Appendix M

Design Traffic Technical Memorandum

by Kittelson & Associates, Inc.

DESIGN TRAFFIC TECHNICAL MEMORANDUM

Sunbridge Parkway Preliminary Design Study

Orange County, Florida

Revised: January 25, 2018

DESIGN TRAFFIC TECHNICAL MEMORANDUM

Sunbridge Parkway Preliminary Design Study

Orange County, Florida

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INTRODUCTION

This Design Traffic Technical Memorandum has been prepared as part of the Sunbridge Parkway Preliminary Design Study. This memorandum summarizes the projected short-term (2025) and design-year (2040) evaluation with appropriate recommendations as to traffic control methods and turn lane geometries for specific intersections.

The scope of this summary includes:

- Traffic forecasts;
- Short-term (2025) operational evaluations; and
- Design-year (2040) operational evaluations.

The analysis years are:

- Short-term: 2025
- Design-year: 2040

For the purposes of this study, the short-term (2025) traffic volumes and operational conditions provide a conservative estimation of opening-year conditions.

PROJECT LOCATION

This portion of Sunbridge Parkway is a proposed roadway running north-south through the Sunbridge Development in Orange County, FL. The project limits extend from the Osceola County line in the south to approximately 0.8 miles south of the intersection of Sunbridge Parkway and Dowden Rd (**Figure 1**). The study limits include nine identified project intersections, shown in **Figure 2**. Analysis for the intersection just north of, and adjacent to, the identified study area can be found in the Sunbridge Parkway Segment 1 Technical Memorandum under separate cover.

There are two additional planned Sunbridge Parkway intersections within the study area that are not analyzed in this memorandum. These two intersections are at Wewahootee Rd (located north of Intersection A) and at a utility/well access road that is located between Intersection H and Intersection I. These two intersections function primarily as driveways, accessing dirt/undeveloped roads and serving ranch/farm land uses. As a result, these intersections do not experience any significant current or future traffic volumes and are not included for analysis.

Through the study area, the land use around Sunbridge Parkway is primarily designated as T-3: Sunbridge Neighborhood Zone. Near the Innovation Way South intersection, the land use is designated as T-4: Sunbridge Activity Center. The majority of the study area is designated as urban. South of the study intersections, the roadway transitions to rural up to the Osceola County Line.

Figure 1: Project Location

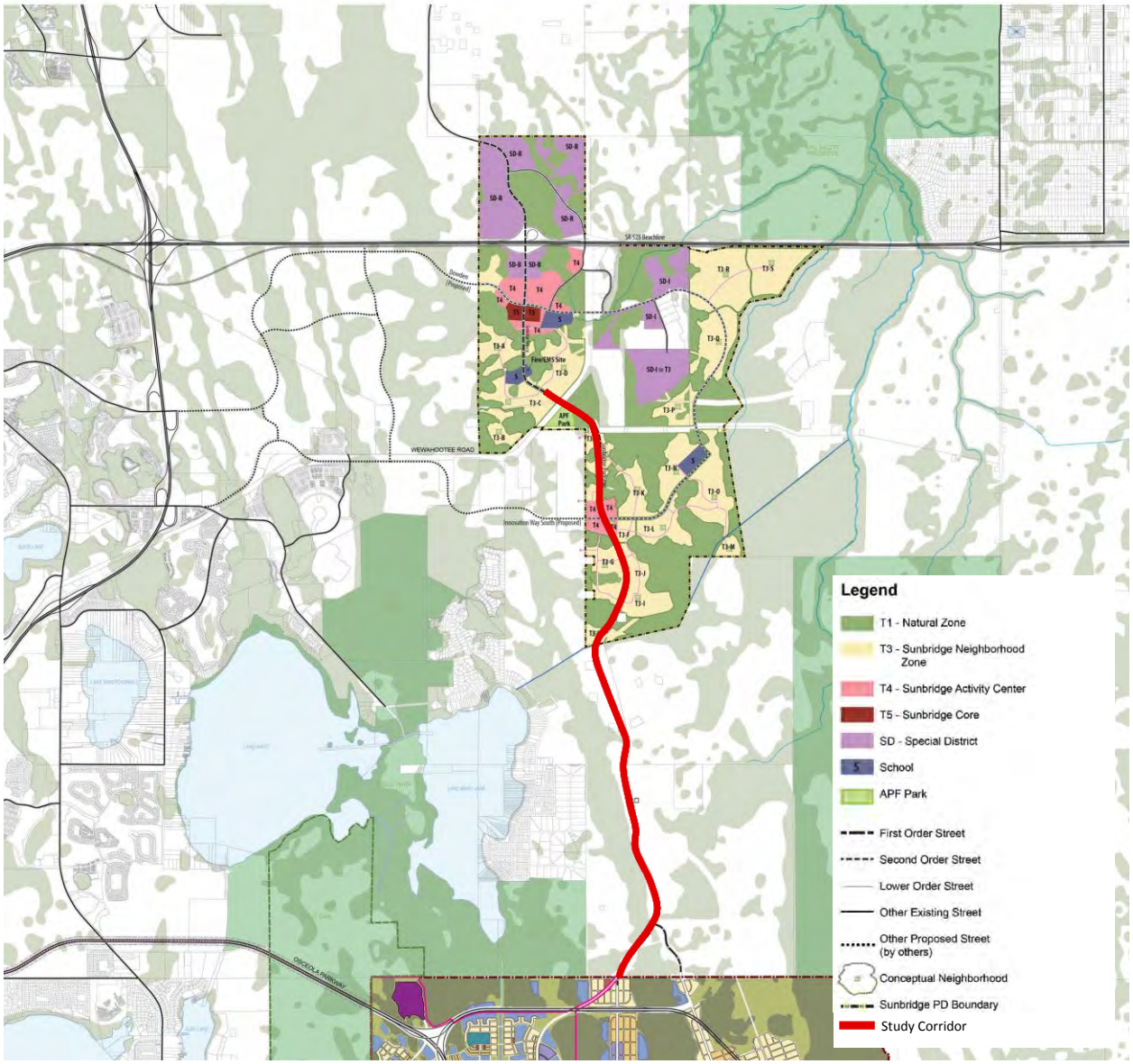
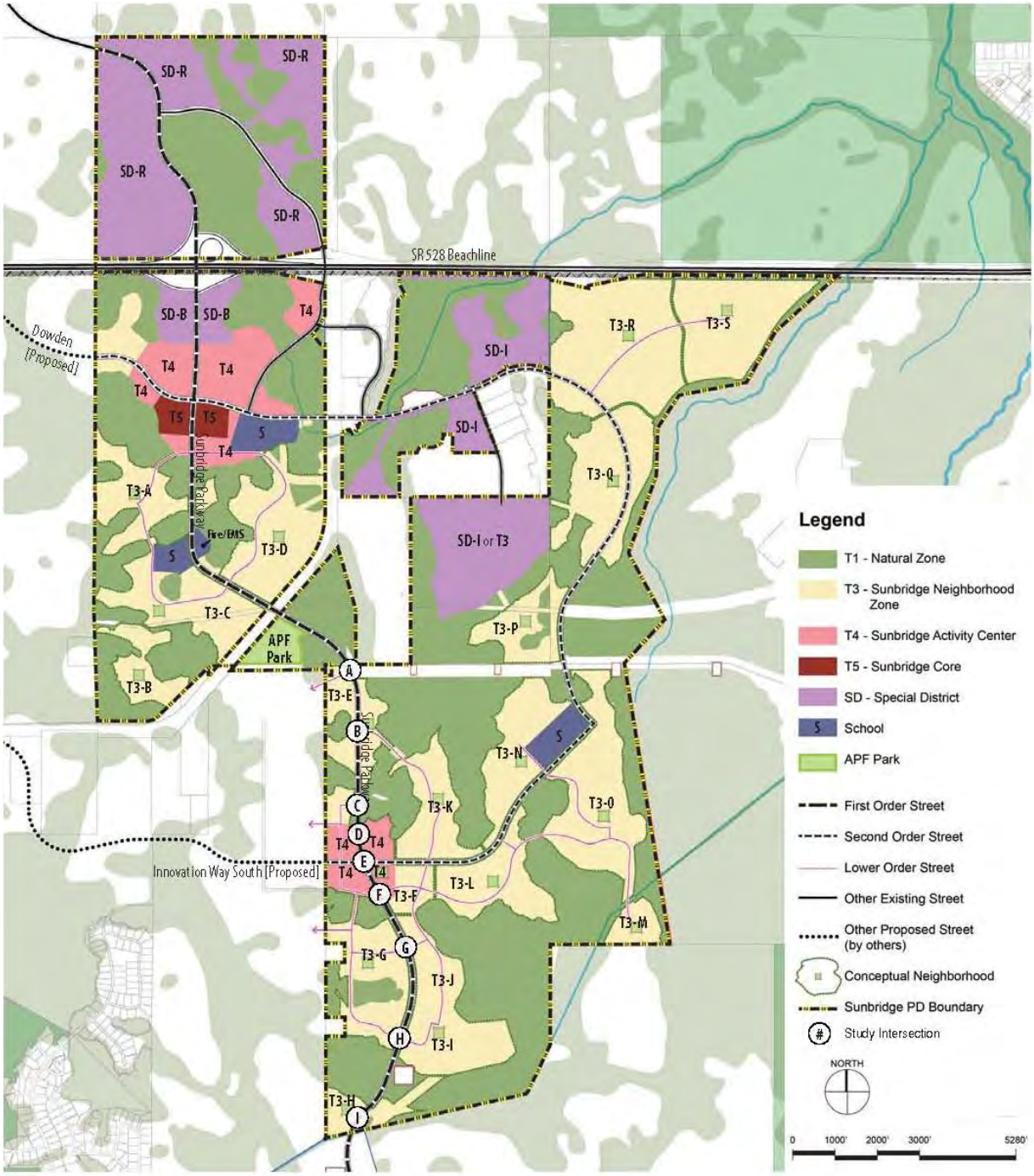


Figure 2: Study Intersections



Study Intersections

NOTE: Access locations and roads that impact wetlands and rare uplands are only approximations and are **not approved with this plan. The exact location of these roadways will be determined during the Orange** County Conservation Area Determination and impact permit process.

SOURCE FOR PLANNED DEVELOPMENT: Sunbridge Planned Development Regulating Plan, October 19, 2016

DEVELOPMENT OF DESIGN TRAFFIC FACTORS

The future traffic volumes were developed following approved FDOT forecasting procedures outlined in the *FDOT Project Forecasting Handbook*. The following summarizes the factors used to develop future design hour volumes.

Standard K

The K factor is the proportion of Annual Average Daily Traffic (AADT) that occurs during the peak hour. Standard K factors were obtained from the FDOT *Project Traffic Forecasting Handbook* (2014). These factors were established using statewide data measured at continuous count sites. The factors are based on area type and facility type, with considerations to typical peak periods of the day.

The urban K factor, 9.0 percent, is recommended for the majority of the study corridor. South of the study intersections, the roadway is designated rural to the Osceola County line; therefore, the rural K factor of 9.5 percent is recommended.

D and T_{24} Factors

Historical information for D and T_{24} factors is not available since Sunbridge Parkway is a new facility. The directional split on Sunbridge Parkway was calculated on each segment based on the forecasted peak hour volumes developed in the traffic analysis for the Sunbridge Comprehensive Plan Amendment. In that analysis, a D factor of 0.55 was selected for background traffic and project traffic was assigned as calculated by project specific trip generation and distribution. As anticipated build-out and land uses change between 2025 and 2040, trip generation also changes, resulting in varying calculation traffic volumes and directional splits for these years. Complete calculated D factors based on the traffic volumes calculated in the Sunbridge Comprehensive Plan Amendment are provided in **Table 1**.

Table 1: D Factors

Roadway Segment		2025 Peak-Hour Forecast			2040 Peak-Hour Forecast		
From	To	NB	SB	D Factor	NB	SB	D Factor
Northern project limit	Wewahootee Rd	644	600	0.52	1,985	2,057	0.51
Wewahootee Rd	Innovation Way S	817	806	0.50	1,664	1,663	0.50
Innovation Way S	South of Intersection G	1,270	1,040	0.55	1,974	1,616	0.55
South of Intersection G	County Line	1,270	1,040	0.55	1,974	1,616	0.55

The D factors for the side streets were based on a review of the surrounding land use and directional splits in the ITE Trip Generation Handbook. The D factors for side streets in residential areas (T-3) was selected as 0.60 and the D factor for side streets in areas with mixed-use development (T-4) was selected as 0.55. These D factors follow what would be expected based on the prevailing land use that each cross-street serves.

The selected T_{24} factor was based on existing similar facilities across central Florida. The similar facilities studied include Lakewood Ranch Blvd (3.0 percent), Metrowest Blvd (4.4 percent), and Avalon Park Blvd (4.4 percent). It is expected that the truck traffic on Sunbridge Parkway will be similar to these existing facilities. The average truck percentage at the identified similar facilities is 4.0 percent, which is selected for use throughout the study area.

TRAFFIC FORECASTING

Volumes were developed for short-term and design-year scenarios:

- Short-term – 2025
- Design-year – 2040

This section presents the future-year daily traffic volumes for the 2025 and 2040 future years and the process by which they were determined.

Methodology

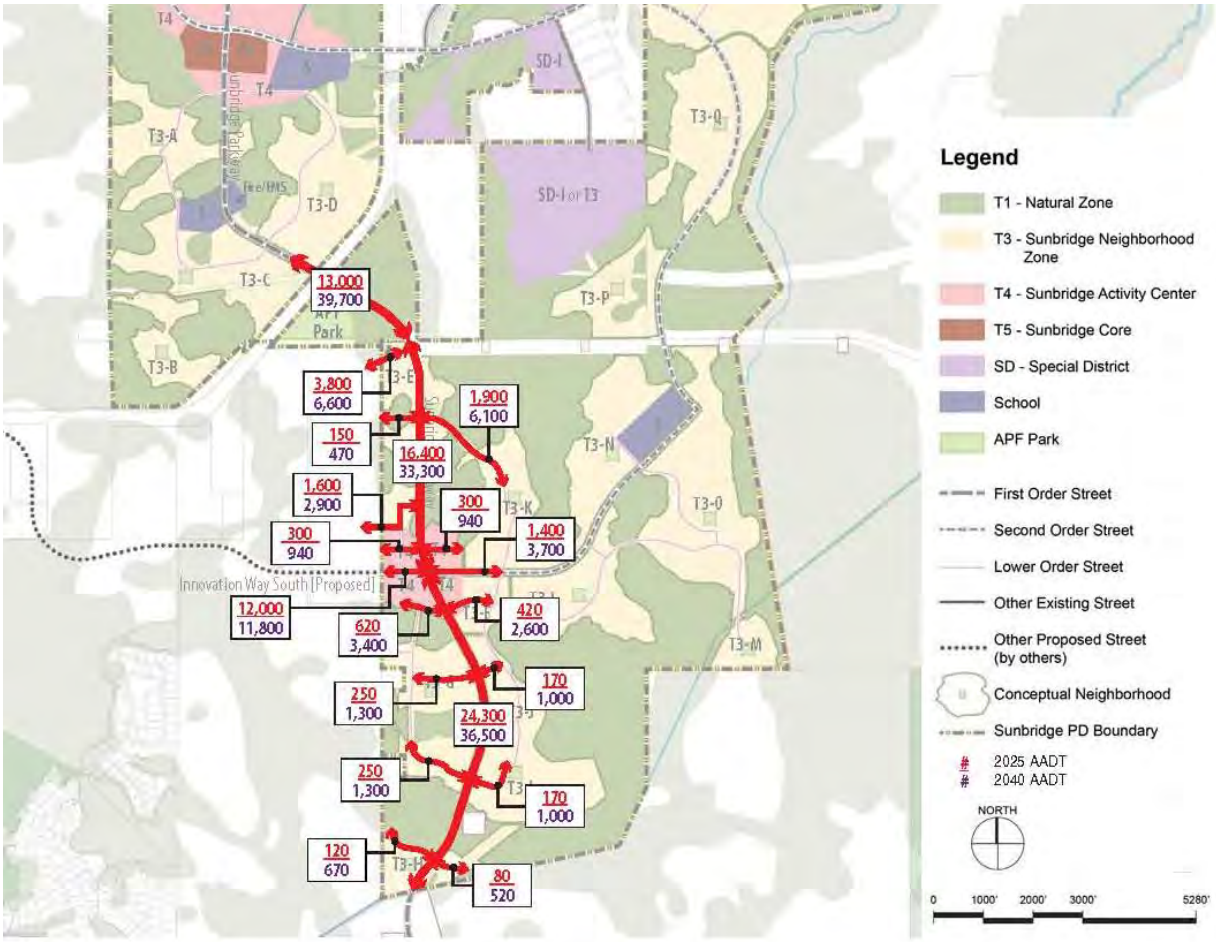
Future traffic volumes, for both the short-term (2025) and design-year (2040) analysis were taken from analyses performed for the Sunbridge Development's Comprehensive Plan Amendment and supplemented by the Camino Reale Planned Development Transportation Network Evaluation. Relevant sections from these documents related to the methods and models used are provided in **Appendix A**.

Future intersection turning movements were projected using accepted methodologies from the *FDOT Project Traffic Forecasting Handbook*.

Future AADTs

The following section summarizes the future AADT forecasted for the study area. Forecasted AADT values are consistent with the model results provided in Appendix A. For side streets that are not directly represented in the travel demand model, the forecasted trips for each TAZ were split between the Sunbridge intersections accessing the TAZ. Forecasted AADTs for 2025 and 2040 throughout the corridor are provided in **Figure 3**.

Figure 3: Forecasted AADTs



AADT

NOTE: Access locations and roads that impact wetlands and rare uplands are only approximations and are **not approved with this plan. The exact location of these roadways will be determined during the Orange** County Conservation Area Determination and impact permit process.

SOURCE FOR PLANNED DEVELOPMENT: Sunbridge Planned Development Regulating Plan, October 19, 2016

Future Intersection Turning Movement Volumes

Future intersection turning movement volumes for the 2025 and 2040 PM peak hours were developed following the procedures described in NCHRP Report 255. This method is consistent with acceptable tools described in FDOT's *Project Traffic Forecasting Handbook (2014)*. Based on the projected future volumes, the PM peak hour had higher intersection volumes than the AM peak hour. Thus, these PM characteristics were selected for use in establishing the design hour. The inputs and outputs from the tool used for forecasting turning movement volumes are provided in **Appendix B**. Future turning movement volumes are provided in **Figure 4** and **Figure 5**.

Figure 4: Future Turning Movement Volumes

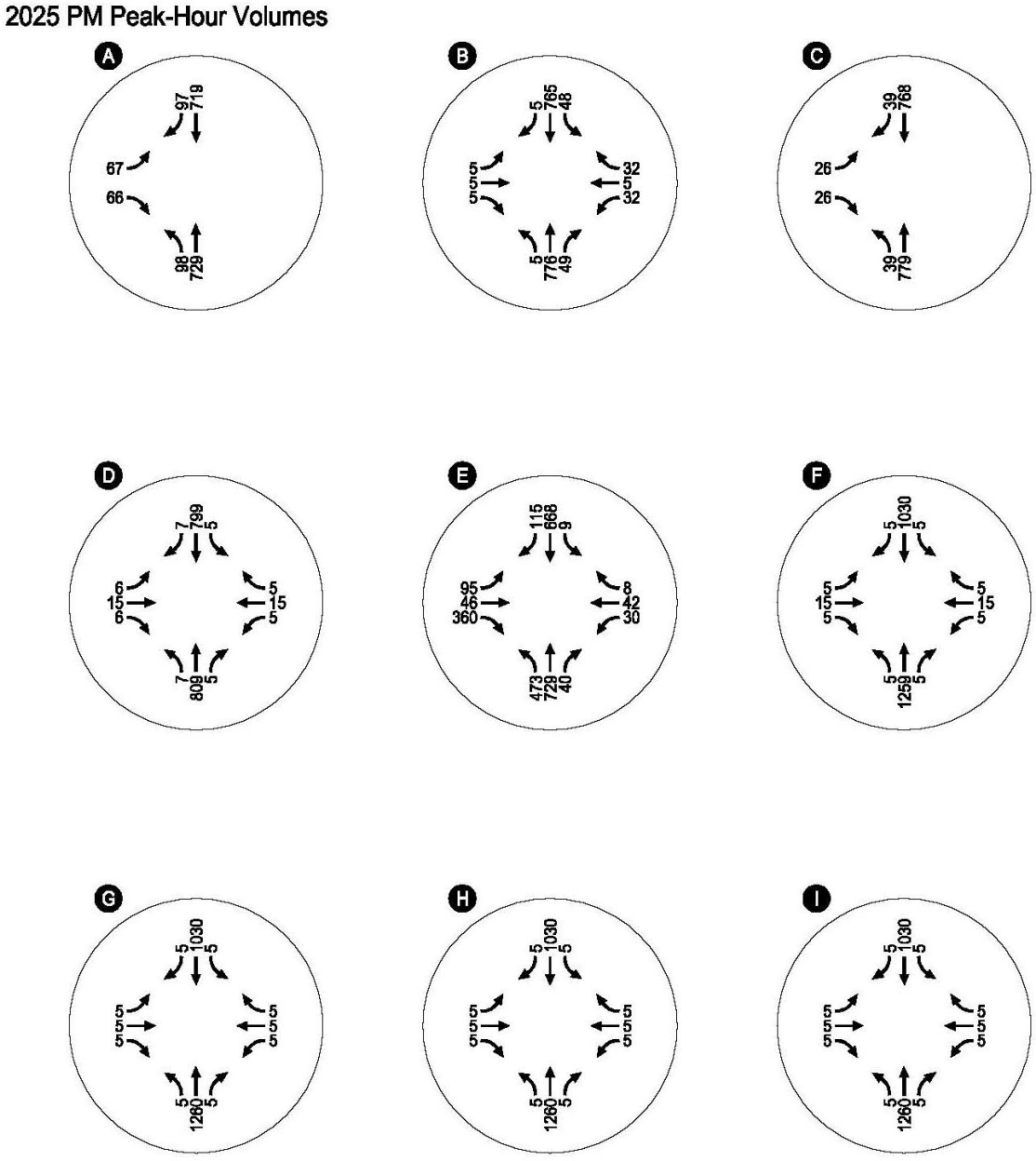
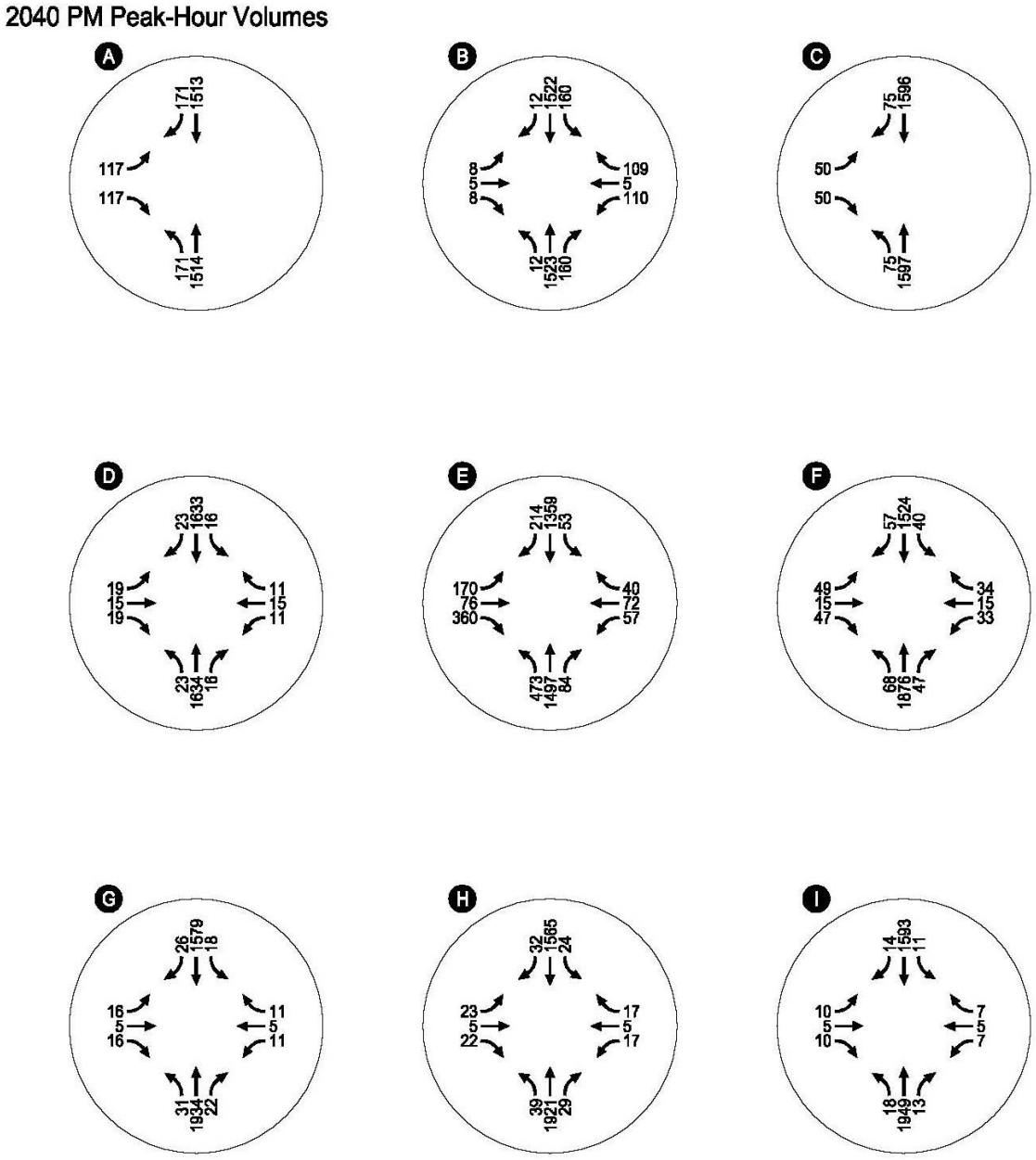


Figure 5: Future Turning Movement Volumes



FUTURE ANALYSIS

This section describes intersection traffic operations for the short-term (2025) and design-year (2040) analysis years. The analysis includes evaluation of intersections within the study area.

Segment Operations

BASIC DESIGN REQUIREMENTS

The study area of Sunbridge Parkway includes four study segments, with the three northernmost segments categorized as urban signalized arterials and the southernmost segment categorized as a rural uninterrupted flow highway. The forecasted AADTs of the study segments are shown in **Figure 3**. The design speed of northern portion of Sunbridge Parkway is anticipated to be 45 mph, resulting in Class I designation for the signalized arterial segments. In accordance with the Orange County road agreement for Sunbridge Parkway, the designated LOS threshold is LOS E for all segments.

Analysis was conducted on these segments for the projected short-term (2025) and design-year (2040) peak-hour peak-direction volume using the FDOT Generalized Level of Service Tables. Results for the short-term (2025) and design-year (2040) analyses are provided in **Table 2** and **Table 3**, respectively.

Table 2: 2025 Forecasted Segment Operations

Roadway Segment			2025 Forecast			
From	To	Area Type	AADT	Peak-Hour Directional Volume	2-Lane LOS	4-Lane LOS
Northern project limit	Wewahootee Rd	Urban	13,000	644	C	C
Wewahootee Rd	Innovation Way S	Urban	16,400	817	C	C
Innovation Way S	South of Intersection G	Urban	24,300	1,270	F	B
South of Intersection G	County Line	Rural	24,300	1,270	E	B

Table 3: 2040 Forecasted Segment Operations

Roadway Segment			2040 Forecast			
From	To	Area Type	AADT	Peak-Hour Directional Volume	2-Lane LOS	4-Lane LOS
Northern project limit	Wewahootee Rd	Urban	39,700	2,057	F	F
Wewahootee Rd	Innovation Way S	Urban	33,300	1,664	F	C
Innovation Way S	South of Intersection G	Urban	36,500	1,974	F	D
South of Intersection G	County Line	Rural	36,500	1,974	F	C

Based on the analysis of the forecasted traffic volumes, Sunbridge Parkway is anticipated to require four lanes in 2040 in order to maintain an acceptable level of service. There is one segment (north of Wewahootee Road), that may not fall within the acceptable LOS in 2040 as a four-lane divided roadway. However, it is still recommended that the design of the four lane section be carried

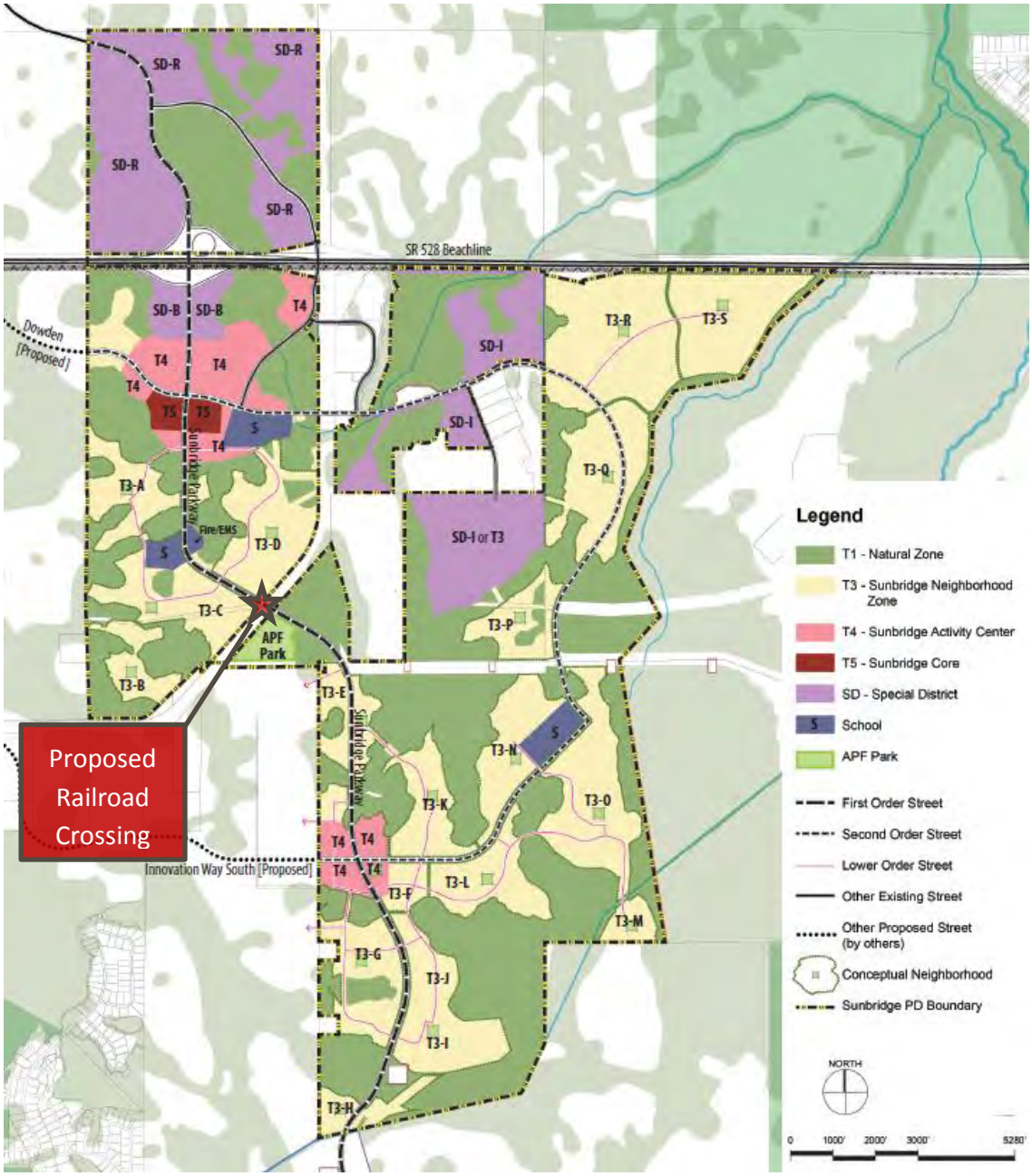
throughout the study area for 2040. As identified in the Sunbridge PD-RP the design of the median for the four-lane section will be established with sufficient width to support either a dedicated transit envelop or an additional two travel lanes. If future traffic demands were to require additional lanes, that option should be further explored at a later time.

In 2025, the majority of the segments operate within the designated level of service threshold as a two-lane facility. However, the segment from Innovation Way South to south of Intersection G is projected to require four lanes to achieve an acceptable level of service.

RAILROAD CROSSING

In addition to this technical memorandum, there is a concurrent study for the application of an at-grade railroad crossing of Sunbridge Parkway within the identified study area. The location of the proposed railroad crossing is provided in **Figure 6**. FDOT recommends conducting a benefit/cost analysis for grade separation when the average daily traffic (ADT) on the roadway reaches 30,000. Based on current AADT projections, the AADT on Sunbridge Parkway is not expected to reach 30,000 vehicles until 2035 or beyond. If this threshold is met in the future, a study to determine the feasibility of a grade separated crossing may be conducted.

Figure 6: Railroad Crossing Location



Intersection Operations

SYNCHRO ANALYSIS

Study intersections were analyzed using HCM 2010 methodologies, implemented in Synchro 9. The 2025 and 2040 intersection operations and lane configurations are illustrated in **Figure 7** and **Figure 8**. In 2025, Intersection E (Innovation Way South) is expected to require signalization. All remaining intersections operate under capacity as unsignalized intersections. In 2040, Intersections A, B, E, and F are likely to require signalization. All Intersections should be monitored and signalized if and when

signal warrants are met in the future. Using HCM methods, the necessary queue lengths for both the short-term (2025) and design-year (2040) scenarios are provided in **Table 4**, where the recommended length includes storage length and deceleration length per FDOT Standard Index 301 based upon a 45 mile-per-hour design speed on Sunbridge Parkway. Detailed analysis reports for the study intersections are provided in **Appendix C**.

Table 4: Synchro Queue Analysis Results

Sunbridge Parkway Intersection	Movement	95th Percentile Queue (ft)		Recommended Length (ft)	
		2025	2040	2025	2040
A	EBL	120	143	280	305
	NBL	< 25	120	235	310
B	WBL	N/A	133	N/A	305
	NBL	33	< 25	235	235
	SBL	< 25	98	235	285
C	NBL	< 25	< 25	235	235
D	NBL	< 25	< 25	235	235
	SBL	< 25	< 25	235	235
E	EBL	< 25	83	235	285
	EBR	363	363	375	560
	WBL	40	55	235	260
	NBL	640	250 (dual)	835	435 (dual)
	SBL	< 25	35	235	235
	SBR	110	208	295	410
F	EBL	N/A	58	N/A	220
	WBL	N/A	40	N/A	195
	NBL	< 25	< 25	235	235
	SBL	< 25	< 25	235	235
G	NBL	< 25	< 25	235	235
	SBL	< 25	< 25	235	235
H	NBL	< 25	< 25	235	235
	SBL	< 25	< 25	235	235
I	NBL	< 25	< 25	235	235
	SBL	< 25	< 25	235	235

Figure 7: Future LOS and Lane Configurations

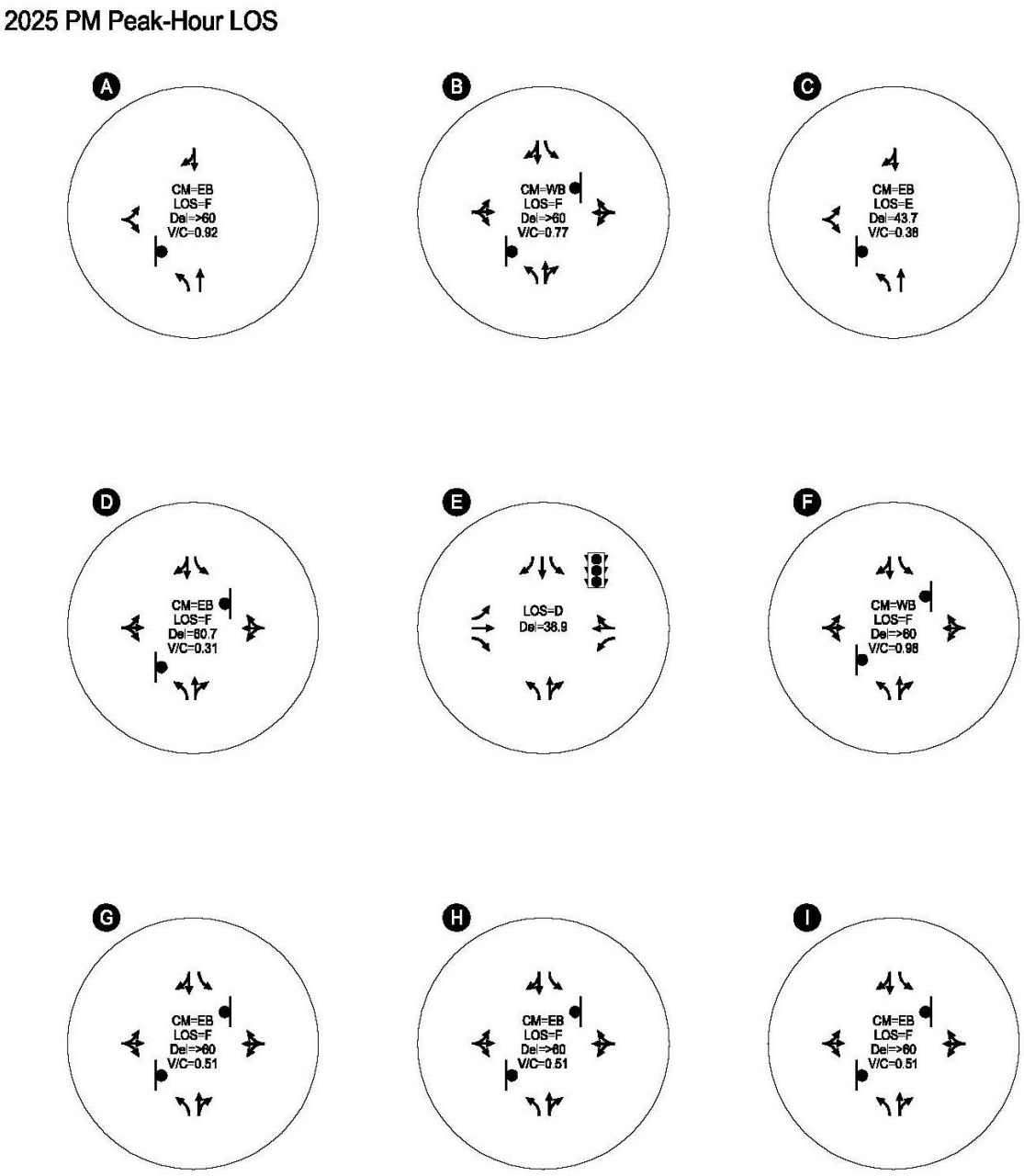
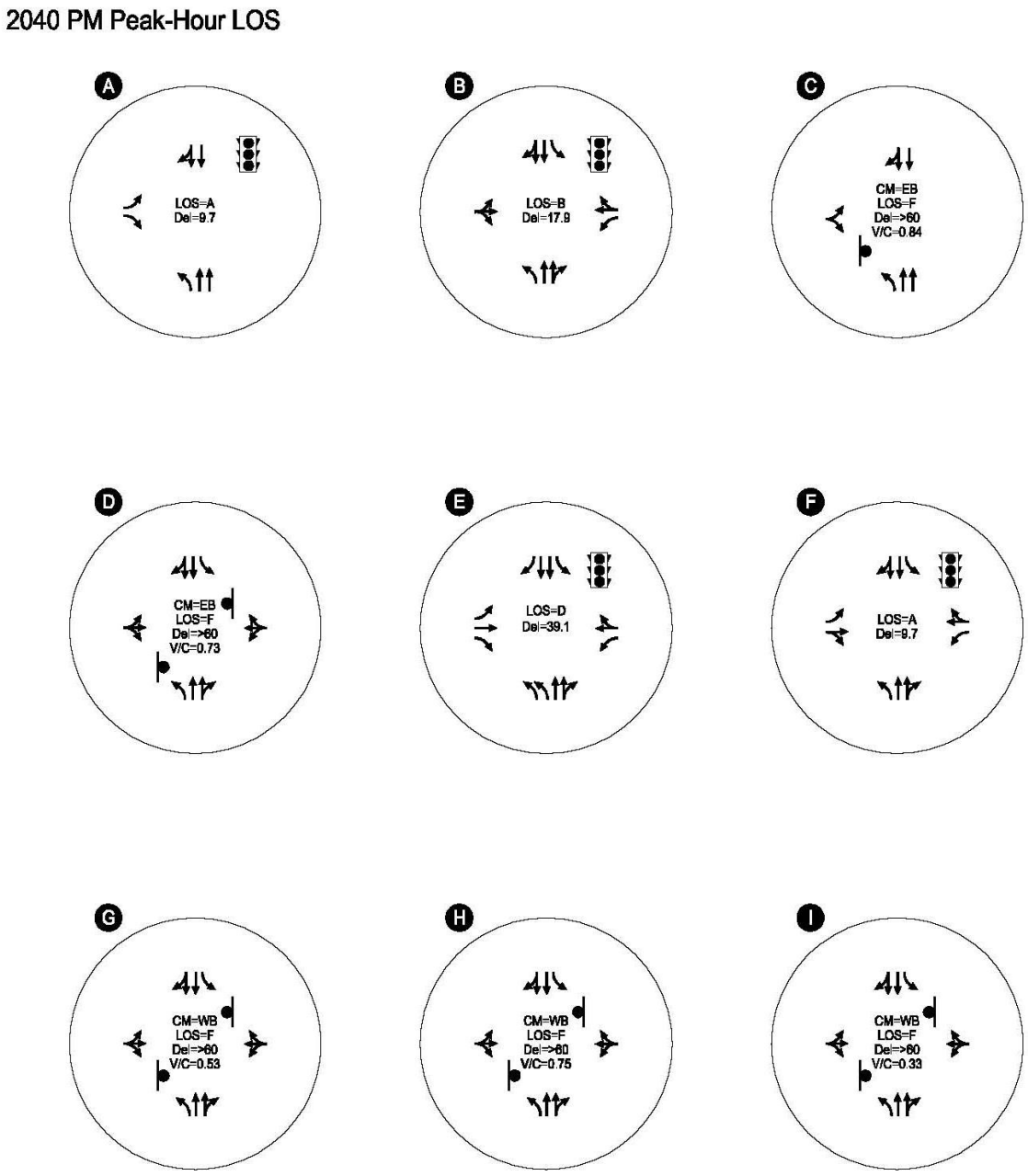


Figure 8: Future LOS and Lane Configurations



SIMTRAFFIC ANALYSIS

In addition to the previously discussed Synchro analysis, SimTraffic microsimulation was also conducted as requested by Orange County. The results of the SimTraffic simulation should be used with caution, as the simulation is not calibrated to reflect local conditions. When using microsimulation analysis methods, calibration is typically required in order to modify driver behavior related parameters such that simulated results reflect local operating conditions. This level of

calibration cannot be completed because the roadway does not yet exist. SimTraffic queue results are displayed in **Table 5**, and complete results from the SimTraffic analysis is provided in **Appendix C**.

