TABLE D-2: LOGIT EQUATION COEFFICIENTS, HOME BASED
WORK, HOME BASED NON-WORK & NON HOME BASED**

Home-Based Work			Home Based Non Work	Non Home Based	Coefficient Description
High Income	Medium Income	Low Income			
-0.0450	-0.0450	-0.0450	-0.0350	-0.0400	TRANSIT WALK TIME, HIGHWAY TERMINAL TIME
-0.0200	-0.0200	-0.0200	-0.0150	-0.0180	TRANSIT AUTO ACCESS TIME
-0.0200	-0.0200	-0.0200	-0.0150	-0.0180	TRANSIT RUN TIME, HIGHWAY RUN TIME
-0.0450	-0.0450	-0.0450	-0.0350	-0.0400	TRANSIT FIRST WAIT < 7 MIN
-0.0230	-0.0230	-0.0230	-0.0350	-0.0400	TRANSIT FIRST WAIT > 7 MIN
-0.0450	-0.0450	-0.0450	-0.0350	-0.0400	TRANSIT TRANSFER TIME
-0.0450	-0.0450	-0.0450	-0.0350	-0.0400	TRANSIT NUMBER OF TRANSFERS
-0.0032	-0.0032	-0.0032	-0.0048	-0.0048	TRANSIT FARE
-0.0025	-0.0025	-0.0025	-0.0048	-0.0048	HIGHWAY AUTO OPERATING COSTS
-0.0005	-0.0005	-0.0005	-0.0024	-0.0024	HIGHWAY PARKING COSTS
-0.0180	-0.0180	-0.0180	-0.0150	-0.0180	HOV TIME DIFFERENCE
-2.6290					WALK TO LOCAL TRANSIT MODAL CONSTANT
4.1815	4.1815	4.1815	1.5524		- FOR MARKET 1 HOUSEHOLDS
0.2142	0.2142	0.2142	-2.0082		- FOR MARKET 2 HOUSEHOLDS
-1.1051	-1.1051	-1.1051	-2.5032		- FOR MARKET 3 HOUSEHOLDS
1.6000	1.6000	1.6000	0.0000	0.6000	- FOR DOWNTOWN ATTRACTIONS
0.1500	0.1500	0.1500	-0.3000	-0.1500	- FOR EXURBAN PRODUCTIONS
0.7500	0.7500	0.7500	0.0000	-0.2500	- FOR EXURBAN ATTRACTIONS
-2.6290					WALK TO PREMIUM TRANSIT MODAL CONSTANT
4.1915	4.1915	4.1915	1.5524		- FOR MARKET 1 HOUSEHOLDS
0.2142	0.2142	0.2142	-2.0082		- FOR MARKET 2 HOUSEHOLDS
-1.1051	-1.1051	-1.1051	-2.5232		- FOR MARKET 3 HOUSEHOLDS
1.6900	1.6900	1.6900	0.0000	0.6000	- FOR DOWNTOWN ATTRACTIONS
0.1500	0.1500	0.1500	-0.3000	-0.1500	- FOR EXURBAN PRODUCTIONS
0.7500	0.7500	0.7500	0.0000	-0.2500	- FOR EXURBAN ATTRACTIONS
-2.5908					PARK-RIDE TRANSIT MODAL CONSTANT
2.4596	2.4596	2.4596	1.0137		- FOR MARKET 1 HOUSEHOLDS
-0.6972	-0.6972	-0.6972	-2.3852		- FOR MARKET 2 HOUSEHOLDS
-1.7400	-1.7400	-1.7400	-2.4220		- FOR MARKET 3 HOUSEHOLDS
0.8500	0.8500	0.8500	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
0.4500	0.4500	0.4500	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.4500	0.4500	0.4500	0.0000	-0.1000	- FOR EXURBAN ATTRACTIONS

**TABLE D-2: LOGIT EQUATION COEFFICIENTS, HOME BASED
WORK, HOME BASED NON-WORK & NON HOME BASED (CONT'D)**

Home-Based Work			Home Based Non Work	Non Home Based	Coefficient Description
High Income	Medium Income	Low Income			
				-2.5922	KISS-RIDE TRANSIT MODAL CONSTANT
2.6797	2.6797	2.6797	0.9525		- FOR MARKET 1 HOUSEHOLDS
-0.6184	-0.6184	-0.6184	-2.5331		- FOR MARKET 2 HOUSEHOLDS
-1.8641	-1.8641	-1.8641	-2.7193		- FOR MARKET 3 HOUSEHOLDS
0.8500	0.8500	0.8500	0.5000	0.5000	- FOR DOWNTOWN ATTRACTIONS
0.4500	0.4500	0.4500	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.4500	0.4500	0.4500	0.0000	-0.1000	- FOR EXURBAN ATTRACTIONS
				-0.3940	TWO PER VEHICLE HIGHWAY MODAL CONSTANT
-0.3390	-0.3390	-0.3390	0.3500	0.0000	- FOR MARKET 1 HOUSEHOLDS
-0.9990	-0.9990	-0.9990	0.2100	0.0000	- FOR MARKET 2 HOUSEHOLDS
-1.7590	-1.7590	-1.7590	-0.1000	0.0000	- FOR MARKET 3 HOUSEHOLDS
0.4000	0.4000	0.4000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
				-0.6160	THREE+ PER VEHICLE HIGHWAY MODAL CONST
-0.5150	-0.5150	-0.5150	0.3110	0.0000	- FOR MARKET 1 HOUSEHOLDS
-1.2230	-1.2230	-1.2230	0.1110	0.0000	- FOR MARKET 2 HOUSEHOLDS
-1.9850	-1.9850	-1.9850	-0.3990	0.0000	- FOR MARKET 3 HOUSEHOLDS
0.4000	0.4000	0.4000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	SUBPURP: 1/VEH, 0 CAR
0.0000	0.0000	0.0000	0.0000	0.0000	SUBPURP: 1/VEH, 1 CAR
0.0000	0.0000	0.0000	0.0000	0.0000	SUBPURP: 1/VEH, 2+ CAR
0.4450	0.4450	0.4450	0.7820	0.0000	SUBPURP: 2/VEH, 0 CAR
0.2950	0.2950	0.2950	0.6320	0.0000	SUBPURP: 2/VEH, 1 CAR
-0.0050	-0.0050	-0.0050	0.3320	0.0000	SUBPURP: 2/VEH, 2+ CAR
0.4730	0.4730	0.4730	0.7740	0.0000	SUBPURP: 3+/VEH, 0 CAR
0.2730	0.2730	0.2730	0.5740	0.0000	SUBPURP: 3+/VEH, 1 CAR
-0.2470	-0.2470	-0.2470	0.0640	0.0000	SUBPURP: 3+/VEH, 2+ CAR
0.0000	0.0000	0.0000			HBW/OP : 1/VEH, 0 CAR
0.0000	0.0000	0.0000			HBW/OP : 1/VEH, 1 CAR
0.0000	0.0000	0.0000			HBW/OP : 1/VEH, 2+ CAR
-0.3560	-0.3560	-0.3560			HBW/OP : 2/VEH, 0 CAR
-1.0160	-1.0160	-1.0160			HBW/OP : 2/VEH, 1 CAR
-1.7760	-1.7760	-1.7760			HBW/OP : 2/VEH, 2+ CAR

