AGENDA REPORT
March 7, 2019

John L. Jackson, Trustee (Bruce Moia) requests a change of zoning classification from GU, BU-1, and BU-2, to all BU-2. (18PZ00161) (District 1)

SUBJECT:
John L. Jackson, Trustee (Bruce Moia) requests a change of zoning classification from GU (General Use), BU-1 (General Retail Commercial), and BU-2 (Retail, Warehousing, and Wholesale Commercial), to all BU-2. The property is 16.4 acres, located on the north side of State Road 46, approximately 0.2 miles west of the Interstate 95 interchange. (No assigned address. In the Mims area.) (18PZ00161) (District 1)

FISCAL IMPACT:
None.

DEPT/OFFICE:
Planning and Development

REQUESTED ACTION:
It is requested that the Board of County Commissioners conduct a public hearing to consider a change of zoning classification from GU (General Use), BU-1 (General Retail Commercial), and BU-2 (Retail, Warehousing, and Wholesale Commercial), to all BU-2

SUMMARY EXPLANATION and BACKGROUND:
The applicant is seeking a change of zoning classification from General Use (GU), General Retail Commercial (BU-1), and Retail, Warehousing, and Wholesale Commercial (BU-2) to all BU-2 for the stated purpose of constructing a hotel on two (2) acres and a truck stop on the remaining 14.4 acres. The applicant has submitted a Concept Plan that identifies the proposed development, and a Binding Development Plan (BDP) limiting development potential to:

- Fast food restaurant with drive-thru with no more than 2,700 square feet.
- Convenience store of no more than 10,300 square feet, and gas station with no more than 24 fueling stations.
- Tire care center with no more than 3 bays.
- Hotel with no more than 120 rooms.

The site lies just west of the S.R. 46 and I-95 Interchange, in the Mims area. The applicant has submitted a Traffic Impact Study and a Traffic Signal Warrant Study along

with this application for rezoning. The proposed development plan's potential traffic impact may create deficiencies in level of service and Florida Department of Transportation (FDOT) may limit access management improvements on the adjacent state roadway. While these factors are typically evaluated during site plan review, formal review of access management solutions could result in limitations on the development proposed.

The Board may wish to evaluate the following:

1. Whether the uses proposed within the BDP within the proposed BU-2 zoning classification are consistent and compatible with the surrounding development and the adjacent BU-1, GU, AU and nearby TU-2, RVP, and TR-1 zoning classifications.
2. Given the potential to create deficiencies in level of service at this location and potential traffic and access improvements identified in the Traffic Impact Study and Signal Warrant Study, the Board may wish to evaluate whether limitations on uses or development potential of the site would offset the impacts identified that could exceed level of service standards.
3. Whether FDOT should evaluate the impacts proposed prior to the request for rezoning being granted.
4. Should the Board deny the Small Scale Comprehensive Plan amendment, that portion of the site currently zoned GU should not be rezoned to BU-2, but could be considered for BU-1-A limited commercial uses. BU-1-A would not allow for development of either a truck stop or a hotel use, but would allow for other limited retail applications.

This request is accompanied by a companion proposal to change the Future Land Use on 3.81 acres from Neighborhood Commercial to Community Commercial. Should the companion request be denied, this zoning action should be reevaluated and revised for consistency with the Comprehensive Plan.

On February 11, 2019, the Planning and Zoning Board heard the request and unanimously recommended approval.

ATTACHMENTS:

Description

- **Administrative Policies**
- **Staff Comments**
- **GIS Maps**
- **Concept Plan**
- **Draft BDP**
- **Traffic Signal Warrant Study**
- **Traffic Impact Study**
- **Planning and Zoning Minutes**
- **Response to Comments**
- **Correspondence**

ADMINISTRATIVE POLICIES OF THE FUTURE LAND USE ELEMENT

Administrative Policies in the Future Land Use Element establish the expertise of staff with regard to zoning and land use issues and set forth criteria when considering a rezoning action or request for Conditional Use Permit, as follows:

Administrative Policy 1

The Brevard County zoning official, planners and the director of the planning and development staff, however designated, are recognized as expert witnesses for the purposes of Comprehensive Plan amendments as well as zoning, conditional use, special exception and variance applications.

Administrative Policy 2

Upon Board request, members of the Brevard County planning and development staff shall be required to present written analysis and a recommendation, which shall constitute an expert opinion, on all applications for zoning, conditional uses, comprehensive plan appeals, vested rights or other applications for development approval that come before the Board of County Commissioners for quasi-judicial review and action. The Board may table an item if additional time is required to obtain the analysis requested or to hire an expert witness if the Board deems such action appropriate. Staff input may include the following:

Criteria:

A. Staff shall analyze an application for consistency or compliance with comprehensive plan policies, zoning approval criteria and other applicable written standards.

B. Staff shall conduct site visits of property which are the subject of analysis and recommendation. As part of the site visit, the staff shall take a videotape or photographs where helpful to the analysis and conduct an inventory of surrounding existing uses. Aerial photographs shall also be used where they would aid in an understanding of the issues of the case.

C. In cases where staff analysis is required, both the applicant and the staff shall present proposed findings of fact for consideration by the Board.

D. For re-zoning applications where a specific use has not been proposed, the worst case adverse impacts of potential uses available under the applicable land use classification shall be evaluated by the staff.

Administrative Policy 3

Compatibility with existing or proposed land uses shall be a factor in determining where a rezoning or any application involving a specific proposed use is being considered. Compatibility shall be evaluated by considering the following factors, at a minimum:

Criteria:

A. Whether the proposed use(s) would have hours of operation, lighting, odor, noise levels, traffic, or site activity that would significantly diminish the enjoyment of, safety or quality of life in

existing neighborhoods within the area which could foreseeably be affected by the proposed use;

B. Whether the proposed use(s) would cause a material reduction (five per cent or more) in the value of existing abutting lands or approved development.

C. Whether the proposed use(s) is/are consistent with an emerging or existing pattern of surrounding development as determined through an analysis of:

1. historical land use patterns;

2. actual development over the immediately preceding three years; and

3. development approved within the past three years but not yet constructed.

D. Whether the proposed use(s) would result in a material violation of relevant policies in any elements of the Comprehensive Plan.

Administrative Policy 4

Character of a neighborhood or area shall be a factor for consideration whenever a rezoning or any application involving a specific proposed use is reviewed. The character of the area must not be materially or adversely affected by the proposed rezoning or land use application. In evaluating the character of an area, the following factors shall be considered:

Criteria:

A. The proposed use must not materially and adversely impact an established residential neighborhood by introducing types or intensity of traffic (including but not limited to volume, time of day of traffic activity, type of vehicles, etc.), parking, trip generation, commercial activity or industrial activity that is not already present within the identified boundaries of the neighborhood.

B. In determining whether an established residential neighborhood exists, the following factors must be present:

1. The area must have clearly established boundaries, such as roads, open spaces, rivers, lakes, lagoons, or similar features.

2. Sporadic or occasional neighborhood commercial uses shall not preclude the existence of an existing residential neighborhood, particularly if the commercial use is non-conforming or pre-dates the surrounding residential use.

3. An area shall be presumed not to be primarily residential but shall be deemed transitional where multiple commercial, industrial or other non-residential uses have been applied for and approved during the previous five (5) years.

Administrative Policy 5

In addition to the factors specified in Administrative Policies 2, 3, and 4, in reviewing a rezoning, conditional use permit or other application for development approval, the impact of the proposed use or uses on transportation facilities either serving the site or impacted by the use(s) shall be considered. In evaluating whether substantial and adverse transportation impacts are likely to result if an application is approved, the staff shall consider the following criteria:

Criteria:

A. Whether adopted levels of service will be compromised;

B. Whether the physical quality of the existing road system that will serve the proposed use(s) is sufficient to support the use(s) without significant deterioration;

C. Whether the surrounding existing road system is of sufficient width and construction quality to serve the proposed use(s) without the need for substantial public improvements;

D. Whether the surrounding existing road system is of such width and construction quality that the proposed use(s) would realistically pose a potential for material danger to public safety in the surrounding area;

E. Whether the proposed use(s) would be likely to result in such a material and adverse change in traffic capacity of a road or roads in the surrounding area such that either design capacities would be significantly exceeded or a de facto change in functional classification would result;

F. Whether the proposed use(s) would cause such material and adverse changes in the types of traffic that would be generated on the surrounding road system, that physical deterioration of the surrounding road system would be likely;

G. Whether projected traffic impacts of the proposed use(s) would materially and adversely impact the safety or welfare of residents in existing residential neighborhoods.

Administrative Policy 6

The use(s) proposed under the rezoning, conditional use or other application for development approval must be consistent with (a) all written land development policies set forth in these administrative policies; and (b) the future land use element, coastal management element, conservation element, potable water element, sanitary sewer element, solid waste management element, capital improvements element, recreation and open space element, surface water element and transportation elements of the comprehensive plan.

Administrative Policy 7

Proposed use(s) shall not cause or substantially aggravate any (a) substantial drainage problem on surrounding properties; or (b) significant, adverse and unmitigatable impact on significant natural wetlands, water bodies or habitat for listed species.

Administrative Policy 8

These policies, the staff analysis based upon these policies and the applicant's written analysis, if any, shall be incorporated into the record of every quasi-judicial review application for development approval presented to the Board including rezoning, conditional use permits and vested rights determinations."

Section 62-1151 (c) of the Code of Ordinances of Brevard County directs ..... "The planning and zoning board shall recommend to the board of county commissioners the denial or approval of each application for amendment to the official zoning maps based upon a consideration of the following factors:

(1) The character of the land use of the property surrounding the property being considered.

(2) The change in conditions of the land use of the property being considered and the surrounding property since the establishment of the current applicable zoning classification, special use or conditional use.

(3) The impact of the proposed zoning classification or conditional use on available and projected traffic patterns, water and sewer systems, other public facilities and utilities and the established character of the surrounding property.

(4) The compatibility of the proposed zoning classification or conditional use with existing land use plans for the affected area.

(5) The appropriateness of the proposed zoning classification or conditional use based upon a consideration of the applicable provisions and conditions contained in this article and other applicable laws, ordinances and regulations relating to zoning and land use regulations and based upon a consideration of the public health, safety and welfare.

The minutes of the planning and zoning board shall specify the reasons for the recommendation of approval or denial of each application."

CONDITIONAL USE PERMITS (CUPs)

In addition to the specific requirements for each Conditional Use Permit (CUP), Section 62-1901 provides that the following approval procedure and general standards of review are to be applied to all CUP requests, as applicable.

(b) *Approval procedure.* An application for a specific conditional use within the applicable zoning classification shall be submitted and considered in the same manner and according to the same procedure as an amendment to the official zoning map as specified in section 62-1151. The approval of a conditional use shall authorize an additional use for the affected parcel of real property in addition to those permitted in the applicable zoning classification. The initial burden is on the applicant to demonstrate that all applicable standards and criteria are met. Applications which do not satisfy this burden cannot be approved. If the applicant meets its initial burden, then the Board has the burden to show, by substantial and competent evidence, that the applicant has failed to meet such standards and the request is adverse to the public interest. As part of the approval of the conditional use permit, the Board may prescribe appropriate and reasonable conditions and safeguards to reduce the impact of the proposed use on adjacent and nearby properties or the neighborhood. A nearby property, for the purpose of this section, is defined as any property which, because of the character of the proposed use, lies within the area which may be substantially and adversely impacted by such use...

...In stating grounds in support of an application for a conditional use permit, it is necessary to show how the request fulfills both the general and specific standards for review. The applicant must show the effect the granting of the conditional use permit will have on adjacent and nearby properties, including, but not limited to traffic and pedestrian flow and safety, curb-cuts, off-street loading and parking, off-street pickup of passengers, odor, glare and noise, particulates, smoke, fumes and other emissions, refuse and service areas, drainage, screening and buffering for protection of adjacent and nearby properties, and open space and economic impact on nearby properties. The applicant, at his discretion, may choose to present expert testimony where necessary to show the effect of granting the conditional use permit.

(c) *General standards of review.*

(1) The planning and zoning board and the board of county commissioners shall base the denial or approval of each application for a conditional use based upon a consideration of the factors specified in section 62-1151(c) plus a determination that the following general standards are satisfied. The Board shall make the determination whether an application meets the intent of this section.

a. The proposed conditional use will not result in a substantial and adverse impact on adjacent and nearby properties due to: (1) the number of persons anticipated to be using, residing or working under the conditional use; (2) noise, odor, particulates, smoke, fumes and other emissions, or other nuisance activities generated by the conditional use; or (3) the increase of traffic within the vicinity caused by the proposed conditional use.

b. The proposed use will be compatible with the character of adjacent and nearby properties with regard to use, function, operation, hours of operation, type and amount of traffic generated, building size and setback, and parking availability.

c. The proposed use will not cause a substantial diminution in value of abutting residential property. A substantial diminution shall be irrebuttably presumed to have occurred if abutting property suffers a 15% reduction in value as a result of the proposed conditional use. A reduction of 10% of the value of abutting property shall create a rebuttable presumption that a substantial diminution has occurred. The Board of County Commissioners carries the burden to show, as evidenced by either testimony from or an appraisal conducted by an MAI certified appraiser, that a substantial diminution in value would occur. The applicant may rebut the findings with his own expert witnesses.

(2) The following specific standards shall be considered, when applicable, in making a determination that the general standards specified in subsection (1) of this section are satisfied:

a. Ingress and egress to the property and proposed structures thereon, with particular reference to automotive and pedestrian safety and convenience, traffic flow and control, and access in case of fire and catastrophe, shall be: (1) adequate to serve the proposed use without burdening adjacent and nearby uses, and (2) built to applicable county standards, if any. Burdening adjacent and nearby uses means increasing existing traffic on the closest collector or arterial road by more than 20%, or 10% if the new traffic is primarily comprised of heavy vehicles, except where the affected road is at Level of Service A or B. New traffic generated by the proposed use shall not cause the adopted level of service for transportation on applicable roadways, as determined by applicable Brevard County standards, to be exceeded. Where the design of a public road to be used by the proposed use is physically inadequate to handle the

numbers, types or weights of vehicles expected to be generated by the proposed use without damage to the road, the conditional use permit cannot be approved without a commitment to improve the road to a standard adequate to handle the proposed traffic, or to maintain the road through a maintenance bond or other means as required by the Board of County Commissioners.

b. The noise, glare, odor, particulates, smoke, fumes or other emissions from the conditional use shall not substantially interfere with the use or enjoyment of the adjacent and nearby property.

c. Noise levels for a conditional use are governed by section 62-2271.

d. The proposed conditional use shall not cause the adopted level of service for solid waste disposal applicable to the property or area covered by such level of service, to be exceeded.

e. The proposed conditional use shall not cause the adopted level of service for potable water or wastewater applicable to the property or the area covered by such level of service, to be exceeded by the proposed use.

f. The proposed conditional use must have existing or proposed screening or buffering, with reference to type, dimensions and character to eliminate or reduce substantial, adverse nuisance, sight, or noise impacts on adjacent and nearby properties containing less intensive uses.

g. Proposed signs and exterior lighting shall not cause unreasonable glare or hazard to traffic safety, or interference with the use or enjoyment of adjacent and nearby properties.

h. Hours of operation of the proposed use shall be consistent with the use and enjoyment of the properties in the surrounding residential community, if any. For commercial and industrial uses adjacent to or near residential uses, the hours of operation shall not adversely affect the use and enjoyment of the residential character of the area.

i. The height of the proposed use shall be compatible with the character of the area, and the maximum height of any habitable structure shall be not more than thirty-five (35) feet higher than the highest residence within 1000 feet of the property line.

j. Off-street parking and loading areas, where required, shall not be created or maintained in a manner which adversely impacts or impairs the use and enjoyment of adjacent and nearby properties. For existing structures, the applicant shall provide competent, substantial evidence to demonstrate that actual or anticipated parking shall not be greater than that which is approved as part of the site plan under applicable county standards.

FACTORS TO CONSIDER FOR A REZONING REQUEST
Section 62-1151(c) sets forth factors to consider in connection with a rezoning request, as follows:

> "...The planning and zoning board shall recommend to the board of county commissioners the denial or approval of each application for amendment to the official zoning maps based upon a consideration of the following factors:
>
> (1) The character of the land use of the property surrounding the property being considered.
>
> (2) The change in conditions of the land use of the property being considered and the surrounding property since the establishment of the current applicable zoning classification, special use or conditional use.
>
> (3) The impact of the proposed zoning classification or conditional use on available and projected traffic patterns, water and sewer systems, other public facilities and utilities and the established character of the surrounding property.
>
> (4) The compatibility of the proposed zoning classification or conditional use with existing land use plans for the affected area.
>
> (5) The appropriateness of the proposed zoning classification or conditional use based upon a consideration of the applicable provisions and conditions contained in this article and other applicable laws, ordinances and regulations relating to zoning and land use regulations and based upon a consideration of the public health, safety and welfare..."

These staff comments contain references to zoning classifications found in the Brevard County Zoning Regulations, Chapter 62, Article VI, Code of Ordinances of Brevard County. These references include brief summaries of some of the characteristics of that zoning classification. Reference to each zoning classification shall be deemed to incorporate the full text of the section or sections defining and regulating that classification into the Zoning file and Public Record for that item.

These staff comments contain references to sections of the Code of Ordinances of Brevard County. Reference to each code section shall be deemed to incorporate the section into the Zoning file and Public Record for that item.

These staff comments contain references to Policies of the Brevard County Brevard County Comprehensive Plan. Reference to each Policy shall be deemed to incorporate the entire Policy into the Zoning file and Public Record for that item.

These staff comments refer to previous zoning actions which are part of the Public Records of Brevard County, Florida. These records will be referred to by reference to the file number. Reference to zoning files are intended to make the entire contents of the cited file a part of the Zoning file and Public Record for that item.

DEFINITIONS OF CONCURRENCY TERMS
Maximum Acceptable Volume (MAV): Maximum acceptable daily volume that a roadway can carry at the adopted Level of Service (LOS).

Current Volume: Building permit related trips added to the latest MPO traffic counts.

Volume with Development (VOL W/DEV.): Equals Current Volume plus trip generation projected for the proposed development.

Volume/Maximum Acceptable Volume (VOL/MAV): Equals the ratio of current traffic volume to the maximum acceptable roadway volume.

Volume/Maximum Acceptable Volume with Development (VOL/MAV W/DEV): Ratio of volume with development to the Maximum Acceptable Volume.

Acceptable Level of Service (ALOS): Acceptable Level of Service currently adopted by the County.

Current Level of Service (CURRENT LOS): The Level of Service at which a roadway is currently operating.

Level of Service with Development (LOS W/DEV): The LOS that a proposed development may generate on a roadway.

REZONING REVIEW WORKSHEET

18PZ00161

Commission District # 1
Hearing Dates: P&Z 02/11/19 BCC 03/07/19

Owner Name: John L. Jackson, Jr., Trustee, et al

Request: GU, BU-1 and BU-2 to all BU-2

Subject Property:

Parcel ID# 21-34-12-00-502 (portion)
Tax Acct.# 2100183 (portion)
Location: North side of S.R. 46, approximately 0.2 mile west of I-95.
Address: No assigned address. In the Mims area
Acreage: 16.40 +/-

Consistency with Land Use Regulations

YES	**Current zoning can be considered under the Future Land Use Designation. Sec. 62-1255**
YES**	**Proposal can be considered under the Future Land Use Designation. Sec. 62-1255**
NO	**Would proposal maintain acceptable Levels of Service (LOS) (XIII 1.6.C)**

	CURRENT	PROPOSED
Zoning	GU, BU-1 and BU-2	BU-2
Potential*	1 SF lot and 147,354 square feet	200,028 square feet
Can be Considered under FLU MAP	YES Neighborhood Commercial and Community Commercial	Yes** if SSCPA Approved Community Commercial

*Zoning potential for concurrency analysis purposes only, subject to applicable land development regulations.**Requires Small Scale Amendment from NC to CC.

	ADT	PM PEAK		
Trips from Existing Zoning	15,075	1,398	Segment Number	310B
Trips from Proposed Zoning	20,451	1,896	Segment Name	SR 46 - Fawn Lake to I-95
Maximum Acceptable Volume (MAV)	14,160	1,274	Acceptable LOS	D
Current Volume	10,360	932	Directional Split	0.51
Volume With Proposed Development	30,811	2,828	ITE CODE	
Current Volume / MAV	73.16%	73.16%	850	
Volume / MAV with Proposal	217.59%	221.94%		
Current LOS	C	C		
LOS With Proposal	F	F		
Findings	☐ Non-Deficiency		☑ Deficiency	

Background & Purpose of Request

The applicant is seeking a change of Zoning classification from General Use (GU), General Retail Commercial (BU-1), and Retail, Warehousing, and Wholesale Commercial (BU-2) to all BU-2 in order to construct a hotel on two (2) acres and a truck stop on the remaining 14.4 acres.

- The GU zoned portion of the site encompasses an area of 3.81 acres.
- The BU-1 zoned portion of the site encompasses 1.78 acres.
- The existing BU-2 zoned portion of the site encompasses an area of 10.81 acres.

This site was originally zoned GU in 1958. Under zoning action **Z-3219**, a portion of the lot was rezoned from GU to a mix of BU-1 and BU-2. **Z-3219** was approved on March 26, 1973. No other zoning actions have been requested or applied to the property.

The site lies just west of the SR-46 and I-95 Interchange, in the Mims area. It is currently vacant but there exists the potential to generate a large volume of traffic due to the property's overall size.

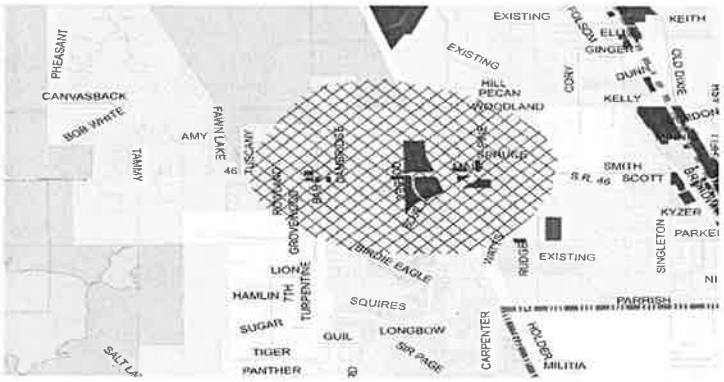
Land Use Compatibility

The subject property retains split Future Land Use (FLU) designations with the western 3.81 acres that retains a Zoning classification of GU and the FLU of Neighborhood Commercial (NC); the remainder of the site retains Community Commercial (CC) FLU.

Small Scale Comprehensive Plan Amendment **18PZ00160** was filed concurrently with the subject request to change the Zoning classification and must be approved in order for the GU portion of the property to be rezoned to BU-2. The applicant's request is consistent with the proposed Future Land Use if SCCPA **18PZ00160** is approved.

The subject property is located within the Mims Small Area Study (SAS) boundaries. The Mims SAS, which was accepted by the Board on April 10, 2007, recommends an elliptical overlay zone around the SR-46/I-95 Interchange. The concept for this overlay area is that the commercially valuable properties in this area ought to have design guidelines in place that recognize its highly visible nature and unique situation. The S.R. 46 interchange is one of Mims's "front doors", especially those from outside Brevard County. The Mims community is greatly concerned that development be visually harmonious with its rural heritage and character.

Below is a portion of Map #11 of the Mims Small Area Study – the cross-hatched area indicates the area at SR 46/I-95 that was identified as commercially viable. The Board did not ultimately pursue implementing an overlay zone with specific regulations, but the identification of the area itself is ultimately valuable in narrowing the focus area for planned commercial expansion.



FLUE Policy 2.1 outlines the role of the Comprehensive Plan in the designation of commercial land. The request for BU-2 zoning should be evaluated within the context of **Policy 2.7** of the Future Land Use Element, which identifies "development activities that may be considered within the Community Commercial Future Land Use Designation..."

Existing strip commercial;
Transient commercial uses;
Tourist commercial uses;
Professional offices;
Personal service establishments;
Retail establishments;
Non-retail commercial uses;
Residential uses;
Institutional uses;
Recreational uses;
Public facilities;
Transitional uses pursuant to Policy 2.14; and
Planned Industrial Park development (as permitted by PIP zoning).

The request for BU-2 zoning should be evaluated within the context of **Policy 2.8** of the Future Land Use Element, which sets forth locational criteria for community commercial land use activities, as follows:

A. Community Commercial clusters of up to ten (10) acres in size should be located at arterial intersections. Collector/arterial intersections area acceptable for clusters of up to ten (10) acres in size, however, the collector roadways must serve multiple residential areas. Intrusion of these land uses into the surrounding residential areas shall be limited. For Community Commercial clusters greater than ten (10) acres in size, they must be located at principal/ arterial intersections.
B. Community Commercial complexes should not exceed 40 acres at an intersection.
C. Community Commercial clusters up to 10 acres in size should be spaced at least 2 miles apart and community commercial clusters up to 40 acres in size should be spaced at least five (5) miles apart.
D. The gross floor area of community commercial complexes should not exceed 150,000 square feet for commercial clusters up to 10 acres in size and shall not exceed 400,000 square feet for commercial clusters greater than 10 acres but less than 40 acres in size.
E. Floor Area Ratio (FAR) of up to 1.00 will be permitted for Community Commercial sites.

This request should be evaluated within the context of **Policy 2.14A** of the Future Land Use Element, which establishes locational criteria for non-retail commercial uses, as follows:

A. Non-retail commercial land uses shall be limited to those areas where non-retail commercial or industrial characteristics are established or planned so as to protect residential areas from their influence. Non-retail uses, including wholesaling, contracting, heavy repair services, paint and body shops, storage and warehousing uses, may serve as a transitional use between the following higher intensity and lower intensity uses, in the following listed Future Land Use designations:

Higher Intensity Uses:	Heavy Industrial or Light Industrial activities.
Lower Intensity Uses:	Community Commercial, Planned Industrial Park or Planned Business Park uses.
Future Land Use Designations:	Community Commercial, Heavy/Light Industrial or Planned Industrial (Planned Industrial permits PIP zone uses only).

Roadway Access Requirements:	Convenient access to a major transportation corridor or along a railroad corridor with visual buffering from such corridors.

Given the zoning pattern in the area, **Policy 2.15**, which addressed infill vs. strip commercial development, should also be considered, as follows:

The creation/promotion of strip pattern of commercial development shall be discouraged. Infill within established strip commercial areas is preferred over extension of a strip commercial pattern. Extension of a commercial land use designation may be considered in circumstances where the proposed commercial parcel is located within a block in which at least fifty percent (50%) of the block face (in linear feet) is either currently developed with commercial land uses or is designated for commercial use. In either case, the proposed commercial land use extension shall not constitute an encroachment into a residential area. Judging the suitability of a location for an extension of strip commercial development activities shall be based upon the following minimum criteria:

A. Impacts upon traffic circulation should be anticipated and mitigated through the reservation of right-of-way for road widening and marginal access streets. Access points for strip commercial complexes shall seek to minimize points of conflict by utilizing frontage roads, providing cross access between parcels or installing shared use curb cuts for access driveways to the maximum extent feasible, as determined by Brevard County.

B. Setbacks and landscaped or other appropriate buffers shall be established to mitigate the visual impacts of strip commercial development.

C. A sidewalk or bicycle path shall be required where appropriate (as encouraged by Tables 2.1 and 2.2 of the FLUE) to provide convenient access to surrounding residents and to reduce traffic volumes on the roadways.

The Board should evaluate the compatibility of this application within the context of the Board's Administrative Policies 1 - 8 of the Future Land Use Element, as outlined on pages 2 through 5 of the Administrative Policies.

Environmental Constraints

Please refer to comments provided by the Natural Resources Management Department.

Applicable Land Use Policies

The subject property proposed for rezoning is located approximately 375 feet west of the SR-46/I-95 Interchange, along the north-side of SR-46. Although this zoning request accounts for a zoning change over 16.4 acres, a large portion of the site is already zoned BU-2. The existing BU-2 acreage as listed above is 10.81 acres in area and remains vacant. Rather than submit individual sub-parcels to identify the GU and BU-1 areas, this application submittal depicts the lot as one contiguous application. The Board may wish to consider whether all BU-2 uses are consistent with the vision for the "Mims Gateway". As a reminder, the BU-1 & BU-2 zoning change was adopted back on March, 1973 and remains undeveloped to date.

The 0.92 acre parcel abutting the subject property to the east and fronting SR-46 is developed as a Chevron gas station and convenience store and retains BU-1 Zoning. The other properties to the east, between the subject property and the interchange, are vacant and retain BU-1 Zoning. All other land in the northwest section of the interchange is vacant until the Cambridge Park single-family home subdivision located approximately 2,240 west of the interchange. The property to the north retains split zoning of GU, BU-2, and BU-1 running west to east and along the same lines as does the subject property. The property to the west retains GU zoning.

The property across SR-46 to the south consists of four (4) parcels described below running west to east and terminating at the interchange:

- 1.46 acre BU-1 zoned portion of 13.71 acre KOA Campgrounds the remainder of which is zoned Recreational Vehicle Park (RVP);
- 1.41 acre parcel at southwest corner of SR-46 and N. Carpenter Road zoned BU-1 and developed as a Dollar General;
- 1.15 acre parcel at southeast corner of SR-46 and N. Carpenter Road zoned Transient Tourist Commercial (TU-2) and developed as a Sugarland country convenience store and gas station;
- 12.31 acre vacant parcel that retains TU-2 zoning.

The subject property is located within the area examined within the Mims Small Area Study, which was acknowledged in 2007 by the Board of County Commissioners. This area of Mims is characterized by a mixture of Community Commercial, Neighborhood Commercial and residential uses along the SR 46 corridor.

There have been two (2) zoning actions approved in the last three (3) years within ½ mile of the subject property and two (2) zoning actions currently under review in addition to the subject request:

- **16PZ00095** approved a Binding Development Plan (BDP) for a Recreational Vehicle Park (RVP) on 12/21/16;
- **16PZ00015** changed the name of the Walkabout PUD to the Indian River Preserve PUD on 02/05/2016;
- **18PZ00160** is a 3.81 acre Small Scale Comprehensive Plan Amendment from NC to CC that was filed concurrently with the subject request for change of Zoning classification and is for the GU to BU-2 portion the same project;
- **18PZ00150** is also currently under review for a 1.55 acre parcel 1/3 mile east of the subject property and likewise on the north side of SR-46 and is a request to change the zoning classification from Single-Family Residential (RU-1-13) to Restricted Neighborhood Commercial (BU-1-A) on a property that retains a FLU of NC.

Transportation Consideration

Due to the amount of vacant land and the limited roadway capacity available to handle trips generated by the proposed development, the Board should consider the cumulative impacts of approved and future development that is consistent with the adopted FLU on the Adopted Level of Service (LOS) standards for the SR-46 corridor.

A preliminary concurrency analysis indicates that the proposed BU-2 zoning has the potential to create a deficiency in the Level of Service (LOS) requirements for State Road 46 (SR 46). Today, the traffic counts indicate that State Road 46 (SR 46) is at 73.16% Maximum Acceptable Volume (MAV). The preliminary concurrency analysis evaluated the impact of a supermarket (ITE 850) on the subject property, which has the potential to create conditions at on SR 46 that would put the roadway at 217% of the roadway's current capacity. Significant improvements may need to be made to SR46, which are typically reviewed by FDOT at the time of site development.

The applicant has submitted a Traffic Impact Study (TIS) and a Traffic Signal Warrant Study along with this application for rezoning. The TIS examines the impact of a convenience market / gas station, hotel, fast-food restaurant with drive-through and a tire store. The methodology for the TIS was not approved in advance by the Public Works Traffic Operations section, which recommends the following:

1. Utilize the "truck stop" (ITE 950) as the combined land use instead of the "convenience market/gas station", "fast food restaurant with drive through" and "tire store" separate land uses.
2. Contact FDOT about signal spacing and driveway location, as that may affect development potential.
3. Cross-access to all adjacent parcels will be required, per Section 62-2957 of Brevard County Code – please revise the Concept Plan to demonstrate how interconnectivity to adjacent parcels will be provided.
4. If shared access to a signal through the subject property is proposed to be provided for the remainder of the parent parcel to the west and north of the subject area proposed for rezoning, the Traffic Impact Study should be revised to examine these impacts.

5. The TIS and Signal warrant will be reviewed for final approval at site development.

For Board Consideration

The applicant is seeking a change of Zoning classification from General Use (GU), General Retail Commercial (BU-1), and Retail, Warehousing, and Wholesale Commercial (BU-2) to all BU-2 for the stated purpose of constructing a hotel on two (2) acres and a truck stop on the remaining 14.4 acres. While the applicant has submitted a Concept Plan that identifies the proposed development, a Binding Development Plan has not been submitted with the request, which would limit development potential to that which is proposed.

The site lies just west of the SR-46 and I-95 Interchange, in the Mims area. It is currently vacant but there exists the potential to generate a large volume of traffic due to the property's overall size. There remains the potential under the existing BU-1 and BU-2 zoning to generate 15,075 trips on this site and roadway improvements would still need to be required if the site is developed to its full potential under the existing GU, BU-1 and BU-2 zoning classifications on the property.

The applicant has submitted a Traffic Impact Study (TIS) and a Traffic Signal Warrant Study along with this application for rezoning. The TIS examines the impact of a convenience market / gas station, hotel, fast-food restaurant with drive-through and a tire store.

The methodology for the TIS was not approved in advance by the Public Works Traffic Operations section, which recommends the following:

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4. If shared access to a signal through the subject property is proposed to be provided for the remainder of the parent parcel to the west and north of the subject area proposed for rezoning, the Traffic Impact Study should be revised to examine these impacts.
5. The TIS and Signal warrant will be reviewed for final approval at site development.

The Board may wish to evaluate the following:

1. Whether the full range of uses allowed under the BU-2 zoning classification are consistent and compatible with the surrounding development.
2. Given the potential to create deficiencies in level of service at this location and potential traffic and access improvements identified in the Traffic Impact Analysis and Signal Warrant Study, the board may wish to evaluate whether limitations on uses or development potential of the site would offset the impacts identified that would exceed level of service standards.
3. Whether the applicant should be required to evaluate the full development potential of the site, as proposed for the full range of uses permissible within the requested BU-2 Zoning classification.
4. Whether FDOT should evaluate the impacts proposed prior to the request for rezoning being granted.
5. Should the Board deny the Small Scale Comprehensive Plan amendment, that portion of the site currently zoned GU should not be rezoned to BU-2 but could be considered for BU-1-A limited commercial uses. BU-1-A would not allow for development of either a truck stop or a hotel use, but would allow for other limited retail applications.
6. Potential design guidelines for the development to be consistent with the findings of the Mims Small Area Study.

This request is accompanied by a companion proposal to change the FLU on 3.81 acres from NC to CC. Should the companion request be denied, this zoning action should be reevaluated and revised for consistency with the Comprehensive Plan.

NATURAL RESOURCES MANAGEMENT DEPARTMENT
Rezoning Review
SUMMARY

Item #: 18PZ00161	**Applicant: Bruce Moia c/o Jackson Trustee**
Zoning Request: BU-1, BU-2 & GU to BU-2	
P&Z Hearing Date: 02/11/19	**BCC Hearing Date: 03/07/19**

This is a preliminary review based on environmental maps available to the Natural Resources Management (NRM) Department at the time of this review and does not include a site inspection to verify the accuracy of this information. This review does not ensure whether or not a proposed use, specific site design, or development of the property can be permitted under current Federal, State, or County Regulations. In that this process is not the appropriate venue for site plan review, specific site designs that may be submitted with the rezoning will be deemed conceptual and any comments or omissions relative to specific site design do not provide vested rights or waivers from these regulations, unless specifically requested by the owner and approved by the Board of County Commissioners. If the owner has any questions regarding this information, he/she is encouraged to contact NRM at 321-633-2016 prior to submittal of any development or construction plans.

Natural Resource	Preliminary Assessment	Natural Resource	Preliminary Assessment
Hydric Soils/Wetlands	Mapped	Coastal Protection	N/A
Aquifer Recharge Soils	Mapped	Surface Waters	N/A
Floodplains	Mapped	Wildlife	Potential

Comments:
This review relates to the following property: Twp. 21, Rng. 34, Sec. 12;
Tax ID Nos. 2100183

The subject parcel contains a small mapped SJRWMD wetlands on the easternmost portion of the subject property as shown on the SJRWMD Florida Land Use & Cover Codes map; an indicator that wetlands may be present on the property. Per Section 62-3694(c)(3), Impacts to wetlands are permittable for commercial or industrial land development activities on a property that is designated as commercial or industrial on the Future Land Use map, and the proposed wetland impacts are entirely located within one-half mile of the intersection of the off-ramp of the I-95 interchange with the connecting roadway. The one-half mile radius shall be measured from the end of the limited access boundary of I-95. This shall not include those interchanges where I-95 intersects a limited access highway as defined by Florida Statute. Any permitted wetland impacts must meet the requirements of Sections 62-3694(e) and 62-3696.

The subject parcel contains mapped aquifer recharge soils (Pomello sand) as shown on the USDA Soil Conservation Service Soils Survey map. The applicant is hereby notified of the development and impervious restrictions within Conservation Element Policy 10.2 and the Aquifer Protection Ordinance.

A portion of the property is mapped as being within the floodplain as identified by the Federal Emergency Management Agency and as shown on the FEMA Flood Map. The property is subject to the development criteria in Conservation Element Objective 4, its subsequent policies, and the Floodplain Ordinance. If floodplain is isolated, then per Section 62-3724(3)(d), compensatory storage shall be required for fill in excess of that which will provide an upland buildable area within the isolated floodplain greater than one third (1/3) acre in size. Additional impervious area increases stormwater runoff that can adversely impact nearby properties unless addressed on-site. Chapter 62, Article X, Division 6 states, "No site alteration shall adversely affect the existing surface water flow pattern." Chapter 62, Article X, Division 5, Section 62-3723 (2) states, "Development within floodplain areas shall not have adverse impacts upon adjoining properties."

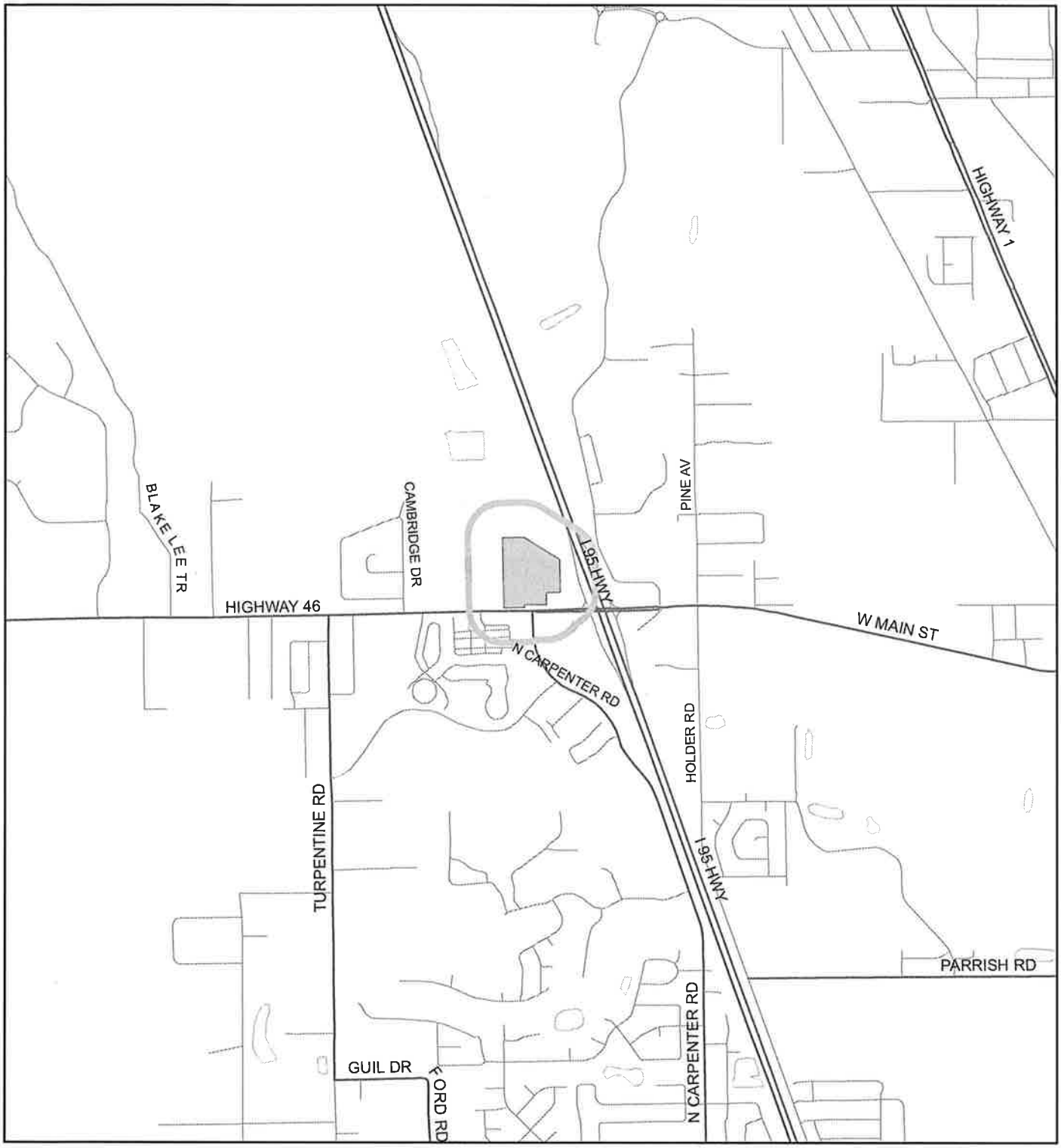
Information available to NRM indicates that federally and/or state protected species may be present on the property. Specifically, gopher tortoises can be found in areas of aquifer recharge soils. Prior to any plan, permit submittal, or development activity, including land clearing, the applicant should obtain any necessary permits or clearance letters from the Florida Fish and Wildlife Conservation Commission and/or U.S. Fish and Wildlife Service, as applicable.

The applicant is advised to refer to Article XIII, Division 2, entitled Land Clearing, Landscaping, and Tree Protection, for specific requirements for preservation and canopy coverage requirements. Per Section 62-4341(18), Specimen Trees shall be preserved or relocated on site to the Greatest Extent Feasible. Per Section 62-4332, Definitions, Greatest Extent Feasible shall include, but not be limited to, relocation of roads, buildings, ponds, increasing building height to reduce building footprint or reducing Vehicular Use Areas.

LOCATION MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



N

W E

S

1:24,000 or 1 inch = 2,000 feet

Buffer Distance: 500 feet

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by BoCC - GIS Date: 1/7/2019

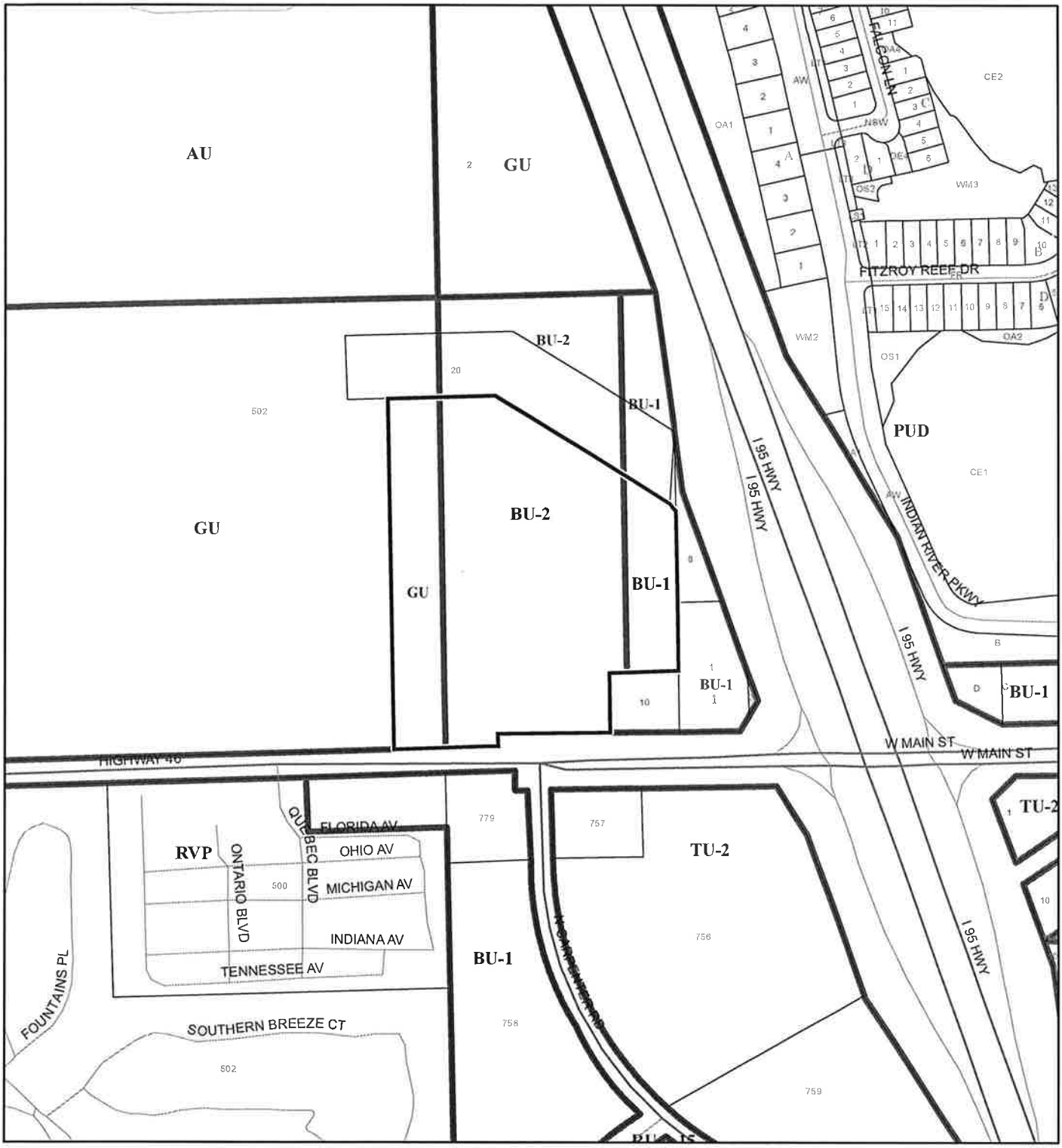
Buffer

Subject Property

ZONING MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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1:4,800 or 1 inch = 400 feet

Subject Property

Parcels

Zoning

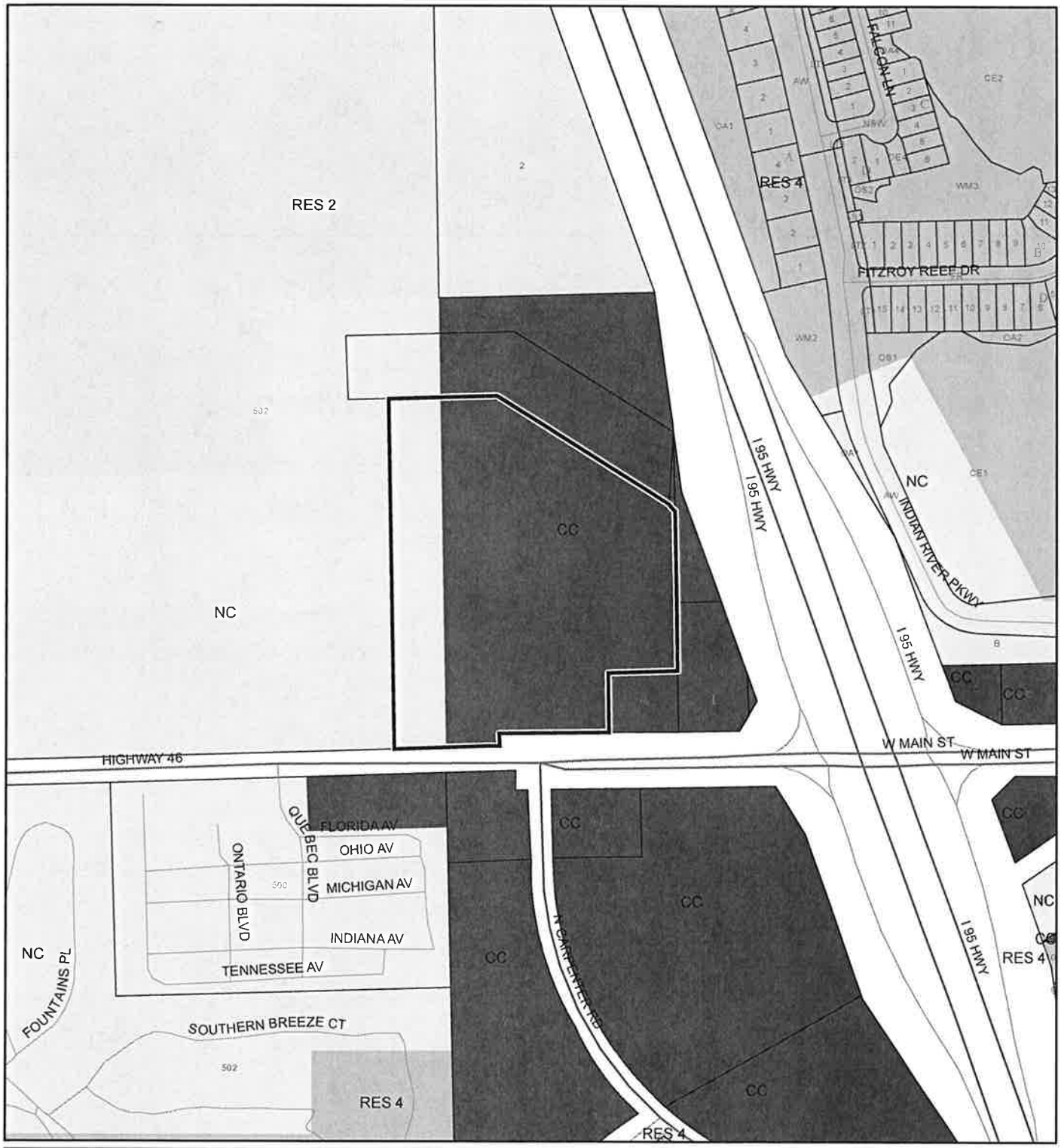
This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by BoCC - GIS Date: 1/7/2019

FUTURE LAND USE MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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1:4,800 or 1 inch = 400 feet

Subject Property

Parcels

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

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AERIAL MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161

N

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1:4,800 or 1 inch = 400 feet

PHOTO YEAR: 2018

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by BoCC - GIS Date: 1/7/2019

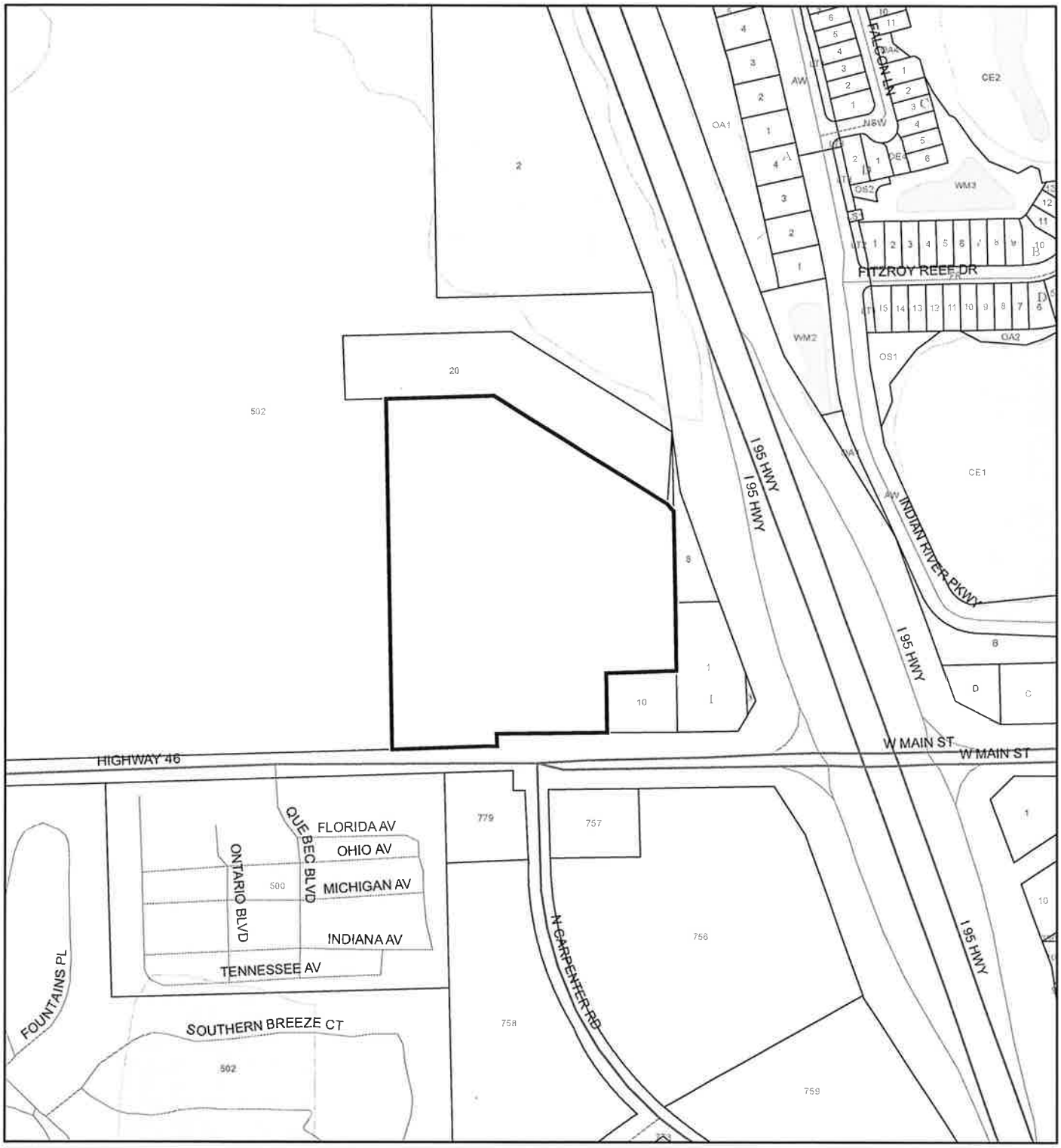
Subject Property

Parcels

NWI WETLANDS MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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1:4,800 or 1 inch = 400 feet