Table 5: SimTraffic Queueing Analysis

Sunbridge Parkway Intersection	Movement	95th Percentile Queue (ft)	
		2025	2040
A	EBL	178	181
	NBL	120	222
B	WBL	N/A	148
	NBL	21	98
	SBL	109	199
C	NBL	53	130
D	NBL	19	56
	SBL	52	68
E	EBL	241	388
	EBR	304	682
	WBL	89	131
	NBL	403	394
	SBL	57	205
	SBR	405	540
F	EBL	N/A	103
	WBL	N/A	75
	NBL	18	133
	SBL	23	116
G	NBL	18	54
	SBL	18	48
H	NBL	20	60
	SBL	20	55
I	NBL	15	39
	SBL	20	46

ACCESS MANAGEMENT

This section outlines the access management guidelines for use on Sunbridge Parkway. County access management standards were reviewed to identify adopted policies, regulations, and guidance regarding access along Sunbridge Parkway. Sunbridge Parkway should adhere to the Orange County minimum standards of 600 feet of separation between median openings.

SUMMARY

This PDS Design Traffic Technical Memorandum evaluates traffic operations for the short-term and design-year scenarios for nine intersections along the corridor. In the short-term (2025) scenario, only Intersection E (the intersection of Sunbridge Parkway at Innovation Way South) is expected to require signalization. The remaining intersections can remain unsignalized through 2025. All initially unsignalized intersections should be monitored for signalization when appropriate warrants may be met in the future.

In the design-year (2040) scenario, four intersections are expected to require signalization, Intersections A, B, E, and F. With the addition of these signals, all signalized intersections are anticipated to operate at LOS D or better in 2040. All intersections should be monitored and signalized if and when signal warrants are met in the future.

Table 6 provides the recommended turn lane lengths for each study intersection. Due to the inaccurate and uncalibrated nature of the SimTraffic analysis, turn lane lengths are primarily based on the previously presented Synchro analysis, with slight modification at the intersection of Innovation Way South. At Innovation Way South, Orange County has requested dual eastbound left-turn lanes in 2040, with a recommended length of 350 feet, and for the dual northbound left-turn lanes in 2040 to be 450 feet. Additionally, per the County's request, the intersection at Innovation Way South should be designed to accommodate the potential future four-laning of Innovation Way South inclusive of dual left-turn lanes on both the eastbound and westbound approaches. The Sunbridge Parkway median configuration will also accommodate dual left-turn lanes within the median envelope.

Further refinements to the traffic operations analysis presented in this memorandum should be performed prior to the ultimate four-laning of this segment of Sunbridge Parkway, as neighborhood preliminary subdivision plans become available in the future.

Table 6: Recommended Turn Lane Lengths

Sunbridge Parkway Intersection	Movement	Recommended Length (ft)	
		2025	2040
A	EBL	280	305
	NBL	235	310
B	WBL	N/A	305
	NBL	235	235
	SBL	235	285
C	NBL	235	235
D	NBL	235	235
	SBL	235	235
E	EBL	235	350 (dual)
	EBR	375	560
	WBL	235	260
	NBL	835	450 (dual)
	SBL	235	235
	SBR	295	410
F	EBL	N/A	220
	WBL	N/A	195
	NBL	235	235
	SBL	235	235
G	NBL	235	235
	SBL	235	235
H	NBL	235	235
	SBL	235	235
I	NBL	235	235
	SBL	235	235

APPENDIX A – TRAFFIC FORECASTING METHODS AND MODELS

Section 4
Travel Demand Model Network Modifications

TRAVEL DEMAND MODEL MODIFICATIONS

As part of the effort to forecast reasonable future traffic volumes of near-term horizon (2025) and long-term horizon (2040), the current adopted Central Florida Regional Planning Model (CFRPM) v5.01 model was selected due to the location of the proposed development areas in proximity to MetroPlan boundaries, the scale of the proposed development areas, and to maintain consistency with other planning efforts currently underway in Osceola County. Three model scenarios were developed and evaluated:

1. Year 2010: Began with the adopted 2005 base CFRPM, roadway improvements between 2005 and 2010 were coded in and 2010 land use data adopted by OUATS v4 and CFRPM v6 was applied to replicate 2010 conditions.
2. Year 2025: Began with the validated 2010 scenario, then added the FDOT Five Year Work Program. 2025 land use assumptions of TAZs within MetroPlan Orlando Area was consistent with OUATS v4, TAZs outside MetroPlan Orlando Area was consistent with the CFRPM 2010.
3. Year 2040: Began with adopted 2035 CFRPMv5.1 cost-feasible model network within Orange, Osceola, and Seminole Counties and modify to be consistent with the OUATSv4 2040 Cost Feasible network. Areas outside MetroPlan Orlando area were draft LRTP Cost Feasible networks where available and applicable. 2040 land use assumptions adopted by CFRPM v6 were be applied.

The following subsections outline the modifications incorporated within each of the three model scenarios.

Year 2010 Validation Model

The area generally bounded by Florida's Turnpike to the west, SR 50 to the north, I-95 to the east, and US 192 to the south is identified as subarea of the adopted CFRPM model, and was validated to year 2010 conditions. The validation process began with the CFRPM v5.01 2005 roadway network and TAZ structure. Roadway improvements constructed between 2005 and 2010 are coded into the model to replicate 2010 roadway conditions. The 2010 land use data obtained from the US Census, and used in CFRPMv6, was coded into the newly-created 2010 model network. Validation was prepared in accordance with FSUTMS standards and the details of the extensive validation effort are documented within the validation tech memo in **Appendix C**.

The future year model networks are based upon the validated subarea model. The modifications made for the 2010 validation model scenario were carried forward and used within the other scenarios to provide a consistent basis for comparison.

Year 2025

The year 2025 model network was based on the validated "Year 2010" model network. Model areas within Orange, Osceola and Seminole Counties utilize the adopted OUATS 2025 land use assumptions.

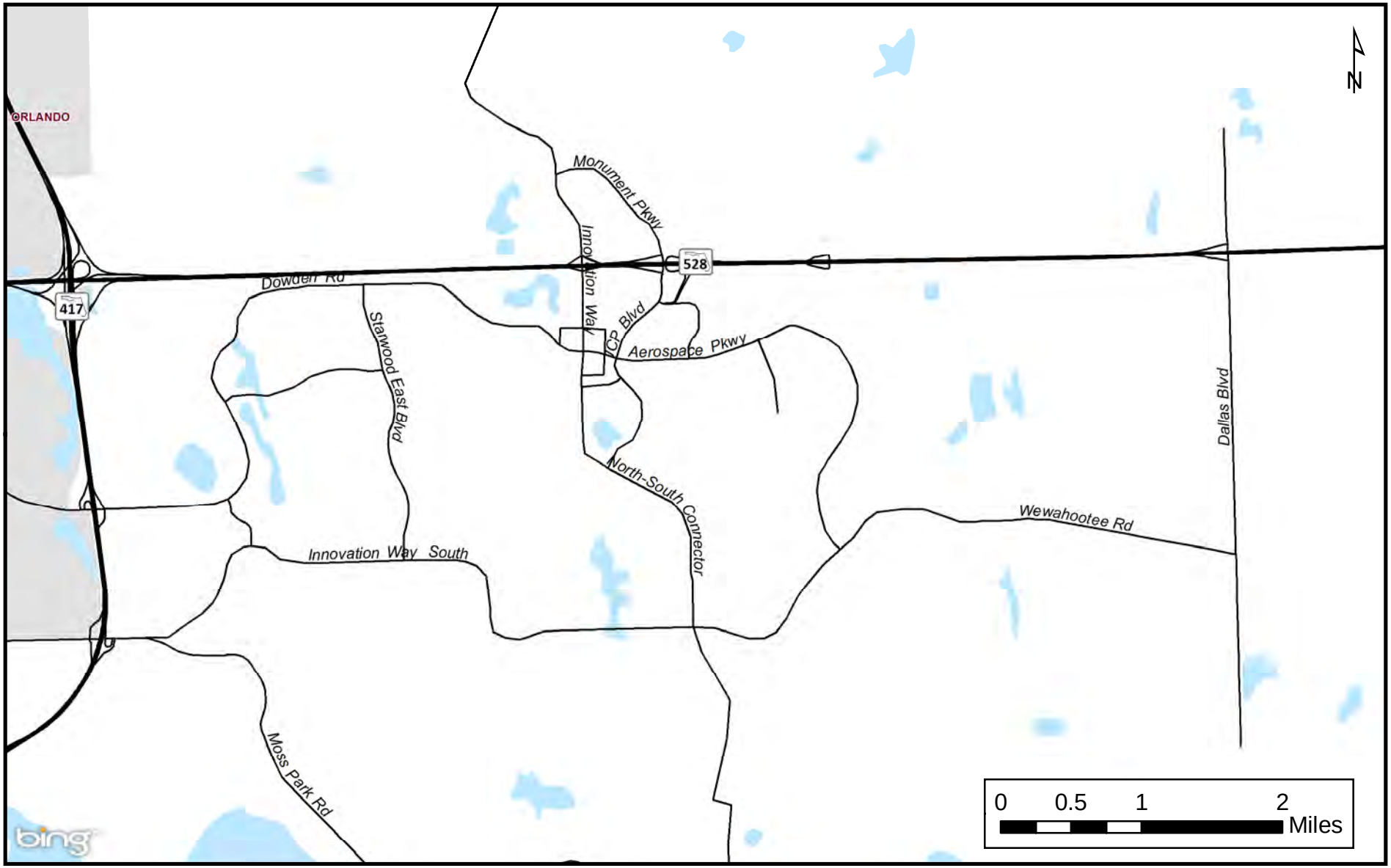
Approximately 50 percent (assumed 2025 development level) of the recently-annexed Starwood development (City of Orlando) was coded into the model due to its relatively-close proximity to and shared infrastructure with ICP/IWE. Detailed future land use plans can be found in **Appendix A**. In Osceola County, the current 2025 proposed development program for NED was coded into the model.

Projects involving roadway capacity change listed in FDOT Five Year Work Program within CFRPM study area were incorporated to support the land uses anticipated to be built by Year 2025, which can be found in **Appendix D**. The current interchange at SR 528 and Monument Parkway/ICP Boulevard was also deleted from the model and replaced with the new Innovation Way interchange scheduled to begin construction in the summer of 2016. To provide access to and improve the connectivity of the ICP, IWE, and NED, a representative roadway network illustrated in **Figure 2** was added to the model network. This network included development roadways internal to the master plans within ICP, IWE, and NED and the following regional connections:

- Osceola Parkway Extension into NED

Year 2040

The year 2040 model network was developed starting with the adopted 2035 Cost Feasible CFRPMv5.01 model network. All the modifications made in base year validation process were incorporated. The network was then modified to be consistent with the 2040 Cost Feasible model network and land use from OUATSv4 within Orange, Osceola, and Seminole Counties. The model network and land use outside Orange, Osceola, and Seminole Counties were adjusted upon the DRAFT LRTP Cost Feasible plans where available and applicable. The onsite roadway network utilized in the 2025 scenario was also utilized in the 2040 network with the addition of an expressway between Florida's Turnpike and the Osceola Parkway Extension.



Model Roadway Network

Figure **2**

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Section 5
Trip End Generation Evaluation

TRIP END GENERATION EVALUATION

The generalized nature of the ICP and IWE land use plans and the magnitude of the land area covered by proposed land uses required additional assumptions for the purposes of evaluating transportation conditions for Year 2025 and Year 2040. The assumptions made as part of this transportation data and analysis report included the aggregation of potential land uses into transportation analysis zones (TAZs) to identify the spatial effects of the land use plan. Assumptions regarding the potential land use program were also used for trip end generation estimating purposes. Once the land use program was refined and allocated to individual TAZs, two methods of trip end generation potential estimation were evaluated. Additional details regarding TAZ structure development, the land use program refinements, and trip end generation estimation are provided in the subsections below.

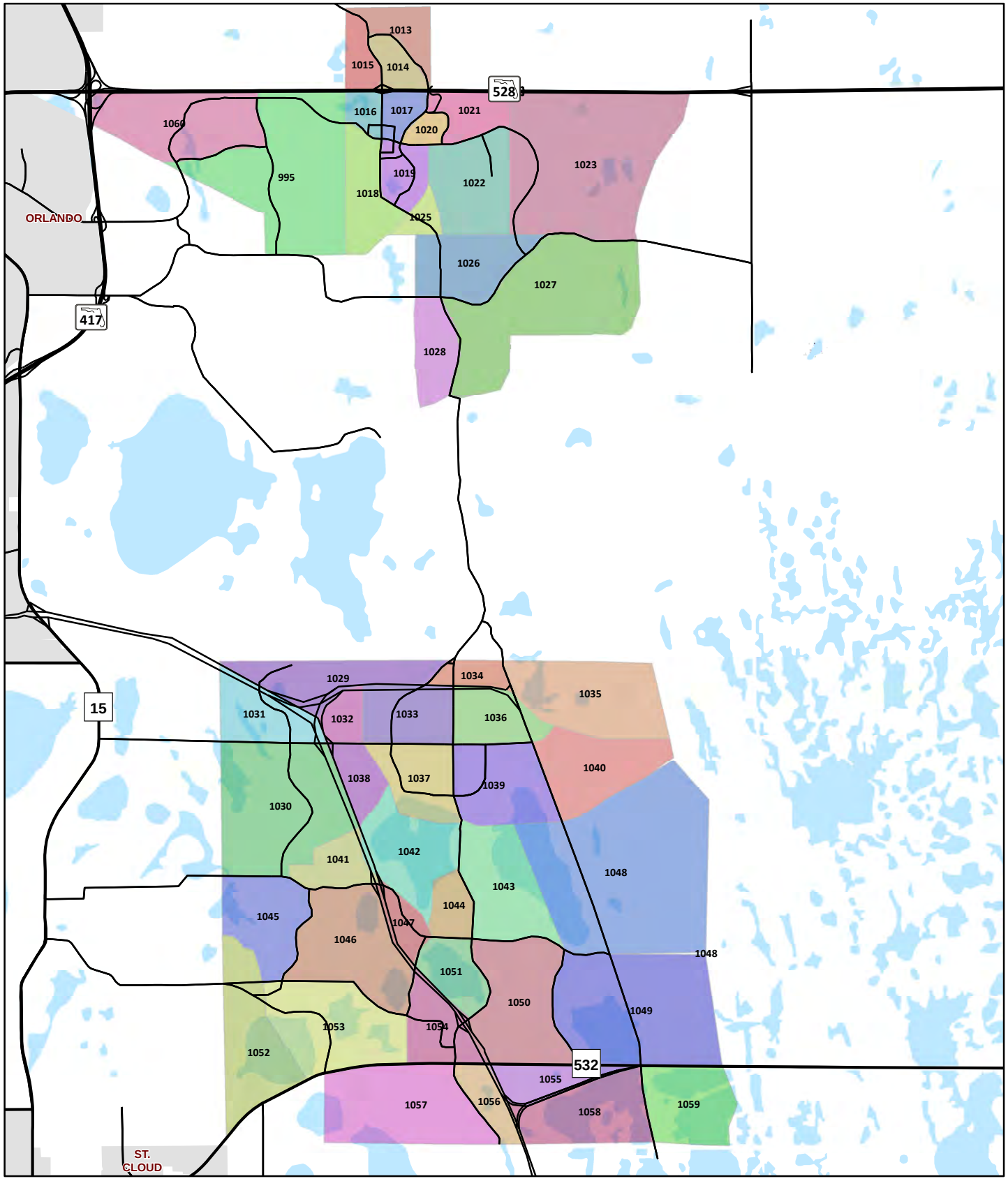
TAZ STRUCTURE DEVELOPMENT

Because the urban areas within the proposed master plan are generally spread across an area of approximately 4,800 acres (7.5 square miles), the land use program was split into several representative TAZs, shown in **Table 2,** to account for the spatial effects that the land use area has on transportation. A similar effort was also undertaken for the NED development program coded into the adopted and proposed scenarios.

Table 2: Representative TAZs for ICP/IWE

Development	TAZ Range
International Corporate Park	1013-1019,1021-1022
Innovation Way East	1023,1025-1028

Figure 3 illustrates the geographic areas of the TAZs utilized within this data and analysis report.



New TAZ Structure

Figure **3**

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REFINEMENTS TO LAND USE PLAN

The land use categories of the development program were further delineated for the purposes of estimating trip end generation potential for each TAZ. A summary of the land use refinements for each generalized land use is provided for the near-term horizon (2025) and long-term horizon (2040) in **Table 3** and **Table 4**, respectively. The land use intensity of ICP, in the adopted scenario was determined based upon the 1986 ICP Development Order. As previously discussed, IWE was not included in the adopted land use scenario.

As indicated in **Table 3**, 3,880 residential dwelling units and a total of 6.06 million square feet of non-residential space (manufacturing/industrial, research and development, office, and commercial) will be built on ICP/IWE by year 2025 in the proposed scenario. The 2025 adopted land use scenario includes 9.8 million square feet of non-residential space developed based upon an average annual construction rate of non-residential lands through buildout.

By year 2040 showing in **Table 4**, there will be a total of 7,370 residential dwelling units and 12.4 million square feet of non-residential space in the proposed plan. In 2040, the adopted plan includes the entirety of the 20.9 million square feet of non-residential space from the 1986 ICP development order.

Table 3: Refined Land Use Program for Trip End Generation Estimation – Near-term (2025)

Future Land Use Program	2025 Adopted	2025 Proposed
Single-Family Residential (DU)	-	2,230
Multi-Family Residential (DU)	-	1,650
Total Residential (DU)	**-**	**3,880**
Employment/Office (SF)	**1,000,000**	**1,280,000**
Industrial (SF)	**8,328,592**	**4,607,900**
Retail/Commercial (SF)	**451,350**	**175,000**
Hospitality (Rooms)	**-**	**-**

Table 4: Refined Land Use Program for Trip End Generation Estimation – Long-term (2040)

Future Land Use Program	2040 Adopted	2040 Proposed
Single-Family Residential (DU)	-	5,720
Multi-Family Residential (DU)	-	1,650
Total Residential (DU)	**-**	**7,370**
Employment/Office (SF)	**1,000,000**	**5,470,000**
Industrial (SF)	**19,448,650**	**6,007,900**
Retail/Commercial (SF)	**451,350**	**880,000**
Hospitality (Rooms)	**-**	**490**

Land use allocations by TAZ for all four scenarios are provided in **Appendix A**.

GROSS TRIP END GENERATION EVALUATION: CFRPM

The gross trip ends generated by the developments were calculated for both the 2025 and 2040 scenario. The gross trip ends generated were first evaluated by coding housing and employment data indicative of the refined land use program into the Central Florida Regional Planning Model (CFRPM) v5.01. The CFRPM requires the use of socioeconomic data, number and type of residential dwelling units (single family and multifamily), and number of employees by industrial, commercial and service type. The non-residential portion of the three programs was identified by potential building size, not employees, so land use conversion rates for traffic impact assessments from 2014 FDOT Transportation Site Impact Handbook as display in **Table 5** was applied to estimate the number of employees and population by TAZ. Specifically, the office service employment conversion rate was calibrated to 2.5 based on ITE Trip Generation due to the limited employment category and the model's tendency to overestimate service trips in the CFRPM.

Table 5: Land Use Conversion Rates

Land Use Category	Conversion Rate	Unit
Single-Family Residential (DU)	3	person per DU
Multi-Family Residential (DU)	2	person per DU
Employment/Office (SF)	2.5	person per 1000 sq ft
Industrial (SF)	1-2	person per 1000 sq ft
Retail/Commercial (SF)	2-3	person per 1000 sq ft
Hospitality (Rooms)	1	person per room

[1]Source: 2014 FDOT Transportation Site Impact Handbook, Exhibit 20

The trip generation module of the CFRPM was run to identify the model daily gross vehicular trip end generation of ICP and IWE (and NED) land uses for the adopted and proposed programs in each analysis year, gross daily trips ends for each scenarios are summarized in **Table 6**. The detailed gross vehicle trip end data by TAZ are provided in **Appendix E**.

A similar effort was undertaken for NED as well. The detailed gross daily trip ends calculation for NED by TAZ was provided in **Appendix E.**

Table 6: Gross Daily Trip Ends Calculated by CFRPM

Year	Development	Adopted Gross Trip Ends by CFRPM	Proposed Gross Trip Ends by CFRPM
2025	ICP	77,449	65,251
	IWE	-	4,217
	Total	77,449	69,468
2040	ICP	162,992	166,429
	IWE	-	27,787
	Total	162,992	194,216

ITE GROSS TRIP END GENERATION CALIBRATION

To check the reasonableness of the model estimation, the daily gross trip end generation potential of the programs were also calculated in accordance with the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. The future land use categories were paired with matching ITE code as provided in **Table 7**, detailed calculations for the ITE gross trip end generation evaluation is provided in **Appendix E**. The results of applying the ITE data were summarized in **Table 8**.

Table 7: Future Land Use Program ITE Code

Land Use Category	ITE Code
Single-Family Residential (DU)	210, 251
Multi-Family Residential (DU)	220
Employment/Office (sq ft)	710, 750
Industrial (sq ft)	110, 140, 150
Retail/Commercial (sq ft)	820
Hospitality (room)	310

Table 8: Gross Daily Trip Ends Calculated by ITE

	Development	Adopted	Proposed
2025	ICP	55,479	62,379
	IWE	-	9,282
	Total	55,479	71,661
2040	ICP	99,519	131,797
	IWE	-	44,907
	Total	99,519	176,704

A similar effort for ITE trip end generation potential was undertaken for NED as well. Detailed calculations are provided in **Appendix E.**

COMPARISON OF GROSS TRIP ENDS GENERATED

In comparing the CFRPM and ITE trip end generation potential estimates, as summarized in **Table 9**, the base CFRPM daily trip end generation potential is approximately 40 percent higher than the ITE method predicts in the 2025 adopted scenario. The model projected 3 percent lower trip end generation potential than the ITE method in the 2025 proposed scenario. For 2040 adopted scenario, the CFRPM daily trip end generation potential is nearly 64 percent higher than the ITE method prediction, and for 2040 proposed scenario CFRPM projected 10 percent higher trip end generation potential than the ITE method.

It is important to note that the model's trip end generation calibration data and ITE trip end generation calibration data were collected from different sources using different methodologies. Therefore, per the approved methodology, the gross trip ends generated by the development TAZs were calibrated to

match ITE levels and eliminate any discrepancy on trip-end generation within the model. During the initial model run, the model's trips are distributed (in origin-destination format) to the network, a "Fratar" adjustment method was then applied that factored the rows and columns of the trip table from/to all ICP/IWE zones until the total trip ends entering and departing matched ITE. Additional information regarding the Fratar adjustment procedure is provided in **Appendix F**.

The Fratar adjustment results in a zero-percent difference between the model and ITE trip end generation estimates. Therefore, the Fratared trip table was carried forward throughout the subsequent analyses.

Table 9: Gross Trip End Generation Comparison

Year	Trip Generation	Adopted			Proposed		
		ITE Trip End	CFRPM Trip End	% Difference	ITE Trip End	CFRPM Trip End	% Difference
2025	Unadjusted	55,479	77,449	39.6%	71,661	69,468	-3.1%
	Adjusted with Fratar Method	55,479	55,490	0.0%	71,661	71,669	0.0%
2040	Unadjusted	99,519	162,992	63.8%	176,704	194,216	9.9%
	Adjusted with Fratar Method	99,519	99,533	0.0%	176,704	176,715	0.0%

PM PEAK HOUR GROSS TRIP ENDS

Because the Orange County methodology requires an analysis of conditions during the PM peak-hour in the peak direction, the ITE PM peak-hour gross trip-end generation potential was also calculated using rates and equations from ITE and is summarized in **Table 10.**

As mentioned in **Section 3**, the directional PM peak hour gross trip will be added to the PHPD volumes to determine the total PHPD volumes used for analysis. The total gross PM peak hour project trips calculated by the ITE method for each scenario are summarized in **Table 11** and will be carried through the analysis.

Table 10: ITE PM Peak Hour Gross Trip End Generation Potential

Scenario	Direction	ITE Category											Total	Directional %
		Townhouse	Apartment	Single-Family Residential	Senior Adult Housing - Detached	Hotel	Industrial	Warehousing	Office	Office-Research Park	Manufacturing	Retail		
	In	67%	65%	63%	61%	51%	12%	25%	17%	15%	36%	48%		
	Out	33%	35%	37%	39%	49%	88%	75%	83%	85%	74%	52%		
2025 Adopted	Total	-	-	-	-	-	-	1,171	1,356	-	1,847	1,645	6,204	
	In	-	-	-	-	-	-	293	231	-	665	790	1,978	31.88%
	Out	-	-	-	-	-	-	878	1,125	-	1,367	855	4,226	68.12%
2025 Proposed	Total	-	548	2,006	-	-	1,830	537	1,126	713	-	1,083	7,843	
	In	-	356	1,264	-	-	220	134	191	107	-	520	2,792	35.60%
	Out	-	192	742	-	-	1,610	403	935	606	-	563	5,051	64.40%
2040 Adopted	Total	-	-	-	-	-	-	1,171	1,356	-	1,847	1,645	15,675	
	In	-	-	-	-	-	-	293	231	-	3,765	790	5,077	32.39%
	Out	-	-	-	-	-	-	878	1,125	-	7,738	855	10,597	67.61%
2040 Proposed	Total	-	979	4,575	112	294	3,833	537	1,591	3,603	-	3,859	19,383	
	In	-	636	2,882	68	150	460	134	270	540	-	1,852	6,994	36.08%
	Out	-	343	1,693	44	144	3,373	403	1,321	3,063	-	2,007	12,389	63.92%

Table 11: Total PM Peak Hour Trip

Gross PM Peak Hour Trips	In	Out	Total
2025 Adopted	1,978	4,226	6,204
2025 Proposed	2,792	5,051	7,843
2040 Adopted	5,077	10,597	15,674
2040 Proposed	6,994	12,389	19,383

Section 6
Trip Distribution and Assignment

TRIP DISTRIBUTION AND ASSIGNMENT

TRIP DISTRIBUTION

The trip distribution phase of the model involves the pairing of gross trip ends between compatible productions and attractions within each TAZ and between TAZs using a gravity-based equation. This process results in the identification of external trips (trips with one end within either the ICP or IWE and the other end external to both) and trips with both ends within either ICP or IWE or between the two. The identification of each trip type involves a complex analysis of the model's trip table. The following subsections define each trip type in a simplified form and summarize the quantity of each trip type. Following the distribution of project trips, the route assignment is determined such that vehicular volumes can be tracked throughout the model network.

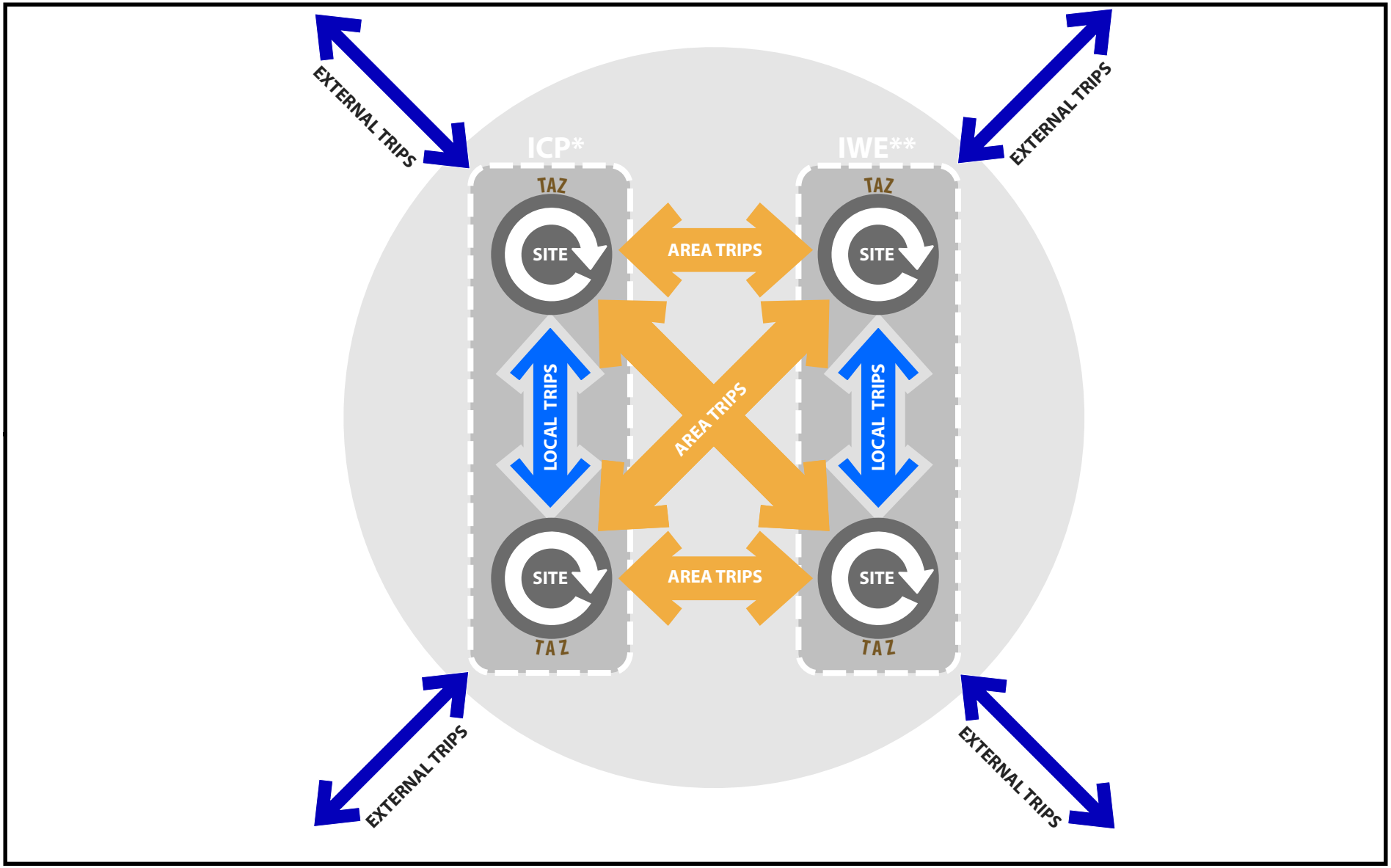
Project-Generated Trip Types

The Fratared gross trip end generation evaluation within the model provides an estimation of the total number of trip ends that may be generated by the adopted and proposed land use plans. The gross trip end generation potential is comprised of four basic trip types. Due to the overall magnitude of the ICP/IWE properties, a detailed understanding of each trip type is required to best-inform community design. The trip types analyzed within this study are as follows:

- **Site Trips**: The percentage of total vehicular trips that are made internally to a development site without using roads external to the site. In this case, these types of trips refer to those trips with both ends within one TAZ.
- **Local Trips**: A trip with both ends within the same development but made between TAZs. It refers to trips travelling within ICP or IWE and using the major road system passing through either development.
- **Area Trips**: All trips made within a defined area such that the trips do not use transportation facilities external to the area. For the purposes of this study, trips with one end in either ICP TAZ and the other end in either IWE TAZ are considered area trips.
- **External Trips**: A trip with one end in either ICP or IWE and the other end external to the boundary of ICP and IWE.

Understanding the various trip types that contribute to the project volumes on each study roadway is critical to appropriately account for project impacts and also informs the community design process such that each transportation corridor can be designed to the appropriate context.

Figure 4 is an infographic illustrating the different trip types evaluated within this data and analysis report.



* ICP has 9 TAZs
** IWE has 5 TAZs

Trip Type Infographic

Figure **4**

Site (TAZ) Trips

A portion of the gross trip ends generated within some TAZs will be internal to each TAZ. Site-captured trips ends, or intrazonal trip ends, were evaluated with a CFRPM run for all four scenarios. A summary of the site captured trip ends by development is provided in **Table 12**. **Appendix G** includes a detailed breakdown of site-captured trips by TAZ.

Table 12: Site Trip End Generation Summary

Development	Year 2025						Year 2040					
	Adopted			Proposed			Adopted			Proposed		
	Gross Trip Ends	Site Trip Ends	% of Gross Trip Ends	Gross Trip Ends	Site Trip Ends	% of Gross Trip Ends	Gross Trip Ends	Site Trip Ends	% of Gross Trip Ends	Gross Trip Ends	Site Trip Ends	% of Gross Trip Ends
ICP	55,490	9,417	17.0%	62,383	7,467	12.0%	99,533	20,790	20.9%	131,804	16,348	12.4%
IWE	-	-	-	9,287	938	10.1%	-	-	-	44,911	6,460	14.4%
Total	55,490	9,417	17.0%	71,669	8,405	11.7%	99,533	20,790	20.9%	176,715	22,808	12.9%

Local Trips

The local captured trips generated by the individual development were evaluated by examining the zone-to-zone trip end interaction between each TAZ inside one development. A summary of the local captured trip ends by TAZ was provided in **Table 13**. **Appendix G** includes a detailed breakdown of local trips by TAZ.

Table 13: Local Trip End Generation Summary

Development	Year 2025		Year 2040	
	Adopted	Proposed	Adopted	Proposed
ICP	4,991	14,722	9,947	26,217
IWE	-	538	-	3,851
Total	4,991	15,259	9,947	30,068
% of Gross	9.0%	21.3%	10.0%	17.0%

Area Captured Trips

The area captured trips generated were evaluated by examining the zone-to-zone trip end interaction between developments and not within a single development. As previously discussed, one end of the area-captured trips are within one development, the other end is within one of the other two developments using the internal road system only. A summary of the area captured trip ends by TAZ is provided in **Table 14**. **Appendix G** includes a detailed breakdown of area captured trips by TAZ.

Table 14: Area-Captured Trip End Generation Summary

Development	Year 2025		Year 2040	
	Adopted	Proposed	Adopted	Proposed
ICP	-	1,808	-	10,924
IWE	-	1,808	-	10,924
Total	-	3,616	-	21,848
% of Gross	0.0%	5.0%	0.0%	12.4%

External Trips

External trip ends generated by the adopted and proposed programs were evaluated by subtracting site, local and area-captured trip ends from the gross trip end generation for each development. **Table 15** summarizes the external trip end generation for each development. **Appendix G** includes a detailed breakdown of external trips by TAZ.

Table 15: External Trip End Generation Summary

Development	Year 2025		Year 2040	
	Adopted	Proposed	Adopted	Proposed
ICP	41,082	38,386	68,796	78,315
IWE	-	6,003	-	23,675
Total	41,082	44,390	68,796	101,990
% of Gross	74.0%	61.9%	69.1%	57.7%

Trip End Generation vs Trip Generation

It is important to distinguish the difference between trip end generation and trip generation. Each trip consists of two trip ends. In the section above, site-captured trips have both ends of the trip within the same TAZ, local-captured trips have both ends of the trip within the same development, and area-captured trips have one trip end within ICP and the other trip end within IWE. The number of external *trip ends* generated by the ICP and IWE is equivalent to the number of external *trips* generated by both plans. This is because one end of each external trip is located within the master plan area, and the other end is located external to both areas. **Table 16** summarized trip ends generated. An equivalent way to show the data is to summarize the total *trips* generated for each trip type. This alternative way of presenting the data is provided in **Table 17.**

Table 16: Summary of Trip Ends

Scenario		Dev	Gross Trip Ends Generated	Site Trip Ends Generated	Local Trip Ends Generated	Area Trip Ends Generated	External Trip Ends
2025	Adopted	ICP	55,490	9,417	4,991	-	41,082
		IWE	-	-	-	-	-
		Total	*55,490*	*9,417*	*4,991*	-	*41,082*
		%	*100.0%*	*17.0%*	*9.0%*	*0.0%*	*74.0%*
	Proposed	ICP	62,383	7,467	14,722	1,808	38,386
		IWE	9,287	938	538	1,808	6,003
		Total	*71,669*	*8,405*	*15,259*	*3,616*	*44,390*
		%	*100.0%*	*11.7%*	*21.3%*	*5.0%*	*61.9%*
2040	Adopted	ICP	99,533	20,790	9,947	-	68,796
		IWE	-	-	-	-	-
		Total	*99,533*	*20,790*	*9,947*	-	*68,796*
		%	*100.0%*	*20.9%*	*10.0%*	*0.0%*	*69.1%*
	Proposed	ICP	131,804	16,348	26,217	10,924	78,315
		IWE	44,911	6,460	3,851	10,924	23,675
		Total	*176,715*	*22,808*	*30,068*	*21,848*	*101,990*
		%	*100.0%*	*12.9%*	*17.0%*	*12.4%*	*57.7%*

Table 17: Summary of Trips

Scenario		Dev	Gross Trips Gene [3]	Site Trips[1]	Local Trips[1]	Area Trips[1]	External Trips[2]
2025	Adopted	ICP	48,286	4,709	2,496	-	41,082
		IWE	-	-	-	-	-
		Total	*48,286*	*4,709*	*2,496*	-	*41,082*
		%	*100.0%*	*9.8%*	*5.2%*	*0.0%*	*85.1%*
	Proposed	ICP	50,385	3,733	7,361	904	38,386
		IWE	7,645	469	269	904	6,003
		Total	*58,030*	*4,202*	*7,630*	*1,808*	*44,390*
		%	*100.0%*	*7.2%*	*13.1%*	*3.1%*	*76.5%*
2040	Adopted	ICP	84,164	10,395	4,974	-	68,796
		IWE	-	-	-	-	-
		Total	*84,164*	*10,395*	*4,974*	-	*68,796*
		%	*100.0%*	*12.4%*	*5.9%*	*0.0%*	*81.7%*
	Proposed	ICP	105,060	8,174	13,108	5,462	78,315
		IWE	34,293	3,230	1,926	5,462	23,675
		Total	*139,353*	*11,404*	*15,034*	*10,924*	*101,990*
		%	*100.0%*	*8.2%*	*10.8%*	*7.8%*	*73.2%*

[1] Site, Local and Area Captured Trips are equivalent to half of the respective Trip Ends
[2] # of External Trips are equivalent to # of External Trip Ends
[3] Site Captured Trips + Area Captured Trips + External Trips = Gross Trips Generated

PM Peak-Hour External Trips

ITE methods for approximating the portion of gross trip ends equating to external trip ends are limited in scope and not applicable to developments of this magnitude. Per the ITE *Trip Generation Handbook, 3rd Edition*, the methodology would not be applicable to this development because industrial uses were not evaluated in the research, the overall building area proposed within ICP and IWE exceeds the 2,000,000 square-foot upper limit, and the overall site area also exceeds the 300-acre upper limit for overall acreage. Due to the overall scale of the adopted and proposed development plans, the portion

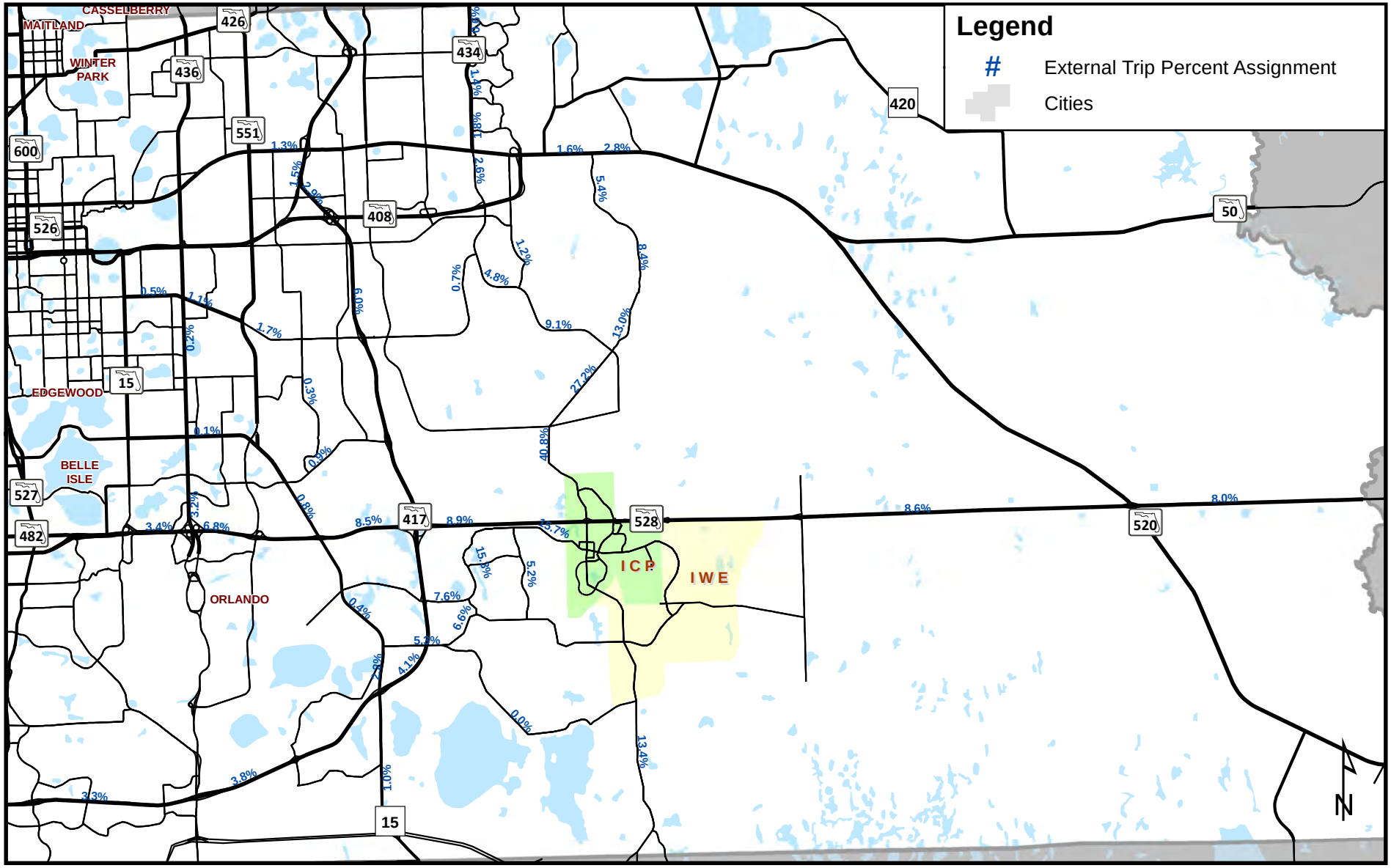
of PM peak-hour external project trip ends were approximated based upon the portion of daily external project trip ends, as shown in **Table 18**. This method provides the best-available tool for approximating external trip percentages for a development of this magnitude.