**TABLE D-3: LOGIT EQUATION COEFFICIENTS, DISNEY,
UNIVERSAL & AIRPORT RESIDENT & NON-RESIDENT**

Disney Resident	Disney Non-Resident	Universal Resident	Universal Non-Resident	Airport Resident	Airport Non-Resident	Coefficient Description
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT WALK TIME, HIGHWAY TERMINAL TIME
-0.0150	-0.0180	-0.0150	-0.0180	-0.0150	-0.0180	TRANSIT AUTO ACCESS TIME
-0.0150	-0.0180	-0.0150	-0.0180	-0.0150	-0.0180	TRANSIT RUN TIME, HIGHWAY RUN TIME
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT FIRST WAIT < 7 MIN
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT FIRST WAIT > 7 MIN
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT TRANSFER TIME
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT NUMBER OF TRANSFERS
-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	TRANSIT FARE
-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	HIGHWAY AUTO OPERATING COSTS
-0.0024	-0.0024	-0.0024	-0.0024	-0.0048	-0.0048	HIGHWAY PARKING COSTS
-0.0150	-0.0180	-0.0150	-0.0180	-0.0150	-0.0180	HOV TIME DIFFERNCE
-2.3610		-2.3610		-2.7400		WALK TO LOCAL TRANSIT MODAL CONSTANT
1.8214		1.8214		-3.7400		- FOR MARKET 1 HOUSEHOLDS
-1.7392		-1.7392		-2.7400		- FOR MARKET 2 HOUSEHOLDS
-2.2542		-2.2542		-2.7400		- FOR MARKET 3 HOUSEHOLDS
0.0000	0.6000	0.0000	0.6000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
-0.3000	-0.1500	-0.3000	-0.1500	-0.5000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.2500	0.0000	-0.2500	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
-2.3610		-2.3610		0.1600		WALK TO PREMIUM TRANSIT MODAL CONSTANT
1.8214		1.8214		0.0600		- FOR MARKET 1 HOUSEHOLDS
-1.7392		-1.7392		2.0600		- FOR MARKET 2 HOUSEHOLDS
-2.2542		-2.2542		2.2600		- FOR MARKET 3 HOUSEHOLDS
0.0000	0.6000	0.0000	0.6000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
-0.3000	-0.1500	-0.3000	-0.1500	-0.5000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.2500	0.0000	-0.2500	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
-2.3228		-2.3228		-3.7400		PARK-RIDE TRANSIT MODAL CONSTANT
1.2827		1.2827		-3.4400		- FOR MARKET 1 HOUSEHOLDS
-2.1162		-2.1162		-2.4400		- FOR MARKET 2 HOUSEHOLDS
-2.1530		-2.1530		-2.4400		- FOR MARKET 3 HOUSEHOLDS
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.1000	0.0000	-0.1000	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
-2.3242		-2.3242		-3.5400		KISS-RIDE TRANSIT MODAL CONSTANT
1.2215		1.2215		-3.2400		- FOR MARKET 1 HOUSEHOLDS
-2.2641		-2.2641		-2.2400		- FOR MARKET 2 HOUSEHOLDS
-2.4503		-2.4503		-2.0400		- FOR MARKET 3 HOUSEHOLDS
0.5000	0.5000	0.5000	0.5000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.1000	0.0000	-0.1000	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS

**TABLE D-4: LOGIT EQUATION COEFFICIENTS,
ORANGE COUNTY CONVENTION CENTER, SEA WORLD
& I-DRIVE RESIDENT & NON-RESIDENT**

OCCC Resident	OCCC Non-Resident	Sea World Resident	Sea World Non-Resident	I-Drive Resident	I-Drive Non-Resident	Coefficient Description
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT WALK TIME, HIGHWAY TERMINAL TIME
-0.0150	-0.0180	-0.0150	-0.0180	-0.0150	-0.0180	TRANSIT AUTO ACCESS TIME
-0.0150	-0.0180	-0.0150	-0.0180	-0.0150	-0.0180	TRANSIT RUN TIME, HIGHWAY RUN TIME
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT FIRST WAIT < 7 MIN
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT FIRST WAIT > 7 MIN
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT TRANSFER TIME
-0.0350	-0.0400	-0.0350	-0.0400	-0.0350	-0.0400	TRANSIT NUMBER OF TRANSFERS
-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	TRANSIT FARE
-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	-0.0048	HIGHWAY AUTO OPERATING COSTS
-0.0024	-0.0024	-0.0024	-0.0024	-0.0024	-0.0024	HIGHWAY PARKING COSTS
-0.0150	-0.0180	-0.0150	-0.0180	-0.0150	-0.0180	HOV TIME DIFFERNCE
	-2.3610		-2.3610		0.8690	WALK TO LOCAL TRANSIT MODAL CONSTANT
1.8214		1.8214				- FOR MARKET 1 HOUSEHOLDS
-1.7392		-1.7392				- FOR MARKET 2 HOUSEHOLDS
-2.2542		-2.2542				- FOR MARKET 3 HOUSEHOLDS
0.0000	0.6000	0.0000	0.6000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
-0.3000	-0.1500	-0.3000	-0.1500	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.2500	0.0000	-0.2500	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
	-2.3610		-2.3610		0.8690	WALK TO PREMIUM TRANSIT MODAL CONSTANT
1.8214		1.8214				- FOR MARKET 1 HOUSEHOLDS
-1.7392		-1.7392				- FOR MARKET 2 HOUSEHOLDS
-2.2542		-2.2542				- FOR MARKET 3 HOUSEHOLDS
0.0000	0.6000	0.0000	0.6000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
-0.3000	-0.1500	-0.3000	-0.1500	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.2500	0.0000	-0.2500	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
	-2.3228		-2.3228		0.8690	PARK-RIDE TRANSIT MODAL CONSTANT
1.2827		1.2827				- FOR MARKET 1 HOUSEHOLDS
-2.1162		-2.1162				- FOR MARKET 2 HOUSEHOLDS
-2.1530		-2.1530				- FOR MARKET 3 HOUSEHOLDS
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.1000	0.0000	-0.1000	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS
	-2.2342		-2.3242		0.8690	KISS-RIDE TRANSIT MODAL CONSTANT
1.2215		1.2215				- FOR MARKET 1 HOUSEHOLDS
-2.2641		-2.2641				- FOR MARKET 2 HOUSEHOLDS
-2.4503		-2.4503				- FOR MARKET 3 HOUSEHOLDS
0.5000	0.5000	0.5000	0.5000	0.0000	0.0000	- FOR DOWNTOWN ATTRACTIONS
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	- FOR EXURBAN PRODUCTIONS
0.0000	-0.1000	0.0000	-0.1000	0.0000	0.0000	- FOR EXURBAN ATTRACTIONS