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Produced by BoCC - GIS Date: 1/7/2019

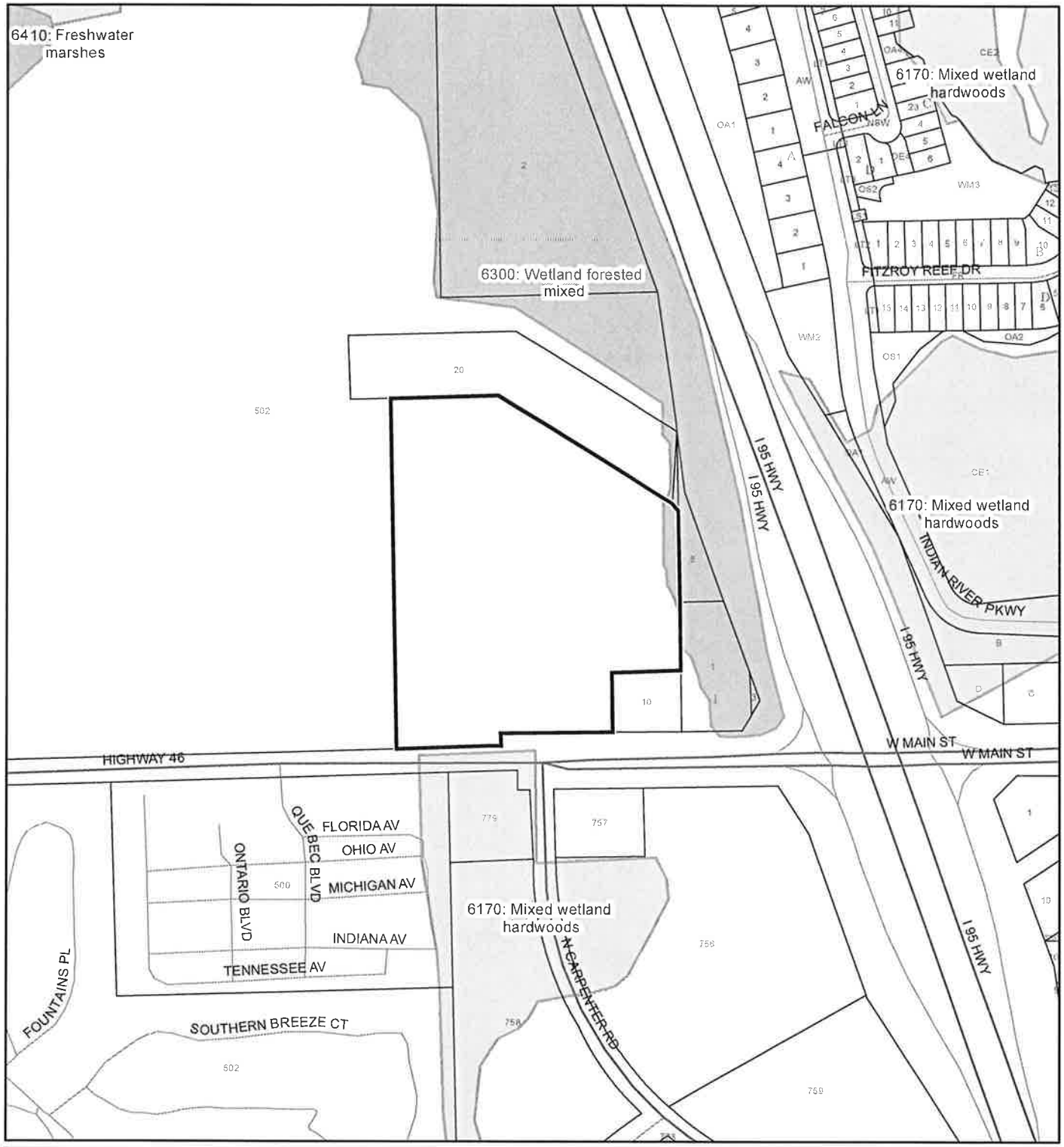
National Wetlands Inventory (NWI)

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Subject Property
- Parcels

SJRWMD FLUCCS WETLANDS - 6000 Series MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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Produced by BoCC - GIS Date: 1/7/2019

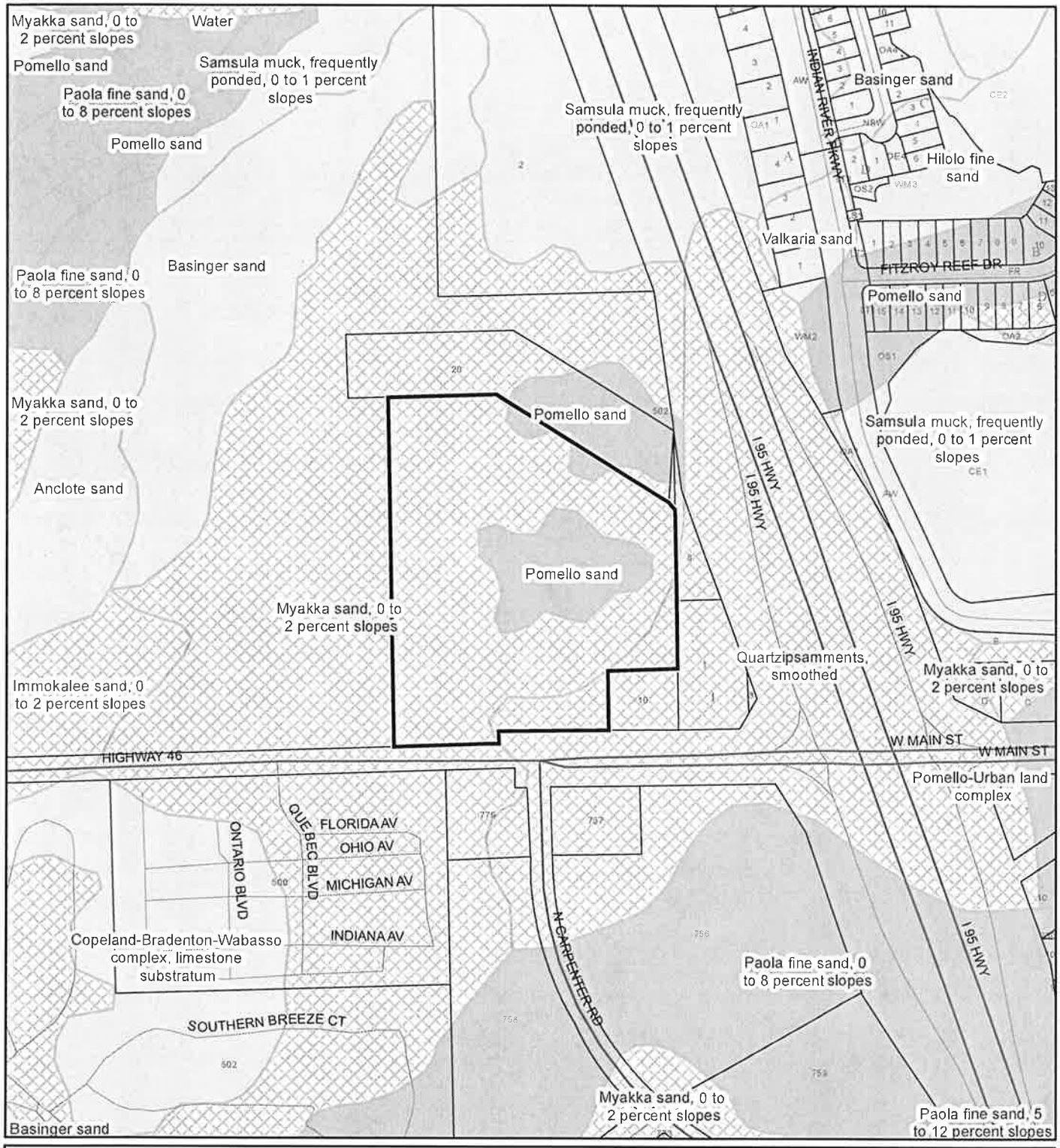
SJRWMD FLUCCS WETLANDS

- Wetland Hardwood Forests - Series 6100
- Wetland Coniferous Forest - Series 6200
- Wetland Forested Mixed - Series 6300
- Vegetated Non-Forested Wetlands - Series 6400
- Non-Vegetated Wetland - Series 6500
- Subject Property
- Parcels

USDA SCSSS SOILS MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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Produced by BoCC - GIS Date: 1/7/2019

USDA SCSSS Soils

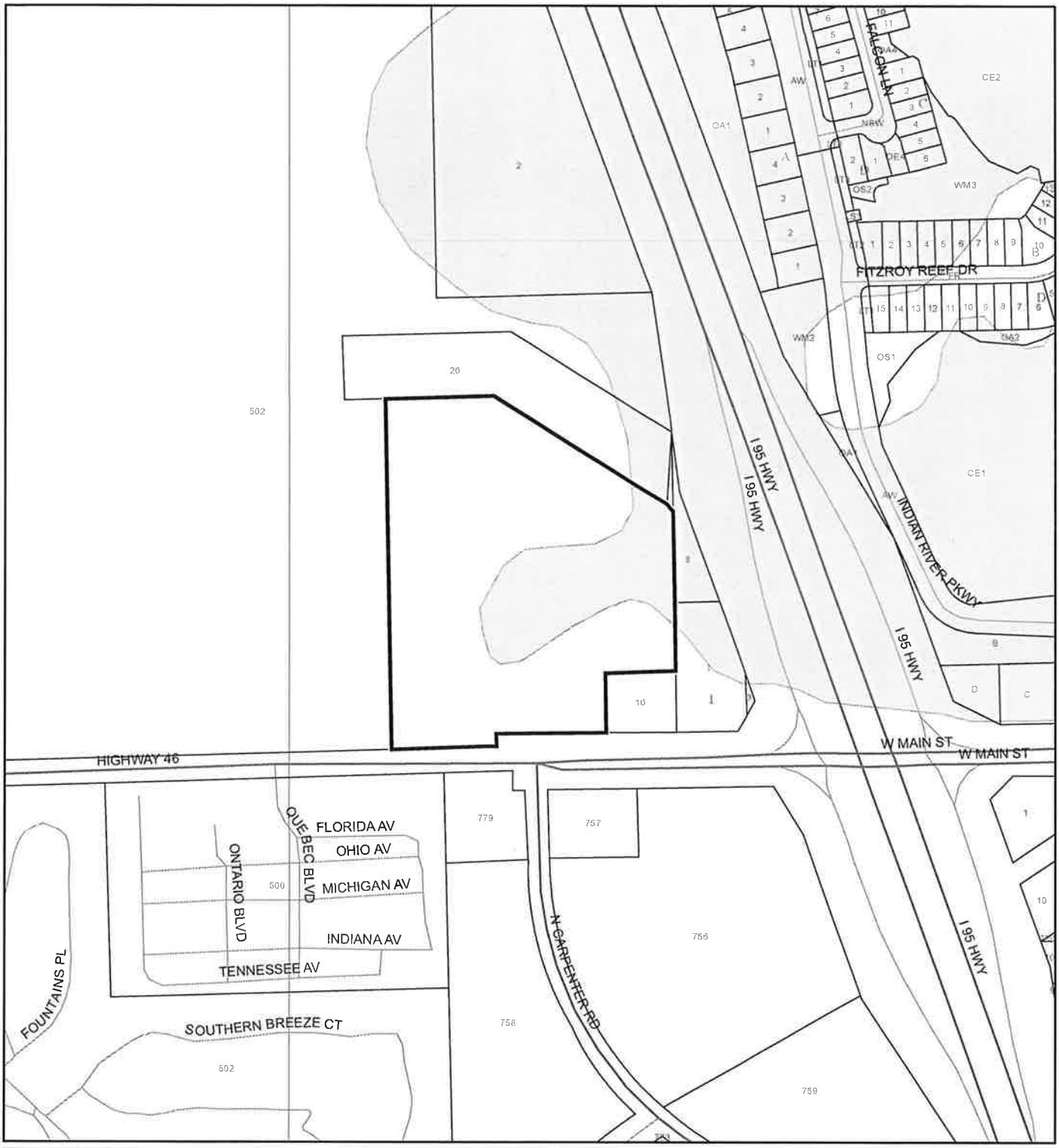
- Aquifer and Hydric
- Aquifer
- Hydric
- None

- Subject Property
- Parcels

FEMA FLOOD ZONES MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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1:4,800 or 1 inch = 400 feet

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Produced by BoCC - GIS Date: 1/7/2019

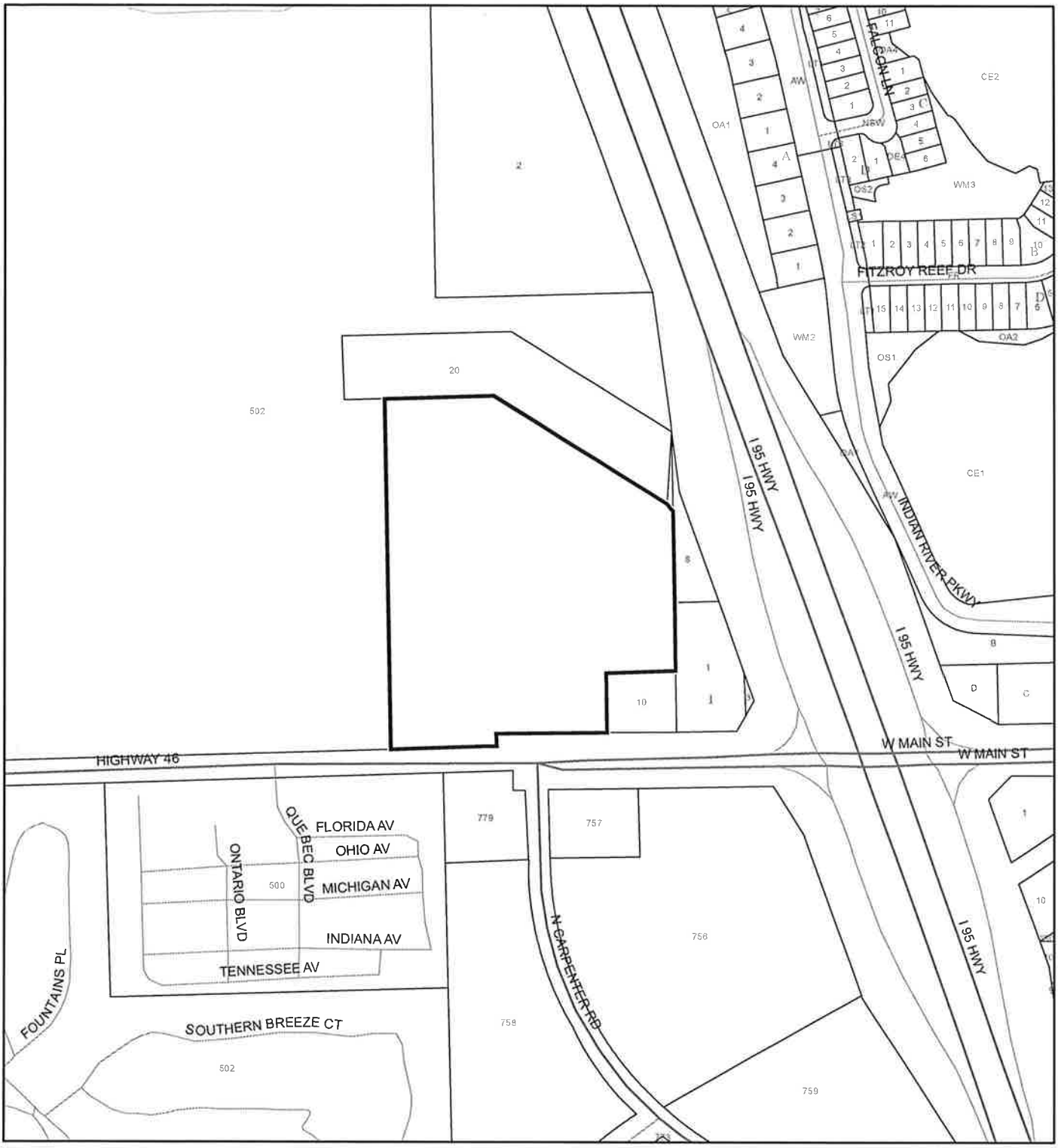
FEMA Flood Zones

- A
- AE
- AH
- AO
- Open Water
- VE
- X
- X Protected By Levee
- 0.2 Percent Annual Chance Flood Hazard
- 0.2 Percent Annual Chance Flood Hazard Conlained in Channel
- Subject Property
- Parcels

EAGLE NESTS MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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1:4,800 or 1 inch = 400 feet

Subject Property

Parcels

Eagle Nests
FWS 2010

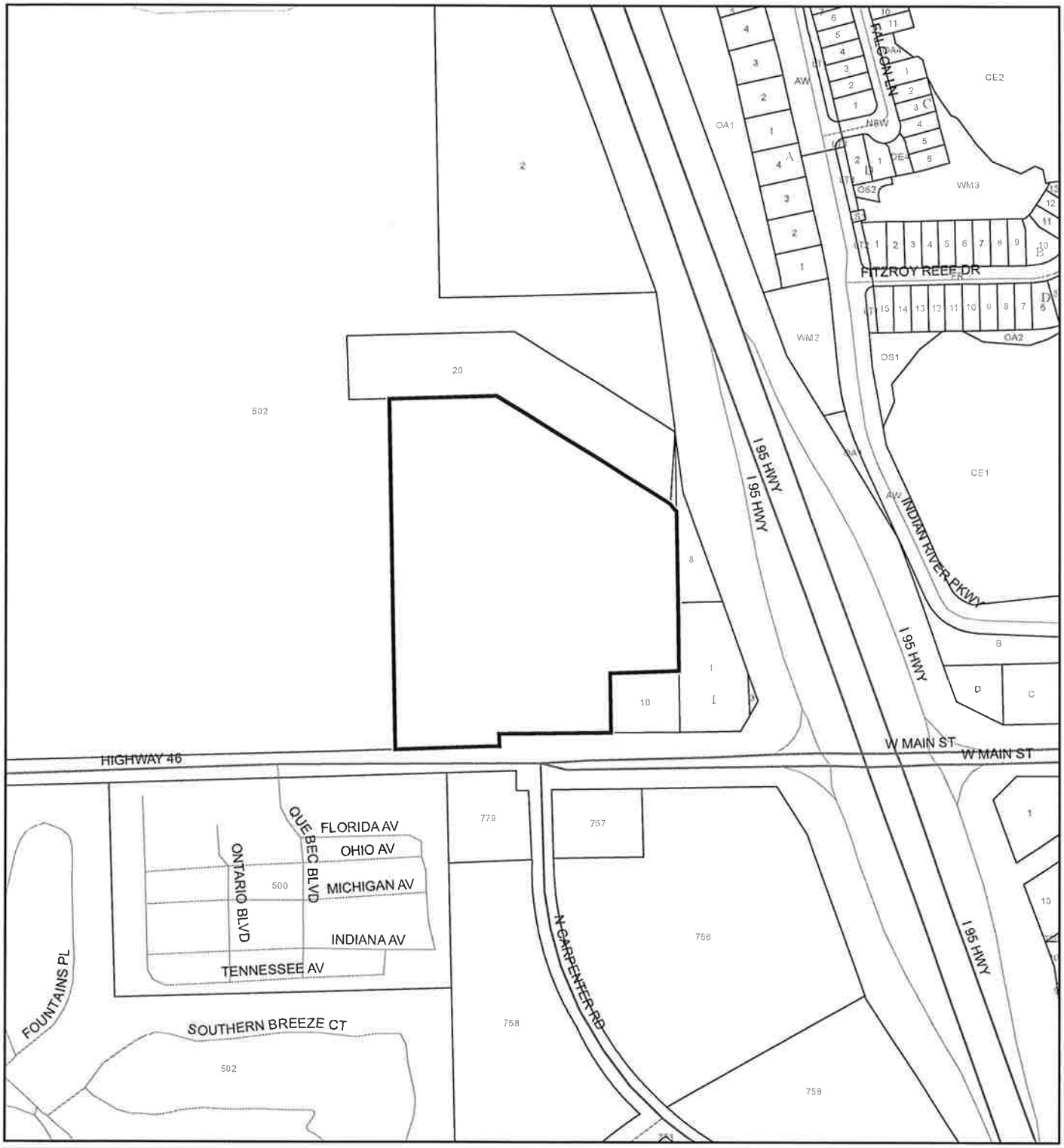
This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by BoCC - GIS Date: 1/7/2019

SCRUB JAY OCCUPANCY MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



N

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1:4,800 or 1 inch = 400 feet

Subject Property

Parcels

Scrub Jay Occupancy

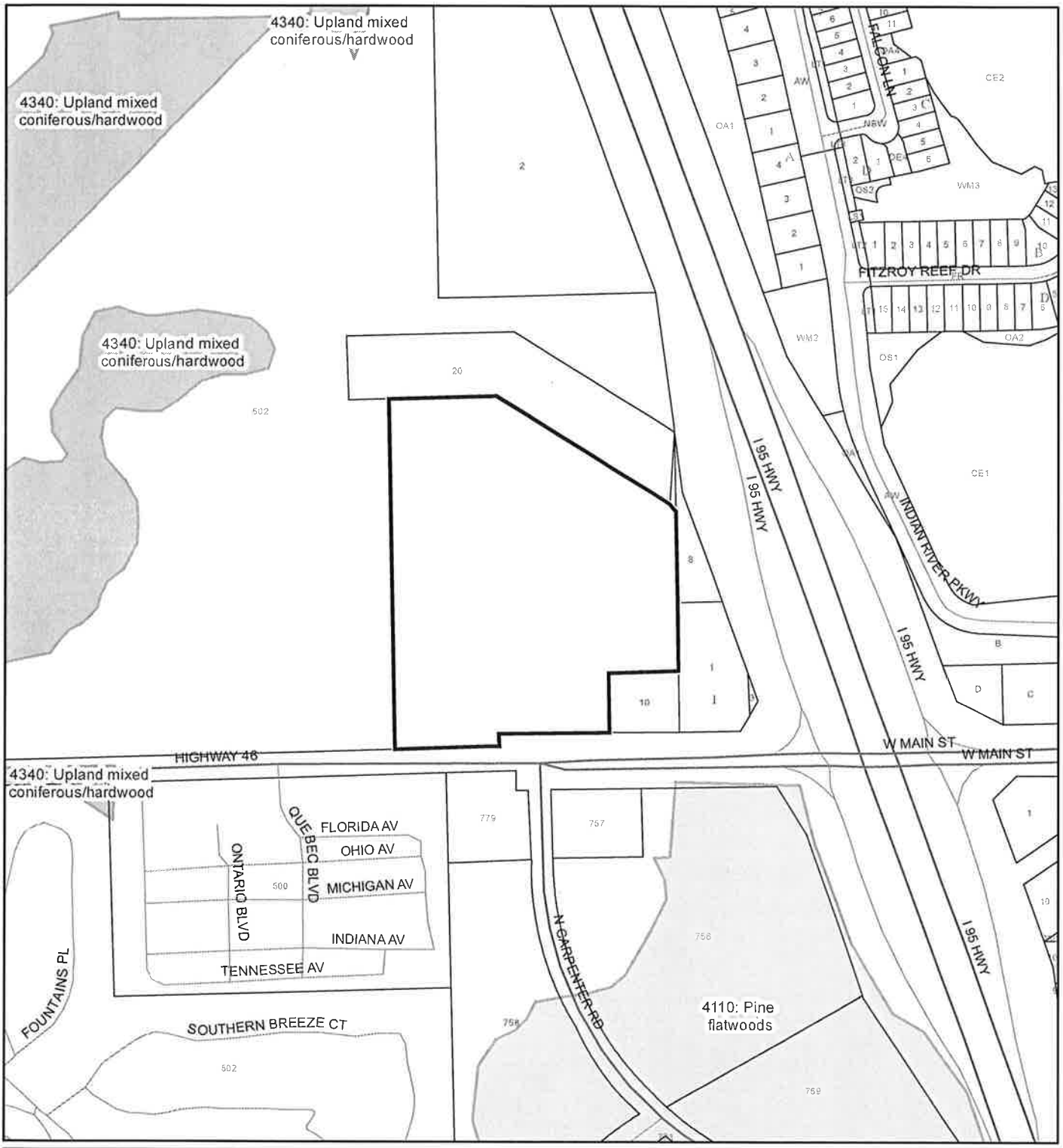
This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by BoCC - GIS Date: 1/7/2019

SJRWMD FLUCCS UPLAND FORESTS - 4000 Series MAP

JOHN L. JACKSON, JR., TRUSTEE, et al

18PZ00161



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1:4,800 or 1 inch = 400 feet

This map was compiled from recorded documents and does not reflect an actual survey. The Brevard County Board of County Commissioners does not assume responsibility for errors or omissions hereon.

Produced by BoCC - GIS Date: 1/7/2019

SJRWMD FLUCCS Upland Forests

- Upland Coniferous Forest - 4100 Series
- Upland Hardwood Forest - 4200 Series
- Upland Mixed Forest - 4300 Series
- Tree Plantations - 4400 Series
- Subject Property
- Parcels

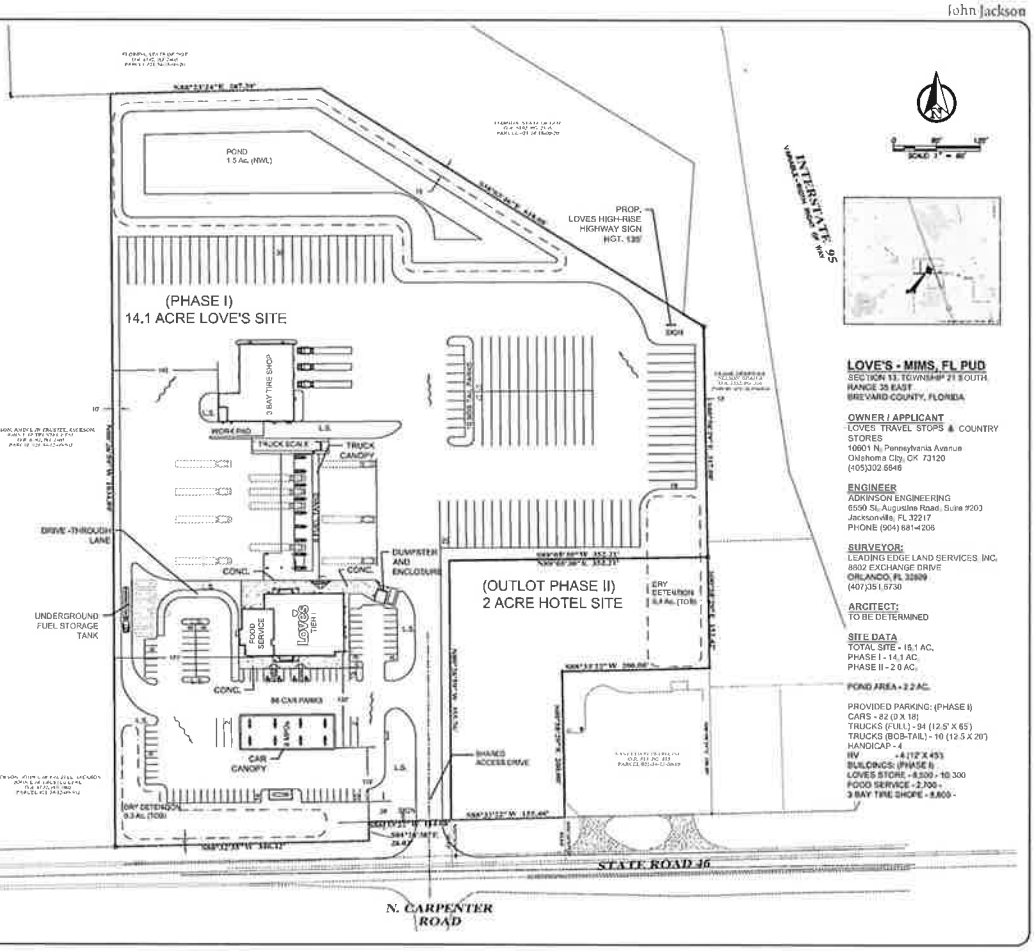
Concept Plan
18PZ00161
John Jackson

LEGAL DISCRIPTION:

BEING A PARCEL OF LAND LOCATED IN SECTION 13, TOWNSHIP 21 SOUTH, RANGE 35 EAST, BREVARD COUNTY, FLORIDA AND BEING A PORTION OF A PARCEL OF LAND CONVEYED BY DEED TO JOHN L. JACKSON JR TRUSTEE ETAL AS RECORDED IN DEED BOOK 6133, PAGE 2745, OF THE PUBLIC RECORDS IN BREVARD COUNTY,, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE EAST QUARTER CORNER OF SECTION 13, THENCE WESTERLY ALONG THE QUARTER SECTION S89°33'57"W, A DISTANCE OF 2344.11 FEET; THENCE LEAVING SAID QUARTER SECTION LINE N01°26'03"W, A DISTANCE OF 59.52 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY OF STATE ROUTE 46 AS SHOWN ON THE RIGHT OF WAY MAP FOR STATE ROAD 9 (INTERSTATE 95), BREVARD COUNTY, SECTION 70025, FED PROJECT NUMBER 0953-114, SAID POINT BEING THE POINT OF BEGINNING AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THENCE ALONG THE NORTH RIGHT OF WAY OF STATE ROUTE 46 THE FOLLOWING THREE (3) COURSES: 1) S89°33'22"W, A DISTANCE OF 114.68 FEET; 2) S01°26'38"E, A DISTANCE OF 20.92 FEET; 3) S89°32'35"W, A DISTANCE OF 346.42 FEET; THENCE LEAVING THE RIGHT OF WAY OF STATE ROUTE 46 N00°26'59"W, A DISTANCE OF 1634.89 FEET, TO THE SOUTH LINE OF FLORIDA DEPARTMENT OF TRANSPORTATION DRAINAGE POND PROPERTY; THENCE ALONG THE SOUTH LINE OF SAID FLORIDA DEPARTMENT OF TRANSPORTATION PROPERTY THE FOLOWWING TWO (2) COURSES: 1) N88°23'24"E, A DISTANCE OF 287.39 FEET; 2) S58°03'16"E, A DISTANCE OF 618.08 FEET, TO THE EAST LINE OF DESCRIBED PROPERTY; THENCE S00°58'29"E, A DISTANCE OF 469.42 FEET, TO THE NORTH LINE OF PROPERTY OWNED BY EAST COAST PETRO., INC; THENCE ALONG SAID NORTH LINE S89°33'22"W, A DISTANCE OF 200.00 FEET, TO THE WEST LINE OF SAID PROPERTY; THENCE LEAVING SAID NORTH LINE S00°58'29"E, A DISTANCE OF 200.00, TO THE NORTH LINE OF STATE ROUTE 46; THENCE ALONG THE NORTH LINE OF STATE ROUTE 46 S89°33'22"W, A DISTANCE OF 155.48 FEET, TO THE POINT OF BEGINNING.



LEGEND:
L.S. LANDSCAPE AREA
DRAINAGE FLOW

LOVE'S - MIMS, FL PUD
SECTION 13, TOWNSHIP 21 SOUTH
RANGE 35 EAST
BREVARD COUNTY, FLORIDA

OWNER / APPLICANT
LOVES TRAVEL STOPS & COUNTRY STORES
10601 N. Pennsylvania Avenue
Oklahoma City, OK 73120
(405)302.6646

ENGINEER
ADKINSON ENGINEERING
6550 St. Augustine Road, Suite #203
Jacksonville, FL 32217
PHONE (904) 641-4206

SURVEYOR:
LEADING EDGE LAND SERVICES, INC.
8602 EXCHANGE DRIVE
ORLANDO, FL 32809
(407)351.5730

ARCITECT:
TO BE DETERMINED

SITE DATA
TOTAL SITE - 16.1 AC.
PHASE I - 14.1 AC.
PHASE II - 2.0 AC.

POND AREA - 2.2 AC.

PROVIDED PARKING: (PHASE I)
CARS - 82 (9 X 18)
TRUCKS (FULL) - 94 (12.5' X 65')
TRUCKS (BOB-TAIL) - 10 (12.5 X 28')
HANDICAP - 4
RV - 4 (12' X 45')
BUILDINGS: (PHASE I)
LOVES STORE - 8,500 - 10,300
FOOD SERVICE - 2,700 -
3 BAY TIRE SHOPE - 8,600 -

ADKINSON ENGINEERING
6550 St. Augustine Road, Suite #203
Jacksonville, FL 32217
PHONE (904) 641-4206

Love's
MIMS, FL
TRAVEL STOPS & COUNTRY STORES
10601 N. Pennsylvania Avenue
Oklahoma City, OK 73120

SITE PLAN EXHIBIT

JOB NO. 2018-07
DATE November 26, 2018
SCALE AS SHOWN
SHEET PUD-1

Draft BDP
18PZ00161
Jackson
(Submitted 02/06/19)

Prepared by: MBV Engineering, Inc.
Address: 1250 W. Eau Gallie Blvd. Unit L, Melbourne, FL 32935

BINDING DEVELOPMENT PLAN

THIS AGREEMENT, entered into this _____ day of _____, 201__ between the BOARD OF COUNTY COMMISSIONERS OF BREVARD COUNTY, FLORIDA, a political subdivision of the State of Florida (hereinafter referred to as "County") and Love's Travel Stops & Country Stores, Inc., a Floridacorporation (hereinafter referred to as "Developer/Owner").

RECITALS

WHEREAS, Developer/Owner owns property (hereinafter referred to as the "Property") in Brevard County, Florida, as more particularly described in Exhibit "A" attached hereto and incorporated herein by this reference; and

WHEREAS, Developer/Owner has requested the BU-2 zoning classification(s) and desires to develop the Property as a truck stop and hotel, and pursuant to the Brevard County Code, Section 62-1157; and

WHEREAS, as part of its plan for development of the Property, Developer/Owner wishes to mitigate negative impact on abutting land owners and affected facilities or services; and

WHEREAS, the County is authorized to regulate development of the Property.

NOW, THEREFORE, the parties agree as follows:

1. The County shall not be required or obligated in any way to construct or maintain or participate in any way in the construction or maintenance of the improvements. It is the intent of the parties that the Developer/Owner, its grantees, successors or assigns in interest or some other association and/or assigns satisfactory to the County shall be responsible for the maintenance of any improvements.

2. Developer/Owner shall limit development to a Fast Food Restaurant with Drive-Thru with no more than 2,700 sf, A Convenience Store of no more than 10,300 sf, a GasStation with no more than

24 Fueling Positions, a Tire Care Center with no more than 3 bays, and a hotel with no more than 120 rooms.

3. Developer/Owner shall comply with all regulations and ordinances of Brevard County, Florida. This Agreement constitutes Developer's/Owner's agreement to meet additional standards or restrictions in developing the Property. This agreement provides no vested rights against changes to the Comprehensive Plan or land development regulations as they may apply to this Property.

4. Developer/Owner, upon execution of this Agreement, shall pay to the County the cost of recording this Agreement in the Public Records of Brevard County, Florida.

5. This Agreement shall be binding and shall inure to the benefit of the successors or assigns of the parties and shall run with the subject Property unless or until rezoned and be binding upon any person, firm or corporation who may become the successor in interest directly or indirectly to the subject Property, and be subject to the above referenced conditions as approved by the Board of County Commissioners on _____. In the event the subject Property is annexed into a municipality and rezoned, this Agreement shall be null and void.

6. Violation of this Agreement will also constitute a violation of the Zoning Classification and this Agreement may be enforced by Sections 1.7 and 62-5, Code of Ordinances of Brevard County, Florida, as it may be amend

IN WITNESS THEREOF, the parties hereto have caused these presents to be signed all as of the date and year first written above.

ATTEST:

BOARD OF COUNTY COMMISSIONERS
OF BREVARD COUNTY, FLORIDA
2725 Judge Fran Jamieson Way
Viera, FL 32940

_____
Scott Ellis, Clerk
(SEAL)

_____
Kristine Isnardi
Chairman
As approved by the Board on_____

(Please note: You must have two witnesses and a notary for each signature required. The notary may serve as one witness.)

WITNESSES:

_____

_____
(Witness Name typed or printed)

_____

_____
(Witness Name typed or printed)

DEVELOPER/OWNER

_____

_____
(Address)

_____
(President)

_____
(Name typed, printed or stamped)

STATE OF _____ §

COUNTY OF _____ §

The foregoing instrument was acknowledged before me this _____ day of

, 20___, by _____, President of _____, who is personally

known to me or who has produced _____ as identification.

My commission expires
SEAL
Commission No.:

_____
Notary Public

_____
(Name typed, printed or stamped)

JOINDER IN BINDING DEVELOPMENT PLAN

KNOW ALL MEN BY THESE PRESENTS, that the undersigned, being the authorized agent and signatory for the owner and holder of that certain Mortgage dated _____, given by _____, as mortgagor, in favor of the undersigned, _____, as mortgagee, recorded in Official Records Book _____, page _____, Public Records of Brevard County, Florida, and encumbering lands described in said Mortgage, does hereby join in the foregoing Binding Development Plan for the purpose of consenting to the change of property use and development requirements as set forth therein.

WITNESSES:

MORTGAGEE NAME/ADDRESS

_____

_____

(Address)

_____ _____

Authorized Agent Signature

_____ _____

(Witness name typed or printed) (Name/title typed, printed or stamped)

_____

_____

(Witness name typed or printed)

STATE OF_____ §

COUNTY OF_____ §

The foregoing instrument was acknowledged before me this _____ day of _____, 20___, by , who is personally known to me or who has produced _____as identification.

My commission expires

_____

Notary Public

SEAL

_____

Commission No.: (Name typed, printed or stamped)

Traffic Signal Warrant Study

SR 46 at N. Carpenter Road
(Brevard County)

LTG Job No.: 4607.06

Prepared For:

LOVE'S TRAVEL STOPS & COUNTY STORES, INC.

Prepared By:

LTG Engineering & Planning

1970 Dairy Road
W. Melbourne, Florida 32904

February 13, 2019

Engineer of Record: George Galan
P.E. No. 60080

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with LTG, Inc., a corporation authorized to operate as an engineering business, EB 0009227, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: SR 46 at North Carpenter Road – Traffic Signal Warrant Study

LOCATION: Brevard County, Florida

CLIENT: Love's Travel Stops & Country Stores, Inc.

JOB #: 4607.06

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.

Prepared by:
LTG, Inc.
1450 W. Granada Blvd, Suite 2
Ormond Beach, FL 32174
Certificate of Authorization 9227
386/257-2571

This item has been electronically signed and sealed by: George Galan, PE on date shown using a digital signature.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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EXECUTIVE SUMMARY

LTG, Inc. has conducted a Traffic Signal Warrant Study (TSWS) at the intersection of SR 46 and North Carpenter Road for the proposed Love's Travel Plaza development in unincorporated Brevard County, Florida. Based on the results of the analysis and engineering judgment, the following recommendations and conclusions were developed:

- A traffic signal is warranted at the intersection of SR 46 and North Carpenter Road.
- During the existing conditions the intersection meets Warrant 2: 4-Hour Vehicular Volume. The traffic volume on the major street is so heavy that the northbound approach suffers excessive delay or conflict in entering SR 46.
- During the Phase I conditions the intersection meets Warrant 1A: Minimum Vehicular Volume, Warrant 1B: Interruption of Continuous of Continuous Traffic, and Warrant 2: 4-Hour Vehicular Volume. The southbound approach experiences excessive delay.
- Within a 12-month period, from February 1, 2017 to February 1, 2018, there were 4 crashes (1 left-turn and 2 off-road collisions) reported at the study intersection that were susceptible to correction by the installation of a traffic signal.
- It is recommended to install a traffic signal during the existing conditions.

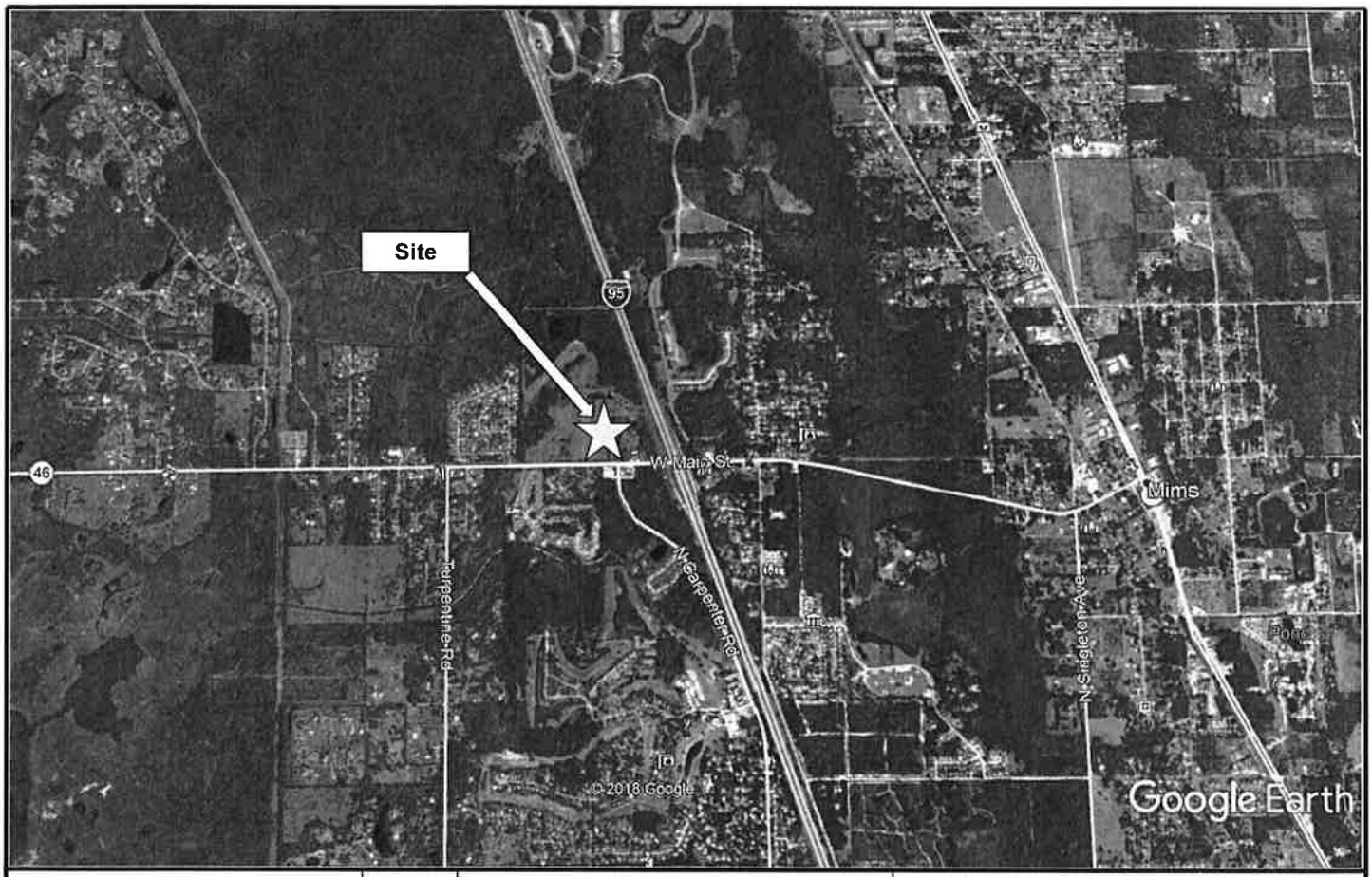
LTG's analysis was based on methods which are consistent with those set forth in the *Manual on Uniform Traffic Control Devices* (MUTCD) and standard practice in the State of Florida.

INTRODUCTION

LTG, Inc. has been retained by Love's Travel Stops & Country Stores, Inc. to conduct a Traffic Signal Warrant Study (TSWS) at the intersection of SR 46 and North Carpenter Road for the proposed Phase I Love's Travel Plaza located in the community of Mims, Florida in unincorporated Brevard County. The existing stop-sign controlled T-intersection configuration will be revised to a 4-leg intersection due to the Love's Travel Plaza Development entrance/exit on the north side of SR 46, opposite of North Carpenter Road.

The development is proposed as a two-phased project. Phase I consists of an 10,300 square feet Gas Station with 24 fueling positions (16 vehicle fueling positions and 8 truck fueling positions), a 2,670 square feet Fast Food Restaurant with a drive through, and a tire superstore with 3 service bays. The anticipated build-out year for Phase I is 2020. This study is based on Phase I only. Figure 1 shows the location of the project relative to the surrounding road network. A preliminary site plan is attached as Appendix A.

The purpose of this study is to determine if Phase I warrant signalized traffic control at the intersection of SR 46 and North Carpenter Road. The analysis methods used in conducting this study are consistent with those set forth in the *Manual on Uniform Traffic Control Devices* (MUTCD), the *Manual on Uniform Traffic Studies* (MUTS), and FDOT guidelines and procedures. This report documents the existing conditions, future conditions, signal warrant analysis, and recommendations.



Love's Travel Plaza	N NTS	**Location Map**		LTG Engineering & Planning
		Project No.: 4607.06	Figure: 1	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

EXISTING CONDITIONS

SR 46 is presently a two-way, two-lane, east-west, undivided facility with a posted speed limit of 55 mph in the vicinity of the study intersection. North Carpenter Road is a two-way, two-lane, north-south roadway and provides access to the Love's Travel Plaza located on the northwest quadrant of the SR 46 and North Carpenter Road. A westbound left-turn lane is provided at the intersection of SR 46 and N Carpenter Road. A condition diagram for the intersection is presented as Figure 2, and images of the intersection are included on the following pages. Significant features of the intersection are summarized in Table 1 below:

Table 1
Summary of Existing Conditions
SR 46 and North Carpenter Road TSWS

Feature	Description
Main Street	SR 46
Side Street	North Carpenter Road / Project Driveway.
Area Location	The intersection is just west of I-95 in the community of Mims, Florida.
Surrounding Development	The surrounding development consists of commercial land uses.
Land Uses at Intersection	The northwest quadrant is occupied by the proposed land development. The northeast, southwest and southeast quadrants are occupied by the commercial land uses.
Pedestrian Generators	None
Traffic Control	This intersection has a two-way stop control with uninterrupted flow east and west.
N Carpenter Road/ Project Driveway	Function – North-south urban collector
	Connectivity – SR 46 (North) and Dairy Road (South)
	Cross Section – Two-lane undivided roadway
	Posted Speed Limit – 40 mph
	Alignment – The roadway is level and slightly shift to the east in the northbound direction.
	Sidewalks – None
	Utilities – Overhead electric is located on the west side of the road
	Street Lighting – Lighting is located on the southeast corner of the intersection.
SR 46	Function – east-west arterial roadway
	Connectivity – SJHP (West) and Minton Road (East)
	Cross Section – Two-lane undivided roadway
	Posted Speed Limit – 55 mph
	Alignment - Straight and level
	Sidewalks – None.
	Utilities – Overhead Electric on the north side of the road.
	Street Lighting – Lighting is located on the southeast corner of the intersection.
Other Distinct Features	None

Image 1 - Carpenter Road Northbound

Image 2 - SR 46 Westbound

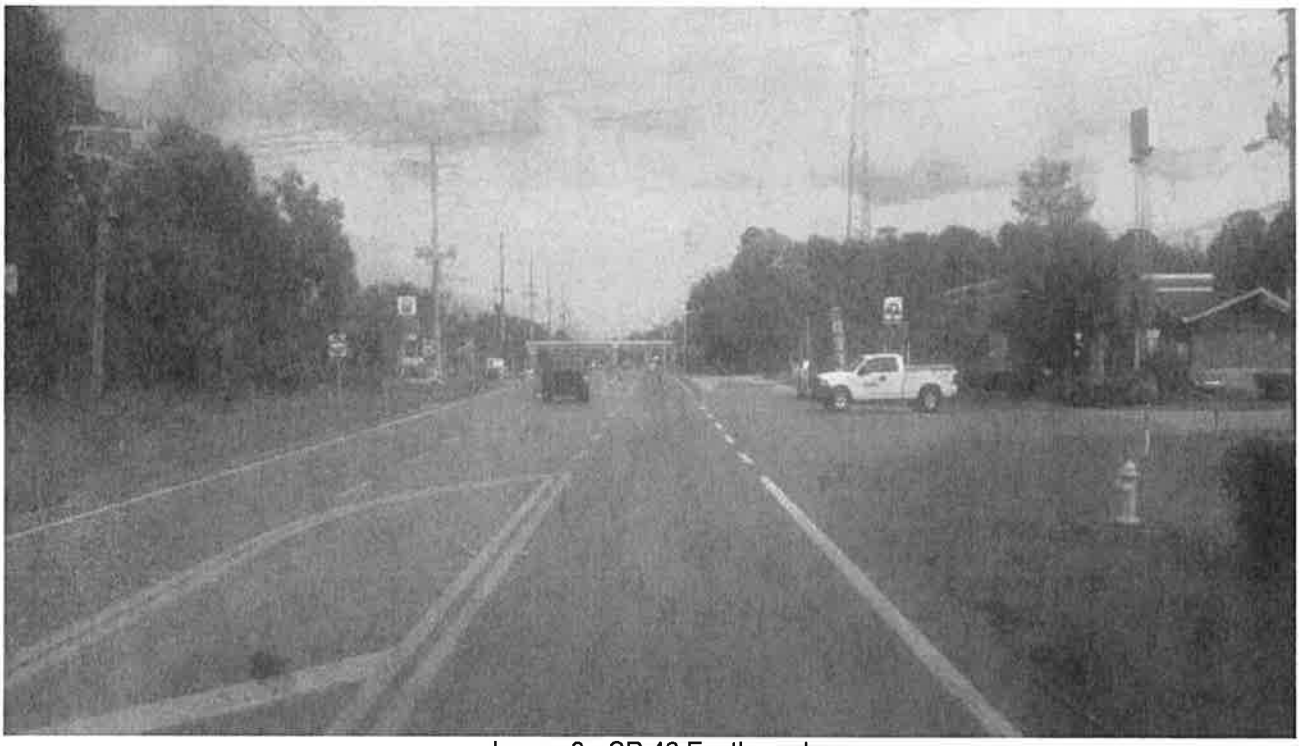
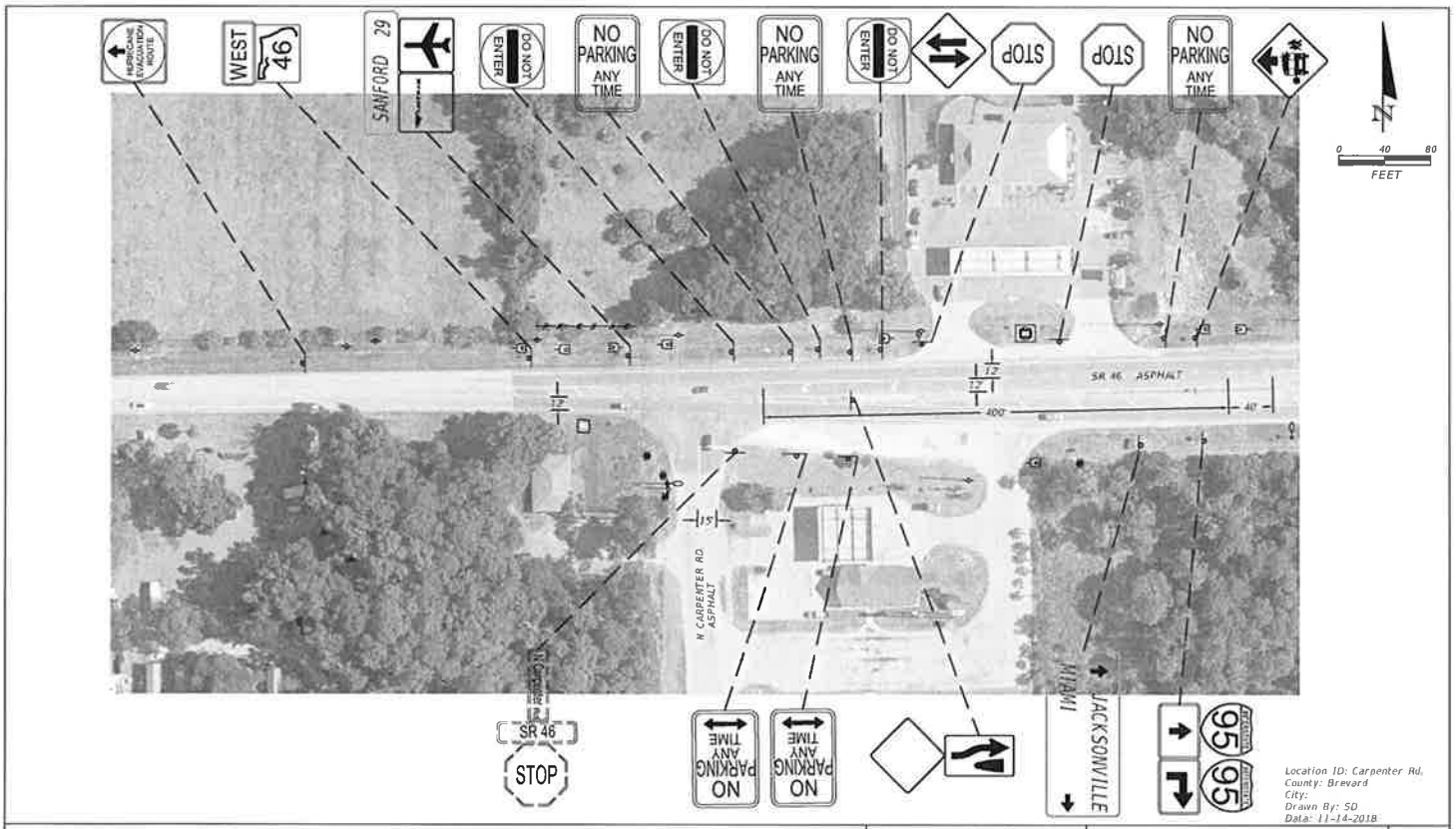


Image 3 - SR 46 Eastbound



SIGN	MITERED END SECTION SINGLE PIPE
LIGHT POLE	PULL BOX
DELINEATOR	FENCE
POWER POLE	DITCH BOTTOM INLET

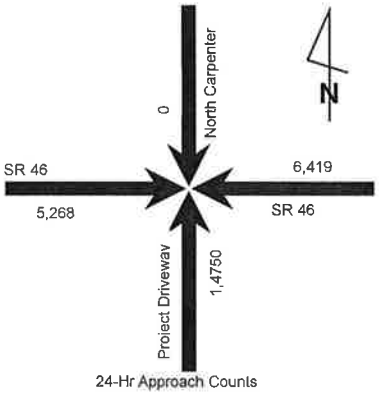
LTG Engineering & Planning
GEORGE GALAN
P.E. No. 60080
1970 Dairy Road
W. MELBOURNE, FLORIDA 32904
PH: 321.499.4679 FAX: 321.499.4680
CERTIFICATE OF AUTHORIZATION NO. 9227

CONDITION DIAGRAM
LOVE'S TRAVEL PLAZA
TSWS

FIGURE NO. 2

Existing Traffic Volumes

Continuous 24-hour machine approach counts were collected for the east, west and south approach to the intersection of SR 46 and North Carpenter Road on Wednesday, November 14, 2018. The 24-hour approach counts yielded 5,268 eastbound vehicles, 6,419 westbound vehicles and 1,475 northbound vehicles approached the intersection on the day of collection.