Table 18 PM Peak-hour Trips

		In	Out	Total
2025 Adopted	Gross	1,978	4,226	6,204
	Internal Capture	807	807	1,614
	Net	1,171	3,419	4,591
2025 Proposed	Gross	2,792	5,051	7,843
	Internal Capture	1,494	1,494	2,988
	Net	1,298	3,557	4,855
2040 Adopted	Gross	5,077	10,597	15,674
	Internal Capture	2,422	2,422	4,843
	Net	2,655	8,175	10,831
2040 Proposed	Gross	6,994	12,389	19,383
	Internal Capture	4,100	4,100	8,199
	Net	2,894	8,289	11,184

TRIP ASSIGNMENT

The regional trip assignment was evaluated on a link-by-link basis for regionally significant roadways within Orange County. This was done using a select-zone model run for the adopted and proposed development programs. The external trip percent assignment for each scenario is illustrated within the figure series from **Figure 5 to Figure 8**. Select-zone model plots are included in **Appendix H.**



External Percentage Assignment
2025 Adopted Scenario

Figure **5**

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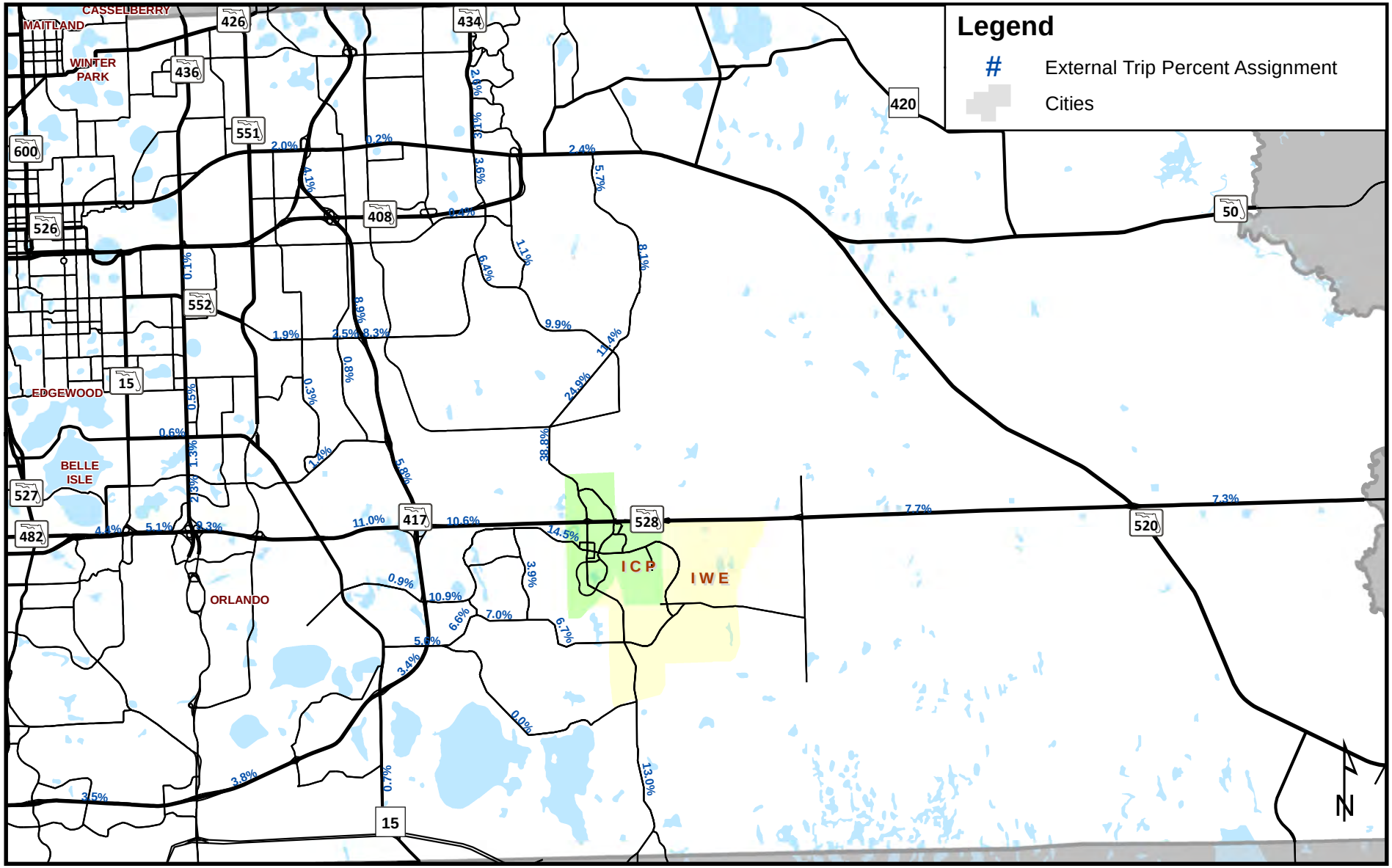

External Percentage Assignment
2025 Proposed Scenario

Figure **6**

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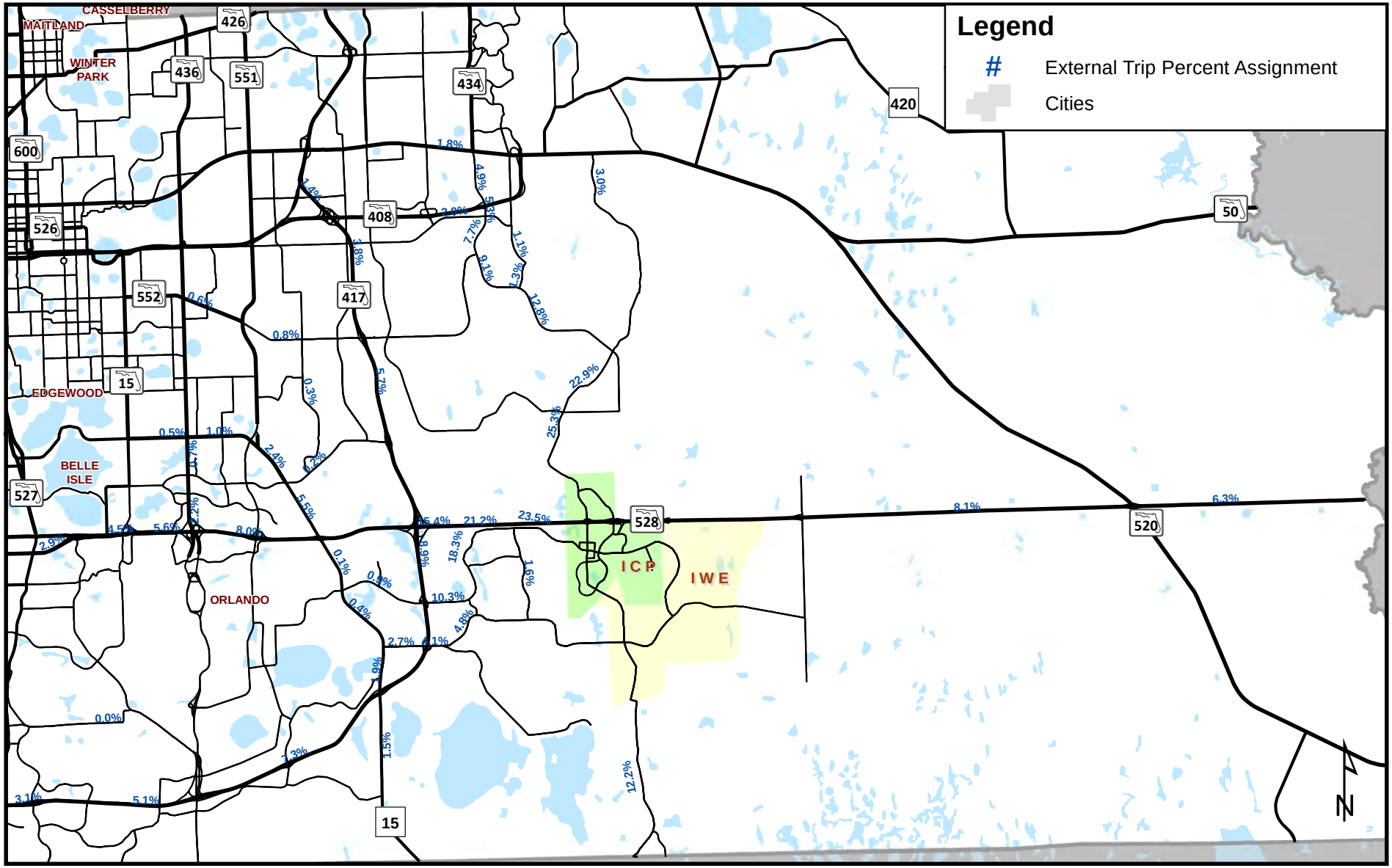

External Percentage Assignment
2040 Adopted Scenario

Figure **7**

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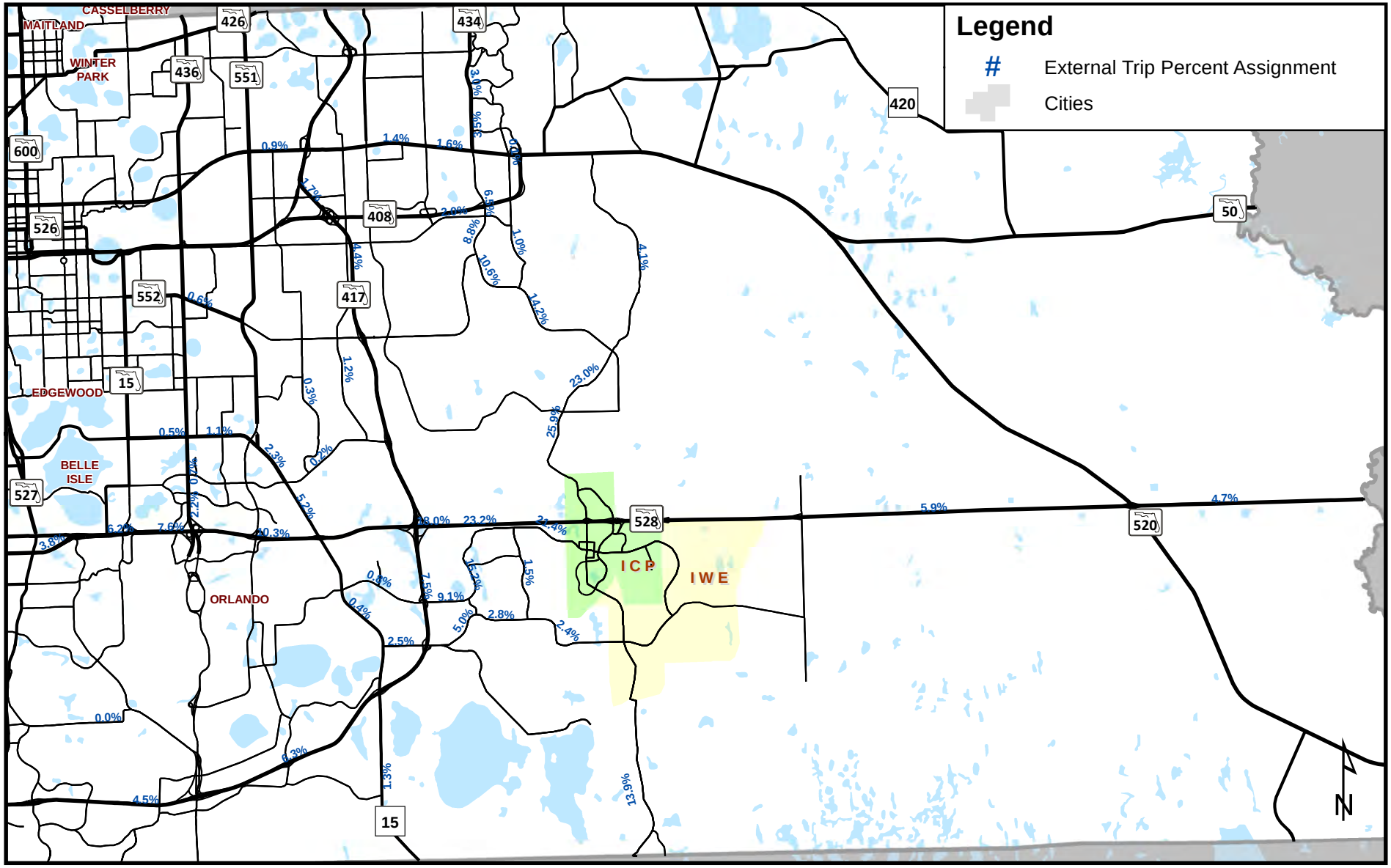

External Percentage Assignment
2040 Proposed Scenario

Figure **8**

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MEMORANDUM

Date: November 11, 2015

Project #: 19320

To: Hatem Abu-Senna, PhD, P.E.
Orange County Transportation Planning Division
4200 S. John Young Parkway
Orlando, Florida 32839

From: Adam Burghdoff, P.E.

Project: Proposed ICP/IWE Comprehensive Plan Amendments

Subject: Revised Travel Demand Modeling Methodology

INTRODUCTION

Kittelson & Associates, Inc. (KAI) has been retained by Tavistock to provide transportation planning services associated with proposed comprehensive plan amendments in eastern Orange and Osceola Counties. A proposed modeling methodology was presented to Orange County on October 30, 2015. Through subsequent discussions, the methodology approach was revised. This memorandum summarizes the revised travel demand modeling methodology proposed for use in forecasting traffic demands.

MODELING APPROACH

The Comprehensive Plan Amendments are proposed by Tavistock East Holdings for lands in Orange County (to include International Corporate Park, Innovation Way East, and Camino Reale) and Osceola County (to include Northeast District). The aforementioned development areas are currently undergoing a simultaneous planning effort. Due to the proximity of the development areas, it is recommended that the travel demand forecasts be prepared with the use of a single travel demand model for planning consistency.

The use of the CFRPM is recommended due to the location of the proposed development areas (their proximity to the eastern boundary of the OUATS travel demand model and other large-scale development proposals such as the North Ranch Sector Plan), the scale of the proposed development areas, and to maintain consistency with other planning efforts currently, or soon to be, underway. Additionally, MetroPlan Orlando has recently decided not to continue with updates to the OUATS model. While the CFRPMv6 is currently under development, it is not scheduled for completion until January 2016. Based on Orange County discussions with FDOT, FDOT is still making revisions to the

modeling processes and does not endorse the use of the CFRPMv6 prior to its final adoption. Therefore, it is recommended to use the CFRPMv5.01 as the modeling platform with updates to land use and network data based upon the latest information available from the CFRPMv6 development process. The methodology described within this memorandum would result in a travel demand model subarea based upon the most-current information available and calibrated for use specifically within eastern Orange and Osceola Counties. The methodology described herein is consistent with FDOT District Five methodologies used in preparing subarea modeling for PD&E projects and new interchange access requests.

PROPOSED METHODOLOGY OUTLINE

The outline below summarizes a proposed methodology that would be based upon the most-recent, and best-available, travel demand modeling information to date:

1) Subarea validation
   a) The validation process will begin with the CFRPM v5.01 2005 roadway network and TAZ structure. Roadway improvements constructed between 2005 and 2010 will be coded into the model to replicate 2010 roadway conditions.
      i) The roadway network and TAZ structure will then be checked against the OUATSv4 network and TAZ structure for consistency. In the event there is a discrepancy, the discrepancy and its solution will be documented.
   b) The 2010 land use data obtained from the US Census, and used in CFRPMv6, will be coded into the newly-created 2010 model network.
   c) Major state and County roadways within the area generally bounded by Florida's Turnpike to the west, SR 50 to the north, I-95 to the east, and US 192 to the south will be validated to 2010 conditions.
   d) Validation will be prepared in accordance with FSUTMS standards.
2) 2020 Model Scenario Development
   a) Model areas within Orange, Osceola, and Seminole Counties will be consistent with adopted OUATS 2020 network and 2020 OUATS land use assumptions. The OUATS model data will be replicated within the CFRPM for consistency purposes.
   b) The CFRPM 2020 model network will be used for counties outside Orange, Osceola, and Seminole Counties. Land use information for these counties will be obtained from the CFRPM, or interpolated between the 2010 base year land use and 2040 horizon year land use projections.
3) 2040 Model Scenario Development
   a) 2040 socioeconomic data will be consistent with OUATS 2040 and CFRPMv6 2040 projections, but will be coded into the adopted CFRPMv5.01 2035 TAZ structure.
      i) The TAZ structure will then be checked against the OUATSv4 network and TAZ structure for consistency. In the event there is a discrepancy, the discrepancy and its solution will be documented.
   b) The 2040 CFRPM model network within Orange, Osceola, and Seminole Counties will be checked for consistency with the OUATSv4 Cost Feasible network

c) The 2040 CFRPM model network outside Orange, Osceola, and Seminole Counties will be based upon the DRAFT LRTP Cost Feasible networks where available and applicable.

We kindly request your concurrence with the proposed methodology. If you have any questions, please feel free to call me at 407-373-1116.

MEMORANDUM

Date: December 22, 2015 Project #: 19320

To: Hatem Abu-Senna, PhD, P.E.
Orange County Transportation Planning Division
4200 S. John Young Parkway
Orlando, Florida 32839

From: Adam Burghdoff, P.E.

Project: Proposed ICP/IWE/Camino South Comprehensive Plan Amendments

Subject: Revised Transportation Impact Study Methodology Outline

INTRODUCTION

Kittelson & Associates, Inc. (KAI) has been retained by Tavistock to provide transportation planning services associated with proposed comprehensive plan amendments in eastern Orange and Osceola Counties. A proposed transportation impact study methodology outline was presented to Orange County on December 17, 2015. Based upon County feedback during the meeting, the outline has been revised. This memorandum summarizes the revised transportation impact study methodology outline.

METHODOLOGY OUTLINE

1. Traffic Impact Assessment Area
    a. The area will include each directly impacted collector or arterial;
    b. The area shall include a two-mile radius around the project site;
    c. The area will include each roadway where the PM peak hour project trips (generated by the proposed future land use) on the roadway segments are greater or equal to 3% of the maximum service volume at the adopted LOS.
2. Analysis
    a. Transportation impact analysis will be based upon the change in the transportation impact between the existing (adopted) and the proposed future land use map category.
    b. The analysis will be provided for both daily traffic and PM peak-hour peak-directional traffic.
    c. The daily traffic analysis will be based upon AADT.
    d. The peak hour traffic analysis will be based on the highest combination of the background and the development peak hour traffic. In other words, the peak hour and peak direction of each roadway segment.

3. Existing Conditions Analysis
    a. A capacity analysis will be conducted for existing conditions. Average Daily and PM Peak Hour Directional traffic volumes for all roadway segments identified within the project's traffic impact assessment area will be included.
        i. Existing traffic count data will be obtained from County and FDOT sources. Count data will also be checked to see if they are reasonable or not.
    b. Existing volumes will be compared with the appropriate generalized service volume at the adopted level of service standard to identify roadways operating below the adopted level of service.
4. Future Conditions Analysis
    a. Future Traffic –Ten Year Horizon
        i. Ten-year horizon (year 2025) analysis will be conducted.
            1. 2025 traffic forecasts will be based on CFRPMv5.01 roadway network calibrated with existing year roadway network plus projects listed in FDOT five year work program.
            2. Model areas within Orange, Osceola and Seminole Counties will be consistent with adopted OUATS 2025 land use assumptions. Previously adopted future land use map amendments, DRIs, and trips vested in the concurrency management system will be included as background traffic.
            3. Model PSWADT will be converted to AADT by applying MOCF. Model growth rate will be compared with a 2% annual growth rate as requested by the County.
    b. Future Traffic – Long-Term Horizon
        i. Future traffic will be determined using the CFRPMv5.01 modified as described within the November 11, 2015 memo to Dr. Hatem Abu-Senna (Attachment 2). Previously adopted future land use map amendments, DRIs, and trips vested in the concurrency management system will be included as background traffic. Model growth rate will be compared with a 2% annual growth rate as requested by the County.
            1. Future offsite roadway network will be consistent with OUATSv4 in no-build scenario
                a. Orange County
                b. Osceola County
            2. Nobuild roadway network will be modified to include proposed onsite roadway system
                a. Orange County
                b. Osceola County
        ii. Model PSWADT will be converted to AADT by applying MOCF. AADT volumes will be converted to PHPD volumes by applying K factor and D Factor
            1. Demand K factor will be the lower of the K_{100} factor specified in the Orange County 2014 Traffic Counts Report or the FDOT Standard K factor.
            2. In most cases, D Factor will be based upon existing D factor magnitude and directionality. Justification will be provided where this is not a practical approach.

5. Recommendations/Submittals
    a. Findings of the transportation impact analysis will be summarized in a report.
    b. Impact fee and infrastructure analysis will be presented under separate cover.

We kindly request your concurrence with the proposed methodology. If you have any questions, please feel free to call me at 407-373-1116.

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MEMORANDUM

Date: February 12, 2016

Project #: 19320

To:

From: Like Liu

Project: Tavistock East Holding Master Planning

Subject: Travel Demand Model Base Year Subarea Validation

INTRODUCTION

Kittelson & Associates, Inc. (KAI) has been retained by Tavistock to provide transportation planning services associated with proposed comprehensive plan amendments. The Comprehensive Plan Amendments are proposed by Tavistock East Holdings for lands in Orange County (to include International Corporate Park, Innovation Way East, and Camino Reale) and Osceola County (to include Northeast District).

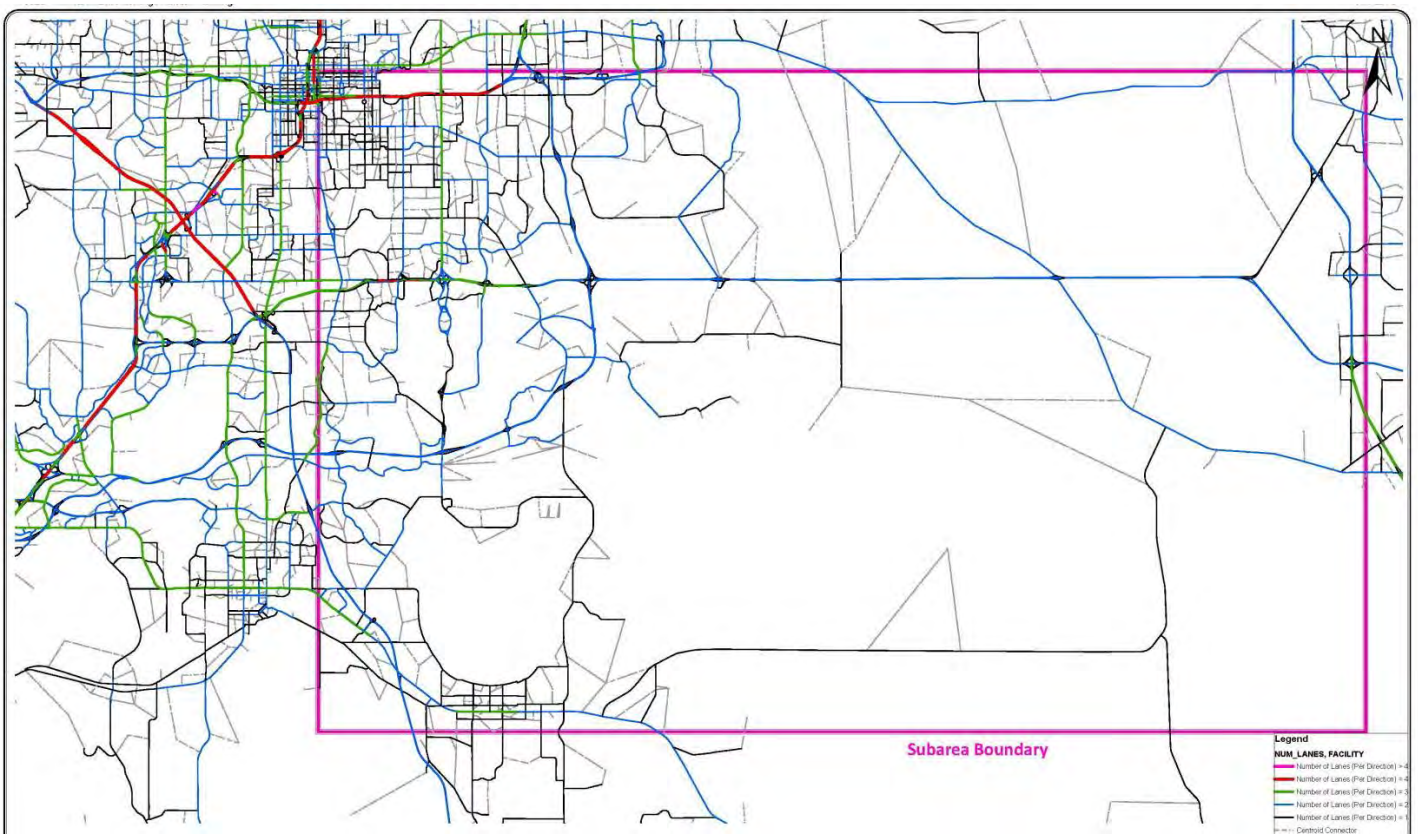
As part of the effort to forecast reliable traffic volumes of ten year horizon (2025) and long-term horizon (2040) for the Orange County Comprehensive Plan Amendments, the current adopted Central Florida Regional Planning Model (CFRPM) v5.01 model was identified due to the location of the proposed development areas (their proximity to the eastern boundary of the OUATS travel demand model and other large-scale development proposals such as the North Ranch Sector Plan), the scale of the proposed development areas, and to maintain consistency with other planning efforts currently, or soon to be, underway. Additionally, MetroPlan Orlando has recently decided not to continue with updates to the OUATS model. While the CFRPMv6 is currently under development, it is not scheduled for completion until 2016 Spring. Based on Orange County discussions with FDOT, FDOT is still making revisions to the modeling processes and does not endorse the use of the CFRPMv6 prior to its final adoption. Therefore, it is recommended to use the CFRPMv5.01 as the modeling platform with updates to land use and network data based upon the latest information available from the CFRPMv6 development process.

The future year traffic growth will be evaluated using the validated subarea model. This memorandum summarizes the subarea model validation steps and presented the validation results for the study corridor.

SUBAREA VALIDATION REFINEMENT

The area generally bounded by Florida's Turnpike to the west, SR 50 to the north, I-95 to the east, and US 192 to the south is identified as subarea of the adopted CFRPM model as display in Figure 1 , and will be validated to year 2010 conditions. The subarea model was updated from base year 2005 to base year of 2010, and validated to the Florida Department of Transportation (FDOT) 2010 counts. An iterative approach was taken for validation until the subarea model showed acceptable model volumes comparable to the counts.

Figure 1 Subarea Model Validation Boundary



The validation procedures are detailed as follows.

Land Use / Socioeconomic Data

The TAZs in draft CFRPM v6 have the same structure as adopted OUATS v4 within MetroPlan Orlando area, which were more refined than the CFRPM 5.0 TAZ structures. Also the base year of OUATS v4 is 2009, while the draft CFRPM v6 has the base year for 2010. To make reasonable volumes forecasts, the adopted 2005 CFRPM 5.01 was updated to year 2010 using socio economic population and employment data from the adopted CFRPM v6 2010 land use assumptions.

Model Network

Modifications were made to the CFRPM v5.01 base year roadway network characteristics, which included roadway posted speed and number of lanes, and to match the 2010 road network structure by overlaying the street network layers and draft CFRPM v6 2010 model network. Several new road segments were added to the 2005 road network to better represent the 2010 year roadway network situation. The posted speed on the major roads was modified to reflect the realistic relative importance of the roadways chosen by travelers. The number of lanes and facility types were checked for correctness. Figure 2 to Figure 4 illustrate all the network changes made during validation process.

Figure 2 Posted Speed Updates

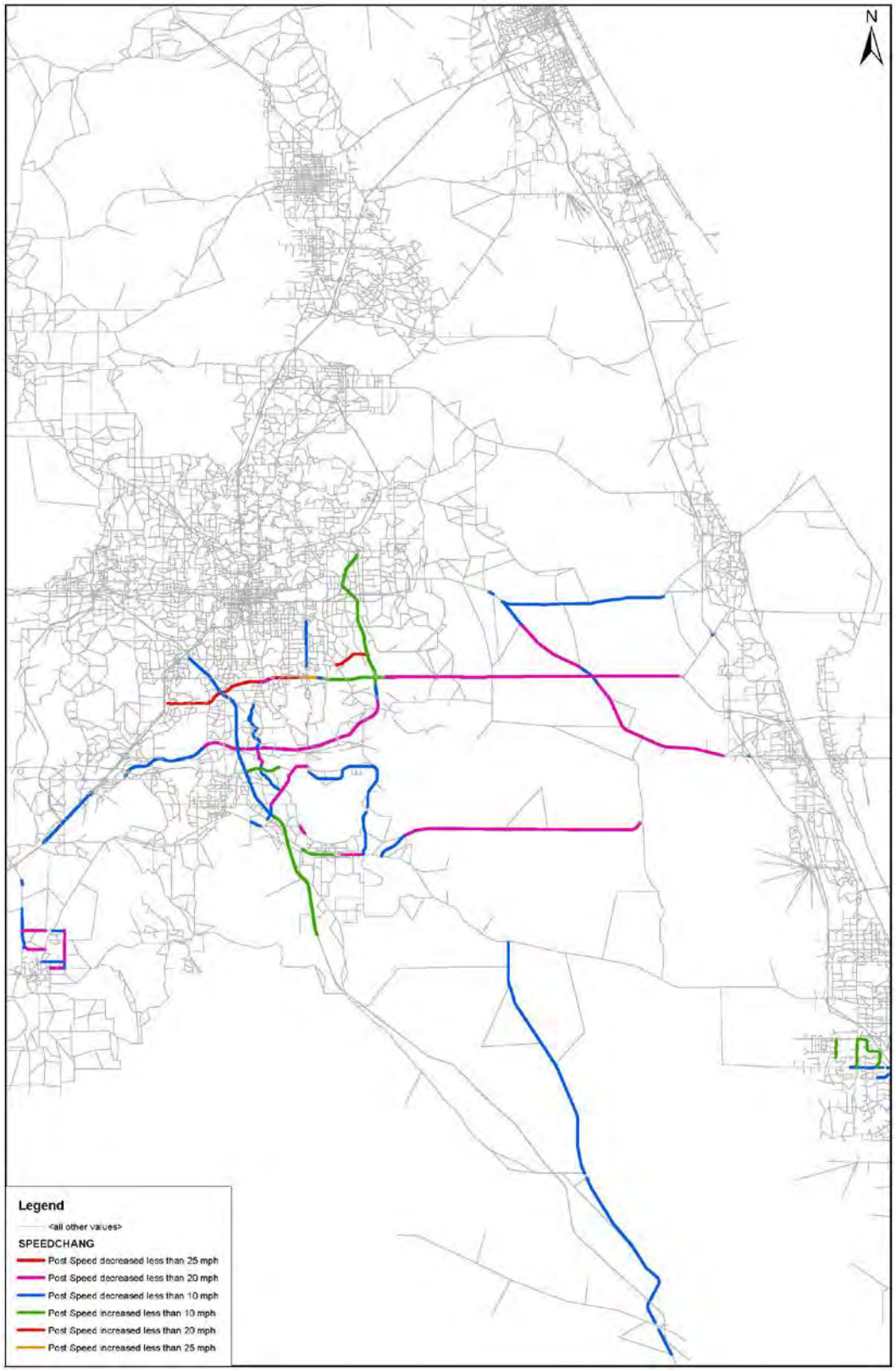


Figure 3 Number of Lanes Updates

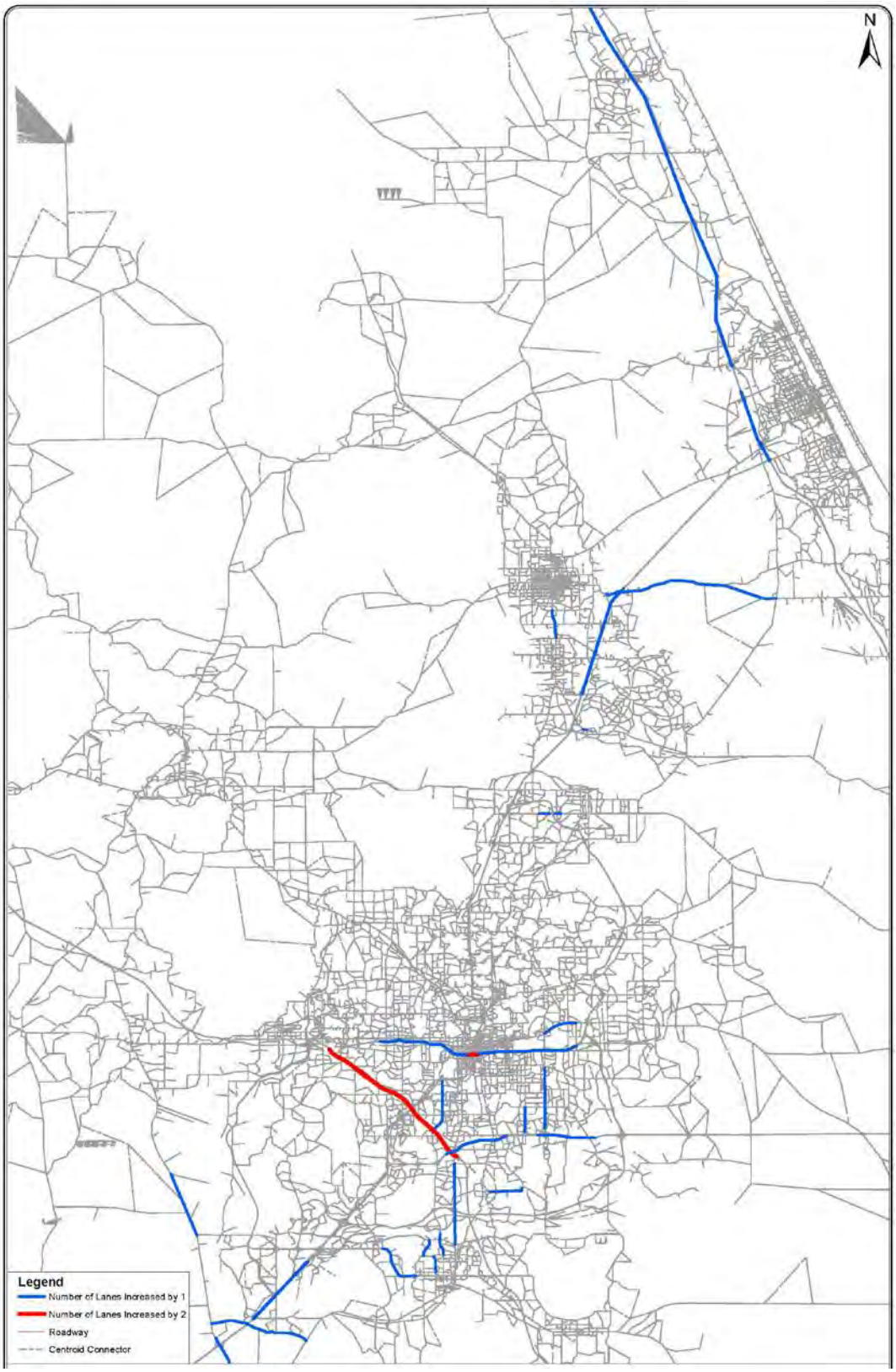
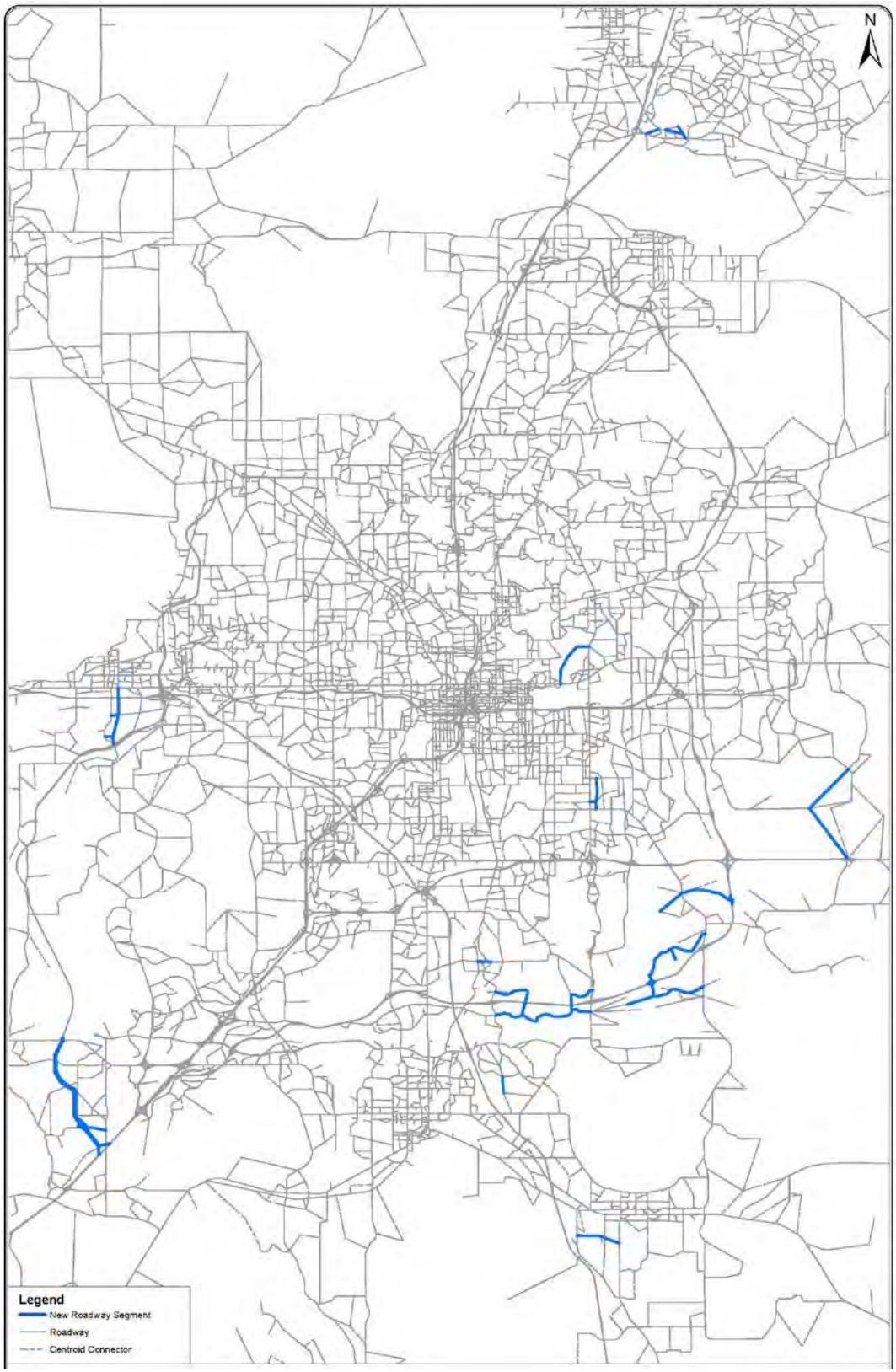


Figure 4 New Road Updates



SUBAREA MODEL ACCURACY

After all the validation efforts above, the updated year 2010 subarea model was ready to generate the Peak Season Weekday Average Daily Traffic (PSWADT) volumes, which used the Model Output Conversion Factor (MOCF) to convert into AADT volumes:

$$AADT = PSWADT * MOCF$$

A comparison was made between the subarea model AADT volumes and FDOT 2010 AADT counts from Florida Traffic Information (FTI) by percent root mean square error (RMSE). The RMSEs for subarea validated model were expected to meet the FSUTMS standards before proceeding to future traffic forecasting. There are no data for year 2010 of most of the Orange County count stations within study area, so the Orange County counts were not used as measurement.

Within study area, 41 FDOT traffic count locations were used to calculate the RMSE as displayed in Figure 5. The individual information was summarized in Table 1. Table 2 summarizes the RMSE calculations and FSUTMS-Cube Model Calibration and Validation Standards for the entire subarea from the original Year 2005 CFRPM model, original 2009 OUATS model, and the validated year 2010 subarea model. The total RMSE is 20% from the validated year 2010 subarea model, which is better than the FSUTMS preferable standards. The validated year 2010 subarea model has improvements for almost all groups and the RMSEs are within preferable range except group 3, which including stations outside the subarea. Due to group 7 only has one observation and the count stations were chosen on regional basis, the validated subarea model is acceptable as base and expected to provide a reasonable future traffic projection base.

