

**ORDINANCE NO. 12-2024**

**AN ORDINANCE OF THE CITY OF DELTONA, FLORIDA, AMENDING THE OFFICIAL ZONING MAP TO REZONE ±36.46 ACRES OF LAND LOCATED ALONG THE NORTH NORMANDY BOULEVARD CORRIDOR SOUTH AND EAST OF THE I-4 LOGISTICS PARK WITHIN THE ACTIVITY CENTER FROM SINGLE-FAMILY RESIDENTIAL (R1-AA) TO MIXED USE PLANNED UNIT DEVELOPMENT (MPUD); PROVIDING FOR CONFLICTS, SEVERABILITY, AND AN EFFECTIVE DATE.**

**WHEREAS**, the City of Deltona, Florida, has received an application to rezone ±36.46-acres from Single-Family Residential (R1-AA) to Mixed Use Planned Unit Development (MPUD); and,

**WHEREAS**, the City of Deltona, Florida, and its Land Planning Agency have complied with the requirements of the Municipal Home Rule Powers Act, sections 166.011 et. seq., Florida Statutes, in considering the proposed MPUD rezoning; and

**WHEREAS**, after said public hearing, the City Commission of the City of Deltona, Florida, has determined that the MPUD zoning is consistent with the Comprehensive Plan of the City of Deltona, Florida.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF DELTONA, FLORIDA, as follows:**

**Section 1:** Located in the City of Deltona, Florida this North Normandy Boulevard Corridor property zoning amendment includes Exhibit “A”, Development Agreement as a written agreement for the Mixed-Use Planned Unit Development, Exhibit “B”, Legal Description depicting the land hereby rezoned from R1-AA to MPUD, Exhibit “C”, Master Development Plan, Exhibit “D”, Perimeter and Entry Signage Locations, Exhibit “E”, Traffic Impact Analysis, Exhibit “F” Site Access and Driveway Locations, and Exhibit “G” Right-of-Way

Map. The following identification numbers are included for this zoning amendment:  
8118-01-03-0010, 8118-01-04-0210, 8118-01-04-0010, 8118-01-04-0350, 8118-01-09-0010, 8118-01-09-0170, 8118-01-01-0010, 8118-01-01-0050, 8118-01-01-0240, 8118-01-01-0280, 8118-01-02-0010, 8118-01-10-0010, 8118-01-10-0150, 8118-01-10-0250, 8118-01-05-0010, and 8118-01-04-0180.

**Section 2:** This Ordinance is adopted in conformity with and pursuant to the Comprehensive Plan of the City of Deltona, the Local Government Planning and Development Act, Sections 163.161 et. Seq., Florida Statutes, and the Municipal Home Rule Power Act, Sections 166.011 et. seq., Florida Statutes.

**Section 3. Conflicts.** Any and all Ordinances or parts of Ordinances in conflict herewith are hereby repealed.

**Section 4. Severability.** If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect any other provision or application of this Ordinance which can be given effect without the invalid provision or application.

**Section 5. Effective Date.** This Ordinance shall take effect immediately upon its final adoption by the City Commission.

[Remainder of page intentionally left blank.]

**PASSED AND ADOPTED BY THE CITY COMMISSION OF THE CITY OF  
DELTONA, FLORIDA THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2025.**

First Reading: \_\_\_\_\_

Advertised: \_\_\_\_\_

Second Reading: \_\_\_\_\_

BY: \_\_\_\_\_

Santiago Aliva, Jr., MAYOR

ATTEST:

\_\_\_\_\_  
Joyce Raftery, CMC, MMC, CITY CLERK

Approved as to form and legality  
for use and reliance of the City of  
Deltona, Florida

Name	Yes	No
Avila-Vazquez		
Colwell		
Heriot		
Howington		
Lulli		
Santiago		
Avila		

\_\_\_\_\_  
TG Law, PLLC, CITY ATTORNEY

**THIS INSTRUMENT WAS PREPARED BY  
AND AFTER RECORDING RETURN TO:**

City Attorney  
City of Deltona  
2345 Providence Boulevard  
Deltona, Florida 32725

**Exhibit “A” to Ordinance No. 12 - 2024**

**DEVELOPMENT AGREEMENT**

For the development known as SYNERGY at NORMANDY Mixed Use Planned Unit Development (MPUD) located at the southeast corner of North Normandy Boulevard and the Rhode Island Avenue extension, Deltona, FL (hereinafter referred to as the “Subject Property” ).