12-hour turning movement counts were collected at the subject intersection from 7:00 a.m. to 7:00 p.m. on Wednesday, October 10, 2018, and Wednesday, November 14, 2018. The eight highest hours were identified from utilizing the 12-hour turning movement counts. The eight highest count hours selected include 7:00 a.m. to 9:00 a.m., 12:00 p.m. to 1:00 p.m. and 2:00 p.m. to 7:00 p.m. The a.m. peak traffic volumes at the intersection occur from 7:15 a.m. – 8:15 a.m. with a total of 988 vehicles per hour (vph) approaching the intersection. The p.m. peak traffic volumes at the intersection occur from 5:00 p.m. – 6:00 p.m. with a total of 1.138 vehicles per hour (vph) approaching the intersection.

The raw count data is included in Appendix B. Table 2 summarizes the minimum and maximum volumes and the average approach percent distribution of turning movements during the twelve highest hours:

Table 2
Turning Movement Count Summary
Wisteria Ave at SR 46

Movement		EB		WB		NB	
		Min	Max	Min	Max	Min	Max
Left	Volume	0	0	54	147	13	43
	Avg %	0%		23%		25%	
Through	Volume	247	434	165	495	0	0
	Avg %	93%		77%		0%	
Right	Volume	7	44	0	0	29	141
	Avg %	7%		0%		75%	

Existing turning movement counts dated November 20, 2018

QUALITATIVE ASSESSMENT

The intersection of SR 46 at North Carpenter Road was observed during the p.m. peak-hour to assess existing operating conditions and to determine if installing a traffic signal would be potentially beneficial. The following conditions were observed:

Operation:

General Observations:

- Four (4) pedestrians were observed at the study intersection during the p.m. peak-hour. Two of Four pedestrians were crossing SR 46.
- Ten (10) westbound vehicles were observed making U-turn at the end of the raised median prior to reaching the end of the turn lane, thereby reducing the deceleration distance for other left-turn vehicles.
- Northbound direction has limited sight distance from the west direction.

Eastbound:

- During the p.m. peak-hour eastbound right-turn vehicles onto Carpenter Road caused through-lane blockage resulting in hard-braking and tailgating.
- No long queue was observed on eastbound direction.
- Two (2) eastbound vehicles were observed passing over Carpenter Road and using shoulder as deceleration lane to make the right-turning movement into the Gas Station.

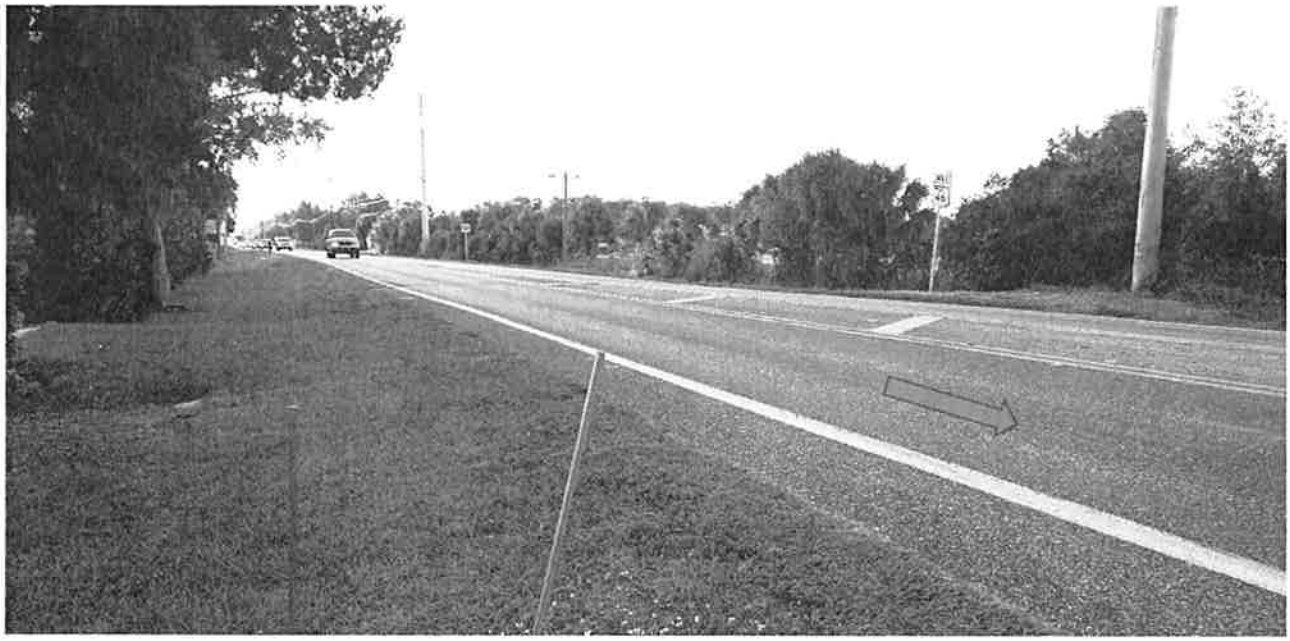


Image 4 - SR 46 Facing West

Image 5 SR 46 Facing East

Westbound:

- During the p.m. peak-hour, a maximum queue of five (5) vehicles and delay of 45 seconds were observed for the westbound left-turn movement.
- Ten (10) westbound vehicles were observed making U-turns from the end of the raised median prior to reaching the end of the turn lane during the p.m. peak-hour, thereby reducing the deceleration distance for other left turn vehicles. There currently isn't enough radius to accommodate westbound U-turns. A possible solution is to extend the raised median to the intersection and provide a bulb-out at the intersection to help facilitate the movement.

Image 6 - SR 46 Facing East

Image 7 - SR 46 Facing West

Northbound:

- The maximum queue for the northbound movement was eight (8) vehicles during the p.m. peak hour. Delay was observed to be 80 seconds, and the queue dissipated quickly.
- Northbound direction has a limited sight distance. Vehicles turning left from the northbound approach were observed driving past stop bar in order to get a clear sight to perform the turning movement. It was also observed that vehicles turning left from the westbound approach had a harder time performing their turn due to the northbound vehicle being their turning radius.

Image 7 – Carpenter Road Facing South

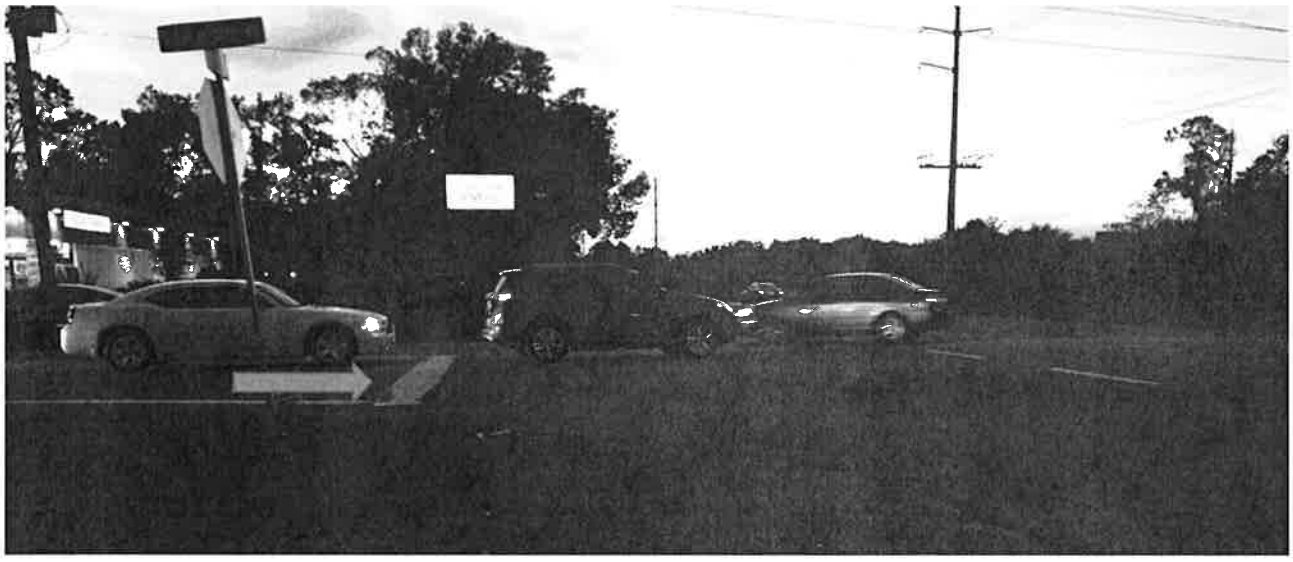


Image 8 - N Carpenter Road Facing West

Safety:

No signs of skid marks, broken glass, plastic, or other indication of a crash were observed at the study intersections.

Maintenance:

The signs, pavement markings, and pavement conditions at the study intersection are in good condition. The grass area on the southeast side of SR 46 is in poor condition. No pedestrian facilities are provided at the intersection of SR 46 and North Carpenter Road.

FUTURE CONDITIONS

Due to planned Love's Travel Plaza on the north side of SR 46, evaluation of signal warrants was based on both the existing and future roadway conditions. The following presents the methods used to determine the traffic volumes for the signal warrant evaluation.

Project Trip Generation

Trip generation for the proposed development was determined using the trip generation rates published by the Institute of Transportation Engineers (ITE) in the document *Trip Generation, 10th Edition*. The daily, a.m., and p.m. peak-hour trips generated for Phase I of the development are provided in Table 3.

Table 3
Gross Trip Generation
SR 46 and North Carpenter Road TSWS

Time Period	Land Use	Land Use Code	Trip Rate Equation	Size	Units	Percent Entering	Percent Exiting	Trips Entering	Trips Exiting	Total Trips
Daily	Super Convenience Market/Gas Station	960	T=837.58(X)	10.3	KSF	50%	50%	4,314	4,313	8,627
	Fast Food Restaurant with Drive Through	934	T=470.95(X)	2.70	KSF	50%	50%	636	636	1,272
	Tire Store	849	T=30.55(X)	3.00	Service Bays	50%	50%	46	46	92
Totals:								**4,996**	**4,995**	**9,991**
A.M. Peak-Hour	Super Convenience Market/Gas Station	960	T=83.14(X)	10.3	KSF	50%	50%	428	428	856
	Fast Food Restaurant with Drive Through	934	T=40.19(X)	2.70	KSF	51%	49%	55	54	109
	Tire Store	849	T=2.01(X)	3.0	Service Bays	65%	35%	4	2	6
Totals:								**487**	**484**	**971**
P.M. Peak-Hour	Super Convenience Market/Gas Station	960	T=69.28(X)	10.3	KSF	50%	50%	357	357	714
	Fast Food Restaurant with Drive Through	934	T=32.67(X)	2.70	KSF	52%	48%	46	42	88
	Tire Store	849	T=3.17(X)	3	Service Bays	47%	53%	4	6	10
Totals:								**407**	**405**	**812**

Due to the nature of the proposed development, a certain portion of the trips is expected to remain internal to the site. The internal capture rate was calculated based on a.m. and p.m. NCHRP Report 684 Internal Capture Estimator. Additionally, a portion of the new trips known as pass-by will be attracted to the project from the existing traffic on the adjacent roadways. These pass-by trips were calculated using procedures outlined in the *Trip Generation Handbook, 3rd Edition*. The internal capture and pass-by trips associated with the development were deducted from the gross total project trips to determine the new net external trips. The results are presented in Table 4.

Hourly Trip Variation

The hourly entering and exiting project trips were determined using hourly variation percentage, published by in the *ITE Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use,* multiplied by the land use entering and exiting trips and the directional distribution. The anticipated 8 highest hourly project traffic were selected between the hours of 7:00 a.m. to 7:00 p.m. The project hourly trips were added to the background hourly traffic to provide the total approach hourly volumes. The northbound and southbound hourly trip distribution were evaluated to determine which side of the minor street generated more traffic. Base on the analysis, the southbound direction was used due to higher hourly traffic volume. Tables and 6 provide the results of the major and minor road calculations.

Table 4
Net Trip Generation
SR 46 and North Carpenter Road TSWS

Time Period	Land Use	Total Trips			Internal Trips			Pass-by Trips Total			New External Trips		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Daily	Super Convenience Market/Gas Station	4,314	4,313	8,627	0	0	0	0	0	0	4,314	4,313	8,627
	Fast Food Restaurant with Drive Through	636	636	1,272	0	0	0	0	0	0	636	636	1,272
	Tire Store	46	46	92	0	0	0	0	0	0	46	46	92
Totals:		**4,996**	**4,995**	**9,991**	**0**	**0**	**0**	**0**	**0**	**0**	**4,996**	**4,995**	**9,991**
AM Peak-Hour	Super Convenience Market/Gas Station	428	428	856	8	28	36	260	248	508	160	152	312
	Fast Food Restaurant with Drive Through	55	54	109	28	8	36	13	23	36	14	23	37
	Tire Store	4	2	6	0	0	0	0	0	0	4	2	6
Totals:		**487**	**484**	**971**	**36**	**36**	**72**	**273**	**271**	**544**	**178**	**177**	**355**
PM Peak-Hour	Super Convenience Market/Gas Station	357	357	714	17	13	30	190	193	383	150	151	301
	Fast Food Restaurant with Drive Through	46	42	88	13	17	30	17	13	30	16	12	28
	Tire Store	4	6	10	0	0	0	0	0	0	4	6	10
Totals:		**407**	**405**	**812**	**30**	**30**	**60**	**207**	**206**	**413**	**170**	**169**	**339**

Pass-by rates: Gas Station: A.M. - 62%, P.M. - 56%; Fast Food Restaurant: A.M. - 49%, P.M. - 50%

Table 5
Hourly Variation of Project Traffic – Major Street
SR 46 and North Carpenter Road TSWS

Time		Land Use Code			Major - EB							Major - WB							EB-WB Mainline Total
		ITE Hourly Variation - Entering[1]			Existing Hourly Traffic	Projected BG Growth Traffic[2]	Entering Project Trips d=enter *20%*a			Total Project Trips	Build-Out Approach Total	Existing Hourly Traffic	Projected BG Growth Traffic[2]	Entering Project Trips k=enter *55%*a			Total Project Trips	Build-Out Approach Total	
From	To	960 (a1)	934 (a2)	848 (a3)	(c)	(d=GR *c*SF)	960 (e1)	934 (e2)	848 (e3)	(f)	(g=d+f)	(i)	(j=GR *i*SF)	960 (k1)	934 (k2)	848 (k3)	(l)	(m=j+l)	
7:00 AM	8:00 AM	5.7%	3.2%	4.7%	463	541	49	4	0	54	595	360	421	135	11	1	148	569	1,164
8:00 AM	9:00 AM	6.4%	3.4%	9.5%	355	415	55	4	1	60	475	302	353	152	12	2	166	519	995
12:00 PM	1:00 PM	6.3%	11.7%	6.5%	292	322	54	15	1	70	392	370	409	149	41	2	192	601	993
2:00 PM	3:00 PM	6.0%	5.8%	9.3%	295	326	52	7	1	60	386	435	480	142	20	2	165	645	1,031
3:00 PM	4:00 PM	6.3%	5.6%	9.3%	290	320	54	7	1	62	382	445	491	149	20	2	171	663	1,045
4:00 PM	5:00 PM	6.3%	5.7%	8.5%	316	369	54	7	1	62	432	612	716	149	20	2	172	887	1,319
5:00 PM	6:00 PM	6.6%	6.8%	5.5%	429	502	57	9	1	66	568	629	735	157	24	1	182	917	1,485
6:00 PM	7:00 PM	6.0%	7.3%	1.6%	337	372	52	9	0	61	433	503	555	142	26	0	168	724	1,157

1. Hourly Variation percentages from ITE Trip Generation

2. A minimum 2% growth rate and FDOT Season Factor are applied to existing trips.

Table 6
Hourly Variation of Project Traffic – Minor Street
SR 46 and North Carpenter Road TSWS

Time		Land Use Code			Minor - SB					
		ITE Hourly Variation - Exiting[1]			Existing Hourly Traffic	Entering Project Trips k=exit *100%*b			Total Project Trips	Build-Out Approach Total
From	To	960 (b1)	934 (b2)	848 (b3)	(p)	960 (r1)	934 (r2)	848 (r3)	(s)	(t=p+s)
7:00 AM	8:00 AM	5.7%	2.9%	1.0%	0	135	69	24	228	228
8:00 AM	9:00 AM	6.3%	3.3%	4.8%	0	149	78	114	342	342
12:00 PM	1:00 PM	6.3%	11.8%	8.2%	0	149	280	195	624	624
2:00 PM	3:00 PM	6.0%	6.4%	11.6%	0	142	152	275	569	569
3:00 PM	4:00 PM	6.2%	5.6%	11.0%	0	147	133	261	541	541
4:00 PM	5:00 PM	6.3%	5.4%	10.4%	0	149	128	247	524	524
5:00 PM	6:00 PM	6.5%	6.4%	8.2%	0	154	152	195	501	501
6:00 PM	7:00 PM	6.1%	7.2%	4.4%	0	145	171	104	420	420

1. Hourly Variation percentages from ITE Trip Generation

COLLISION SUMMARY

Crash Data for a three-year period (January 1, 2014 to August 7, 2018) was obtained from Signal Four Analytics. A total of 14 crashes were reported, and consisted of the following crash types:

- 3 rear-end collisions;
- 4 left-turn collisions;
- 2 sideswipes;
- 5 off-roads;

- The crashes have resulted in no fatalities, 2 injuries, and $84,900 in estimated property damage.
- 10 crashes occurred during the day and 4 occurred at night.
- 11 crashes occurred under dry pavement conditions and 3 occurred under wet pavement conditions.
- 3 crashes occurred due to vehicles that failed to yield the right-of-way. 1 crash occurred due to a stop sign violation when the vehicle attempted to cross SR 46. 5 collisions involving in the single-vehicle off-road were reported.
- Within a 12-month period, from February 1, 2017 to February 1, 2018, there were 4 crashes (1 left-turn and 2 off-road collisions) reported at the study intersection that were susceptible to correction by the installation of a traffic signal.

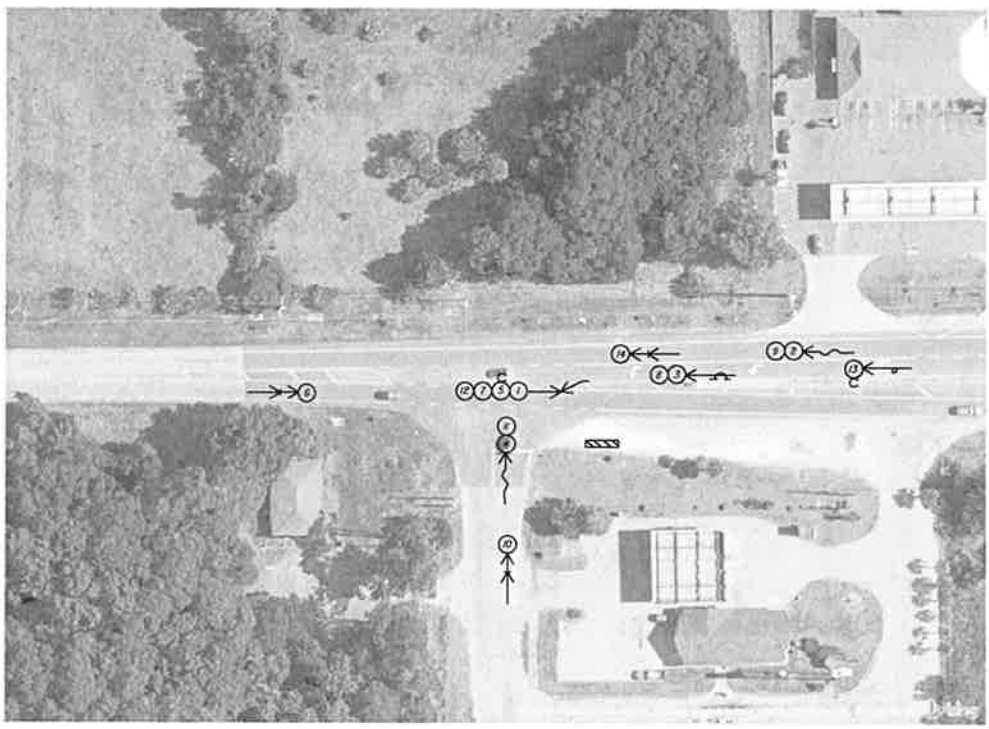
A detailed collision summary featuring the crashes is provided in Table 6 and graphically depicted in Figure 3.

Table 7
Collision Summary
SR 46 and North Carpenter Road TSWS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION — FORM 750-020-06
TRAFFIC ENGINEERING
CRASH SUMMARY — 12/18/2017

LOCATION: Proposed Signal					S.R. NO.: 46				
INTERSECTING ROUTE: SR 46 at Carpenter Rd					M.P.:			ENGINEER: G. Ramirez	
STUDY PERIOD FROM: 1-1-2014					TO: 8-7-2018			COUNTY: Brevard	
NO.	DATE	DAY	TIME	FATAL	INJURY	PROPERTY DAMAGE	DAY/ NIGHT	WET/ DRY	CONTRIBUTING CAUSE
1	3/2/2014	Sunday	12:40 PM	-	-	$ 7,000	D	D	Failed to Yield Right-of-Way
2	5/29/2014	Thursday	6:00 PM	-	-	$ 2,200	Dusk	D	Careless Driving
3	7/16/2014	Wednesday	3:00 PM	-	-	$ 2,000	D	W	Careless Driving
4	1/21/2015	Wednesday	5:46 AM	-	-	$ 5,500	Dark - Lighted	D	Failed to stop
5	6/28/2015	Sunday	10:50 AM	-	1	$ 9,000	D	D	Failed to Yield Right-of-Way
6	12/15/2015	Tuesday	5:58 PM	-	-	$ 4,200	Dusk	D	Followed too Closely
7	1/16/2016	Saturday	9:30 AM	-	-	$ 10,000	D	D	Improper Turn
8	2/6/2016	Saturday	9:49 AM	-	-	$ 7,500	D	D	Careless Driving, DUI
9	2/21/2017	Tuesday	3:50 PM	-	-	$ 3,500	D	D	Run off Roadway
10	6/13/2017	Tuesday	6:34 PM	-	-	$ 2,500	D	W	Followed too Closely
11	5/21/2018	Monday	9:38 PM	-	-	$ 5,000	Dark - Not Lighted	W	Drove too Fast for Conditions
12	11/6/2017	Monday	3:39 PM	-	-	$ 3,500	D	D	Failed to Yield Right-of-Way
13	11/19/2017	Sunday	11:30 AM	-	1	$ 1,000	D	D	Careless Driving
14	8/7/2018	Tuesday	4:20 PM	-	-	$ 22,000	D	D	Careless Driving
TOTAL				0	2	$ 84,900			

TOTAL NO.	FATAL	INJURY	P.D.	ANGLE	LEFT TURN	RIGHT TURN	REAR END	SIDESWIPE
14	0	2	12	0	4	0	3	2
ONE VEHICLE	PED/ BIKE	DAY	NIGHT	WET	DRY	EXCESS SPEED	FTY R/W	DUI
5	0	10	4	3	11	1	3	1
TOTAL VEHICLES ENTERING/ADT:					CRASH RATE: MEV		0.649532012	



N

0 15 60
Feet

Location ID: SR 46 at N Carpenter Rd
County: Brevard County
City:
Drawn By: SD Period:01/01/2014 to 08/07/2018

CONDITION CODES
PAVEMENT CONDITION: D=DRY W=WET I=ICY WEATHER CONDITION: C=CLEAR R=RAIN F=FOG K=CLOUDY LIGHT CONDITION: L=DAYLIGHT N=NIGHT(DARK) TIME OF DAY (MILITARY)

CRASH SUMMARY				
	PROP. DMG. ONLY	INJURY	FATAL	TOTAL
DAYTIME	8	2	0	10
NIGHTTIME	4	0	0	4
TOTAL	12	2	0	14

← VEHICLE PATH
PARKED VEHICLE
U PERSONAL INJURY
REAR-END COLLISION
SIDE SWIPE
OUT OF CONTROL
OVERTURNED VEHICLE
LEFT TURN COLLISION

LTG Engineering & Planning
GEORGE GALAN
P.E. No. 60080
1870 Dairy Road
W. MELBOURNE, FLORIDA 32904
PH: 321.499.4679 FAX: 321.499.4680
CERTIFICATE OF AUTHORIZATION NO. 9227

COLLISION DIAGRAM
LOVE'S TRAVEL PLAZA

PAGE NO. 3

SIGNAL WARRANT ANALYSIS

The traffic volumes and geometric conditions were compared with the warrants for the installation of traffic signals contained in the latest edition of the *Manual on Uniform Traffic Control Devices* (MUTCD).

For the purposes of the Signal Warrant Analysis, SR 46 was considered the major street and North Carpenter Road / Project Driveway the minor street. The analysis was performed under the existing conditions and 2020 Phase I for Love's Travel Plaza with a minimum 2% growth rate applied to the eastbound and westbound background traffic. The Traffic Trend Analysis sheet is included in Appendix C.

Based on the posted speed limit of 55 mph on SR 46, the seventy percent (70%) volume criterion was applied to the analysis. The signal warrant forms are included as Appendix D and Appendix E. Before the project construction, a traffic signal is warranted at this intersection. Thus, it is recommended to install a signal before the project construction. Table 8 and Table 9 summarize the results of the analyses during the study hours:

Table 8
Summary of Signal Warrant Analysis – Existing Conditions
SR 46 and North Carpenter Road TSWS

Warrant		Applicable	Satisfied	Comments
1A	Minimum Vehicular Volume	Yes	No	**Warrant is not satisfied.**
1B	Interruption of Continuous Traffic	Yes	Yes	**Warrant is not satisfied.**
2	Four-Hour Vehicular Volume	Yes	Yes	**Warrant is satisfied.**
3A	Peak-Hour Delay	No	No	This warrant is not applicable.
3B	Peak-Hour Volume	No	No	This warrant is not applicable.
4	Pedestrian Volume	No	No	This warrant is not applicable.
5	School Crossing	No	No	This warrant is not applicable.
6	Coordinated Signal System	No	No	No adjacent traffic signal system.
7	Crash Experience	No	No	This warrant was not evaluated.
8	Roadway Network	No	No	This warrant is not applicable.

Table 9
Summary of Signal Warrant Analysis – Phase I Conditions
SR 46 and North Carpenter Road TSWS

Warrant		Applicable	Satisfied	Comments
1A	Minimum Vehicular Volume	Yes	Yes	**Warrant is satisfied.**
1B	Interruption of Continuous Traffic	Yes	Yes	**Warrant is satisfied.**
2	Four-Hour Vehicular Volume	Yes	Yes	**Warrant is satisfied.**
3A	Peak-Hour Delay	No	No	This warrant is not applicable.
3B	Peak-Hour Volume	No	No	This warrant is not applicable.
4	Pedestrian Volume	No	No	This warrant is not applicable.
5	School Crossing	No	No	This warrant is not applicable.
6	Coordinated Signal System	No	No	No adjacent traffic signal system.
7	Crash Experience	No	No	This warrant was not evaluated.
8	Roadway Network	No	No	This warrant is not applicable.

RECOMMENDATIONS

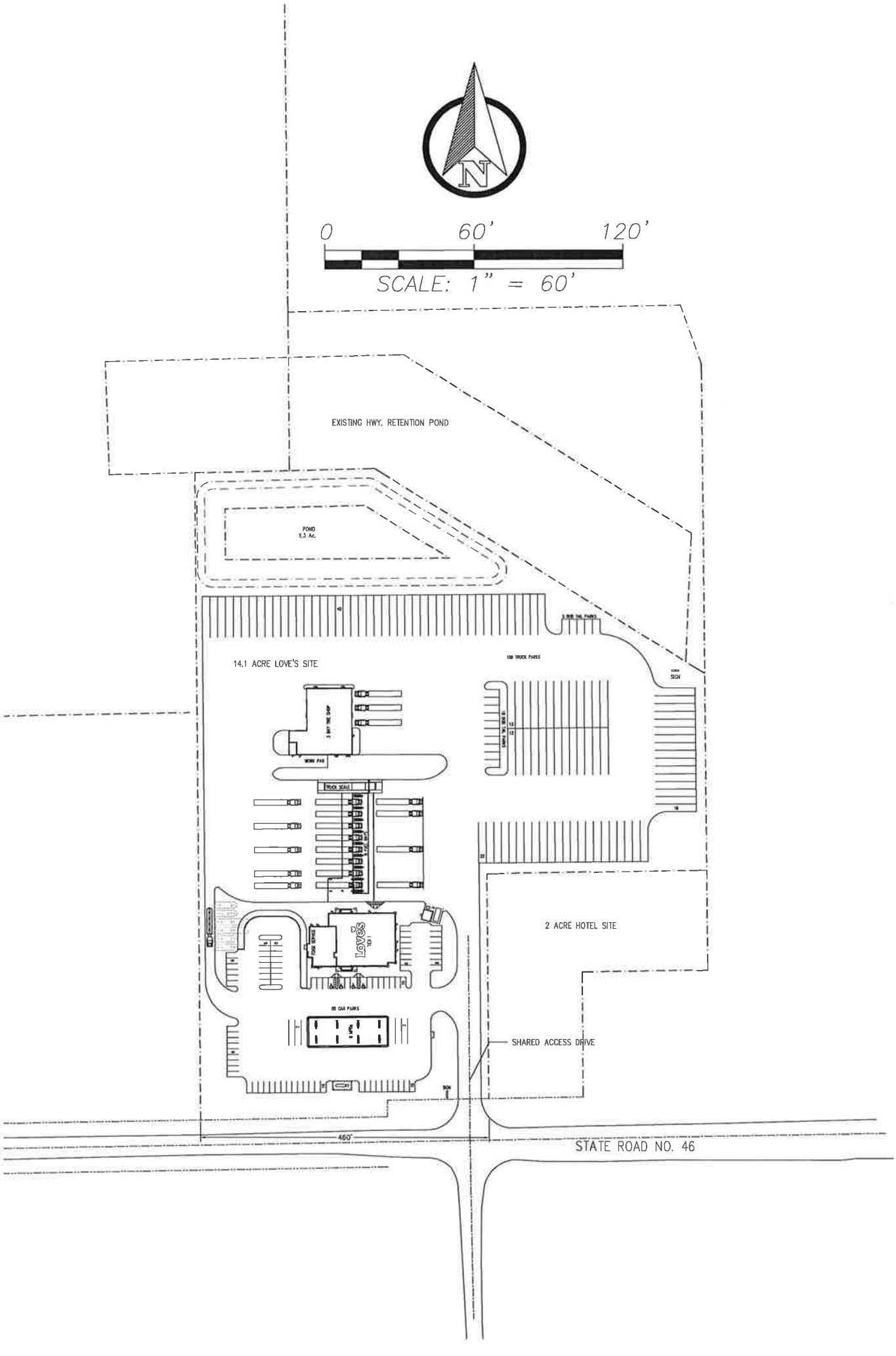
Based on the results of the Signal Warrant Analyses and engineering judgment of projected trips at the proposed Love's Travel Plaza, the following recommendations were developed:

- A traffic signal is warranted at the intersection of SR 46 and North Carpenter Road.
- During the existing conditions the intersection meets Warrant 2: 4-Hour Vehicular Volume. The traffic volume on the major street is so heavy that the northbound approach suffers excessive delay or conflict in entering SR 46.
- During the Phase I conditions the intersection meets Warrant 1A: Minimum Vehicular Volume, Warrant 1B: Interruption of Continuous of Continuous Traffic, and Warrant 2: 4-Hour Vehicular Volume. The southbound approach experiences excessive delay.
- Within a 12-month period, from February 1, 2017, to February 1, 2018, there were 4 crashes (1 left-turn and 2 off-road collisions) reported at the study intersection that were susceptible to correction by the installation of a traffic signal.
- It is recommended to install a traffic signal during the existing conditions.

Appendices

Appendix A

Preliminary Site Plan


N
0
60'
120'
SCALE: 1" = 60'
EXISTING HWY. RETENTION POND
POND
1.3 Ac.
14.1 ACRE LOVE'S SITE
100 TRUCK PARKS
SIGN
WORK PAD
TRUCK SCALE
LOVE'S
88 CAR PARKS
2 ACRE HOTEL SITE
SHARED ACCESS DRIVE
450'
STATE ROAD NO. 46

Appendix B

Raw Data Counts

DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
Site Code : 00000001
Start Date : 10/10/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	0	0	0	19	68	0	87	6	0	35	41	0	100	11	111	239
07:15 AM	0	0	0	0	15	80	0	95	1	0	30	31	0	105	5	110	236
07:30 AM	0	0	0	0	18	67	0	85	4	0	43	47	0	112	3	115	247
07:45 AM	0	0	0	0	22	71	0	93	9	0	33	42	0	117	10	127	262
Total	0	0	0	0	74	286	0	360	20	0	141	161	0	434	29	463	984
08:00 AM	0	0	0	0	24	80	0	104	4	0	25	29	0	101	9	110	243
08:15 AM	0	0	0	0	13	54	0	67	5	0	20	25	0	83	2	85	177
08:30 AM	0	0	0	0	22	52	0	74	5	0	25	30	0	69	4	73	177
08:45 AM	0	0	0	0	11	46	0	57	6	0	20	26	0	83	4	87	170
Total	0	0	0	0	70	232	0	302	20	0	90	110	0	336	19	355	767
04:00 PM	0	0	0	0	43	123	0	166	11	0	22	33	0	72	10	82	281
04:15 PM	0	0	0	0	22	107	0	129	12	0	20	32	0	83	6	89	250
04:30 PM	0	0	0	0	41	112	0	153	13	0	10	23	0	66	10	76	252
04:45 PM	0	0	0	0	41	123	0	164	7	0	16	23	0	62	7	69	256
Total	0	0	0	0	147	465	0	612	43	0	68	111	0	283	33	316	1039
05:00 PM	0	0	0	0	27	124	0	151	11	0	12	23	0	112	12	124	298
05:15 PM	0	0	0	0	32	160	0	192	3	0	11	14	0	96	8	104	310
05:30 PM	0	0	0	0	34	105	0	139	7	0	20	27	0	83	11	94	260
05:45 PM	0	0	0	0	41	106	0	147	3	0	13	16	0	94	13	107	270
Total	0	0	0	0	134	495	0	629	24	0	56	80	0	385	44	429	1138
Grand Total	0	0	0	0	425	1478	0	1903	107	0	355	462	0	1438	125	1563	3928
Apprch %	0	0	0		22.3	77.7	0		23.2	0	76.8		0	92	8		
Total %	0	0	0	0	10.8	37.6	0	48.4	2.7	0	9	11.8	0	36.6	3.2	39.8	

DE TRAFFIC

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Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
Site Code : 00000001
Start Date : 10/10/2018
Page No : 2

Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Automobiles	0	0	0	0	411	1446	0	1857	107	0	347	454	0	1393	118	1511	3822
% Automobiles	0	0	0	0	96.7	97.8	0	97.6	100	0	97.7	98.3	0	96.9	94.4	96.7	97.3
Commercial	0	0	0	0	14	32	0	46	0	0	8	8	0	45	7	52	106
% Commercial	0	0	0	0	3.3	2.2	0	2.4	0	0	2.3	1.7	0	3.1	5.6	3.3	2.7

DE TRAFFIC

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Carpenter Rd at SR 46
Brevard County, FL

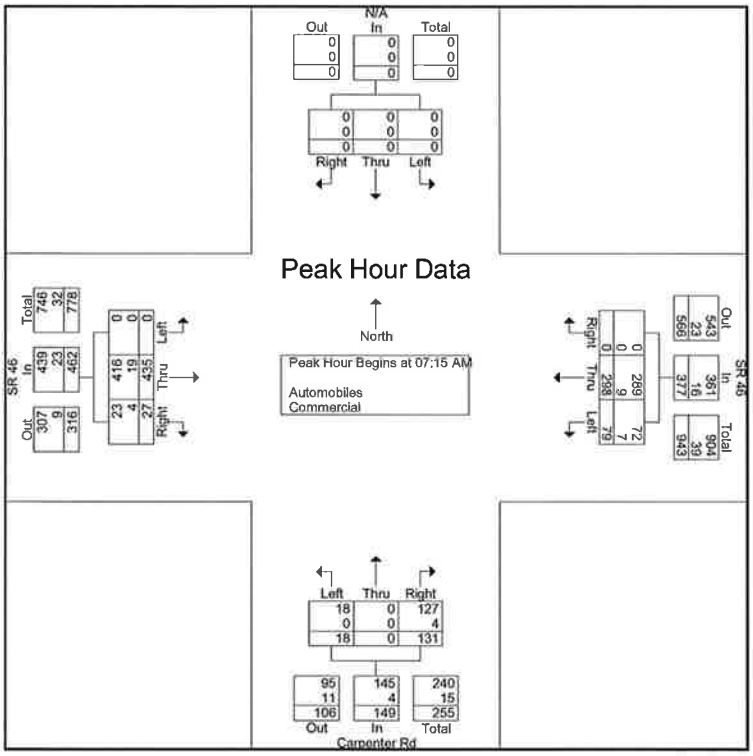
File Name : Carpenter at 46
Site Code : 00000001
Start Date : 10/10/2018
Page No : 3

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	15	80	0	95	1	0	30	31	0	105	5	110	236
07:30 AM	0	0	0	0	18	67	0	85	4	0	43	47	0	112	3	115	247
07:45 AM	0	0	0	0	22	71	0	93	9	0	33	42	0	117	10	127	262
08:00 AM	0	0	0	0	24	80	0	104	4	0	25	29	0	101	9	110	243
Total Volume	0	0	0	0	79	298	0	377	18	0	131	149	0	435	27	462	988
% App. Total	0	0	0		21	79	0		12.1	0	87.9		0	94.2	5.8		
PHF	.000	.000	.000	.000	.823	.931	.000	.906	.500	.000	.762	.793	.000	.929	.675	.909	.943
Automobiles	0	0	0	0	72	289	0	361	18	0	127	145	0	416	23	439	945
% Automobiles	0	0	0	0	91.1	97.0	0	95.8	100	0	96.9	97.3	0	95.6	85.2	95.0	95.6
Commercial	0	0	0	0	7	9	0	16	0	0	4	4	0	19	4	23	43
% Commercial	0	0	0	0	8.9	3.0	0	4.2	0	0	3.1	2.7	0	4.4	14.8	5.0	4.4

DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
Site Code : 00000001
Start Date : 10/10/2018
Page No : 4



DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
Site Code : 00000001
Start Date : 10/10/2018
Page No : 5

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	27	124	0	151	11	0	12	23	0	112	12	124	298
05:15 PM	0	0	0	0	32	160	0	192	3	0	11	14	0	96	8	104	310
05:30 PM	0	0	0	0	34	105	0	139	7	0	20	27	0	83	11	94	260
05:45 PM	0	0	0	0	41	106	0	147	3	0	13	16	0	94	13	107	270
Total Volume	0	0	0	0	134	495	0	629	24	0	56	80	0	385	44	429	1138
% App. Total	0	0	0		21.3	78.7	0		30	0	70		0	89.7	10.3		
PHF	.000	.000	.000	.000	.817	.773	.000	.819	.545	.000	.700	.741	.000	.859	.846	.865	.918
Automobiles	0	0	0	0	132	490	0	622	24	0	55	79	0	381	44	425	1126
% Automobiles	0	0	0	0	98.5	99.0	0	98.9	100	0	98.2	98.8	0	99.0	100	99.1	98.9
Commercial	0	0	0	0	2	5	0	7	0	0	1	1	0	4	0	4	12
% Commercial	0	0	0	0	1.5	1.0	0	1.1	0	0	1.8	1.3	0	1.0	0	0.9	1.1

DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
Site Code : 00000001
Start Date : 10/10/2018
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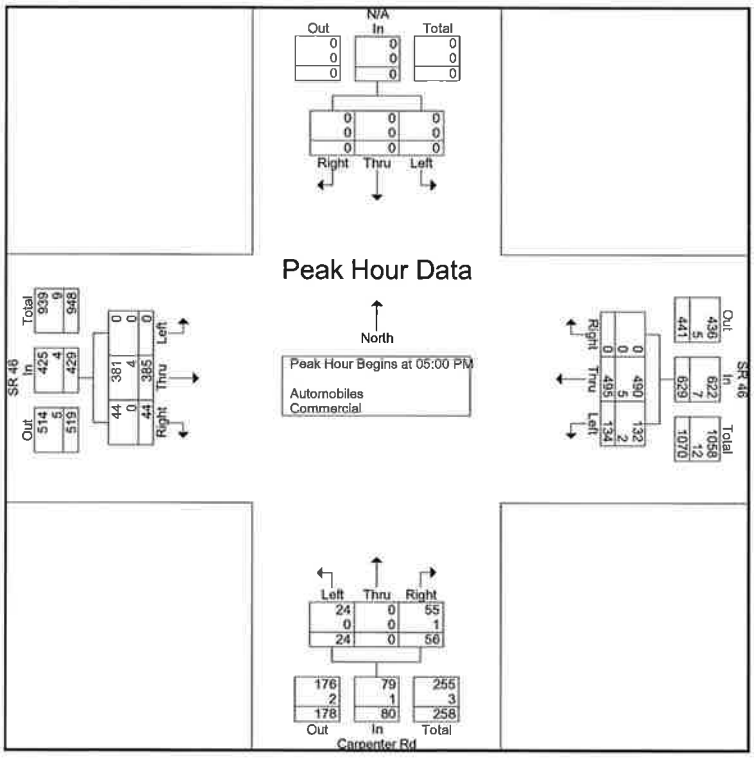

NB Approach

EB Approach

WB Approach

de traffic

Carpenter Rd
at SR 46

Brevard County

www.de-traffic.com

299 McGregor Rd. DeLand Fl. 32720

Project Number: L18-66

Sheet Number: 1

DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : SR 46 at Carpenter
Site Code : 00000001
Start Date : 11/14/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
09:00 AM	0	0	0	0	12	45	0	57	6	0	7	13	0	56	1	57	127
09:15 AM	0	0	0	0	13	37	0	50	10	0	4	14	0	54	2	56	120
09:30 AM	0	0	0	0	17	44	0	61	13	0	6	19	0	66	2	68	148
09:45 AM	0	0	0	0	12	39	0	51	11	0	12	23	0	73	2	75	149
Total	0	0	0	0	54	165	0	219	40	0	29	69	0	249	7	256	544
10:00 AM	0	0	0	0	21	48	0	69	10	0	12	22	0	70	4	74	165
10:15 AM	0	0	0	0	14	60	0	74	8	0	16	24	0	66	8	74	172
10:30 AM	0	0	0	0	15	37	0	52	3	0	12	15	0	69	4	73	140
10:45 AM	0	0	0	0	18	47	0	65	8	0	15	23	0	90	8	98	186
Total	0	0	0	0	68	192	0	260	29	0	55	84	0	295	24	319	663
11:00 AM	0	0	0	0	16	50	0	66	2	0	9	11	0	74	8	82	159
11:15 AM	0	0	0	0	15	50	0	65	5	0	13	18	0	56	5	61	144
11:30 AM	0	0	0	0	18	59	0	77	5	0	12	17	0	66	7	73	167
11:45 AM	0	0	0	0	18	66	0	84	4	0	12	16	0	51	8	59	159
Total	0	0	0	0	67	225	0	292	16	0	46	62	0	247	28	275	629
12:00 PM	0	0	0	0	18	90	0	108	3	0	13	16	0	64	1	65	189
12:15 PM	0	0	0	0	20	60	0	80	4	0	18	22	0	72	8	80	182
12:30 PM	0	0	0	0	17	78	0	95	5	0	13	18	0	61	7	68	181
12:45 PM	0	0	0	0	30	57	0	87	5	0	20	25	0	75	4	79	191
Total	0	0	0	0	85	285	0	370	17	0	64	81	0	272	20	292	743
01:00 PM	0	0	0	0	16	78	0	94	3	0	15	18	0	65	4	69	181
01:15 PM	0	0	0	0	29	84	0	113	5	0	15	20	0	66	5	71	204

DE TRAFFIC

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Carpenter Rd at SR 46
Brevard County, FL

File Name : SR 46 at Carpenter
Site Code : 00000001
Start Date : 11/14/2018
Page No : 2

Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
01:30 PM	0	0	0	0	11	53	0	64	8	0	11	19	0	62	8	70	153
01:45 PM	0	0	0	0	19	77	0	96	5	0	19	24	0	70	8	78	198
Total	0	0	0	0	75	292	0	367	21	0	60	81	0	263	25	288	736
02:00 PM	0	0	0	0	19	76	0	95	5	0	13	18	0	72	7	79	192
02:15 PM	0	0	0	0	15	100	0	115	3	0	12	15	0	57	1	58	188
02:30 PM	0	0	0	0	21	79	0	100	2	0	14	16	0	66	7	73	189
02:45 PM	0	0	0	0	31	94	0	125	6	0	26	32	0	79	6	85	242
Total	0	0	0	0	86	349	0	435	16	0	65	81	0	274	21	295	811
03:00 PM	0	0	0	0	26	100	0	126	5	0	17	22	0	52	2	54	202
03:15 PM	0	0	0	0	17	94	0	111	2	0	16	18	0	64	3	67	196
03:30 PM	0	0	0	0	18	90	0	108	5	0	11	16	0	77	5	82	206
03:45 PM	0	0	0	0	22	78	0	100	4	0	17	21	0	85	2	87	208
Total	0	0	0	0	83	362	0	445	16	0	61	77	0	278	12	290	812
06:00 PM	0	0	0	0	24	100	0	124	2	0	11	13	0	83	4	87	224
06:15 PM	0	0	0	0	16	103	0	119	2	0	16	18	0	77	3	80	217
06:30 PM	0	0	0	0	11	126	0	137	5	0	18	23	0	86	4	90	250
06:45 PM	0	0	0	0	17	106	0	123	4	0	10	14	0	78	2	80	217
Total	0	0	0	0	68	435	0	503	13	0	55	68	0	324	13	337	908
Grand Total	0	0	0	0	586	2305	0	2891	168	0	435	603	0	2202	150	2352	5846
Apprch %	0	0	0		20.3	79.7	0		27.9	0	72.1		0	93.6	6.4		
Total %	0	0	0	0	10	39.4	0	49.5	2.9	0	7.4	10.3	0	37.7	2.6	40.2	
Automobiles	0	0	0	0	563	2213	0	2776	167	0	424	591	0	2133	142	2275	5642
% Automobiles	0	0	0	0	96.1	96	0	96	99.4	0	97.5	98	0	96.9	94.7	96.7	96.5
Commercial	0	0	0	0	23	92	0	115	1	0	11	12	0	69	8	77	204
% Commercial	0	0	0	0	3.9	4	0	4	0.6	0	2.5	2	0	3.1	5.3	3.3	3.5

DE TRAFFIC

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File Name : SR 46 at Carpenter
Site Code : 00000001
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	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 09:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:00 AM																	
10:00 AM	0	0	0	0	21	48	0	69	10	0	12	22	0	70	4	74	165
10:15 AM	0	0	0	0	14	60	0	74	8	0	16	24	0	66	8	74	172
10:30 AM	0	0	0	0	15	37	0	52	3	0	12	15	0	69	4	73	140
10:45 AM	0	0	0	0	18	47	0	65	8	0	15	23	0	90	8	98	186
Total Volume	0	0	0	0	68	192	0	260	29	0	55	84	0	295	24	319	663
% App. Total	0	0	0		26.2	73.8	0		34.5	0	65.5		0	92.5	7.5		
PHF	.000	.000	.000	.000	.810	.800	.000	.878	.725	.000	.859	.875	.000	.819	.750	.814	.891
Automobiles	0	0	0	0	63	182	0	245	29	0	54	83	0	281	24	305	633
% Automobiles	0	0	0	0	92.6	94.8	0	94.2	100	0	98.2	98.8	0	95.3	100	95.6	95.5
Commercial	0	0	0	0	5	10	0	15	0	0	1	1	0	14	0	14	30
% Commercial	0	0	0	0	7.4	5.2	0	5.8	0	0	1.8	1.2	0	4.7	0	4.4	4.5

DE TRAFFIC

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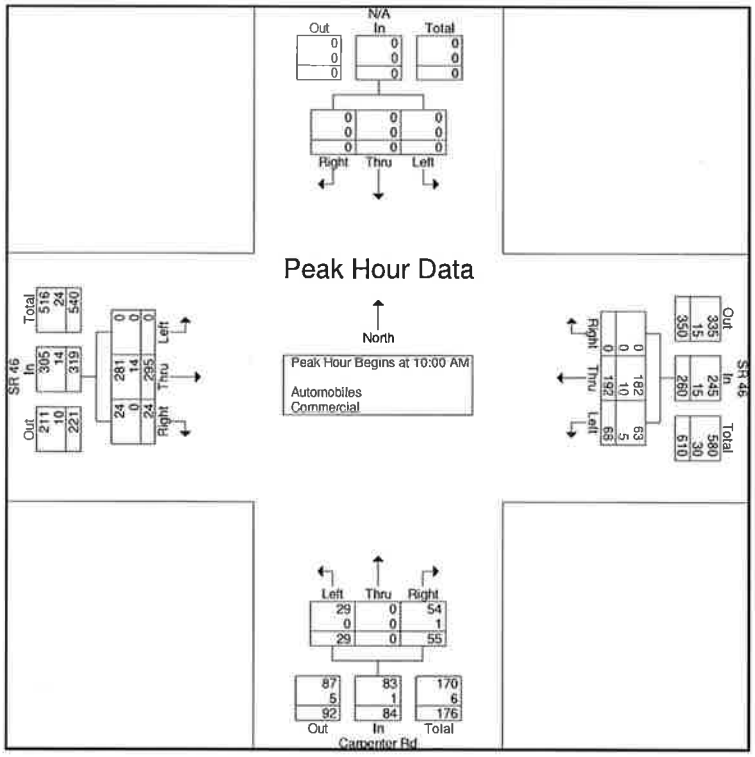
Carpenter Rd at SR 46
Brevard County, FL

File Name : SR 46 at Carpenter
Site Code : 00000001
Start Date : 11/14/2018
Page No : 4



DE TRAFFIC

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Carpenter Rd at SR 46
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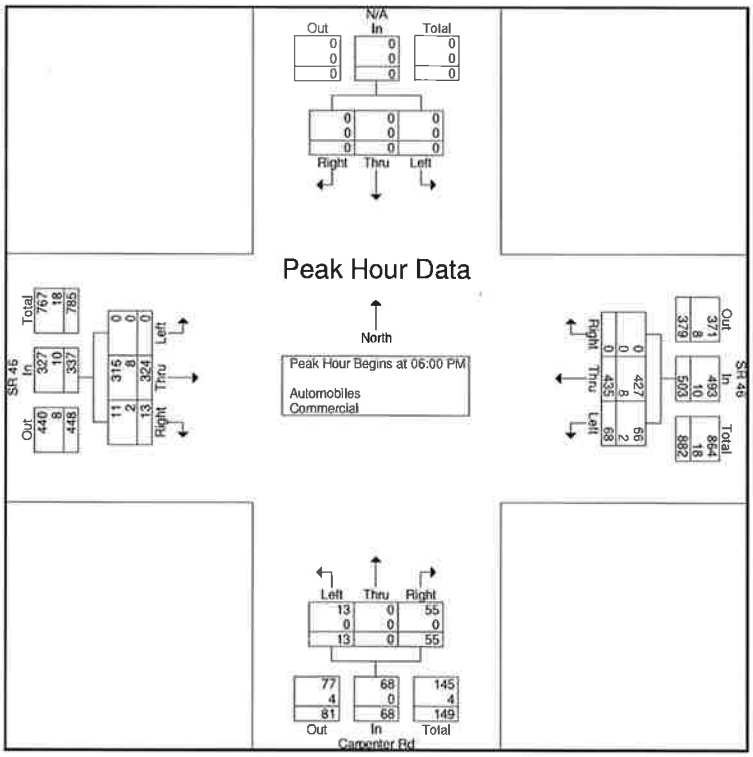
File Name : SR 46 at Carpenter
Site Code : 00000001
Start Date : 11/14/2018
Page No : 5