Table 1 FTI Count Station Information

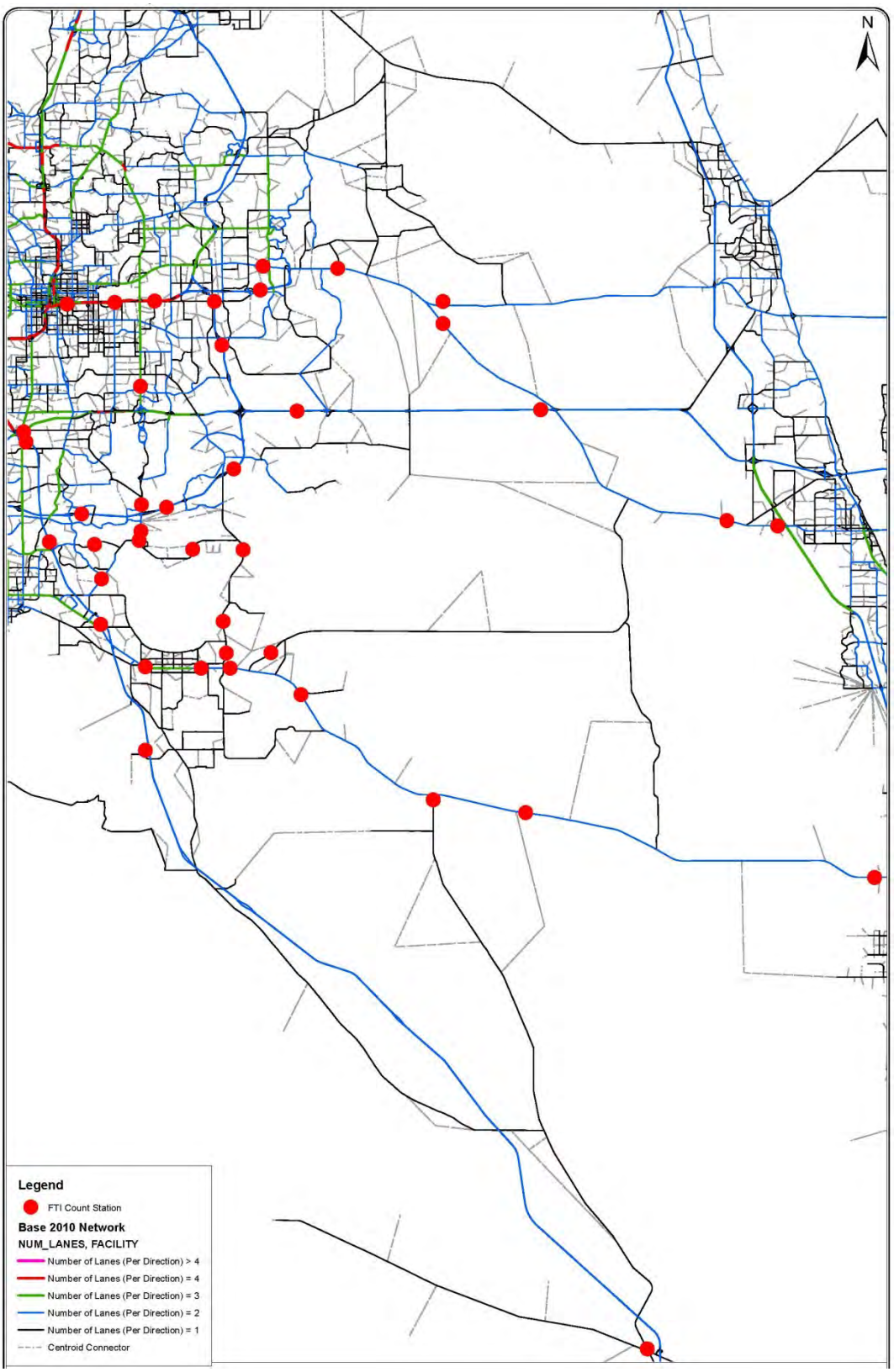
Location	Cosite	AADT	MOCF		Location	Cosite	AADT	MOCF
Boggy Creek	757044	21,000	0.98		SR 50	751008	11,400	0.98
Boggy Creek	757086	30,500	0.98		SR 50	750561	37,500	0.98
Boggy Creek	927050	6,400	0.97		SR 50	750605	46,500	0.98
Narcoossee RD	927044	13,300	0.97		SR 520	700385	18,800	0.93
Narcoossee RD	927043	12,300	0.97		SR 520	700367	14,600	0.93
Narcoossee RD	927045	14,500	0.97		SR 520	751009	15,800	0.98
Nova Rd	927041	2,900	0.97		SR 528	750336	39,207	0.95
Osceola Pkwy	927059	15,700	0.97		SR 528	750618	40,000	0.95
Simpson Road	927049	11,100	0.97		SR 528	970534	64,400	0.95
Simpson Road	927048	18,000	0.97		Tpk	972001	55,000	0.97
SR 408	750586	110,000	0.98		Tpk	972014	65,700	0.97
SR 408	750585	97,000	0.98		Tpk	972110	31,000	0.97
SR 408	750623	49,500	0.98		Tpk	972108	25,300	0.97
SR 408	750584	103,000	0.98		US 192	700090	6,100	0.93
SR 417	750620	46,000	0.98		US 192	920255	22,000	0.97
SR 417	750619	61,500	0.98		US 192	920155	28,000	0.97
SR 417	750636	23,500	0.98		US 192	920304	12,100	0.97
SR 417	750635	28,500	0.98		US 192	921008	6,000	0.97
SR 417	750634	29,000	0.98		US 192	920105	44,000	0.97
SR 436	750154	44,756	0.98		US 441	920044	1,550	0.96
					US 441	921006	2,500	0.96

Table 2 RMSE by Volume Group

Group	Volume Range (vehicles/day)	Number of Observations	CFRPM 2005	OUATS 2009	Validated 2010	FSUTMS Standards[1]	
						Acceptable	Preferable
1	Less than 5,000	3	76%	41%	21%	100%	45%
2	5,000 - 9,999	3	137%	45%	14%	45%	35%
3	10,000-14,999	7	47%	43%	43%	35%	27%
4	15,000-19,999	4	73%	36%	28%	30%	25%
5	20,000-29999	7	55%	59%	26%	27%	15%
6	30,000-49,999	10	31%	21%	18%	25%	15%
7	50,000-59,999	1	11%	26%	17%	20%	10%
8	60,000+	6	15%	6%	11%	19%	10%
Total		**41**	35%	27%	20%	45%	35%

1 Source: FSUTMS-Cube Model Calibration and Validation Standards, Table 2-11

Figure 5 FDOT Count Station Map



Near-Term Horizon (2025) Volume Development - Proposed Land Use

Roadway	From	To	Existing (2014) AADT	MOCF	2010 Model Volume		2025 Model Volume		2025 Model Project Trips		2025 Model Background Volume	Total Model Background Growth	Annual Model Background Growth	Model Linear Growth Rate	2025 Forecasted AADT				2025 Background Volume	Applied		Background Peak Direction	Background Peak Hour Volume		Select Zone Percentage	NB/EB In or Out?	Peak Hour Project Trips		Total Peak Hour Volume	
					PSWDT	AADT	PSWDT	AADT	PSWDT	AADT					2% Growth	Model Growth	Recommended			K	D		NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
Alafaya Trail (SR 434)	Science Dr.	Colonial Dr.		0.98	46,779	45,844	50,240	49,235	1,381	1,354	47,881	2,037	136	0.30%	69,666	61,598	Model Growth	61,598	60,244	0.073	0.536	NB	2,357	2,041	3.11%	O	111	40	2,468	2,081
Alafaya Trail (CR 434)	Colonial Dr.	SR 408	54,367	0.98	52,648	51,595	55,377	54,270	1,586	1,554	52,716	1,121	75	0.15%	66,328	58,911	Model Growth	58,911	57,357	0.079	0.54	SB	2,066	2,465	3.57%	O	127	46	2,193	2,511
Alafaya Trail (CR 434)	SR 408	Lake Underhill Rd.	39,816	0.98	62,149	60,906	62,090	60,848	1,733	1,699	59,149	-1,757	-117	-0.19%	48,576	43,705	Model Growth	43,705	42,006	0.082	0.57	SB	1,491	1,953	3.90%	O	139	51	1,630	2,004
Alafaya Trail (CR 434)	Lake Underhill Rd.	Huckleberry Finn Dr.	39,816	0.98	54,690	53,596	52,257	51,212	1,952	1,913	49,299	-4,297	-286	-0.53%	48,576	43,919	Model Growth	43,919	42,006	0.082	0.57	SB	1,491	1,953	4.40%	O	156	57	1,647	2,010
Alafaya Trail (CR 434)	Huckleberry Finn Dr.	Curry Ford Rd.	39,816	0.98	35,066	34,365	33,388	32,720	2,511	2,461	30,259	-4,106	-274	-0.80%	48,576	44,467	Model Growth	44,467	42,006	0.082	0.57	SB	1,491	1,953	5.66%	O	201	73	1,692	2,026
Alafaya Trail (CR 434)	Curry Ford Rd.	Golfway Blvd..	26,833	0.98	24,824	24,327	25,111	24,609	2,850	2,793	21,816	-2,511	-167	-0.69%	32,736	31,102	Model Growth	31,102	28,309	0.089	0.61	NB	1,547	973	6.42%	O	228	83	1,775	1,056
Alafaya Trail (CR 434)	Golfway Blvd..	Avalon Park Rd./Innovation Way	19,043	0.98	16,657	16,324	22,156	21,713	4,414	4,326	17,387	1,063	71	0.43%	23,232	24,416	Model Growth	24,416	20,090	0.090	0.58	SB	761	1,047	9.95%	O	354	129	1,115	1,176
Innovation Way	Alafaya Trail/Avalon Park	Pope St	7,458	0.98	10,845	10,628	30,357	29,750	11,065	10,843	18,907	8,279	552	5.19%	9,099	26,580	Model Growth*	26,580	15,737	0.090	0.81	NB	1,146	271	24.93%	O	887	324	2,033	595
Innovation Way	Pope St	ICP Boundary	7,497	0.98	12,643	12,390	38,359	37,592	17,228	16,883	20,709	8,319	555	4.48%	9,146	32,699	Model Growth*	32,699	15,816	0.090	0.82	NB	1,164	259	38.81%	O	1,380	504	2,544	763
Innovation Way	ICP Boundary	Monument Pkwy.	7,497	0.98	12,643	12,390	36,889	36,151	15,758	15,443	20,708	8,318	555	4.48%	9,146	31,258	Model Growth*	31,258	15,815	0.090	0.82	NB	1,164	259	35.50%	O	1,263	461	2,427	720
Innovation Way	Monument Pkwy.	SR 528	--	0.98	12,643	12,390	36,381	35,654	15,257	14,952	20,702	8,312	554	4.47%	--	23,265	Model AADT*	23,265	8,313	0.090	0.55	N/A	337	337	24.12%	O	919	752	1,256	1,089
Innovation Way	SR 528	Innovation Way North	--	0.98	8,864	8,686	38,254	37,489	17,472	17,123	20,366	11,680	779	8.97%	--	28,804	Model AADT*	28,804	11,681	0.090	0.55	N/A	473	473	27.62%	O	1,052	861	1,525	1,334
Avalon Park Blvd..	Alafaya Trail	Avalon 1W Pair	18,164	0.98	3,259	3,194	28,302	27,736	5,080	4,979	22,757	19,563	1,304	40.83%	22,160	104,716	2% Growth	22,160	17,181	0.090	0.80	NB	1,229	317	11.45%	O	407	149	1,636	466
Avalon Park Blvd..	Avalon 1W Pair	Schools	18,364	0.98	14,939	14,640	25,626	25,114	4,328	4,242	20,872	6,232	415	2.83%	22,404	28,332	2% Growth	22,404	18,163	0.090	0.56	SB	718	917	9.75%	O	347	127	1,065	1,044
Avalon Park Blvd..	Schools	Timber Springs Blvd..	21,436	0.98	19,330	18,943	22,950	22,491	3,576	3,504	18,987	44	3	0.02%	26,152	26,119	2% Growth	26,152	22,648	0.090	0.56	SB	907	1,131	8.06%	O	287	105	1,194	1,236
Avalon Park Blvd..	Timber Springs Blvd..	Waterford Chase Pkwy.	25,872	0.98	17,417	17,069	24,647	24,154	3,060	2,999	21,156	4,087	272	1.59%	31,564	33,406	2% Growth	31,564	28,566	0.087	0.54	SB	1,156	1,330	6.89%	O	245	89	1,401	1,419
Avalon Park Blvd..	Waterford Chase Pkwy.	SR 408	18,086	0.98	15,581	15,269	26,344	25,817	2,544	2,493	23,324	8,055	537	3.52%	22,065	27,576	2% Growth	22,065	19,572	0.087	0.53	SB	799	904	5.73%	O	204	74	1,003	978
Moss Park Rd.	Innovation Way South	SR 417	10,269	0.98	19,330	18,943	22,433	21,984	2,503	2,453	19,531	588	39	0.21%	12,528	13,287	Model Growth	13,287	10,834	0.090	0.55	WB	441	534	5.64%	O	201	73	642	607
Moss Park Rd.	SR 417	CR 15	14,250	0.98	17,417	17,069	16,078	15,756	1,710	1,675	14,081	-2,988	-199	-1.17%	17,385	16,709	Model Growth	16,709	15,034	0.090	0.52	WB	645	708	3.85%	O	137	50	782	758
Curry Ford Rd. (SR 552)	Goldenrod Rd.	Chickasaw Trail		0.98	22,078	21,637	24,534	24,043	855	838	23,205	1,568	105	0.49%	39,355	34,870	Model Growth	34,870	34,032	0.078	0.554	EB	1471	1184	1.93%	I	25	69	1,496	1,253
Curry Ford Rd. (SR 552)	Chickasaw Trail	Econlockhatchee Trail	29,153	0.98	27,175	26,632	31,205	30,581	1,374	1,346	29,235	2,603	174	0.65%	35,567	32,594	Model Growth	32,594	31,248	0.085	0.529	EB	1,405	1,251	3.10%	I	40	110	1,445	1,361
Curry Ford Rd. (SR 552)	Econlockhatchee Trail	SR 417	35,466	0.98	21,809	21,373	22,153	21,710	1,115	1,092	20,618	-755	-50	-0.23%	43,269	38,509	Model Growth	38,509	37,417	0.089	0.563	EB	1875	1455	2.51%	I	33	89	1,908	1,544
Curry Ford Rd. (SR 552)	SR 417	Dean Rd.	43,085	0.98	38,363	37,596	39,973	39,174	3,673	3,600	35,574	-2,022	-135	-0.36%	52,564	49,055	Model Growth	49,055	45,455	0.09	0.668	EB	2733	1358	8.28%	I	107	294	2,840	1,652
Narcoossee Rd. (CR 15)	Moss Park Rd.	SR 417	29,039	0.98	20,013	19,612	29,831	29,234	1,132	1,110	28,124	8,512	567	2.89%	35,428	39,384	Model Growth	39,384	38,274	0.090	0.56	SB	1,519	1,926	2.55%	I	33	91	1,552	2,017
Semoran Blvd. (SR 436)	Beachline Expwy	Frontage Road		0.98	52,294	51,248	58,018	56,857	1,620	1,588	55,269	4,021	268	0.52%	67,100	59,752	Model Growth	59,752	58,164	0.09	0.532	NB	2,785	2,450	3.65%	O	130	47	2,915	2,497
Lee Vista Blvd.	SR 417	Econlockhatchee Trail	20,670	0.98	8,047	7,886	13,292	13,026	1,150	1,127	11,899	4,013	268	3.40%	25,217	29,524	Model Growth	29,524	28,397	0.09	0.579	EB	1,480	1,076	2.59%	I	34	92	1,514	1,168
Monument Pkwy.	ICP Blvd..	Innovation Way	8,152	0.98	12,643	12,390	3,109	3,046	3,102	3,040	6	-12,384	-826	-6.67%	9,945	11,640	2% Growth	9,945	6,905	0.090	0.80	SB	123	498	4.90%	O	187	153	310	651
Innovation Way North	SR 417	Innovation Place Connector	--	0.98	--	--	32,478	31,828	4,832	4,735	27,093	--	--	--	--	31,828	Model AADT	31,828	27,093	0.090	0.55	EB	1,341	1,097	7.64%	I	238	291	1,579	1,388
Innovation Way North	Innovation Place Connector	Starwood East Blvd.	--	0.98	--	--	19,411	19,023	5,763	5,648	13,375	--	--	--	--	19,023	Model AADT	19,023	13,375	0.090	0.55	EB	662	542	9.11%	I	284	347	946	889
Innovation Way North	Starwood East Blvd.	Aerospace Pkwy	--	0.98	--	--	20,445	20,036	6,429	6,300	13,736	--	--	--	--	20,036	Model AADT	20,036	13,736	0.090	0.55	EB	680	556	10.16%	I	317	387	997	943
Innovation Way South	Moss Park Rd.	Innovation Place Connector	--	0.98	--	--	15,748	15,433	2,913	2,854	12,579	--	--	--	--	15,433	Model AADT	15,433	12,579	0.090	0.55	EB	623	509	4.60%	I	143	175	766	684
Innovation Way South	Innovation Place Connector	Starwood East Blvd.	--	0.98	--	--	20,132	19,729	3,112	3,049	16,680	--	--	--	--	19,729	Model AADT	19,729	16,680	0.090	0.55	EB	826	676	4.92%	I	153	187	979	863
Innovation Way South	Starwood East Blvd	N/S Connector	--	0.98	--	--	11,974	11,735	2,956	2,897	8,838	--	--	--	--	11,735	Model AADT	11,735	8,838	0.090	0.55	EB	437	358	4.67%	I	146	178	583	536
Innovation Way South	N/S Connector	Aerospace Parkway	--	0.98	--	--	1,452	1,423	1,353	1,325	98	--	--	--	--	1,423	Model AADT	1,423	98	0.090	0.55	EB	5	4	2.14%	I	67	81	72	85
Innovation Place Connector	Innovation Way North	Innovation Way South	--	0.98	--	--	27,176	26,632	3,415	3,347	23,285	--	--	--	--	26,632	Model AADT	26,632	23,285	0.090	0.55	SB	943	1,153	5.40%	O	206	168	1,149	1,321
ICP Blvd.	Monument Pkwy	SR 528 Ramps	--	0.98	--	--	3,680	3,606	3,673	3,600	6	--	--	--	--	3,606	Model AADT	3,606	6	0.090	0.55	SB	0	0	5.81%	O	221	181	221	181
ICP Blvd.	SR 528 Ramps	Innovation Way South	--	0.98	--	--	4,296	4,210	3,867	3,789	421	--	--	--	--	4,210	Model AADT	4,210	421	0.090	0.55	SB	17	21	6.11%	O	233	190	250	211
Aerospace Pkwy.	N/S Connector	ICP Blvd.	--	0.98	--	--	12,573	12,321	12,129	11,886	435	--	--	--	1	12,321	Model AADT	12,321	435	0.09	0.55	EB	22	18	19.17%	I	597	730	619	748
Aerospace Pkwy.	ICP Blvd.	Innovation Way South	--	0.98	--	--	3,938	3,860	3,915	3,836	24	--	--	--	2	3,860	Model AADT	3,860	24	0.09	0.55	EB	1	1	6.19%	I	193	236	194	237
Econlockhatchee Trail	Lee Vista Blvd..	Curry Ford Rd.		0.98	10,357	10,150	15,219	14,915	348	341	14,574	4,424	295	2.91%	15,451	17,055	Model Growth	17,100	16,759	0.09	0.582	SB	630	878	0.78%	O	28	10	658	888
Woodbury Rd.	Golfway Blvd..	Lake Underhill Rd.		0.98	12,643	12,390	15,585	15,273	482	473	14,800	2,410	161	1.30%	14,236	13,810	Model Growth	13,800	13,327	0.09	0.621	NB	745	455	1.09%	O	39	14	784	469
Golfway Blvd.	Alafaya Tr	Woodbury Rd.	7,745	0.98	2,197	2,153	2,243	2,198	482	473	1,725	-428	-29	-1.35%	9,449	8,644	Model Growth	8,600	8,127	0.090	0.55	NB	399	332	1.09%	O	39	14	438	346
SR 528	Tradeport Dr.	SR 436		0.95	64,345	61,128	74,967	71,219	2,250	2,138	69,081	7,953	530	0.87%	98,820	90,863	Model Growth	90,900	88,762	0.085	0.5983	EB	4,514	3,031	5.07%	I	66	180	4,580	3,211
SR 528	SR 436	SR 15	69,626	0.95	77,852	73,959	91,176	86,617	4,122	3,916	82,701	8,742	583	0.79%	84,944	79,579	Model Growth	79,600	75,684	0.09	0.5995	EB	4,083	2,728	9.29%	I	121	330	4,204	3,058
SR 528	SR 15	SR 417	59,500	0.95	65,965	62,667	71,654	68,071	4,870	4,627	63,444	777	52	0.08%	72,590	67,400	Model Growth	67,400	62,773	0.09	0.6006	EB	3,393	2,256	10.97%	I	142	390	3,535	2,646
SR 528	SR 417	1.085 miles west of ICP Blvd	53,000	0.95	53,465	50,792	54,145	51,438	4,697	4,462	46,976	-3,816	-254	-0.50%	64,660	60,377	Model Growth	60,400	55,938	0.090	0.58	EB	2,940	2,094	10.58%	I	137	376	3,077	2,470
SR 528	1.085 miles west of ICP Blvd	International Corp Park Blvd	53,000	0.95	57,610	54,730	54,145	51,438	4,697	4,462	46,976	-7,754	-517	-0.94%	64,660	60,377	Model Growth	60,400	55,938	0.090	0.58	EB	2,940	2,094	10.58%	I	137	376	3,077	2,470
SR 528	International Corp Park Blvd	Dallas Blvd	41,418	0.95	56,365	53,546	67,056	63,703	5,631	5,350	58,353	4,807	320	0.60%	50,530	49,491	Model Growth	49,500	44,150	0.090	0.60	EB	2,371	1,602	12.69%	O	451	165	2,822	1,767
SR 528	Dallas Blvd	SR 520	41,418	0.95	47,699	45,314	55,811	53,020	3,429	3,258	49,762	4,448	297	0.66%	50,530	47,662	Model Growth	47,700	44,442	0.090	0.60	EB	2,387	1,613	7.73%	O	275	100	2,662	1,713
SR 528	SR 520	Brevard County Line	41,418	0.95	57,463	54,590	65,520	62,244	3,246	3,084	59,160	4,570	305	0.56%	50,530	47,047	Model Growth	47,000	43,916	0.090	0.60	EB	2,359	1,594	7.31%	O	260	95	2,619	1,689
SR 417	Landstar Blvd	Boggy Creek Rd.		0.98	31,389	30,761	47,735	46,780	1,548	1,517	45,263	14,502	967	3.14%	56,120	63,424	Model Growth	63,400	61,883	0.09	0.6244	NB	3,477	2,092	3.49%	I	45	124	3,522	2,216
SR 417	Boggy Creek Rd.	Narcoossee Rd.		0.98	27,512	26,961	40,409	39,601	1,709	1,675	37,926	10,965	731	2.71%	45,750	50,359	Model Growth	50,400	48,725	0.09	0.5841	NB	2,561	1,824	3.85%	I	50	137	2,611	1,961
SR 417	Narcoossee Rd.	SR 528	40,000	0.98	34,832	34,136	34,330	33,643	1,494	1,465	32,178	-1,958	-131	-0.38%	48,800	43,665	Model Growth	43,700	42,235	0.090	0.52	SB	1,821	1,980	3.37%	I	44	120	1,865	2,100
SR 417	SR 528	Curry Ford Rd.	72,000	0.98	51,339	50,312	64,307	63,021	2,572	2,521	60,500	10,188	679	1.35%	87,840	85,210	Model Growth	85,200	82,679	0.090	0.58	NB	4,305	3,136	5.80%	O	206	75	4,511	3,211
SR 417	Curry Ford Rd.	SR 408	68,000	0.98	53,618	52,546	59,213	58,029	3,957	3,877	54,152	1,606	107	0.20%	82,960	75,617	Model Growth	75,600	71,723	0.090	0.51	NB	3,273	3,182	8.91%	O	317	116	3,590	3,298
North-South Connector	Osceola County Line	Innovation Way South	--	0.98	--	--	24,840	24,344	5,781	5,666	18,678	--	--	--	--	24,344	Model AADT	24,300	18,634	0.090	0.55	NB	922	755	9.14%	O	348	285	1,270	1,040
North-South Connector	Innovation Way South	Wewahootee Rd. / Bypass	--	0.98	--	--	16,731	16,397	6,913	6,775	9,622	--	--	--	--	16,397	Model AADT	16,397	9,622	0.090	0.55	EB	476	390	10.93%	I	341	416	817	806
North-South Connector	Wewahootee Rd. / Bypass	ICP Blvd.	--	0.98	--	--	13,227	12,962	3,695	3,621	9,341	--	--	--	--	12,962	Model AADT	12,962	9,341	0.090	0.55	EB	462	378	5.84%	I	182	222	644	600
North-South Connector	ICP Blvd.	Innovation Way North	--	0.98	--	--	17,151	16,808	7,619	7,466	9,342	--	--	--	--	16,808	Model AADT	16,808	9,342	0.090	0.55	EB	462	378	12.04%	I	375	459	837	837
Starwood East Blvd.	Innovation Way North	Innovation Way South	--	0.98	--	--	5,655	5,542	1,717	1,683	3,859	--	--	--	--	5,542	Model AADT	5,500	3,817	0.090	0.55	NB	189	155	2.71%	O	103	85	292	240

*Model Background Volume adusted to compensate for the decrease in volume observed between the 2010 base year and the existing (2014) AADT.

Long-Term Horizon (2040) Volume Development - Proposed Land Use

Roadway	From	To	Existing (2014) AADT	MOCF	2010 Model Volume		2040 Model Volume		2040 Model Project Trips		2040 Model Background Volume	Total Model Background Growth	Annual Model Background Growth	Model Linear Growth Rate	2040 Forecasted AADT				2040 Background Volume	Applied		Peak Direction	Peak Hour Background Volume		Select Zone Percentage	NB/EB In or Out?	Peak Hour Project Trips		Total Peak Hour Volume	
					PSWDT	AADT	PSWDT	AADT	PSWDT	AADT					2% Growth	Model Growth	Recommended			K	D	Dir	NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
Alafaya Trail (SR 434)	McColluch Rd.	University Blvd..	46808	0.98	44,368	43,480	50,817	49,801	1,649	1,616	48,185	4,705	157	0.36%	71,148	54,509	Model Growth	54,509	52,893	0.079	0.62	NB	2587	1592	1.62%	O	134	47	2,721	1,639
Alafaya Trail (SR 434)	University Blvd..	Science Dr.	57,529	0.98	54,380	53,293	62,043	60,802	3,080	3,018	57,784	4,491	150	0.28%	87,444	68,026	Model Growth	68,026	65,008	0.073	0.52	NB	2,482	2,264	3.02%	O	250	87	2,732	2,351
Alafaya Trail (SR 434)	Science Dr.	Colonial Dr.	57,103	0.98	46,779	45,844	50,230	49,225	3,576	3,504	45,721	-123	-4	-0.01%	86,797	68,030	Model Growth	68,030	64,526	0.073	0.54	NB	2,525	2,186	3.51%	O	291	101	2,816	2,287
Alafaya Trail (CR 434)	Colonial Dr.	SR 408	54,367	0.98	52,648	51,595	57,144	56,001	6,039	5,918	50,083	-1,512	-50	-0.10%	82,638	67,353	Model Growth	67,353	61,435	0.079	0.54	SB	2,213	2,640	5.92%	O	491	171	2,704	2,811
Alafaya Trail (CR 434)	SR 408	Lake Underhill Rd.	39,816	0.98	62,149	60,906	66,842	65,505	6,621	6,488	59,017	-1,889	-63	-0.10%	60,520	51,480	Model Growth	51,480	44,992	0.082	0.57	SB	1,597	2,092	6.49%	O	538	188	2,135	2,280
Alafaya Trail (CR 434)	Lake Underhill Rd.	Huckleberry Finn Dr.	39,816	0.98	54,690	53,596	75,946	74,427	8,890	8,713	65,714	12,118	404	0.75%	60,520	56,332	Model Growth	56,332	47,619	0.082	0.57	SB	1,691	2,214	8.72%	O	723	252	2,414	2,466
Alafaya Trail (CR 434)	Huckleberry Finn Dr.	Curry Ford Rd.	39,816	0.98	35,066	34,365	54,896	53,799	8,966	8,786	45,013	10,648	355	1.03%	60,520	59,296	Model Growth	59,296	50,510	0.082	0.57	SB	1,793	2,348	8.79%	O	729	254	2,522	2,602
Alafaya Trail (CR 434)	Curry Ford Rd.	Golfway Blvd..	26,833	0.98	24,824	24,327	46,509	45,579	10,775	10,559	35,020	10,693	356	1.46%	40,786	47,601	Model Growth	47,601	37,042	0.089	0.61	NB	2,024	1,273	10.57%	O	876	306	2,900	1,579
Alafaya Trail (CR 434)	Golfway Blvd..	Avalon Park Rd./Innovation Way	19,043	0.98	16,657	16,324	43,180	42,316	14,445	14,156	28,160	11,836	395	2.42%	28,945	45,180	Model Growth	45,180	31,024	0.090	0.58	SB	1,175	1,617	14.16%	O	1,174	410	2,349	2,027
Innovation Way	Alafaya Trail/Avalon Park	Pope St	7,458	0.98	10,845	10,628	50,795	49,779	23,442	22,973	26,806	16,178	539	5.07%	11,336	46,609	Model Growth*	46,609	23,636	0.090	0.55	NB	1,170	957	22.99%	O	1,905	665	3,075	1,622
Innovation Way	Pope St	ICP Boundary	7,497	0.98	12,643	12,390	53,304	52,238	26,434	25,905	26,333	13,943	465	3.75%	11,395	47,345	Model Growth*	47,345	21,440	0.090	0.55	NB	1,061	868	25.92%	O	2,148	750	3,209	1,618
Innovation Way	ICP Boundary	Monument Pkwy.	7,497	0.98	12,643	12,390	53,304	52,238	24,904	24,406	27,832	15,442	515	4.16%	11,395	47,345	Model Growth*	47,345	22,939	0.090	0.55	NB	1,135	929	24.42%	O	2,024	707	3,159	1,636
Innovation Way	Monument Pkwy.	SR 528	--	0.98	12,643	12,390	49,489	48,499	21,864	21,427	27,072	14,682	489	3.95%	--	36,110	Model AADT*	36,110	14,683	0.090	0.55	NB	727	595	14.21%	O	1,319	1,079	2,046	1,674
Innovation Way	SR 528	Innovation Way North	--	0.98	8,864	8,686	58,521	57,351	32,754	32,099	25,252	16,566	552	6.36%	--	48,666	Model AADT*	48,666	16,567	0.090	0.55	NB	820	671	21.28%	O	1,976	1,617	2,796	2,288
Dowden Rd.	SR 417	CR 15 (Narcoossee Rd.)	5,074	0.98	2,587	2,536	7,560	7,409	837	821	6,588	4,052	135	5.32%	7,712	12,918	Model Growth	12,918	12,097	0.090	0.60	WB	441	648	0.82%	I	24	68	465	716
Avalon Park Blvd..	Alafaya Trail	Avalon 1W Pair	18,164	0.98	3,259	3,194	32,998	32,338	6,452	6,323	26,015	22,821	761	23.83%	27,609	137,008	2% Growth	27,609	21,286	0.090	0.80	NB	1,523	393	6.33%	O	524	183	2,047	576
Avalon Park Blvd..	Avalon 1W Pair	Schools	18,364	0.98	14,939	14,640	26,377	25,849	5,328	5,222	20,627	5,987	200	1.37%	27,913	30,109	2% Growth	27,913	22,692	0.090	0.56	SB	897	1,146	5.22%	O	433	151	1,330	1,297
Avalon Park Blvd..	Schools	Timber Springs Blvd..	21,436	0.98	19,330	18,943	19,755	19,359	4,204	4,120	15,239	-3,704	-123	-0.65%	32,583	28,343	2% Growth	32,583	28,463	0.090	0.56	SB	1,140	1,422	4.12%	O	342	119	1,482	1,541
Avalon Park Blvd..	Timber Springs Blvd..	Waterford Chase Pkwy.	25,872	0.98	17,417	17,069	20,590	20,178	3,341	3,274	16,904	-165	-6	-0.04%	39,325	32,509	2% Growth	39,325	36,052	0.087	0.54	SB	1,458	1,678	3.28%	O	271	95	1,729	1,773
Avalon Park Blvd..	Waterford Chase Pkwy.	SR 408	18,086	0.98	15,581	15,269	21,424	20,996	2,477	2,427	18,569	3,300	110	0.72%	27,491	23,901	2% Growth	27,491	25,064	0.087	0.53	SB	1,023	1,158	2.43%	O	201	70	1,224	1,228
Moss Park Rd.	Innovation Way South	SR 417	10,269	0.98	19,330	18,943	32,385	31,737	4,488	4,398	27,339	8,396	280	1.48%	15,609	18,613	Model Growth	18,613	14,215	0.090	0.55	WB	578	701	4.40%	O	365	127	943	828
Moss Park Rd.	SR 417	CR 15	14,250	0.98	17,417	17,069	15,789	15,473	2,557	2,505	12,968	-4,101	-137	-0.80%	21,660	18,608	Model Growth	18,608	16,103	0.090	0.52	WB	691	758	2.51%	O	208	73	899	831
Curry Ford Rd. (SR 552)	Chickasaw Trail	Econlockhatchee Trail	29,153	0.98	27,175	26,632	32,915	32,256	1,456	1,427	30,829	4,197	140	0.53%	44,313	34,565	Model Growth	34,565	33,138	0.085	0.53	EB	1,490	1,327	1.43%	I	41	118	1,531	1,445
Curry Ford Rd. (SR 552)	Cypress Springs Pkwy.	Alafaya Trail	27,074	0.98	15,040	14,739	21,073	20,652	858	840	19,812	5,073	169	1.15%	41,152	35,985	Model Growth	35,985	35,145	0.087	0.62	EB	1887	1171	0.84%	I	24	70	1,911	1,241
Lake Underhill Rd.	Rouse Rd.	Alafaya Trail	30,576	0.98	19,227	18,843	21,465	21,035	2,017	1,976	19,059	216	7	0.04%	46,476	36,527	Model Growth	36,527	34,551	0.088	0.64	EB	1,937	1,104	1.98%	I	57	164	1,994	1,268
Colonial Dr. (SR 50)	Dean Rd.	Rouse Rd.	52,118	0.98	37,652	36,899	58,093	56,931	1,413	1,385	55,546	18,647	622	1.69%	79,219	76,345	Model Growth	76,345	74,960	0.066	0.54	EB	2662	2286	1.39%	I	40	115	2,702	2,401
Colonial Dr. (SR 50)	Rouse Rd.	Alafaya Tr	48,960	0.98	34,517	33,827	48,956	47,976	1,638	1,605	46,371	12,544	418	1.24%	74,419	66,295	Model Growth	66,295	64,690	0.066	0.51	EB	2169	2101	1.61%	I	46	133	2,215	2,234
Colonial Dr. (SR 50)	Avalon Park Blvd..	S. Tanner Rd.	34,513	0.98	33,013	32,353	50,708	49,694	1,545	1,514	48,180	15,827	528	1.63%	52,460	50,672	Model Growth	50,672	49,158	0.080	0.55	EB	2171	1762	1.52%	I	44	126	2,215	1,888
Hoffner Rd. (SR 15)	SR 436	SR 551	20,905	0.98	17,007	16,667	35,563	34,852	1,144	1,121	33,731	17,064	569	3.41%	31,776	40,582	Model Growth	40,582	39,461	0.080	0.57	EB	1784	1373	1.12%	I	32	93	1,816	1,466
Narcoossee Rd. (SR 15)	SR 551	Lee Vista Blvd..	22,920	0.98	13,600	13,328	32,085	31,443	2,316	2,269	29,174	15,846	528	3.96%	34,838	48,797	Model Growth	48,797	46,528	0.078	0.53	SB	1,695	1,934	2.27%	I	66	188	1,761	2,122
Narcoossee Rd. (SR 15)	Lee Vista Blvd..	SR 528	27,692	0.98	17,660	17,307	46,973	46,033	5,315	5,209	40,824	23,517	784	4.53%	42,092	65,516	Model Growth	65,516	60,307	0.088	0.53	NB	2,786	2,521	5.21%	I	151	432	2,937	2,953
Narcoossee Rd. (CR 15)	Moss Park Rd.	SR 417	29,039	0.98	20,013	19,612	36,281	35,555	1,771	1,735	33,820	14,208	474	2.42%	44,139	49,022	Model Growth	49,022	47,287	0.090	0.56	SB	1,877	2,379	1.74%	I	50	144	1,927	2,523
Narcoossee Rd. (CR 15)	SR 417	Osceola Pkwy. Ext	21,213	0.98	22,000	21,560	61,864	60,626	1,289	1,263	59,363	37,803	1,260	5.84%	32,244	54,709	Model Growth	54,709	53,446	0.090	0.69	SB	1510	3300	1.26%	I	37	105	1,547	3,405
Narcoossee Rd. (CR 15)	Osceola Pkwy. Ext	Boggy Creek Rd. East	21,213	0.98	20,707	20,293	69,566	68,175	1,564	1,533	66,642	46,349	1,545	7.61%	32,244	64,737	Model Growth	64,737	63,204	0.090	0.69	SB	1786	3902	1.53%	I	44	127	1,830	4,029
Semoran Blvd. (SR 436)	Beachline Expwy	Frontage Road	55,000	0.98	52,294	51,248	61,969	60,729	2,226	2,182	58,547	7,299	243	0.47%	83,600	64,332	Model Growth	64,332	62,150	0.090	0.53	NB	2,976	2,618	2.18%	O	181	63	3,157	2,681
Lee Vista Blvd.	SR 417	Econlockhatchee Trail	20,670	0.98	8,047	7,886	16,465	16,135	1,497	1,467	14,668	6,782	226	2.87%	31,418	37,539	Model Growth	37,539	36,072	0.090	0.58	EB	1,880	1,367	1.47%	I	42	122	1,922	1,489
Monument Pkwy.	ICP Blvd..	Innovation Way	8,152	0.98	12,643	12,390	14,382	14,094	13,606	13,334	760	-11,630	-388	-3.13%	12,391	22,546	Model Growth	22,546	9,212	0.090	0.80	SB	164	665	8.84%	O	821	672	985	1,337
Innovation Way North	SR 417	Innovation Place Connector	--	0.98	--	--	32,470	31,821	9,245	9,060	22,761	--	--	--	--	31,821	Model AADT	31,821	22,761	0.090	0.55	EB	1,127	922	6.01%	I	456	558	1,583	1,480
Innovation Way North	Innovation Place Connector	Starwood East Blvd.	--	0.98	--	--	28,928	28,349	15,542	15,231	13,118	--	--	--	--	28,349	Model AADT	28,349	13,118	0.090	0.55	EB	649	531	10.10%	I	767	938	1,416	1,469
Innovation Way North	Starwood East Blvd.	Aerospace Pkwy	--	0.98	--	--	34,325	33,638	21,804	21,368	12,270	--	--	--	--	33,638	Model AADT	33,638	12,270	0.090	0.55	EB	607	497	14.17%	I	1,076	1,315	1,683	1,812
Innovation Way South	Moss Park Rd.	Innovation Place Connector	--	0.98	--	--	14,130	13,847	5,102	4,999	8,848	--	--	--	--	13,847	Model AADT	13,847	8,848	0.090	0.55	EB	438	358	3.32%	I	252	308	690	666
Innovation Way South	Innovation Place Connector	Starwood East Blvd.	--	0.98	--	--	12,350	12,103	2,882	2,825	9,278	--	--	--	--	12,103	Model AADT	12,103	9,278	0.090	0.55	EB	459	376	1.87%	I	142	174	601	550
Innovation Way South	Starwood East Blvd	N/S Connector	--	0.98	--	--	6,645	6,512	2,466	2,417	4,095	--	--	--	--	6,512	Model AADT	6,512	4,095	0.090	0.55	EB	203	166	1.60%	I	122	149	325	315
Innovation Way South	N/S Connector	Aerospace Parkway	--	0.98	--	--	3,762	3,687	3,758	3,683	4	--	--	--	--	3,687	Model AADT	3,687	4	0.090	0.55	EB	0	0	2.44%	I	186	227	186	227
Innovation Place Connector	Innovation Way North	Innovation Way South	--	0.98	--	--	17,332	16,985	5,116	5,014	11,971	--	--	--	--	16,985	Model AADT	16,985	11,971	0.090	0.55	SB	485	593	3.32%	O	309	253	794	846
ICP Blvd.	Monument Pkwy	SR 528 Ramps	--	0.98	--	--	15,444	15,135	14,668	14,374	761	--	--	--	--	15,135	Model AADT	15,135	761	0.090	0.55	SB	31	38	9.53%	O	885	724	916	762
ICP Blvd.	SR 528 Ramps	Innovation Way South	--	0.98	--	--	8,938	8,759	7,982	7,823	936	--	--	--	--	8,759	Model AADT	8,759	936	0.090	0.55	SB	38	46	5.19%	O	482	394	520	440
Aerospace Pkwy.	N/S Connector	ICP Blvd.	--	0.98	--	--	16,506	16,176	16,211	15,886	290	--	--	--	2	16,176	Model AADT	16,176	290	0.090	0.55	EB	14	12	10.53%	I	800	978	814	990
Aerospace Pkwy.	ICP Blvd.	Innovation Way South	--	0.98	--	--	13,588	13,316	13,588	13,316	0	--	--	--	3	13,316	Model AADT	13,316	0	0.090	0.55	EB	0	0	8.83%	I	671	820	671	820
Econlockhatchee Trail	Lee Vista Blvd..	Curry Ford Rd.	12,665	0.98	10,357	10,150	27,517	26,966	1,206	1,181	25,785	15,635	521	5.13%	19,251	30,748	Model Growth	30,748	29,567	0.090	0.58	SB	1,112	1,549	1.18%	O	98	34	1,210	1,583
Woodbury Rd.	Golfway Blvd..	Lake Underhill Rd.	11,669	0.98	12,643	12,390	10,580	10,368	1,057	1,035	9,333	-3,057	-102	-0.82%	17,737	14,221	Model Growth	14,221	13,186	0.090	0.62	NB	737	450	1.04%	O	86	30	823	480
Woodbury Rd.	Lake Underhill Rd.	Waterford Lakes Pkwy.	17,288	0.98	11,855	11,618	18,173	17,810	506	496	17,314	5,696	190	1.64%	26,278	25,135	Model Growth	25,135	24,639	0.079	0.54	SB	903	1,043	0.50%	O	41	14	944	1,057
Golfway Blvd.	Alafaya Tr	Woodbury Rd.	7,745	0.98	2,197	2,153	3,340	3,273	1,207	1,183	2,090	-63	-2	-0.09%	11,772	9,935	Model Growth	9,935	8,752	0.090	0.55	NB	430	358	1.18%	O	98	34	528	392
SR 528	Orangewood Blvd	John Young Pkwy	79,000	0.95	101,632	96,550	146,004	138,704	2,703	2,568	136,136	39,586	1,320	1.37%	120,080	109,650	Model Growth	109,650	107,082	0.085	0.59	EB	5407	3695	2.65%	I	77	220	5,484	3,915
SR 528	John Young Pkwy	Orange Blossom Trail	67,000	0.95	81,599	77,519	130,215	123,704	3,449	3,276	120,428	42,909	1,430	1.84%	101,840	102,411	Model Growth	102,411	99,135	0.085	0.59	EB	5005	3421	3.38%	I	98	280	5,103	3,701
SR 528	Orange Blossom Trail	McCoy Road	70,000	0.95	72,393	68,773	126,216	119,905	3,916	3,720	116,185	47,412	1,580	2.30%	106,400	115,533	Model Growth	115,533	111,813	0.085	0.59	EB	5645	3859	3.84%	I	111	318	5,756	4,177
SR 528	McCoy Road	Tradeport Dr.	101,500	0.95	86,415	82,094	141,133	134,076	6,324	6,007	128,069	45,975	1,533	1.87%	154,280	156,787	Model Growth	156,787	150,780	0.085	0.61	EB	7,875	4,941	6.20%	I	179	514	8,054	5,455
SR 528	Tradeport Dr.	SR 436	81,000	0.95	64,345	61,128	125,134	118,877	7,759	7,371	111,506	50,378	1,679	2.75%	123,120	146,216	Model Growth	146,216	138,845	0.085	0.60	EB	7,061	4,741	7.61%	I	220	631	7,281	5,372
SR 528	SR 436	SR 15	69,626	0.95	77,852	73,959	127,573	121,194	10,505	9,979	111,215	37,256	1,242	1.68%	105,832	110,005	Model Growth	110,005	100,026	0.090	0.60	EB	5,396	3,606	10.30%	I	298	854	5,694	4,460
SR 528	SR 15	SR 417	59,500	0.95	65,965	62,667	124,166	117,958	18,383	17,464	100,494	37,827	1,261	2.01%	90,440	108,093	Model Growth	108,093	90,629	0.090	0.60	EB	4,899	3,258	18.02%	I	522	1,494	5,421	4,752
SR 528	SR 417	1.085 miles west of ICP Blvd	53,000	0.95	53,465	50,792	111,624	106,043	23,697	22,512	83,531	32,739	1,091	2.15%	80,560	105,111	Model Growth	105,111	82,599	0.090	0.58	EB	4,341	3,093	23.24%	I	672	1,926	5,013	5,019
SR 528	1.085 miles west of ICP Blvd	International Corp Park Blvd	53,000	0.95	57,610	54,730	111,624	106,043	23,697	22,512	83,531	28,801	960	1.75%	80,560	99,683	Model Growth	99,683	77,171	0.090	0.58	EB	4,056	2,889	23.24%	I	672	1,926	4,728	4,815
SR 528	International Corp Park Blvd	Dallas Blvd	41,418	0.95	56,365	53,546	93,637	88,956	9,157	8,699	80,257	26,711	890	1.66%	62,955	68,016	Model Growth	68,016	59,317	0.090	0.60	EB	3,186	2,152	8.98%	O	744	260	3,930	2,412
SR 528	Dallas Blvd	SR 520	41,418	0.95	47,699	45,314	82,442	78,320	6,011	5,711	72,609	27,295	910	2.01%	62,955	68,755	Model Growth	68,755	63,044	0.090	0.60	EB	3,386	2,288	5.89%	O	489	171	3,875	2,459
SR 528	SR 520	Brevard County Line	41,418	0.95	57,463	54,590	79,060	75,107	4,757	4,519	70,588	15,998	533	0.98%	62,955	56,451	Model Growth	56,451	51,932	0.090	0.60	EB	2,789	1,884	4.66%	O	387	135	3,176	2,019
SR 417	SR 441/17-92	Landstar Blvd	46,500	0.98	17,264	16,919	118,272	115,907	3,033	2,972	112,935	96,016	3,201	18.92%	70,680	278,209	Model Growth	278,209	275,237	0.090	0.57	NB	14208	10563	2.97%	I	86	246	14,294	10,809
SR 417	Landstar Blvd	Boggy Creek Rd.	46,000	0.98	31,389	30,761	98,354	96,387	4,555	4,464	91,923	61,162	2,039	6.63%	69,920	129,741	Model Growth	129,741	125,277	0.090	0.62	NB	7,040	4,235	4.47%	I	129	370	7,169	4,605
SR 417	Boggy Creek Rd.	Narcoossee Rd.	37,500	0.98	27,512	26,961	79,202	77,618	6,443	6,314	71,304	44,343	1,478	5.48%	57,000	97,263	Model Growth	97,263	90,949	0.090	0.58	NB	4,781	3,404	6.32%	I	183	524	4,964	3,928
SR 417	Narcoossee Rd.	SR 528	40,000	0.98	34,832	34,136	91,229	89,404	7,653	7,500	81,904	47,768	1,592	4.66%	60,800	96,002	Model Growth	96,002	88,502	0.090	0.52	SB	3,815	4,150	7.50%	I	217	622	4,032	4,772
SR 417	SR 528	Curry Ford Rd.	72,000	0.98	51,339	50,312	103,892	101,814	5,995	5,875	95,939	45,627	1,521	3.02%	109,440	134,468	Model Growth	134,468	128,593	0.090	0.58	NB	6,695	4,878	5.88%	O	487	170	7,182	5,048
SR 417	Curry Ford Rd.	SR 408	68,000	0.98	53,618	52,546	82,095	80,453	4,506	4,416	76,037	23,491	783	1.49%	103,360	98,761	Model Growth	98,761	94,345	0.090	0.51	NB	4,306	4,185	4.42%	O	366	128	4,672	4,313
North-South Connector	Osceola County Line	Innovation Way South	--	0.98	--	--	37,245	36,501	14,192	13,908	22,593	--	--	--	2	36,501	Model AADT	36,501	22,593	0.090	0.55	NB	1,118	915	9.22%	O	856	701	1,974	1,616
North-South Connector	Innovation Way South	Wewahootee Rd. / Bypass	--	0.98	--	--	34,021	33,341	15,146	14,843	18,498	--	--	--	--	33,341	Model AADT	33,341	18,498	0.090	0.55	EB	916	749	9.84%	I	748	914	1,664	1,663
North-South Connector	Wewahootee Rd. / Bypass	ICP Blvd.	--	0.98	--	--	40,532	39,722	21,750	21,315	18,407	--	--	--	--	39,722	Model AADT	39,722	18,407	0.090	0.55	EB	911	745	14.13%	I	1,074	1,312	1,985	2,057
North-South Connector	ICP Blvd.	Innovation Way North	--	0.98	--	--	38,700	37,926	20,851	20,434	17,492	--	--	--	--	37,926	Model AADT	37,926	17,492	0.090	0.55	EB	866	708	13.55%	I	1,029	1,258	1,895	1,966
Starwood East Blvd.	Innovation Way North	Innovation Way South	--	0.98	--	--	3,839	3,762	1,488	1,458	2,304	--	--	--	2	3,762	Model AADT	3,762	2,304	0.090	0.55	NB	114	93	0.97%	O	90	73	204	166

*Model Background Volume adusted to compensate for the decrease in volume observed between the 2010 base year and the existing (2014) AADT.