TABLE D-5: TRIP TOTALS FOR HBWRK

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for HBWRK

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	11495.9	4729.9	2811.1	1828.1	1656.5	36.8	209.2	224.3	2126.8
One Car Households	117343.9	79259.4	22706.9	12188.3	2563.3	30.4	415.5	180.1	3189.3
Two+ Car Households	256929.2	215498.7	24482.1	14612.0	1710.9	20.7	544.2	60.6	2336.4
TOTAL	385769.0	299488.1	50000.0	28628.4	5930.7	87.9	1168.9	465.1	7652.5
Can Walk	47916.4	33849.1	5632.6	2258.5	5930.7	87.9	121.2	36.4	6176.2
Must Drive	121054.8	92306.5	16076.1	11195.8	0.0	0.0	1047.7	428.6	1476.3
No Access	216797.9	173332.4	28291.4	15174.1	0.0	0.0	0.0	0.0	0.0
TOTAL	385769.0	299488.1	50000.0	28628.4	5930.7	87.9	1168.9	465.1	7652.5
Productions:									
CBD	402.0	234.1	64.8	27.2	74.3	1.6	0.0	0.0	75.9
Exurban	190946.0	149913.1	24612.0	13426.1	1875.7	29.8	796.1	293.4	2994.9
Other	194421.0	149340.9	25323.3	15175.1	3980.8	56.5	372.8	171.7	4581.7
Attractions:									
CBD	18873.0	10927.9	2955.0	2424.4	2116.5	9.1	331.3	108.7	2565.7
Exurban	171332.0	135616.1	21975.6	11839.7	1481.7	25.6	278.7	114.5	1900.6
Other	195564.0	152944.0	25069.4	14364.3	2332.4	53.1	558.9	241.8	3186.3
TOTAL	385769.0	299488.1	50000.0	28628.4	5930.7	87.9	1168.9	465.1	7652.5
Average Car Occupancy:	1.134								
Revenue Potential Summary (Dollars):									
Fare Revenue					5940.	93.	1176.	468.	7677.
Average Fare					1.00	1.06	1.01	1.01	1.00
Parking Revenue					0.				

TABLE D-6: TRIP TOTALS FOR HBWRK

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for HBWRK

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	8374.3	3548.9	2099.0	1261.0	1100.5	25.5	178.0	161.4	1465.4
One Car Households	124114.5	85055.4	24137.2	11837.3	2387.7	39.9	482.8	174.3	3084.6
Two+ Car Households	321073.2	272407.0	30578.7	15739.0	1512.7	15.9	753.9	66.1	2348.5
TOTAL	453562.0	361011.3	56814.9	28837.4	5000.8	81.2	1414.7	401.8	6898.5
Can Walk	40162.7	28447.6	4792.5	1737.5	5000.8	81.2	81.2	21.9	5185.1
Must Drive	158701.6	125088.4	20347.5	11552.3	0.0	0.0	1333.4	379.9	1713.4
No Access	254697.7	207475.3	31674.9	15547.5	0.0	0.0	0.0	0.0	0.0
TOTAL	453562.0	361011.3	56814.9	28837.4	5000.8	81.2	1414.7	401.8	6898.5
Productions:									
CBD	2520.0	1583.3	376.2	159.9	390.1	8.8	1.3	0.5	400.6
Exurban	271679.0	217834.1	33679.9	17250.5	1534.6	29.8	1064.5	285.6	2914.5
Other	179363.0	141593.8	22758.8	11427.0	3076.1	42.6	348.9	115.7	3583.3
Attractions:									
CBD	22272.0	14002.8	3589.5	2221.7	1849.6	10.1	485.4	112.9	2458.0
Exurban	200995.0	162788.4	24647.9	11930.1	1207.9	14.2	312.2	94.3	1628.6
Other	230295.0	184220.1	28577.5	14685.6	1943.3	56.8	617.0	194.6	2811.8
TOTAL	453562.0	361011.3	56814.9	28837.4	5000.8	81.2	1414.7	401.8	6898.5
Average Car Occupancy:	1.121								
Revenue Potential Summary (Dollars):									
Fare Revenue					4975.	94.	1423.	404.	6897.
Average Fare					0.99	1.16	1.01	1.01	1.00
Parking Revenue							0.		

TABLE D-7: TRIP TOTALS FOR HBWRK

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for HBWRK

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	544.3	253.0	151.2	93.9	32.3	0.2	7.5	6.2	46.2
One Car Households	17680.3	12056.5	3426.8	1729.7	415.2	16.8	26.6	8.6	467.2
Two+ Car Households	52161.3	44343.9	4999.6	2618.9	142.3	0.1	52.2	4.3	198.9
TOTAL	70386.0	56653.4	8577.7	4442.6	589.8	17.1	86.3	19.2	712.4
Can Walk	4374.2	2989.7	573.1	199.6	589.8	17.1	3.8	1.1	611.8
Must Drive	26417.6	21272.2	3254.9	1790.0	0.0	0.0	82.5	18.1	100.6
No Access	39594.1	32391.5	4749.6	2453.0	0.0	0.0	0.0	0.0	0.0
TOTAL	70386.0	56653.4	8577.7	4442.6	589.8	17.1	86.3	19.2	712.4
Productions:									
CBD	178.0	115.0	27.3	11.0	24.4	0.1	0.1	0.0	24.7
Exurban	46528.0	37937.8	5452.5	2993.8	72.6	5.4	54.6	11.2	143.8
Other	23680.0	18600.6	3097.8	1437.7	492.8	11.5	31.7	7.9	543.9
Attractions:									
CBD	3415.0	2256.6	550.1	336.1	236.5	5.3	25.9	4.5	272.2
Exurban	31739.0	25870.7	3767.5	1946.9	121.2	3.2	23.9	5.7	153.8
Other	35232.0	28526.1	4260.0	2159.6	232.1	8.6	36.6	9.0	286.3
TOTAL	70386.0	56653.4	8577.7	4442.6	589.8	17.1	86.3	19.2	712.4
Average Car Occupancy:	1.117								
Revenue Potential Summary (Dollars):									
Fare Revenue					597.	18.	87.	19.	721.
Average Fare					1.01	1.06	1.01	1.01	1.01
Parking Revenue					0.				

TABLE D-8: TRIP TOTALS FOR HBNWRK

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for HBNWK

	Person Trips	----- Highway Trips -----			----- Transit Trips -----					
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit	
Zero Car Households	50845.5	14714.8	14471.5	17332.9	3743.5	0.0	38.7	544.1	4326.3	
One Car Households	1276636.0	443457.3	422917.3	405749.2	3717.2	0.0	67.9	727.0	4512.1	
Two+ Car Households	1793963.5	816538.9	726764.6	246697.7	2583.9	0.0	224.9	1153.5	3962.3	
TOTAL	3121445.0	1274711.0	1164153.5	669779.9	10044.6	0.0	331.6	2424.6	12800.7	
Can Walk	757496.7	315841.1	283840.3	146564.8	10044.6	0.0	144.7	1061.3	11250.6	
Must Drive	756395.2	272770.7	267001.3	215073.1	0.0	0.0	186.9	1363.3	1550.1	
No Access	1607553.1	686099.2	613311.9	308142.0	0.0	0.0	0.0	0.0	0.0	
TOTAL	3121445.0	1274711.0	1164153.5	669779.9	10044.6	0.0	331.6	2424.6	12800.7	
Productions:										
CBD	11914.0	4452.1	4165.2	2662.4	627.1	0.0	1.5	5.7	634.2	
Exurban	1756930.0	718738.7	656039.5	377134.1	2994.4	0.0	122.3	1900.9	5017.7	
Other	1352601.0	551520.2	503948.7	289983.3	6423.1	0.0	207.7	517.9	7148.8	
Attractions:										
CBD	92272.0	29976.9	30365.6	29482.0	1691.2	0.0	1.3	755.0	2447.5	
Exurban	1496432.0	628562.6	565985.2	298012.7	3085.9	0.0	34.8	750.8	3871.5	
Other	1532741.0	616171.5	567802.7	342285.2	5267.4	0.0	295.5	918.8	6481.7	
TOTAL	3121445.0	1274711.0	1164153.5	669779.9	10044.6	0.0	331.6	2424.6	12800.7	
Average Car Occupancy:		1.516								
Revenue Potential Summary (Dollars):										
Fare Revenue					10019.	0.	335.	2431.	12785.	
Average Fare					1.00	0.00	1.01	1.00	1.00	
Parking Revenue							0.			