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 PM																	
06:00 PM	0	0	0	0	24	100	0	124	2	0	11	13	0	83	4	87	224
06:15 PM	0	0	0	0	16	103	0	119	2	0	16	18	0	77	3	80	217
06:30 PM	0	0	0	0	11	126	0	137	5	0	18	23	0	86	4	90	250
06:45 PM	0	0	0	0	17	106	0	123	4	0	10	14	0	78	2	80	217
Total Volume	0	0	0	0	68	435	0	503	13	0	55	68	0	324	13	337	908
% App. Total	0	0	0		13.5	86.5	0		19.1	0	80.9		0	96.1	3.9		
PHF	.000	.000	.000	.000	.708	.863	.000	.918	.650	.000	.764	.739	.000	.942	.813	.936	.908
Automobiles	0	0	0	0	66	427	0	493	13	0	55	68	0	316	11	327	888
% Automobiles	0	0	0	0	97.1	98.2	0	98.0	100	0	100	100	0	97.5	84.6	97.0	97.8
Commercial	0	0	0	0	2	8	0	10	0	0	0	0	0	8	2	10	20
% Commercial	0	0	0	0	2.9	1.8	0	2.0	0	0	0	0	0	2.5	15.4	3.0	2.2

DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : SR 46 at Carpenter
Site Code : 00000001
Start Date : 11/14/2018
Page No : 6



DE Traffic

VOLUME SUMMARY
Wed 11/14/2018

Machine #: NB
Site ID: NB
Location: Carpenter Rd NB south of SR 46

File: NB.prn
Street Name: Carpenter Rd
County: Brevard

TIME	1 NORTH	Total
01:00	2	2
02:00	5	5
03:00	3	3
04:00	7	7
05:00	12	12
06:00	53	53
07:00	117	117
08:00	151	151
09:00	120	120
10:00	83	83
11:00	90	90
12:00	86	86
13:00	80	80
14:00	80	80
15:00	96	96
16:00	98	98
17:00	107	107
18:00	80	80
19:00	72	72
20:00	61	61
21:00	25	25
22:00	24	24
23:00	15	15
24:00	8	8
DAY TOTAL	1475	1475
PERCENTS	100.0	100
AM Times	07:00	
AM Peaks	161	
PM Times	16:00	
PM Peaks	113	

DE Traffic

VOLUME SUMMARY
Wed 11/14/2018

Machine #: NB
Site ID: NB
Location: Carpenter Rd NB south of SR 46

File: NB.prn
Street Name: Carpenter Rd
County: Brevard

TIME	1 NORTH	Total
00:15	1	1
00:30	1	1
00:45	0	0
01:00	0	0
Hour Total	2	2
01:15	2	2
01:30	2	2
01:45	0	0
02:00	1	1
Hour Total	5	5
02:15	0	0
02:30	1	1
02:45	0	0
03:00	2	2
Hour Total	3	3
03:15	0	0
03:30	1	1
03:45	1	1
04:00	5	5
Hour Total	7	7
04:15	2	2
04:30	3	3
04:45	2	2
05:00	5	5
Hour Total	12	12
05:15	4	4
05:30	15	15
05:45	19	19
06:00	15	15
Hour Total	53	53
06:15	21	21
06:30	26	26
06:45	31	31
07:00	39	39
Hour Total	117	117
07:15	41	41
07:30	39	39
07:45	42	42
08:00	29	29
Hour Total	151	151

Machine #: NB
Site ID: NB
Location: Carpenter Rd NB south of SR 46

File: NB.prn
Street Name: Carpenter Rd
County: Brevard

TIME	1 NORTH	Total
08:15	34	34
08:30	26	26
08:45	34	34
09:00	26	26
Hour Total	120	120
09:15	24	24
09:30	16	16
09:45	19	19
10:00	24	24
Hour Total	83	83
10:15	26	26
10:30	24	24
10:45	21	21
11:00	19	19
Hour Total	90	90
11:15	24	24
11:30	24	24
11:45	19	19
12:00	19	19
Hour Total	86	86
12:15	21	21
12:30	18	18
12:45	22	22
13:00	19	19
Hour Total	80	80
13:15	21	21
13:30	18	18
13:45	22	22
14:00	19	19
Hour Total	80	80
14:15	18	18
14:30	24	24
14:45	28	28
15:00	26	26
Hour Total	96	96
15:15	24	24
15:30	19	19
15:45	21	21
16:00	34	34
Hour Total	98	98

Machine #: NB
Site ID: NB
Location: Carpenter Rd NB south of SR 46

File: NB.prn
Street Name: Carpenter Rd
County: Brevard

TIME	1 NORTH	Total
16:15	29	29
16:30	26	26
16:45	24	24
17:00	28	28
Hour Total	107	107
17:15	19	19
17:30	24	24
17:45	21	21
18:00	16	16
Hour Total	80	80
18:15	18	18
18:30	24	24
18:45	19	19
19:00	11	11
Hour Total	72	72
19:15	16	16
19:30	16	16
19:45	18	18
20:00	11	11
Hour Total	61	61
20:15	10	10
20:30	6	6
20:45	5	5
21:00	4	4
Hour Total	25	25
21:15	5	5
21:30	4	4
21:45	6	6
22:00	9	9
Hour Total	24	24
22:15	8	8
22:30	2	2
22:45	1	1
23:00	4	4
Hour Total	15	15
23:15	4	4
23:30	2	2
23:45	1	1
24:00	1	1
Hour Total	8	8

Machine #: NB
Site ID: NB
Location: Carpenter Rd NB south of SR 46

File: NB.prn
Street Name: Carpenter Rd
County: Brevard

TIME	1 NORTH	Total
DAY TOTAL	1475	1475
PERCENTS	100.0	100
AM Times	07:00	
AM Peaks	161	
PM Times	16:00	
PM Peaks	113	

DE Traffic

VOLUME SUMMARY
Wed 11/14/2018

Machine #: EB
Site ID: EB
Location: SR 46 EB west of Carpenter Rd

File: EB.prn
Street Name: SR 46 EB
County: Brevard

TIME	1 EAST	Total
01:00	13	13
02:00	16	16
03:00	21	21
04:00	23	23
05:00	75	75
06:00	257	257
07:00	394	394
08:00	462	462
09:00	318	318
10:00	273	273
11:00	336	336
12:00	275	275
13:00	303	303
14:00	295	295
15:00	281	281
16:00	319	319
17:00	336	336
18:00	383	383
19:00	326	326
20:00	210	210
21:00	154	154
22:00	114	114
23:00	55	55
24:00	29	29
DAY TOTAL	5268	5268
PERCENTS	100.0	100
AM Times	07:00	
AM Peaks	465	
PM Times	17:00	
PM Peaks	414	

DE Traffic

VOLUME SUMMARY
Wed 11/14/2018

Machine #: EB
Site ID: EB
Location: SR 46 EB west of Carpenter Rd

File: EB.prn
Street Name: SR 46 EB
County: Brevard

TIME	1 EAST	Total
00:15	2	2
00:30	4	4
00:45	5	5
01:00	2	2
Hour Total	13	13
01:15	4	4
01:30	5	5
01:45	2	2
02:00	5	5
Hour Total	16	16
02:15	5	5
02:30	4	4
02:45	6	6
03:00	6	6
Hour Total	21	21
03:15	5	5
03:30	4	4
03:45	5	5
04:00	9	9
Hour Total	23	23
04:15	16	16
04:30	16	16
04:45	19	19
05:00	24	24
Hour Total	75	75
05:15	42	42
05:30	63	63
05:45	76	76
06:00	76	76
Hour Total	257	257
06:15	84	84
06:30	103	103
06:45	98	98
07:00	109	109
Hour Total	394	394
07:15	115	115
07:30	117	117
07:45	124	124
08:00	106	106
Hour Total	462	462

VOLUME SUMMARY
Wed 11/14/2018

Machine #: EB
Site ID: EB
Location: SR 46 EB west of Carpenter Rd

File: EB.prn
Street Name: SR 46 EB
County: Brevard

TIME	1 EAST	Total
08:15	95	95
08:30	78	78
08:45	84	84
09:00	61	61
Hour Total	318	318
09:15	56	56
09:30	72	72
09:45	64	64
10:00	81	81
Hour Total	273	273
10:15	76	76
10:30	81	81
10:45	98	98
11:00	81	81
Hour Total	336	336
11:15	76	76
11:30	72	72
11:45	63	63
12:00	64	64
Hour Total	275	275
12:15	75	75
12:30	81	81
12:45	76	76
13:00	71	71
Hour Total	303	303
13:15	76	76
13:30	81	81
13:45	75	75
14:00	63	63
Hour Total	295	295
14:15	75	75
14:30	81	81
14:45	63	63
15:00	62	62
Hour Total	281	281
15:15	72	72
15:30	81	81
15:45	91	91
16:00	75	75
Hour Total	319	319

Machine #: EB
Site ID: EB
Location: SR 46 EB west of Carpenter Rd

File: EB.prn
Street Name: SR 46 EB
County: Brevard

TIME	1 EAST	Total
16:15	81	81
16:30	76	76
16:45	64	64
17:00	115	115
Hour Total	336	336
17:15	106	106
17:30	99	99
17:45	94	94
18:00	84	84
Hour Total	383	383
18:15	76	76
18:30	84	84
18:45	91	91
19:00	75	75
Hour Total	326	326
19:15	52	52
19:30	64	64
19:45	52	52
20:00	42	42
Hour Total	210	210
20:15	35	35
20:30	42	42
20:45	25	25
21:00	52	52
Hour Total	154	154
21:15	43	43
21:30	24	24
21:45	26	26
22:00	21	21
Hour Total	114	114
22:15	16	16
22:30	18	18
22:45	11	11
23:00	10	10
Hour Total	55	55
23:15	9	9
23:30	8	8
23:45	7	7
24:00	5	5
Hour Total	29	29

Machine #: EB
Site ID: EB
Location: SR 46 EB west of Carpenter Rd

File: EB.prn
Street Name: SR 46 EB
County: Brevard

TIME	1 EAST	Total
DAY TOTAL	5268	5268
PERCENTS	100.0	100
AM Times	07:00	
AM Peaks	465	
PM Times	17:00	
PM Peaks	414	

Machine #: WB
Site ID: WB
Location: SR 46 WB east of Carpenter Rd

File: WB.prn
Street Name: SR 46 WB
County: Brevard

TIME	1 WEST	Total
01:00	34	34
02:00	20	20
03:00	5	5
04:00	27	27
05:00	64	64
06:00	214	214
07:00	278	278
08:00	382	382
09:00	283	283
10:00	242	242
11:00	234	234
12:00	319	319
13:00	366	366
14:00	378	378
15:00	481	481
16:00	498	498
17:00	592	592
18:00	635	635
19:00	488	488
20:00	400	400
21:00	274	274
22:00	105	105
23:00	47	47
24:00	53	53
DAY TOTAL	6419	6419
PERCENTS	100.0	100
AM Times	07:15	
AM Peaks	382	
PM Times	17:00	
PM Peaks	662	

Machine #: WB
Site ID: WB
Location: SR 46 WB east of Carpenter Rd

File: WB.prn
Street Name: SR 46 WB
County: Brevard

TIME	1 WEST	Total
00:15	6	6
00:30	9	9
00:45	8	8
01:00	11	11
Hour Total	34	34
01:15	8	8
01:30	7	7
01:45	4	4
02:00	1	1
Hour Total	20	20
02:15	2	2
02:30	1	1
02:45	2	2
03:00	0	0
Hour Total	5	5
03:15	0	0
03:30	2	2
03:45	9	9
04:00	16	16
Hour Total	27	27
04:15	9	9
04:30	15	15
04:45	16	16
05:00	24	24
Hour Total	64	64
05:15	52	52
05:30	46	46
05:45	53	53
06:00	63	63
Hour Total	214	214
06:15	72	72
06:30	51	51
06:45	72	72
07:00	83	83
Hour Total	278	278
07:15	95	95
07:30	87	87
07:45	91	91
08:00	109	109
Hour Total	382	382

Machine #: WB
Site ID: WB
Location: SR 46 WB east of Carpenter Rd

File: WB.prn
Street Name: SR 46 WB
County: Brevard

TIME	1 WEST	Total
08:15	76	76
08:30	81	81
08:45	63	63
09:00	63	63
Hour Total	283	283
09:15	51	51
09:30	56	56
09:45	63	63
10:00	72	72
Hour Total	242	242
10:15	65	65
10:30	54	54
10:45	52	52
11:00	63	63
Hour Total	234	234
11:15	64	64
11:30	71	71
11:45	81	81
12:00	103	103
Hour Total	319	319
12:15	81	81
12:30	99	99
12:45	91	91
13:00	95	95
Hour Total	366	366
13:15	109	109
13:30	72	72
13:45	99	99
14:00	98	98
Hour Total	378	378
14:15	106	106
14:30	116	116
14:45	125	125
15:00	134	134
Hour Total	481	481
15:15	106	106
15:30	115	115
15:45	106	106
16:00	171	171
Hour Total	498	498

Machine #: WB
Site ID: WB
Location: SR 46 WB east of Carpenter Rd

File: WB.prn
Street Name: SR 46 WB
County: Brevard

TIME	1 WEST	Total
16:15	135	135
16;30	154	154
16:45	142	142
17:00	161	161
Hour Total	592	592
17:15	187	187
17:30	151	151
17:45	163	163
18:00	134	134
Hour Total	635	635
18:15	109	109
18:30	141	141
18:45	135	135
19:00	103	103
Hour Total	488	488
19:15	115	115
19:30	103	103
19:45	98	98
20:00	84	84
Hour Total	400	400
20:15	75	75
20:30	84	84
20:45	52	52
21:00	63	63
Hour Total	274	274
21:15	34	34
21:30	26	26
21:45	24	24
22:00	21	21
Hour Total	105	105
22:15	16	16
22:30	11	11
22:45	9	9
23:00	11	11
Hour Total	47	47
23:15	13	13
23:30	18	18
23:45	13	13
24:00	9	9
Hour Total	53	53

Machine #: WB
Site ID: WB
Location: SR 46 WB east of Carpenter Rd

File: WB.prn
Street Name: SR 46 WB
County: Brevard

TIME	1 WEST	Total
DAY TOTAL	6419	6419
PERCENTS	100.0	100
AM Times	07:15	
AM Peaks	382	
PM Times	17:00	
PM Peaks	662	

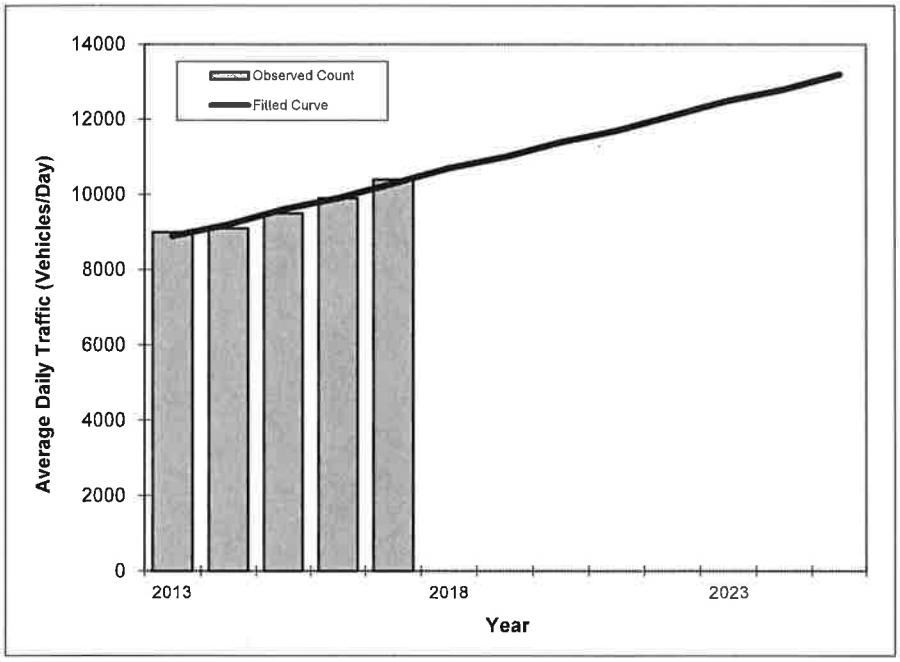
Appendix C

Traffic Trend Analysis Sheet

TRAFFIC TRENDS

SR 46 -- SR 46 from Fawn Lake Blvd to I-95

County:	Brevard
Station #:	200
Highway:	SR 46



Year	Traffic (ADT/AADT) Count*	Trend**
2013	9000	8900
2014	9100	9200
2015	9500	9600
2016	9900	9900
2017	10400	10300
2018 Opening Year Trend		
2018	N/A	10700
2019 Mid-Year Trend		
2019	N/A	11000
2020 Design Year Trend		
2020	N/A	11400
TRANPLAN Forecasts/Trends		

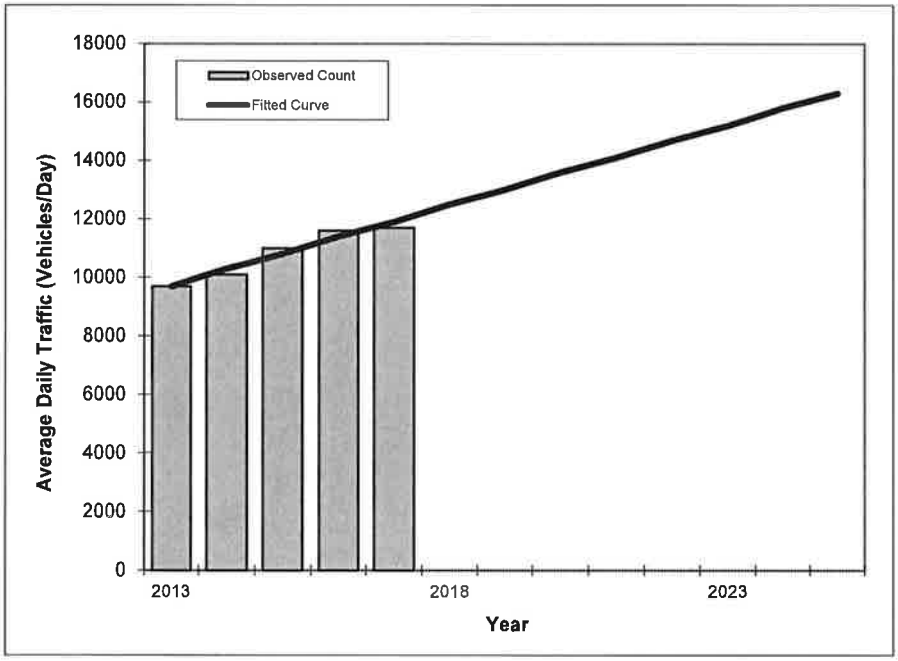
*Axle-Adjusted

** Annual Trend Increase:	360
Trend R-squared:	96.1%
Trend Annual Historic Growth Rate:	3.93%
Trend Growth Rate (2017 to Design Year):	3.56%
Printed:	16-Nov-18
Straight Line Growth Option	

TRAFFIC TRENDS

SR 46 -- SR 46 from I-95 to US 1

County:	Brevard
Station #:	200
Highway:	SR 46



Year	Traffic (ADT/AADT) Count*	Trend**
2013	9700	9700
2014	10100	10300
2015	11000	10800
2016	11600	11400
2017	11700	11900
2018 Opening Year Trend		
2018	N/A	12500
2019 Mid-Year Trend		
2019	N/A	13000
2020 Design Year Trend		
2020	N/A	13600
TRANPLAN Forecasts/Trends		

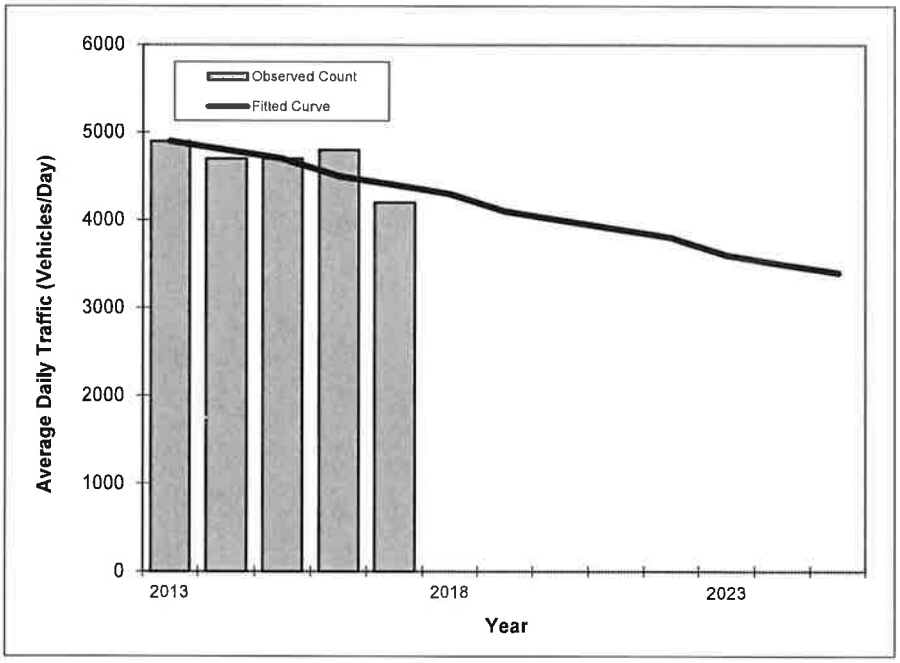
*Axle-Adjusted

** Annual Trend Increase:	550
Trend R-squared:	94.9%
Trend Annual Historic Growth Rate:	5.67%
Trend Growth Rate (2017 to Design Year):	4.76%
Printed:	16-Nov-18
Straight Line Growth Option	

TRAFFIC TRENDS

N Carpenter Rd -- N Carpenter Rd from Dairy Rd to SR 46

County:	Brevard
Station #:	183
Highway:	N Carpenter Rd



Year	Traffic (ADT/AADT) Count*	Trend**
2013	4900	4900
2014	4700	4800
2015	4700	4700
2016	4800	4500
2017	4200	4400
2018 Opening Year Trend		
2018	N/A	4300
2019 Mid-Year Trend		
2019	N/A	4100
2020 Design Year Trend		
2020	N/A	4000
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	-130
Trend R-squared:	57.9%
Trend Annual Historic Growth Rate:	-2.55%
Trend Growth Rate (2017 to Design Year):	-3.03%
Printed:	16-Nov-18
Straight Line Growth Option	

Appendix D

Traffic Signal Warrants – Existing Conditions

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	Mims	Engineer:	ACP
County:	70 – Brevard	Date:	February 12, 2019
District:	Five		

Major Street:	SR 46	Lanes:	1	Major Approach Speed:	55
Minor Street:	N Carpenter Rd	Lanes:	1	Minor Approach Speed:	40

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ 70% ☐ 100%

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

Warrant 1 is satisfied if Condition A or Condition B is "100%" satisfied for eight hours. ☐ Yes ☑ No

Warrant 1 is also satisfied if both Condition A and Condition B are "80%" satisfied (should only be applied after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems). ☐ Yes ☑ No

Condition A - Minimum Vehicular Volume

Condition A is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

100% Satisfied: ☐ Yes ☑ No
80% Satisfied: ☐ Yes ☑ No
70% Satisfied: ☐ Yes ☑ No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	Minor	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

[a] Basic Minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Street	Eight Highest Hours							
	7:00 AM	8:00 AM	12:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM
Major	823	657	662	730	735	928	1,058	840
Minor	161	110	81	81	77	111	80	68

Existing Volumes

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

Condition B - Interruption of Continuous Traffic

Condition B is intended for application where Condition A is not satisfied and the traffic volume on a major street is so heavy that traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Applicable:	☑ Yes	☐ No
100% Satisfied:	☐ Yes	☑ No
80% Satisfied:	☑ Yes	☐ No
70% Satisfied:	☑ Yes	☐ No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	**Minor**	**100%[a]**	**80%[b]**	**70%[c]**	**100%[a]**	**80%[b]**	**70%[c]**
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

[a] Basic Minimum hourly volume

[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Eight Highest Hours								
Street	**7:00 AM**	**8:00 AM**	**12:00 PM**	**2:00 PM**	**3:00 PM**	**4:00 PM**	**5:00 PM**	**6:00 PM**
Major	823	657	662	730	735	928	1,058	840
Minor	161	110	81	81	77	111	80	68

Existing Volumes

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City:	Mims	Engineer:	ACP
County:	70 – Brevard	Date:	February 11, 2019
District:	Five		

Major Street:	SR 46	Lanes:	1	Major Approach Speed:	55
Minor Street:	N Carpenter Rd	Lanes:	1	Minor Approach Speed:	40

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ Yes ☐ No

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME

If all four points lie above the appropriate line, then the warrant is satisfied.

Applicable: ☑ Yes ☐ No

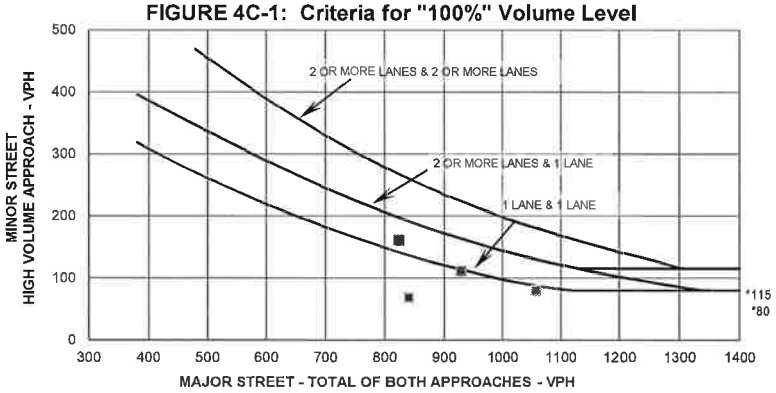
Satisfied: ☑ Yes ☐ No

Plot four volume combinations on the applicable figure below.

100% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
7:00 AM	823	161
4:00 PM	928	111
5:00 PM	1058	80
6:00 PM	840	68

FIGURE 4C-1: Criteria for "100%" Volume Level



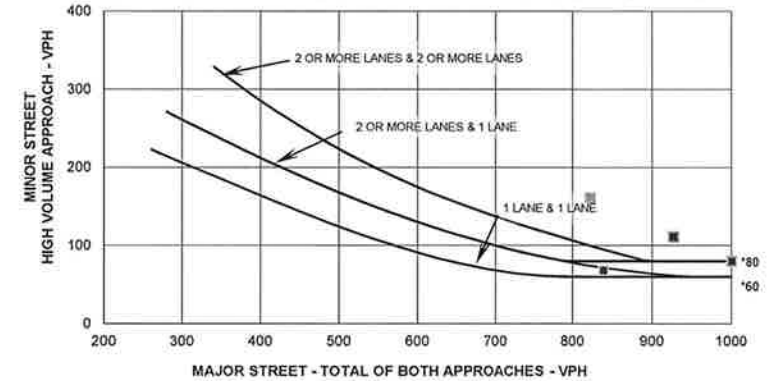
** Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

70% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
7:00 AM	823	161
4:00 PM	928	111
5:00 PM	1058	80
6:00 PM	840	68

FIGURE 4C-2: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr (40 mph) on Major Street)



** Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

Appendix E

Traffic Signal Warrants – Phase I Conditions

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City: **Mims**
County: **70 – Brevard**
District: **Five**

Engineer: **ACP**
Date: **February 11, 2019**

Major Street: **SR 46** Lanes: **1** Major Approach Speed: **55**
Minor Street: **N Carpenter Rd** Lanes: **1** Minor Approach Speed: **40**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ 70% ☐ 100%

WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME

Warrant 1 is satisfied if Condition A or Condition B is "100%" satisfied for eight hours. ☑ Yes ☐ No

Warrant 1 is also satisfied if both Condition A and Condition B are "80%" satisfied (should only be applied after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems). ☑ Yes ☐ No

Condition A - Minimum Vehicular Volume

Condition A is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

100% Satisfied: ☑ Yes ☐ No
80% Satisfied: ☑ Yes ☐ No
70% Satisfied: ☑ Yes ☐ No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	Minor	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

[a] Basic Minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Street	Eight Highest Hours							
	7:00AM	8:00 AM	12:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM
Major	1,164	955	993	1,031	1,045	1,319	1,485	1,157
Minor	228	342	624	569	541	524	501	420

Existing Volumes

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

Condition B - Interruption of Continuous Traffic

Condition B is intended for application where Condition A is not satisfied and the traffic volume on a major street is so heavy that traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Applicable:	☑ Yes	☐ No
100% Satisfied:	☑ Yes	☐ No
80% Satisfied:	☑ Yes	☐ No
70% Satisfied:	☑ Yes	☐ No

Number of Lanes for moving traffic on each approach		Vehicles per hour on major-street (total of both approaches)			Vehicles per hour on minor-street (one direction only)		
Major	**Minor**	**100%[a]**	**80%[b]**	**70%[c]**	**100%[a]**	**80%[b]**	**70%[c]**
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

[a] Basic Minimum hourly volume

[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Record 8 highest hours and the corresponding major-street and minor-street volumes in the Instructions Sheet.

Eight Highest Hours								
Street	**7:00AM**	**8:00 AM**	**12:00 PM**	**2:00 PM**	**3:00 PM**	**4:00 PM**	**5:00 PM**	**6:00 PM**
Major	1,164	955	993	1,031	1,045	1,319	1,485	1,157
Minor	228	342	624	569	541	524	501	420

Existing Volumes

Form 750-020-01
TRAFFIC ENGINEERING
10/15

State of Florida Department of Transportation

TRAFFIC SIGNAL WARRANT SUMMARY

City: **Mims**
County: **70 – Brevard**
District: **Five**

Engineer: **ACP**
Date: **February 11, 2019**

Major Street: **SR 46** Lanes: **1** Major Approach Speed: **55**
Minor Street: **N Carpenter Rd** Lanes: **1** Minor Approach Speed: **40**

MUTCD Electronic Reference to Chapter 4: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/part4.pdf

Volume Level Criteria

1. Is the posted speed or 85th-percentile of major street > 40 mph (70 km/h)? ☑ Yes ☐ No
2. Is the intersection in a built-up area of an isolated community with a population < 10,000? ☐ Yes ☑ No

"70%" volume level **may** be used if Question 1 **or** 2 above is answered "Yes" ☑ Yes ☐ No

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME

If all four points lie above the appropriate line, then the warrant is satisfied.

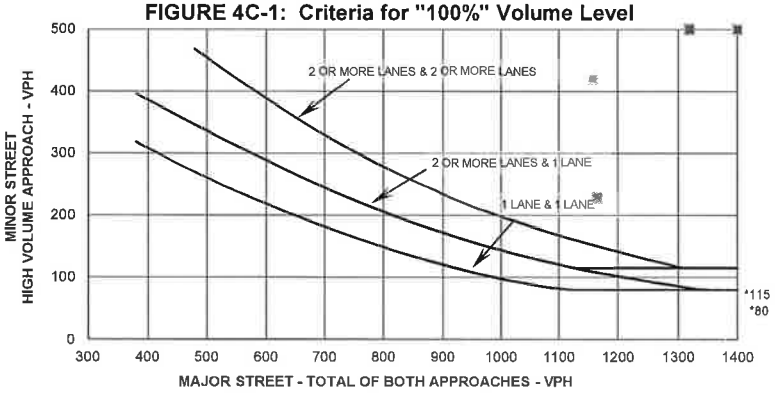
Applicable: ☑ Yes ☐ No
Satisfied: ☑ Yes ☐ No

100% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
7:00AM	1164	228
4:00 PM	1319	524
5:00 PM	1485	501
6:00 PM	1157	420

Plot four volume combinations on the applicable figure below.

FIGURE 4C-1: Criteria for "100%" Volume Level



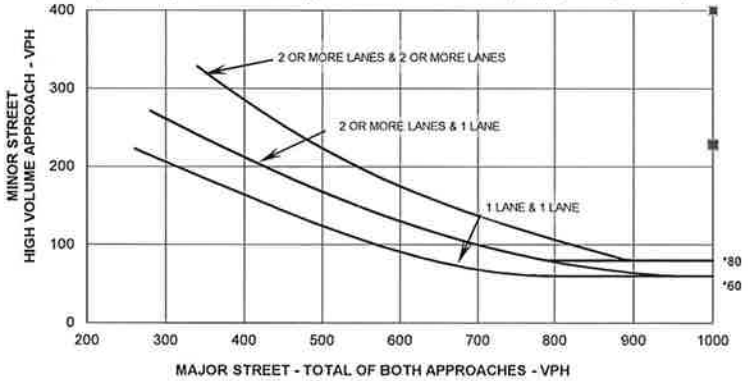
** Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

70% Volume Level

Four Highest Hours	Volumes	
	Major Street	Minor Street
7:00AM	1164	228
4:00 PM	1319	524
5:00 PM	1485	501
6:00 PM	1157	420

FIGURE 4C-2: Criteria for "70%" Volume Level

(Community Less than 10,000 population or above 70 km/hr (40 mph) on Major Street)



** Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume threshold for a minor street approach with one lane.*

Love's Travel Plaza
Unincorporated Brevard County, Florida

Traffic Impact Study

Prepared for: Love's Travel Stops & Country Stores
By: LTG, Inc.
***Revised* February 2019**

LTG Engineering & Planning

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with LTG, Inc., a corporation authorized to operate as an engineering business, EB 0009227, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT:	Love's Travel Plaza – Traffic Impact Study *Revised*
LOCATION:	Unincorporated Brevard County, Florida
CLIENT:	Love's Travel Stops & County Stores
JOB #:	4607.03

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.

Prepared by:
LTG, Inc.
1450 W. Granada Blvd, Suite 2
Ormond Beach, FL 32174
Certificate of Authorization 9227
386/257-2571

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY:

George A Galan

Digitally signed by George A Galan
Date: 2019.02.13 17:00:20 -05'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

1450 W. GRANADA BLVD, SUITE 2
ORMOND BEACH, FL 32174
CERTIFICATE OF AUTHORIZATION 9227
GEORGE A. GALAN, P.E. NO. 60080

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Appendix C- TMCs Data, FDOT's Seasonal Factor and TMC Build-out Spreadsheet
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1

INTRODUCTION

LTG, Inc. (LTG) has been retained by Love's Travel Stops & Country Stores to prepare a Traffic Impact Study (TIS) for the proposed Love's Travel Plaza development located in the northwest quadrant of the intersection of SR 46 and North Carpenter Road, just west of the I-95/SR46 interchange in unincorporated Brevard County, Florida. The project build-out year is 2020. Figure 1 shows the location and influence area of the project relative to the surrounding road network. A concept site plan showing the layout of the site is attached as Appendix A.

The development will be built in two phases. Ultimate Build-out, which will include the addition of a hotel, will only be used to size the project driveway and for turn lane requirements. The proposed development will consist of the following land-uses:

Fast Food Restaurant with Drive-Through:	2,700 SF
Super Convenience Market/Gas Station:	10,300 SF, 24 Fueling Positions (16 vehicle FP and 8 truck FP)
Tire Super Store:	3 Service Bays
Hotel (Ultimate Build-out):	120 Rooms

Study Area

The approved methodology (Appendix B) details the analysis used to determine the following study area intersections and roadway segment listed below:

Intersections:

1. SR 46 at Carpenter Road
2. SR 46 at I-95 SB Ramp
3. SR 46 at I-95 NB Ramp
4. SR 46 at Hammock Trail/Australian Way
5. SR 46 at Holder Road/Pine Avenue

Roadway Segments:

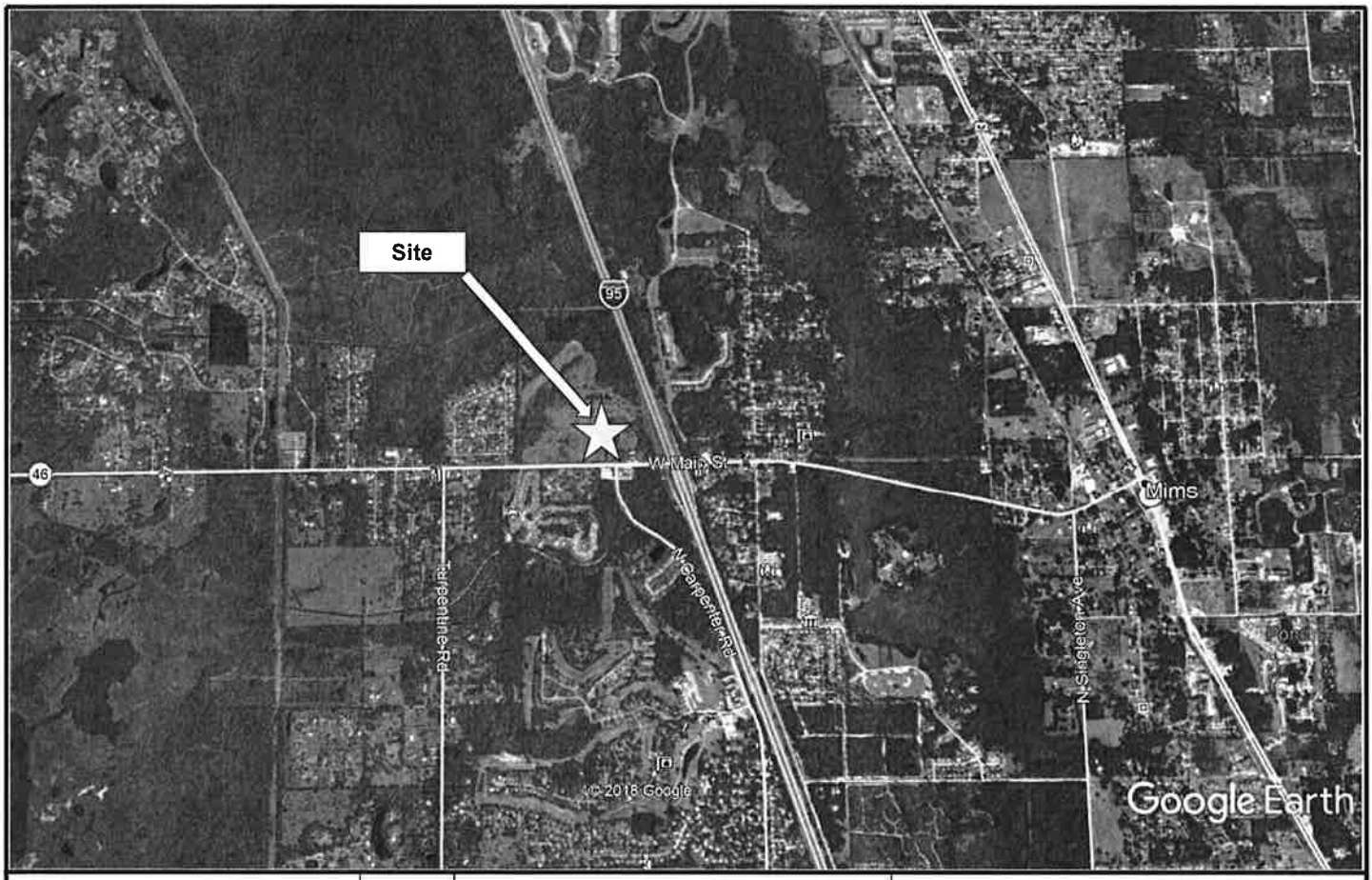
- SR 46 from Fawn Lake Boulevard to I-95
- SR 46 from I-95 to Palm Avenue

Study Procedures

Standard engineering and planning procedures were used to determine the impacts of the proposed project. Reference data were obtained from the Space Coast Transportation Planning Organization (Space Coast TPO), Brevard County, the Institute of Transportation Engineers (ITE), and the Florida Department of Transportation (FDOT).

Planned Roadway Improvements

FDOT's Five Year Work Program, Space Coast TPO and Brevard County were consulted to ascertain if there were any programmed or planned roadway improvements within the study area. Based on information available, SR 46 from Carpenter Road to Volusia County line is scheduled to be resurfaced.



Love's Travel Plaza	**N** NTS	**Location Map**		LTG Engineering & Planning
		Project No.: 4607.03	Figure: 1	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

2

EXISTING ROADWAY ANALYSIS

Turning movement counts (TMCs) were conducted during the weekday AM and PM peak-hours on October 10th and November 13th of 2018 at the study area intersections (see Appendix C). The associated FDOT seasonal factors (SF) of 1.02 and 1.08 were applied to the counts to determine the adjusted factored volumes for analysis. The spreadsheet used to develop the existing and build-out traffic volumes is also located in Appendix C. The existing AM and PM peak-hour traffic volumes from the adjusted counts are presented in Figures 2 and 3.

Unsignalized Intersection Analysis

The existing conditions at the unsignalized intersections were analyzed using the *Synchro 10*. This software utilizes the procedures outlined in Chapter 20 of the *Highway Capacity Manual 6th Edition,* titled "Two-Way Stop-Controlled Intersections". Table 1 shows the existing AM and PM peak-hour level of service (LOS) at the unsignalized intersections. The Synchro summary sheets are located in Appendix D.

Table 1
Existing AM and PM Peak-Hour Level of Service - Unsignalized Intersections
Love's Travel Plaza

Intersection	Adopted LOS	Existing Conditions					
		AM Peak-Hour			PM Peak-Hour		
		Critical Approach	Delay	LOS	Critical Approach	Delay	LOS
1. SR 46 at Carpenter Rd.	D	NB	16.6	C	NB	22.9	C
2. SR 46 at I-95 SB Ramp	D	SB	17.2	C	SB	23.1	C
4. SR 46 at Hammock Trail	D	NB	22.7	C	NB	24.0	C

As indicated in Table 1, all unsignalized intersections currently operate within the adopted LOS and achieve a v/c ratio less than 1.0 under existing conditions.

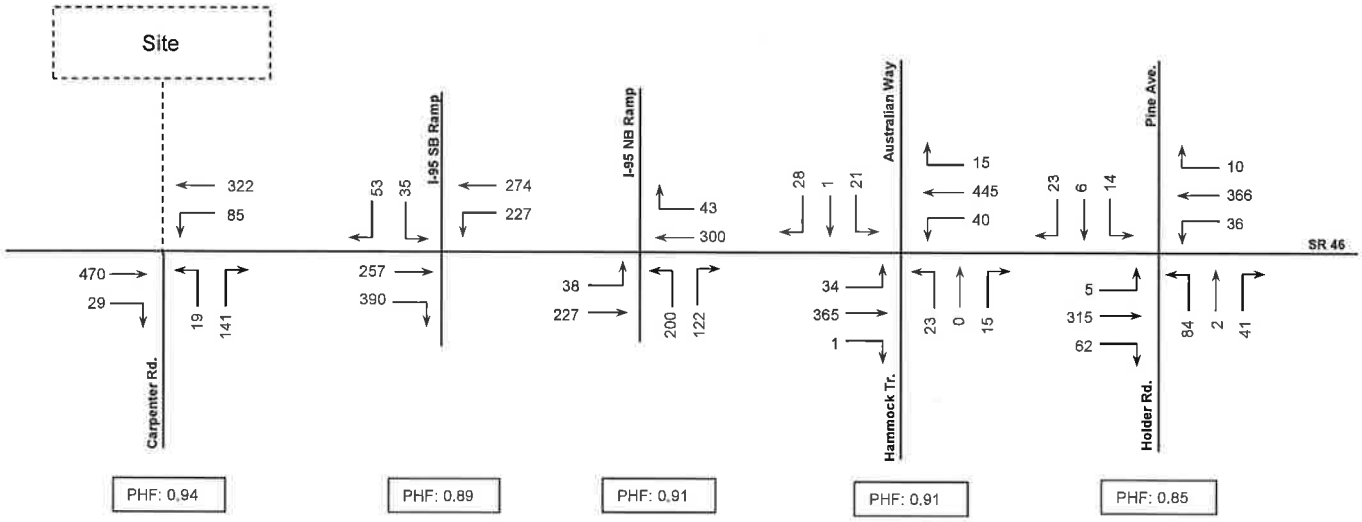
Signalized Intersection Analysis

The LOS at signalized intersections are based on the average stop delay per vehicle for the various movements within the intersections. The operating conditions at the signalized intersection was analyzed using *Synchro 10*. This software utilizes the procedures outlined in Chapter 19 of the *Highway Capacity Manual 6th Edition*, titled "Signalized Intersections". Signal timings were obtained from Brevard County and are provided in Appendix E. Table 2 shows the existing LOS at the project's signalized intersection during the AM and PM peak-hours. The Synchro summary sheets are included in Appendix F.

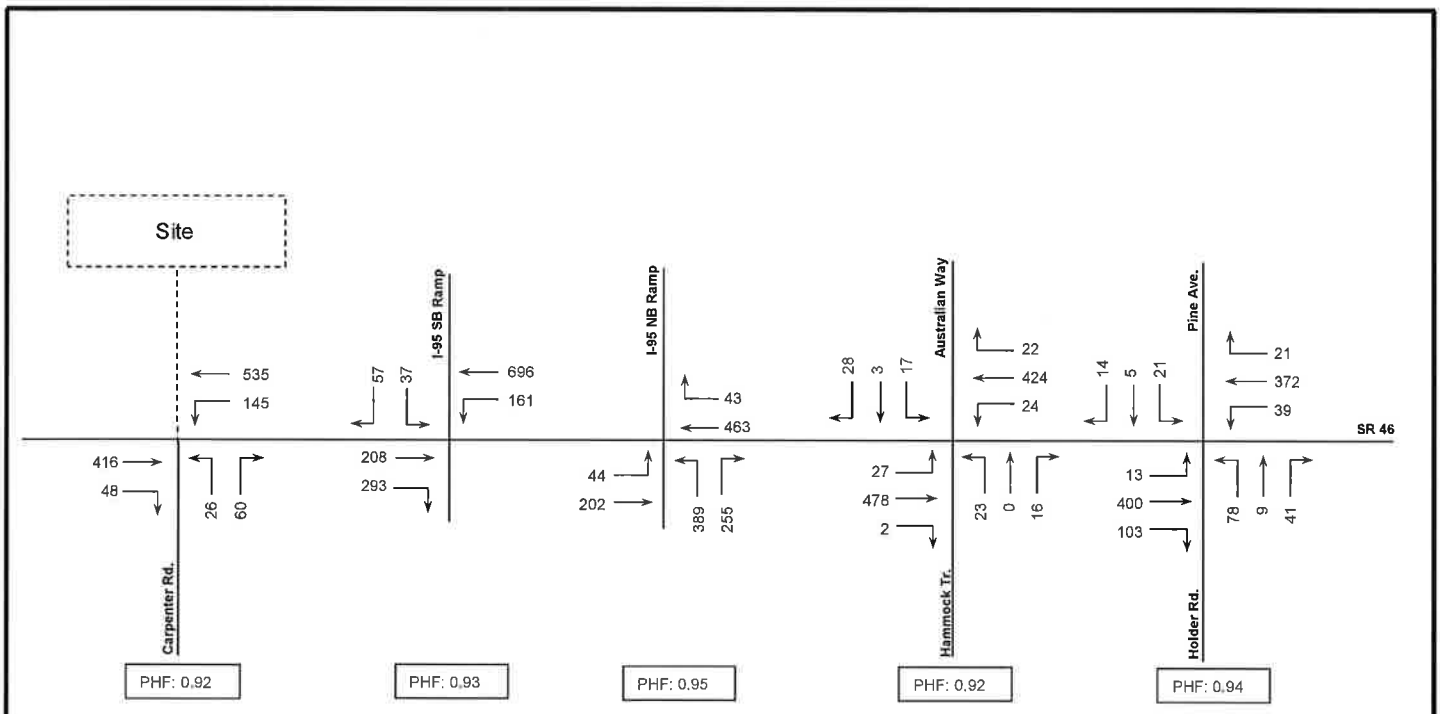
Table 2
Existing AM and PM Peak-Hour Level of Service - Signalized Intersection
Love's Travel Plaza

Intersection	Adopted LOS	AM Peak-Hour			PM Peak-Hour		
		Delay (sec.)	LOS	V/C greater than 1.0?	Delay (sec.)	LOS	V/C greater than 1.0?
3. SR 46 at I-95 NB Ramp	D	14.6	B	No	20.1	C	No
5. SR 46 at Pine Ave.	D	16.0	B	No	13.7	B	No

As indicated in Table 2, the signalized intersections currently operate within the adopted LOS and achieve a v/c ratio less than 1.0 under existing conditions.



Love's Travel Plaza **Mims, FL**	N NTS	**Existing AM Peak-Hour Turning Movement Counts**		LTG Engineering & Planning
		Project No.: 4607.03	Figure: 2	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227



Love's Travel Plaza **Mims, FL**	N NTS	**Existing PM Peak-Hour Turning Movement Counts**		LTG Engineering & Planning
		Project No.: 4607.03	Figure: 3	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

Roadway Segment Analysis

Roadway LOS describes the operating condition determined from the number of vehicles passing over a given section of roadway during a specified time period. It is a qualitative measure of several factors which include speed, travel time, traffic interruptions, freedom to maneuver, driver comfort, convenience, safety and vehicle operating costs. Six LOS categories have been established as standards by which to gauge roadway performance designated by the letters A through F. The LOS categories are defined as follows:

Level of Service A: *Free flow, individual users virtually unaffected by the presence of others*
Level of Service B: *Stable flow with a high degree of freedom to select operating conditions*
Level of Service C: *Flow remains stable, but with significant interactions with others*
Level of Service D: *High-density stable flow in which the freedom to maneuver is severely restricted*
Level of Service E: *This condition represents the capacity level of the road*
Level of Service F: *Forced flow in which the traffic exceeds the amount that can be served*

The Average Annual Daily Traffic (AADT) historical counts for the study roadway segments was obtained from the *Space Coast Transportation Planning Organization Traffic Counts* spreadsheet. The existing levels of service for the study area road segments during the PM peak-hour are shown in Table 3.

Table 3
Existing PM Peak-Hour Level of Service - Roadway Segments
Love's Travel Plaza

Roadway	Segment		No. of Lanes	Adopted LOS	Current MAV	K-Factor	Peak-Hour Two-Way Capacity at Adopted LOS[1]	2017 AADT	Existing PM Peak-Hour Two-Way Volume[2]	Existing PM Volume Exceed Adopted LOS?
	From	To								
SR 46	Fawn Lake Blvd	I-95	2	D	14,160	0.090	1,274	10,360	617	No
	I-95	Palm Avenue	2	D	14,160	0.090	1,274	11,720	744	No

[1]*Capacity was calculated by applying a 0.09 k-factor to the current MAV.*
[2]*The existing PM peak-hour two-way volume were obtained from Space Coast Interactive Traffic Count data by taking the average of two-day counts (see Appendix C).*

As indicated in Table 3, the study area roadway segments currently operate within the adopted LOS.

3

FUTURE TRAFFIC CONDITIONS

Background Traffic

The traffic growth rates from historic Average Annual Daily Traffic (AADT) counts from the past five years were determined for the study area roadway segments using FDOT's *Traffic Trends* software. Table 4 presents the average annual growth rates and the growth rate applied to the existing traffic volumes to project background traffic. A minimum average annual growth rate of two percent was applied for roadway segments that demonstrates less than two percent growth. The Traffic Trends analysis worksheets are contained in Appendix G.

Table 4
Historical Growth Rates
Love's Travel Plaza

Roadway	Segment		Average Annual Growth Rate*	Applied Growth Rate
	From	To		
SR 46	Fawn Lake Blvd	I-95	3.56%	3.56%
	I-95	Palm Avenue	4.76%	4.76%

**Growth rate of segment calculated using AADT data from available years (2013-2017)*

4

2020 BUILD-OUT – FUTURE ROADWAY ANALYSIS

Trip Generation

The daily, AM and PM peak-hour trip generation for the development was determined using the Institute of Transportation Engineers (ITE) 10th Edition of the *Trip Generation Manual*. The gross trip generation is presented in Table 5.

Table 5
Gross Trip Generation
Love's Travel Plaza

Time Period	Land Use	Land Use Code	Trip Rate Equation	Size	Units	Percent Entering	Percent Exiting	Trips Entering	Trips Exiting	Total Trips
Daily	Convenience Market/Gas Station	960	T=837.58(X)	10.3	KSF	50%	50%	4,314	4,314	8,627
	Fast Food Restaurant with Drive Through	934	T=470.95(X)	2.7	KSF	50%	50%	636	636	1,272
	Tire Store	849	T=30.55(X)	3.0	Service Bays	50%	50%	46	46	92
Totals:								**4,996**	**4,995**	**9,991**
AM Peak-Hour	Convenience Market/Gas Station	960	T=83.14(X)	10.3	KSF	50%	50%	428	428	856
	Fast Food Restaurant with Drive Through	934	T=40.19(X)	2.7	KSF	51%	49%	55	54	109
	Tire Store	849	T=2.01(X)	3.0	Service Bays	65%	35%	4	2	6
Totals:								**487**	**484**	**971**
PM Peak-Hour	Convenience Market/Gas Station	960	T=69.28(X)	10.3	KSF	50%	50%	357	357	714
	Fast Food Restaurant with Drive Through	934	T=32.67(X)	2.7	KSF	52%	48%	46	42	88
	Tire Store	849	T=3.17(X)	3.0	Service Bays	47%	53%	4	6	10
Totals:								**407**	**405**	**812**

Due to the nature of the proposed development, a certain portion of the trips are expected to remain internal to the site. The internal capture rate was calculated based on AM and PM NCHRP Report 684 Internal Capture Estimator. Additionally, a portion of the new trips known as pass-by will be attracted to the project from the existing traffic on the adjacent roadways. These pass-by trips were calculated using procedures outlined in the *Trip Generation Handbook, 3rd Edition*. The internal capture and pass-by trips associated with the development were deducted from the gross total project trips to determine the new net external trips. The results are presented in Table 6.