**THIS DEVELOPMENT AGREEMENT** (hereinafter referred to as the “Agreement”) is entered into and made as of the \_\_\_\_\_ day of \_\_\_\_\_, 2025, by and between the CITY OF DELTONA, a Florida municipal corporation, with a mailing address of 2345 Providence Boulevard, Deltona, Florida 32725, ( hereinafter referred to as the “City” ), and Warranty Parts Solutions, LLC, a Florida Limited Liability Company ( hereinafter referred to as the “Owner” ), with a mailing address of 14537 Whittridge Drive, Winter Garden, FL 34787, and Telesis Services, LLC, a Florida Limited Liability company ( hereinafter referred to as the “Developer” ), with a mailing address of 1111 N. Ronald Reagan Blvd, Suite 101, Longwood, FL 32750.

**W I T N E S S E T H**

**WHEREAS**, the Owner warrants that it holds legal title to the lands located in Volusia County, Florida, and within the corporate limits of the City of Deltona, said lands being more particularly described in **Exhibit “B”**, Legal Description for the Subject Property, attached hereto and by this reference made a part hereof; and that the holders of any and all liens and encumbrances affecting such property will subordinate their interests to this Agreement; and

**WHEREAS**, the Owner has clear title of the Subject Property and intends to develop such property as a Mixed Use Planned Unit Development; and

**WHEREAS**, the Owner or Developer desires to facilitate the orderly development of the Subject Property in compliance with the laws and regulations of the City and other governmental authorities, and the Owner or Developer desires to ensure that its development is compatible with other properties in the area and planned traffic patterns; and

**WHEREAS**, the development permitted or proposed under this Development Agreement is consistent with the City’s Comprehensive Plan, concurrency management system, and all

land development regulations, and this Agreement does not replace, supersede, or grant variances to those regulations; and

**WHEREAS**, it is the purpose of this Agreement to clearly set forth the understanding and agreement of the parties concerning the matters contained herein; and

**WHEREAS**, the Owner and / or Developer have sought the City's approval to develop the Subject Property, and the City approved Ordinance No. 12-2024, through rezoning the Subject Property to a form of Mixed Use Planned Unit Development (MPUD), as defined under the City's Land Development Code in Section 110-319. The MPUD shall consist of this Agreement as the Written Agreement of the PUD and an **Exhibit "C"**, Master Development Plan (MDP), attached hereto and by this reference made a part hereof as the Preliminary Plan, subject to the covenants, restrictions, and easements offered by the Owner or Developer and contained herein, (hereinafter the "Master Development Plan"). Where more detailed criteria for City required submittals exceed the criteria required for a Master Development Plan, the more detailed criteria apply.

**NOW, THEREFORE**, in consideration of the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. **Recitals and Definitions.** The recitals contained herein are true and correct and are incorporated herein by reference. All capitalized terms not otherwise defined herein shall be as defined or described in the City's Land Development Code as it may be amended from time to time unless otherwise indicated.
2. **Ownership.** The legal and equitable owner of the Subject Property is Warranty Parts Solutions, LLC, a Florida Limited Liability Company.
3. **Title Opinion/Certification.** The Developer will provide to the City, in advance of the City's execution and recordation of this Agreement, a title opinion from a licensed attorney in the state of Florida, or a certification by an abstractor or title company authorized to do business in the state of Florida, verifying marketable title to the Subject Property to be in the name of the Owner, with all liens, mortgages, and other encumbrances that are either satisfied or not satisfied or released of record.
4. **Subordination / Joinder.** Unless otherwise agreed to by the City and if applicable, all liens, mortgages, and other encumbrances that are not satisfied or released of record must be subordinated to the terms of this Agreement or the Lienholder shall join in this Agreement. It shall be the responsibility of the Owner and / or Developer to promptly obtain the said subordination or joinder, in form and substance that is acceptable to the City Attorney, prior to the execution and recordation of this Agreement.
5. **Duration.** The duration of this Agreement is binding and runs with the land in perpetuity unless amended.