TABLE D-9: TRIP TOTALS FOR NHB

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for NHB

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	60339.3	32302.8	18735.6	8822.0	455.2	0.0	20.1	3.5	478.9
One Car Households	1152426.1	613914.4	358256.8	174516.4	5251.9	0.0	417.5	69.1	5738.5
Two+ Car Households	1514714.6	804267.1	468898.9	234549.4	6274.5	0.0	620.8	103.8	6999.1
TOTAL	2727480.0	1450484.3	845891.4	417887.8	11981.6	0.0	1058.4	176.4	13216.5
Can Walk	934510.1	509471.1	291565.3	120914.1	11981.6	0.0	508.9	69.2	12559.7
Must Drive	512327.7	261943.7	158051.1	91676.0	0.0	0.0	549.5	107.3	656.8
No Access	1280642.2	679069.6	396275.0	205297.7	0.0	0.0	0.0	0.0	0.0
TOTAL	2727480.0	1450484.3	845891.4	417887.8	11981.6	0.0	1058.4	176.4	13216.5
Productions:									
CBD	108567.0	56356.9	33098.5	15588.9	3517.6	0.0	1.8	3.3	3522.7
Exurban	1214184.0	641520.9	375981.6	193231.4	2786.2	0.0	578.8	85.1	3450.0
Other	1404729.0	752606.5	436811.3	209067.6	5677.7	0.0	477.9	88.1	6243.7
Attractions:									
CBD	108649.0	56134.3	32956.9	15665.2	3738.1	0.0	71.6	82.9	3892.6
Exurban	1213170.0	641883.0	376126.9	192181.0	2617.5	0.0	340.6	21.0	2979.0
Other	1405661.0	752467.1	436807.6	210041.6	5626.0	0.0	646.2	72.6	6344.8
TOTAL	2727480.0	1450484.3	845891.4	417887.8	11981.6	0.0	1058.4	176.4	13216.5
Average Car Occupancy:	1.356								
Revenue Potential Summary (Dollars):									
Fare Revenue					11509.	0.	1070.	178.	12757.
Average Fare					0.96	0.00	1.01	1.01	0.97
Parking Revenue					0.				

TABLE D-10: TRIP TOTALS FOR TOTNW

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for TOTNW

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	111184.8	47017.6	33207.2	26154.9	4198.7	0.0	58.8	547.6	4805.1
One Car Households	2429062.1	1057371.8	781174.1	580265.6	8969.1	0.0	485.4	796.1	10250.6
Two+ Car Households	3308678.1	1620806.0	1195663.5	481247.1	8858.4	0.0	845.7	1257.4	10961.5
TOTAL	5848925.0	2725195.3	2010044.8	1087667.7	22026.2	0.0	1390.0	2601.0	26017.2
Can Walk	1692006.8	825312.1	575405.6	267478.9	22026.2	0.0	653.6	1130.5	23810.2
Must Drive	1268722.9	534714.4	425052.4	306749.1	0.0	0.0	736.4	1470.5	2206.9
No Access	2888195.3	1365168.8	1009586.8	513439.6	0.0	0.0	0.0	0.0	0.0
TOTAL	5848925.0	2725195.3	2010044.8	1087667.7	22026.2	0.0	1390.0	2601.0	26017.2
Productions:									
CBD	120481.0	60809.0	37263.7	18251.3	4144.7	0.0	3.3	9.0	4157.0
Exurban	2971114.0	1360259.7	1032021.2	570365.4	5780.6	0.0	701.1	1986.0	8467.7
Other	2757330.0	1304126.6	940760.0	499050.9	12100.8	0.0	685.6	606.0	13392.5
Attractions:									
CBD	200921.0	86111.2	63322.5	45147.2	5429.4	0.0	72.9	837.9	6340.1
Exurban	2709602.0	1270445.7	942112.1	490193.7	5703.4	0.0	375.3	771.8	6850.5
Other	2938402.0	1368638.5	1004610.3	552326.8	10893.4	0.0	941.7	991.4	12826.5
TOTAL	5848925.0	2725195.3	2010044.8	1087667.7	22026.2	0.0	1390.0	2601.0	26017.2
Average Car Occupancy:	1.443								
Revenue Potential Summary (Dollars):									
Fare Revenue					21528.	0.	1404.	2609.	25542.
Average Fare					0.98	0.00	1.01	1.00	0.98
Parking Revenue							0.		

TABLE D-11: TRIP TOTALS FOR MCO RES

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for MCO RES

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	408.6	149.4	149.2	108.5	0.5	0.0	0.4	0.6	1.5
One Car Households	7117.3	2678.3	2836.0	1544.5	13.4	0.0	19.5	25.7	58.6
Two+ Car Households	13381.1	6587.0	4968.3	1690.6	18.3	0.0	22.2	94.6	135.1
TOTAL	20907.0	9414.7	7953.5	3343.6	32.2	0.0	42.1	120.9	195.2
Can Walk	6739.8	3443.0	2641.6	537.8	32.2	0.0	21.3	63.9	117.4
Must Drive	14167.2	5971.7	5312.0	2805.7	0.0	0.0	20.8	57.0	77.8
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	20907.0	9414.7	7953.5	3343.6	32.2	0.0	42.1	120.9	195.2
Productions:									
CBD	99.0	50.8	40.3	5.5	1.1	0.0	0.4	0.8	2.3
Exurban	11450.0	5287.4	4414.4	1649.1	6.4	0.0	24.4	68.3	99.1
Other	9358.0	4076.4	3498.9	1688.9	24.7	0.0	17.3	51.7	93.8
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	20907.0	9414.7	7953.5	3343.6	32.2	0.0	42.1	120.9	195.2
TOTAL	20907.0	9414.7	7953.5	3343.6	32.2	0.0	42.1	120.9	195.2
Average Car Occupancy:	1.448								
Revenue Potential Summary (Dollars):									
Fare Revenue					32.	0.	42.	121.	195.
Average Fare					1.00	0.00	1.00	1.00	1.00
Parking Revenue					0.				