Table 6
Net Trip Generation
Love's Travel Plaza

Time Period	Land Use	Total Trips			Internal Trips			Pass-by Trips			New External Trips		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Daily	Convenience Market/Gas Station	4,314	4,313	8,627	0	0	0	0	0	0	4,314	4,313	8,627
	Fast Food Restaurant with Drive Through	636	636	1,272	0	0	0	0	0	0	636	636	1,272
	Tire Store	46	46	92	0	0	0	0	0	0	46	46	92
Totals:		**4,996**	**4,995**	**9,990**	**0**	**0**	**0**	**0**	**0**	**0**	**4,996**	**4,995**	**9,991**
AM Peak-Hour	Convenience Market/Gas Station	428	428	856	8	28	36	260	248	508	160	152	312
	Fast Food Restaurant with Drive Through	55	54	109	28	8	36	13	23	36	14	23	37
	Tire Store	4	2	6	0	0	0	0	0	0	4	2	6
Totals:		**487**	**484**	**971**	**36**	**36**	**72**	**273**	**271**	**544**	**178**	**177**	**355**
PM Peak-Hour	Convenience Market/Gas Station	357	357	714	17	13	30	190	193	383	150	151	301
	Fast Food Restaurant with Drive Through	46	42	88	13	17	30	17	13	30	16	12	28
	Tire Store	4	6	10	0	0	0	0	0		4	6	10
Totals:		**407**	**405**	**812**	**30**	**30**	**60**	**207**	**206**	**413**	**170**	**169**	**339**

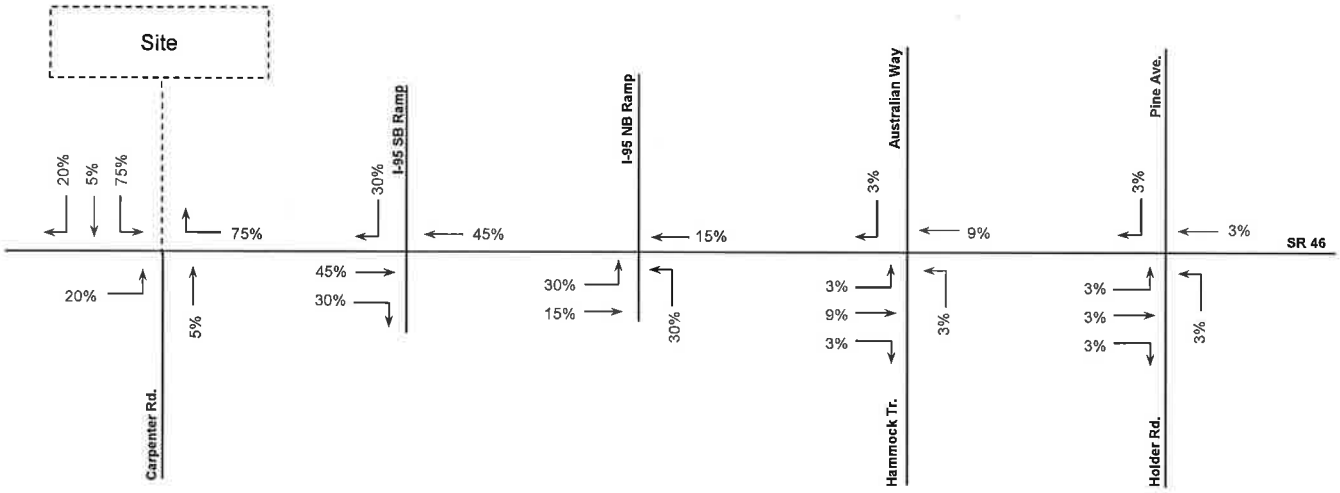
***Pass-by rates**: Gas Station: AM - 62%, PM - 56%; Fast Food Restaurant: AM - 49%, PM - 50%.*

Trip Distribution

The process of determining the directional flow of traffic associated with a new development is called trip distribution. A manual trip distribution was to determine the primary project trip distribution. The project trip distribution is graphically illustrated in Figure 4.

Trip Assignment

Using the project trip distribution, the AM and PM peak-hour project trips were assigned to the study area roadway network. Figures 5 and 6 graphically depicts the 2020 build-out AM and PM traffic and peak-hour project trips assigned at the study area intersections.



Love's Travel Plaza **Mims, FL**	N NTS	**Project Trip Distribution**		LTG Engineering & Planning
		Project No.: 4607.03	Figure: 4	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

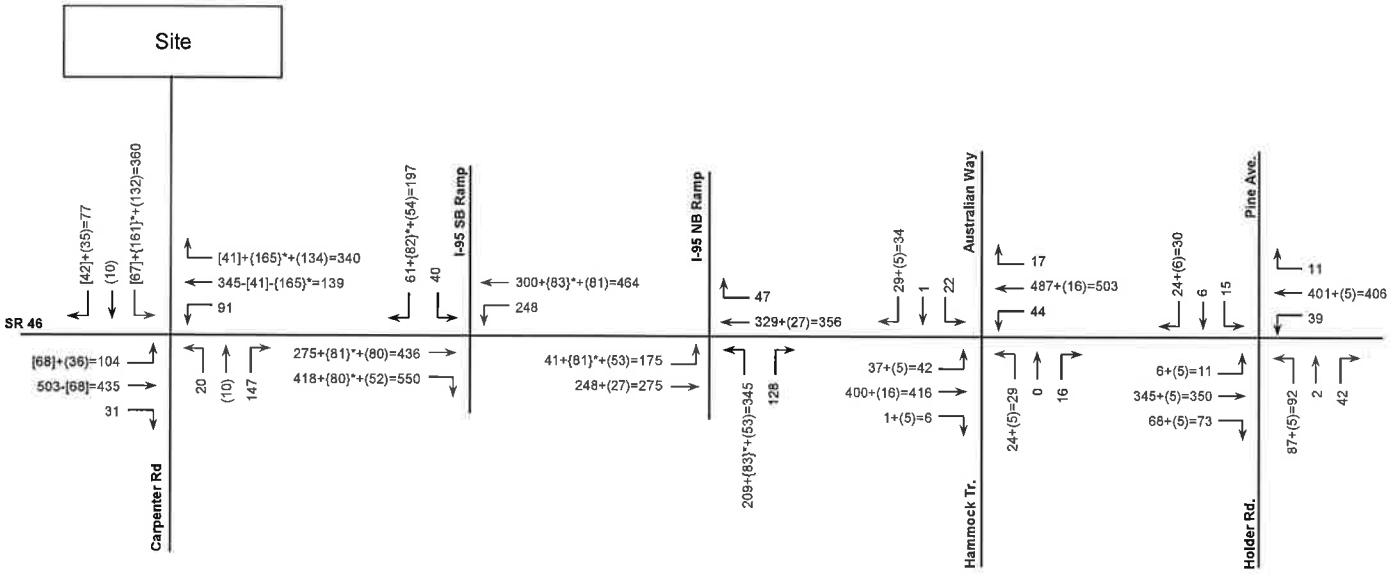
AM Peak-Hour Project Traffic

Trip Type	Enter	Exit	Total
Net External Project Trips	178	177	355
Pass-by Trips	274	270	544

Legend:

X + [X] + {X}* + (X) = XX

- XX: Total Build-out Traffic
- (X): Project Traffic
- {X}*: I-95 Diverted Pass-by Trips
- [X]: Pass-By Trips
- X: 2020 Background Traffic



Love's Travel Plaza **Mims, FL**	N NTS	**Build-out AM Peak-Hour Turning Movement Counts**	LTG Engineering & Planning
		Project No.: 4607.03 — Figure: 5	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

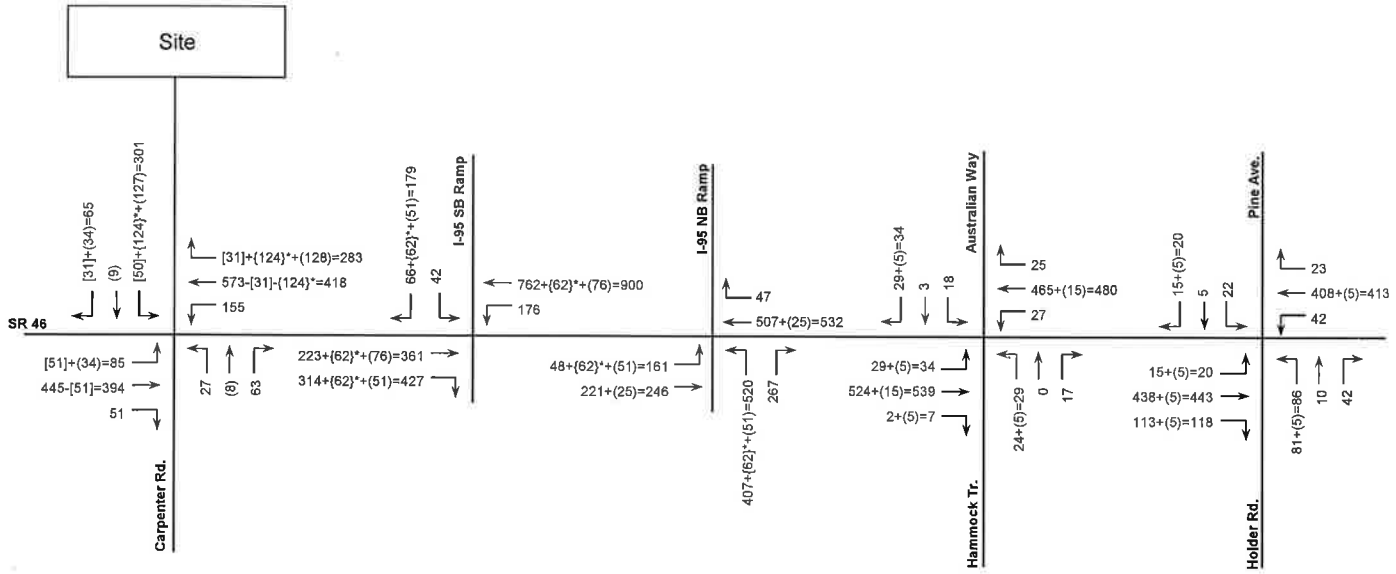
PM Peak-Hour Project Traffic

Trip Type	Enter	Exit	Total
Net External Project Trips	170	170	340
Pass-by Trips	206	205	411

Legend:

X + [X] + {X}* + (X) = XX

- XX: Total Build-out Traffic
- (X): Project Traffic
- {X}*: I-95 Diverted Pass-by Trips
- [X]: Pass-By Trips
- X: 2020 Background Traffic



Love's Travel Plaza **Mims, FL**	N NTS	**Build-out PM Peak-Hour Turning Movement Counts**	LTG Engineering & Planning
		Project No.: 4607.03 — Figure: 6	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

2020 Build-Out - Unsignalized Intersections Analysis

The unsignalized intersections were analyzed to determine the operational LOS under 2020 build-out conditions. Table 7 depicts the projected LOS in the AM and PM peak-hours for the unsignalized intersections under build-out conditions. The Synchro summary sheets are contained in Appendix H.

Table 7
Build-out AM and PM Peak-Hour LOS - Unsignalized Intersections
Love's Travel Plaza

Intersection	Adopted LOS	Build-Out Conditions					
		AM Peak-Hour			PM Peak-Hour		
		Critical Approach	Delay (Sec.)	LOS	Critical Approach	Delay (Sec.)	LOS
1. SR 46 at Carpenter Rd.	D	SB	1017.1	F	SB	1451.9	F
2. SR 46 at I-95 SB Ramp	D	SB	23.9	C	SB	43.3	E
4. SR 46 at Hammock Trail	D	NB	31.6	D	NB	34.1	D

As indicated in Table 7, all unsignalized intersections are expected to operate within the adopted LOS and achieve a v/c ratio less than 1.0 under build-out conditions with the exception of the SR 46 at Carpenter Road intersection, which is expected to operate outside of the adopted LOS.

Intersection Improvement Needed for Build-out Conditions

Under build-out conditions, the following improvement is recommended in order to achieve acceptable levels of service and a v/c ratio less than 1.0 for the following intersection:

SR 46 at Carpenter Road:

- Install a traffic signal control

Analysis of Recommendations

The unsignalized intersection was then reanalyzed to determine the operational LOS under the build-out conditions with the recommended installation of a traffic signal control. The results are presented in Table 8. Synchro summary sheets are located in Appendix I.

Table 8
Build-out AM and PM Peak-Hour LOS - Unsignalized Intersection - Improved
Love's Travel Plaza

Intersection	Adopted LOS	Build-Out Conditions with Improvements					
		AM Peak-Hour			PM Peak-Hour		
		Delay (Sec.)	LOS	V/C greater than 1.0?	Delay (Sec.)	LOS	V/C greater than 1.0?
1. SR 46 at Carpenter Rd.	D	9.7	A	No	9.1	A	No

As indicated in Table 8, the intersection is expected to operate within the adopted LOS and achieve a v/c ratio less than 1.0 under build-out conditions with the recommended installation of a traffic signal control.

2020 Build-Out - Signalized Intersections Analysis

The signalized intersections were analyzed to determine the operational LOS under 2020 build-out conditions. Table 9 shows the projected LOS in the AM and PM peak-hour at the signalized intersections. The Synchro summary sheets are contained in Appendix J.

Table 9
Build-out AM and PM Peak-Hour LOS - Signalized Intersections
Love's Travel Plaza

Intersection	Adopted LOS	AM Peak-Hour			PM Peak-Hour		
		Delay (sec.)	LOS	V/C greater than 1.0?	Delay (sec.)	LOS	V/C greater than 1.0?
3. SR 46 at I-95 NB Ramp	D	19.2	B	No	27.0	C	No
5. SR 46 at Pine Ave.	D	17.5	B	No	14.6	B	No

As indicated in Table 9, the signalized intersections are expected to operate within the adopted LOS and achieve a v/c ratio less than 1.0 under build-out conditions.

2020 Build-Out - Roadway Segment Analysis

The study area roadway segments were analyzed under 2020 build-out conditions to determine the anticipated LOS at the time of build-out. The results are presented in Table 10.

Table 10
Build-out PM Peak-Hour Level of Service - Roadway Segments
Love's Travel Plaza

Roadway	Segment		No. of Lanes	Adopted LOS	Current MAV	Peak-Hour Two-Way Capacity at Adopted LOS	Existing PM Peak-Hour Two-Way Volume	2020 Growth Factor	2020 Background Traffic	Project Distribution	Project Trips	2020 Build-Out Traffic	2020 Build-Out Traffic Exceed Adopted LOS?
	From	To											
SR 46	Fawn Lake Blvd	Site	2	D	14,160	1,274	617	1.11	683	20%	68	751	No
	Site	I-95	2	D	14,160	1,274	617	1.11	683	75%	255	938	No
	I-95	Palm Avenue	2	D	14,160	1,274	744	1.14	850	15%	51	901	No

As indicted in Table 10, the study area roadway segments are expected to operate within the adopted LOS.

Site Access Analysis

The intersection of SR 46 at Carpenter Road was analyzed under Ultimate build-out conditions, which includes a 120-room hotel. Access to the Love's Travel Plaza is proposed via a full access driveway on the northern leg of the SR 46 at Carpenter intersection. Ultimate Build-out trip generation for the proposed Love's Travel Plaza with the addition of the hotel is presented in Table 11. The daily, AM and PM peak-hour trip generation were determined using ITE 10th Edition of the *Trip Generation Manual.*

Table 11
Ultimate Build-out Gross Trip Generation
Love's Travel Plaza

Time Period	Land Use	Land Use Code	Trip Rate Equation	Size	Units	Percent Entering	Percent Exiting	Trips Entering	Trips Exiting	Total Trips
Daily	Convenience Market/Gas Station	960	T=837.58(X)	10.3	KSF	50%	50%	4,314	4,314	8,627
	Hotel	310	T=11.29(X)-426.97	120	Rooms	50%	50%	464	464	928
	Fast Food Restaurant with Drive Through	934	T=470.95(X)	2.70	KSF	50%	50%	636	636	1,272
	Tire Store	849	T=30.55(X)	3.00	Service Bays	50%	50%	46	46	92
Totals:								**5,460**	**5,460**	**10,920**
AM Peak-Hour	Convenience Market/Gas Station	960	T=83.14(X)	10.3	KSF	50%	50%	428	428	856
	Hotel	310	T=0.50(X)-5.34	120	Rooms	59%	41%	32	22	54
	Fast Food Restaurant with Drive Through	934	T=40.19(X)	2.70	KSF	51%	49%	55	54	109
	Tire Store	849	T=2.01(X)	3.0	Service Bays	65%	35%	4	2	6
Totals:								**519**	**566**	**1,025**
PM Peak-Hour	Convenience Market/Gas Station	960	T=69.28(X)	10.3	KSF	50%	50%	357	357	714
	Hotel	310	T=0.75(X)-26.02	120	Rooms	51%	49%	33	31	64
	Fast Food Restaurant with Drive Through	934	T=32.67(X)	2.70	KSF	52%	48%	46	42	88
	Tire Store	849	T=3.17(X)	3	Service Bays	47%	53%	4	6	10
Totals:								**440**	**436**	**876**

As stated previously, a certain portion of the trips are expected to remain internal to the site and a portion of the new trips known as pass-by will be attracted to the project from the existing traffic on the adjacent roadways. The internal capture and pass-by trips associated with the development were deducted from the gross total project trips to determine the new net external trips. The calculation resulting from the subtraction of internal and pass-by trips are shown in Table 12.

Table 12
Ultimate Build-out Net Trip Generation
Love's Travel Plaza

Time Period	Land Use	Total Trips			Internal Trips			Pass-by Trips			New External Trips		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Daily	Convenience Market/Gas Station	4,314	4,314	8,628	0	0	0	0	0		4,314	4,314	8,628
	Hotel	464	464	928	0	0	0	0	0		464	464	928
	Fast Food Restaurant with Drive Through	636	636	1,272	0	0	0	0	0		636	636	1,272
	Tire Store	46	46	92	0	0	0	0	0		46	46	92
Totals:		**5,460**	**5,460**	**10,920**	**0**	**0**	**0**	**0**	**0**	**0**	**5,460**	**5,460**	**10,920**
AM Peak-Hour	Convenience Market/Gas Station	428	428	856	11	28	39	259	248	507	158	152	310
	Hotel	32	22	54	1	5	6	0	0	0	31	17	48
	Fast Food Restaurant with Drive Through	55	54	109	30	9	39	12	22	34	13	23	36
	Tire Store	4	2	6	0	0	0	0	0	0	4	2	6
Totals:		**519**	**506**	**1,025**	**42**	**42**	**84**	**271**	**270**	**541**	**206**	**194**	**400**
PM Peak-Hour	Convenience Market/Gas Station	357	357	714	22	19	41	188	189	377	147	149	296
	Hotel	33	31	64	9	7	16	0	0	0	24	24	48
	Fast Food Restaurant with Drive Through	46	42	88	15	20	35	16	11	27	16	11	27
	Tire Store	4	6	10	0	0	0	0	0	0	4	6	10
Totals:		**440**	**436**	**876**	**46**	**46**	**92**	**203**	**200**	**403**	**191**	**190**	**381**

Ultimate Build-out driveway volumes are graphically shown in Figure 7. The SR 46 at Carpenter Road intersection was analyzed to determine the need for turn lanes to accommodate project traffic entering the site with a 45-mph posted speed limit along SR 46. The analysis was conducted using the standard National Cooperative Highway Research Program Report 457 (NCHRP 457) to determine if turn lanes are warranted. NCHRP worksheets are included in Appendix K. The results of the turn lane evaluation are provided below:

SR 46 at Carpenter Road:

- A 285-foot (185'+100' (minimum two trucks queue)) eastbound left-turn lane will be required.
- A 185-foot westbound right-turn lane will be required.

Please note that due to the proximity and limited spacing between the proposed Love's Travel Plaza driveway and the neighboring gas station to the east, the westbound right-turn lane will be limited to approximately 140 feet.

AM Peak-Hour Project Traffic

Trip Type	Enter	Exit	Total
Net External Project Trips	207	194	401
Pass-by Trips	271	270	541

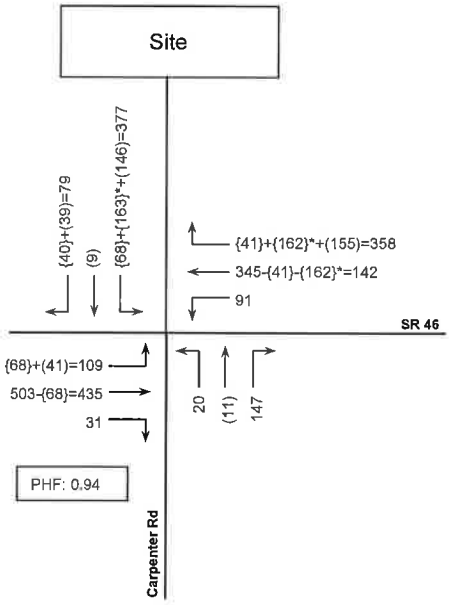
Legend:

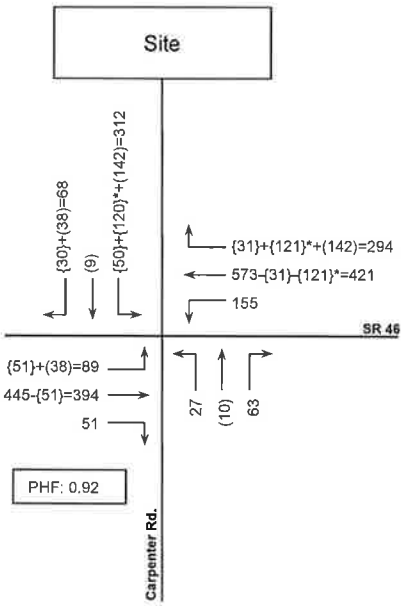
X + {X} + {X}*+ (X) = XX

- Total Build-out Traffic
- Project Traffic
- I-95 Diverted Pass-by Trips
- Pass-By Trips
- 2020 Background Traffic

PM Peak-Hour Project Traffic

Trip Type	Enter	Exit	Total
Net External Project Trips	190	189	379
Pass-by Trips	203	200	403





Love's Travel Plaza

Mims, FL

N

NTS

Ultimate Build-out Peak-Hour Turning Movement Counts

Project No.: 4607.03 | Figure: 7

LTG Engineering & Planning

1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174
Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

Ultimate Build-Out - Signalized Intersection Analysis

The intersection of SR 46 at Carpenter Road was analyzed to determine the operational LOS under ultimate build-out conditions with the recommended installation of a traffic signal control. Table 13 depicts the projected LOS in the AM and PM peak-hours for the signalized intersection under ultimate build-out conditions. The Synchro summary sheets are contained in Appendix L.

Table 13
Ultimate Build-Out AM and PM Peak-Hour LOS - Signalized Intersection
Love's Travel Plaza

Intersection	Adopted LOS	Ultimate Build-Out Conditions					
		AM Peak-Hour			PM Peak-Hour		
		Delay (Sec.)	LOS	V/C greater than 1.0?	Delay (Sec.)	LOS	V/C greater than 1.0?
1. SR 46 at Carpenter Rd.	D	10.1	B	No	9.4	A	No

As indicated in Table 13, the intersection is expected to operate within the adopted LOS and achieve a v/c ratio less than 1.0 under ultimate build-out conditions with the recommended installation of a traffic signal control.

5

CONCLUSION AND RECOMMENDATIONS

This study was conducted to evaluate the impact the proposed Love's Travel Plaza development would have on the surrounding roadway network. The proposed development is located in the northwest quadrant of the intersection of SR 46 and North Carpenter Road just west of the I-95/SR46 interchange in unincorporated Brevard County, FL. The project build-out year is 2020.

The development will be built in two phases. Ultimate Build-out will only be used to size the project driveway and for turn lane requirements. The proposed development will consist of the following land-uses:

Fast Food Restaurant with Drive-Through:	2,700 SF
Super Convenience Market/Gas Station:	10,300 SF, 24 Fueling Positions (16 vehicle FP and 8 truck FP)
Tire Super Store:	3 Service Bays
Hotel (Ultimate Build-out):	120 Rooms

The results of the study are summarized below:

Existing Conditions

- The study area unsignalized intersections currently operate within the adopted LOS.
- The study area signalized intersections currently operate within the adopted LOS.
- All study area roadway segments currently operate within the adopted LOS.

Build-out Conditions

- The study area unsignalized intersections are expected to operate within the adopted LOS under build-out conditions with the exception of the SR 46 at Carpenter Road intersection, which is anticipated to operate outside the adopted LOS during the AM and PM peak-hours.
- The installation of a traffic signal control at the SR 46 at Carpenter Road intersection is recommended in order to achieve acceptable LOS and a v/c ratio less than 1.0.
- The study area signalized intersections are expected to operate within the adopted LOS.
- All road segments within the study area are expected to operate within the adopted LOS.

Site Access Analysis

Access to the Love's Travel Plaza is proposed via a full access driveway on the northern leg of the SR 46 at Carpenter intersection. The results of the turn lane evaluation are provided below:

SR 46 at Carpenter Road:

- A 285-foot (185'+100' (minimum two trucks queue)) eastbound left-turn lane will be required.
- A 185-foot westbound right-turn lane will be required.

Please note that due to the proximity and limited spacing between the proposed Love's Travel Plaza driveway and the neighboring gas station to the east, the westbound right-turn lane will be limited to approximately 140 feet.

Based on the results of this study and the recommendations provided above, the proposed Love's Travel Plaza development is recommended for approval.

APPENDIX A

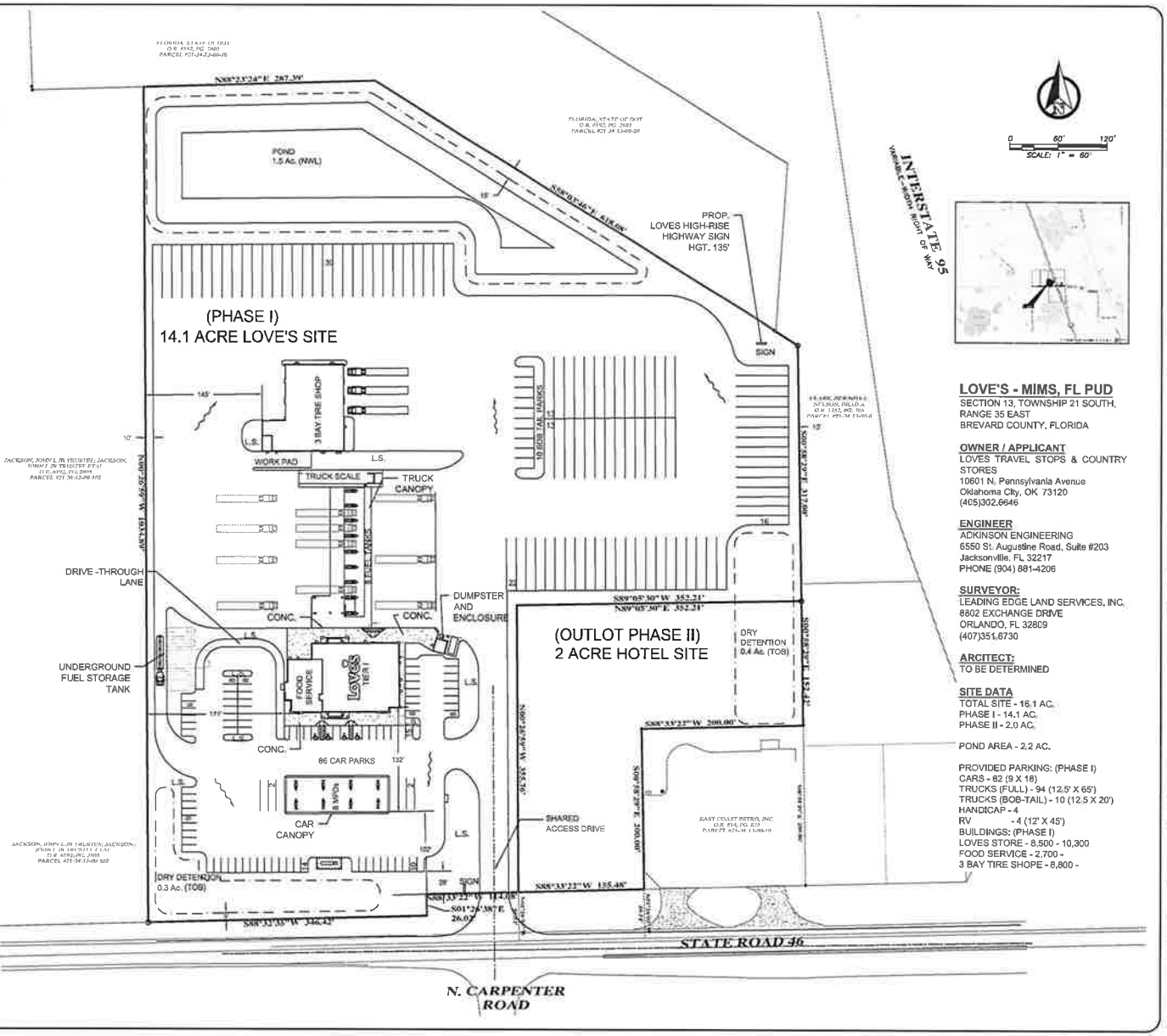
CONCEPT PLAN

LEGAL DISCRIPTION:

BEING A PARCEL OF LAND LOCATED IN SECTION 13, TOWNSHIP 21 SOUTH, RANGE 35 EAST, BREVARD COUNTY, FLORIDA AND BEING A PORTION OF A PARCEL OF LAND CONVEYED BY DEED TO JOHN L. JACKSON JR TRUSTEE ETAL AS RECORDED IN DEED BOOK 6133, PAGE 2745, OF THE PUBLIC RECORDS IN BREVARD COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE EAST QUARTER CORNER OF SECTION 13, THENCE WESTERLY ALONG THE QUARTER SECTION S88°33'57"W, A DISTANCE OF 2344.11 FEET; THENCE LEAVING SAID QUARTER SECTION LINE N01°26'03"W, A DISTANCE OF 59.52 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY OF STATE ROUTE 46 AS SHOWN ON THE RIGHT OF WAY MAP FOR STATE ROAD 9 (INTERSTATE 95), BREVARD COUNTY, SECTION 70225, FED PROJECT NUMBER 0953-114, SAID POINT BEING THE POINT OF BEGINNING AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THENCE ALONG THE NORTH RIGHT OF WAY OF STATE ROUTE 46 THE FOLLOWING THREE (3) COURSES: 1) S88°33'22"W, A DISTANCE OF 114.08 FEET; 2) S01°26'38"E, A DISTANCE OF 20.02 FEET; 3) S88°32'35"W, A DISTANCE OF 346.42 FEET; THENCE LEAVING THE RIGHT OF WAY OF STATE ROUTE 46 N00°26'59"W, A DISTANCE OF 1034.89 FEET, TO THE SOUTH LINE OF FLORIDA DEPARTMENT OF TRANSPORTATION DRANAGE POND PROPERTY; THENCE ALONG THE SOUTH LINE OF SAID FLORIDA DEPARTMENT OF TRANSPORTATION PROPERTY THE FOLOWMING TWO (2) COURSES: 1) N88°23'24"E, A DISTANCE OF 287.39 FEET; 2) S58°03'46"E, A DISTANCE OF 618.08 FEET, TO THE EAST LINE OF DESCRIBED PROPERTY; THENCE S00°58'29"E, A DISTANCE OF 469.42 FEET, TO THE NORTH LINE OF PROPERTY OWNED BY EAST COAST PETRO, INC; THENCE ALONG SAID NORTH LINE S88°33'22"W, A DISTANCE OF 200.00 FEET, TO THE WEST LINE OF SAID PROPERTY; THENCE LEAVING SAID NORTH LINE S00°58'29"E, A DISTANCE OF 200.00', TO THE NORTH LINE OF STATE ROUTE 46; THENCE ALONG THE NORTH LINE OF STATE ROUTE 46 S88°33'22"W, A DISTANCE OF 155.48 FEET, TO THE POINT OF BEGINNING.



LEGEND:
L.S. LANDSCAPE AREA
~~~~ DRAINAGE FLOW

LOVE'S - MIMS, FL PUD

SECTION 13, TOWNSHIP 21 SOUTH,
RANGE 35 EAST
BREVARD COUNTY, FLORIDA

OWNER / APPLICANT
LOVES TRAVEL STOPS & COUNTRY STORES
10601 N. Pennsylvania Avenue
Oklahoma City, OK 73120
(405)302.6646

ENGINEER
ADKINSON ENGINEERING
6550 St. Augustine Road, Suite #203
Jacksonville, FL 32217
PHONE (904) 881-4206

SURVEYOR:
LEADING EDGE LAND SERVICES, INC.
8802 EXCHANGE DRIVE
ORLANDO, FL 32809
(407)351.6730

ARCITECT:
TO BE DETERMINED

SITE DATA
TOTAL SITE - 16.1 AC.
PHASE I - 14.1 AC.
PHASE II - 2.0 AC.

POND AREA - 2.2 AC.

PROVIDED PARKING: (PHASE I)
CARS - 82 (9 X 18)
TRUCKS (FULL) - 94 (12.5' X 65')
TRUCKS (BOB-TAIL) - 10 (12.5 X 20')
HANDICAP - 4
RV - 4 (12' X 45')
BUILDINGS: (PHASE I)
LOVES STORE - 8,500 - 10,300
FOOD SERVICE - 2,700 -
3 BAY TIRE SHOPE - 8,800 -

ADKINSON ENGINEERING
6550 St. Augustine Road, Suite #203
Jacksonville, FL 32217
PHONE (904) 881-4206

Love's
MIMS, FL
TRAVEL STOPS & COUNTRY STORES
10601 N. Pennsylvania Avenue
Oklahoma City, OK 73120

SITE PLAN EXHIBIT

JOB NO. JOB1807
DATE November 28, 2018
SCALE AS SHOWN
SHEET PUD-1
~~~~

APPENDIX B

METHODOLOGY

LTG Engineering & Planning

Via E-Mail: (Suraj.Pamulapati@dot.state.fl.us)

Ref: 4607.01

November 5, 2018

Suraj Pamulapati, PE, PTOE
District Five Access Management Engineer
FDOT – Traffic Operations
719 S. Woodland Blvd., M.S. # 562
Deland, Florida 32720

RE: Love's Travel Plaza - Traffic Impact Study Methodology
Mims, Florida

Dear Mr. Pamulapati:

LTG, Inc. (LTG) has been retained by Love's Travel Stops & Country Stores to prepare a Traffic Impact Study (TIS) for the proposed Love's Travel Plaza located in the northwest quadrant of the intersection of SR 46 and North Carpenter Road just west of the I-95/SR46 interchange in unincorporated Brevard County, FL. The TIS will be prepared in accordance with requirements for Brevard County as well as Florida Department of Transportation (FDOT) driveway permit applications. Figure 1 shows the location of the project relative to the surrounding road network and a preliminary site plan is attached as Exhibit A. Build-out of the project is expected by the end of 2020.

The proposed development will consist of the following land-uses:

Hotel:	120 Rooms
Fast Food Restaurant with Drive-Through:	2,670 SF
Super Convenience Market/Gas Station:	8,200 SF, 24 Fueling Positions (16 vehicle FP and 8 truck FP)
Tire Super Store:	3 Service Bays

Analysis Period

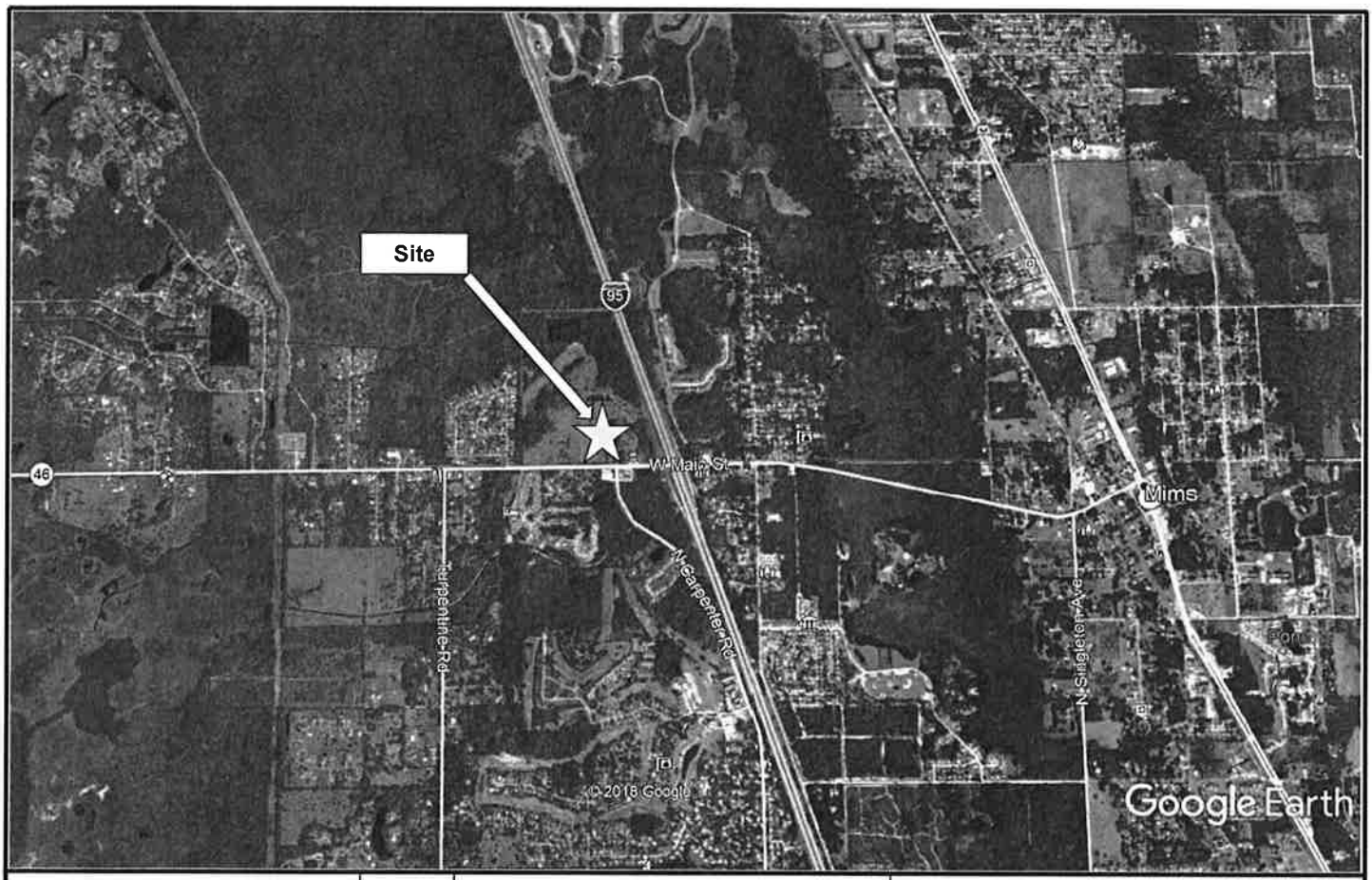
Roadway segments will be analyzed based on daily traffic and intersections will be analyzed during the a.m. and p.m. peak-hour. The analysis will be conducted under 2018 existing conditions and 2020 build-out conditions.

Traffic Concurrency Spreadsheet

The analysis will be based on the latest concurrency information as obtained from FDOT and the Brevard County Planning and Development Department.

Trip Generation

The daily, a.m. and p.m. peak-hour trip generation rates for the proposed project were determined using the the Institute of Transportation Engineers (ITE) 10th Edition of the *Trip Generation Manual*. The gross trip generation is presented in Table 1.



Love's Travel Plaza	N NTS	**Location Map**		LTG Engineering & Planning
		Project No.: 4607.01	Figure: 1	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

Table 1
Gross Trip Generation
Love's Travel Plaza

Time Period	Land Use	Land Use Code	Trip Rate Equation	Size	Units	Percent Entering	Percent Exiting	Trips Entering	Trips Exiting	Total Trips
Daily	Convience Market/Gas Station	960	T=837.58(X)	8.2	KSF	50%	50%	3,434	3,434	6,868
	Hotel	310	T=11.29(X)-426.97	120	Rooms	50%	50%	464	464	928
	Fast Food Restaurant with Drive Through	934	T=470.95(X)	2.67	KSF	50%	50%	629	629	1,257
	Tire Store	849	T=30.55(X)	3.00	Service Bays	50%	50%	46	46	92
Totals:								**4,573**	**4,573**	**9,145**
AM Peak-Hour	Convience Market/Gas Station	960	T=83.14(X)	8.2	KSF	50%	50%	341	341	682
	Hotel	310	T=0.50(X)-5.34	120	Rooms	59%	41%	32	23	55
	Fast Food Restaurant with Drive Through	934	T=40.19(X)	2.67	KSF	51%	49%	55	52	107
	Tire Store	849	T=2.01(X)	3.0	Service Bays	65%	35%	4	2	6
Totals:								**432**	**418**	**850**
PM Peak-Hour	Convience Market/Gas Station	960	T=69.28(X)	8.2	KSF	50%	50%	284	284	568
	Hotel	310	T=0.75(X)-26.02	120	Rooms	51%	49%	33	31	64
	Fast Food Restaurant with Drive Through	934	T=32.67(X)	2.67	KSF	52%	48%	45	42	87
	Tire Store	849	T=3.17(X)	3	Service Bays	47%	53%	4	6	10
Totals:								**366**	**363**	**729**

Due to the nature of the proposed development, a certain portion of the trips generated is expected to remain internal to the site while an additional percentage is expected to be attracted from existing traffic on the adjacent roadway (pass-by). The internal capture rate was calculated based on a.m. and p.m. NCHRP Report 684 Internal Capture Estimator (Exhibit B). The pass-by capture trips were calculated using procedures outlined in the *ITE Trip Generation Handbook*. As part of this study, 40% of the total pass-by trips were assigned to SR 46 and 60% were assigned as diverted trips from I-95. Table 2 shows the resulting net new external trips to be assigned to the roadway network.

Table 2
Net Trip Generation
Love's Travel Plaza

Time Period	Land Use	Total Trips			Internal Trips			Pass-by Trips Total			Pass-by Trips SR 46 (40% of Pass-by)			Diverted from I-95 (60% of Pass-by)			New External Trips		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Daily	Market/Gas	3,434	3,434	6,868	153	315	468	0	0	0	0	0	0	0	0	0	3,281	3,119	6,400
	Hotel	464	464	928	19	103	122	0	0	0	0	0	0	0	0	0	445	361	806
	Fast Food Restaurant with Drive Through	629	629	1,257	353	107	460	0	0	0	0	0	0	0	0	0	276	522	798
	Tire Store	46	46	92			0	0	0	0	0	0	0	0	0	0	46	46	92
Totals:		**4,573**	**4,573**	**9,145**	**525**	**525**	**1,050**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4,048**	**4,048**	**8,096**
Time Period	**Land Use**	**Total Trips**			**Internal Trips**			**Pass-by Trips**									**New External Trips**		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total							Enter	Exit	Total
AM Peak-Hour	Market/Gas	341	341	682	10	28	38	200	200	399	80	80	160	120	120	239	131	113	245
	Hotel	32	23	55	1	5	6	0	0	0	0	0	0	0	0	0	31	18	49
	Fast Food Restaurant with Drive Through	55	52	107	30	8	38	17	17	34	7	7	14	10	10	20	8	27	35
	Tire Store	4	2	6	0	0	0	0	0	0	0	0	0	0	0	0	4	2	6
Totals:		**432**	**418**	**850**	**41**	**41**	**82**	**217**	**216**	**433**	**87**	**86**	**173**	**130**	**130**	**260**	**174**	**161**	**335**
Time Period	**Land Use**	**Total Trips**			**Internal Trips**			**Pass-by Trips**									**New External Trips**		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total							Enter	Exit	Total
PM Peak-Hour	Market/Gas	284	284	568	22	19	41	148	148	295	59	59	118	89	89	177	114	117	232
	Hotel	33	31	64	9	7	16	0	0	0	0	0	0	0	0	0	24	24	48
	Fast Food Restaurant with Drive Through	45	42	87	15	20	35	14	13	26	5	5	10	8	8	16	16	9	26
	Tire Store	4	6	10	0	0	0	0	0	0	0	0	0	0	0	0	4	6	10
Totals:		**366**	**363**	**729**	**46**	**46**	**92**	**161**	**160**	**321**	**64**	**64**	**129**	**97**	**96**	**193**	**159**	**157**	**316**

Pass-by rates: Convenience Market/Gas Station A.M. peak hour - 62%, P.M. peak hour 56%; Fast Food Restaurant A.M. peak hour 49%, P.M. peak hour 50%.

Project Trip Distribution

A manual trip distribution and engineering judgement will be used to distribute project trips. Figure 2 illustrates the proposed trip distribution.

Study Area

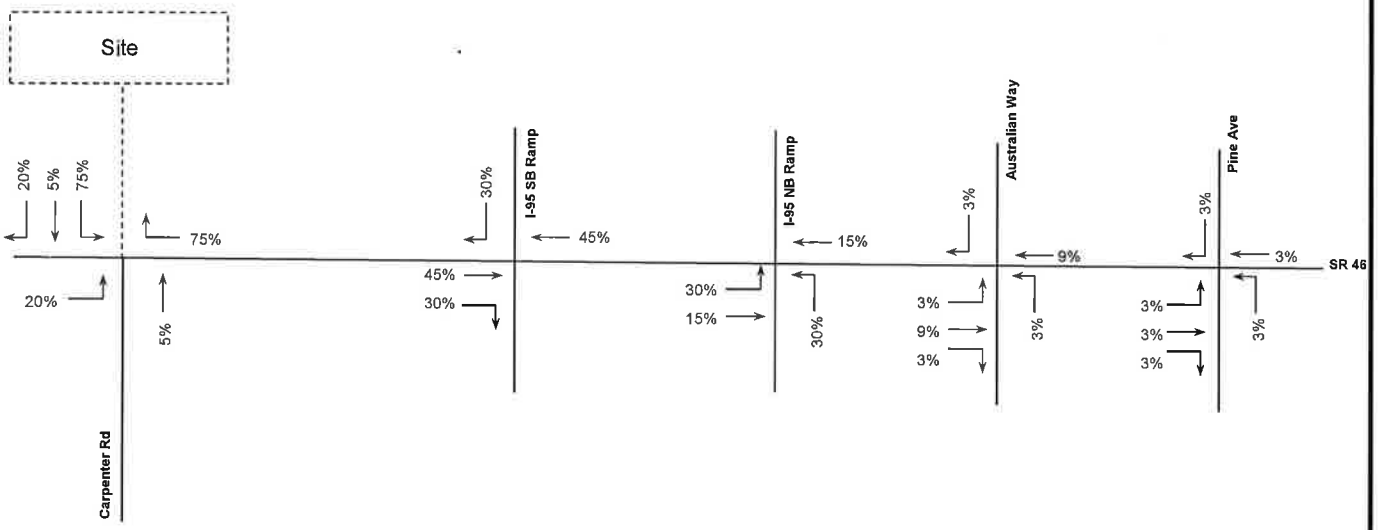
The study will include the following intersections and segment.

Intersections

1. SR 46 at Carpenter Road
2. SR 46 at I-95 SB Ramp
3. SR 46 at I-95 NB Ramp
4. SR 46 at Australian Way
5. SR 46 at Holder Road

Segments

- SR 46 from Fawn Lake Boulevard to I-95
- SR 46 from I-95 to Palm Avenue



Love's Travel Plaza **Mims, FL**	N NTS	**Project Trip Distribution**		LTG Engineering & Planning
		Project No.: 4607.01	Figure: 2	1450 W. Granada Blvd., Suite 2, Ormond Beach, Florida 32174 Telephone: 386.257.2571 Fax: 386.257.6996 EB# 0009227

Build-Out Traffic

The build-out traffic will be developed by the sum of the background traffic derived from growth rates or vested trips plus the estimated project traffic. Growth rates for each study area roadway segment will be determined by historic growth trends calculated based upon five years of historic count data. A minimum annual growth rate of two percent shall be used unless otherwise documented. In no case shall a negative growth rate be used.

Intersection Analysis – A.M. & P.M. Peak-Hour (Existing and Build-Out Conditions)

The operating conditions for both the existing and future conditions at the study intersections will be evaluated using the current version of Highway Capacity Software (HCS). This software is based on the 6th Edition Highway Capacity Manual.

Segment Analysis – Existing and Build-Out Conditions

Existing and Build-out segment traffic volumes will be compared to default capacities provided in the current Space Coast Transportation Planning Organization Traffic Counts Historical Counts document.

Improvements

If warranted, appropriate roadway and intersection improvements will be identified. Conditions for each analysis phase will be analyzed for improvements that are required for mitigation. Site access needs will be addressed. The need for turn lanes at the site driveway will be assessed using the methodology provided by NCHRP Report 457, HCS, and the latest version of the FDOT Design Standards.

Please review and advise if FDOT is in agreement with this proposed methodology or provide comments relating to preferred revisions. If you have any questions, please contact me at 386.257.2571.

Sincerely,

LTG, INC.