CAMINO REALE PD
Project № 16-072 (v1.1)
December 2016

TRANSPORTATION NETWORK EVALUATION
ORANGE COUNTY
FLORIDA

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TMC
Traffic & Mobility Consultants

Site Location Map

Camino Reale
16-072

Figure
1

2.0 CAMINO REALE DEVELOPMENT PLAN

2.1 Land Use Plan

Camino Reale will be developed on approximately 677 acres of the 1,040-acre gross acre property. The approved development program in the CRP is for up to 3,000 residential units and up to 330,000 square feet of commercial uses. The approved Conceptual Regulating Plan (CRP) is illustrated in **Figure 2** and included in **Appendix A**.

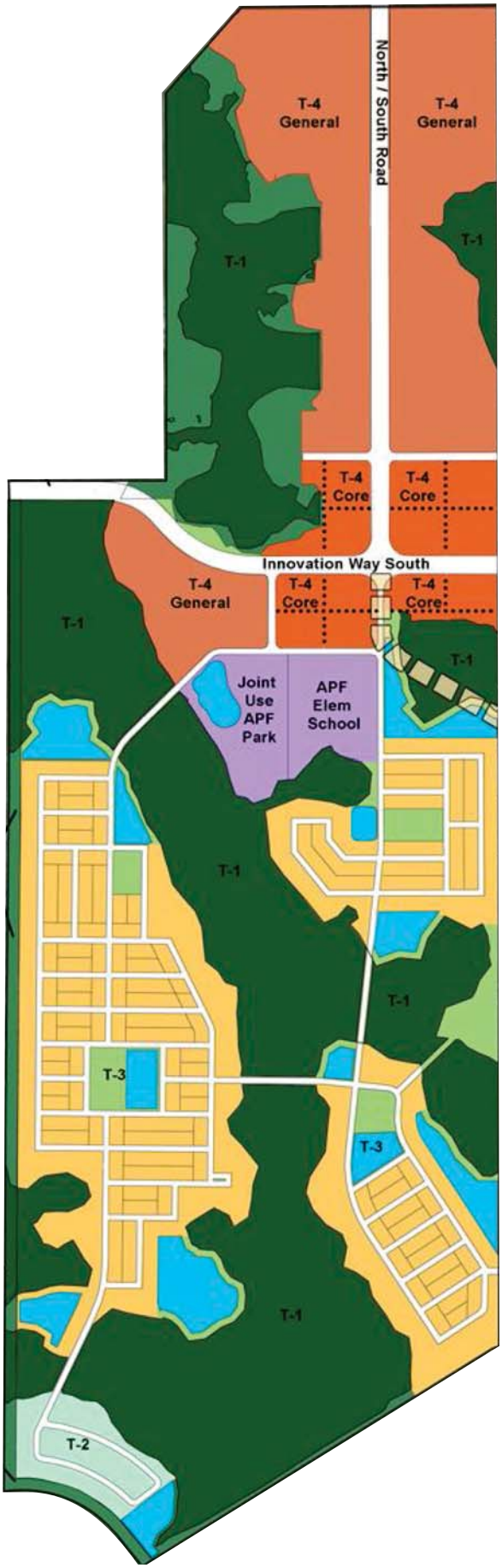
It is anticipated that the property will develop in phases as the transportation and other infrastructure continue to develop and mature in the surrounding area. The short term and buildout development programs are summarized in **Table 1**.

Table 1
Development and Phasing Plan

Phase	Land Use	Units
Phase 1 Development (2025)		
1	Single Family Residential	900 Units
	Townhouse Residential	300 Units
	Retail/Commercial	60 KSF
	Office	50 KSF
Buildout Development (2040)		
2	Single Family Residential	1,800 Units
	Multifamily Residential	600 Units
	Townhouse Residential	600 Units
	Retail/Commercial	180 KSF
	Office	150 KSF

Additionally, the property is surrounded by planned developments in the Innovation Way area. These include the following project, also illustrated in **Figure 3**.

- Sunbridge PD
- Innovation Place PD
- Starwood Property
- Live Oak Estates
- Moss Park PD



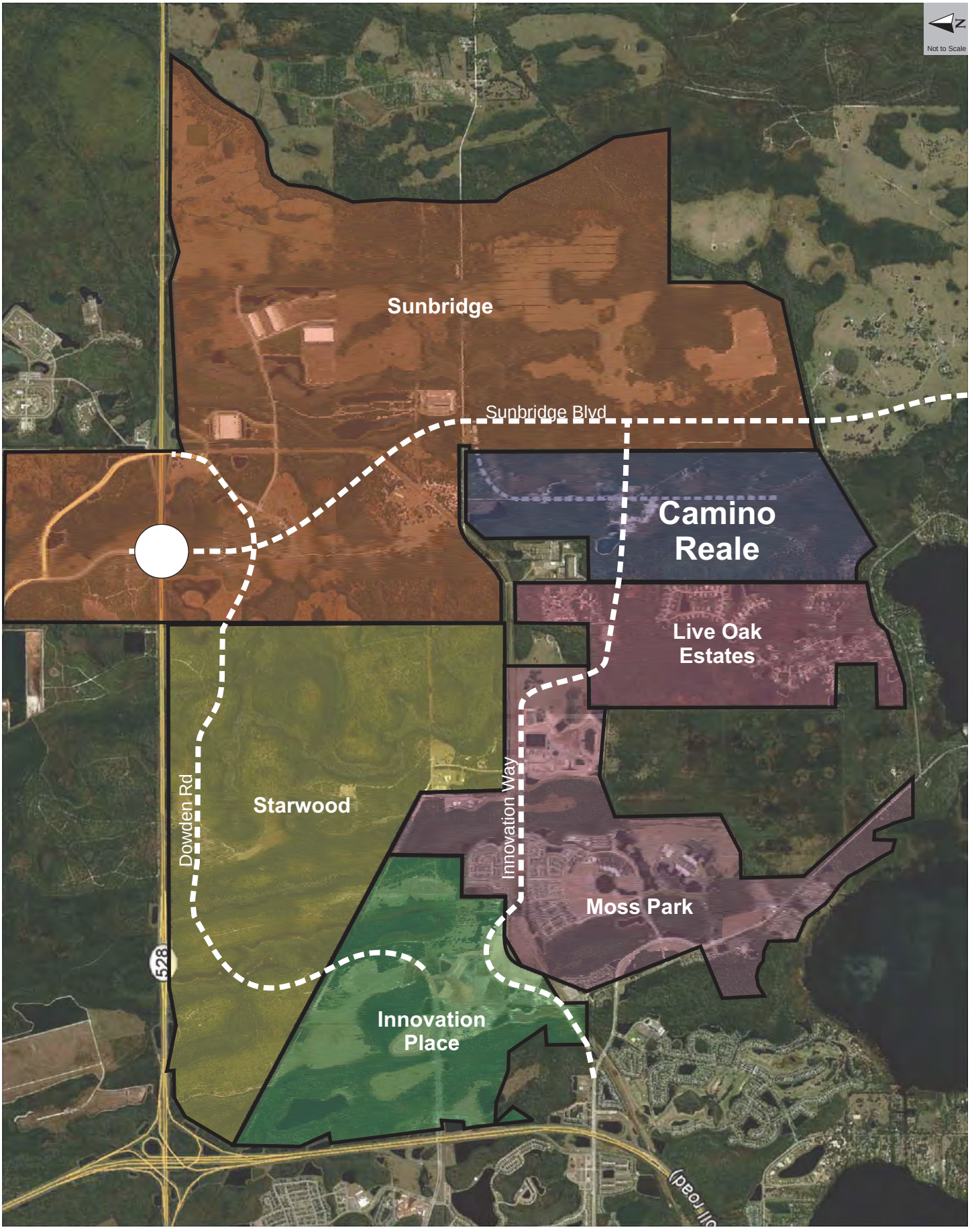
Source: Daly Desing Group, Inc.

TMC Traffic & Mobility Consultants

Conceptual Regulating Plan

Camino Reale
16-072

Figure
2

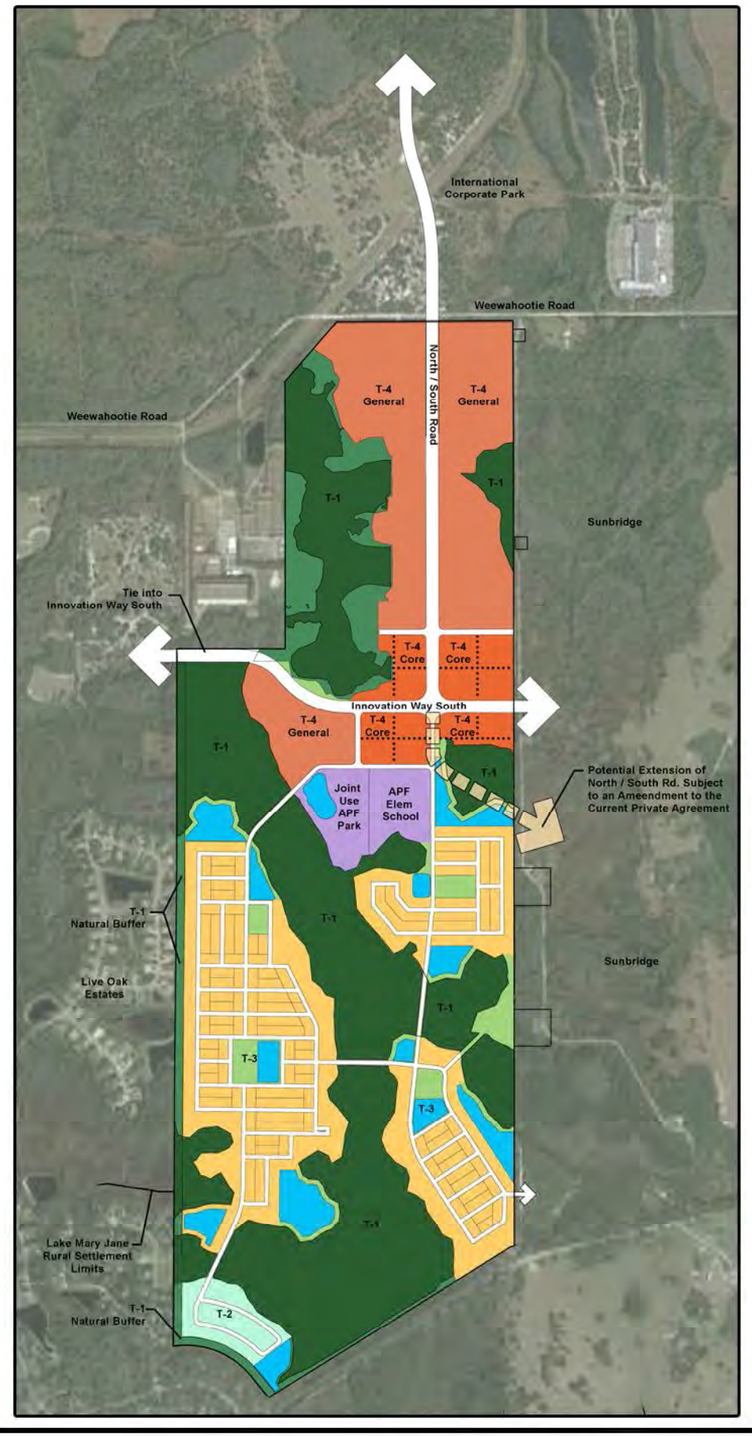


Innovation Way Area Projects

Camino Reale

16-072

Figure 3



LEGEND

- T-1 Wetlands
- T-1 Natural (0.0 du/ac)
- T-2 (2.0 du/ac)
- T-3 (Average 4.0 du/ac)
- T-4 General (Min 6.0 du/ac / commercial)
- T-4 Core (Min 15.0 du/ac / commercial)
- Central Focal Point Park / Open Space
- Adequate Public Facilities
- Stormwater Facilities

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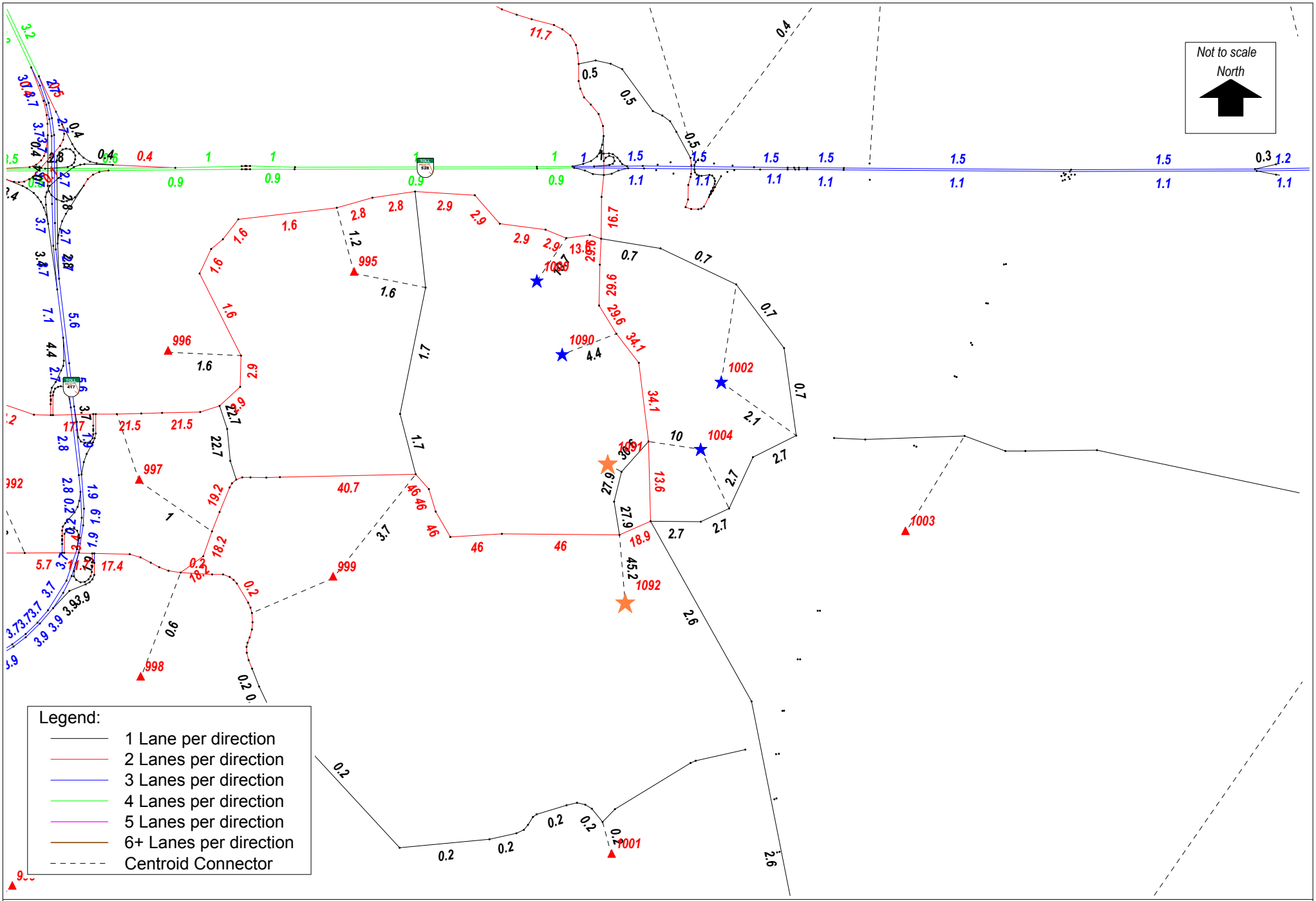
Regulating Plan

NORTH

Camino Reale-PD
Regulating Plan



Orlando 2040 LRTP Model - Camino Reale (16-072)
Project Distribution (TAZs=1091-1092)
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APPENDIX B – FORECASTED TURNING MOVEMENTS

2025 Scenario

TURNS v2.4.1 Inputs

2017 Existing PM Turning Movements

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
A	5	5	0	0	0	0	0	5	5	5	0	5
B	5	5	5	5	5	5	5	5	5	5	5	5
C	5	5	0	0	0	0	0	5	5	5	0	5
D	5	5	5	5	15	5	5	5	5	5	15	5
E	5	5	5	5	40	5	5	5	5	5	40	5
F	5	5	5	5	15	5	5	5	5	5	15	5
G	5	5	5	5	5	5	5	5	5	5	5	5
H	5	5	5	5	5	5	5	5	5	5	5	5
I	5	5	5	5	5	5	5	5	5	5	5	5

2017 Approach/Departure (Peak Direction: NB/WB)

	Southbound		Westbound		Northbound		Eastbound	
	North Leg		East Leg		South Leg		West Leg	
Node	App	Dep	App	Dep	App	Dep	App	Dep
A	15	15	15	15	15	15	15	15
B	10	10	0	0	10	10	10	10
C	15	15	15	15	15	15	15	15
D	10	10	0	0	10	10	10	10
E	15	15	25	25	15	15	25	25
F	15	15	50	50	15	15	50	50
G	15	15	25	25	15	15	25	25
H	15	15	15	15	15	15	15	15
I	15	15	15	15	15	15	15	15

2025 Approach/Departure (Peak Direction: NB/WB)

	Southbound		Westbound		Northbound		Eastbound	
	North Leg		East Leg		South Leg		West Leg	
Node	App	Dep	App	Dep	App	Dep	App	Dep
A	806	817	0	0	817	806	136	204
B	806	817	69	104	817	806	5	8
C	806	817	0	0	817	806	57	85
D	806	817	12	15	817	806	12	15
E	806	817	58	70	1,270	1,040	486	594
F	1,040	1,270	17	21	1,270	1,040	25	31
G	1,040	1,270	6	9	1,270	1,040	9	13
H	1,040	1,270	6	10	1,270	1,040	9	14
I	1,040	1,270	3	5	1,270	1,040	5	7

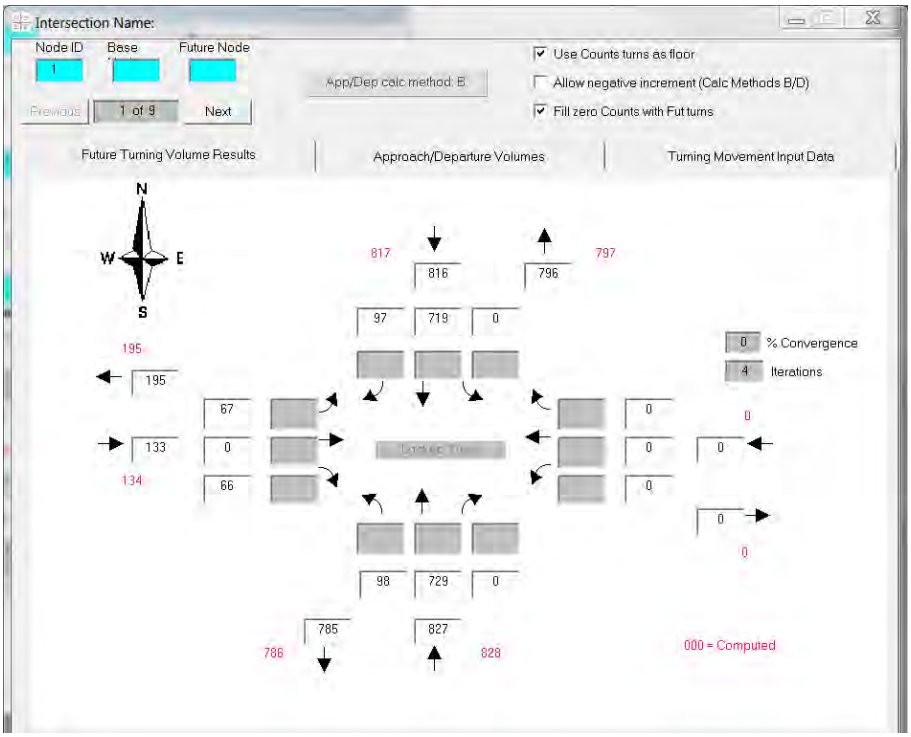
TURNS v2.4.1 Output

Total

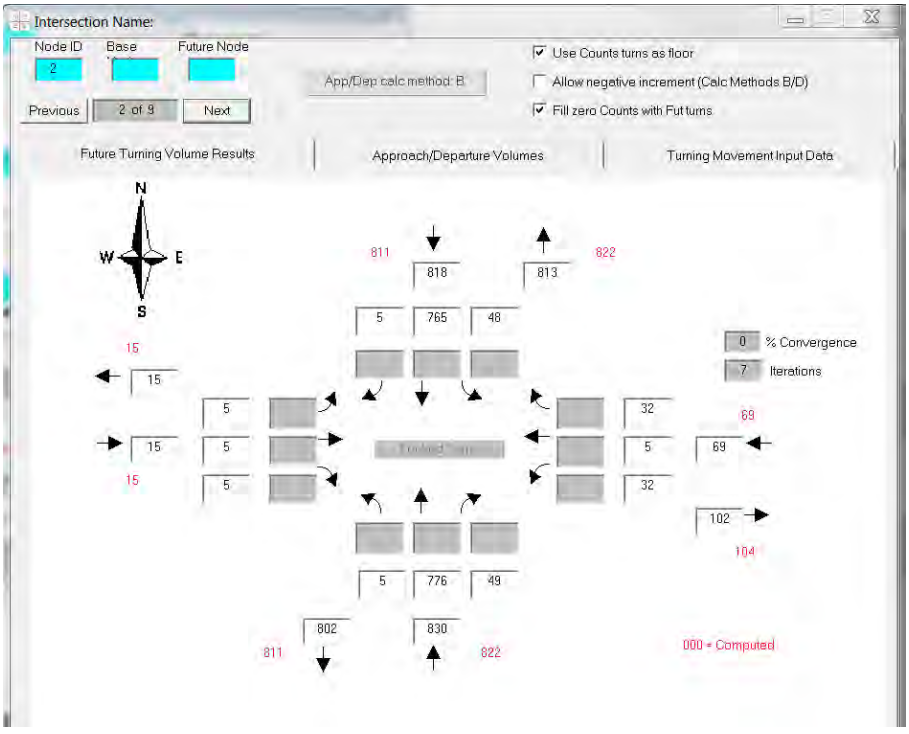
Turning Movement Count
60 Minute counts

INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	98	729	0	0	719	97	67	0	66	0	0	0
2	5	776	49	48	765	5	5	5	5	32	5	32
3	39	779	0	0	768	39	26	0	26	0	0	0
4	7	809	5	5	799	7	6	15	6	5	15	5
5	473	729	40	9	668	115	95	46	360	30	42	8
6	5	1259	5	5	1030	5	5	15	5	5	15	5
7	5	1260	5	5	1030	5	5	5	5	5	5	5
8	5	1260	5	5	1030	5	5	5	5	5	5	5
9	5	1260	5	5	1030	5	5	5	5	5	5	5

Intersection A



Intersection B



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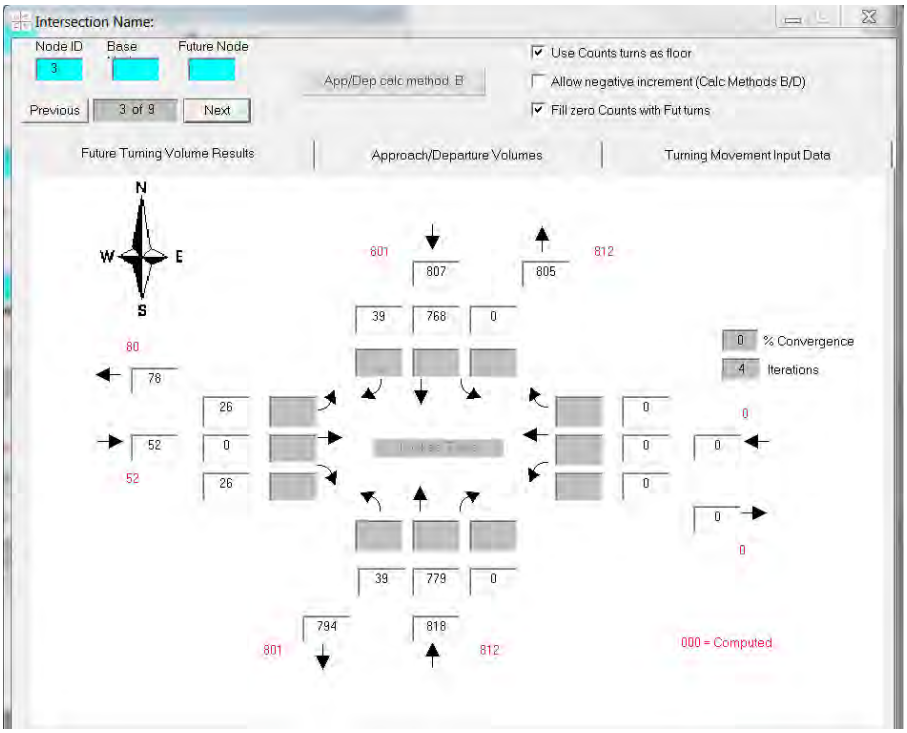

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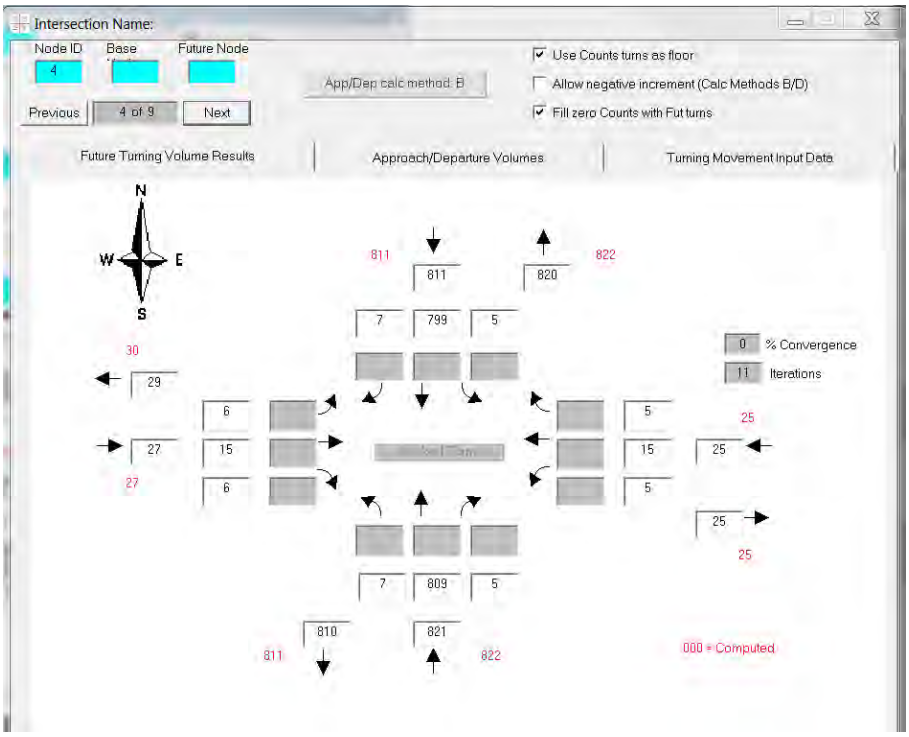
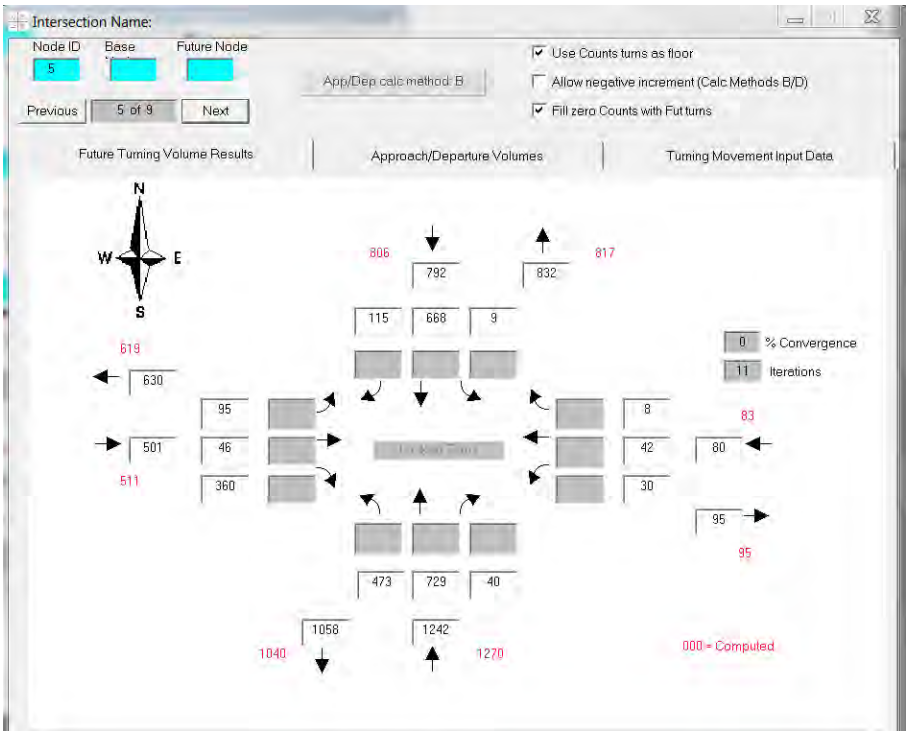
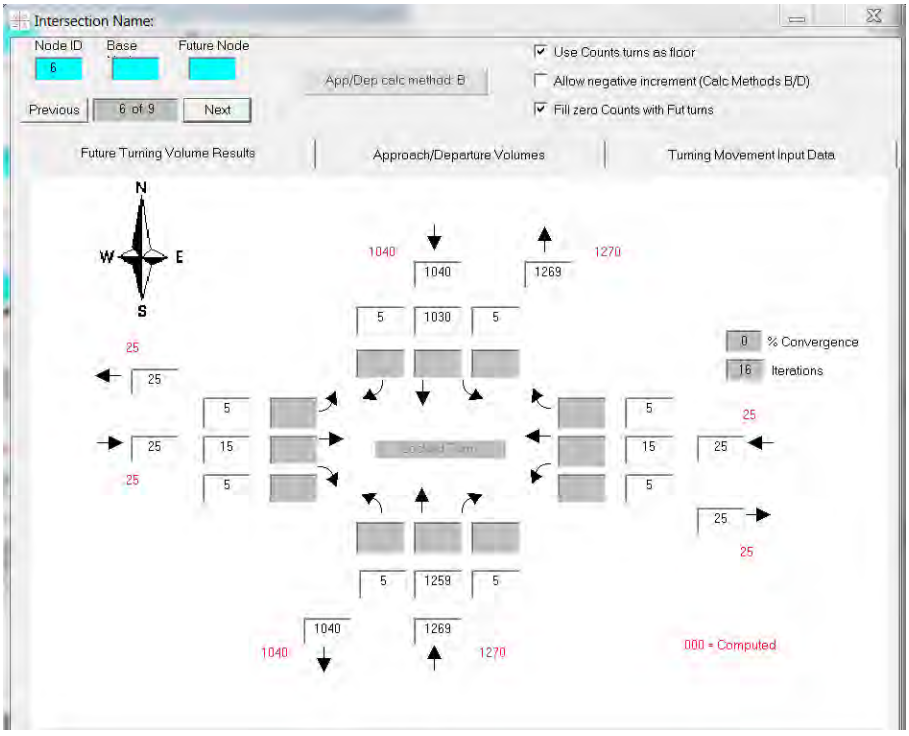


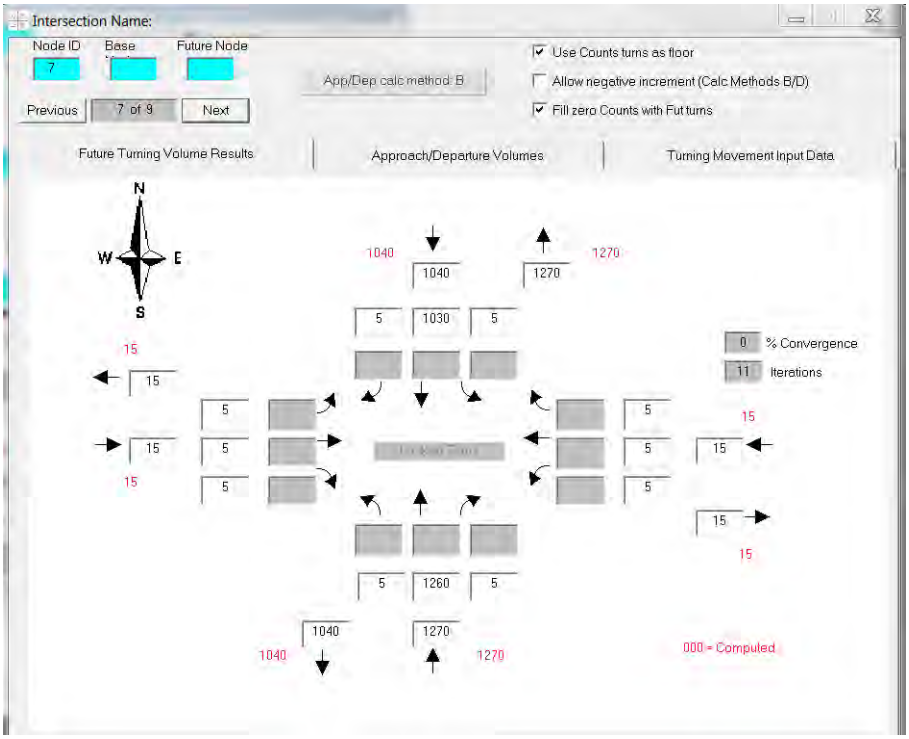
Intersection E



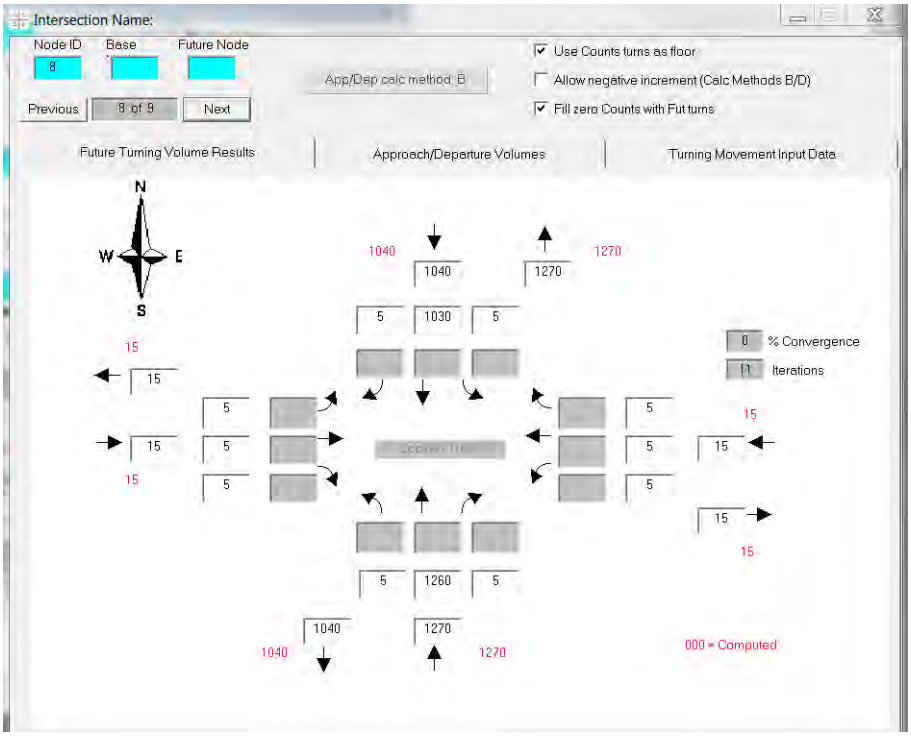
Intersection F



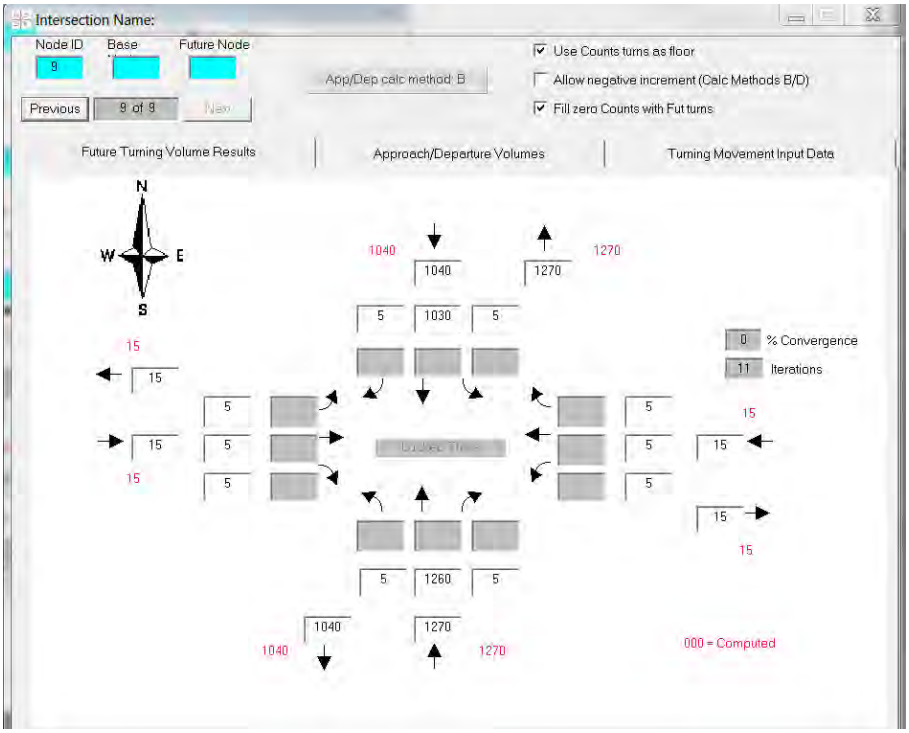
Intersection G



Intersection H



Intersection I



2040 Scenario

TURNS v2.4.1 Inputs

2017 Existing PM Turning Movements

Node	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
A	5	5	0	0	0	0	0	5	5	5	0	5
B	5	5	5	5	5	5	5	5	5	5	5	5
C	5	5	0	0	0	0	0	5	5	5	0	5
D	5	5	5	5	15	5	5	5	5	5	15	5
E	5	5	5	5	40	5	5	5	5	5	40	5
F	5	5	5	5	15	5	5	5	5	5	15	5
G	5	5	5	5	5	5	5	5	5	5	5	5
H	5	5	5	5	5	5	5	5	5	5	5	5
I	5	5	5	5	5	5	5	5	5	5	5	5