TABLE D-12: TRIP TOTALS FOR MCO VIS

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for MCO VIS

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				Total Transit
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	
Zero Car Households	300.9	99.6	140.3	59.2	1.7	0.0	0.0	0.0	1.8
One Car Households	62463.6	19953.3	30014.7	12266.3	226.4	0.0	1.4	1.6	229.4
Two+ Car Households	9661.4	2988.5	4490.4	2162.5	18.6	0.0	0.6	0.8	20.0
TOTAL	72426.0	23041.5	34645.3	14488.0	246.7	0.0	2.0	2.4	251.2
Can Walk	42288.5	13818.7	20739.1	7480.5	246.7	0.0	1.5	2.0	250.2
Must Drive	30137.5	9222.8	13906.3	7007.5	0.0	0.0	0.5	0.4	0.9
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	72426.0	23041.5	34645.3	14488.0	246.7	0.0	2.0	2.4	251.2
Productions:									
CBD	830.0	331.3	418.1	68.0	12.0	0.0	0.2	0.3	12.5
Exurban	33414.0	10161.1	15902.9	7295.6	51.7	0.0	1.1	1.6	54.4
Other	38182.0	12549.1	18324.3	7124.3	183.0	0.0	0.7	0.5	184.3
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	72426.0	23041.5	34645.3	14488.0	246.7	0.0	2.0	2.4	251.2
TOTAL	72426.0	23041.5	34645.3	14488.0	246.7	0.0	2.0	2.4	251.2
Average Car Occupancy:	1.639								
Revenue Potential Summary (Dollars):									
Fare Revenue					247.	0.	2.	2.	251.
Average Fare					1.00	0.00	1.00	1.00	1.00
Parking Revenue							0.		

TABLE D-13: TRIP TOTALS FOR MCO TOT

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for MCO TOT

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	709.5	249.0	289.5	167.7	2.2	0.0	0.4	0.6	3.3
One Car Households	69580.9	22631.6	32850.7	13810.8	239.8	0.0	20.9	27.3	287.9
Two+ Car Households	23042.5	9575.5	9458.7	3853.1	36.9	0.0	22.8	95.4	155.2
TOTAL	93333.0	32456.1	42598.9	17831.6	278.9	0.0	44.1	123.3	446.4
Can Walk	49028.4	17261.7	23380.6	8018.4	278.9	0.0	22.8	65.9	367.7
Must Drive	44304.6	15194.4	19218.2	9813.2	0.0	0.0	21.3	57.4	78.7
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	93333.0	32456.1	42598.9	17831.6	278.9	0.0	44.1	123.3	446.4
Productions:									
CBD	929.0	382.2	458.4	73.6	13.1	0.0	0.6	1.1	14.9
Exurban	44864.0	15448.5	20317.3	8944.7	58.1	0.0	25.5	69.9	153.5
Other	47540.0	16625.5	21823.2	8813.3	207.7	0.0	18.0	52.3	278.0
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	93333.0	32456.1	42598.9	17831.6	278.9	0.0	44.1	123.3	446.4
TOTAL	93333.0	32456.1	42598.9	17831.6	278.9	0.0	44.1	123.3	446.4
Average Car Occupancy:	0.000								
Revenue Potential Summary (Dollars):									
Fare Revenue					279.	0.	44.	123.	446.
Average Fare					1.00	0.00	1.00	1.00	1.00
Parking Revenue					0.				

TABLE D-14: TRIP TOTALS FOR OCC RES

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for OCC RES

	----- Highway Trips -----				----- Transit Trips -----				T
	Person Trips	Drive Alone	One Passenger	Two+ Passengers	Walk to Local	Walk to Premium	Park-Ride	Kiss-Ride	
Zero Car Households	369.8	30.9	108.7	180.7	38.4	0.0	8.9	2.2	
One Car Households	6185.0	707.9	2346.3	3106.5	15.9	0.0	7.5	1.0	
Two+ Car Households	10759.2	1732.5	6329.2	2661.5	12.2	0.0	22.6	1.1	
TOTAL	17314.0	2471.2	8784.2	5948.6	66.6	0.0	39.0	4.4	
Can Walk	5729.5	976.9	3225.3	1438.9	66.6	0.0	19.4	2.4	
Must Drive	11584.5	1494.3	5558.9	4509.8	0.0	0.0	19.5	2.0	
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL	17314.0	2471.2	8784.2	5948.6	66.6	0.0	39.0	4.4	
Productions:									
CBD	100.0	16.6	52.8	23.5	7.1	0.0	0.0	0.0	
Exurban	9110.0	1278.4	4662.1	3131.5	12.2	0.0	23.3	2.5	
Other	8104.0	1176.3	4069.3	2793.6	47.3	0.0	15.6	1.9	
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other	17314.0	2471.2	8784.2	5948.6	66.6	0.0	39.0	4.4	
TOTAL	17314.0	2471.2	8784.2	5948.6	66.6	0.0	39.0	4.4	
Average Car Occupancy:	2.011								
Revenue Potential Summary (Dollars):									
Fare Revenue					72.	0.	43.	5.	
Average Fare					1.08	0.00	1.09	1.09	
Parking Revenue									0.

TABLE D-15: TRIP TOTALS FOR OCC VIS

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for OCC VIS

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	78.4	3.5	25.9	48.9	0.1	0.0	0.0	0.0	0.1
One Car Households	13201.3	645.5	4881.4	7671.9	2.6	0.0	0.0	0.0	2.6
Two+ Car Households	2346.3	102.7	762.7	1480.4	0.4	0.0	0.0	0.0	0.4
TOTAL	15626.0	751.7	5670.0	9201.2	3.1	0.0	0.0	0.0	3.1
Can Walk	7525.5	364.3	2757.3	4400.7	3.1	0.0	0.0	0.0	3.1
Must Drive	8100.5	387.4	2912.7	4800.4	0.0	0.0	0.0	0.0	0.0
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	15626.0	751.7	5670.0	9201.2	3.1	0.0	0.0	0.0	3.1
Productions:									
CBD	232.0	11.2	85.5	133.7	1.6	0.0	0.0	0.0	1.6
Exurban	8616.0	423.0	3198.5	4994.5	0.1	0.0	0.0	0.0	0.1
Other	6778.0	317.4	2386.1	4073.0	1.5	0.0	0.0	0.0	1.5
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	15626.0	751.7	5670.0	9201.2	3.1	0.0	0.0	0.0	3.1
TOTAL	15626.0	751.7	5670.0	9201.2	3.1	0.0	0.0	0.0	3.1
Average Car Occupancy:	2.558								
Revenue Potential Summary (Dollars):									
Fare Revenue					3.	0.	0.	0.	3.
Average Fare					1.06	0.00	1.03	1.01	1.06
Parking Revenue							0.		

TABLE D-16: TRIP TOTALS FOR OCC TOT

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for OCC TOT

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	448.2	34.3	134.6	229.5	38.6	0.0	8.9	2.2	49.7
One Car Households	19386.4	1353.4	7227.6	10778.3	18.6	0.0	7.5	1.0	27.1
Two+ Car Households	13105.4	1835.2	7092.0	4141.9	12.6	0.0	22.6	1.1	36.3
TOTAL	32940.0	3222.9	14454.2	15149.8	69.7	0.0	39.0	4.4	113.1
Can Walk	13255.0	1341.2	5982.7	5839.6	69.7	0.0	19.5	2.4	91.5
Must Drive	19685.0	1881.8	8471.6	9310.2	0.0	0.0	19.5	2.0	21.5
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	32940.0	3222.9	14454.2	15149.8	69.7	0.0	39.0	4.4	113.1
Productions:									
CBD	332.0	27.8	138.3	157.3	8.7	0.0	0.0	0.0	8.7
Exurban	17726.0	1701.4	7860.6	8126.0	12.2	0.0	23.3	2.5	38.0
Other	14882.0	1493.7	6455.4	6866.5	48.8	0.0	15.7	1.9	66.4
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	32940.0	3222.9	14454.2	15149.8	69.7	0.0	39.0	4.4	113.1
TOTAL	32940.0	3222.9	14454.2	15149.8	69.7	0.0	39.0	4.4	113.1
Average Car Occupancy:	0.000								
Revenue Potential Summary (Dollars):									
Fare Revenue					75.	0.	43.	5.	122.
Average Fare					1.08	0.00	1.09	1.09	1.08
Parking Revenue							0.		