George Galan, PE
Senior Project Manager

Attachments: Exhibit A - Preliminary site plan
Exhibit B - NCHRP Report 684 Internal Capture Estimator

cc: Tim Schram, Sr. Project Manager, (tschram@adkinsoneng.com)

EXHIBIT A

Preliminary Site Plan

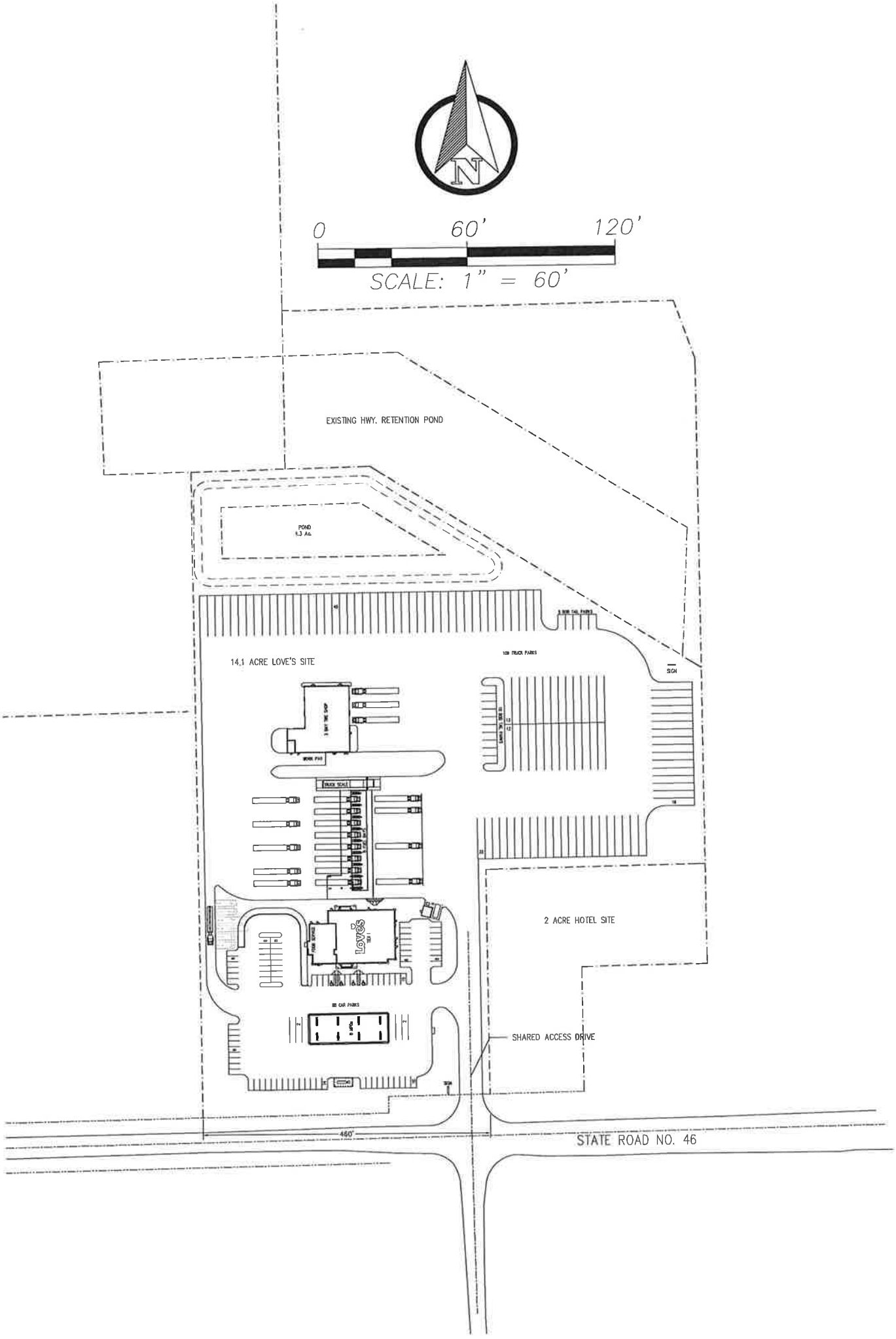

N
0
60'
120'
SCALE: 1" = 60'
EXISTING HWY. RETENTION POND
POND
1.3 Ac.
14.1 ACRE LOVE'S SITE
SIGN
2 ACRE HOTEL SITE
Love's
SHARED ACCESS DRIVE
460'
STATE ROAD NO. 46

EXHIBIT B

Internal Capture

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Love's Travel Plaza	**Organization:**	LTG
Project Location:	Brevard County	**Performed By:**	ARO
Scenario Description:		**Date:**	9/25/2018
Analysis Year:	2020	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	960	8	KSF	682	341	341
Restaurant	934	3	KSF	108	55	53
Cinema/Entertainment				0		
Residential				0		
Hotel	310	120	Rooms	54	32	22
All Other Land Uses[2]				0		
Total				844	428	416

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		28	0	0	0
Restaurant	0	7		0	0	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	3	2	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	844	428	416
Internal Capture Percentage	10%	10%	10%
External Vehicle-Trips[3]	762	387	375
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	3%	8%
Restaurant	55%	15%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	3%	23%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Love's Travel Plaza
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	341	341	1.00	341	341
Restaurant	1.00	55	55	1.00	53	53
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	32	32	1.00	22	22

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	99		44	0	48	0
Restaurant	16	7		0	2	2
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	17	3	2	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		109	13	0	0	0
Retail	0		28	0	0	0
Restaurant	0	27		0	0	1
Cinema/Entertainment	0	0	0		0	0
Residential	0	58	11	0		0
Hotel	0	14	3	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	10	331	341	331	0	0
Restaurant	30	25	55	25	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	1	31	32	31	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	28	313	341	313	0	0
Restaurant	8	45	53	45	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	5	17	22	17	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Love's Trave Plaza	**Organization:**	LTG
Project Location:	Brevard County	**Performed By:**	ARO
Scenario Description:		**Date:**	9/25/2018
Analysis Year:	2020	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	960	8	KSF	568	284	284
Restaurant	934	3	KSF	87	45	42
Cinema/Entertainment				0		
Residential				0		
Hotel	310	120	Rooms	64	33	31
All Other Land Uses[2]				0		
Total				719	362	357

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		13	0	0	6
Restaurant	0	17		0	0	3
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	5	2	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	719	362	357
Internal Capture Percentage	13%	13%	13%
External Vehicle-Trips[3]	627	316	311
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	7%
Restaurant	33%	48%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	27%	23%

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Love's Trave Plaza
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	284	284	1.00	284	284
Restaurant	1.00	45	45	1.00	42	42
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	33	33	1.00	31	31

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	6		82	11	74	14
Restaurant	1	17		3	8	3
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	5	21	0	1	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		23	1	0	0	0
Retail	0		13	0	0	6
Restaurant	0	142		0	0	23
Cinema/Entertainment	0	11	1		0	0
Residential	0	28	6	0		4
Hotel	0	6	2	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	22	262	284	262	0	0
Restaurant	15	30	45	30	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	9	24	33	24	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	19	265	284	265	0	0
Restaurant	20	22	42	22	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	7	24	31	24	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

APPENDIX C

TURNING MOVEMENT COUNTS

AM Peak-Hour Factored Volumes

Intersection	Approach	Mvmn't	Existing Traffic: Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Background Traffic: Approach Growth Rate	Vested Traffic	Total Background Volume	Pass-by Trips	Diverted Pass-by Trips	% Model Distribution	Trip Direction	Build-Out: Project Trips	Total Build-Out Volume	Peak-Hour Factor
1. SR 46 at Carpenter Rd.	Eastbound	U-Turn			1.08	0	0%	3.56%		0					0	0	0.94
		Left	0	0		0	0%			0	68		20%	in	36	104	
		Through	435	19		470	4%			503	-68				0	435	
		Right	27	4		29	15%			31					0	31	
	Westbound	U-Turn				0	0%	3.56%		0					0	0	
		Left	79	7		85	9%			91					0	91	
		Through	298	9		322	3%			345	-41	-165			0	139	
		Right	0	0		0	0%			0	41	165	75%	in	133	339	
	Northbound	U-Turn				0	0%	2.00%		0					0	0	
		Left	18	0		19	0%			20					0	20	
		Through	0	0		0	0%			0			5%	in	9	9	
		Right	131	4		141	3%			147					0	147	
	Southbound	U-Turn				0	0%	2.00%		0					0	0	
		Left	0	0		0	0%			0	67	161	75%	out	133	351	
		Through	0	0		0	0%			0			5%	out	9	9	
		Right	0	0		0	0%			0	42		20%	out	35	77	

Intersection	Approach	Mvmn't	Existing Traffic: Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Background Traffic: Approach Growth Rate	Vested Traffic	Total Background Volume	Diverted Pass-by Trips	% Model Distribution	Trip Direction	Build-Out: Project Trips	Total Build Out Volume	Peak-Hour Factor
2. SR 46 at I-95 SB Ramp	Eastbound	U-Turn			1.08	0	0%	3.56%		0				0	0	0.89
		Left	0	0		0	0%			0				0	0	
		Through	238	8		257	3%			275	81	45%	out	80	436	
		Right	361	17		390	5%			418	80	30%	out	53	551	
	Westbound	U-Turn				0	0%	4.76%		0				0	0	
		Left	210	11		227	5%			248				0	248	
		Through	254	4		274	2%			300	83	45%	in	80	463	
		Right	0	0		0	0%			0				0	0	
	Northbound	U-Turn				0	0%	2.00%		0				0	0	
		Left	0	0		0	0%			0				0	0	
		Through	0	0		0	0%			0				0	0	
		Right	0	0		0	0%			0				0	0	
	Southbound	U-Turn				0	0%	7.47%		0				0	0	
		Left	32	4		35	13%			40				0	40	
		Through	0	0		0	0%			0				0	0	
		Right	49	7		53	14%			61	82	30%	in	53	196	

Intersection	Approach	Mvmn't	Existing Traffic: Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Background Traffic: Approach Growth Rate	Vested Traffic	Total Background Volume	Diverted Pass-by Trips	% Model Distribution	Trip Direction	Build-Out: Project Trips	Total Build Out Volume	Peak-Hour Factor
3. SR 46 at I-95 NB Ramp	Eastbound	U-Turn			1.08	0	0%	4.76%		0				0	0	0.91
		Left	35	2		38	6%			41	81	30%	out	53	175	
		Through	210	4		227	2%			248		15%	out	27	275	
		Right	0	0		0	0%			0				0	0	
	Westbound	U-Turn				0	0%	4.76%		0				0	0	
		Left	0	0		0	0%			0				0	0	
		Through	278	6		300	2%			329		15%	in	27	355	
		Right	40	2		43	5%			47				0	47	
	Northbound	U-Turn				0	0%	2.36%		0				0	0	
		Left	185	19		200	10%			209	82	30%	in	53	345	
		Through	0	0		0	0%			0				0	0	
		Right	113	7		122	6%			128				0	128	
	Southbound	U-Turn				0	0%	2.00%		0				0	0	
		Left	0	0		0	0%			0				0	0	
		Through	0	0		0	0%			0				0	0	
		Right	0	0		0	0%			0				0	0	

Intersection	Approach	Mvmn't	Existing Traffic: Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Background Traffic: Approach Growth Rate	Vested Traffic	Total Background Volume	% Model Distribution	Trip Direction	Build-Out: Project Trips	Total Build-Out Volume	Peak-Hour Factor
4. SR 46 at Hammock Trail	Eastbound	U-Turn			1.02	0	0%	4.76%		0			0	0	0.91
		Left	33	0		34	0%			37	3%	out	5	42	
		Through	358	15		365	4%			400	9%	out	16	416	
		Right	1	0		1	0%			1	3%	out	5	6	
	Westbound	U-Turn				0	0%	4.76%		0			0	0	
		Left	39	0		40	0%			44			0	44	
		Through	436	19		445	4%			487	9%	in	16	503	
		Right	15	2		15	13%			17			0	17	
	Northbound	U-Turn				0	0%	2.00%		0			0	0	
		Left	23	0		23	0%			24	3%	in	5	30	
		Through	0	0		0	0%			0			0	0	
		Right	15	1		15	7%			16			0	18	
	Southbound	U-Turn				0	0%	2.00%		0			0	0	
		Left	21	1		21	5%			22			0	22	
		Through	1	1		1	100%			1			0	1	
		Right	27	0		28	0%			29	3%	in	5	34	

Intersection	Approach	Mvmn't	Existing Traffic: Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Background Traffic: Approach Growth Rate	Vested Traffic	Total Background Volume	% Model Distribution	Trip Direction	Build-Out: Project Trips	Total Build-Out Volume	Peak-Hour Factor
5. SR 46 at Pine Ave.	Eastbound	U-Turn			1.02	0	0%	4.76%		0			0	0	0.85
		Left	5	0		5	0%			6	3%	out	5	11	
		Through	309	12		315	4%			345	3%	out	5	350	
		Right	61	2		62	3%			68	3%	out	5	73	
	Westbound	U-Turn				0	0%	4.76%		0			0	0	
		Left	35	2		36	6%			39			0	39	
		Through	359	15		366	4%			401	3%	in	5	406	
		Right	10	1		10	10%			11			0	11	
	Northbound	U-Turn				0	0%	2.00%		0			0	0	
		Left	82	1		84	1%			87	3%	in	5	92	
		Through	2	1		2	50%			2			0	2	
		Right	40	1		41	3%			42			0	42	
	Southbound	U-Turn				0	0%	2.00%		0			0	0	
		Left	14	3		14	21%			15			0	15	
		Through	6	0		6	0%			6			0	6	
		Right	23	1		23	4%			24	3%	in	5	30	

PM Peak-Hour Factored Volumes

Intersection	Approach	Mvmn't.	Existing Traffic					Background Traffic			Build-Out						Peak-Hour Factor
			Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Approach Growth Rate	Vested Traffic	Total Background Volume	Pass-by	Diverted Pass by Trips	% Model Distribution	Project Trip Direction	Project Trips	Total Build-Out Volume	
1. SR 46 at Carpenter Rd.	Eastbound	U-Turn			1.08	0	0%	3.56%		0			0%	0	0	0	0.92
		Left	0	0		0	0%			0	51		20%	in	34	85	
		Through	385	4		416	1%			445	-51		0%	0	0	394	
		Right	44	0		48	0%			51			0%	0	0	51	
	Westbound	U-Turn				0	0%	3.56%		0			0%	0	0	0	
		Left	134	2		145	1%			155			0%	0	0	155	
		Through	495	5		535	1%			573	-31	-124	0%	0	0	418	
		Right	0	0		0	0%			0	31	124	75%	in	127	282	
	Northbound	U-Turn				0	0%	2.00%		0			0%	0	0	0	
		Left	24	0		26	0%			27			0%	0	0	27	
		Through	0	0		0	0%			0			5%	in	8	8	
		Right	56	1		60	2%			63			0%	0	0	63	
	Southbound	U-Turn				0	0%	2.00%		0			0%	0	0	0	
		Left	0	0		0	0%			0	50	124	75%	out	127	301	
		Through	0	0		0	0%			0			5%	out	8	8	
		Right	0	0		0	0%			0	31		20%	out	34	65	

Intersection	Approach	Mvmn't.	Existing Traffic					Background Traffic			Build-Out					Peak-Hour Factor
			Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Approach Growth Rate	Vested Traffic	Total Background Volume	Diverted Pass by Trips	% Model Distribution	Project Trip Direction	Project Trips	Total Build-Out Volume	
2. SR 46 at I-95 SB Ramp	Eastbound	U-Turn			1.08	0	0%	3.56%		0		0%	0	0	0	0.93
		Left	0	0		0	0%			0		0%	0	0	0	
		Through	193	3		208	2%			223	62	45%	out	76	362	
		Right	271	3		293	1%			314	62	30%	out	51	426	
	Westbound	U-Turn				0	0%	4.76%		0		0%	0	0	0	
		Left	149	6		161	4%			176		0%	0	0	176	
		Through	644	3		696	0%			762	62	45%	in	76	900	
		Right	0	0		0	0%			0		0%	0	0	0	
	Northbound	U-Turn				0	0%	2.00%		0		0%	0	0	0	
		Left	0	0		0	0%			0		0%	0	0	0	
		Through	0	0		0	0%			0		0%	0	0	0	
		Right	0	0		0	0%			0		0%	0	0	0	
	Southbound	U-Turn				0	0%	7.47%		0		0%	0	0	0	
		Left	34	2		37	6%			42		0%	0	0	42	
		Through	0	0		0	0%			0		0%	0	0	0	
		Right	53	3		57	6%			66	62	30%	in	51	179	

Intersection	Approach	Mvmn't.	Existing Traffic					Background Traffic			Build-Out					Peak-Hour Factor
			Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Approach Growth Rate	Vested Traffic	Total Background Volume	Diverted Pass by Trips	% Model Distribution	Project Trip Direction	Project Trips	Total Build-Out Volume	
3. SR 46 at I-95 NB Ramp	Eastbound	U-Turn			1.08	0	0%	4.76%		0		0%	0	0	0	0.95
		Left	41	0		44	0%			48	62	30%	out	51	161	
		Through	187	3		202	2%			221		15%	out	25	247	
		Right	0	0		0	0%			0		0%	0	0	0	
	Westbound	U-Turn				0	0%	4.76%		0		0%	0	0	0	
		Left	0	0		0	0%			0		0%	0	0	0	
		Through	429	4		463	1%			507		15%	in	25	533	
		Right	40	1		43	3%			47		0%	0	0	47	
	Northbound	U-Turn				0	0%	2.36%		0		0%	0	0	0	
		Left	360	15		389	4%			407	62	30%	in	51	520	
		Through	0	0		0	0%			0		0%	0	0	0	
		Right	236	5		255	2%			267		0%	0	0	267	
	Southbound	U-Turn				0	0%	2.00%		0		0%	0	0	0	
		Left	0	0		0	0%			0		0%	0	0	0	
		Through	0	0		0	0%			0		0%	0	0	0	
		Right	0	0		0	0%			0		0%	0	0	0	

Intersection	Approach	Mvmn't.	Existing Traffic					Background Traffic			Build-Out				Peak-Hour Factor
			Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Approach Growth Rate	Vested Traffic	Total Background Volume	% Model Distribution	Project Trip Direction	Project Trips	Total Build-Out Volume	
4. SR 46 at Hammock Trail	Eastbound	U-Turn			1.02	0	0%	4.76%		0	0%	0	0	0	0.92
		Left	26	0		27	0%			29	3%	out	5	34	
		Through	469	9		478	2%			524	9%	out	15	539	
		Right	2	0		2	0%			2	3%	out	5	7	
	Westbound	U-Turn				0	0%	4.76%		0	0%	0	0	0	
		Left	24	0		24	0%			27	0%	0	0	27	
		Through	416	8		424	2%			465	9%	in	15	480	
		Right	22	1		22	5%			25	0%	0	0	25	
	Northbound	U-Turn				0	0%	2.00%		0	0%	0	0	0	
		Left	23	0		23	0%			24	3%	in	5	29	
		Through	0	0		0	0%			0	0%	0	0	0	
		Right	16	0		16	0%			17	0%	0	0	17	
	Southbound	U-Turn				0	0%	2.00%		0	0%	0	0	0	
		Left	17	0		17	0%			18	0%	0	0	18	
		Through	3	0		3	0%			3	0%	0	0	3	
		Right	27	3		28	11%			29	3%	in	5	34	

Intersection	Approach	Mvmn't.	Existing Traffic					Background Traffic			Build-Out				Peak-Hour Factor
			Raw Count	Raw Truck Count	Seasonal Factor	TMC Volume	% Heavy Vehicles	Approach Growth Rate	Vested Traffic	Total Background Volume	% Model Distribution	Project Trip Direction	Project Trips	Total Build-Out Volume	
5. SR 46 at Pine Ave.	Eastbound	U-Turn			1.02	0	0%	4.76%		0	0%	0	0	0	0.94
		Left	13	0		13	0%			15	3%	out	5	20	
		Through	392	7		400	2%			438	3%	out	5	443	
		Right	101	1		103	1%			113	3%	out	5	118	
	Westbound	U-Turn				0	0%	4.76%		0	0%	0	0	0	
		Left	38	0		39	0%			42	0%	0	0	42	
		Through	365	7		372	2%			408	3%	in	5	413	
		Right	21	0		21	0%			23	0%	0	0	23	
	Northbound	U-Turn				0	0%	2.00%		0	0%	0	0	0	
		Left	76	1		78	1%			81	3%	in	5	86	
		Through	9	0		9	0%			10	0%	0	0	10	
		Right	40	0		41	0%			42	0%	0	0	42	
	Southbound	U-Turn				0	0%	2.00%		0	0%	0	0	0	
		Left	21	0		21	0%			22	0%	0	0	22	
		Through	5	0		5	0%			5	0%	0	0	5	
		Right	14	0		14	0%			15	3%	in	5	20	

DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
Site Code : 00000001
Start Date : 10/10/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	0	0	0	19	68	0	87	6	0	35	41	0	100	11	111	239
07:15 AM	0	0	0	0	15	80	0	95	1	0	30	31	0	105	5	110	236
07:30 AM	0	0	0	0	18	67	0	85	4	0	43	47	0	112	3	115	247
07:45 AM	0	0	0	0	22	71	0	93	9	0	33	42	0	117	10	127	262
Total	0	0	0	0	74	286	0	360	20	0	141	161	0	434	29	463	984
08:00 AM	0	0	0	0	24	80	0	104	4	0	25	29	0	101	9	110	243
08:15 AM	0	0	0	0	13	54	0	67	5	0	20	25	0	83	2	85	177
08:30 AM	0	0	0	0	22	52	0	74	5	0	25	30	0	69	4	73	177
08:45 AM	0	0	0	0	11	46	0	57	6	0	20	26	0	83	4	87	170
Total	0	0	0	0	70	232	0	302	20	0	90	110	0	336	19	355	767
04:00 PM	0	0	0	0	43	123	0	166	11	0	22	33	0	72	10	82	281
04:15 PM	0	0	0	0	22	107	0	129	12	0	20	32	0	83	6	89	250
04:30 PM	0	0	0	0	41	112	0	153	13	0	10	23	0	66	10	76	252
04:45 PM	0	0	0	0	41	123	0	164	7	0	16	23	0	62	7	69	256
Total	0	0	0	0	147	465	0	612	43	0	68	111	0	283	33	316	1039
05:00 PM	0	0	0	0	27	124	0	151	11	0	12	23	0	112	12	124	298
05:15 PM	0	0	0	0	32	160	0	192	3	0	11	14	0	96	8	104	310
05:30 PM	0	0	0	0	34	105	0	139	7	0	20	27	0	83	11	94	260
05:45 PM	0	0	0	0	41	106	0	147	3	0	13	16	0	94	13	107	270
Total	0	0	0	0	134	495	0	629	24	0	56	80	0	385	44	429	1138
Grand Total	0	0	0	0	425	1478	0	1903	107	0	355	462	0	1438	125	1563	3928
Apprch %	0	0	0		22.3	77.7	0		23.2	0	76.8		0	92	8		
Total %	0	0	0	0	10.8	37.6	0	48.4	2.7	0	9	11.8	0	36.6	3.2	39.8	

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Carpenter Rd at SR 46
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Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Automobiles	0	0	0	0	411	1446	0	1857	107	0	347	454	0	1393	118	1511	3822
% Automobiles	0	0	0	0	96.7	97.8	0	97.6	100	0	97.7	98.3	0	96.9	94.4	96.7	97.3
Commercial	0	0	0	0	14	32	0	46	0	0	8	8	0	45	7	52	106
% Commercial	0	0	0	0	3.3	2.2	0	2.4	0	0	2.3	1.7	0	3.1	5.6	3.3	2.7

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Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
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	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	15	80	0	95	1	0	30	31	0	105	5	110	236
07:30 AM	0	0	0	0	18	67	0	85	4	0	43	47	0	112	3	115	247
07:45 AM	0	0	0	0	22	71	0	93	9	0	33	42	0	117	10	127	262
08:00 AM	0	0	0	0	24	80	0	104	4	0	25	29	0	101	9	110	243
Total Volume	0	0	0	0	79	298	0	377	18	0	131	149	0	435	27	462	988
% App. Total	0	0	0		21	79	0		12.1	0	87.9		0	94.2	5.8		
PHF	.000	.000	.000	.000	.823	.931	.000	.906	.500	.000	.762	.793	.000	.929	.675	.909	.943
Automobiles	0	0	0	0	72	289	0	361	18	0	127	145	0	416	23	439	945
% Automobiles	0	0	0	0	91.1	97.0	0	95.8	100	0	96.9	97.3	0	95.6	85.2	95.0	95.6
Commercial	0	0	0	0	7	9	0	16	0	0	4	4	0	19	4	23	43
% Commercial	0	0	0	0	8.9	3.0	0	4.2	0	0	3.1	2.7	0	4.4	14.8	5.0	4.4

DE TRAFFIC

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Carpenter Rd at SR 46
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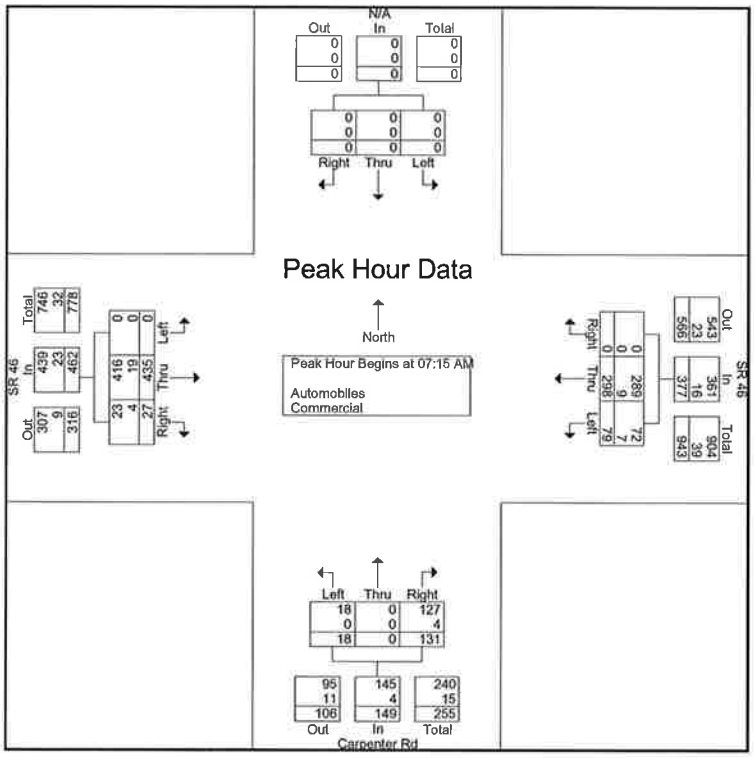

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Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
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	N/A Southbound				SR 46 Westbound				Carpenter Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	27	124	0	151	11	0	12	23	0	112	12	124	298
05:15 PM	0	0	0	0	32	160	0	192	3	0	11	14	0	96	8	104	310
05:30 PM	0	0	0	0	34	105	0	139	7	0	20	27	0	83	11	94	260
05:45 PM	0	0	0	0	41	106	0	147	3	0	13	16	0	94	13	107	270
Total Volume	0	0	0	0	134	495	0	629	24	0	56	80	0	385	44	429	1138
% App. Total	0	0	0		21.3	78.7	0		30	0	70		0	89.7	10.3		
PHF	.000	.000	.000	.000	.817	.773	.000	.819	.545	.000	.700	.741	.000	.859	.846	.865	.918
Automobiles	0	0	0	0	132	490	0	622	24	0	55	79	0	381	44	425	1126
% Automobiles	0	0	0	0	98.5	99.0	0	98.9	100	0	98.2	98.8	0	99.0	100	99.1	98.9
Commercial	0	0	0	0	2	5	0	7	0	0	1	1	0	4	0	4	12
% Commercial	0	0	0	0	1.5	1.0	0	1.1	0	0	1.8	1.3	0	1.0	0	0.9	1.1

DE TRAFFIC

http:de-traffic.com
Carpenter Rd at SR 46
Brevard County, FL

File Name : Carpenter at 46
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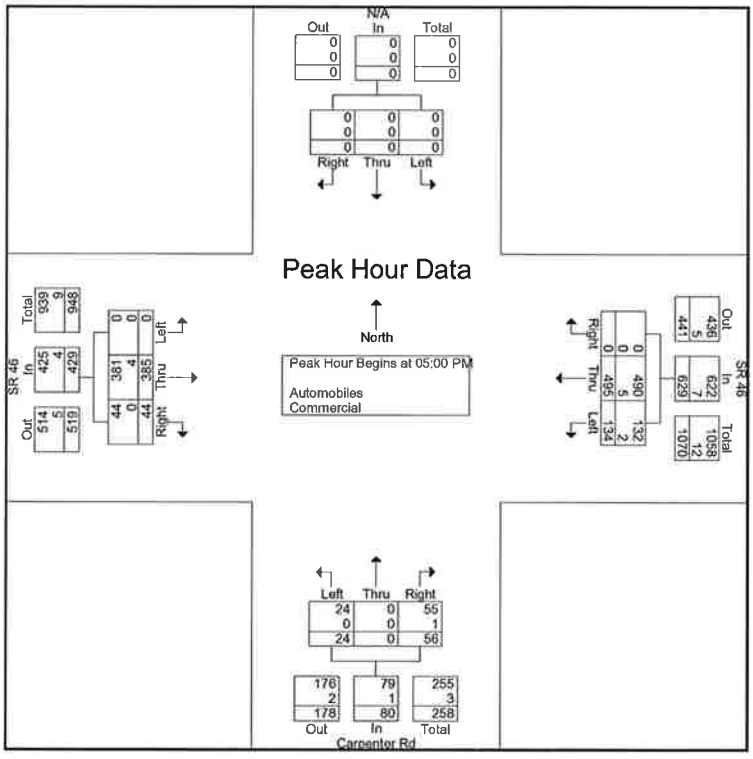

DE TRAFFIC

http:de-traffic.com
I-95 SB Ramp at SR 46
Brevard County, FL

File Name : I_95 SB at 46
Site Code : 00000002
Start Date : 10/10/2018
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Groups Printed- Automobiles - Commercial

	I-95 SB Ramp Southbound				SR 46 Westbound				N/A Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	4	0	9	13	49	52	0	101	0	0	0	0	0	35	88	123	237
07:15 AM	5	0	18	23	54	63	0	117	0	0	0	0	0	58	88	146	286
07:30 AM	12	0	6	18	47	42	0	89	0	0	0	0	0	46	61	107	214
07:45 AM	7	0	12	19	58	54	0	112	0	0	0	0	0	80	112	192	323
Total	28	0	45	73	208	211	0	419	0	0	0	0	0	219	349	568	1060
08:00 AM	8	0	13	21	51	95	0	146	0	0	0	0	0	54	100	154	321
08:15 AM	5	0	6	11	31	80	0	111	0	0	0	0	0	31	41	72	194
08:30 AM	7	0	9	16	45	71	0	116	0	0	0	0	0	37	71	108	240
08:45 AM	4	0	9	13	36	63	0	99	0	0	0	0	0	43	46	89	201
Total	24	0	37	61	163	309	0	472	0	0	0	0	0	165	258	423	956
04:00 PM	8	0	22	30	32	117	0	149	0	0	0	0	0	52	60	112	291
04:15 PM	10	0	14	24	26	143	0	169	0	0	0	0	0	52	64	116	309
04:30 PM	5	0	7	12	34	157	0	191	0	0	0	0	0	42	60	102	305
04:45 PM	10	0	17	27	36	169	0	205	0	0	0	0	0	42	86	128	360
Total	33	0	60	93	128	586	0	714	0	0	0	0	0	188	270	458	1265
05:00 PM	7	0	16	23	44	166	0	210	0	0	0	0	0	44	60	104	337
05:15 PM	12	0	13	25	35	152	0	187	0	0	0	0	0	65	65	130	342
05:30 PM	5	0	13	18	25	126	0	151	0	0	0	0	0	51	60	111	280
05:45 PM	4	0	10	14	31	107	0	138	0	0	0	0	0	65	57	122	274
Total	28	0	52	80	135	551	0	686	0	0	0	0	0	225	242	467	1233
Grand Total	113	0	194	307	634	1657	0	2291	0	0	0	0	0	797	1119	1916	4514
Apprch %	36.8	0	63.2		27.7	72.3	0		0	0	0		0	41.6	58.4		
Total %	2.5	0	4.3	6.8	14	36.7	0	50.8	0	0	0	0	0	17.7	24.8	42.4	

DE TRAFFIC

http:de-traffic.com
I-95 SB Ramp at SR 46
Brevard County, FL

File Name : I_95 SB at 46
Site Code : 00000002
Start Date : 10/10/2018
Page No : 2

Groups Printed- Automobiles - Commercial

	I-95 SB Ramp Southbound				SR 46 Westbound				N/A Northbound				SR 46 Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Automobiles	106	0	166	272	603	1641	0	2244	0	0	0	0	0	782	1070	1852	4368
% Automobiles	93.8	0	85.6	88.6	95.1	99	0	97.9	0	0	0	0	0	98.1	95.6	96.7	96.8
Commercial	7	0	28	35	31	16	0	47	0	0	0	0	0	15	49	64	146
% Commercial	6.2	0	14.4	11.4	4.9	1	0	2.1	0	0	0	0	0	1.9	4.4	3.3	3.2

DE TRAFFIC

http:de-traffic.com
I-95 SB Ramp at SR 46
Brevard County, FL

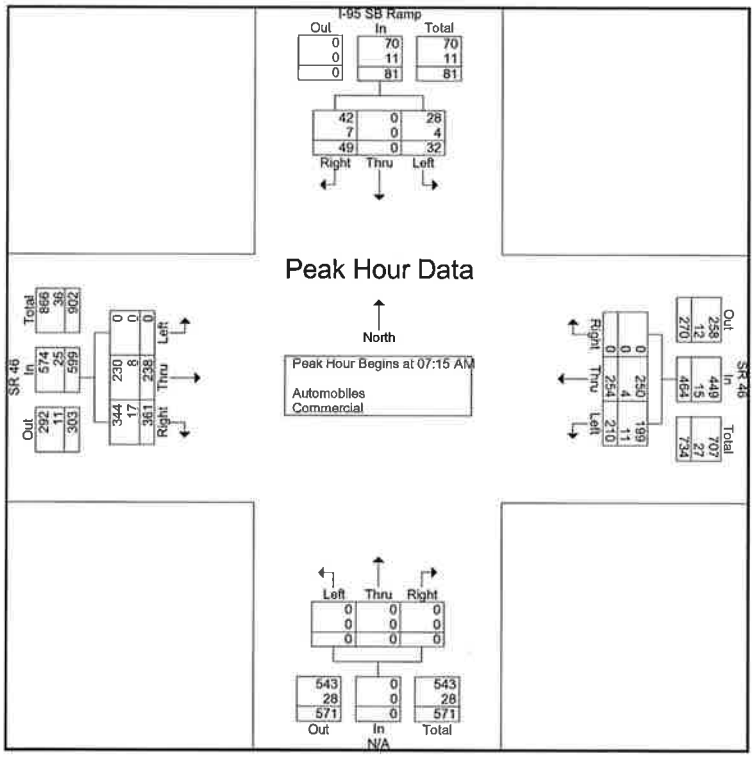
File Name : I_95 SB at 46
Site Code : 00000002
Start Date : 10/10/2018
Page No : 3

	I-95 SB Ramp Southbound				SR 46 Westbound				N/A Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	5	0	18	23	54	63	0	117	0	0	0	0	0	58	88	146	286
07:30 AM	12	0	6	18	47	42	0	89	0	0	0	0	0	46	61	107	214
07:45 AM	7	0	12	19	58	54	0	112	0	0	0	0	0	80	112	192	323
08:00 AM	8	0	13	21	51	95	0	146	0	0	0	0	0	54	100	154	321
Total Volume	32	0	49	81	210	254	0	464	0	0	0	0	0	238	361	599	1144
% App. Total	39.5	0	60.5		45.3	54.7	0		0	0	0		0	39.7	60.3		
PHF	.667	.000	.681	.880	.905	.668	.000	.795	.000	.000	.000	.000	.000	.744	.806	.780	.885
Automobiles	28	0	42	70	199	250	0	449	0	0	0	0	0	230	344	574	1093
% Automobiles	87.5	0	85.7	86.4	94.8	98.4	0	96.8	0	0	0	0	0	96.6	95.3	95.8	95.5
Commercial	4	0	7	11	11	4	0	15	0	0	0	0	0	8	17	25	51
% Commercial	12.5	0	14.3	13.6	5.2	1.6	0	3.2	0	0	0	0	0	3.4	4.7	4.2	4.5

DE TRAFFIC

http:de-traffic.com
I-95 SB Ramp at SR 46
Brevard County, FL

File Name : I_95 SB at 46
Site Code : 00000002
Start Date : 10/10/2018
Page No : 4



DE TRAFFIC

http:de-traffic.com
I-95 SB Ramp at SR 46
Brevard County, FL

File Name : I_95 SB at 46
Site Code : 00000002
Start Date : 10/10/2018
Page No : 5

	I-95 SB Ramp Southbound				SR 46 Westbound				N/A Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	5	0	7	12	34	157	0	191	0	0	0	0	0	42	60	102	305
04:45 PM	10	0	17	27	36	169	0	205	0	0	0	0	0	42	86	128	360
05:00 PM	7	0	16	23	44	166	0	210	0	0	0	0	0	44	60	104	337
05:15 PM	12	0	13	25	35	152	0	187	0	0	0	0	0	65	65	130	342
Total Volume	34	0	53	87	149	644	0	793	0	0	0	0	0	193	271	464	1344
% App. Total	39.1	0	60.9		18.8	81.2	0		0	0	0		0	41.6	58.4		
PHF	.708	.000	.779	.806	.847	.953	.000	.944	.000	.000	.000	.000	.000	.742	.788	.892	.933
Automobiles	32	0	50	82	143	641	0	784	0	0	0	0	0	190	268	458	1324
% Automobiles	94.1	0	94.3	94.3	96.0	99.5	0	98.9	0	0	0	0	0	98.4	98.9	98.7	98.5
Commercial	2	0	3	5	6	3	0	9	0	0	0	0	0	3	3	6	20
% Commercial	5.9	0	5.7	5.7	4.0	0.5	0	1.1	0	0	0	0	0	1.6	1.1	1.3	1.5

DE TRAFFIC

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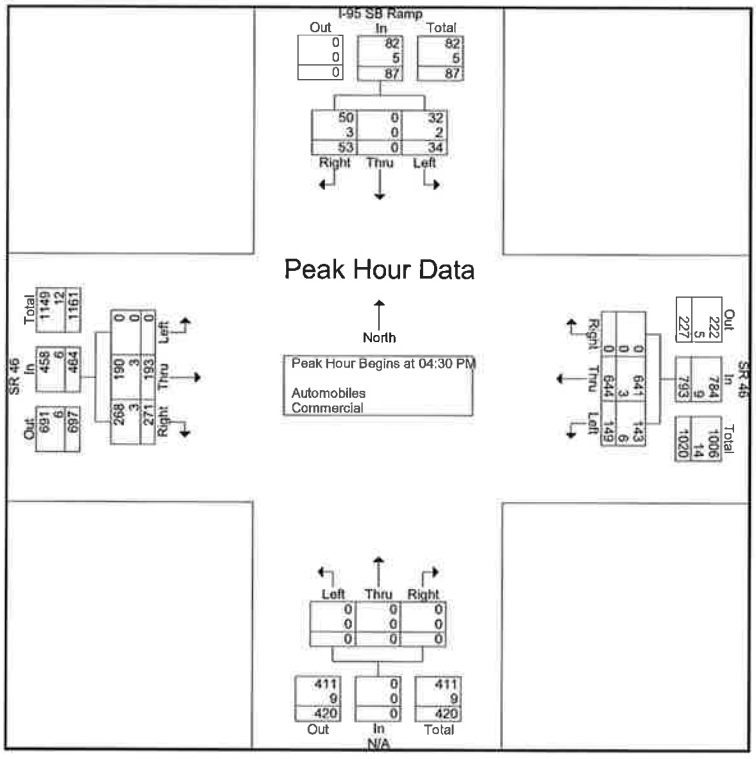
I-95 SB Ramp at SR 46
Brevard County, FL

File Name : I_95 SB at 46
Site Code : 00000002
Start Date : 10/10/2018
Page No : 6



DE TRAFFIC

http:de-traffic.com
I-95 NB Ramp at SR 46
Brevard County, FL

File Name : I_95 NB at 46
Site Code : 00000003
Start Date : 10/10/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				I-95 NB Ramp Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	68	8	76	32	0	19	51	9	24	0	33	160
07:15 AM	0	0	0	0	0	58	13	71	61	0	30	91	7	48	0	55	217
07:30 AM	0	0	0	0	0	53	10	63	35	0	26	61	4	52	0	56	180
07:45 AM	0	0	0	0	0	71	9	80	40	0	27	67	11	69	0	80	227
Total	0	0	0	0	0	250	40	290	168	0	102	270	31	193	0	224	784
08:00 AM	0	0	0	0	0	96	8	104	49	0	30	79	13	41	0	54	237
08:15 AM	0	0	0	0	0	83	5	88	30	0	28	58	10	36	0	46	192
08:30 AM	0	0	0	0	0	77	8	85	35	0	29	64	6	42	0	48	197
08:45 AM	0	0	0	0	0	61	9	70	42	0	25	67	10	36	0	46	183
Total	0	0	0	0	0	317	30	347	156	0	112	268	39	155	0	194	809
04:00 PM	0	0	0	0	0	65	6	71	88	0	47	135	9	52	0	61	267
04:15 PM	0	0	0	0	0	102	4	106	73	0	70	143	10	54	0	64	313
04:30 PM	0	0	0	0	0	110	9	119	93	0	66	159	8	41	0	49	327
04:45 PM	0	0	0	0	0	108	12	120	87	0	59	146	8	45	0	53	319
Total	0	0	0	0	0	385	31	416	341	0	242	583	35	192	0	227	1226
05:00 PM	0	0	0	0	0	115	10	125	84	0	53	137	15	37	0	52	314
05:15 PM	0	0	0	0	0	96	9	105	96	0	58	154	10	64	0	74	333
05:30 PM	0	0	0	0	0	57	2	59	98	0	79	177	8	52	0	60	296
05:45 PM	0	0	0	0	0	62	6	68	73	0	50	123	11	59	0	70	261
Total	0	0	0	0	0	330	27	357	351	0	240	591	44	212	0	256	1204
Grand Total	0	0	0	0	0	1282	128	1410	1016	0	696	1712	149	752	0	901	4023
Apprch %	0	0	0		0	90.9	9.1		59.3	0	40.7		16.5	83.5	0		
Total %	0	0	0	0	0	31.9	3.2	35	25.3	0	17.3	42.6	3.7	18.7	0	22.4	

DE TRAFFIC

http:de-traffic.com
I-95 NB Ramp at SR 46
Brevard County, FL

File Name : I_95 NB at 46
Site Code : 00000003
Start Date : 10/10/2018
Page No : 2

Groups Printed- Automobiles - Commercial

	N/A Southbound				SR 46 Westbound				I-95 NB Ramp Northbound				SR 46 Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Automobiles	0	0	0	0	0	1264	123	1387	967	0	669	1636	135	736	0	871	3894
% Automobiles	0	0	0	0	0	98.6	96.1	98.4	95.2	0	96.1	95.6	90.6	97.9	0	96.7	96.8
Commercial	0	0	0	0	0	18	5	23	49	0	27	76	14	16	0	30	129
% Commercial	0	0	0	0	0	1.4	3.9	1.6	4.8	0	3.9	4.4	9.4	2.1	0	3.3	3.2

DE TRAFFIC

http:de-traffic.com
I-95 NB Ramp at SR 46
Brevard County, FL

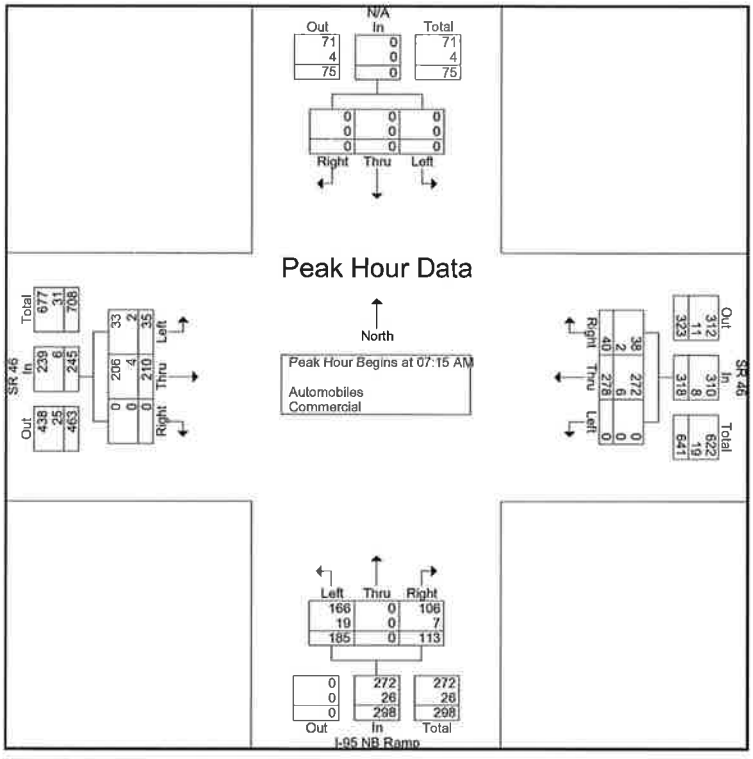
File Name : I_95 NB at 46
Site Code : 00000003
Start Date : 10/10/2018
Page No : 3

	N/A Southbound				SR 46 Westbound				I-95 NB Ramp Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	58	13	71	61	0	30	91	7	48	0	55	217
07:30 AM	0	0	0	0	0	53	10	63	35	0	26	61	4	52	0	56	180
07:45 AM	0	0	0	0	0	71	9	80	40	0	27	67	11	69	0	80	227
08:00 AM	0	0	0	0	0	96	8	104	49	0	30	79	13	41	0	54	237
Total Volume	0	0	0	0	0	278	40	318	185	0	113	298	35	210	0	245	861
% App. Total	0	0	0		0	87.4	12.6		62.1	0	37.9		14.3	85.7	0		
PHF	.000	.000	.000	.000	.000	.724	.769	.764	.758	.000	.942	.819	.673	.761	.000	.766	.908
Automobiles	0	0	0	0	0	272	38	310	166	0	106	272	33	206	0	239	821
% Automobiles	0	0	0	0	0	97.8	95.0	97.5	89.7	0	93.8	91.3	94.3	98.1	0	97.6	95.4
Commercial	0	0	0	0	0	6	2	8	19	0	7	26	2	4	0	6	40
% Commercial	0	0	0	0	0	2.2	5.0	2.5	10.3	0	6.2	8.7	5.7	1.9	0	2.4	4.6

DE TRAFFIC

http:de-traffic.com
I-95 NB Ramp at SR 46
Brevard County, FL

File Name : I_95 NB at 46
Site Code : 00000003
Start Date : 10/10/2018
Page No : 4



DE TRAFFIC

http:de-traffic.com
I-95 NB Ramp at SR 46
Brevard County, FL

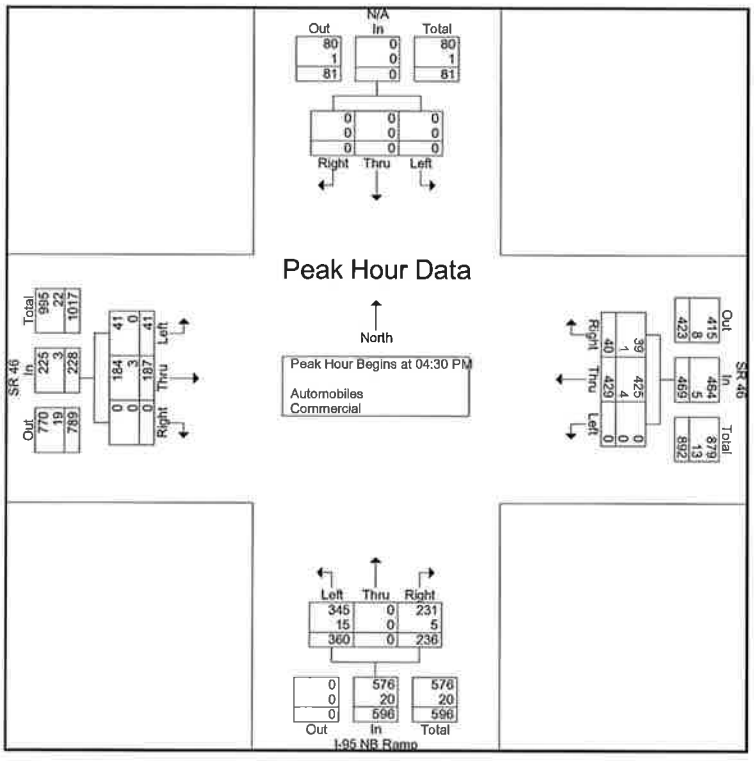
File Name : I_95 NB at 46
Site Code : 00000003
Start Date : 10/10/2018
Page No : 5

	N/A Southbound				SR 46 Westbound				I-95 NB Ramp Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	110	9	119	93	0	66	159	8	41	0	49	327
04:45 PM	0	0	0	0	0	108	12	120	87	0	59	146	8	45	0	53	319
05:00 PM	0	0	0	0	0	115	10	125	84	0	53	137	15	37	0	52	314
05:15 PM	0	0	0	0	0	96	9	105	96	0	58	154	10	64	0	74	333
Total Volume	0	0	0	0	0	429	40	469	360	0	236	596	41	187	0	228	1293
% App. Total	0	0	0		0	91.5	8.5		60.4	0	39.6		18	82	0		
PHF	.000	.000	.000	.000	.000	.933	.833	.938	.938	.000	.894	.937	.683	.730	.000	.770	.971
Automobiles	0	0	0	0	0	425	39	464	345	0	231	576	41	184	0	225	1265
% Automobiles	0	0	0	0	0	99.1	97.5	98.9	95.8	0	97.9	96.6	100	98.4	0	98.7	97.8
Commercial	0	0	0	0	0	4	1	5	15	0	5	20	0	3	0	3	28
% Commercial	0	0	0	0	0	0.9	2.5	1.1	4.2	0	2.1	3.4	0	1.6	0	1.3	2.2

DE TRAFFIC

http:de-traffic.com
I-95 NB Ramp at SR 46
Brevard County, FL

File Name : I_95 NB at 46
Site Code : 00000003
Start Date : 10/10/2018
Page No : 6



NB Approach

EB Approach

WB Approach

de traffic

Carpenter Rd
at SR 46

Brevard County

www.de-traffic.com

299 McGregor Rd. DeLand Fl. 32720

Project Number: L18-66

Sheet Number: 1

SB Approach

EB Approach

WB Approach

de traffic

I-95 SB Ramp
at SR 46

Brevard County

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299 McGregor Rd. DeLand Fl. 32720

Project Number: L18-66

Sheet Number: 2

NB Approach

EB Approach

WB Approach

de traffic

I-95 NB Ramp
at SR 46

Brevard County

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299 McGregor Rd. DeLand Fl. 32720

Project Number: L18-66

Sheet Number: 3

DE TRAFFIC

http:de-traffic.com
Indian River Pkwy at SR 46
Brevard County, FL

File Name : Hammock at SR 46
Site Code : 00000002
Start Date : 11/13/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	Indian River Pkwy Southbound				SR 46 Westbound				Hammock Trail Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
08:00 AM	4	0	7	11	4	109	9	122	3	0	1	4	7	71	0	78	215
08:15 AM	3	0	7	10	8	103	1	112	7	0	3	10	4	89	1	94	226
08:30 AM	10	0	9	19	12	113	3	128	6	0	3	9	10	101	0	111	267
08:45 AM	4	1	4	9	15	111	2	128	7	0	8	15	12	97	0	109	261
Total	21	1	27	49	39	436	15	490	23	0	15	38	33	358	1	392	969
09:00 AM	2	0	6	8	7	88	6	101	7	0	5	12	10	58	0	68	189
09:15 AM	7	0	5	12	11	77	1	89	10	0	6	16	7	72	0	79	196
09:30 AM	5	0	5	10	8	63	1	72	7	1	4	12	3	64	0	67	161
09:45 AM	4	0	4	8	6	56	1	63	9	1	4	14	3	58	1	62	147
Total	18	0	20	38	32	284	9	325	33	2	19	54	23	252	1	276	693
05:00 PM	8	1	5	14	8	93	3	104	9	0	5	14	10	100	2	112	244
05:15 PM	1	0	3	4	3	93	8	104	4	0	6	10	5	117	0	122	240
05:30 PM	4	0	6	10	9	80	4	93	5	0	1	6	7	103	0	110	219
05:45 PM	2	0	9	11	8	110	3	121	4	0	7	11	4	101	0	105	248
Total	15	1	23	39	28	376	18	422	22	0	19	41	26	421	2	449	951
06:00 PM	7	0	4	11	3	97	3	103	5	0	1	6	6	118	0	124	244
06:15 PM	5	2	7	14	5	95	7	107	7	0	5	12	9	141	0	150	283
06:30 PM	3	1	7	11	8	114	9	131	7	0	3	10	7	109	2	118	270
06:45 PM	8	0	6	14	6	86	10	102	4	0	4	8	8	106	1	115	239
Total	23	3	24	50	22	392	29	443	23	0	13	36	30	474	3	507	1036
Grand Total	77	5	94	176	121	1488	71	1680	101	2	66	169	112	1505	7	1624	3649
Apprch %	43.8	2.8	53.4		7.2	88.6	4.2		59.8	1.2	39.1		6.9	92.7	0.4		
Total %	2.1	0.1	2.6	4.8	3.3	40.8	1.9	46	2.8	0.1	1.8	4.6	3.1	41.2	0.2	44.5	

DE TRAFFIC

http:de-traffic.com
Indian River Pkwy at SR 46
Brevard County, FL

File Name : Hammock at SR 46
Site Code : 00000002
Start Date : 11/13/2018
Page No : 2

Groups Printed- Automobiles - Commercial

	Indian River Pkwy Southbound				SR 46 Westbound				Hammock Trail Northbound				SR 46 Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Automobiles	76	4	91	171	121	1443	68	1632	100	2	63	165	112	1463	7	1582	3550
% Automobiles	98.7	80	96.8	97.2	100	97	95.8	97.1	99	100	95.5	97.6	100	97.2	100	97.4	97.3
Commercial	1	1	3	5	0	45	3	48	1	0	3	4	0	42	0	42	99
% Commercial	1.3	20	3.2	2.8	0	3	4.2	2.9	1	0	4.5	2.4	0	2.8	0	2.6	2.7

DE TRAFFIC

http:de-traffic.com
Indian River Pkwy at SR 46
Brevard County, FL

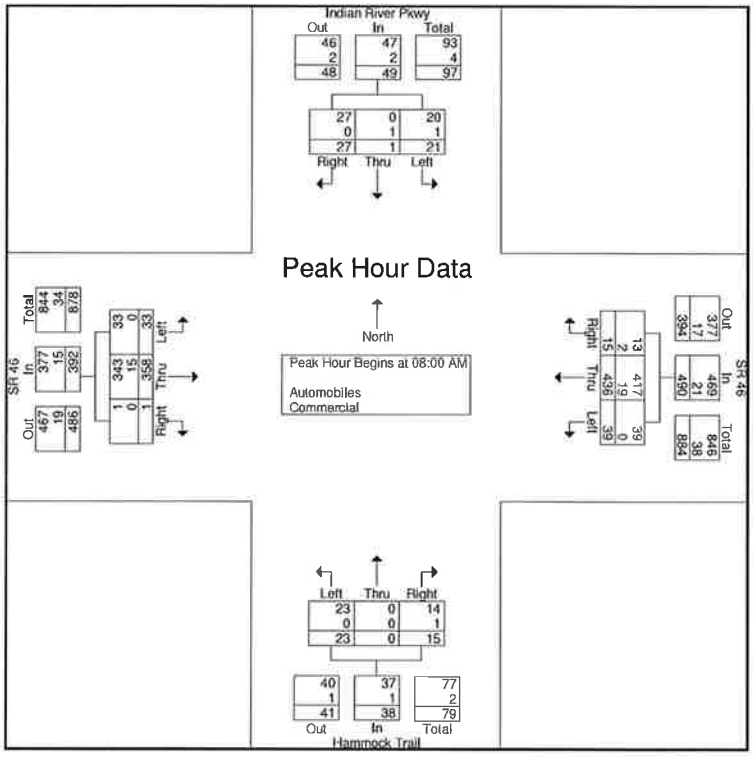
File Name : Hammock at SR 46
Site Code : 00000002
Start Date : 11/13/2018
Page No : 3

	Indian River Pkwy Southbound				SR 46 Westbound				Hammock Trail Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	4	0	7	11	4	109	9	122	3	0	1	4	7	71	0	78	215
08:15 AM	3	0	7	10	8	103	1	112	7	0	3	10	4	89	1	94	226
08:30 AM	10	0	9	19	12	113	3	128	6	0	3	9	10	101	0	111	267
08:45 AM	4	1	4	9	15	111	2	128	7	0	8	15	12	97	0	109	261
Total Volume	21	1	27	49	39	436	15	490	23	0	15	38	33	358	1	392	969
% App. Total	42.9	2	55.1		8	89	3.1		60.5	0	39.5		8.4	91.3	0.3		
PHF	.525	.250	.750	.645	.650	.965	.417	.957	.821	.000	.469	.633	.688	.886	.250	.883	.907
Automobiles	20	0	27	47	39	417	13	469	23	0	14	37	33	343	1	377	930
% Automobiles	95.2	0	100	95.9	100	95.6	86.7	95.7	100	0	93.3	97.4	100	95.8	100	96.2	96.0
Commercial	1	1	0	2	0	19	2	21	0	0	1	1	0	15	0	15	39
% Commercial	4.8	100	0	4.1	0	4.4	13.3	4.3	0	0	6.7	2.6	0	4.2	0	3.8	4.0

DE TRAFFIC

http:de-traffic.com
Indian River Pkwy at SR 46
Brevard County, FL

File Name : Hammock at SR 46
Site Code : 00000002
Start Date : 11/13/2018
Page No : 4