2017 Approach/Departure (Peak Direction: NB/WB)

	Southbound		Westbound		Northbound		Eastbound	
	North Leg		East Leg		South Leg		West Leg	
Node	App	Dep	App	Dep	App	Dep	App	Dep
A	15	15	15	15	15	15	15	15
B	10	10	0	0	10	10	10	10
C	15	15	15	15	15	15	15	15
D	10	10	0	0	10	10	10	10
E	15	15	25	25	15	15	25	25
F	15	15	50	50	15	15	50	50
G	15	15	25	25	15	15	25	25
H	15	15	15	15	15	15	15	15
I	15	15	15	15	15	15	15	15

2040 Approach/Departure (Peak Direction: NB/WB)

	Southbound		Westbound		Northbound		Eastbound	
	North Leg		East Leg		South Leg		West Leg	
Node	App	Dep	App	Dep	App	Dep	App	Dep
A	1,663	1,664	0	0	1,664	1,663	236	354
B	1,663	1,664	221	331	1,664	1,663	17	25
C	1,663	1,664	0	0	1,664	1,663	104	156
D	1,663	1,664	38	47	1,664	1,663	38	47
E	1,663	1,664	149	183	1,974	1,616	477	583
F	1,616	1,974	106	129	1,974	1,616	136	166
G	1,616	1,974	38	56	1,974	1,616	48	73
H	1,616	1,974	40	59	1,974	1,616	51	77
I	1,616	1,974	20	30	1,974	1,616	26	38

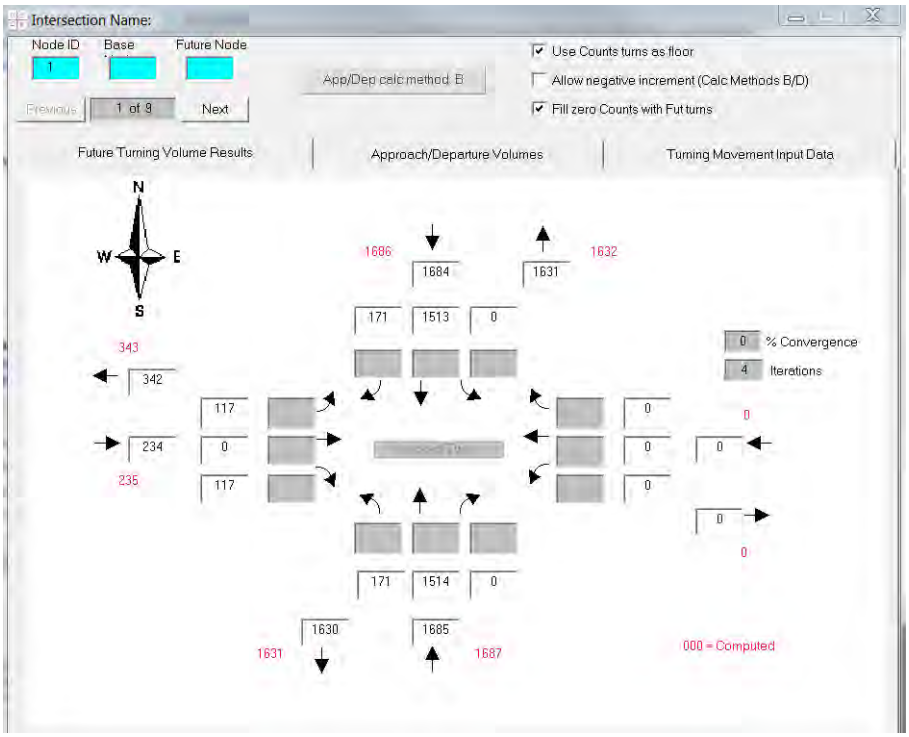
TURNS v2.4.1 Output

Total

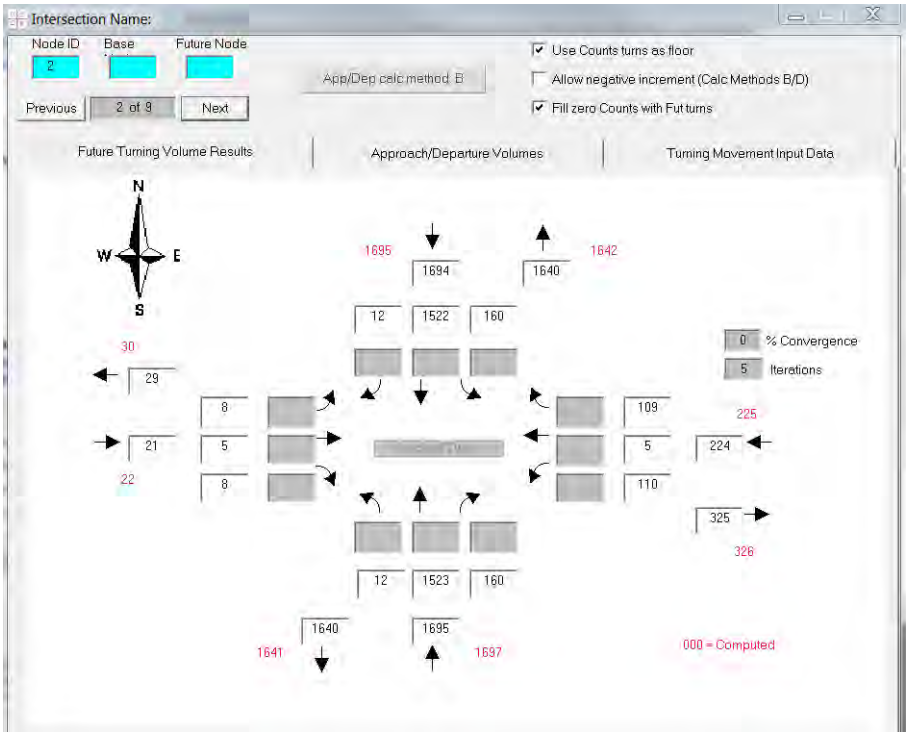
Turning Movement Count
60 Minute counts

INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	171	1514	0	0	1513	171	117	0	117	0	0	0
2	12	1523	160	160	1522	12	8	5	8	110	5	109
3	75	1597	0	0	1596	75	50	0	50	0	0	0
4	23	1634	16	16	1633	23	19	15	19	11	15	11
5	336	1497	84	53	1359	214	170	76	242	57	72	40
6	68	1876	47	40	1524	57	49	15	47	33	15	34
7	31	1934	22	18	1579	26	16	5	16	11	5	11
8	39	1921	29	24	1565	32	23	5	22	17	5	17
9	18	1949	13	11	1593	14	10	5	10	7	5	7

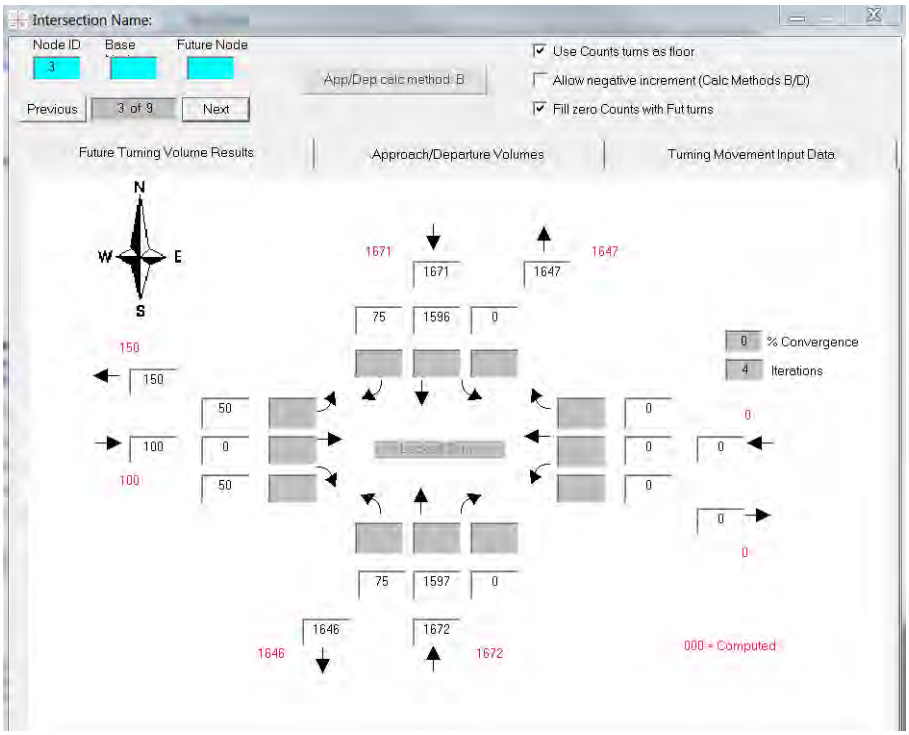
Intersection A



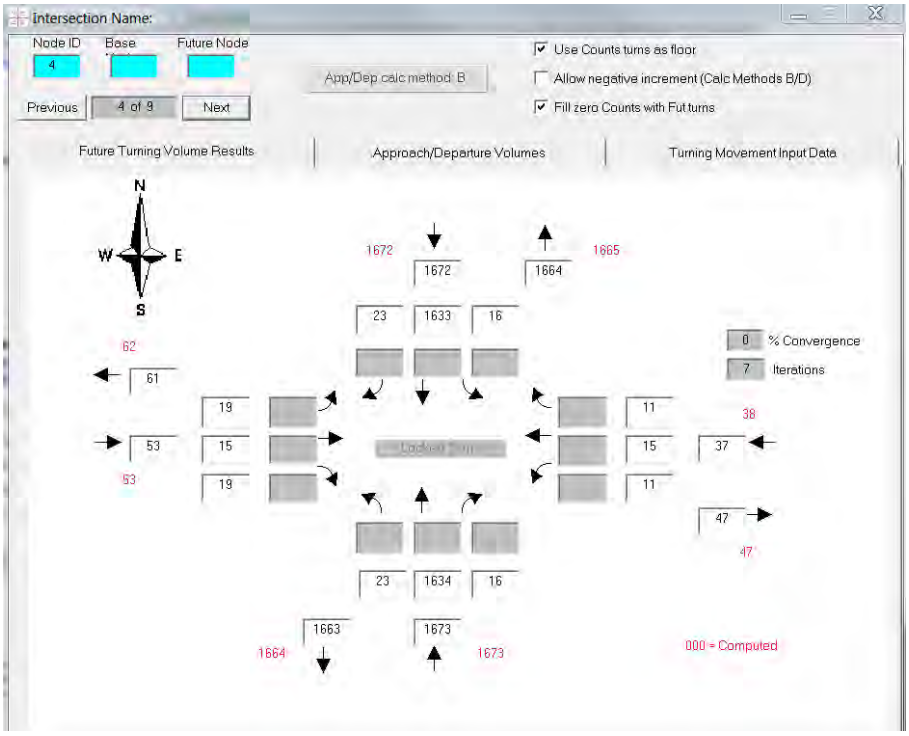
Intersection B



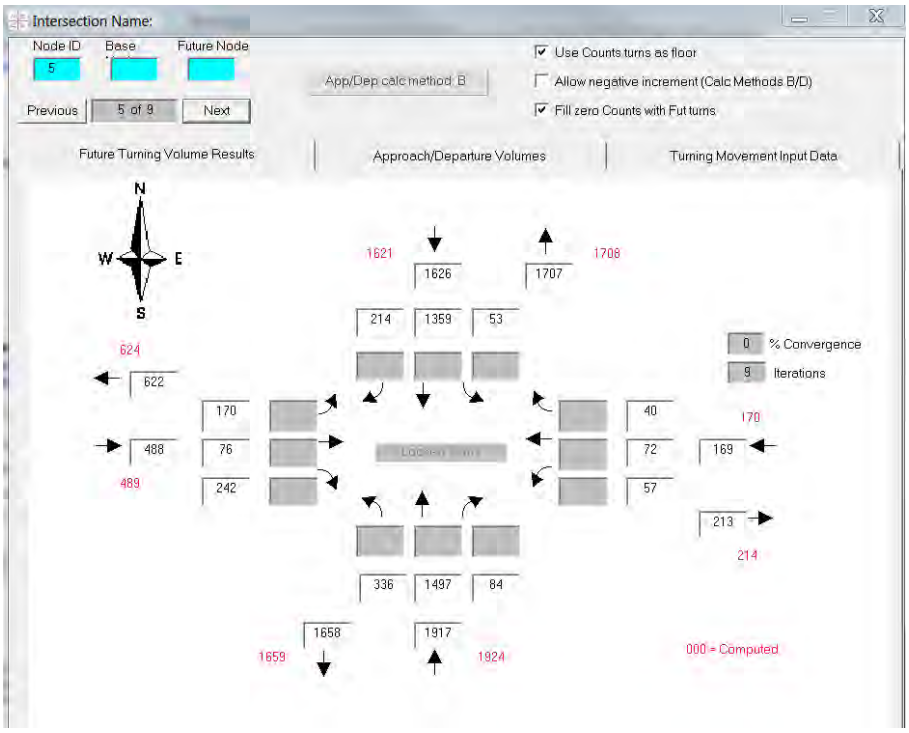
Intersection C



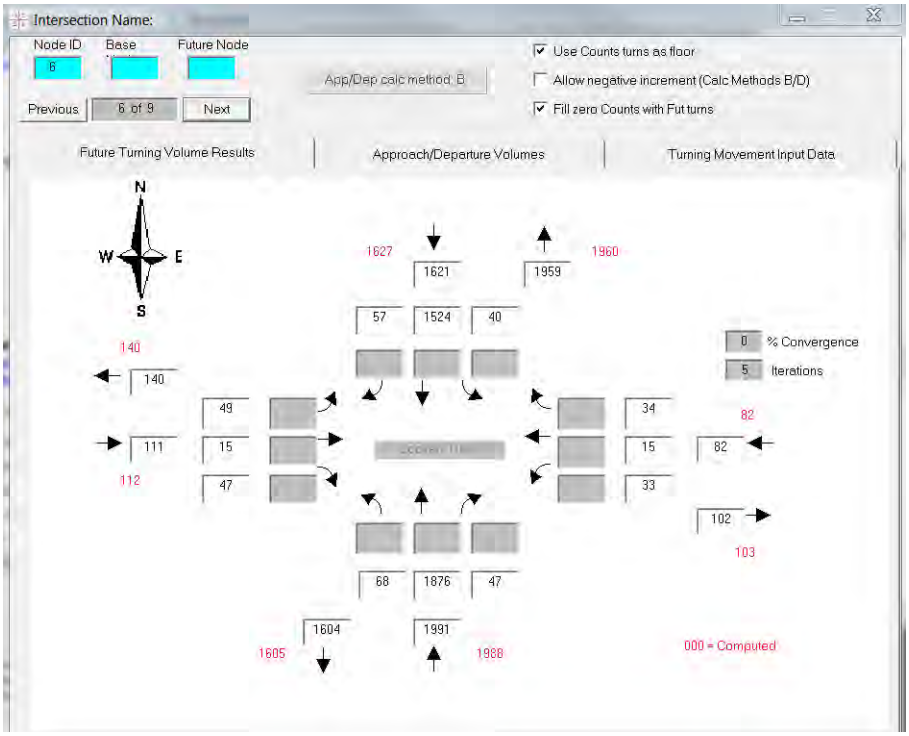
Intersection D



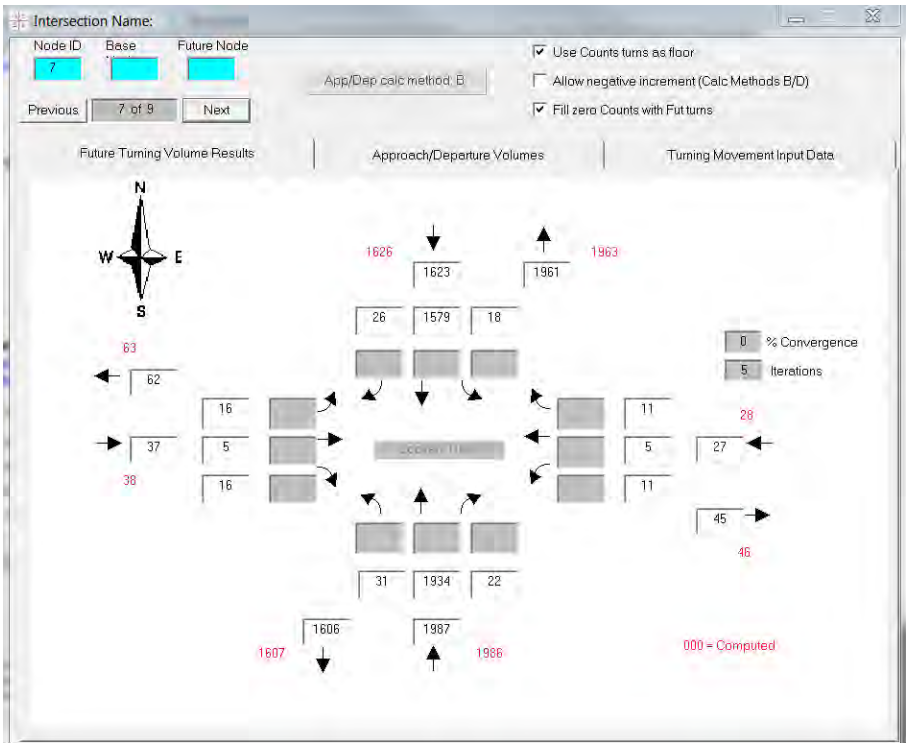
Intersection E



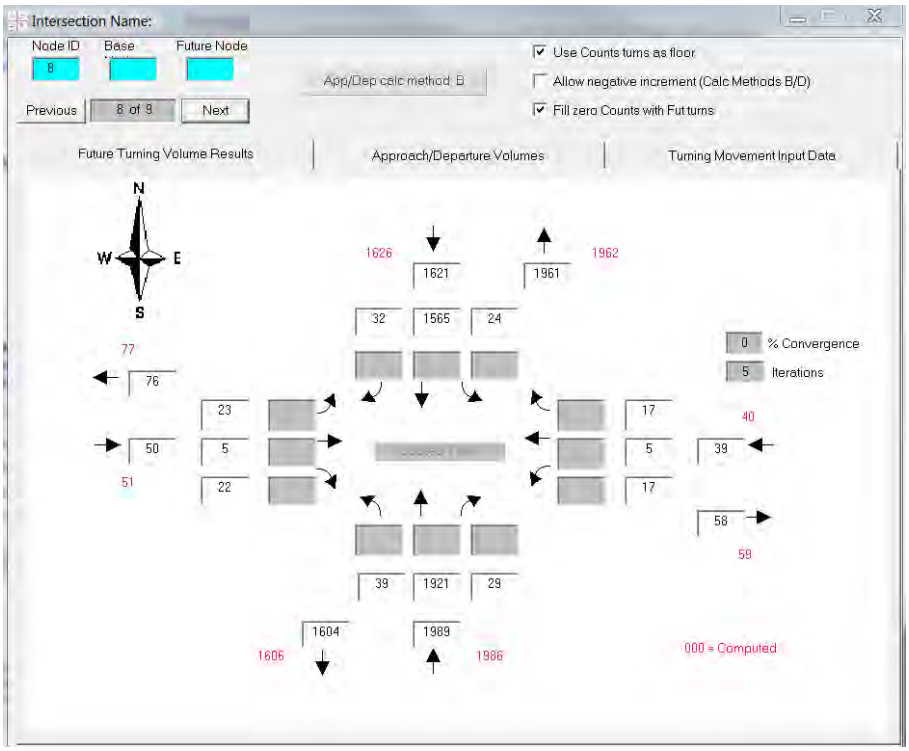
Intersection F



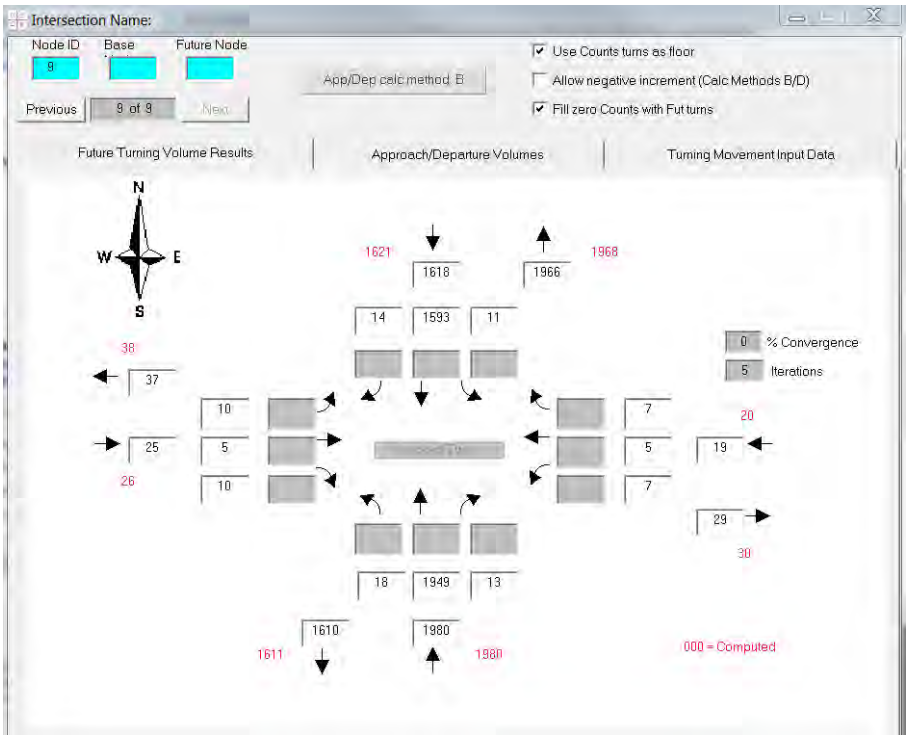
Intersection G



Intersection H



Intersection I



APPENDIX C – INTERSECTION OPERATIONS

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	67	66	98	729	719	97
Future Vol, veh/h	67	66	98	729	719	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	71	69	103	767	757	102

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1782	808	859	0	-	0
Stage 1	808	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	89	378	774	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	77	378	774	-	-	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	315	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	95.4	1.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	774	-	77	378	-	-
HCM Lane V/C Ratio	0.133	-	0.916	0.184	-	-
HCM Control Delay (s)	10.4	-	172.9	16.7	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	0.5	-	4.8	0.7	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↑			↑	
Traffic Vol, veh/h	5	5	5	32	5	32	5	776	49	48	765	5
Future Vol, veh/h	5	5	5	32	5	32	5	776	49	48	765	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	5	5	34	5	34	5	817	52	51	805	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1782	1788	808	1767	1765	843	811	0	0	868	0	0
Stage 1	909	909	-	853	853	-	-	-	-	-	-	-
Stage 2	873	879	-	914	912	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	63	80	378	64	83	361	806	-	-	768	-	-
Stage 1	327	351	-	351	373	-	-	-	-	-	-	-
Stage 2	342	363	-	325	350	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	74	378	56	77	361	806	-	-	768	-	-
Mov Cap-2 Maneuver	51	74	-	56	77	-	-	-	-	-	-	-
Stage 1	325	328	-	349	371	-	-	-	-	-	-	-
Stage 2	304	361	-	294	327	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	57.5	115.8	0.1	0.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	806	-	-	84	95	768	-	-
HCM Lane V/C Ratio	0.007	-	-	0.188	0.765	0.066	-	-
HCM Control Delay (s)	9.5	-	-	57.5	115.8	10	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	4	0.2	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	26	39	779	768	39
Future Vol, veh/h	26	26	39	779	768	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	27	27	41	820	808	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1731	829	849	0	-	0
Stage 1	829	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	96	367	780	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	91	367	780	-	-	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	425	-	-	-	-	-
Stage 2	372	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	43.7	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	780	-	146	-	-
HCM Lane V/C Ratio	0.053	-	0.375	-	-
HCM Control Delay (s)	9.9	-	43.7	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Traffic Vol, veh/h	6	15	6	5	15	5	7	809	5	5	799	7
Future Vol, veh/h	6	15	6	5	15	5	7	809	5	5	799	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	6	16	6	5	16	5	7	852	5	5	841	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1734	1727	845	1735	1728	854	848	0	0	857	0	0
Stage 1	855	855	-	869	869	-	-	-	-	-	-	-
Stage 2	879	872	-	866	859	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	68	88	360	68	87	355	781	-	-	775	-	-
Stage 1	350	372	-	344	367	-	-	-	-	-	-	-
Stage 2	339	365	-	345	370	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	57	87	360	57	86	355	781	-	-	775	-	-
Mov Cap-2 Maneuver	57	87	-	57	86	-	-	-	-	-	-	-
Stage 1	347	370	-	341	364	-	-	-	-	-	-	-
Stage 2	317	362	-	322	368	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	60.7	59.9	0.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	781	-	-	92	91	775	-	-
HCM Lane V/C Ratio	0.009	-	-	0.309	0.289	0.007	-	-
HCM Control Delay (s)	9.7	-	-	60.7	59.9	9.7	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.2	1.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	46	360	30	42	8	473	729	40	9	668	115
Future Volume (veh/h)	95	46	360	30	42	8	473	729	40	9	668	115
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	100	48	379	32	44	8	498	767	42	9	703	121
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	294	289	653	239	213	39	529	1108	61	318	720	682
Arrive On Green	0.04	0.16	0.16	0.03	0.14	0.14	0.26	0.65	0.65	0.01	0.39	0.39
Sat Flow, veh/h	1740	1827	1553	1740	1505	274	1740	1716	94	1740	1827	1553
Grp Volume(v), veh/h	100	48	379	32	0	52	498	0	809	9	703	121
Grp Sat Flow(s),veh/h/ln	1740	1827	1553	1740	0	1779	1740	0	1810	1740	1827	1553
Q Serve(g_s), s	5.1	2.6	18.1	1.8	0.0	3.0	27.1	0.0	32.7	0.4	43.3	5.4
Cycle Q Clear(g_c), s	5.1	2.6	18.1	1.8	0.0	3.0	27.1	0.0	32.7	0.4	43.3	5.4
Prop In Lane	1.00		1.00	1.00		0.15	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	294	289	653	239	0	252	529	0	1169	318	720	682
V/C Ratio(X)	0.34	0.17	0.58	0.13	0.00	0.21	0.94	0.00	0.69	0.03	0.98	0.18
Avail Cap(c_a), veh/h	294	289	653	268	0	282	601	0	1169	375	720	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	41.6	25.4	40.2	0.0	43.4	33.7	0.0	13.0	20.4	34.1	19.5
Incr Delay (d2), s/veh	0.7	0.3	1.3	0.3	0.0	0.4	21.9	0.0	3.4	0.0	28.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	2.4	14.5	1.6	0.0	2.7	25.6	0.0	24.1	0.3	36.1	4.4
LnGrp Delay(d),s/veh	41.2	41.9	26.7	40.4	0.0	43.8	55.5	0.0	16.4	20.4	62.2	20.1
LnGrp LOS	D	D	C	D		D	E		B	C	E	C
Approach Vol, veh/h		527			84			1307			833	
Approach Delay, s/veh		30.8			42.5			31.3			55.7	
Approach LOS		C			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	78.3	7.7	22.6	34.5	49.6	9.6	20.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	73.8	5.1	18.1	34.7	44.1	5.1	18.1
Max Q Clear Time (g_c+I1), s	2.4	34.7	3.8	20.1	29.1	45.3	7.1	5.0
Green Ext Time (p_c), s	0.0	14.3	0.0	0.0	0.9	0.0	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	38.9
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	5	15	5	5	15	5	5	1259	5	5	1030	5
Future Vol, veh/h	5	15	5	5	15	5	5	1259	5	5	1030	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	16	5	5	16	5	5	1325	5	5	1084	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2446	2438	1087	2446	2438	1328	1089	0	0	1331	0	0
Stage 1	1097	1097	-	1338	1338	-	-	-	-	-	-	-
Stage 2	1349	1341	-	1108	1100	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	21	31	260	21	31	188	633	-	-	512	-	-
Stage 1	256	287	-	187	220	-	-	-	-	-	-	-
Stage 2	184	219	-	252	286	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	12	30	260	12	30	188	633	-	-	512	-	-
Mov Cap-2 Maneuver	12	30	-	12	30	-	-	-	-	-	-	-
Stage 1	254	284	-	186	218	-	-	-	-	-	-	-
Stage 2	165	217	-	231	283	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 374.5	$ 374.5	0	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	633	-	-	27	27	512	-	-
HCM Lane V/C Ratio	0.008	-	-	0.975	0.975	0.01	-	-
HCM Control Delay (s)	10.7	-	-	$ 374.5	$ 374.5	12.1	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	3.1	3.1	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	5	5	5	5	5	5	6	1260	5	5	1030	5
Future Vol, veh/h	5	5	5	5	5	5	6	1260	5	5	1030	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	5	5	5	5	5	6	1326	5	5	1084	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2444	2441	1087	2445	2442	1329	1089	0	0	1332	0	0
Stage 1	1097	1097	-	1342	1342	-	-	-	-	-	-	-
Stage 2	1347	1344	-	1103	1100	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	21	31	260	21	31	187	633	-	-	512	-	-
Stage 1	256	287	-	186	219	-	-	-	-	-	-	-
Stage 2	185	218	-	254	286	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	17	30	260	18	30	187	633	-	-	512	-	-
Mov Cap-2 Maneuver	17	30	-	18	30	-	-	-	-	-	-	-
Stage 1	254	284	-	184	217	-	-	-	-	-	-	-
Stage 2	174	216	-	242	283	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	207.7	198.4	0.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	633	-	-	31	32	512	-	-
HCM Lane V/C Ratio	0.01	-	-	0.509	0.493	0.01	-	-
HCM Control Delay (s)	10.7	-	-	207.7	198.4	12.1	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.7	1.6	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	5	5	5	5	5	5	6	1260	5	5	1030	5
Future Vol, veh/h	5	5	5	5	5	5	6	1260	5	5	1030	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	5	5	5	5	5	6	1326	5	5	1084	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2444	2441	1087	2445	2442	1329	1089	0	0	1332	0	0
Stage 1	1097	1097	-	1342	1342	-	-	-	-	-	-	-
Stage 2	1347	1344	-	1103	1100	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	21	31	260	21	31	187	633	-	-	512	-	-
Stage 1	256	287	-	186	219	-	-	-	-	-	-	-
Stage 2	185	218	-	254	286	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	17	30	260	18	30	187	633	-	-	512	-	-
Mov Cap-2 Maneuver	17	30	-	18	30	-	-	-	-	-	-	-
Stage 1	254	284	-	184	217	-	-	-	-	-	-	-
Stage 2	174	216	-	242	283	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	207.7	198.4	0.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	633	-	-	31	32	512	-	-
HCM Lane V/C Ratio	0.01	-	-	0.509	0.493	0.01	-	-
HCM Control Delay (s)	10.7	-	-	207.7	198.4	12.1	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.7	1.6	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Traffic Vol, veh/h	5	5	5	5	5	5	5	1260	5	5	1030	5
Future Vol, veh/h	5	5	5	5	5	5	5	1260	5	5	1030	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	5	5	5	5	5	5	5	1326	5	5	1084	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2442	2439	1087	2442	2439	1329	1089	0	0	1332	0	0
Stage 1	1097	1097	-	1339	1339	-	-	-	-	-	-	-
Stage 2	1345	1342	-	1103	1100	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	21	31	260	21	31	187	633	-	-	512	-	-
Stage 1	256	287	-	187	219	-	-	-	-	-	-	-
Stage 2	185	219	-	254	286	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	17	30	260	18	30	187	633	-	-	512	-	-
Mov Cap-2 Maneuver	17	30	-	18	30	-	-	-	-	-	-	-
Stage 1	254	284	-	186	217	-	-	-	-	-	-	-
Stage 2	174	217	-	242	283	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	207.7	198.4	0	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	633	-	-	31	32	512	-	-
HCM Lane V/C Ratio	0.008	-	-	0.509	0.493	0.01	-	-
HCM Control Delay (s)	10.7	-	-	207.7	198.4	12.1	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.7	1.6	0	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	117	117	171	1514	1513	171
Future Volume (veh/h)	117	117	171	1514	1513	171
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	123	123	180	1594	1593	180
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	182	162	272	2761	2175	243
Arrive On Green	0.10	0.10	0.11	1.00	0.69	0.69
Sat Flow, veh/h	1740	1553	1740	3563	3241	351
Grp Volume(v), veh/h	123	123	180	1594	869	904
Grp Sat Flow(s),veh/h/ln	1740	1553	1740	1736	1736	1765
Q Serve(g_s), s	6.1	6.9	2.6	0.0	27.9	29.3
Cycle Q Clear(g_c), s	6.1	6.9	2.6	0.0	27.9	29.3
Prop In Lane	1.00	1.00	1.00			0.20
Lane Grp Cap(c), veh/h	182	162	272	2761	1198	1219
V/C Ratio(X)	0.68	0.76	0.66	0.58	0.72	0.74
Avail Cap(c_a), veh/h	350	312	340	2761	1198	1219
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.33	0.33	1.00	1.00
Uniform Delay (d), s/veh	38.8	39.2	15.3	0.0	8.6	8.8
Incr Delay (d2), s/veh	4.3	7.0	1.1	0.3	3.8	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	10.2	4.8	0.2	20.5	21.9
LnGrp Delay(d),s/veh	43.2	46.2	16.5	0.3	12.5	12.9
LnGrp LOS	D	D	B	A	B	B
Approach Vol, veh/h	246			1774	1773	
Approach Delay, s/veh	44.7			1.9	12.7	
Approach LOS	D			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		76.1		13.9	9.4	66.6		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		62.9		18.1	8.5	49.9		
Max Q Clear Time (g_c+I1), s		2.0		8.9	4.6	31.3		
Green Ext Time (p_c), s		49.8		0.5	0.2	17.4		

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	5	8	110	5	109	12	1523	160	130	1522	12
Future Volume (veh/h)	8	5	8	110	5	109	12	1523	160	130	1522	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	8	5	8	116	5	115	13	1603	168	137	1602	13
Adj No. of Lanes	0	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	15	9	15	181	7	156	221	1968	204	232	2322	19
Arrive On Green	0.02	0.02	0.02	0.10	0.10	0.10	0.02	0.62	0.62	0.05	0.66	0.66
Sat Flow, veh/h	641	400	641	1740	65	1498	1740	3176	329	1740	3529	29
Grp Volume(v), veh/h	21	0	0	116	0	120	13	868	903	137	787	828
Grp Sat Flow(s),veh/h/ln	1682	0	0	1740	0	1563	1740	1736	1769	1740	1736	1822
Q Serve(g_s), s	1.1	0.0	0.0	5.8	0.0	6.7	0.2	34.2	35.7	2.4	25.6	25.6
Cycle Q Clear(g_c), s	1.1	0.0	0.0	5.8	0.0	6.7	0.2	34.2	35.7	2.4	25.6	25.6
Prop In Lane	0.38		0.38	1.00		0.96	1.00		0.19	1.00		0.02
Lane Grp Cap(c), veh/h	38	0	0	181	0	162	221	1075	1096	232	1142	1199
V/C Ratio(X)	0.55	0.00	0.00	0.64	0.00	0.74	0.06	0.81	0.82	0.59	0.69	0.69
Avail Cap(c_a), veh/h	151	0	0	350	0	314	293	1075	1096	276	1142	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.48	0.48	0.48
Uniform Delay (d), s/veh	43.5	0.0	0.0	38.7	0.0	39.1	8.9	13.0	13.3	18.5	9.6	9.6
Incr Delay (d2), s/veh	11.8	0.0	0.0	3.8	0.0	6.4	0.1	6.5	7.1	1.1	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	0.0	5.3	0.0	5.7	0.2	25.1	26.7	3.9	16.6	17.3
LnGrp Delay(d),s/veh	55.3	0.0	0.0	42.5	0.0	45.6	9.0	19.5	20.4	19.6	11.3	11.2
LnGrp LOS	E			D		D	A	B	C	B	B	B
Approach Vol, veh/h		21			236			1784			1752	
Approach Delay, s/veh		55.3			44.0			19.9			11.9	
Approach LOS		E			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.3	60.3		6.5	5.9	63.7		13.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	7.1	38.7		8.1	5.1	40.7		18.1
Max Q Clear Time (g_c+I1), s	4.4	37.7		3.1	2.2	27.6		8.7
Green Ext Time (p_c), s	0.1	0.9		0.0	0.0	12.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	50	75	1597	1596	75
Future Vol, veh/h	50	50	75	1597	1596	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	235	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	53	53	79	1681	1680	79

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2717	879	1759	0	-	0
Stage 1	1719	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Critical Hdwy	6.88	6.98	4.18	-	-	-
Critical Hdwy Stg 1	5.88	-	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-	-
Follow-up Hdwy	3.54	3.34	2.24	-	-	-
Pot Cap-1 Maneuver	~ 16	287	343	-	-	-
Stage 1	127	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 12	287	343	-	-	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	127	-	-	-	-	-
Stage 2	241	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	106.6	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	343	-	126	-	-
HCM Lane V/C Ratio	0.23	-	0.835	-	-
HCM Control Delay (s)	18.6	-	106.6	-	-
HCM Lane LOS	C	-	F	-	-
HCM 95th %tile Q(veh)	0.9	-	5.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Traffic Vol, veh/h	19	15	19	11	15	11	23	1634	16	16	1633	23
Future Vol, veh/h	19	15	19	11	15	11	23	1634	16	16	1633	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	20	16	20	12	16	12	24	1720	17	17	1719	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2681	3550	872	2678	3554	868	1743	0	0	1737	0	0
Stage 1	1765	1765	-	1777	1777	-	-	-	-	-	-	-
Stage 2	916	1785	-	901	1777	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.58	6.98	7.58	6.58	6.98	4.18	-	-	4.18	-	-
Critical Hdwy Stg 1	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4.04	3.34	3.54	4.04	3.34	2.24	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 10	~ 6	290	~ 10	~ 5	292	348	-	-	350	-	-
Stage 1	85	133	-	84	131	-	-	-	-	-	-	-
Stage 2	289	130	-	295	131	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	~ 5	290	~ 7	~ 4	292	348	-	-	350	-	-
Mov Cap-2 Maneuver	55	54	-	54	52	-	-	-	-	-	-	-
Stage 1	79	127	-	78	122	-	-	-	-	-	-	-
Stage 2	225	121	-	229	125	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	127.9	107.7	0.2	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	348	-	-	77	70	350	-	-
HCM Lane V/C Ratio	0.07	-	-	0.725	0.556	0.048	-	-
HCM Control Delay (s)	16.1	-	-	127.9	107.7	15.8	-	-
HCM Lane LOS	C	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.4	2.3	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	76	360	57	72	40	473	1497	84	53	1359	214
Future Volume (veh/h)	170	76	360	57	72	40	473	1497	84	53	1359	214
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1827
Adj Flow Rate, veh/h	179	80	379	60	76	42	498	1576	88	56	1431	225
Adj No. of Lanes	1	1	1	1	1	0	2	2	0	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	338	367	491	305	208	115	567	1718	95	170	1530	772
Arrive On Green	0.06	0.20	0.20	0.04	0.19	0.19	0.08	0.34	0.34	0.01	0.15	0.15
Sat Flow, veh/h	1740	1827	1553	1740	1107	612	3375	3344	186	1740	3471	1553
Grp Volume(v), veh/h	179	80	379	60	0	118	498	814	850	56	1431	225
Grp Sat Flow(s),veh/h/ln	1740	1827	1553	1740	0	1719	1688	1736	1794	1740	1736	1553
Q Serve(g_s), s	5.1	3.3	18.1	2.5	0.0	5.4	8.3	40.4	40.9	1.6	36.7	10.5
Cycle Q Clear(g_c), s	5.1	3.3	18.1	2.5	0.0	5.4	8.3	40.4	40.9	1.6	36.7	10.5
Prop In Lane	1.00		1.00	1.00		0.36	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	338	367	491	305	0	322	567	892	922	170	1530	772
V/C Ratio(X)	0.53	0.22	0.77	0.20	0.00	0.37	0.88	0.91	0.92	0.33	0.94	0.29
Avail Cap(c_a), veh/h	338	367	491	328	0	346	573	892	922	196	1530	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	30.0	27.8	27.6	0.0	31.9	25.4	27.6	27.8	21.0	37.2	21.4
Incr Delay (d2), s/veh	1.6	0.3	7.4	0.3	0.0	0.7	8.8	9.6	10.1	1.1	12.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	3.1	14.5	2.2	0.0	4.7	10.0	27.4	28.8	1.4	27.6	8.3
LnGrp Delay(d),s/veh	32.2	30.3	35.3	27.9	0.0	32.6	34.2	37.2	37.8	22.1	49.2	22.4
LnGrp LOS	C	C	D	C		C	C	D	D	C	D	C
Approach Vol, veh/h		638			178			2162			1712	
Approach Delay, s/veh		33.8			31.0			36.8			44.8	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	50.7	8.4	22.6	14.9	44.2	9.6	21.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	43.7	5.1	18.1	10.5	38.3	5.1	18.1
Max Q Clear Time (g_c+I1), s	3.6	42.9	4.5	20.1	10.3	38.7	7.1	7.4
Green Ext Time (p_c), s	0.0	0.8	0.0	0.0	0.0	0.0	0.0	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	15	47	33	15	34	68	1876	47	40	1524	57
Future Volume (veh/h)	49	15	47	33	15	34	68	1876	47	40	1524	57
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	52	16	49	35	16	36	72	1975	49	42	1604	60
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	168	38	117	156	48	109	367	2484	61	212	2414	90
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.10	0.05	0.72	0.72	0.07	1.00	1.00
Sat Flow, veh/h	1321	397	1216	1306	501	1127	1740	3462	86	1740	3413	127
Grp Volume(v), veh/h	52	0	65	35	0	52	72	986	1038	42	813	851
Grp Sat Flow(s),veh/h/ln	1321	0	1612	1306	0	1628	1740	1736	1812	1740	1736	1804
Q Serve(g_s), s	3.4	0.0	3.4	2.3	0.0	2.7	1.0	33.4	34.1	0.6	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	3.4	5.8	0.0	2.7	1.0	33.4	34.1	0.6	0.0	0.0
Prop In Lane	1.00		0.75	1.00		0.69	1.00		0.05	1.00		0.07
Lane Grp Cap(c), veh/h	168	0	155	156	0	157	367	1245	1300	212	1227	1276
V/C Ratio(X)	0.31	0.00	0.42	0.22	0.00	0.33	0.20	0.79	0.80	0.20	0.66	0.67
Avail Cap(c_a), veh/h	306	0	324	293	0	327	389	1245	1300	248	1227	1276
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.50	0.50	0.50
Uniform Delay (d), s/veh	40.8	0.0	38.3	41.0	0.0	38.0	2.8	8.3	8.4	10.3	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	1.8	0.7	0.0	1.2	0.3	5.2	5.2	0.2	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	0.0	2.9	1.6	0.0	2.3	0.8	24.3	25.7	0.9	0.9	0.9
LnGrp Delay(d),s/veh	41.8	0.0	40.1	41.7	0.0	39.2	3.1	13.5	13.6	10.5	1.4	1.4
LnGrp LOS	D		D	D		D	A	B	B	B	A	A
Approach Vol, veh/h		117			87			2096			1706	
Approach Delay, s/veh		40.9			40.2			13.2			1.6	
Approach LOS		D			D			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	69.1		13.2	8.7	68.2		13.2
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.1	53.3		18.1	5.3	53.1		18.1
Max Q Clear Time (g_c+I1), s	2.6	36.1		8.1	3.0	2.0		7.8
Green Ext Time (p_c), s	0.0	16.5		0.6	0.0	45.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↑↑			↑↑↑	
Traffic Vol, veh/h	16	5	16	11	5	11	39	1921	29	18	1579	26
Future Vol, veh/h	16	5	16	11	5	11	39	1921	29	18	1579	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	17	5	17	12	5	12	41	2022	31	19	1662	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2810	3849	845	2991	3846	1026	1689	0	0	2053	0	0
Stage 1	1714	1714	-	2119	2119	-	-	-	-	-	-	-
Stage 2	1096	2135	-	872	1727	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.58	6.98	7.58	6.58	6.98	4.18	-	-	4.18	-	-
Critical Hdwy Stg 1	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4.04	3.34	3.54	4.04	3.34	2.24	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 8	~ 3	302	~ 6	~ 3	229	365	-	-	262	-	-
Stage 1	92	141	-	50	87	-	-	-	-	-	-	-
Stage 2	224	86	-	308	139	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 6	~ 2	302	~ 4	~ 2	229	365	-	-	262	-	-
Mov Cap-2 Maneuver	52	37	-	34	38	-	-	-	-	-	-	-
Stage 1	82	131	-	44	77	-	-	-	-	-	-	-
Stage 2	176	76	-	259	129	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	96.2	129.9	0.3	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	365	-	75	54	262	-	-	
HCM Lane V/C Ratio	0.112	-	0.519	0.526	0.072	-	-	
HCM Control Delay (s)	16.1	-	96.2	129.9	19.8	-	-	
HCM Lane LOS	C	-	F	F	C	-	-	
HCM 95th %tile Q(veh)	0.4	-	2.2	2	0.2	-	-	