TABLE D-17: TRIP TOTALS FOR UNI RES

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for UNI RES

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				Total Transit
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	
Zero Car Households	248.1	5.6	12.8	221.7	7.1	0.0	0.8	0.2	8.1
One Car Households	4142.2	107.1	195.3	3837.0	2.2	0.0	0.5	0.1	2.8
Two+ Car Households	7322.7	330.4	1329.4	5659.2	2.2	0.0	1.4	0.1	3.7
TOTAL	11713.0	443.1	1537.5	9718.0	11.6	0.0	2.6	0.3	14.5
Can Walk	3909.3	189.0	686.7	3020.2	11.6	0.0	1.7	0.2	13.5
Must Drive	7803.7	254.1	850.8	6697.8	0.0	0.0	0.9	0.1	1.0
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	11713.0	443.1	1537.5	9718.0	11.6	0.0	2.6	0.3	14.5
Productions:									
CBD	64.0	3.0	9.3	50.4	1.3	0.0	0.1	0.0	1.3
Exurban	6277.0	226.7	779.6	5267.0	2.0	0.0	1.5	0.2	3.7
Other	5372.0	213.3	748.6	4400.6	8.3	0.0	1.1	0.1	9.5
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	11713.0	443.1	1537.5	9718.0	11.6	0.0	2.6	0.3	14.5
TOTAL	11713.0	443.1	1537.5	9718.0	11.6	0.0	2.6	0.3	14.5
Average Car Occupancy:	3.137								
Revenue Potential Summary (Dollars):									
Fare Revenue					12.	0.	3.	0.	14.
Average Fare					1.00	0.00	1.00	1.00	1.00
Parking Revenue							0.		

TABLE D-18: TRIP TOTALS FOR UNI VIS

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for UNI VIS

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				Total Transit
		Drive Alone	One Passenger	Two+ Passengers	Walk to Local	Walk to Premium	Park-Ride	Kiss-Ride	
Zero Car Households	295.1	1.1	5.5	288.4	0.0	0.0	0.0	0.0	0.0
One Car Households	46903.2	188.1	900.9	45814.2	0.0	0.0	0.0	0.0	0.0
Two+ Car Households	8547.8	30.8	142.1	8374.9	0.0	0.0	0.0	0.0	0.0
TOTAL	55746.0	220.0	1048.5	54477.6	0.0	0.0	0.0	0.0	0.0
Can Walk	26489.8	108.4	521.8	25859.6	0.0	0.0	0.0	0.0	0.0
Must Drive	29256.2	111.6	526.7	28617.9	0.0	0.0	0.0	0.0	0.0
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	55746.0	220.0	1048.5	54477.6	0.0	0.0	0.0	0.0	0.0
Productions:									
CBD	825.0	3.9	20.5	800.6	0.0	0.0	0.0	0.0	0.0
Exurban	30537.0	122.1	581.9	29833.0	0.0	0.0	0.0	0.0	0.0
Other	24384.0	93.9	446.1	23844.0	0.0	0.0	0.0	0.0	0.0
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	55746.0	220.0	1048.5	54477.6	0.0	0.0	0.0	0.0	0.0
TOTAL	55746.0	220.0	1048.5	54477.6	0.0	0.0	0.0	0.0	0.0
Average Car Occupancy:	3.724								
Revenue Potential Summary (Dollars):									
Fare Revenue					0.	0.	0.	0.	0.
Average Fare					0.00	0.00	0.00	0.00	0.00
Parking Revenue					0.				

TABLE D-19: TRIP TOTALS FOR UNI TOT

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for UNI TOT

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	543.2	6.7	18.3	510.1	7.1	0.0	0.8	0.2	8.1
One Car Households	51045.3	295.2	1096.2	49651.2	2.2	0.0	0.5	0.1	2.8
Two+ Car Households	15870.5	361.1	1471.5	14034.2	2.2	0.0	1.4	0.1	3.7
TOTAL	67459.0	663.0	2586.0	64195.5	11.6	0.0	2.6	0.3	14.5
Can Walk	30399.2	297.4	1208.5	28879.8	11.6	0.0	1.7	0.2	13.5
Must Drive	37059.8	365.6	1377.5	35315.7	0.0	0.0	0.9	0.1	1.0
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	67459.0	663.0	2586.0	64195.5	11.6	0.0	2.6	0.3	14.5
Productions:									
CBD	889.0	7.0	29.8	851.0	1.3	0.0	0.1	0.0	1.3
Exurban	36814.0	348.9	1361.5	35099.9	2.0	0.0	1.5	0.2	3.7
Other	29756.0	307.2	1194.7	28244.6	8.3	0.0	1.1	0.1	9.5
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	67459.0	663.0	2586.0	64195.5	11.6	0.0	2.6	0.3	14.5
TOTAL	67459.0	663.0	2586.0	64195.5	11.6	0.0	2.6	0.3	14.5
Average Car Occupancy:	0.000								
Revenue Potential Summary (Dollars):									
Fare Revenue					12.	0.	3.	0.	14.
Average Fare					1.00	0.00	1.00	1.00	1.00
Parking Revenue							0.		

TABLE D-20: TRIP TOTALS FOR SEW RES

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for SEW RES

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				Total Transit
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	
Zero Car Households	156.3	2.9	22.3	124.9	5.3	0.0	0.8	0.2	6.3
One Car Households	2621.9	62.9	493.1	2063.5	1.7	0.0	0.5	0.1	2.3
Two+ Car Households	4579.8	166.2	1804.5	2606.0	1.4	0.0	1.7	0.1	3.1
TOTAL	7358.0	231.9	2319.9	4794.4	8.4	0.0	3.1	0.4	11.8
Can Walk	2514.8	94.3	954.5	1455.1	8.4	0.0	2.2	0.3	10.9
Must Drive	4843.2	137.6	1365.4	3339.3	0.0	0.0	0.8	0.1	0.9
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	7358.0	231.9	2319.9	4794.4	8.4	0.0	3.1	0.4	11.8
Productions:									
CBD	44.0	1.6	15.2	26.2	1.0	0.0	0.0	0.0	1.0
Exurban	3902.0	119.3	1194.9	2585.1	1.0	0.0	1.5	0.2	2.7
Other	3412.0	111.0	1109.9	2183.1	6.3	0.0	1.6	0.2	8.0
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	7358.0	231.9	2319.9	4794.4	8.4	0.0	3.1	0.4	11.8
TOTAL	7358.0	231.9	2319.9	4794.4	8.4	0.0	3.1	0.4	11.8
Average Car Occupancy:	2.855								
Revenue Potential Summary (Dollars):									
Fare Revenue					9.	0.	3.	0.	13.
Average Fare					1.07	0.00	1.07	1.07	1.07
Parking Revenue					0.				