DE TRAFFIC

http:de-traffic.com
Indian River Pkwy at SR 46
Brevard County, FL

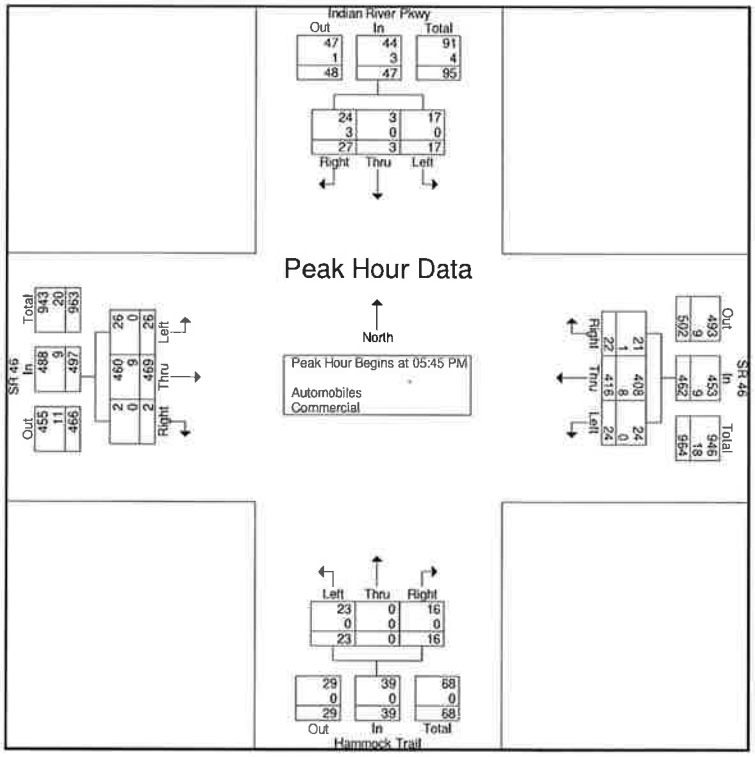
File Name : Hammock at SR 46
Site Code : 00000002
Start Date : 11/13/2018
Page No : 5

	Indian River Pkwy Southbound				SR 46 Westbound				Hammock Trail Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:45 PM																	
05:45 PM	2	0	9	11	8	110	3	121	4	0	7	11	4	101	0	105	248
06:00 PM	7	0	4	11	3	97	3	103	5	0	1	6	6	118	0	124	244
06:15 PM	5	2	7	14	5	95	7	107	7	0	5	12	9	141	0	150	283
06:30 PM	3	1	7	11	8	114	9	131	7	0	3	10	7	109	2	118	270
Total Volume	17	3	27	47	24	416	22	462	23	0	16	39	26	469	2	497	1045
% App. Total	36.2	6.4	57.4		5.2	90	4.8		59	0	41		5.2	94.4	0.4		
PHF	.607	.375	.750	.839	.750	.912	.611	.882	.821	.000	.571	.813	.722	.832	.250	.828	.923
Automobiles	17	3	24	44	24	408	21	453	23	0	16	39	26	460	2	488	1024
% Automobiles	100	100	88.9	93.6	100	98.1	95.5	98.1	100	0	100	100	100	98.1	100	98.2	98.0
Commercial	0	0	3	3	0	8	1	9	0	0	0	0	0	9	0	9	21
% Commercial	0	0	11.1	6.4	0	1.9	4.5	1.9	0	0	0	0	0	1.9	0	1.8	2.0

DE TRAFFIC

http:de-traffic.com
Indian River Pkwy at SR 46
Brevard County, FL

File Name : Hammock at SR 46
Site Code : 00000002
Start Date : 11/13/2018
Page No : 6



DE TRAFFIC

http:de-traffic.com
Pine Ave/Holder Rd at SR 46
Brevard County, FL

File Name : Pine at 46
Site Code : 00000001
Start Date : 11/13/2018
Page No : 1

Groups Printed- Automobiles - Commercial

	Pine Ave Southbound				SR 46 Westbound				Holder Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
08:00 AM	0	0	7	7	2	92	2	96	17	0	7	24	1	72	8	81	208
08:15 AM	4	1	9	14	5	78	0	83	14	2	6	22	1	70	19	90	209
08:30 AM	7	3	2	12	5	97	2	104	19	0	15	34	1	90	11	102	252
08:45 AM	3	2	5	10	23	92	6	121	32	0	12	44	2	77	23	102	277
Total	14	6	23	43	35	359	10	404	82	2	40	124	5	309	61	375	946
09:00 AM	2	2	6	10	12	73	2	87	22	1	8	31	1	51	14	66	194
09:15 AM	3	3	4	10	17	75	4	96	25	1	4	30	0	65	27	92	228
09:30 AM	2	1	1	4	4	62	1	67	12	3	5	20	1	69	11	81	172
09:45 AM	2	0	5	7	4	59	3	66	15	0	4	19	1	67	14	82	174
Total	9	6	16	31	37	269	10	316	74	5	21	100	3	252	66	321	768
05:00 PM	3	2	1	6	4	71	4	79	12	0	7	19	6	89	18	113	217
05:15 PM	2	2	3	7	12	82	2	96	18	4	4	26	4	83	21	108	237
05:30 PM	2	1	1	4	6	85	5	96	14	3	6	23	2	93	18	113	236
05:45 PM	1	4	2	7	10	83	6	99	11	1	5	17	3	86	22	111	234
Total	8	9	7	24	32	321	17	370	55	8	22	85	15	351	79	445	924
06:00 PM	2	2	3	7	9	120	2	131	21	4	7	32	2	88	13	103	273
06:15 PM	10	1	3	14	9	89	6	104	15	2	11	28	3	99	35	137	283
06:30 PM	6	1	5	12	10	79	8	97	24	3	11	38	2	109	32	143	290
06:45 PM	3	1	3	7	10	77	5	92	16	0	11	27	6	96	21	123	249
Total	21	5	14	40	38	365	21	424	76	9	40	125	13	392	101	506	1095
Grand Total	52	26	60	138	142	1314	58	1514	287	24	123	434	36	1304	307	1647	3733
Apprch %	37.7	18.8	43.5		9.4	86.8	3.8		66.1	5.5	28.3		2.2	79.2	18.6		
Total %	1.4	0.7	1.6	3.7	3.8	35.2	1.6	40.6	7.7	0.6	3.3	11.6	1	34.9	8.2	44.1	

DE TRAFFIC

http:de-traffic.com
Pine Ave/Holder Rd at SR 46
Brevard County, FL

File Name : Pine at 46
Site Code : 00000001
Start Date : 11/13/2018
Page No : 2

Groups Printed- Automobiles - Commercial

	Pine Ave Southbound				SR 46 Westbound				Holder Rd Northbound				SR 46 Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
Automobiles	49	25	57	131	136	1267	54	1457	283	23	120	426	36	1270	303	1609	3623
% Automobiles	94.2	96.2	95	94.9	95.8	96.4	93.1	96.2	98.6	95.8	97.6	98.2	100	97.4	98.7	97.7	97.1
Commercial	3	1	3	7	6	47	4	57	4	1	3	8	0	34	4	38	110
% Commercial	5.8	3.8	5	5.1	4.2	3.6	6.9	3.8	1.4	4.2	2.4	1.8	0	2.6	1.3	2.3	2.9

DE TRAFFIC

http:de-traffic.com
Pine Ave/Holder Rd at SR 46
Brevard County, FL

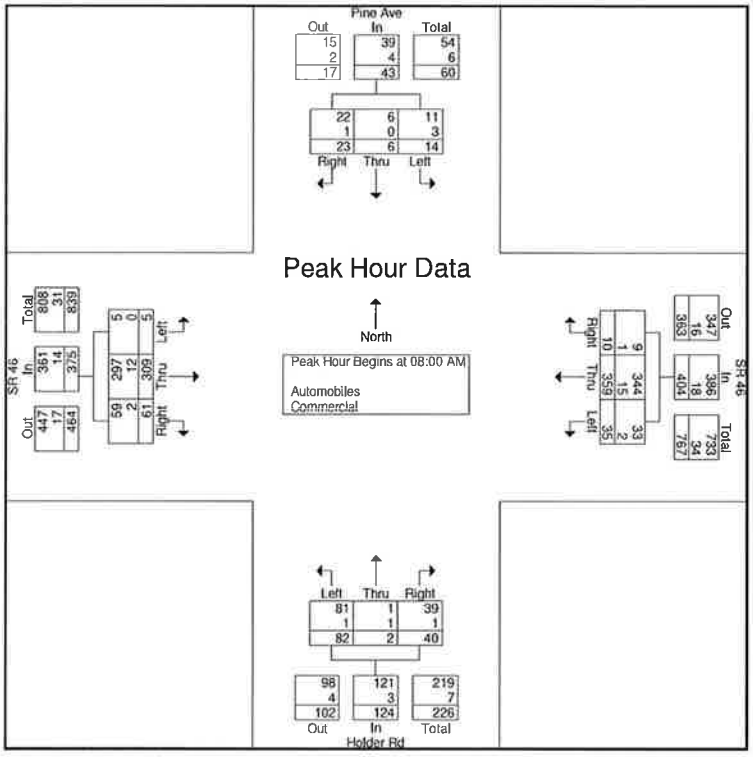
File Name : Pine at 46
Site Code : 00000001
Start Date : 11/13/2018
Page No : 3

	Pine Ave Southbound				SR 46 Westbound				Holder Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	7	7	2	92	2	96	17	0	7	24	1	72	8	81	208
08:15 AM	4	1	9	14	5	78	0	83	14	2	6	22	1	70	19	90	209
08:30 AM	7	3	2	12	5	97	2	104	19	0	15	34	1	90	11	102	252
08:45 AM	3	2	5	10	23	92	6	121	32	0	12	44	2	77	23	102	277
Total Volume	14	6	23	43	35	359	10	404	82	2	40	124	5	309	61	375	946
% App. Total	32.6	14	53.5		8.7	88.9	2.5		66.1	1.6	32.3		1.3	82.4	16.3		
PHF	.500	.500	.639	.768	.380	.925	.417	.835	.641	.250	.667	.705	.625	.858	.663	.919	.854
Automobiles	11	6	22	39	33	344	9	386	81	1	39	121	5	297	59	361	907
% Automobiles	78.6	100	95.7	90.7	94.3	95.8	90.0	95.5	98.8	50.0	97.5	97.6	100	96.1	96.7	96.3	95.9
Commercial	3	0	1	4	2	15	1	18	1	1	1	3	0	12	2	14	39
% Commercial	21.4	0	4.3	9.3	5.7	4.2	10.0	4.5	1.2	50.0	2.5	2.4	0	3.9	3.3	3.7	4.1

DE TRAFFIC

http:de-traffic.com
Pine Ave/Holder Rd at SR 46
Brevard County, FL

File Name : Pine at 46
Site Code : 00000001
Start Date : 11/13/2018
Page No : 4



DE TRAFFIC

http:de-traffic.com
Pine Ave/Holder Rd at SR 46
Brevard County, FL

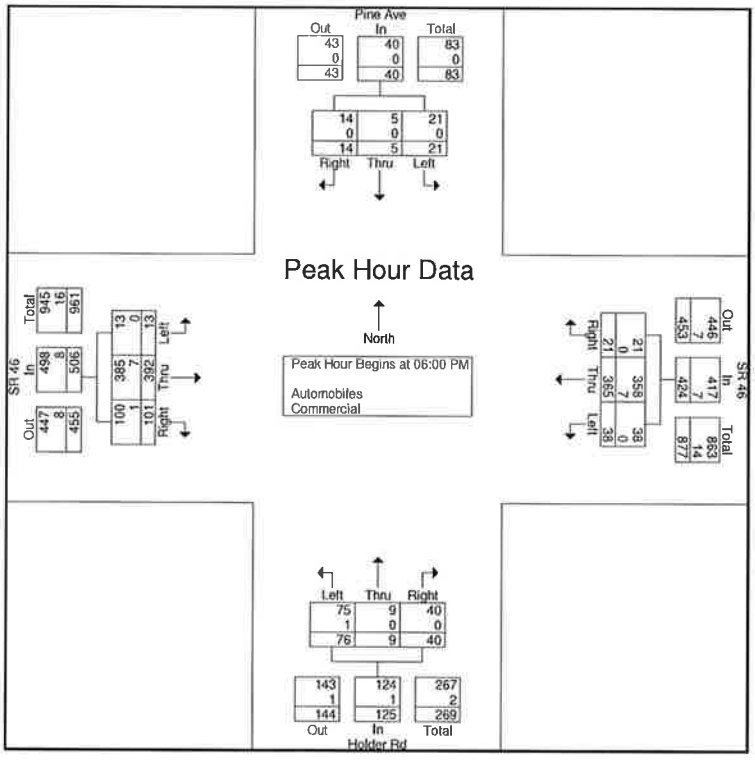
File Name : Pine at 46
Site Code : 00000001
Start Date : 11/13/2018
Page No : 5

	Pine Ave Southbound				SR 46 Westbound				Holder Rd Northbound				SR 46 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00 PM																	
06:00 PM	2	2	3	7	9	120	2	131	21	4	7	32	2	88	13	103	273
06:15 PM	10	1	3	14	9	89	6	104	15	2	11	28	3	99	35	137	283
06:30 PM	6	1	5	12	10	79	8	97	24	3	11	38	2	109	32	143	290
06:45 PM	3	1	3	7	10	77	5	92	16	0	11	27	6	96	21	123	249
Total Volume	21	5	14	40	38	365	21	424	76	9	40	125	13	392	101	506	1095
% App. Total	52.5	12.5	35		9	86.1	5		60.8	7.2	32		2.6	77.5	20		
PHF	.525	.625	.700	.714	.950	.760	.656	.809	.792	.563	.909	.822	.542	.899	.721	.885	.944
Automobiles	21	5	14	40	38	358	21	417	75	9	40	124	13	385	100	498	1079
% Automobiles	100	100	100	100	100	98.1	100	98.3	98.7	100	100	99.2	100	98.2	99.0	98.4	98.5
Commercial	0	0	0	0	0	7	0	7	1	0	0	1	0	7	1	8	16
% Commercial	0	0	0	0	0	1.9	0	1.7	1.3	0	0	0.8	0	1.8	1.0	1.6	1.5

DE TRAFFIC

http:de-traffic.com
Pine Ave/Holder Rd at SR 46
Brevard County, FL

File Name : Pine at 46
Site Code : 00000001
Start Date : 11/13/2018
Page No : 6



NB Approach

SB Approach

EB Approach

WB Approach

de traffic

Indian River Pkwy/Hammock Trail at SR 46

Brevard County

www.de-traffic.com

299 McGregor Rd. DeLand Fl. 32720

Project Number: L18-79

Sheet Number: 1

NB Approach

SB Approach

EB Approach

WB Approach

de traffic

Holder Rd/Pine Ave
at SR 46

Brevard County

www.de-traffic.com

299 McGregor Rd. DeLand Fl. 32720

Project Number: L18-79

Sheet Number: 2

COUNTY: 70
STATION: 0002
DESCRIPTION: ON SR 46, 0.735 MI. E OF I-95
START DATE: 08/02/2017
START TIME: 1000

TIME	DIRECTION: E 1ST	2ND	3RD	4TH	TOTAL	DIRECTION: W 1ST	2ND	3RD	4TH	TOTAL	COMBINED TOTAL
0000	9	13	4	5	31	12	6	5	4	27	58
0100	6	3	5	7	21	3	4	4	4	15	36
0200	2	1	6	2	11	2	4	7	6	19	30
0300	2	7	5	3	17	4	5	5	4	18	35
0400	8	7	8	14	37	9	14	15	16	54	91
0500	18	19	19	38	94	22	37	45	44	148	242
0600	46	50	59	67	222	38	67	71	73	249	471
0700	61	57	83	105	306	71	79	86	75	311	617
0800	57	54	66	63	240	76	71	59	66	272	512
0900	65	70	65	68	268	61	63	63	59	246	514
1000	72	64	70	51	257	66	74	67	65	272	529
1100	68	81	73	65	287	67	64	59	68	258	545
1200	64	61	76	84	285	79	60	77	75	291	576
1300	60	69	74	72	275	71	67	72	65	275	550
1400	64	70	67	66	267	81	68	64	70	283	550
1500	61	68	61	100	290	77	76	80	86	319	609
1600	91	86	93	77	347	114	81	93	87	375	722
1700	75	84	114	79	352	90	109	91	84	374	726
1800	75	109	92	79	355	83	58	61	76	278	633
1900	55	61	68	48	232	60	46	48	62	216	448
2000	58	60	30	43	191	54	51	41	46	192	383
2100	38	33	35	19	125	31	32	31	29	123	248
2200	21	18	26	19	84	17	15	12	24	68	152
2300	13	16	16	15	60	11	15	12	8	46	106
24-HOUR TOTALS:					4654					4729	9383

PEAK VOLUME INFORMATION

	DIRECTION: E HOUR	VOLUME	DIRECTION: W HOUR	VOLUME	COMBINED DIRECTIONS HOUR	VOLUME
A.M.	700	306	715	316	715	618
P.M.	1730	377	1630	379	1545	744
DAILY	1730	377	1630	379	1545	744

TRUCK PERCENTAGE 8.70 8.12 8.41

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	11	3012	1226	20	251	36	3	60	30	4	1	0	0	0	0	405	4654
W	15	3005	1325	22	240	34	3	39	38	7	1	0	0	0	0	384	4729

GENERATED BY SPS 5.0.53P

COUNTY: 70
STATION: 0416
DESCRIPTION: ON SR-46, 2.478 MI. W OF I-95 (RCLP)
START DATE: 08/08/2017
START TIME: 1130

TIME	DIRECTION: E 1ST	2ND	3RD	4TH	TOTAL	DIRECTION: W 1ST	2ND	3RD	4TH	TOTAL	COMBINED TOTAL
0000	6	4	1	4	15	3	6	9	5	23	38
0100	2	3	5	1	11	6	2	1	1	10	21
0200	2	2	1	0	5	2	1	4	5	12	17
0300	2	2	2	6	12	4	3	3	1	11	23
0400	4	4	8	10	26	4	11	15	22	52	78
0500	18	16	47	48	129	31	35	24	36	126	255
0600	60	53	71	54	238	36	57	44	76	213	451
0700	53	68	66	58	245	55	64	70	57	246	491
0800	59	44	58	55	216	65	52	47	60	224	440
0900	48	48	63	45	204	47	39	43	41	170	374
1000	57	73	45	38	213	44	37	42	39	162	375
1100	53	45	41	53	192	42	47	35	37	161	353
1200	36	45	38	40	159	40	52	53	49	194	353
1300	43	46	41	70	200	45	41	44	53	183	383
1400	42	42	41	47	172	39	44	56	47	186	358
1500	37	43	56	47	183	46	59	51	67	223	406
1600	50	67	58	73	248	64	88	72	60	284	532
1700	72	68	71	69	280	81	78	97	67	323	603
1800	72	73	47	53	245	71	49	44	58	222	467
1900	55	46	41	36	178	42	29	33	25	129	307
2000	28	24	32	13	97	21	23	20	28	92	189
2100	25	18	11	22	76	22	29	26	12	89	165
2200	14	8	11	20	53	13	14	10	11	48	101
2300	15	4	7	4	30	14	6	3	4	27	57
24-HOUR TOTALS:					3427					3410	6837

PEAK VOLUME INFORMATION

	DIRECTION: E HOUR	VOLUME	DIRECTION: W HOUR	VOLUME	COMBINED DIRECTIONS HOUR	VOLUME
A.M.	715	251	645	265	715	507
P.M.	1730	285	1700	323	1700	603
DAILY	1730	285	1700	323	1700	603

TRUCK PERCENTAGE 13.74 13.90 13.82

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	2	2204	750	21	170	39	0	97	141	3	0	0	0	0	0	471	3427
W	5	2179	752	27	168	13	11	115	113	27	0	0	0	0	0	474	3410

GENERATED BY SPS 5.0.53P

COUNTY: 70
STATION: 0416
DESCRIPTION: ON SR-46, 2.478 MI. W OF I-95 (RCLP)
START DATE: 08/09/2017
START TIME: 1130

TIME	DIRECTION: E 1ST	2ND	3RD	4TH	TOTAL	DIRECTION: W 1ST	2ND	3RD	4TH	TOTAL	COMBINED TOTAL
0000	5	3	4	7	19	5	9	3	6	23	42
0100	7	4	4	2	17	6	6	5	1	18	35
0200	3	3	2	1	9	1	3	2	6	12	21
0300	2	5	4	4	15	1	3	6	3	13	28
0400	9	6	9	11	35	8	18	16	19	61	96
0500	13	25	43	67	148	32	47	43	41	163	311
0600	43	70	70	51	234	55	62	53	56	226	460
0700	68	62	59	73	262	60	56	52	60	228	490
0800	59	50	63	57	229	72	57	58	60	247	476
0900	58	50	56	44	208	46	36	43	59	184	392
1000	47	45	72	67	231	57	38	41	48	184	415
1100	45	46	44	52	187	54	48	54	62	218	405
1200	47	49	31	59	186	37	47	52	48	184	370
1300	59	40	38	52	189	57	40	33	35	165	354
1400	64	51	62	48	225	72	49	45	55	221	446
1500	47	44	45	41	177	44	70	75	82	271	448
1600	57	63	66	86	272	74	73	85	86	318	590
1700	62	71	68	87	288	81	94	82	69	326	614
1800	83	61	56	49	249	73	48	76	42	239	488
1900	41	43	36	27	147	36	41	34	37	148	295
2000	41	54	47	34	176	30	34	25	30	119	295
2100	35	29	16	19	99	31	17	17	14	79	178
2200	21	15	18	5	59	14	14	11	13	52	111
2300	6	11	7	8	32	8	5	5	6	24	56
24-HOUR TOTALS:					3693					3723	7416

PEAK VOLUME INFORMATION

	DIRECTION: E HOUR	VOLUME	DIRECTION: W HOUR	VOLUME	COMBINED DIRECTIONS HOUR	VOLUME
A.M.	700	262	745	247	715	493
P.M.	1715	309	1630	346	1630	631
DAILY	1715	309	1630	346	1630	631

TRUCK PERCENTAGE 12.13 11.82 11.97

CLASSIFICATION SUMMARY DATABASE

DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK	TOTVOL
E	6	2366	873	19	165	19	0	110	130	5	0	0	0	0	0	448	3693
W	4	2426	853	21	158	16	3	115	105	22	0	0	0	0	0	440	3723

GENERATED BY SPS 5.0.53P

APPENDIX D

UNSIGNALIZED INTERSECTION SYNCHRO WORKSHEETS – EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	470	29	85	322	19	141
Future Vol, veh/h	470	29	85	322	19	141
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	15	9	3	2	3
Mvmt Flow	500	31	90	343	20	150

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	531	0	1039	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	-	-	4.19	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.281	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1002	-	255	557
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	595	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1002	-	232	557
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	595	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	478	-	-	1002	-
HCM Lane V/C Ratio	0.356	-	-	0.09	-
HCM Control Delay (s)	16.6	-	-	8.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.6	-	-	0.3	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	416	48	145	535	26	60
Future Vol, veh/h	416	48	145	535	26	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	400	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	452	52	158	582	28	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	504	0	1376	478
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	898	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1061	-	160	587
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	398	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1061	-	136	587
Mov Cap-2 Maneuver	-	-	-	-	136	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	398	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	22.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	293	-	-	1061	-
HCM Lane V/C Ratio	0.319	-	-	0.149	-
HCM Control Delay (s)	22.9	-	-	9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.5	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↰	↑					↰		↱
Traffic Vol, veh/h	0	257	390	227	274	0	0	0	0	35	0	53
Future Vol, veh/h	0	257	390	227	274	0	0	0	0	35	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	0	-	-	-	-	-	0	-	135
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	3	5	5	2	2	2	2	2	13	2	14
Mvmt Flow	0	289	438	255	308	0	0	0	0	39	0	60

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	289	0	0	963	-	308
Stage 1	-	-	-	-	-	-	818	-	-
Stage 2	-	-	-	-	-	-	145	-	-
Critical Hdwy	-	-	-	4.175	-	-	6.795	-	6.41
Critical Hdwy Stg 1	-	-	-	-	-	-	5.595	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.995	-	-
Follow-up Hdwy	-	-	-	2.2475	-	-	3.6235	-	3.433
Pot Cap-1 Maneuver	0	-	-	1252	-	0	252	0	699
Stage 1	0	-	-	-	-	0	409	0	-
Stage 2	0	-	-	-	-	0	839	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1252	-	-	201	0	699
Mov Cap-2 Maneuver	-	-	-	-	-	-	201	0	-
Stage 1	-	-	-	-	-	-	326	0	-
Stage 2	-	-	-	-	-	-	839	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.9	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1252	-	201	699
HCM Lane V/C Ratio	-	-	0.204	-	0.196	0.085
HCM Control Delay (s)	-	-	8.6	-	27.2	10.6
HCM Lane LOS	-	-	A	-	D	B
HCM 95th %tile Q(veh)	-	-	0.8	-	0.7	0.3

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↰	↑					↰		↱
Traffic Vol, veh/h	0	208	293	161	696	0	0	0	0	37	0	57
Future Vol, veh/h	0	208	293	161	696	0	0	0	0	37	0	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	0	-	-	-	-	-	0	-	135
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	4	2	2	2	2	2	6	2	6
Mvmt Flow	0	224	315	173	748	0	0	0	0	40	0	61

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	224	0	0	1206	-	748
Stage 1	-	-	-	-	-	-	1094	-	-
Stage 2	-	-	-	-	-	-	112	-	-
Critical Hdwy	-	-	-	4.16	-	-	6.69	-	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	5.49	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.89	-	-
Follow-up Hdwy	-	-	-	2.238	-	-	3.557	-	3.357
Pot Cap-1 Maneuver	0	-	-	1330	-	0	184	0	403
Stage 1	0	-	-	-	-	0	312	0	-
Stage 2	0	-	-	-	-	0	890	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1330	-	-	160	0	403
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	0	-
Stage 1	-	-	-	-	-	-	271	0	-
Stage 2	-	-	-	-	-	-	890	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.5	23.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1330	-	160	403
HCM Lane V/C Ratio	-	-	0.13	-	0.249	0.152
HCM Control Delay (s)	-	-	8.1	-	34.8	15.5
HCM Lane LOS	-	-	A	-	D	C
HCM 95th %tile Q(veh)	-	-	0.4	-	0.9	0.5

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	365	1	40	445	15	23	0	15	21	1	28
Future Vol, veh/h	34	365	1	40	445	15	23	0	15	21	1	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	230	-	300	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	4	2	2	4	13	2	2	7	5	100	2
Mvmt Flow	37	401	1	44	489	16	25	0	16	23	1	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	505	0	0	402	0	0	1077	1069	402	1061	1053	489
Stage 1	-	-	-	-	-	-	476	476	-	577	577	-
Stage 2	-	-	-	-	-	-	601	593	-	484	476	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.27	7.15	7.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	6.5	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.363	3.545	4.9	3.318
Pot Cap-1 Maneuver	1060	-	-	1157	-	-	197	221	638	199	154	579
Stage 1	-	-	-	-	-	-	570	557	-	497	374	-
Stage 2	-	-	-	-	-	-	487	493	-	558	423	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1060	-	-	1157	-	-	175	205	638	183	143	579
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	205	-	183	143	-
Stage 1	-	-	-	-	-	-	550	538	-	480	360	-
Stage 2	-	-	-	-	-	-	442	474	-	525	408	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.7	22.7	18.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	245	1060	-	-	1157	-	-	183	579
HCM Lane V/C Ratio	0.17	0.035	-	-	0.038	-	-	0.126	0.053
HCM Control Delay (s)	22.7	8.5	-	-	8.2	-	-	27.5	11.6
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	0.4	0.2

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	27	478	2	24	424	22	23	0	16	17	3	28
Future Vol, veh/h	27	478	2	24	424	22	23	0	16	17	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	230	-	300	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	5	2	2	2	2	2	11
Mvmt Flow	29	520	2	26	461	24	25	0	17	18	3	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	485	0	0	522	0	0	1121	1116	521	1101	1093	461
Stage 1	-	-	-	-	-	-	579	579	-	513	513	-
Stage 2	-	-	-	-	-	-	542	537	-	588	580	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.399
Pot Cap-1 Maneuver	1078	-	-	1044	-	-	183	208	555	189	214	582
Stage 1	-	-	-	-	-	-	501	501	-	544	536	-
Stage 2	-	-	-	-	-	-	525	523	-	495	500	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1078	-	-	1044	-	-	165	197	555	176	203	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	165	197	-	176	203	-
Stage 1	-	-	-	-	-	-	487	487	-	529	523	-
Stage 2	-	-	-	-	-	-	482	510	-	467	487	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	24	17.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	232	1078	-	-	1044	-	-	176	582
HCM Lane V/C Ratio	0.183	0.027	-	-	0.025	-	-	0.105	0.052
HCM Control Delay (s)	24	8.4	-	-	8.5	-	-	27.8	11.5
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.1	-	-	0.3	0.2

APPENDIX E

EXISTING SIGNAL TIMINGS

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Phase [1.1.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		13		16		13		16								
Min Green	5	15		8	5	15		8	5	5	5	5	5	5	5	5
Passage	3	3		3	3	3		3	1	1	1	1	1	1	1	1
Max1	20	40		30	20	40		30	25	25	25	25	25	25	25	25
Max2	20	40		30	20	40		30	50	50	50	50	50	50	50	50
Yellow	4.8	4.8		4.8	4.8	4.8		3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	2	2	2	2	2	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Auto Exit		ON				ON										
Rest In Walk																

Phase Option [1.1.2]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable	ON	ON		ON	ON	ON		ON								
Auto Entry				ON				ON								
Non Act1																
Non Act2																
Lock Call		ON				ON			ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable	ON	ON				ON			ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Cond Service																
Add Init Calc																

Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

	Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

	Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 1, Interval Times [1.1.6.1]

	Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 2, Interval Times [1.1.6.1]

	Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1											
2											
3											
4											
5											
6											
7											
8											

Prepared By	Date Implemented	Reviewed By	Traffic Engineer

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Backup Time	Red Revert	Console Timeout	Tone Disable	Feature Profile	Phase Model	Diamond Mode	SDLC Retry Time	TS2 Det Failed	Cycle Fault Action	Max Cycle Time	Max Seek Track Time	Max Seek Dwell Time	Enable Run	Local Flash Start	Disable Init Ped Start Red Time	Yellow 3 Second Disable	Omit Yellow Enable	Free Ring Sequence
	OFF		3	25	OFF		STD8	4PH		OFF	ALARM				ON	OFF	OFF	OFF	OFF	1

Comm, General Comm Parameters [6.1]

Station ID	Master Station ID	Fallback time	Allow Pencil	Port	System-Up	Sys-Down	PC/Print	Aux 232
155		900	OFF					

Port Parameters [6.2]

Comm	Mode	Baud	MsgTime	Duplex	Enable	DialTime	Modem	ModemTime	Tel#1	Tel#2
System Up(P-A)										
System Down(P-B)										
PC/Print(P-2)										

Overlap General Parameters [1.5.1]

Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	OFF	OFF	OFF

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5

Overlap Conflict Parameters+ [1.5.2.2]

Overlap	Conflicting Phases								Conflicting Overlaps								Conflicting Peds									
Overlap 1																									OFF	OFF
Overlap 2																									OFF	OFF
Overlap 3																									OFF	OFF
Overlap 4																									OFF	OFF
Overlap 5																									OFF	OFF
Overlap 6																									OFF	OFF
Overlap 7																									OFF	OFF
Overlap 8																									OFF	OFF

Detector, Vehicle Parameters 1-16 [5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	1	2	2	4	5	6	6	8								
Switch Phase																
Delay Time	5			7	5			7								

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																
Switch Phase																
Delay Time																

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Detector Alternate Program 1, Vehicle Parameters [5.5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase																
Switch Phase																
Delay Time																

Channels/SDLC, Assign to Phases [1.3.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PH/OLP #	1	2	3	4	5	6	7	8	1	2	3	4	2	4	6	8	1	3	5	7				
Type	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OLP	OLP	OLP	OLP	PED	PED	PED	PED	PED	PED	PED	PED	VEH	VEH	VEH	VEH
Flash	RED	YEL	RED	RED	RED	YEL	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Flash 1-2 Hertz																								
Dimming Green																								
Dimming Yellow																								
Dimming Red																								
Alt Cyc	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Channel/SDLC, Parameters [1.3.3]

TOD Dim Enable	Extra Maps Enable	D Connector Enable	Single BIU Map	IO Mode	Preempt or Ext Output
OFF	DEFAULT	TX2_V14	ON	AUTO	EXT

Channel/SDLC, MMU Map [1.3.5]

MMU-to-Controller Channel Map

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Channel/SDLC, Permissive [1.3.4]

Channel	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1		1									1	1			
2		1		1							1	1			
3	1								1	1					
4	1		1						1	1					
5				1											
6		1		1											
7			1												
8	1		1												
9															
10															
11															
12															
13		1													
14	1														
15															

Channel/SDLC, Permissive [1.3.7]

SDLC Device	Term/Fac								Detector								MMU	Diag
BIU#	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
Present	ON	ON							ON	ON							ON	
Peer to Peer																		

Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Alarms, Enable Events [1.6.1]

Event#	Event Enable
1	ON
2	ON
3	ON
4	ON
5	ON
6	ON
7	ON
8	ON
9	
10	ON
11	
12	ON
13	
14	
15	ON
16	ON
17	
18	
19	
20	ON
21	ON
22	
23	
24	
25	
26	
27	
28	ON
29	
30	
31	ON
32	
33	
34	
35	ON
36	
37	
38	
39	
40	
41	ON
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	
60	
61	
62	
63	
64	

Alarms, Enable Alarms [1.6.4]

Alarm#	Alarm Enable
1	ON
2	ON
3	ON
4	ON
5	ON
6	ON
7	ON
8	ON
9	
10	ON
11	
12	
13	
14	
15	
16	ON
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	ON
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	
60	
61	
62	
63	
64	

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash	ON	ON	ON	ON	ON	ON
Override Higher	ON	ON	ON	ON	ON	ON
Flash Dwell	ON	ON	ON	ON	ON	ON
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Alarms, Parameters [1.4.1]

Auto Flash Parameter

Yellow	Red	Mode	Source
35	15	VOT_MON	TEST B

Alarms, Parameters [1.6.7]

Preempt Event Enabled	Pattern Event Enabled
OFF	ON

Alarms, Phases/Overlaps [1.4.2]

Auto Flash	1	2	3	4	5	6	7	8	9	10	11	12
Phases												
Overlaps												

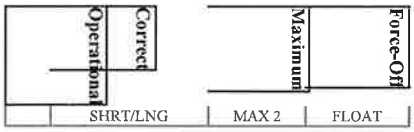
Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

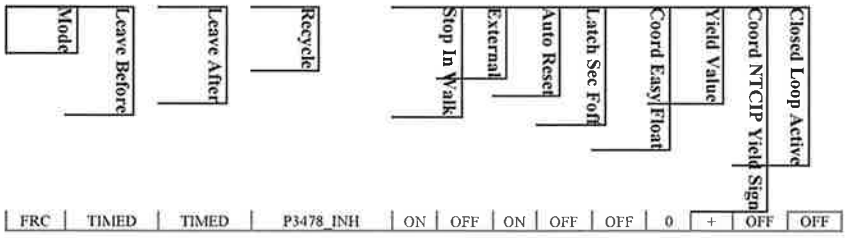
Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Coordination, Modes,+ [2.1]

Modes



Modes+



Coordination, Pattern 1-16 [2.1]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	70	70	80													
Offset Time																
Split Number	1	2	3	4	5	6	7	8								
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn

Coordination, Pattern 17-32 [2.1]

Pattern	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Cycle Time																
Offset Time																
Split Number																
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn	beggrn

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	10	37		23	10	37		23								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	10	37		23	10	37		23								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	10	47		23	10	47		23								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Split Table 32	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph																

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

TB Coor, Advanced Scheduler [4.3]

	Month												Day of Week							Day of Month										1										2										3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
3																																																	1
4																																																	1
5																																																	1
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30																																																	1
31																																																	1
32																																																	1

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	10	15	19											
Minute																
Action	10	1	2	3	10											

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		8	21													
Minute																
Action	10	2	10													

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

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Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

Day Plan Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Station : 155 - SR 46 & Holder Rd./Pine Ave. (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	255											
10	254											
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
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49												
50												
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53												
54												
55												
56												
57												
58												
59												
60												
61												
62												
63												
64												
99												
100												

Station : 334 - SR 46 & SR 9/I-95 NB Ramp (Standard File)

Phase [1.1.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk																
Ped Clearance																
Min Green		14			10	14		10	3		3		3		3	
Passage		3.5			3.5	4.5		3.5								
Max1		45			15	45		20								
Max2		45			25	45		40								
Yellow		4.8			4.8	4.8		4.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red		2			2	2		2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Auto Exit		ON				ON										
Rest In Walk																

Phase Option [1.1.2]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable		ON			ON	ON		ON								
Auto Entry				ON				ON								
Non Act1																
Non Act2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON				ON										
Sim Gap Enable		ON				ON				ON		ON		ON		ON
Guar Passage																
Cond Service																
Add Init Calc																

Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

	Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

	Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 1, Interval Times [1.1.6.1]

	Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1											
2											
3											
4											
5											
6											
7											
8											

Alternate Phase Program 2, Interval Times [1.1.6.1]

	Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1											
2											
3											
4											
5											
6											
7											
8											

Prepared By	Date Implemented	Reviewed By	Traffic Engineer

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Station : 334 - SR 46 & SR 9/I-95 NB Ramp (Standard File)

Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Backup Time	Red Revert	Console Timeout	Tone Disable	Feature Profile	Phase Model	Diamond Model	SDLC Retry Time	TS2 Det Faults	Cycle Fault Action	Max Cycle Time	Max Seek Track Time	Max Seek Dwell Time	Enable Run	Local Flash Start	Disable Init Ped Start Red Time	Yellow 3 Second Disable	Omit Yellow Enable	Free Ring Sequence
	OFF			30	OFF		STD8	4PH		OFF	ALARM				ON	OFF	OFF	OFF	OFF	

Comm, General Comm Parameters [6.1]

Station ID	Master Station ID	Fallback time	Allow Pencil	Port	System-Up	Sys-Down	PC/Print	Aux 232
334		900	OFF					

Port Parameters [6.2]

Comm	Mode	Baud	MsgTime	Duplex	Enable	DialTime	Modem	ModemTime	Tel#1	Tel#2
System Up(P-A)										
System Down(P-B)										
PC/Print(P-2)										

Overlap General Parameters [1.5.1]

Conflict Lock	Lock Inhibit	Program Card	Use Parent	Canadian Fast Flash
OFF	OFF	OFF	ON	OFF

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5

Overlap Conflict Parameters+ [1.5.2.2]

Overlap	Conflicting Phases								Conflicting Overlaps								Conflicting Peds									
Overlap 1																									OFF	OFF
Overlap 2																									OFF	OFF
Overlap 3																									OFF	OFF
Overlap 4																									OFF	OFF
Overlap 5																									OFF	OFF
Overlap 6																									OFF	OFF
Overlap 7																									OFF	OFF
Overlap 8																									OFF	OFF

Detector, Vehicle Parameters 1-16 [5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	2	2	5	6	6			8								
Switch Phase																
Delay Time			3													

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																
Switch Phase																
Delay Time																

Station : 334 - SR 46 & SR 9/I-95 NB Ramp (Standard File)

Detector Alternate Program 1, Vehicle Parameters [5.5.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase																
Switch Phase																
Delay Time																

Channels/SDLC, Assign to Phases [1.3.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
PH/OLP #	1	2	3	4	5	6	7	8	1	2	3	4	2	4	6	8	1	3	5	7				
Type	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OLP	OLP	OLP	OLP	PED	PED	PED	PED	PED	PED	PED	PED	VEH	VEH	VEH	VEH
Flash	RED	YEL	RED	RED	RED	YEL	RED	RED	RED	RED	RED	RED	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK	DRK
Flash 1-2 Hertz																								
Dimming Green																								
Dimming Yellow																								
Dimming Red																								
Alt Cyc	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Channel/SDLC, Parameters [1.3.3]

TOD Dim Enable	Extra Maps Enable	D Connector Enable	Single BIU Map	IO Mode	Preempt or Ext Output
OFF	DEFAULT		ON	AUTO	EXT

Channel/SDLC, MMU Map [1.3.5]

MMU-to-Controller Channel Map

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Channel/SDLC, Permissive [1.3.4]

Channel	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2											1	1			
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Channel/SDLC, Permissive [1.3.7]

SDLC Device	Term/Fac								Detector								MMU	Diag
BIU#	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
Present	ON	ON							ON								ON	
Peer to Peer																		

Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

Station : 334 - SR 46 & SR 9/I-95 NB Ramp (Standard File)

Alarms, Enable Events [1.6.1]

Event#	Event Enable
1	ON
2	ON
3	ON
4	ON
5	ON
6	ON
7	ON
8	ON
9	
10	ON
11	
12	
13	
14	
15	
16	ON
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	ON
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	
60	
61	
62	
63	
64	

Alarms, Enable Alarms [1.6.4]

Alarm#	Alarm Enable
1	ON
2	ON
3	ON
4	ON
5	ON
6	ON
7	ON
8	ON
9	
10	ON
11	
12	
13	
14	
15	
16	ON
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	ON
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	ON
50	ON
51	ON
52	ON
53	ON
54	ON
55	ON
56	ON
57	ON
58	ON
59	
60	
61	
62	
63	
64	

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash	ON	ON	ON	ON	ON	ON
Override Higher	ON	ON	ON	ON	ON	ON
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Alarms, Parameters [1.4.1]

Auto Flash Parameter

Yellow	Red	Mode	Source
45	30	VOT_MON	TEST B

Alarms, Parameters [1.6.7]

Preempt Event Enabled	Pattern Event Enabled
ON	ON

Alarms, Phases/Overlaps [1.4.2]

Auto Flash	1	2	3	4	5	6	7	8	9	10	11	12
Phases	2	6										
Overlaps												

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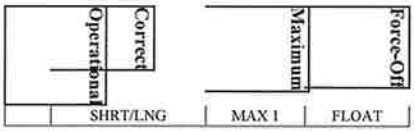
Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

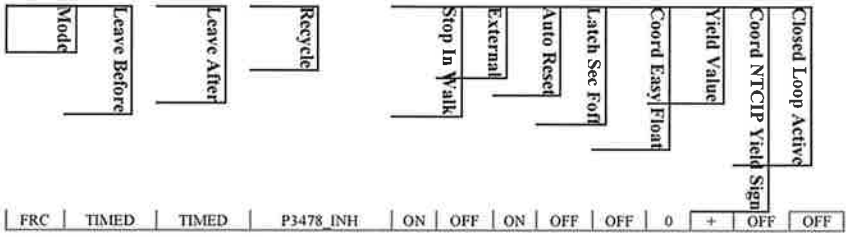
Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt	ON					
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Coordination, Modes,+ [2.1]

Modes



Modes+



Coordination, Pattern 1-16 [2.1]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time																
Offset Time																
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

Coordination, Pattern 17-32 [2.1]

Pattern	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Cycle Time																
Offset Time																
Split Number	17	18	19	20	21	22	23	24								
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Offset	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn	endgrn

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Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

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Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 25	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 26	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 27	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 29	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

Split Table 32	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	OMT	OMT	OMT	OMT	OMT	OMT	OMT	OMT
Coord-Ph		ON														

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TB Coor, Advanced Scheduler [4.3]

	Month												Day of Week							Day of Month										1										2										3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
3	1	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
4	1	1	1	1	1	1	1	1	1	1	1	1						1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
5																																																	1
6																																																		1
7																																																		1
8																																																		1
9																																																		1
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25																																																		1
26																																																		1
27																																																		1
28																																																		1
29																																																		1
30																																																		1
31																																																		1
32																																																		1

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Station : 334 - SR 46 & SR 9/I-95 NB Ramp (Standard File)

Day Plan Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Station : 334 **-** SR 46 & SR 9/I-95 NB Ramp (Standard File)

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25	255											
26	1											
27	2											
28	3											
29	4											
30	5											
31	6											
32	7											
33	8											
34	9											
35	10											
36	11											
37	12											
38	13											
39	14											
40	15											
41	16											
42	17											
43	18											
44	19											
45	20											
46	21											
47	22											
48	23											
49	24											
50	48											
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												
61												
62												
63												
64												
99												
100	254											

APPENDIX F

SIGNALIZED INTERSECTION SYNCHRO WORKSHEETS – EXISTING CONDITIONS

HCM 6th Signalized Intersection Summary
12: I-95 NB Ramp & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	227	0	0	300	43	200	0	122	0	0	0
Future Volume (veh/h)	38	227	0	0	300	43	200	0	122	0	0	0
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1870	0	0	1870	1826	1752	0	1811			
Adj Flow Rate, veh/h	42	249	0	0	330	0	220	0	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	6	2	0	0	2	5	10	0	6			
Cap, veh/h	627	1148	0	0	1498		280	0				
Arrive On Green	0.08	0.61	0.00	0.00	0.42	0.00	0.17	0.00	0.00			
Sat Flow, veh/h	1725	1870	0	0	3647	1547	1668	0	1535			
Grp Volume(v), veh/h	42	249	0	0	330	0	220	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1870	0	0	1777	1547	1668	0	1535			
Q Serve(g_s), s	0.7	3.7	0.0	0.0	3.7	0.0	7.9	0.0	0.0			
Cycle Q Clear(g_c), s	0.7	3.7	0.0	0.0	3.7	0.0	7.9	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	627	1148	0	0	1498		280	0				
V/C Ratio(X)	0.07	0.22	0.00	0.00	0.22		0.79	0.00				
Avail Cap(c_a), veh/h	988	1148	0	0	2181		890	0				
HCM Platoon Ratio	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	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	7.1	5.4	0.0	0.0	11.5	0.0	24.8	0.0	0.0			
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.0	0.1	0.0	5.8	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.4	2.2	0.0	0.0	2.4	0.0	6.0	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	5.8	0.0	0.0	11.6	0.0	30.6	0.0	0.0			
LnGrp LOS	A	A	A	A	B		C	A				
Approach Vol, veh/h		291			330	A		220	A			
Approach Delay, s/veh		6.0			11.6			30.6				
Approach LOS		A			B			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		45.0			12.0	33.0		17.2				
Change Period (Y+Rc), s		6.8			6.8	6.8		6.8				
Max Green Setting (Gmax), s		38.2			18.2	38.2		33.2				
Max Q Clear Time (g_c+I1), s		5.7			2.7	5.7		9.9				
Green Ext Time (p_c), s		1.9			0.1	2.8		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
12: I-95 NB Ramp & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	202	0	0	463	43	389	0	255	0	0	0
Future Volume (veh/h)	44	202	0	0	463	43	389	0	255	0	0	0
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1856	1841	0	1870			
Adj Flow Rate, veh/h	46	213	0	0	487	0	409	0	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	3	4	0	2			
Cap, veh/h	483	1005	0	0	1272		475	0				
Arrive On Green	0.08	0.54	0.00	0.00	0.36	0.00	0.27	0.00	0.00			
Sat Flow, veh/h	1781	1870	0	0	3647	1572	1753	0	1585			
Grp Volume(v), veh/h	46	213	0	0	487	0	409	0	0			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1777	1572	1753	0	1585			
Q Serve(g_s), s	1.0	4.2	0.0	0.0	7.2	0.0	15.8	0.0	0.0			
Cycle Q Clear(g_c), s	1.0	4.2	0.0	0.0	7.2	0.0	15.8	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	483	1005	0	0	1272		475	0				
V/C Ratio(X)	0.10	0.21	0.00	0.00	0.38		0.86	0.00				
Avail Cap(c_a), veh/h	790	1005	0	0	1910		819	0				
HCM Platoon Ratio	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	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	10.9	8.6	0.0	0.0	17.0	0.0	24.6	0.0	0.0			
Incr Delay (d2), s/veh	0.1	0.5	0.0	0.0	0.2	0.0	5.6	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.7	2.9	0.0	0.0	5.1	0.0	11.2	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	9.1	0.0	0.0	17.2	0.0	30.2	0.0	0.0			
LnGrp LOS	B	A	A	A	B		C	A				
Approach Vol, veh/h		259			487	A		409	A			
Approach Delay, s/veh		9.4			17.2			30.2				
Approach LOS		A			B			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		45.0			12.8	32.2		26.1				
Change Period (Y+Rc), s		6.8			6.8	6.8		6.8				
Max Green Setting (Gmax), s		38.2			18.2	38.2		33.2				
Max Q Clear Time (g_c+I1), s		6.2			3.0	9.2		17.8				
Green Ext Time (p_c), s		1.5			0.1	4.2		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			20.1									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
5: Holder Rd/Pine Ave & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	315	62	36	366	10	84	2	41	14	6	23
Future Volume (veh/h)	5	315	62	36	366	10	84	2	41	14	6	23
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1811	1841	1841	1159	1159	1159	1870	1870	1870
Adj Flow Rate, veh/h	6	371	73	42	431	12	99	2	48	16	7	27
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	4	4	6	4	4	50	50	50	2	2	2
Cap, veh/h	456	719	142	456	915	25	190	13	56	137	74	169
Arrive On Green	0.01	0.48	0.48	0.04	0.51	0.51	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1781	1494	294	1725	1782	50	556	68	297	372	397	902
Grp Volume(v), veh/h	6	0	444	42	0	443	149	0	0	50	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1788	1725	0	1832	921	0	0	1671	0	0
Q Serve(g_s), s	0.1	0.0	12.0	0.8	0.0	10.9	9.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	12.0	0.8	0.0	10.9	10.9	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.03	0.66		0.32	0.32		0.54
Lane Grp Cap(c), veh/h	456	0	861	456	0	941	258	0	0	380	0	0
V/C Ratio(X)	0.01	0.00	0.52	0.09	0.00	0.47	0.58	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	569	0	861	510	0	941	298	0	0	448	0	0
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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	12.5	9.3	0.0	10.9	27.4	0.0	0.0	23.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.2	0.1	0.0	1.7	2.1	0.0	0.0	0.2	0.0	0.0
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	0.1	0.0	7.8	0.5	0.0	7.0	4.2	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	0.0	14.7	9.4	0.0	12.6	29.5	0.0	0.0	24.0	0.0	0.0
LnGrp LOS	A	A	B	A	A	B	C	A	A	C	A	A
Approach Vol, veh/h		450			485			149			50	
Approach Delay, s/veh		14.6			12.3			29.5			24.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	42.8		19.9	9.6	40.5		19.9				
Change Period (Y+Rc), s	6.8	6.8		6.8	6.8	6.8		6.8				
Max Green Setting (Gmax), s	5.0	28.4		16.2	5.0	28.4		16.2				
Max Q Clear Time (g_c+I1), s	2.1	12.9		12.9	2.8	14.0		3.7				
Green Ext Time (p_c), s	0.0	2.2		0.2	0.0	2.2		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
5: Holder Rd/Pine Ave & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	400	103	39	372	21	78	9	41	21	5	14
Future Volume (veh/h)	13	400	103	39	372	21	78	9	41	21	5	14
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	426	110	41	396	22	83	10	44	22	5	15
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	606	851	220	523	1078	60	171	21	56	147	43	67
Arrive On Green	0.02	0.59	0.59	0.04	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	1434	370	1781	1755	98	864	181	494	686	373	589
Grp Volume(v), veh/h	14	0	536	41	0	418	137	0	0	42	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1804	1781	0	1853	1539	0	0	1648	0	0
Q Serve(g_s), s	0.2	0.0	13.8	0.7	0.0	9.0	5.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	13.8	0.7	0.0	9.0	6.8	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.05	0.61		0.32	0.52		0.36
Lane Grp Cap(c), veh/h	606	0	1070	523	0	1138	248	0	0	257	0	0
V/C Ratio(X)	0.02	0.00	0.50	0.08	0.00	0.37	0.55	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	687	0	1070	567	0	1138	378	0	0	387	0	0
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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	9.4	6.8	0.0	7.7	34.3	0.0	0.0	32.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.7	0.1	0.0	0.9	1.9	0.0	0.0	0.3	0.0	0.0
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	0.1	0.0	8.2	0.4	0.0	5.4	4.6	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	11.1	6.9	0.0	8.6	36.2	0.0	0.0	32.4	0.0	0.0
LnGrp LOS	A	A	B	A	A	A	D	A	A	C	A	A
Approach Vol, veh/h		550			459			137			42	
Approach Delay, s/veh		11.0			8.5			36.2			32.4	
Approach LOS		B			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	55.9		15.9	9.8	54.3		15.9				
Change Period (Y+Rc), s	6.8	6.8		6.8	6.8	6.8		6.8				
Max Green Setting (Gmax), s	5.0	38.4		16.2	5.0	38.4		16.2				
Max Q Clear Time (g_c+I1), s	2.2	11.0		8.8	2.7	15.8		3.7				
Green Ext Time (p_c), s	0.0	2.4		0.3	0.0	3.2		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

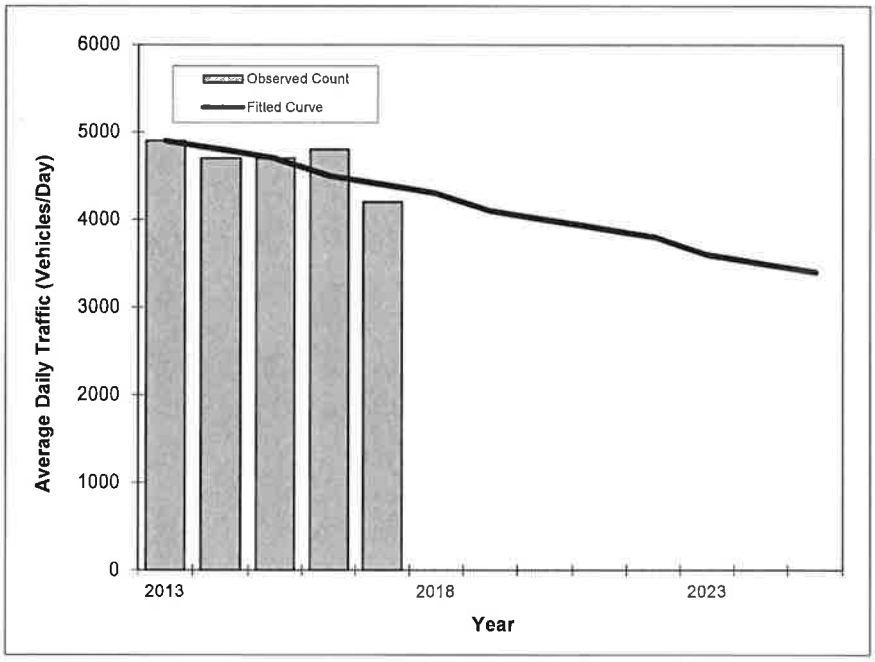
APPENDIX G

TRAFFIC TRENDS ANALYSIS WORKSHEETS

TRAFFIC TRENDS

Carpenter Rd -- Carpenter Rd from Dairy Rd to SR 46

County:	Volusia
Station #:	183
Highway:	Carpenter Rd



Year	Traffic (ADT/AADT) Count*	Trend**
2013	4900	4900
2014	4700	4800
2015	4700	4700
2016	4800	4500
2017	4200	4400
2018 Opening Year Trend		
2018	N/A	4300
2019 Mid-Year Trend		
2019	N/A	4100
2020 Design Year Trend		
2020	N/A	4000
TRANPLAN Forecasts/Trends		