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↕			↑↕	
Traffic Vol, veh/h	22	5	23	17	5	17	39	1921	29	24	1565	32
Future Vol, veh/h	22	5	23	17	5	17	39	1921	29	24	1565	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	23	5	24	18	5	18	41	2022	31	25	1647	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2811	3850	841	2996	3851	1026	1681	0	0	2053	0	0
Stage 1	1715	1715	-	2119	2119	-	-	-	-	-	-	-
Stage 2	1096	2135	-	877	1732	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.58	6.98	7.58	6.58	6.98	4.18	-	-	4.18	-	-
Critical Hdwy Stg 1	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4.04	3.34	3.54	4.04	3.34	2.24	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 8	~ 3	304	~ 6	~ 3	229	368	-	-	262	-	-
Stage 1	92	141	-	50	87	-	-	-	-	-	-	-
Stage 2	224	86	-	306	138	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 6	~ 2	304	~ 4	~ 2	229	368	-	-	262	-	-
Mov Cap-2 Maneuver	50	34	-	34	38	-	-	-	-	-	-	-
Stage 1	82	128	-	44	77	-	-	-	-	-	-	-
Stage 2	171	76	-	244	125	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	126.1	172.3	0.3	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	368	-	-	75	55	262	-	-
HCM Lane V/C Ratio	0.112	-	-	0.702	0.746	0.096	-	-
HCM Control Delay (s)	16	-	-	126.1	172.3	20.2	-	-
HCM Lane LOS	C	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.3	3.1	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↑↕			↑↕	
Traffic Vol, veh/h	10	5	10	7	5	7	18	1949	13	11	1593	14
Future Vol, veh/h	10	5	10	7	5	7	18	1949	13	11	1593	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	235	-	-	235	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	11	5	11	7	5	7	19	2052	14	12	1677	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2773	3810	846	2960	3811	1033	1692	0	0	2065	0	0
Stage 1	1707	1707	-	2096	2096	-	-	-	-	-	-	-
Stage 2	1066	2103	-	864	1715	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.58	6.98	7.58	6.58	6.98	4.18	-	-	4.18	-	-
Critical Hdwy Stg 1	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.58	-	6.58	5.58	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4.04	3.34	3.54	4.04	3.34	2.24	-	-	2.24	-	-
Pot Cap-1 Maneuver	~ 9	~ 4	302	~ 6	~ 4	226	364	-	-	260	-	-
Stage 1	93	142	-	52	90	-	-	-	-	-	-	-
Stage 2	234	89	-	311	141	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	~ 4	302	~ 5	~ 4	226	364	-	-	260	-	-
Mov Cap-2 Maneuver	58	45	-	39	46	-	-	-	-	-	-	-
Stage 1	88	135	-	49	85	-	-	-	-	-	-	-
Stage 2	201	84	-	275	134	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.8	92.5	0.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	364	-	-	79	60	260	-	-
HCM Lane V/C Ratio	0.052	-	-	0.333	0.333	0.045	-	-
HCM Control Delay (s)	15.4	-	-	71.8	92.5	19.5	-	-
HCM Lane LOS	C	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-	1.3	1.2	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3179	3193	3233	3206
Vehs Exited	3143	3183	3150	3158
Starting Vehs	202	220	204	207
Ending Vehs	238	230	287	250
Travel Distance (mi)	5860	5925	5929	5905
Travel Time (hr)	210.9	245.0	231.3	229.1
Total Delay (hr)	69.3	101.8	88.0	86.4
Total Stops	3305	4228	4009	3851
Fuel Used (gal)	175.5	185.1	181.0	180.5

Interval #0 Information Seeding

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	3179	3193	3233	3206
Vehs Exited	3143	3183	3150	3158
Starting Vehs	202	220	204	207
Ending Vehs	238	230	287	250
Travel Distance (mi)	5860	5925	5929	5905
Travel Time (hr)	210.9	245.0	231.3	229.1
Total Delay (hr)	69.3	101.8	88.0	86.4
Total Stops	3305	4228	4009	3851
Fuel Used (gal)	175.5	185.1	181.0	180.5

1: Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.8	0.9	0.4
Total Delay (hr)	1.6	0.2	0.6	0.5	1.9	0.2	5.0
Total Del/Veh (s)	86.6	9.8	20.3	2.7	9.1	6.3	9.9

2: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.4	0.1	0.0
Total Delay (hr)	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.7	0.0	0.2	1.5	0.0
Total Del/Veh (s)	17.7	30.5	23.8	43.8	33.9	21.2	8.7	3.4	1.7	11.2	7.0	9.0

2: Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	3.1
Total Del/Veh (s)	6.4

3: Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.2	0.0	0.1
Total Delay (hr)	0.9	1.1	0.1	0.3	8.1	0.4	10.7
Total Del/Veh (s)	120.1	150.6	7.7	1.2	37.3	33.4	22.8

4: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.8	0.0
Denied Del/Veh (s)	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	47.5	8.4	0.0
Total Delay (hr)	0.3	0.3	0.5	0.6	0.7	0.4	0.0	0.8	0.0	0.1	12.1	0.1
Total Del/Veh (s)	251.6	121.9	272.6	362.5	206.6	280.2	12.0	3.3	3.1	51.0	56.0	35.9

4: Performance by movement

Movement	All
Denied Delay (hr)	1.9
Denied Del/Veh (s)	4.1
Total Delay (hr)	15.9
Total Del/Veh (s)	34.1

5: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	3.5	1.4	3.5	4.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	3.1	0.6	2.4	0.6	0.8	0.1	4.9	2.6	0.1	0.1	18.0	2.0
Total Del/Veh (s)	110.3	46.0	23.0	78.0	54.1	32.8	38.0	12.2	9.0	74.0	95.0	66.3

5: Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.7
Total Delay (hr)	35.2
Total Del/Veh (s)	47.5

6: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.2	0.0	0.1	0.2	0.0	0.0	1.4	0.0	0.0	1.5	0.0
Total Del/Veh (s)	89.2	66.6	18.4	120.5	73.6	35.9	12.3	4.0	2.9	18.8	5.3	5.0

6: Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	3.7
Total Del/Veh (s)	5.7

7: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.1	0.0	0.2	0.1	0.0	0.0	1.4	0.0	0.0	0.9	0.0
Total Del/Veh (s)	54.8	50.6	21.4	118.2	39.8	23.2	9.5	4.1	3.2	12.7	3.2	1.7

7: Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	2.8
Total Del/Veh (s)	4.4

8: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.8	0.0	0.0	1.1	0.0
Total Del/Veh (s)	70.3	44.6	3.8	76.5	47.8	22.9	7.2	2.4	1.2	17.1	3.9	2.6

8: Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	2.4
Total Del/Veh (s)	3.7

9: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	2.6	1.9	2.2	0.0	0.0	0.0
Total Delay (hr)	0.1	0.1	0.0	0.2	0.1	0.0	0.0	0.6	0.0	0.0	0.8	0.0
Total Del/Veh (s)	85.4	98.8	13.8	233.8	82.1	23.1	6.5	1.8	1.0	17.4	2.7	2.1

9: Performance by movement

Movement	All
Denied Delay (hr)	0.7
Denied Del/Veh (s)	1.1
Total Delay (hr)	2.0
Total Del/Veh (s)	3.1

Total Network Performance

Denied Delay (hr)	3.4
Denied Del/Veh (s)	3.8
Total Delay (hr)	83.0
Total Del/Veh (s)	87.7

Intersection: 1:

Movement	EB	EB	NB	SB
Directions Served	L	R	L	TR
Maximum Queue (ft)	204	91	180	109
Average Queue (ft)	82	39	58	5
95th Queue (ft)	178	72	120	52
Link Distance (ft)	631	631		4438
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			235	
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Intersection: 2:

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	54	125	35	9	133	427
Average Queue (ft)	18	53	4	0	33	42
95th Queue (ft)	49	102	21	5	109	297
Link Distance (ft)	559	533		1044		1051
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)			235		235	
Storage Blk Time (%)					0	2
Queuing Penalty (veh)					0	1

Intersection: 3:

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	192	64	1032
Average Queue (ft)	88	20	351
95th Queue (ft)	196	53	969
Link Distance (ft)	505		1044
Upstream Blk Time (%)			1
Queuing Penalty (veh)			10
Storage Bay Dist (ft)		235	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4:

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	127	182	34	18	111	658
Average Queue (ft)	46	63	3	1	5	481
95th Queue (ft)	127	210	19	7	52	898
Link Distance (ft)	889	803		816		643
Upstream Blk Time (%)						13
Queuing Penalty (veh)						101
Storage Bay Dist (ft)			235		235	
Storage Blk Time (%)					0	41
Queuing Penalty (veh)					0	2

Intersection: 5:

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	TR	L	T	R
Maximum Queue (ft)	250	244	366	123	161	432	326	115	831	320
Average Queue (ft)	137	53	184	36	64	263	160	9	785	175
95th Queue (ft)	241	148	304	89	119	403	292	57	953	405
Link Distance (ft)		886			648		1829		816	
Upstream Blk Time (%)									25	
Queuing Penalty (veh)									204	
Storage Bay Dist (ft)	235		375	235		835		235		295
Storage Blk Time (%)	3		0						53	0
Queuing Penalty (veh)	14		0						66	2

Intersection: 6:

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	69	88	32	40
Average Queue (ft)	22	25	3	5
95th Queue (ft)	56	72	18	23
Link Distance (ft)	571	437		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			235	235
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7:

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	60	80	22	43
Average Queue (ft)	16	23	3	2
95th Queue (ft)	49	65	18	18
Link Distance (ft)	488	544		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			235	235
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8:

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	72	60	34	31
Average Queue (ft)	16	21	4	4
95th Queue (ft)	52	52	20	20
Link Distance (ft)	583	502		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			235	235
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9:

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	72	61	32	35
Average Queue (ft)	22	17	2	4
95th Queue (ft)	60	52	15	20
Link Distance (ft)	592	651		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			235	235
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 400

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	4:45	4:45	4:45	4:45
End Time	6:00	6:00	6:00	6:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5780	5771	5830	5792
Vehs Exited	5624	5628	5739	5665
Starting Vehs	361	408	427	397
Ending Vehs	517	551	518	526
Travel Distance (mi)	10252	10495	10309	10352
Travel Time (hr)	462.7	648.3	475.1	528.7
Total Delay (hr)	214.5	394.9	225.5	278.3
Total Stops	8954	10706	10079	9913
Fuel Used (gal)	365.6	414.8	369.5	383.3

Interval #0 Information Seeding

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5780	5771	5830	5792
Vehs Exited	5624	5628	5739	5665
Starting Vehs	361	408	427	397
Ending Vehs	517	551	518	526
Travel Distance (mi)	10252	10495	10309	10352
Travel Time (hr)	462.7	648.3	475.1	528.7
Total Delay (hr)	214.5	394.9	225.5	278.3
Total Stops	8954	10706	10079	9913
Fuel Used (gal)	365.6	414.8	369.5	383.3

1: Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.1	0.0	0.3
Denied Del/Veh (s)	3.8	0.5	0.1	0.0	0.3	0.4	0.3
Total Delay (hr)	1.4	0.5	1.9	3.6	16.9	2.1	26.4
Total Del/Veh (s)	39.9	16.0	40.4	8.9	38.9	39.6	26.2

2: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.2	3.8	0.1	0.6	11.0	0.4	0.7	0.1	0.0	0.0
Total Delay (hr)	0.1	0.0	0.1	1.0	0.0	0.6	0.1	13.6	1.4	1.0	7.0	0.0
Total Del/Veh (s)	43.2	31.0	12.7	39.2	43.8	18.6	30.5	32.9	34.1	28.0	16.5	12.1

2: Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.4
Total Delay (hr)	24.9
Total Del/Veh (s)	25.4

3: Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.7	1.1	0.0	0.0	0.0	0.0	1.8
Denied Del/Veh (s)	56.7	87.9	0.0	0.0	0.0	0.0	1.9
Total Delay (hr)	3.7	3.5	0.7	1.0	2.5	0.1	11.5
Total Del/Veh (s)	351.5	290.1	38.5	2.3	5.7	5.6	12.3

4: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.8	2.6	3.5	1.3	1.3	0.8	0.2	2.4	0.0	0.1	3.0	0.0
Total Del/Veh (s)	595.1	540.8	567.6	347.4	328.1	245.9	32.1	5.2	4.0	20.5	6.7	6.7

4: Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.0
Total Delay (hr)	17.9
Total Del/Veh (s)	19.0

5: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	14.7	5.1	26.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	300.2	218.8	275.4	3.9	0.4	0.4	0.2	0.0	0.1	0.0	0.0	0.0
Total Delay (hr)	12.5	2.7	4.8	1.0	1.0	0.3	4.6	13.7	0.6	0.8	21.5	1.4
Total Del/Veh (s)	300.7	129.9	58.5	55.2	48.8	30.9	35.2	32.4	29.5	57.0	55.2	25.0

5: Performance by movement

Movement	All
Denied Delay (hr)	46.5
Denied Del/Veh (s)	37.6
Total Delay (hr)	64.9
Total Del/Veh (s)	52.9

6: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	4.1	0.3	0.2	4.2	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.6	0.2	0.2	0.4	0.2	0.2	0.4	8.1	0.2	0.4	7.6	0.3
Total Del/Veh (s)	44.1	36.4	14.5	39.6	40.7	22.5	26.6	15.4	11.3	34.7	17.1	17.9

6: Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	18.7
Total Del/Veh (s)	17.3

7: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	2.3	0.1	0.1	12.5	0.2	2.2	0.2	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	3.8	1.4	3.7	2.5	1.4	2.5	0.2	2.1	0.0	0.2	2.0	0.0
Total Del/Veh (s)	858.6	842.7	705.4	639.6	857.7	702.4	16.9	3.9	4.0	35.1	4.8	5.4

7: Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	19.9
Total Del/Veh (s)	19.8

8: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.7	0.2	0.7	0.8	0.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	139.3	128.5	108.9	165.0	141.5	107.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	4.9	1.1	6.5	5.5	1.2	5.0	0.2	1.4	0.0	0.2	1.2	0.0
Total Del/Veh (s)	984.2	1002.0	1014.8	1312.4	895.0	1049.0	15.7	2.5	1.6	27.4	2.9	2.9

8: Performance by movement

Movement	All
Denied Delay (hr)	3.0
Denied Del/Veh (s)	3.0
Total Delay (hr)	27.1
Total Del/Veh (s)	26.8

9: Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.1	0.2	2.2	0.5	0.4	0.0	0.0	0.0
Total Delay (hr)	3.1	0.9	2.8	0.9	0.5	1.0	0.1	0.7	0.0	0.1	0.7	0.0
Total Del/Veh (s)	1013.6	622.3	1006.9	535.1	640.1	443.8	14.5	1.3	0.4	24.9	1.6	1.6

9: Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.3
Total Delay (hr)	10.7
Total Del/Veh (s)	10.8

Total Network Performance

Denied Delay (hr)	52.4
Denied Del/Veh (s)	31.9
Total Delay (hr)	225.9
Total Del/Veh (s)	131.3

Intersection: 1:

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	208	140	261	206	195	799	815
Average Queue (ft)	106	61	126	88	107	401	437
95th Queue (ft)	181	114	222	176	185	757	784
Link Distance (ft)		618		1046	1046	4436	4436
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	305		310				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2:

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	63	207	159	185	854	882	309	379	419
Average Queue (ft)	27	80	66	19	408	426	88	202	240
95th Queue (ft)	59	148	122	98	730	749	199	376	402
Link Distance (ft)	547		521		1038	1038		1046	1046
Upstream Blk Time (%)						0			
Queuing Penalty (veh)						0			
Storage Bay Dist (ft)		305		235			285		
Storage Blk Time (%)				0	19		0	2	
Queuing Penalty (veh)				0	2		0	3	

Intersection: 3:

Movement	EB	NB	NB	NB	SB
Directions Served	LR	L	T	T	TR
Maximum Queue (ft)	521	145	214	248	19
Average Queue (ft)	238	54	14	15	2
95th Queue (ft)	502	130	171	173	13
Link Distance (ft)	493		643	643	1038
Upstream Blk Time (%)	16		0	0	
Queuing Penalty (veh)	0		0	1	
Storage Bay Dist (ft)		235			
Storage Blk Time (%)		2			
Queuing Penalty (veh)		17			

Intersection: 4:

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	536	306	73	23	62	120	382	408
Average Queue (ft)	277	117	19	1	3	17	45	51
95th Queue (ft)	549	269	56	12	33	68	237	257
Link Distance (ft)	877	791		813	813		643	643
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			235			235		
Storage Blk Time (%)						0	2	
Queuing Penalty (veh)						0	0	

Intersection: 5:

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	TR	L	T	T
Maximum Queue (ft)	310	903	585	152	203	208	459	691	710	259	824	824
Average Queue (ft)	256	500	318	65	97	111	183	338	364	73	524	539
95th Queue (ft)	388	1114	682	131	172	178	394	573	597	205	823	837
Link Distance (ft)		870			630			1821	1821		813	813
Upstream Blk Time (%)		34									3	3
Queuing Penalty (veh)		0									26	25
Storage Bay Dist (ft)	285		560	260		435	435			235		
Storage Blk Time (%)	57	0	1				0	3		0	40	23
Queuing Penalty (veh)	250	1	2				0	12		0	21	49

Intersection: 5:

Movement	SB
Directions Served	R
Maximum Queue (ft)	435
Average Queue (ft)	246
95th Queue (ft)	540
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	410
Storage Blk Time (%)	0
Queuing Penalty (veh)	3

Intersection: 6:

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	122	97	92	97	259	484	462	200	366	386
Average Queue (ft)	44	39	35	39	49	211	210	38	210	235
95th Queue (ft)	103	82	75	80	133	400	399	116	346	356
Link Distance (ft)		552		419		1542	1542		1821	1821
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	220		195		235			235		
Storage Blk Time (%)					0	5		0	4	
Queuing Penalty (veh)					0	3		0	2	

Intersection: 7:

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	L	TR
Maximum Queue (ft)	452	345	69	8	73	13
Average Queue (ft)	282	194	22	0	17	0
95th Queue (ft)	475	448	54	4	48	7
Link Distance (ft)	476	532		1719		1542
Upstream Blk Time (%)	1	7				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)			235		235	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 8:

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	TR
Maximum Queue (ft)	563	489	79	9	22	78	16
Average Queue (ft)	350	328	26	0	1	20	1
95th Queue (ft)	639	611	60	5	12	55	9
Link Distance (ft)	571	490		1051	1051		1719
Upstream Blk Time (%)	21	37					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (ft)			235			235	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 9:

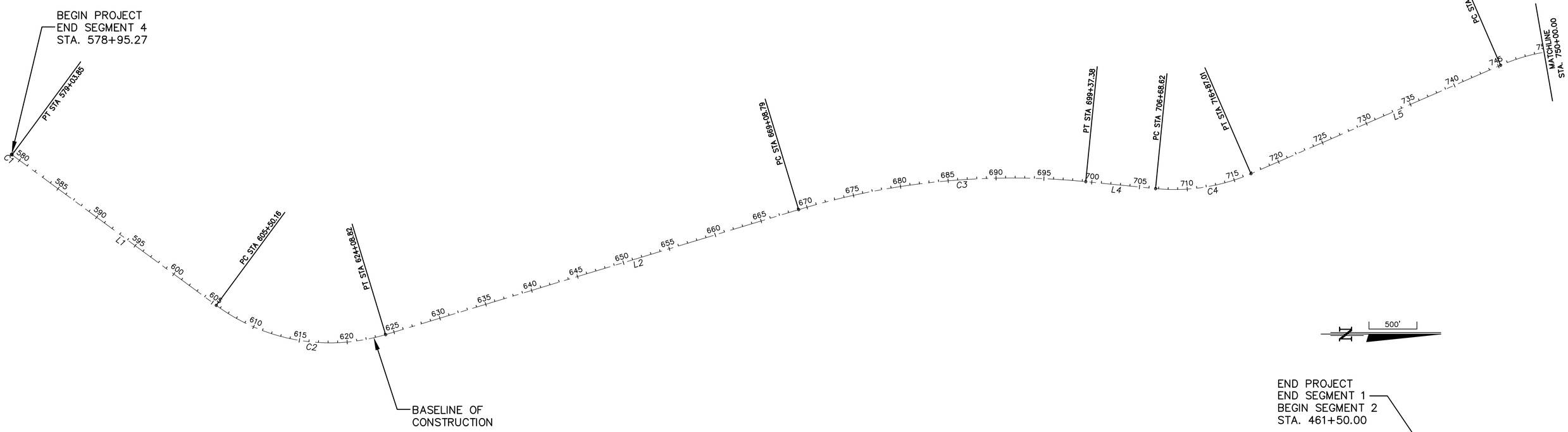
Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	344	184	51	62
Average Queue (ft)	196	76	12	15
95th Queue (ft)	426	206	39	46
Link Distance (ft)	580	638		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			235	235
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 418

Appendix N

Baseline Geometry



CURVE TABLE						
	NUMBER	RADIUS	DELTA	LENGTH	CHORD	CHORD BEARING
3.5% SUPERELEVATION	C1	5000.00'	0°05'54"	8.58'	8.58'	S36°27'24"W
8% SUPERELEVATION	C2	2000.00'	53°14'47"	1858.65'	1792.49'	S09°47'04"W
3% SUPERELEVATION	C3	7700.00'	22°32'09"	3028.59'	3009.11'	S05°34'15"E
8% SUPERELEVATION	C4	2000.00'	29°10'29"	1018.39'	1007.42'	S08°53'25"E
8% SUPERELEVATION	C5	2000.00'	51°07'10"	1784.41'	1725.81'	S02°04'55"W
NORMAL CROWN	C6	3475.00'	63°18'20"	3839.50'	3647.15'	S04°00'40"E
NORMAL CROWN	C7	2200.00'	35°39'50"	1369.39'	1347.39'	S17°49'55"E
NORMAL CROWN	C8	2600.00'	65°48'59"	2986.65'	2825.13'	S32°54'30"E

LINE TABLE						
NUMBER	BEARING	DISTANCE	START POINT NORTHING	START POINT EASTING	END POINT NORTHING	END POINT EASTING
L1	S36°24'27"W	2646.32'	1461574.17	607694.27	1459444.38	606123.61
L2	S16°50'20"E	4499.98'	1467647.62	606695.33	1463340.59	607998.88
L4	S05°41'49"W	731.24'	1471370.14	606475.80	1470642.51	606403.21
L5	S23°28'40"E	2838.05'	1474968.56	605189.45	1472365.46	606320.11
L6	S27°38'30"W	1794.29'	1478282.73	606084.60	1476693.23	605252.15
L7	S35°39'50"E	409.64'	1482253.76	605590.65	1481920.95	605829.48
L8	S00°00'00"E	3058.47'	1486594.90	605178.05	1483536.42	605178.05
L9	S65°48'59"E	1625.64'	1489632.68	602160.20	1488966.71	603643.17

L3 – NOT USED

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
SEGMENTS 2, 3, & 4
ORANGE COUNTY, FLORIDA

BASELINE GEOMETRY

Appendix O

Recommended Improvement Concept Map

KEY MAP

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS ENGINEERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	1"=1200'	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING KEYMAP.dwg

SHEET 1

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
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XREF FILE NAME:

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PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

LIMITS OF PRELIMINARY DESIGN STUDY
STA 578+95.27

PT STA 579+03.85

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

OC-CAD

EXISTING ORANGE COUNTY CAD WETLAND LINE

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

0 25 50 75 100
FEET

MATCHLINE SHEET 3

PROPOSED 160' RIGHT-OF-WAY

14' ASPHALT TRAIL

7'
12'
12'
40'
12'
12'
7'

579 580 581 582 583 584 585 586 587 588 589 590 591

SUNBRIDGE PARKWAY

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

37.5' SLOPE/FILL TEMP CONST ESMT

SPEED LIMIT 55
R2-1

NORTHEAST DISTRICT

OSCEOLA COUNTY
ORANGE COUNTY

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

EXISTING PARCEL LINE

EXISTING ORANGE COUNTY CAD WETLAND LINE

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CWG	JTT	JTT	1/26/18	15152

SCALE: AS SHOWN

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PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

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SHEET: 2

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:
SHEET 1

MATCHLINE SHEET 2

MATCHLINE SHEET 4

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OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

0 25 50 75 100
FEET

EXISTING ORANGE COUNTY CAD WETLAND LINE

TEMPORARY CONSTRUCTION EASEMENT FOR DRIVEWAY RE-ALIGNMENT

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

14' ASPHALT TRAIL

WILDLIFE CROSSING (DRY)

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

PROPOSED 160' RIGHT-OF-WAY

7'
12'
12'
40'
12'
12'
7'

591 592 593 594 595 596 597 598 599 600 601 602 603 604

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

STORM CULVERT & WILDLIFE CROSSING (WET)

TEMPORARY CONSTRUCTION EASEMENT FOR DRIVEWAY RE-ALIGNMENT

COMPENSATION STORAGE AREA N-239

PARCEL ID: 30-24-32-0000-00-001
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OC-CAD

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JOB NUMBER 15152
SCALE AS SHOWN
DATE 1/26/18
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DESIGNED BY JTT
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SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

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SHEET 3

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152_EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 3

MATCHLINE SHEET 5

PROPOSED 160' RIGHT-OF-WAY

PC STA 605+50.16

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

EXISTING ORANGE COUNTY CAD WETLAND LINE

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

14' ASPHALT TRAIL

0 25 50 75 100
FEET

603 604 605 606 607 608 609 610 611 612 613 614 615 616

7' 12' 12' 40' 12' 12' 7'

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

WILDLIFE CROSSING (DRY)

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

PARCEL ID: 30-24-32-0000-00-001
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		REVISIONS	

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2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

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CWG	JTT	JTT	1/26/18

JOB NUMBER	SCALE
15152	AS SHOWN

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 4

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
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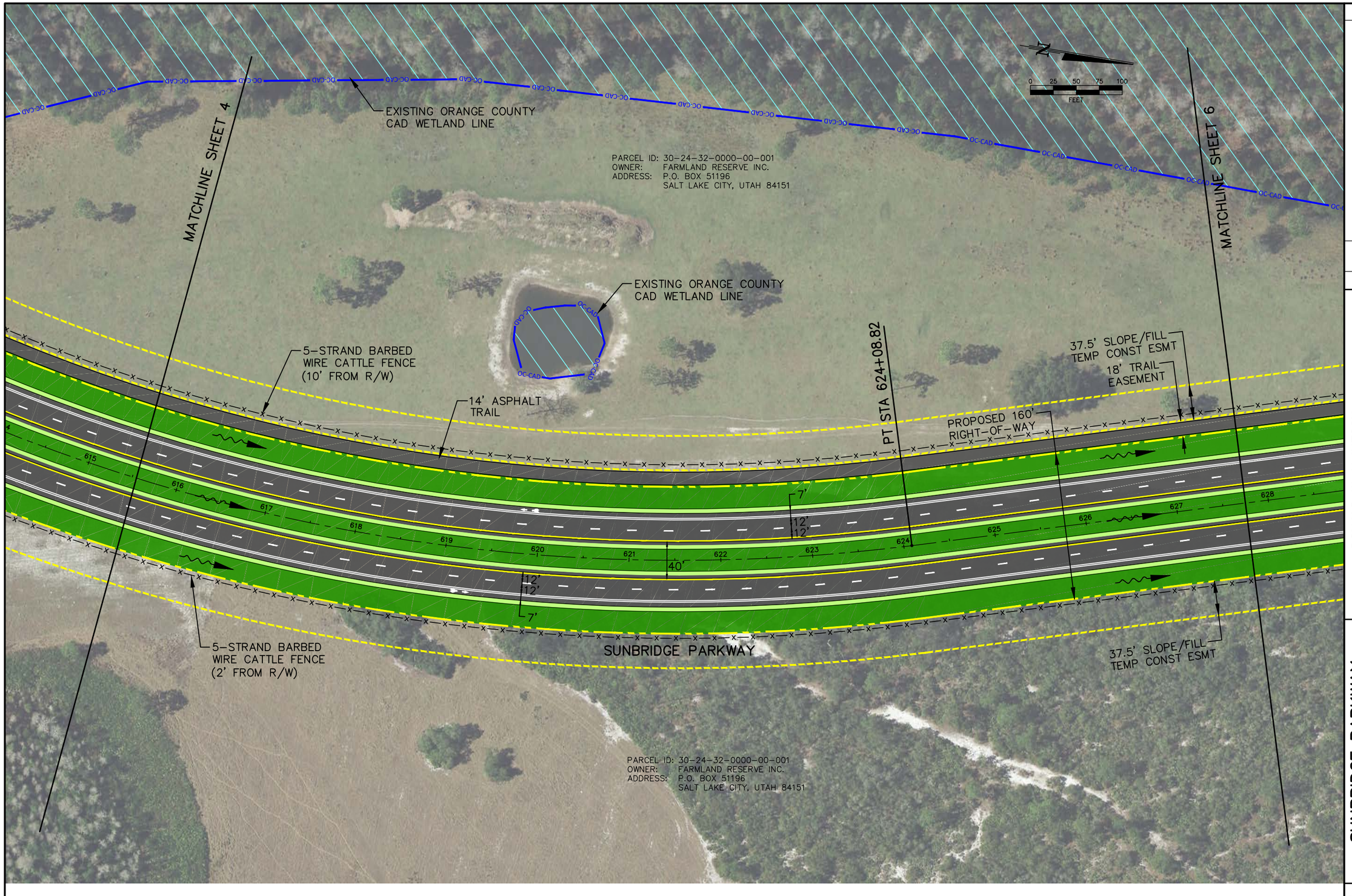

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

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		REVISIONS	

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2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY
CWG	JTT	JTT

DATE	SCALE	JOB NUMBER
1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 5

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 5

MATCHLINE SHEET 7

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

N

0 25 50 75 100
FEET

OC-CAD

EXISTING ORANGE COUNTY CAD WETLAND LINE

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

PROPOSED 160' RIGHT-OF-WAY

14' ASPHALT TRAIL

7'
12'
12'
40'
12'
12'
7'

627 628 629 630 631 632 633 634 635 636 637 638 639 640

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

McINTOSH ASSOCIATES, INC.
PLANNERS SURVEYORS
DONALD W. McINTOSH
ENGINEERS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

JOB NUMBER 15152
SCALE AS SHOWN
DATE 1/26/18
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DESIGNED BY JTT
DRAWN BY CWG

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 6

MATCHLINE SHEET 6

MATCHLINE SHEET 8

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

N

0 25 50 75 100
FEET

OC-CAD

EXISTING ORANGE COUNTY CAD WETLAND LINE

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

PROPOSED 160' RIGHT-OF-WAY

STORM CULVERT

14' ASPHALT TRAIL

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

7'
12'
12'
40'
12'
12'
7'

639 640 641 642 643 644 645 646 647 648 649 650 651 652

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS ENGINEERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY: CWG
DESIGNED BY: JTT
CHECKED BY: JTT
DATE: 1/26/18
SCALE: AS SHOWN
JOB NUMBER: 15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING: IMPROVEMENTS.dwg
SHEET: 7

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 7

MATCHLINE SHEET 9

N

0 25 50 75 100
FEET

OC-CAD

EXISTING ORANGE COUNTY CAD WETLAND LINE

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

COMPENSATION STORAGE AREA N-185

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

PROPOSED 160' RIGHT-OF-WAY

STORM CULVERT

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

14' ASPHALT TRAIL

7'
12'
12'
40'
12'
12'
7'

651 652 653 654 655 656 657 658 659 660 661 662 663 664

SUNBRIDGE PARKWAY

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

37.5' SLOPE/FILL TEMP CONST ESMT

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY CWG
DESIGNED BY JTT
CHECKED BY JTT
DATE 1/26/18
SCALE AS SHOWN
JOB NUMBER 15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg
SHEET 8

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 8

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

EXISTING ORANGE COUNTY CAD WETLAND LINE

MATCHLINE SHEET 10

0 25 50 75 100
FEET

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

PROPOSED 160' RIGHT-OF-WAY

PC STA 669+08.79

14' ASPHALT TRAIL

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

7'
12'
12'
40'
12'
12'
7'

663 664 665 666 667 668 669 670 671 672 673 674 675 676

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

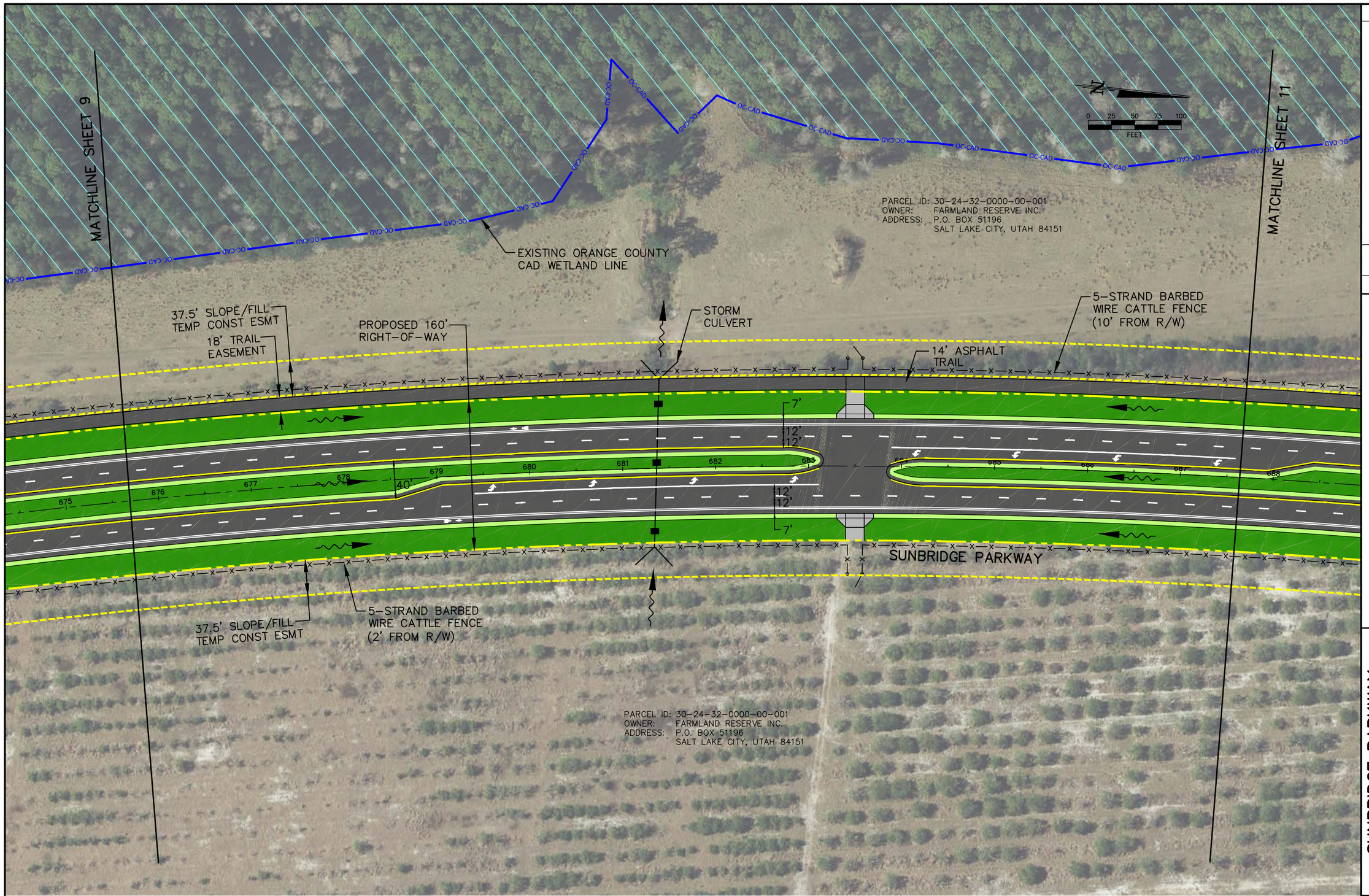
DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY CWG | DESIGNED BY JTT | CHECKED BY JTT | DATE 1/26/18 | SCALE AS SHOWN | JOB NUMBER 15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 9



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

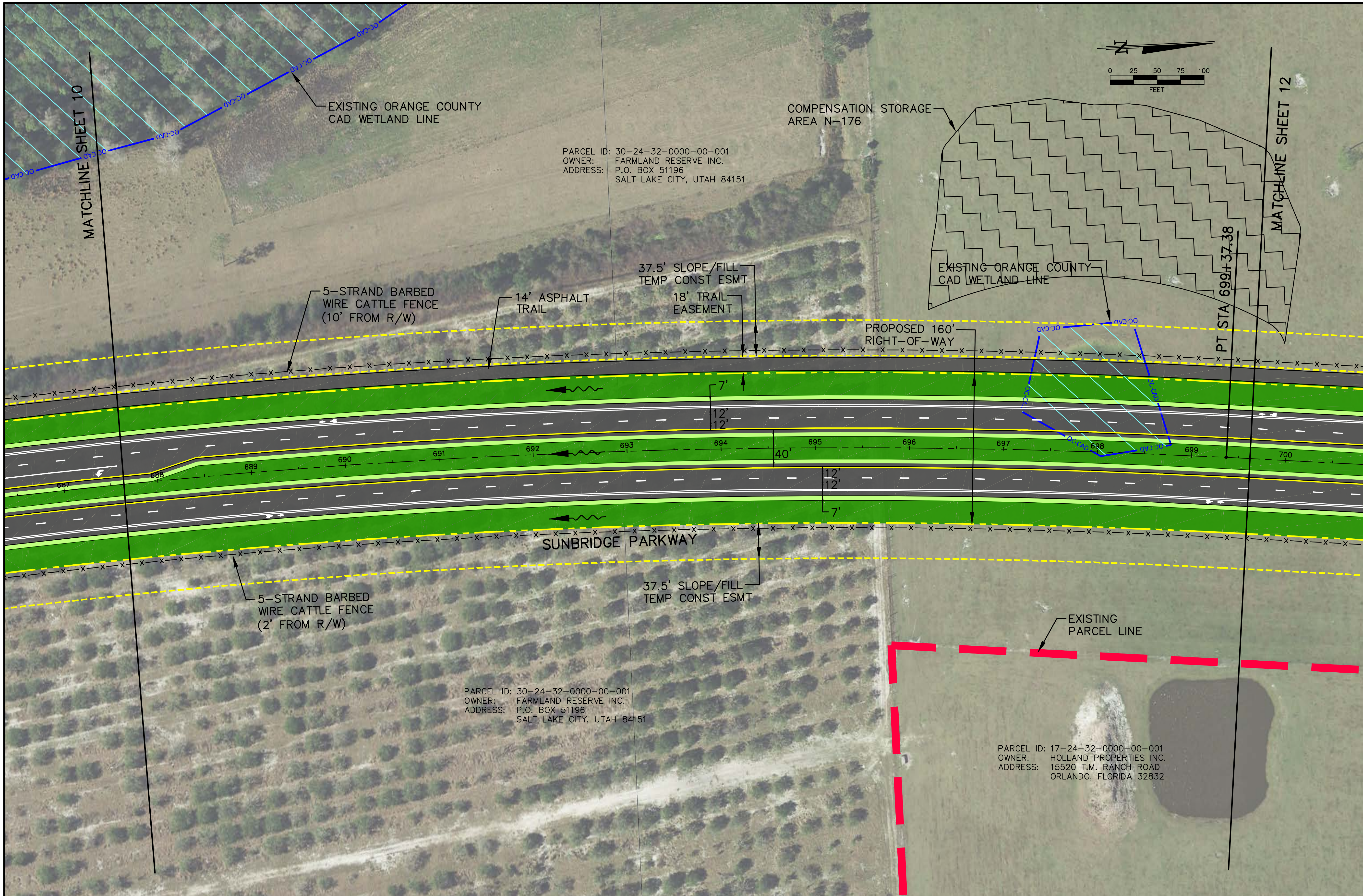
DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 10