TABLE D-21: TRIP TOTALS FOR SEW VIS

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for SEW VIS

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	91.1	0.5	16.9	73.7	0.0	0.0	0.0	0.0	0.0
One Car Households	15208.0	107.5	3675.3	11425.2	0.0	0.0	0.0	0.0	0.0
Two+ Car Households	2725.9	16.6	541.3	2168.0	0.0	0.0	0.0	0.0	0.0
TOTAL	18025.0	124.6	4233.5	13666.9	0.0	0.0	0.0	0.0	0.0
Can Walk	8621.2	59.7	2022.5	6539.0	0.0	0.0	0.0	0.0	0.0
Must Drive	9403.8	64.9	2211.0	7127.9	0.0	0.0	0.0	0.0	0.0
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	18025.0	124.6	4233.5	13666.9	0.0	0.0	0.0	0.0	0.0
Productions:									
CBD	269.0	1.6	51.7	215.6	0.0	0.0	0.0	0.0	0.0
Exurban	9899.0	70.8	2435.1	7393.0	0.0	0.0	0.0	0.0	0.0
Other	7857.0	52.1	1746.6	6058.3	0.0	0.0	0.0	0.0	0.0
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	18025.0	124.6	4233.5	13666.9	0.0	0.0	0.0	0.0	0.0
TOTAL	18025.0	124.6	4233.5	13666.9	0.0	0.0	0.0	0.0	0.0
Average Car Occupancy:	3.238								
Revenue Potential Summary (Dollars):									
Fare Revenue					0.	0.	0.	0.	0.
Average Fare					0.00	0.00	0.00	0.00	0.00
Parking Revenue					0.				

TABLE D-22: TRIP TOTALS FOR SEW TOT

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for SEW TOT

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	247.4	3.4	39.1	198.6	5.3	0.0	0.8	0.2	6.3
One Car Households	17829.9	170.3	4168.5	13488.7	1.7	0.0	0.5	0.1	2.3
Two+ Car Households	7305.7	182.8	2345.8	4774.1	1.4	0.0	1.7	0.1	3.1
TOTAL	25383.0	356.5	6553.4	18461.4	8.4	0.0	3.1	0.4	11.8
Can Walk	11136.0	154.0	2977.1	7994.1	8.4	0.0	2.2	0.3	10.9
Must Drive	14247.0	202.5	3576.3	10467.3	0.0	0.0	0.8	0.1	0.9
No Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	25383.0	356.5	6553.4	18461.4	8.4	0.0	3.1	0.4	11.8
Productions:									
CBD	313.0	3.2	66.9	241.8	1.0	0.0	0.0	0.0	1.0
Exurban	13801.0	190.2	3630.0	9978.1	1.0	0.0	1.5	0.2	2.7
Other	11269.0	163.1	2856.5	8241.4	6.3	0.0	1.6	0.2	8.0
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	25383.0	356.5	6553.4	18461.4	8.4	0.0	3.1	0.4	11.8
TOTAL	25383.0	356.5	6553.4	18461.4	8.4	0.0	3.1	0.4	11.8
Average Car Occupancy:	0.000								
Revenue Potential Summary (Dollars):									
Fare Revenue					9.	0.	3.	0.	13.
Average Fare					1.07	0.00	1.07	1.07	1.07
Parking Revenue					0.				

TABLE D-23: TRIP TOTALS FOR DIS RES

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for DIS RES

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	295.4	6.6	5.2	282.2	1.1	0.0	0.3	0.1	1.4
One Car Households	5035.9	146.8	129.9	4758.6	0.3	0.0	0.2	0.0	0.6
Two+ Car Households	8657.7	416.8	686.6	7553.5	0.3	0.0	0.5	0.0	0.8
TOTAL	13989.0	570.2	821.7	12594.4	1.7	0.0	0.9	0.1	2.7
Can Walk	3977.3	182.7	262.9	3529.4	1.7	0.0	0.6	0.1	2.4
Must Drive	7999.7	309.5	451.1	7238.7	0.0	0.0	0.3	0.1	0.4
No Access	2012.0	78.1	107.6	1826.3	0.0	0.0	0.0	0.0	0.0
TOTAL	13989.0	570.2	821.7	12594.4	1.7	0.0	0.9	0.1	2.7
Productions:									
CBD	75.0	3.2	4.0	67.6	0.2	0.0	0.0	0.0	0.2
Exurban	7424.0	297.6	425.4	6700.2	0.2	0.0	0.5	0.1	0.8
Other	6490.0	269.4	392.4	5826.5	1.3	0.0	0.4	0.1	1.7
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	13989.0	570.2	821.7	12594.4	1.7	0.0	0.9	0.1	2.7
TOTAL	13989.0	570.2	821.7	12594.4	1.7	0.0	0.9	0.1	2.7
Average Car Occupancy:	3.815								
Revenue Potential Summary (Dollars):									
Fare Revenue					2.	0.	1.	0.	3.
Average Fare					1.09	0.00	1.05	1.05	1.07
Parking Revenue					0.				

TABLE D-24: TRIP TOTALS FOR DIS VIS

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for DIS VIS

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				Total Transit
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	
Zero Car Households	866.8	1.7	7.9	857.2	0.0	0.0	0.0	0.0	0.0
One Car Households	177554.0	588.9	3736.7	173228.4	0.0	0.0	0.0	0.0	0.0
Two+ Car Households	27462.2	69.9	373.3	27019.0	0.0	0.0	0.0	0.0	0.0
TOTAL	205883.0	660.6	4117.8	201104.6	0.0	0.0	0.0	0.0	0.0
Can Walk	99319.6	328.3	2078.9	96912.4	0.0	0.0	0.0	0.0	0.0
Must Drive	70143.4	220.4	1367.8	68555.2	0.0	0.0	0.0	0.0	0.0
No Access	36420.0	111.8	671.1	35637.0	0.0	0.0	0.0	0.0	0.0
TOTAL	205883.0	660.6	4117.8	201104.6	0.0	0.0	0.0	0.0	0.0
Productions:									
CBD	2359.0	4.5	16.9	2337.6	0.0	0.0	0.0	0.0	0.0
Exurban	95086.0	316.0	1995.7	92774.2	0.0	0.0	0.0	0.0	0.0
Other	108438.0	340.0	2105.2	105992.8	0.0	0.0	0.0	0.0	0.0
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	205883.0	660.6	4117.8	201104.6	0.0	0.0	0.0	0.0	0.0
TOTAL	205883.0	660.6	4117.8	201104.6	0.0	0.0	0.0	0.0	0.0
Average Car Occupancy:	4.560								
Revenue Potential Summary (Dollars):									
Fare Revenue					0.	0.	0.	0.	0.
Average Fare					0.00	0.00	0.00	0.00	0.00
Parking Revenue							0.		