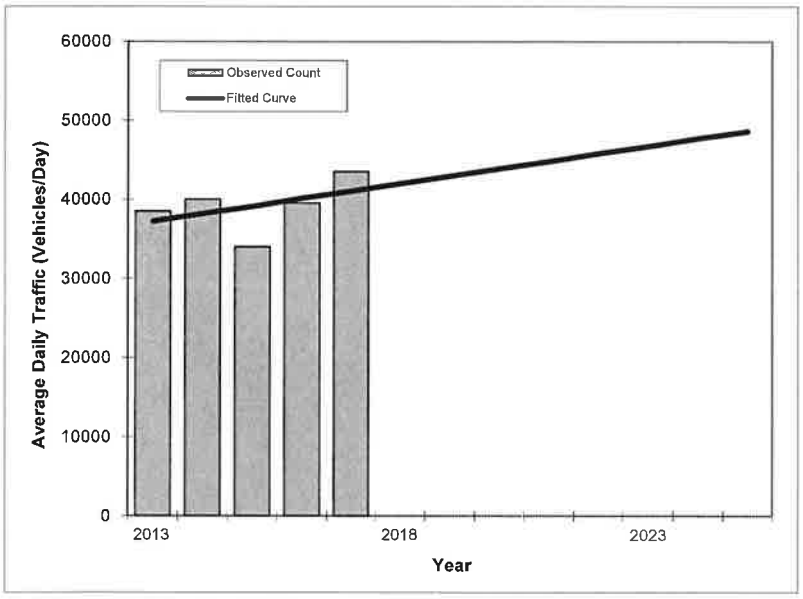
*Axle-Adjusted

** Annual Trend Increase:	-130
Trend R-squared:	57.9%
Trend Annual Historic Growth Rate:	-2.55%
Trend Growth Rate (2017 to Design Year):	-3.03%
Printed:	15-Oct-18
Straight Line Growth Option	

TRAFFIC TRENDS

I-95 – I-95 from SR 406 to SR 46

County:	Brevard
Station #:	70-0363
Highway:	I-95



Year	Traffic (ADT/AADT) Count*	Trend**
2013	38500	37200
2014	40000	38200
2015	34000	39100
2016	39500	40100
2017	43500	41000
2018 Opening Year Trend		
2018	N/A	42000
2019 Mid-Year Trend		
2019	N/A	42900
2020 Design Year Trend		
2020	N/A	43900
TRANPLAN Forecasts/Trends		

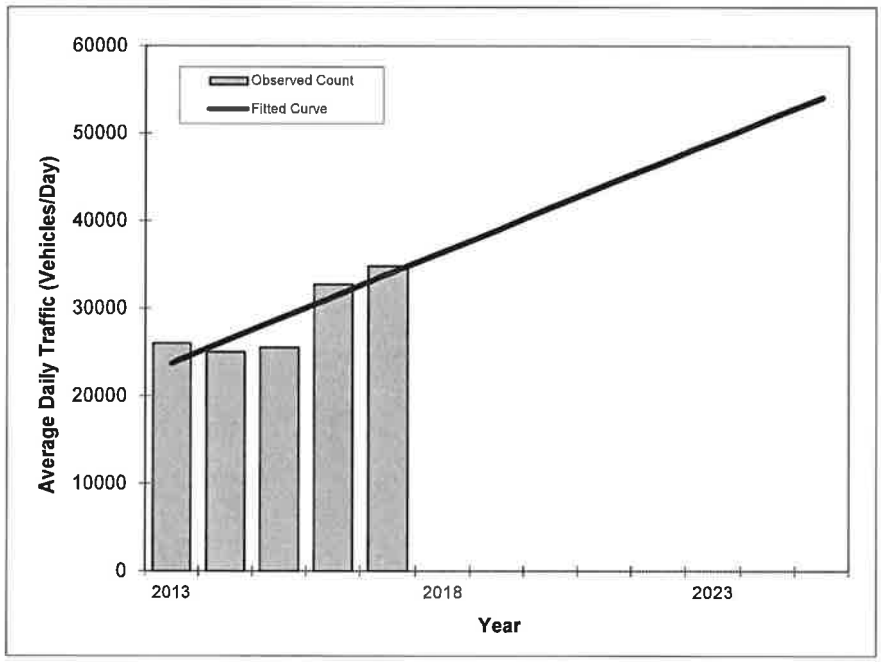
*Axle-Adjusted

** Annual Trend Increase:	950
Trend R-squared:	19.3%
Trend Annual Historic Growth Rate:	2.55%
Trend Growth Rate (2017 to Design Year):	2.36%
Printed:	15-Oct-18
Straight Line Growth Option	

TRAFFIC TRENDS

I-95 -- I-95 from SR 46 to Deering Pkwy

County:	Brevard
Station #:	70-0322
Highway:	I-95



Year	Traffic (ADT/AADT) Count*	Trend**
2013	26000	23700
2014	25000	26300
2015	25500	28800
2016	32700	31300
2017	34800	33900
2018 Opening Year Trend		
2018	N/A	36400
2019 Mid-Year Trend		
2019	N/A	38900
2020 Design Year Trend		
2020	N/A	41500
TRANPLAN Forecasts/Trends		

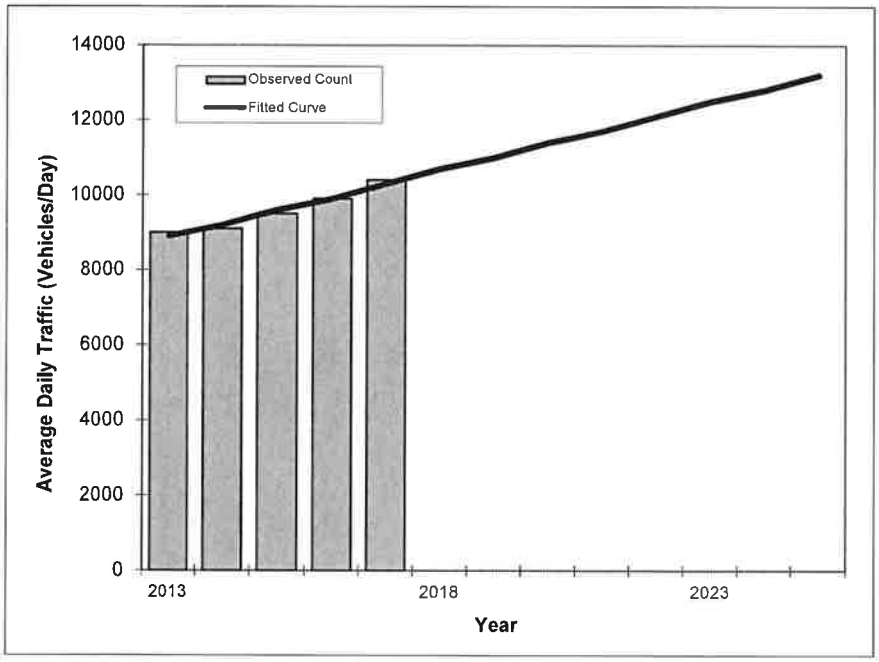
*Axle-Adjusted

**** Annual Trend Increase:**	2,530
Trend R-squared:	75.9%
Trend Annual Historic Growth Rate:	10.76%
Trend Growth Rate (2017 to Design Year):	7.47%
Printed:	15-Oct-18
Straight Line Growth Option	

TRAFFIC TRENDS

SR 46 -- SR 46 from Fawn Lake Blvd to I-95

County:	Volusia
Station #:	200
Highway:	SR 46



Year	Traffic (ADT/AADT) Count*	Trend**
2013	9000	8900
2014	9100	9200
2015	9500	9600
2016	9900	9900
2017	10400	10300
2018 Opening Year Trend		
2018	N/A	10700
2019 Mid-Year Trend		
2019	N/A	11000
2020 Design Year Trend		
2020	N/A	11400
TRANPLAN Forecasts/Trends		

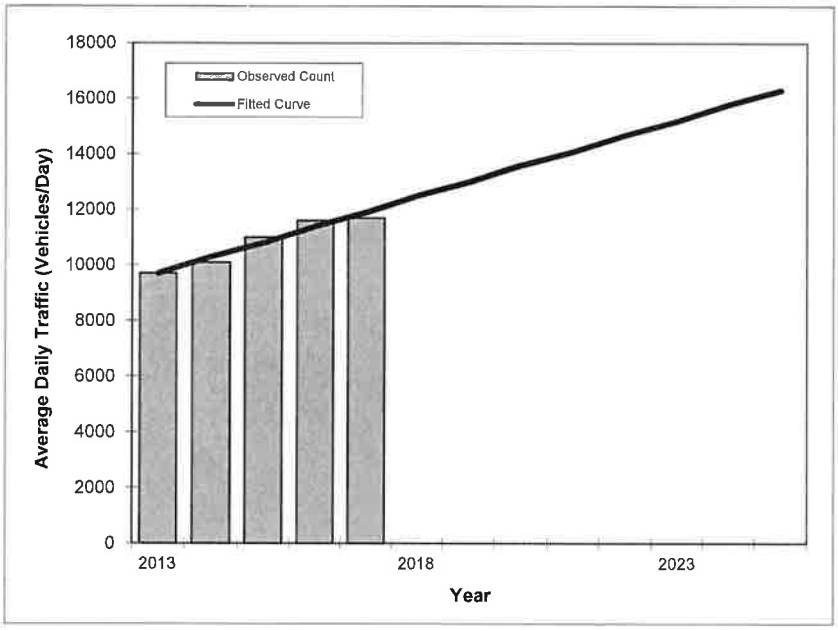
*Axle-Adjusted

** Annual Trend Increase:	360
Trend R-squared:	96.1%
Trend Annual Historic Growth Rate:	3.93%
Trend Growth Rate (2017 to Design Year):	3.56%
Printed:	15-Oct-18
Straight Line Growth Option	

TRAFFIC TRENDS

SR 46 – SR 46 from I-95 to US 1

County:	Volusia
Station #:	200
Highway:	SR 46



	Traffic (ADT/AADT)	
Year	**Count***	**Trend****
2013	9700	9700
2014	10100	10300
2015	11000	10800
2016	11600	11400
2017	11700	11900
2018 Opening Year Trend		
2018	N/A	12500
2019 Mid-Year Trend		
2019	N/A	13000
2020 Design Year Trend		
2020	N/A	13600
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

**** Annual Trend Increase:**	550
Trend R-squared:	94.9%
Trend Annual Historic Growth Rate:	5.67%
Trend Growth Rate (2017 to Design Year):	4.76%
Printed:	15-Oct-18
Straight Line Growth Option	

APPENDIX H

UNSIGNALIZED INTERSECTION SYNCHRO WORKSHEETS – BUILD-OUT CONDITIONS

Intersection	
Int Delay, s/veh	261.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	435	31	91	139	340	20	10	147	360	10	77
Future Vol, veh/h	104	435	31	91	139	340	20	10	147	360	10	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	400	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	4	15	9	3	2	2	2	3	2	2	2
Mvmt Flow	111	463	33	97	148	362	21	11	156	383	11	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	510	0	0	496	0	0	1272	1406	480	1127	1060	148
Stage 1	-	-	-	-	-	-	702	702	-	342	342	-
Stage 2	-	-	-	-	-	-	570	704	-	785	718	-
Critical Hdwy	4.12	-	-	4.19	-	-	7.12	6.52	6.23	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.281	-	-	3.518	4.018	3.327	3.518	4.018	3.318
Pot Cap-1 Maneuver	1055	-	-	1033	-	-	144	139	584	~ 182	224	899
Stage 1	-	-	-	-	-	-	429	440	-	673	638	-
Stage 2	-	-	-	-	-	-	506	440	-	386	433	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1055	-	-	1033	-	-	107	113	584	~ 106	182	899
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	113	-	~ 106	182	-
Stage 1	-	-	-	-	-	-	384	394	-	602	578	-
Stage 2	-	-	-	-	-	-	409	399	-	~ 246	388	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.4	28.5	$ 1017.1
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	336	1055	-	-	1033	-	-	106	619
HCM Lane V/C Ratio	0.56	0.105	-	-	0.094	-	-	3.613	0.15
HCM Control Delay (s)	28.5	8.8	-	-	8.8	-	-	$ 1260	11.8
HCM Lane LOS	D	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	3.3	0.4	-	-	0.3	-	-	38.4	0.5

Notes

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

Intersection	
Int Delay, s/veh	298.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	85	394	51	155	418	283	27	8	63	301	9	65
Future Vol, veh/h	85	394	51	155	418	283	27	8	63	301	9	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	400	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	92	428	55	168	454	308	29	9	68	327	10	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	762	0	0	483	0	0	1625	1738	456	1468	1457	454
Stage 1	-	-	-	-	-	-	640	640	-	790	790	-
Stage 2	-	-	-	-	-	-	985	1098	-	678	667	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	850	-	-	1080	-	-	82	87	604	~ 106	130	606
Stage 1	-	-	-	-	-	-	464	470	-	383	402	-
Stage 2	-	-	-	-	-	-	299	289	-	442	457	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	850	-	-	1080	-	-	54	66	604	~ 69	98	606
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	66	-	~ 69	98	-
Stage 1	-	-	-	-	-	-	414	419	-	342	339	-
Stage 2	-	-	-	-	-	-	217	244	-	342	408	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	1.6	92.5	$ 1451.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	135	850	-	-	1080	-	-	69	372
HCM Lane V/C Ratio	0.789	0.109	-	-	0.156	-	-	4.742	0.216
HCM Control Delay (s)	92.5	9.8	-	-	8.9	-	-	$ 1804.6	17.3
HCM Lane LOS	F	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	4.8	0.4	-	-	0.6	-	-	35.7	0.8

Notes

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

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↰	↑					↰		↱
Traffic Vol, veh/h	0	436	550	248	464	0	0	0	0	40	0	197
Future Vol, veh/h	0	436	550	248	464	0	0	0	0	40	0	197
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	0	-	-	-	-	-	0	-	135
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	3	5	5	2	2	2	2	2	13	2	14
Mvmt Flow	0	490	618	279	521	0	0	0	0	45	0	221

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	490	0	0	1324	-	521
Stage 1	-	-	-	-	-	-	1079	-	-
Stage 2	-	-	-	-	-	-	245	-	-
Critical Hdwy	-	-	-	4.175	-	-	6.795	-	6.41
Critical Hdwy Stg 1	-	-	-	-	-	-	5.595	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.995	-	-
Follow-up Hdwy	-	-	-	2.2475	-	-	3.6235	-	3.433
Pot Cap-1 Maneuver	0	-	-	1053	-	0	148	0	526
Stage 1	0	-	-	-	-	0	304	0	-
Stage 2	0	-	-	-	-	0	745	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1053	-	-	109	0	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	109	0	-
Stage 1	-	-	-	-	-	-	223	0	-
Stage 2	-	-	-	-	-	-	745	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	3.4	23.9
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1053	-	109	526
HCM Lane V/C Ratio	-	-	0.265	-	0.412	0.421
HCM Control Delay (s)	-	-	9.6	-	59.5	16.7
HCM Lane LOS	-	-	A	-	F	C
HCM 95th %tile Q(veh)	-	-	1.1	-	1.7	2.1

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↳		↰	↑					↰		↱
Traffic Vol, veh/h	0	361	427	176	900	0	0	0	0	42	0	179
Future Vol, veh/h	0	361	427	176	900	0	0	0	0	42	0	179
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	0	-	-	-	-	-	0	-	135
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	4	2	2	2	2	2	6	2	6
Mvmt Flow	0	388	459	189	968	0	0	0	0	45	0	192

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	388	0	0	1540	-	968
Stage 1	-	-	-	-	-	-	1346	-	-
Stage 2	-	-	-	-	-	-	194	-	-
Critical Hdwy	-	-	-	4.16	-	-	6.69	-	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	5.49	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.89	-	-
Follow-up Hdwy	-	-	-	2.238	-	-	3.557	-	3.357
Pot Cap-1 Maneuver	0	-	-	1156	-	0	113	0	300
Stage 1	0	-	-	-	-	0	235	0	-
Stage 2	0	-	-	-	-	0	810	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1156	-	-	95	0	300
Mov Cap-2 Maneuver	-	-	-	-	-	-	95	0	-
Stage 1	-	-	-	-	-	-	197	0	-
Stage 2	-	-	-	-	-	-	810	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.4	43.3
HCM LOS			E

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	1156	-	95	300
HCM Lane V/C Ratio	-	-	0.164	-	0.475	0.642
HCM Control Delay (s)	-	-	8.7	-	73.3	36.2
HCM Lane LOS	-	-	A	-	F	E
HCM 95th %tile Q(veh)	-	-	0.6	-	2	4.1

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	416	6	44	503	17	29	0	16	22	1	34
Future Vol, veh/h	42	416	6	44	503	17	29	0	16	22	1	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	230	-	300	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	4	2	2	4	13	2	2	7	5	100	2
Mvmt Flow	46	457	7	48	553	19	32	0	18	24	1	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	464	0	0	1231	1221	461	1211	1205	553
Stage 1	-	-	-	-	-	-	553	553	-	649	649	-
Stage 2	-	-	-	-	-	-	678	668	-	562	556	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.27	7.15	7.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.15	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.15	6.5	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.363	3.545	4.9	3.318
Pot Cap-1 Maneuver	1001	-	-	1097	-	-	154	180	590	157	121	533
Stage 1	-	-	-	-	-	-	517	514	-	454	343	-
Stage 2	-	-	-	-	-	-	442	456	-	506	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1001	-	-	1097	-	-	133	164	590	142	110	533
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	164	-	142	110	-
Stage 1	-	-	-	-	-	-	493	490	-	433	328	-
Stage 2	-	-	-	-	-	-	392	436	-	468	366	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.7	31.6	21.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	184	1001	-	-	1097	-	-	142	533
HCM Lane V/C Ratio	0.269	0.046	-	-	0.044	-	-	0.17	0.07
HCM Control Delay (s)	31.6	8.8	-	-	8.4	-	-	35.5	12.3
HCM Lane LOS	D	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0.1	-	-	0.6	0.2

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	34	539	7	27	480	25	29	0	17	18	3	34
Future Vol, veh/h	34	539	7	27	480	25	29	0	17	18	3	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	230	-	300	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	5	2	2	2	2	2	11
Mvmt Flow	37	586	8	29	522	27	32	0	18	20	3	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	549	0	0	594	0	0	1278	1271	590	1253	1248	522
Stage 1	-	-	-	-	-	-	664	664	-	580	580	-
Stage 2	-	-	-	-	-	-	614	607	-	673	668	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.31
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.399
Pot Cap-1 Maneuver	1021	-	-	982	-	-	143	168	508	149	173	537
Stage 1	-	-	-	-	-	-	450	458	-	500	500	-
Stage 2	-	-	-	-	-	-	479	486	-	445	456	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1021	-	-	982	-	-	125	157	508	136	162	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	125	157	-	136	162	-
Stage 1	-	-	-	-	-	-	434	442	-	482	485	-
Stage 2	-	-	-	-	-	-	430	471	-	413	440	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	34.1	20.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	173	1021	-	-	982	-	-	136	537
HCM Lane V/C Ratio	0.289	0.036	-	-	0.03	-	-	0.144	0.069
HCM Control Delay (s)	34.1	8.7	-	-	8.8	-	-	35.9	12.2
HCM Lane LOS	D	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0.1	-	-	0.5	0.2

APPENDIX I

UNSIGNALIZED INTERSECTION SYNCHRO WORKSHEETS - BUILD-OUT CONDITIONS - IMPROVED

HCM 6th Signalized Intersection Summary
4: N Carpenter Rd & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	435	31	91	139	340	20	10	147	360	10	77
Future Volume (veh/h)	104	435	31	91	139	340	20	10	147	360	10	77
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1767	1856	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	463	33	97	148	362	21	11	156	383	11	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	4	4	9	3	2	2	2	2	2	2	2
Cap, veh/h	522	699	50	364	764	653	138	66	446	660	64	479
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	890	1698	121	851	1856	1585	77	195	1326	1218	191	1423
Grp Volume(v), veh/h	111	0	496	97	148	362	188	0	0	383	0	93
Grp Sat Flow(s),veh/h/ln	890	0	1819	851	1856	1585	1598	0	0	1218	0	1614
Q Serve(g_s), s	3.3	0.0	7.9	3.7	1.8	6.2	0.0	0.0	0.0	5.7	0.0	1.5
Cycle Q Clear(g_c), s	5.1	0.0	7.9	11.6	1.8	6.2	3.1	0.0	0.0	8.8	0.0	1.5
Prop In Lane	1.00		0.07	1.00		1.00	0.11		0.83	1.00		0.88
Lane Grp Cap(c), veh/h	522	0	749	364	764	653	650	0	0	660	0	543
V/C Ratio(X)	0.21	0.00	0.66	0.27	0.19	0.55	0.29	0.00	0.00	0.58	0.00	0.17
Avail Cap(c_a), veh/h	604	0	915	442	933	797	910	0	0	863	0	812
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.3	0.0	8.5	13.2	6.7	8.0	8.9	0.0	0.0	10.4	0.0	8.4
Incr Delay (d2), s/veh	0.2	0.0	1.3	0.4	0.1	0.7	0.2	0.0	0.0	0.8	0.0	0.1
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	0.0	3.3	1.0	0.7	2.2	1.5	0.0	0.0	3.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	0.0	9.8	13.6	6.8	8.8	9.1	0.0	0.0	11.2	0.0	8.5
LnGrp LOS	A	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		607			607			188			476	
Approach Delay, s/veh		9.6			9.1			9.1			10.7	
Approach LOS		A			A			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.5		19.2		16.5		19.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		5.1		9.9		10.8		13.6				
Green Ext Time (p_c), s		0.9		2.2		1.2		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									

HCM 6th Signalized Intersection Summary
4: N Carpenter Rd & SR 46

02/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	394	51	155	418	283	27	8	63	301	9	65
Future Volume (veh/h)	85	394	51	155	418	283	27	8	63	301	9	65
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	428	55	168	454	308	29	9	68	327	10	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	740	95	438	852	722	200	95	299	611	59	417
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	704	1624	209	912	1870	1585	246	322	1016	1322	199	1416
Grp Volume(v), veh/h	92	0	483	168	454	308	106	0	0	327	0	81
Grp Sat Flow(s),veh/h/ln	704	0	1833	912	1870	1585	1584	0	0	1322	0	1615
Q Serve(g_s), s	3.9	0.0	7.0	6.0	6.3	4.7	0.0	0.0	0.0	5.8	0.0	1.3
Cycle Q Clear(g_c), s	10.2	0.0	7.0	13.0	6.3	4.7	1.7	0.0	0.0	7.6	0.0	1.3
Prop In Lane	1.00		0.11	1.00		1.00	0.27		0.64	1.00		0.88
Lane Grp Cap(c), veh/h	398	0	835	438	852	722	594	0	0	611	0	476
V/C Ratio(X)	0.23	0.00	0.58	0.38	0.53	0.43	0.18	0.00	0.00	0.53	0.00	0.17
Avail Cap(c_a), veh/h	429	0	916	478	935	792	906	0	0	883	0	807
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	7.2	12.1	7.0	6.6	9.6	0.0	0.0	11.4	0.0	9.4
Incr Delay (d2), s/veh	0.3	0.0	0.8	0.6	0.5	0.4	0.1	0.0	0.0	0.7	0.0	0.2
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	0.0	2.5	1.5	2.3	1.4	0.9	0.0	0.0	3.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	0.0	8.0	12.6	7.6	7.0	9.7	0.0	0.0	12.2	0.0	9.6
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		575			930			106			408	
Approach Delay, s/veh		8.5			8.3			9.7			11.7	
Approach LOS		A			A			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.1		20.9		15.1		20.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		3.7		12.2		9.6		15.0				
Green Ext Time (p_c), s		0.4		1.7		1.1		1.4				
Intersection Summary												
HCM 6th Ctrl Delay			9.1									
HCM 6th LOS			A									

APPENDIX J

SIGNALIZED INTERSECTION SYNCHRO WORKSHEETS
BUILD-OUT CONDITIONS

HCM 6th Signalized Intersection Summary
12: I-95 NB Ramp & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	275	0	0	356	47	345	0	128	0	0	0
Future Volume (veh/h)	175	275	0	0	356	47	345	0	128	0	0	0
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1811	1870	0	0	1870	1826	1752	0	1811			
Adj Flow Rate, veh/h	192	302	0	0	391	0	379	0	0			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	6	2	0	0	2	5	10	0	6			
Cap, veh/h	554	1015	0	0	1092		441	0				
Arrive On Green	0.14	0.54	0.00	0.00	0.31	0.00	0.26	0.00	0.00			
Sat Flow, veh/h	1725	1870	0	0	3647	1547	1668	0	1535			
Grp Volume(v), veh/h	192	302	0	0	391	0	379	0	0			
Grp Sat Flow(s),veh/h/ln	1725	1870	0	0	1777	1547	1668	0	1535			
Q Serve(g_s), s	4.6	6.2	0.0	0.0	6.0	0.0	15.2	0.0	0.0			
Cycle Q Clear(g_c), s	4.6	6.2	0.0	0.0	6.0	0.0	15.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	554	1015	0	0	1092		441	0				
V/C Ratio(X)	0.35	0.30	0.00	0.00	0.36		0.86	0.00				
Avail Cap(c_a), veh/h	761	1015	0	0	1928		787	0				
HCM Platoon Ratio	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	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	11.5	8.8	0.0	0.0	19.0	0.0	24.7	0.0	0.0			
Incr Delay (d2), s/veh	0.4	0.8	0.0	0.0	0.2	0.0	5.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.7	2.4	0.0	0.0	2.4	0.0	6.4	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	9.5	0.0	0.0	19.2	0.0	30.6	0.0	0.0			
LnGrp LOS	B	A	A	A	B		C	A				
Approach Vol, veh/h		494			391	A		379	A			
Approach Delay, s/veh		10.5			19.2			30.6				
Approach LOS		B			B			C				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		45.0			16.6	28.4		25.4				
Change Period (Y+Rc), s		6.8			6.8	6.8		6.8				
Max Green Setting (Gmax), s		38.2			18.2	38.2		33.2				
Max Q Clear Time (g_c+I1), s		8.2			6.6	8.0		17.2				
Green Ext Time (p_c), s		2.3			0.5	3.3		1.4				

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
12: I-95 NB Ramp & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	246	0	0	532	47	520	0	267	0	0	0
Future Volume (veh/h)	161	246	0	0	532	47	520	0	267	0	0	0
Initial Q (Qb), veh	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			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1856	1841	0	1870			
Adj Flow Rate, veh/h	169	259	0	0	560	0	547	0	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	3	4	0	2			
Cap, veh/h	430	906	0	0	976		601	0				
Arrive On Green	0.12	0.48	0.00	0.00	0.27	0.00	0.34	0.00	0.00			
Sat Flow, veh/h	1781	1870	0	0	3647	1572	1753	0	1585			
Grp Volume(v), veh/h	169	259	0	0	560	0	547	0	0			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1777	1572	1753	0	1585			
Q Serve(g_s), s	4.8	6.5	0.0	0.0	10.7	0.0	23.5	0.0	0.0			
Cycle Q Clear(g_c), s	4.8	6.5	0.0	0.0	10.7	0.0	23.5	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	430	906	0	0	976		601	0				
V/C Ratio(X)	0.39	0.29	0.00	0.00	0.57		0.91	0.00				
Avail Cap(c_a), veh/h	620	906	0	0	1722		738	0				
HCM Platoon Ratio	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	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	15.7	12.2	0.0	0.0	24.6	0.0	24.7	0.0	0.0			
Incr Delay (d2), s/veh	0.7	0.8	0.0	0.0	0.6	0.0	13.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.9	2.7	0.0	0.0	4.4	0.0	11.4	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	13.0	0.0	0.0	25.3	0.0	38.6	0.0	0.0			
LnGrp LOS	B	B	A	A	C		D	A				
Approach Vol, veh/h		428			560	A		547	A			
Approach Delay, s/veh		14.3			25.3			38.6				
Approach LOS		B			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		45.0			16.6	28.4		33.8				
Change Period (Y+Rc), s		6.8			6.8	6.8		6.8				
Max Green Setting (Gmax), s		38.2			18.2	38.2		33.2				
Max Q Clear Time (g_c+I1), s		8.5			6.8	12.7		25.5				
Green Ext Time (p_c), s		1.9			0.4	4.8		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			27.0									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
5: Holder Rd/Pine Ave & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	350	73	39	406	11	92	2	42	15	6	30
Future Volume (veh/h)	11	350	73	39	406	11	92	2	42	15	6	30
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1811	1841	1841	1159	1159	1159	1870	1870	1870
Adj Flow Rate, veh/h	13	412	86	46	478	13	108	2	49	18	7	35
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	4	4	6	4	4	50	50	50	2	2	2
Cap, veh/h	412	693	145	405	883	24	200	12	56	135	69	193
Arrive On Green	0.02	0.47	0.47	0.04	0.50	0.50	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	1477	308	1725	1783	49	574	63	284	345	352	976
Grp Volume(v), veh/h	13	0	498	46	0	491	159	0	0	60	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1785	1725	0	1832	920	0	0	1673	0	0
Q Serve(g_s), s	0.3	0.0	14.4	0.9	0.0	12.9	9.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	14.4	0.9	0.0	12.9	11.6	0.0	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.03	0.68		0.31	0.30		0.58
Lane Grp Cap(c), veh/h	412	0	837	405	0	907	268	0	0	397	0	0
V/C Ratio(X)	0.03	0.00	0.59	0.11	0.00	0.54	0.59	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	511	0	837	456	0	907	298	0	0	449	0	0
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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	13.7	10.1	0.0	12.2	27.0	0.0	0.0	23.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.1	0.1	0.0	2.3	2.6	0.0	0.0	0.2	0.0	0.0
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(50%),veh/ln	0.1	0.0	5.4	0.3	0.0	4.8	2.5	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.3	0.0	16.8	10.3	0.0	14.5	29.6	0.0	0.0	23.6	0.0	0.0
LnGrp LOS	B	A	B	B	A	B	C	A	A	C	A	A
Approach Vol, veh/h		511			537			159			60	
Approach Delay, s/veh		16.6			14.1			29.6			23.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	41.5		20.6	9.8	39.6		20.6				
Change Period (Y+Rc), s	6.8	6.8		6.8	6.8	6.8		6.8				
Max Green Setting (Gmax), s	5.0	28.4		16.2	5.0	28.4		16.2				
Max Q Clear Time (g_c+I1), s	2.3	14.9		13.6	2.9	16.4		4.1				
Green Ext Time (p_c), s	0.0	2.3		0.2	0.0	2.3		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
5: Holder Rd/Pine Ave & SR 46

02/13/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	443	118	42	413	23	86	10	42	22	5	20
Future Volume (veh/h)	20	443	118	42	413	23	86	10	42	22	5	20
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	471	126	45	439	24	91	11	45	23	5	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	567	832	222	472	1056	58	181	21	57	138	42	86
Arrive On Green	0.02	0.59	0.59	0.04	0.60	0.60	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	1422	380	1781	1757	96	894	175	472	596	351	711
Grp Volume(v), veh/h	21	0	597	45	0	463	147	0	0	49	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1802	1781	0	1853	1541	0	0	1658	0	0
Q Serve(g_s), s	0.4	0.0	16.4	0.8	0.0	10.6	5.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	16.4	0.8	0.0	10.6	7.3	0.0	0.0	2.0	0.0	0.0
Prop In Lane	1.00		0.21	1.00		0.05	0.62		0.31	0.47		0.43
Lane Grp Cap(c), veh/h	567	0	1054	472	0	1114	258	0	0	266	0	0
V/C Ratio(X)	0.04	0.00	0.57	0.10	0.00	0.42	0.57	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	637	0	1054	513	0	1114	379	0	0	388	0	0
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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	0.0	10.3	7.6	0.0	8.5	34.0	0.0	0.0	31.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.2	0.1	0.0	1.1	2.0	0.0	0.0	0.3	0.0	0.0
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(50%),veh/ln	0.1	0.0	5.7	0.2	0.0	3.6	2.7	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	0.0	12.5	7.7	0.0	9.6	36.0	0.0	0.0	32.2	0.0	0.0
LnGrp LOS	A	A	B	A	A	A	D	A	A	C	A	A
Approach Vol, veh/h		618			508			147			49	
Approach Delay, s/veh		12.3			9.4			36.0			32.2	
Approach LOS		B			A			D			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	54.9		16.4	10.0	53.6		16.4				
Change Period (Y+Rc), s	6.8	6.8		6.8	6.8	6.8		6.8				
Max Green Setting (Gmax), s	5.0	38.4		16.2	5.0	38.4		16.2				
Max Q Clear Time (g_c+I1), s	2.4	12.6		9.3	2.8	18.4		4.0				
Green Ext Time (p_c), s	0.0	2.7		0.3	0.0	3.6		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

APPENDIX K

NCHRP 457 WORKSHEETS

Left Turn Lane Analysis at Driveway (AM Peak-Hour)

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

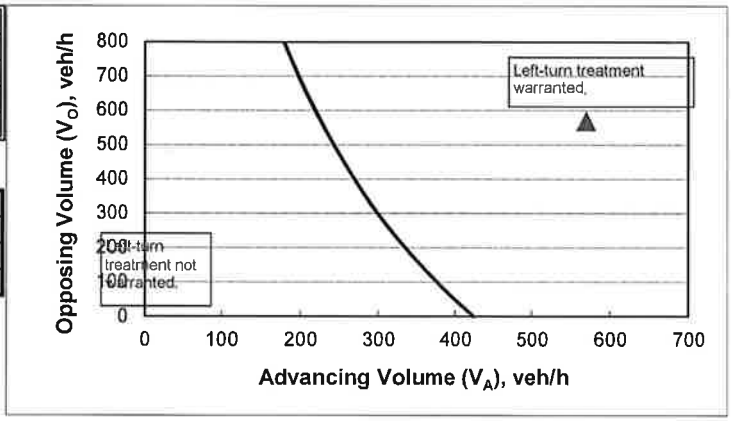
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	18%
Advancing volume (V_A), veh/h:	570
Opposing volume (V_O), veh/h:	570

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	225
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left Turn Lane Analysis at Driveway (PM Peak-Hour)

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

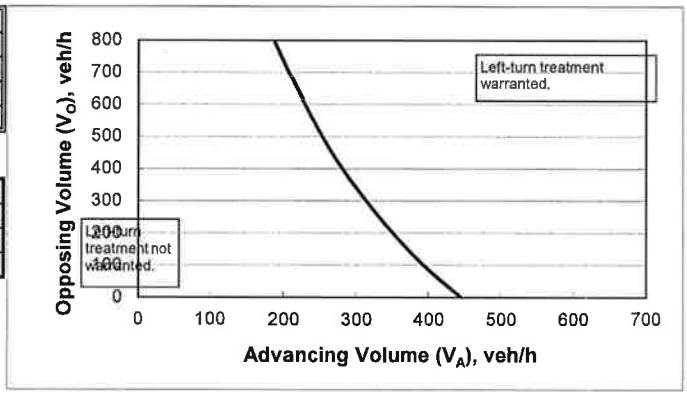
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	16%
Advancing volume (V_A), veh/h:	530
Opposing volume (V_O), veh/h:	856

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	178
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Right Turn Lane Analysis at Driveway
(AM Peak-Hour)

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

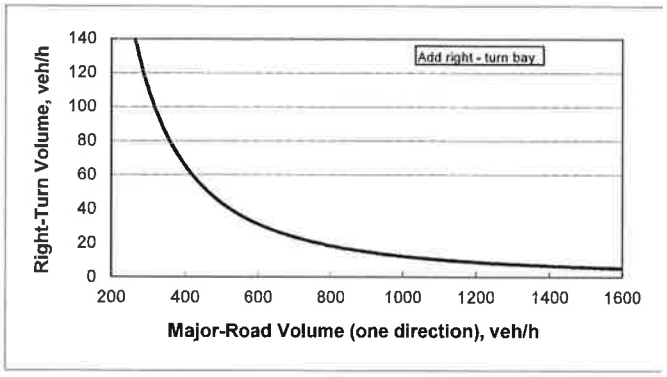
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	45
Major-road volume (one direction), veh/h:	570
Right-turn volume, veh/h:	340

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	34
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Add right-turn bay.	



Right Turn Lane Analysis at Driveway
(PM Peak-Hour)

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	45
Major-road volume (one direction), veh/h:	856
Right-turn volume, veh/h:	283

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	16
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Add right-turn bay.	

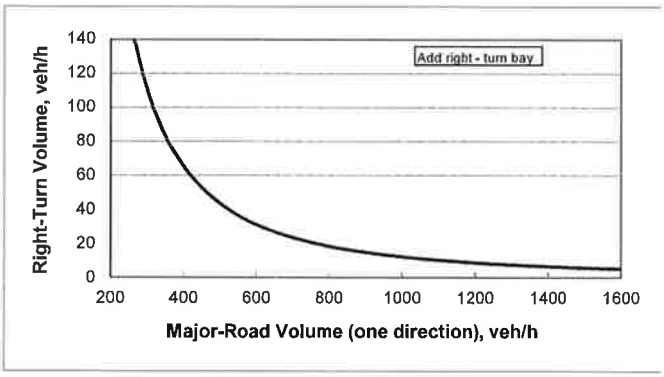


EXHIBIT L

SIGNALIZED INTERSECTION SYNCHRO WORKSHEETS - ULTIMATE BUILD-OUT CONDITIONS

HCM 6th Signalized Intersection Summary
4: N Carpenter Rd & SR 46

02/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	435	31	91	142	358	20	11	147	377	9	79
Future Volume (veh/h)	109	435	31	91	142	358	20	11	147	377	9	79
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1841	1767	1856	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	463	33	97	151	381	21	12	156	401	10	84
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	4	4	9	3	2	2	2	2	2	2	2
Cap, veh/h	506	695	50	354	759	648	134	71	459	666	60	501
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	872	1698	121	851	1856	1585	76	204	1320	1217	171	1440
Grp Volume(v), veh/h	116	0	496	97	151	381	189	0	0	401	0	94
Grp Sat Flow(s),veh/h/ln	872	0	1819	851	1856	1585	1600	0	0	1217	0	1611
Q Serve(g_s), s	3.7	0.0	8.2	3.9	1.9	6.9	0.0	0.0	0.0	6.5	0.0	1.5
Cycle Q Clear(g_c), s	5.6	0.0	8.2	12.1	1.9	6.9	3.2	0.0	0.0	9.7	0.0	1.5
Prop In Lane	1.00		0.07	1.00		1.00	0.11		0.83	1.00		0.89
Lane Grp Cap(c), veh/h	506	0	744	354	759	648	664	0	0	666	0	560
V/C Ratio(X)	0.23	0.00	0.67	0.27	0.20	0.59	0.28	0.00	0.00	0.60	0.00	0.17
Avail Cap(c_a), veh/h	573	0	884	420	902	771	881	0	0	835	0	783
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.8	0.0	8.9	13.8	7.0	8.5	8.9	0.0	0.0	10.6	0.0	8.4
Incr Delay (d2), s/veh	0.2	0.0	1.5	0.4	0.1	0.9	0.2	0.0	0.0	0.9	0.0	0.1
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	0.8	0.0	3.6	1.0	0.8	2.5	1.6	0.0	0.0	4.0	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	10.4	14.2	7.2	9.4	9.1	0.0	0.0	11.5	0.0	8.5
LnGrp LOS	A	A	B	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		612			629			189			495	
Approach Delay, s/veh		10.1			9.6			9.1			10.9	
Approach LOS		B			A			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		17.4		19.6		17.4		19.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		5.2		10.2		11.7		14.1				
Green Ext Time (p_c), s		0.9		2.2		1.2		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			10.1									
HCM 6th LOS			B									

HCM 6th Signalized Intersection Summary
4: N Carpenter Rd & SR 46

02/12/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	394	51	155	421	294	27	10	63	312	9	68
Future Volume (veh/h)	89	394	51	155	421	294	27	10	63	312	9	68
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	428	55	168	458	320	29	11	68	339	10	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	735	94	430	847	718	198	104	302	617	58	430
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	694	1624	209	912	1870	1585	244	344	999	1320	192	1422
Grp Volume(v), veh/h	97	0	483	168	458	320	108	0	0	339	0	84
Grp Sat Flow(s),veh/h/ln	694	0	1833	912	1870	1585	1587	0	0	1320	0	1614
Q Serve(g_s), s	4.3	0.0	7.2	6.2	6.5	5.1	0.0	0.0	0.0	6.3	0.0	1.4
Cycle Q Clear(g_c), s	10.8	0.0	7.2	13.3	6.5	5.1	1.8	0.0	0.0	8.0	0.0	1.4
Prop In Lane	1.00		0.11	1.00		1.00	0.27		0.63	1.00		0.88
Lane Grp Cap(c), veh/h	387	0	830	430	847	718	604	0	0	617	0	488
V/C Ratio(X)	0.25	0.00	0.58	0.39	0.54	0.45	0.18	0.00	0.00	0.55	0.00	0.17
Avail Cap(c_a), veh/h	413	0	899	465	917	777	891	0	0	865	0	792
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.2	0.0	7.5	12.4	7.3	6.9	9.6	0.0	0.0	11.5	0.0	9.4
Incr Delay (d2), s/veh	0.3	0.0	0.8	0.6	0.5	0.4	0.1	0.0	0.0	0.8	0.0	0.2
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	0.8	0.0	2.7	1.6	2.4	1.6	0.9	0.0	0.0	3.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.5	0.0	8.3	13.0	7.8	7.3	9.7	0.0	0.0	12.3	0.0	9.6
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		580			946			108			423	
Approach Delay, s/veh		8.8			8.6			9.7			11.8	
Approach LOS		A			A			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.6		21.1		15.6		21.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		3.8		12.8		10.0		15.3				
Green Ext Time (p_c), s		0.4		1.6		1.1		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

PLANNING AND ZONING BOARD MINUTES

The Brevard County Planning & Zoning Board met in regular session on **Monday, February 11, 2019,** at **3:00 p.m.**, in the Commission Room, Building C, Brevard County Government Center, 2725 Judge Fran Jamieson Way, Viera, Florida.

The meeting was called to order by the Chair, Henry Minneboo, at 3:00 p.m.

Board members present were: Henry Minneboo, Chair; Ron Bartcher, Rochelle Lawandales, Brian Hodgers, Ben Glover; Ron McLellan; Peter Filiberto; and Dane Theodore.

Staff members present were: Erin Sterk, Planning and Zoning Manager; Jad Brewer, Assistant County Attorney; Paul Body, Planner II; and Jennifer Jones, Special Projects Coordinator II.

Henry Minneboo, Chair, announced that the Board of County Commissioners will have the final vote on the recommendations made by the Planning and Zoning Board on Thursday, March 7, 2019, at 5:00 p.m.

Excerpt from complete agenda

John L. Jackson, Trustee – (Bruce Moia):
A Small Scale Comprehensive Plan Amendment from NC (Neighborhood Commercial) and CC (Community Commercial) to all CC. The property is 3.28 acres, located on the north side of State Road 46, approximately 0.2 miles west of the Interstate 95 and State Road 46 interchange. (No assigned address. In the Mims area.) (18PZ00160) (District 1)

John L. Jackson, Trustee – (Bruce Moia):
A change of zoning classification from GU (General Use), BU-1 (General Retail Commercial), and BU-2 (Retail, Warehousing, and Wholesale Commercial) to all BU-2. The property is 16.4 acres, located on the north side of State Road 46, approximately 0.2 miles west of the Interstate 95 and State Road 46 interchange. (No assigned address. In the Mims area.) (18PZ00162) (District 1)

Bruce Moia – My name is Bruce Moia, I'm the President of MBV Engineering, representing the applicant. What we have before you today is approximately a 16-acre parcel of land located on the north side of State Road 46, just west of the I-95 interchange. What we're proposing is a truck stop with a convenience store, truck and trailer parking, tire care center, and a fast-food restaurant. There is a demand there for this use; it's a stop for truckers, a place where they can rest, get something to eat, and fuel up and get back on the road. There's also an outparcel that we're hoping to do a proposed hotel on in the future, but for right now Love's wants to put a truck stop there. The project has three different zonings and two different land uses, so we want to consolidate that and make it consistent and do all Community Commercial for allowable uses, and then rezone it to BU-2 (Retail, Warehousing, and Wholesale Commercial). We have had a traffic study done, because this is a $14 million investment, probably $500,000 in diesel taxes that will be available to the County on an annual basis, so we think there's a real benefit to this project. The traffic study shows there will need to be a signal at Carpenter Road and State Road 46; it will also require a westbound right turn lane, and eastbound left turn lane, so it will be quite an improvement to the intersection of Carpenter Road and State Road 46. It will create more capacity and be easier for vehicles to get in and out of that intersection. We will be coordinating with the FDOT (Florida Department of Transportation). Not to burden the roadway, we have entered into a binding development plan so we're limiting our floor areas so that we're not blowing out the road, we're limiting it to just what we need. We're hoping to get your approval and I am here to answer any questions.

Henry Minneboo – What's the total acreage?

Bruce Moia – About 16.1, but it's a smaller piece of 134 acre property that is owned by the applicant.

Ron McLellan – That's a perfect place for that truck stop.

Rochelle Lawandales – It absolutely is.

Peter Filiberto – There's only a few Love's truck stops around the state.

Bruce Moia – The closest one north is in Daytona Beach, and south is Fort Pierce.

Public comment:

William Park – I'm William Park and I am the real estate broker who represents the seller in this situation, and I live in Orlando, 3736 Lake Margaret Drive. As stated, the property is 134 acres overall. We believe the development of this travel plaza will be the catalyst that will attract other uses, which can include restaurants, as well as hotels, and we believe the existence of the travel plaza will help development in that area. According to the Mims Small Area Study, this property permits these more intense kinds of land uses. We know there is already a convenience store and gas station that this property will surround on two sides, so the use of selling fuel at this location is not something that will be new. We believe that in the future the rest of the property will probably be developed as residential uses that will be buffered from the commercial area.

Rochelle Lawandales – I'll move approval.

Brian Hodgers – Second.

Ron Bartcher – The Mims Small Area Study said this was an area that was to be developed, and in the Mims area we know that's going to happen, and we support this. The traffic study indicates that the proposed traffic signal is going to be fairly close to the intersection. You said you have not had discussions with the FDOT (Florida Department of Transportation) yet?

Bruce Moia – I haven't personally, but the traffic engineer has.

Ron Bartcher – What I would like, if possible, is for the results of the FDOT's review to be shared with this board. The reason is that as this develops, I think it's important that we as a board know what the DOT wants to do and what other things may happen on the other side of the interstate. We know there's going to be a real estate office over there and there may be other things happening over there. If there's any way you can share that with us that would be great.

Bruce Moia – Our engineer can answer that.

Tim Adkinson – Tim Adkinson, I'm from Jacksonville, 4639 Sugar Creek Drive. Bruce has been helping us work with the County. Along with the traffic engineer, we have met with FDOT and we could share all of those results. They've asked us to do some things and we're working through the numbers, but we can share all of that.

Henry Minneboo – You don't have to give us all of the traffic counts in the package.

Ron Bartcher – I'd like for staff to be sure that they share this with the TPO (Transportation Planning Organization), the fact that this development is happening now, because one of my goals is to try to

get State Road 46 on the long-range plan, and this will help do that. Right now, State Road 46 is not in anybody's planning stages.

Erin Sterk – That's something that we recognized when going through the preliminary concurrency analysis. If you look at everything that has Community Commercial or Neighborhood Commercial, the road won't support it, so I think the planning of that road is significantly behind. They're doing that long-range transportation plan update now, so I hope to capture this corridor as one of the ones in there with future widening identified. We got the binding development plan which changed the limitation on uses, so are we getting a revised study and signal warrant that recognizes those figures before the Commission meeting?

Bruce Moia – Yes.

Henry Minneboo called for a vote on the motion as stated, and it passed unanimously.

I've read the rezoning request into the record, so you can make a motion.

Peter Filiberto – I'll make a motion to approve.

Ron McLellan – Second.

Peter Filiberto – With a binding development plan.

Henry Minneboo called for a vote on the motion as stated, and it passed unanimously.

LTG Engineering & Planning

Via email (tadkinson@adkinsoneng.com)

Ref: 4607.02

February 13, 2019

Timothy Adkinson, P.E., LEED AP
ADKINSON ENGINEERING
6550 ST, Augustine Road, Suite 203
Jacksonville, FL 32217

Re: Love's Travel Plaza TIS – Response to Comments
Unincorporated Brevard County, FL

Dear Mr. Adkinson:

LTG, Inc. is in receipt of county's comments dated February 4th, 2019 regarding the Traffic Impact Study (TIS) developed for the proposed Love's Travel Plaza development. The county comments are presented below in plain text with our responses in **bold** text.

Comments Received from Brevard County, dated 2/4/19:

1.) Comment: Utilize the "truck stop" (ITE 950) as the combined land use instead of the "convenience market/gas station", "fast food restaurant with drive through" and "tire store" separate land uses.

Response: The county has agreed to utilize the separate land uses instead of the "truck stop" (ITE 950). However, the convenience market/gas station and the fast food restaurant will consist of the maximum 10,300SF and 2,700SF respectively.

2.) Comment: Contact FDOT about signal spacing and driveway location, as that may affect development potential.

Response: Noted, the study will be submitted to FDOT as part of the driveway permit application.

3.) Comment: Cross-access to all adjacent parcels will be required, per Section 62-2957 of Brevard County Code – please revise the Concept Plan to demonstrate how interconnectivity to adjacent parcels will be provided.

Response: Noted. This will be addressed by the site engineer.

4.) Comment: If shared access to a signal through the subject property is proposed to be provided for the remainder of the parent parcel to the west and north of the subject area proposed for rezoning, the Traffic Impact Study should be revised to examine these impacts.

Response: Noted.

5.) Comment: The TIS and Signal warrant will be reviewed for final approval at site development.

Response: Noted.

If you have any questions or comments, please feel free to call me at (386) 257-2571.

Sincerely,
LTG, INC.

George Galan, PE
Senior Project Manager

From: Sterk, Erin
To: Bruce M
Cc: Gumm, Corrina; Jones, Jennifer
Subject: Loves Traffic Ops Comments
Date: Tuesday, February 26, 2019 6:00:28 PM

Bruce,

Please find documentation of the remaining concerns with the TIS and TSWS submitted. While these all may not need to be resolved now and will be further evaluated at site plan, this email serves as notification of the remaining concerns, in case the Board wishes to discuss them as part of the SSCPA or Rezoning request.

Original TIS/TSWS Submittal

The methodology for the TIS was not initially approved in advance by the Public Works Traffic Operations section, which recommends the following:

1. Utilize the "truck stop" (ITE 950) as the combined land use instead of the "convenience market/gas station", "fast
1. food restaurant with drive through" and "tire store" separate land uses.
2. Contact FDOT about signal spacing and driveway location, as that may affect development potential.
3. Cross access to all adjacent parcels will be required, per Section 622957 of Brevard County Code – please revise the Concept Plan to demonstrate how interconnectivity to adjacent parcels will be provided.
4. If shared access to a signal through the subject property is proposed to be provided for the remainder of the parent parcel to the west and north of the subject area proposed for rezoning, the Traffic Impact Study should be revised to examine these impacts.
5. The Traffic Impact Study and Traffic Signal Warrant Study will be reviewed for final approval at site development.

Revised TIS/TSWS Submittal

The applicants revised the Traffic Impact Study and Traffic Signal Warrant Study, but did not utilize the combined Truck Stop land use code and chose to individually calculate internal capture between uses. Additionally, a significant portion of trips have been attributed to pass-by. While those trips are "passing by" on I95, the trips on SR 46 to access the site would be newly generated, as folks get off the interstate to visit the new service plaza/hotel. Stop land use code and chose to individually calculate internal capture between uses. Additionally, a significant portion of trips have been attributed to pass-by. While those trips are "passing by" on I95, the trips on SR 46 to access the site would be newly generated, as folks get off the interstate to visit the new service plaza/hotel.

Brevard County Traffic Operations continues to have some of the concerns not yet addressed above and the following comments:

1. The applicants should confirm with FDOT that the methodology, land use codes, internal capture and pass-by trip calculations meet their requirements.
2. Pass-by trips – Please limit the pass-by trip percentage to 10 percent of the adjacent street traffic per FDOT's Transportation Site Impact Handbook.

3. Turn lane length – The analysis results in a turn lane length of 285'. Based on the proposed land use, there will be a high percentage of trucks traveling to this location. A turn lane length reduction will likely negatively impact the operational function of the intersection and roadway segment. The applicant should confirm that an insufficient turn lane length will be accepted by FDOT.

Please let me know if you have any questions,

Erin Sterk
Planning & Zoning Manager
Brevard County
(321) 633-2070 ext. 52640