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

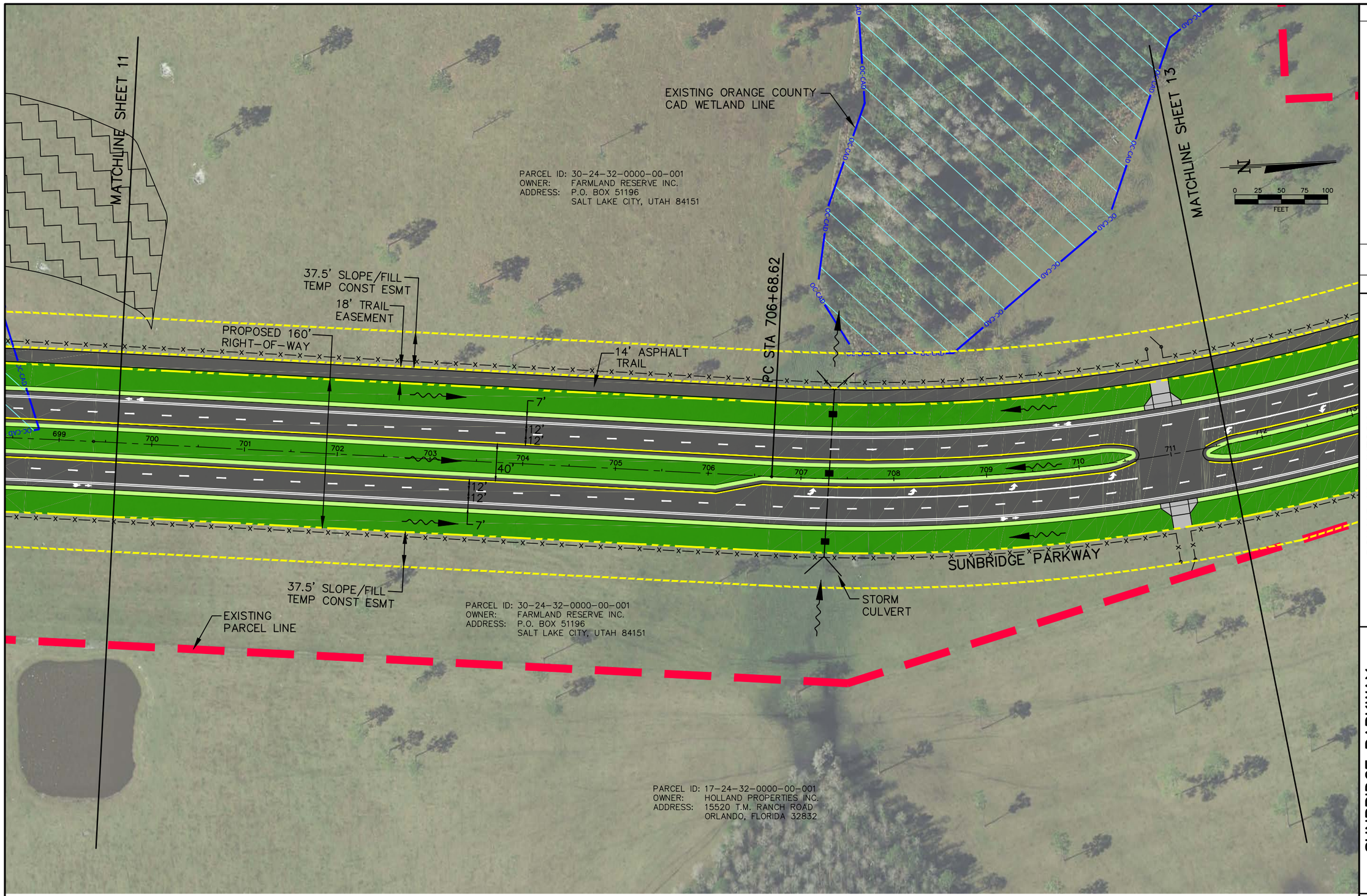
SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA

RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 11

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:
SHEET 1



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS ENGINEERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	JOB NUMBER
CWG	JTT	JTT	15152
DATE	SCALE		
1/26/18	AS SHOWN		

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg
SHEET 12

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

CITY OF COCOA
WELL SITE

PARCEL ID: 19-24-32-0000-00-003
OWNER: CITY OF COCOA
ADDRESS: 65 STONE STREET
COCOA, FLORIDA 32922

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

MATCHLINE SHEET 12

MATCHLINE SHEET 14

0 25 50 75 100
FEET

411'±

PT STA 716+87.01

5-STRAND BARBED
WIRE CATTLE FENCE
(10' FROM R/W)

14' ASPHALT
TRAIL

37.5' SLOPE/FILL
TEMP CONST ESMT

18' TRAIL
EASEMENT

PROPOSED 160'
RIGHT-OF-WAY

7'
12'
12'
40'
12'
12'
7'

711 712 713 714 715 716 717 718 719 720 721 722 723 724

SUNBRIDGE PARKWAY

5-STRAND BARBED
WIRE CATTLE FENCE
(2' FROM R/W)

37.5' SLOPE/FILL
TEMP CONST ESMT

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

EXISTING
PARCEL LINE

PARCEL ID: 17-24-32-0000-00-001
OWNER: HOLLAND PROPERTIES INC.
ADDRESS: 15520 T.M. RANCH ROAD
ORLANDO, FLORIDA 32832

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS SURVEYORS
ENGINEERS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

JOB NUMBER	SCALE
15152	AS SHOWN

DRAWN BY	DESIGNED BY	CHECKED BY	DATE
CWG	JTT	JTT	1/26/18

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 13

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 13

MATCHLINE SHEET 15

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

PROPOSED 160' RIGHT-OF-WAY

5-STRAND BARBED WIRE CATTLE FENCE (10' FROM R/W)

14' ASPHALT TRAIL

OC-CAD

EXISTING ORANGE COUNTY CAD WETLAND LINE

807'± TO WELL SITE

N

0 25 50 75 100
FEET

7'
12'
12'
40'
12'
12'
7'

723 724 725 726 727 728 729 730 731 732 733 734 735 736

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

5-STRAND BARBED WIRE CATTLE FENCE (2' FROM R/W)

STORM CULVERT

PARCEL ID: 30-24-32-0000-00-001
OWNER: FARMLAND RESERVE INC.
ADDRESS: P.O. BOX 51196
SALT LAKE CITY, UTAH 84151

EXISTING PARCEL LINE

PARCEL ID: 17-24-32-0000-00-001
OWNER: HOLLAND PROPERTIES INC.
ADDRESS: 15520 T.M. RANCH ROAD
ORLANDO, FLORIDA 32832

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

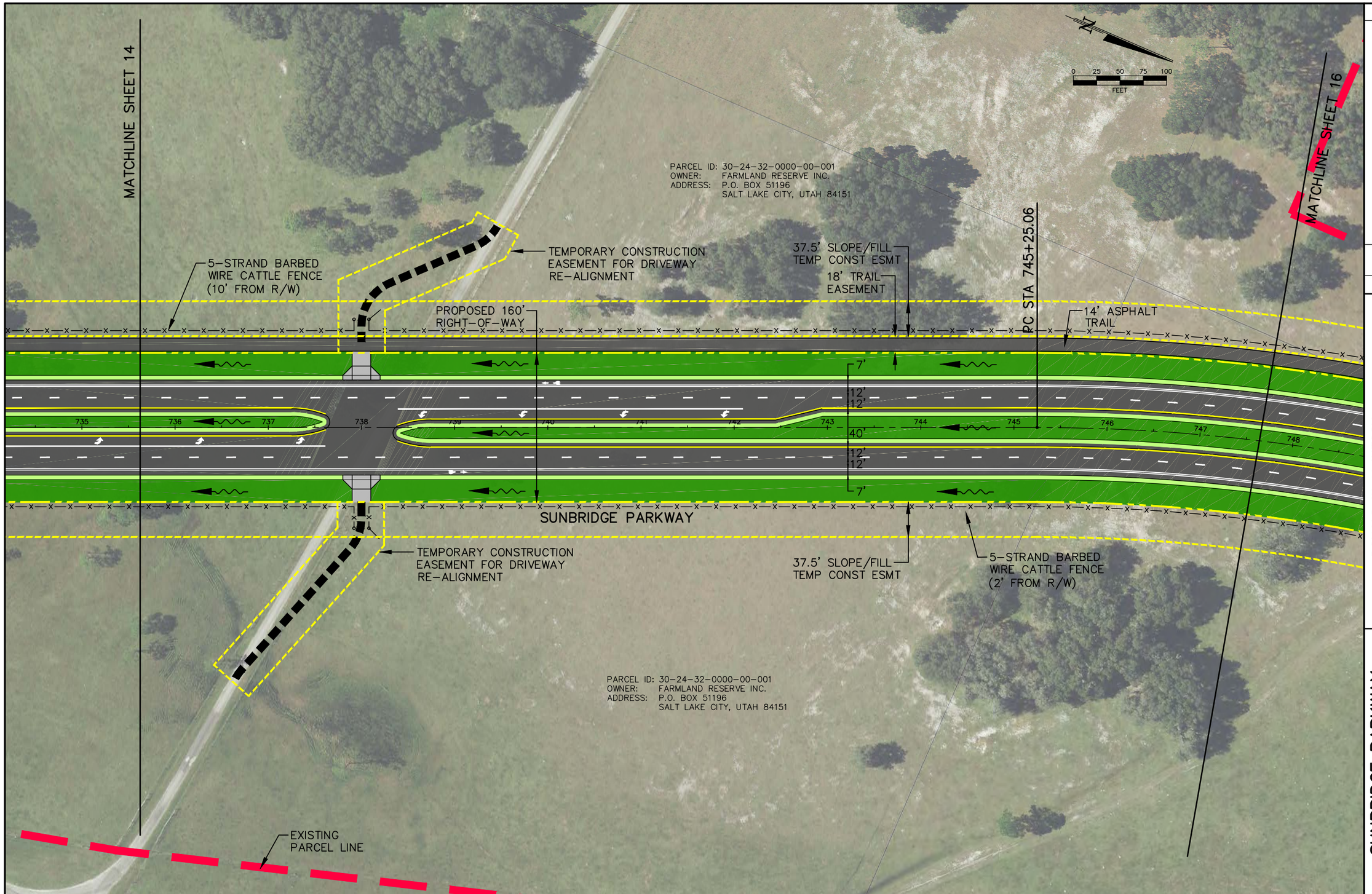
DONALD W.
ENGINEERS

JOB NUMBER 15152
SCALE AS SHOWN
DATE 1/26/18
CHECKED BY JTT
DESIGNED BY JTT
DRAWN BY CWG

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 14



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

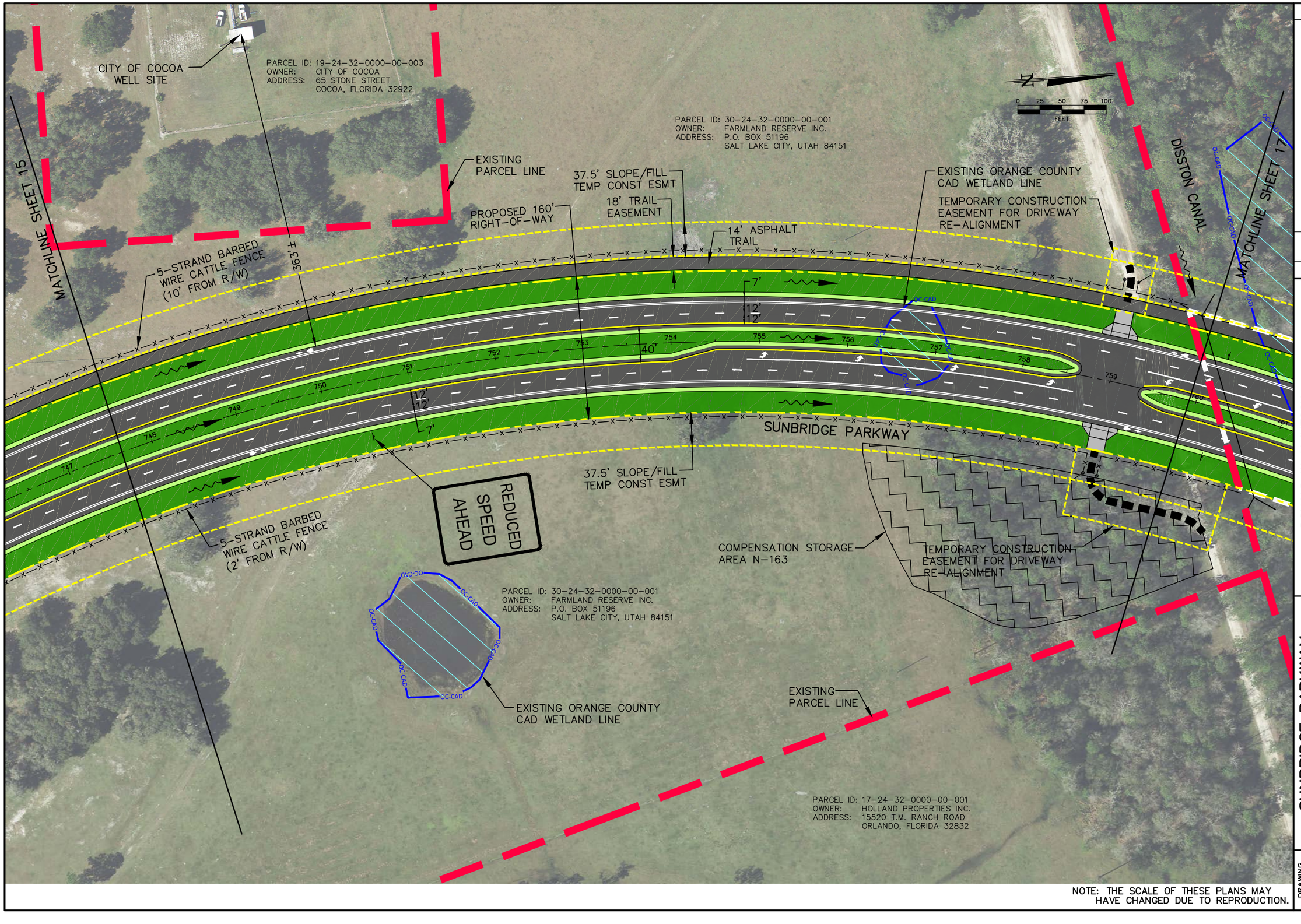
DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS SURVEYORS
ENGINEERS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg
SHEET 15

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS SURVEYORS
ENGINEERS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

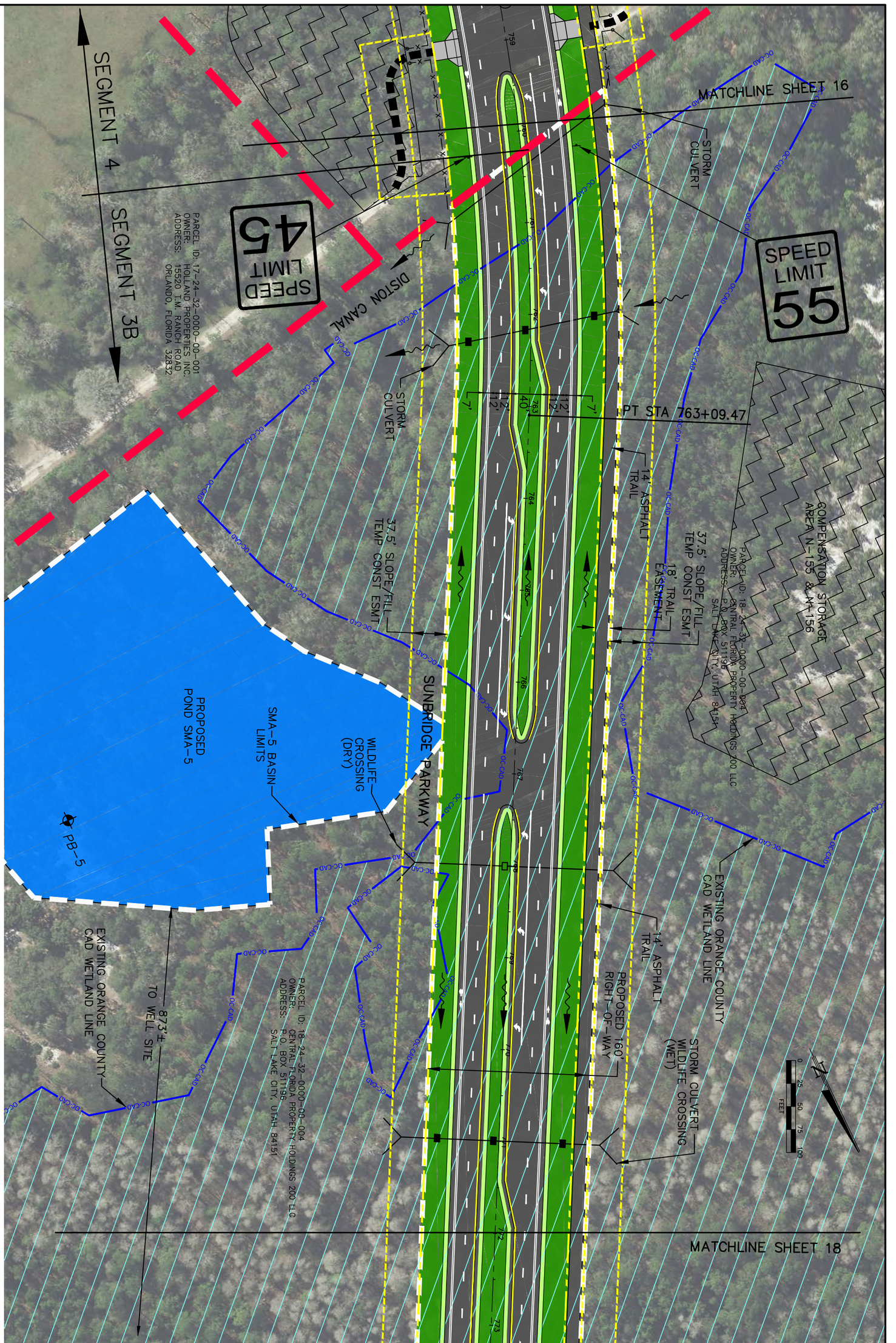
JOB NUMBER 15152
SCALE AS SHOWN
DATE 1/26/18
CHECKED BY JTT
DESIGNED BY JTT
DRAWN BY CWG

DONALD ENGINEERS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg
SHEET 16

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

DRAWING IMPROVEMENTS.dwg

SHEET 17

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

NO.	DATE	DESCRIPTION	CHK.

REVISIONS

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 17

MATCHLINE SHEET 19

SEGMENT 3B | SEGMENT 3A

PARCEL ID: 18-24-32-0000-00-004
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

0 25 50 75 100
FEET

EXISTING ORANGE COUNTY CAD WETLAND LINE

OC-CAD

37.5' SLOPE/FILL TEMP CONST ESMT

18' TRAIL EASEMENT

PROPOSED 160' RIGHT-OF-WAY

TEMPORARY CONSTRUCTION EASEMENT FOR DRIVEWAY RE-ALIGNMENT

1,521'± TO WELL SITE

PC STA 781+03.75

STORM CULVERT

37.5' SLOPE/FILL TEMP CONST ESMT

16' TRAIL & UTIL ESMT

14' ASPHALT TRAIL

PROPOSED 133' RIGHT-OF-WAY

7'
11'
11'
11'
11'
7'

771 772 773 774 775 776 777 778 779 780 781 782 783 784 785

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

WILDLIFE CROSSING (DRY)

RURAL SECTION | URBAN SECTION

37.5' SLOPE/FILL TEMP CONST ESMT

10' CONCRETE MULTI-PURPOSE PATH

TEMPORARY CONSTRUCTION EASEMENT FOR DRIVEWAY RE-ALIGNMENT

348'±

PARCEL ID: 18-24-32-0000-00-004
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

PARCEL ID: 19-24-32-0000-00-003
OWNER: CITY OF COCOA
ADDRESS: 65 STONE STREET
COCOA, FLORIDA 32922

873'± TO POND

EXISTING PARCEL LINE

CITY OF COCOA WELL SITE

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY CWG | DESIGNED BY JTT | CHECKED BY JTT | DATE 1/26/18 | SCALE AS SHOWN | JOB NUMBER 15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 18

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 18

PARCEL ID: 18-24-32-0000-00-004
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

OC-CAD

N

0 25 50 75 100
FEET

EXISTING ORANGE COUNTY CAD WETLAND LINE

MATCHLINE SHEET 20

37.5' SLOPE/FILL TEMP CONST ESMT

16' TRAIL & UTIL ESMT

PROPOSED 133' RIGHT-OF-WAY

14' ASPHALT TRAIL

7'

11'

11'

42.5'

11'

11'

7'

783 784 785 786 787 788 789 790 791 792 793 794 795 796 797

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

10' CONCRETE MULTI-PURPOSE PATH

PARCEL ID: 18-24-32-0000-00-004
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS ENGINEERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 19

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

EXISTING ORANGE COUNTY CAD WETLAND LINE

1,421'± TO WELL SITE

MATCHLINE SHEET 19

MATCHLINE SHEET 21

PB-4

PROPOSED POND SMA-4

SMA-4 BASIN LIMITS

PARCEL ID: 18-24-32-0000-00-004
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

37.5' SLOPE/FILL TEMP CONST ESMT

16' TRAIL & UTIL ESMT

PROPOSED 133' RIGHT-OF-WAY

14' ASPHALT TRAIL

7'

11'

11'

42.5'

795 796 797 798 799 800 801 802 803 804 805 806 807 808 809

SUNBRIDGE PARKWAY

10' CONCRETE MULTI-PURPOSE PATH

37.5' SLOPE/FILL TEMP CONST ESMT

PARCEL ID: 18-24-32-0000-00-004
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

COMPENSATION STORAGE AREA N-137

EXISTING ORANGE COUNTY CAD WETLAND LINE

N

0 25 50 75 100
FEET

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 20

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 20

PARCEL ID: 06-24-32-0000-00-019
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

1,614'± TO WELL SITE

37.5' SLOPE/FILL TEMP CONST ESMT

16' TRAIL & UTIL ESMT

14' ASPHALT TRAIL

OC-CAD

EXISTING ORANGE COUNTY CAD WETLAND LINE

PT STA 819+43.25

MATCHLINE SHEET 22

N

0 25 50 75 100
FEET

PROPOSED 133' RIGHT-OF-WAY

7'
11'
11'
42.5'
11'
11'
7'

807 808 809 810 811 812 813 814 815 816 817 818 819 820 821

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

10' CONCRETE MULTI-PURPOSE PATH

PARCEL ID: 06-24-32-0000-00-019
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

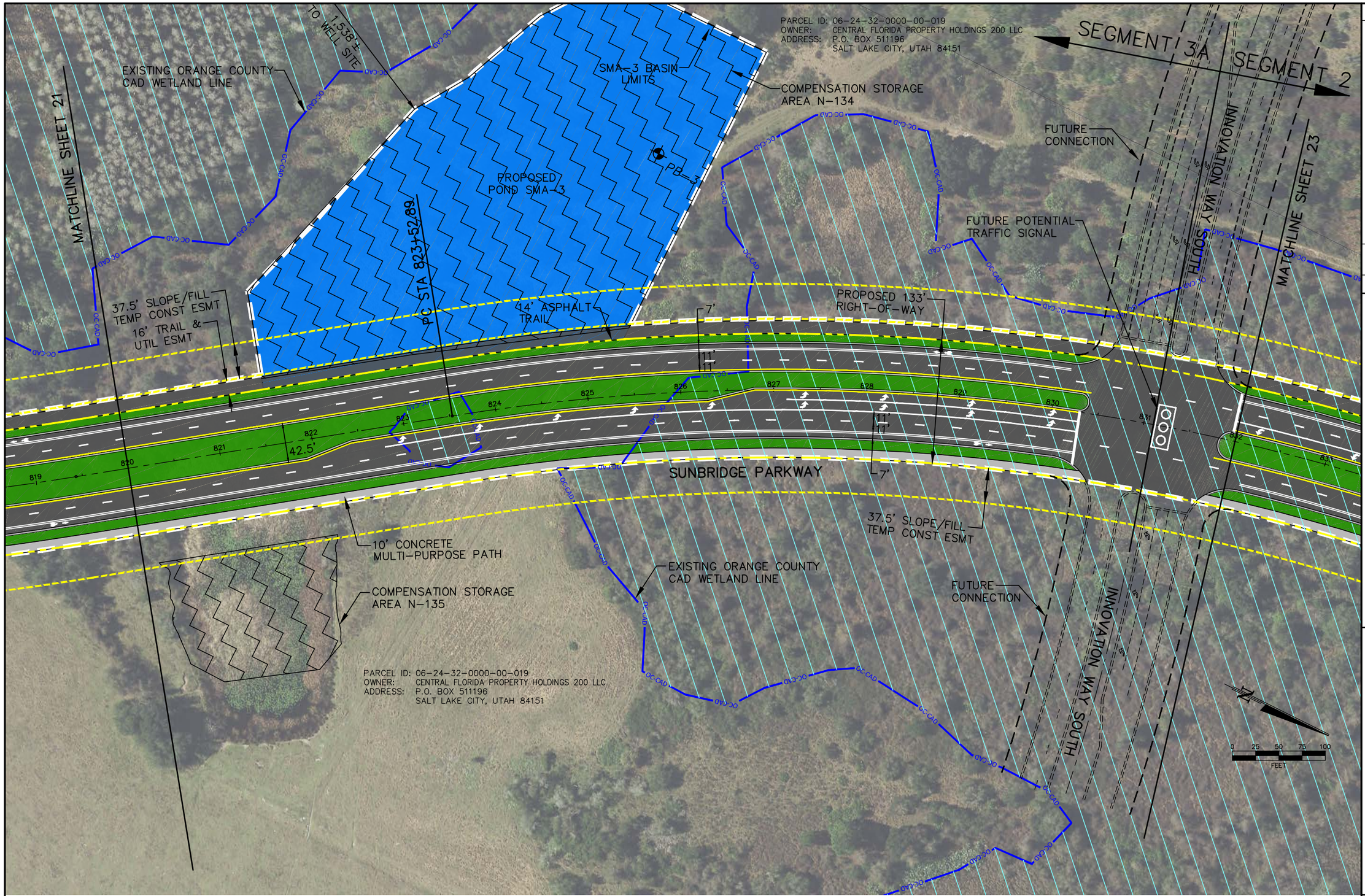
DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	JOB NUMBER
CWG	JTT	JTT	1/26/18	15152

SCALE: AS SHOWN

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING: IMPROVEMENTS.dwg
SHEET 21



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

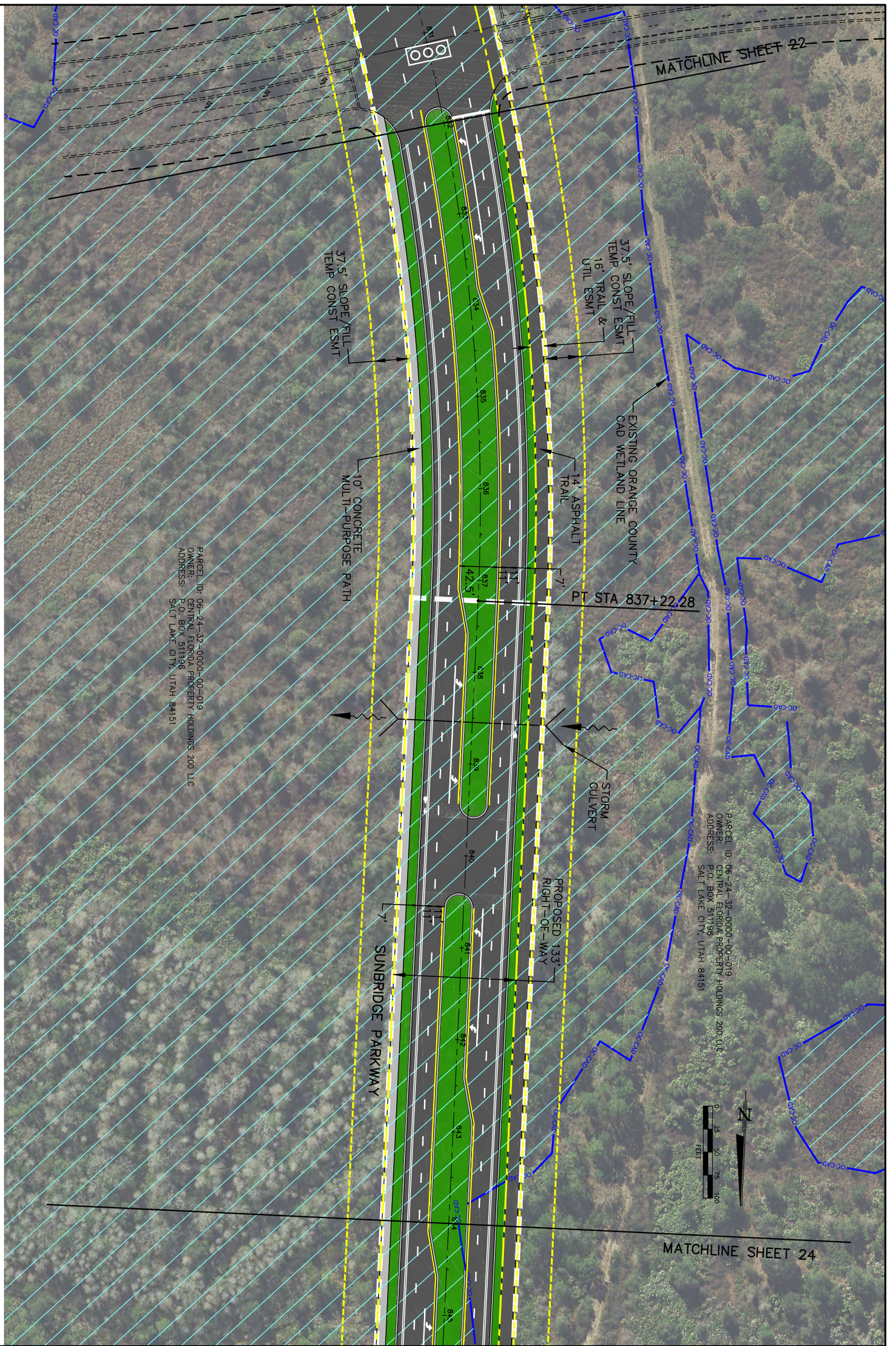
DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 22

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

DRAWING IMPROVEMENTS.dwg

SHEET 23

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

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CWG	JTT	JTT	1/26/18	AS SHOWN	15152

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 23

MATCHLINE SHEET 25

COMPENSATION STORAGE AREA N-081

PARCEL ID: 06-24-32-0000-00-019
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

EXISTING ORANGE COUNTY CAD WETLAND LINE

STORM CULVERT

PROPOSED 133' RIGHT-OF-WAY

37.5' SLOPE/FILL TEMP CONST ESMT

16' TRAIL & UTIL ESMT

14' ASPHALT TRAIL

N

0 25 50 75 100
FEET

7'
11'
11'
42.5'
11'
11'
7'

843 844 845 846 847 848 849 850 851 852 853 854 855 856 857

SUNBRIDGE PARKWAY

PB-2

10' CONCRETE MULTI-PURPOSE PATH

PROPOSED POND SMA-2

SMA-2 BASIN LIMITS

37.5' SLOPE/FILL TEMP CONST ESMT

PARCEL ID: 06-24-32-0000-00-019
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

EXISTING ORANGE COUNTY CAD WETLAND LINE

OC-CAD

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS SURVEYORS
ENGINEERS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

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CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 24

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 24

MATCHLINE SHEET 26

N

0 25 50 75 100
FEET

PARCEL ID: 06-24-32-0000-00-019
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

SMA-1 BASIN LIMITS

PROPOSED POND SMA-1

PC STA 867+80.75

PB-1

COMPENSATION STORAGE AREA N-082

EXISTING ORANGE COUNTY CAD WETLAND LINE

37.5' SLOPE/FILL TEMP CONST ESMT

16' TRAIL & UTIL ESMT

STORM CULVERT

PROPOSED 133' RIGHT-OF-WAY

14' ASPHALT TRAIL

7'
11'
11'
42.5'
11'
11'
7'

855 856 857 858 859 860 861 862 863 864 865 866 867 868 869

SUNBRIDGE PARKWAY

10' CONCRETE MULTI-PURPOSE PATH

37.5' SLOPE/FILL TEMP CONST ESMT

PARCEL ID: 06-24-32-0000-00-019
OWNER: CENTRAL FLORIDA PROPERTY HOLDINGS 200 LLC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

EXISTING ORANGE COUNTY CAD WETLAND LINE

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NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

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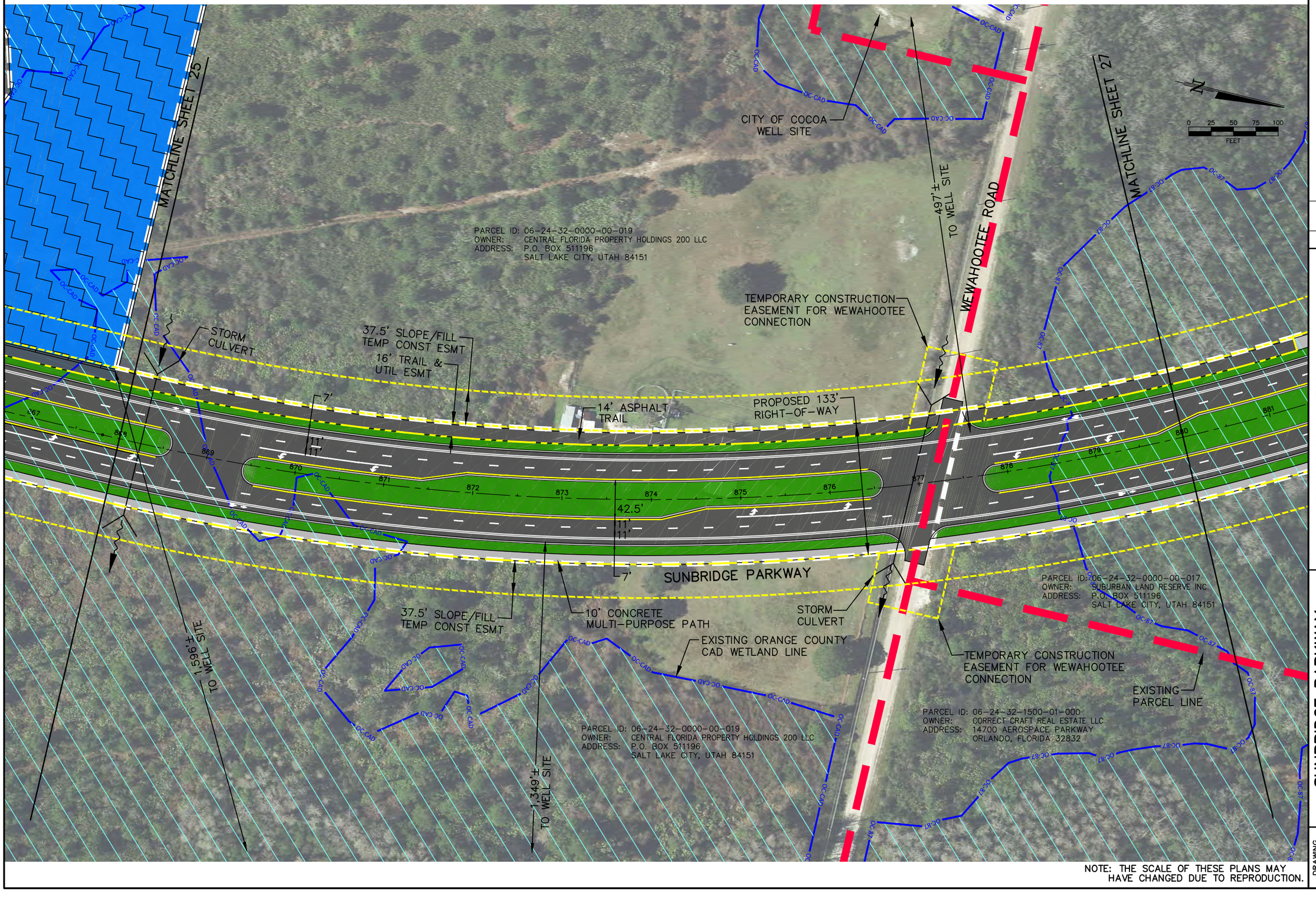
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 25



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

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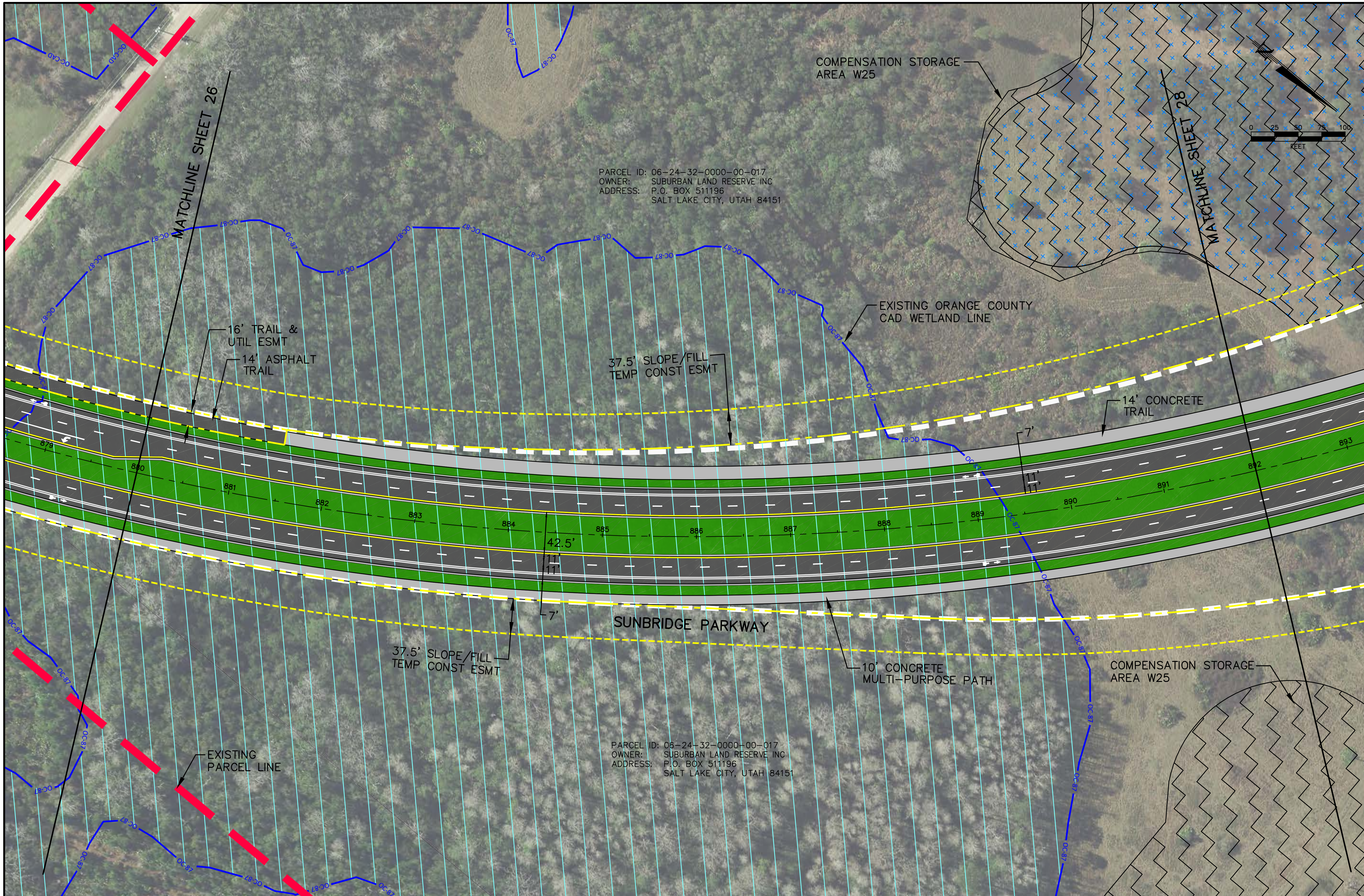
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 26

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:



NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA

RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 27

SHEET 1
PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 27

PROPOSED POND SMA-13 (NOT INCLUDED)

COMPENSATION STORAGE AREA W25

PARCEL ID: 06-24-32-0000-00-017
OWNER: SUBURBAN LAND RESERVE INC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

OUC RAILROAD R/W

PARCEL ID: 01-24-31-0000-00-006
OWNER: CITY OF ORLANDO/OUC
ADDRESS: P.O. BOX 3193
ORLANDO, FLORIDA 32802

PARCEL ID: 36-23-31-0000-00-002
OWNER: SUBURBAN LAND RESERVE INC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

MATCHLINE SHEET 29

0 25 50 75 100
FEET

37.5' SLOPE/FILL TEMP CONST ESMT

PB

PROPOSED 330' RIGHT-OF-WAY

RAILROAD SIGNAL AND GATES

14' CONCRETE TRAIL

7'

11'
11'

42.5'

891 892 893 894 895 896 897 898 899 900 448 449 450 451 452

SUNBRIDGE PARKWAY

10' CONCRETE MULTI-PURPOSE PATH

PT STA 897+67.41

STA 900+00.00=
STA 447+56.95

RAILROAD SIGNAL AND GATES

37.5' SLOPE/FILL TEMP CONST ESMT

EXISTING PARCEL LINE

37.5' SLOPE/FILL TEMP CONST ESMT

EXISTING PARCEL LINE

PARCEL ID: 06-24-32-0000-00-017
OWNER: SUBURBAN LAND RESERVE INC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

PARCEL ID: 01-24-31-0000-00-006
OWNER: CITY OF ORLANDO/OUC
ADDRESS: P.O. BOX 3193
ORLANDO, FLORIDA 32802

OUC RAILROAD R/W

PARCEL ID: 36-23-31-0000-00-002
OWNER: SUBURBAN LAND RESERVE INC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

COMPENSATION STORAGE AREA W25

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	1/26/18	AS SHOWN	15152

SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 28

SHEET 1

PROJECT: SUNBRIDGE PARKWAY P.D. STUDY
SHEET TITLE:
DWG FILE NAME: F:\Proj2015\15152\EDWG\Final\Sunbridge PDS\IMPROVEMENTS.dwg
XREF FILE NAME:

MATCHLINE SHEET 28

PROPOSED
POND SMA-6C-3

PB-1
PB-2
PB-4
PB-5

PARCEL ID: 36-23-31-0000-00-002
OWNER: SUBURBAN LAND RESERVE INC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

SEGMENT 2 | SEGMENT 1

LIMITS OF PRELIMINARY DESIGN STUDY 461+50.00

SPEED LIMIT 45
R2-1

37.5' SLOPE/FILL TEMP CONST ESMT

14' CONCRETE TRAIL

7'
11'
11'
42.5'
11'
11'
7'

451 452 453 454 455 456 457 458 459 460 461 462 463 464 465

10' CONCRETE MULTI-PURPOSE PATH

SUNBRIDGE PARKWAY

37.5' SLOPE/FILL TEMP CONST ESMT

SUNBRIDGE PARKWAY
SEGMENT 1
(NOT INCLUDED)

EXISTING CATTLE CORRAL

PARCEL ID: 36-23-31-0000-00-002
OWNER: SUBURBAN LAND RESERVE INC
ADDRESS: P.O. BOX 511196
SALT LAKE CITY, UTAH 84151

N

0 25 50 75 100
FEET

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	DESCRIPTION	CHK.
		REVISIONS	

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FLORIDA 32789 (407) 644-4068

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SUNBRIDGE PARKWAY
PRELIMINARY DESIGN STUDY
ORANGE COUNTY, FLORIDA
RECOMMENDED IMPROVEMENT CONCEPT MAP

DRAWING IMPROVEMENTS.dwg

SHEET 29