TABLE D-25: TRIP TOTALS FOR DIS TOT

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for DIS TOT

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	1162.2	8.3	13.1	1139.4	1.1	0.0	0.3	0.1	1.4
One Car Households	182590.0	735.8	3866.6	177987.1	0.3	0.0	0.2	0.0	0.6
Two+ Car Households	36119.8	486.7	1059.9	34572.5	0.3	0.0	0.5	0.0	0.8
TOTAL	219872.0	1230.8	4939.5	213699.0	1.7	0.0	0.9	0.1	2.7
Can Walk	103297.0	511.0	2341.8	100441.7	1.7	0.0	0.6	0.1	2.4
Must Drive	78143.0	529.8	1818.9	75793.9	0.0	0.0	0.3	0.1	0.4
No Access	38432.0	189.9	778.8	37463.3	0.0	0.0	0.0	0.0	0.0
TOTAL	219872.0	1230.8	4939.5	213699.0	1.7	0.0	0.9	0.1	2.7
Productions:									
CBD	2434.0	7.7	20.9	2405.2	0.2	0.0	0.0	0.0	0.2
Exurban	102510.0	613.7	2421.1	99474.5	0.2	0.0	0.5	0.1	0.8
Other	114928.0	609.4	2497.6	111819.3	1.3	0.0	0.4	0.1	1.7
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	219872.0	1230.8	4939.5	213699.0	1.7	0.0	0.9	0.1	2.7
TOTAL	219872.0	1230.8	4939.5	213699.0	1.7	0.0	0.9	0.1	2.7
Average Car Occupancy:	0.000								
Revenue Potential Summary (Dollars):									
Fare Revenue					2.	0.	1.	0.	3.
Average Fare					1.09	0.00	1.05	1.05	1.07
Parking Revenue							0.		

TABLE D-26: TRIP TOTALS FOR IDR RES

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for IDR RES

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				Total Transit
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	
Zero Car Households	10.4	3.7	4.1	2.2	0.4	0.0	0.0	0.0	0.4
One Car Households	17869.5	7312.4	6732.9	3523.3	300.9	0.0	0.0	0.0	300.9
Two+ Car Households	662.1	338.0	285.4	26.4	12.3	0.0	0.0	0.0	12.3
TOTAL	18542.0	7654.1	7022.4	3551.9	313.6	0.0	0.0	0.0	313.6
Can Walk	18216.0	7515.7	6896.0	3490.6	313.6	0.0	0.0	0.0	313.6
Must Drive	4.8	2.2	2.0	0.7	0.0	0.0	0.0	0.0	0.0
No Access	321.2	136.2	124.4	60.6	0.0	0.0	0.0	0.0	0.0
TOTAL	18542.0	7654.1	7022.4	3551.9	313.6	0.0	0.0	0.0	313.6
Productions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	4287.0	1810.9	1654.4	799.1	22.6	0.0	0.0	0.0	22.6
Other	14255.0	5843.2	5368.0	2752.8	291.0	0.0	0.0	0.0	291.0
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	4266.0	1798.2	1642.0	793.9	31.9	0.0	0.0	0.0	31.9
Other	14276.0	5855.8	5380.5	2758.0	281.7	0.0	0.0	0.0	281.7
TOTAL	18542.0	7654.1	7022.4	3551.9	313.6	0.0	0.0	0.0	313.6
Average Car Occupancy:	1.511								
Revenue Potential Summary (Dollars):									
Fare Revenue					235.	0.	0.	0.	235.
Average Fare					0.75	0.00	0.00	0.00	0.75
Parking Revenue									0.

TABLE D-27: TRIP TOTALS FOR IDR VIS

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for IDR VIS

	Person Trips	----- Highway Trips -----			----- Transit Trips -----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	74.6	22.8	22.3	22.2	7.3	0.0	0.0	0.0	7.3
One Car Households	12170.1	4038.6	3934.1	3685.7	511.6	0.0	0.0	0.0	511.6
Two+ Car Households	7224.4	2343.9	2283.9	2158.7	437.9	0.0	0.0	0.0	437.9
TOTAL	19469.0	6405.4	6240.3	5866.6	956.8	0.0	0.0	0.0	956.8
Can Walk	18744.5	6156.0	5997.2	5634.5	956.8	0.0	0.0	0.0	956.8
Must Drive	198.6	69.1	67.2	62.3	0.0	0.0	0.0	0.0	0.0
No Access	525.9	180.3	175.8	169.8	0.0	0.0	0.0	0.0	0.0
TOTAL	19469.0	6405.4	6240.3	5866.6	956.8	0.0	0.0	0.0	956.8
Productions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	4839.0	1532.0	1493.5	1449.0	364.5	0.0	0.0	0.0	364.5
Other	14630.0	4873.3	4746.8	4417.5	592.3	0.0	0.0	0.0	592.3
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	3898.0	1289.8	1253.9	1135.6	218.7	0.0	0.0	0.0	218.7
Other	15571.0	5115.6	4986.3	4731.0	738.1	0.0	0.0	0.0	738.1
TOTAL	19469.0	6405.4	6240.3	5866.6	956.8	0.0	0.0	0.0	956.8
Average Car Occupancy:	1.653								
Revenue Potential Summary (Dollars):									
Fare Revenue					718.	0.	0.	0.	718.
Average Fare					0.75	0.00	0.00	0.00	0.75
Parking Revenue					0.				

TABLE D-28: TRIP TOTALS FOR IDR TOT

OUATS Year 2009 Base Model

SUMMARY RESULTS

Trip Totals for IDR TOT

	Person Trips	----- Highway Trips -----			----- Transit Trips-----				
		Drive Alone	One Pas- senger	Two+ Pas- sengers	Walk to Local	Walk to Premium	Park- Ride	Kiss- Ride	Total Transit
Zero Car Households	85.0	26.5	26.4	24.4	7.7	0.0	0.0	0.0	7.7
One Car Households	30039.5	11351.0	10667.0	7209.0	812.5	0.0	0.0	0.0	812.5
Two+ Car Households	7886.5	2681.9	2569.3	2185.1	450.2	0.0	0.0	0.0	450.2
TOTAL	38011.0	14059.4	13262.7	9418.5	1270.4	0.0	0.0	0.0	1270.4
Can Walk	36960.5	13671.8	12893.3	9125.1	1270.4	0.0	0.0	0.0	1270.4
Must Drive	203.4	71.3	69.2	63.0	0.0	0.0	0.0	0.0	0.0
No Access	847.1	316.4	300.3	230.4	0.0	0.0	0.0	0.0	0.0
TOTAL	38011.0	14059.4	13262.7	9418.5	1270.4	0.0	0.0	0.0	1270.4
Productions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	9126.0	3342.9	3147.9	2248.1	387.1	0.0	0.0	0.0	387.1
Other	28885.0	10716.5	10114.8	7170.4	883.3	0.0	0.0	0.0	883.3
Attractions:									
CBD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exurban	8164.0	3088.0	2895.9	1929.5	250.5	0.0	0.0	0.0	250.5
Other	29847.0	10971.4	10366.8	7489.0	1019.8	0.0	0.0	0.0	1019.8
TOTAL	38011.0	14059.4	13262.7	9418.5	1270.4	0.0	0.0	0.0	1270.4
Average Car Occupancy:	0.000								
Revenue Potential Summary (Dollars):									
Fare Revenue					953.	0.	0.	0.	953.
Average Fare					0.75	0.00	0.00	0.00	0.75
Parking Revenue							0.		