6. **Development of the Subject Property.** Development of the Subject Property shall be subject to performance standards listed in this Agreement. Where a land-use listed below differs from a defined use in the City of Deltona's Code of Ordinances, the use listed in this Agreement shall prevail.

**A. Permitted Principal Uses allowed on/within the Subject Property:**

- General light industrial uses.
- Industrial Park.
- Manufacturing.
- Research facilities.
- High-cube warehouse.
- Flex space.
- Data centers.
- General Office.
- Medical Office.
- Office Park.
- Restaurants.
- Hotels.
- Retail.
- Convenience Store.
- Gas Station with up to 14 gas pumps, with possible car wash.
- Apartments (not to exceed 343 units).

**B. Prohibited Land Uses for MPUD:**

- Single Family Residential Homes.
- Mobile and/or Manufactured Homes
- Self-storage Facility.
- Sale of Fireworks.
- Carnivals, Fairs, and circuses.
- Outdoor storage or junkyards.
- Motels.
- Agricultural uses, nurseries, or greenhouses.
- Flea markets.
- Gambling or gaming operations, including internet cafes.
- Any uses not listed within the permitted principal uses.

**C. Dimensional Requirements:**

1. Minimum lot size: 1 acre
2. Minimum lot width: 200 feet
3. Maximum building height: 70 feet. However, spires, belfries, cupolas, clerestory windows, antennas, water tanks, ventilators, solar panels,

modular data equipment, rooftop equipment including satellite dishes, cellular antenna and related equipment, windmills, chimneys, penthouses, or other similar accessory structures customarily required to extend above the roof level, may extend for an additional 20-feet above the 70-ft maximum building height set forth above.

4. Maximum floor area ratio (FAR): 1.0 for industrial uses and 0.5 in retail type uses.
5. Impervious Surface Area: The impervious surface area shall not exceed 75% of the gross footage area for the subject property.
6. Maximum lot coverage shall not exceed 80%, the dry retention systems can be used towards open space.

**D. Minimum Yard Setbacks:**

1. Front yard: 10 feet
2. Side yard: 5 feet
3. Street side yard: 10 feet
4. Rear yard: 15 feet
5. Building Separation: 30 feet
6. For all buildings three (3) stories in height or greater, the building setback from the property line shall be the minimum of half of the height of the building on all sides.

**E. Signage:** All signage within the Subject Property shall comply with the requirements set forth in Chapter 102 of the City's Land Development Code, as may be amended from time to time. In addition to standard building mounted signage, the Developer requests approval Development Perimeter Identification Signage and Entry Signage, as illustrated in **Exhibit "D"**. These additional signs are intended to enhance project identity and provide clear wayfinding at key access points to the development.

**F. Development:** The Subject Property shall be subdivided into five (5) platted lots, along with associated tracts to support the overall development. The lots shall be developed as follows:

1. **Lot 1, 2, 3 and 4.** Each of these lots shall be no smaller than 1.5-acres in size and may be developed for any of the Permitted Principal Uses as defined in this Agreement.
2. **Lot 5.** Lot 5 comprises approximately 17.20-acres is designated for the development of a 320-unit multi-family rental apartment complex. Further details and development standards specific to this lot are provided in Section L of this Agreement.

**G. Density:** The proposed density for the multi-family residential development on Lot 5 shall comply with the following standards.

1. **Minimum Density: 18 dwelling units per acre**
2. Maximum Density: 20 dwelling units per acre
3. Maximum Total Units: A maximum of 343 dwelling units shall be permitted across the multi-family residential portion of the Master Planned Unit Development (MPUD)

The initial development proposal includes a 320-unit rental apartment complex on Lot 5, in accordance with these density parameters.

**H. Landscape Buffer Yard Requirements:** Landscaping buffer yard shall be provided in accordance with Section 110-808 of the City's Land Development Code, as may be amended. A Landscape Plan shall be submitted at the time of Plat or Final Site Plan application and must illustrate the following:

1. Perimeter buffer yard widths.
2. Screening opacity relative to adjacent land uses.
3. Internal Buffers between parcels, within parcel, and within common areas.

**Note:** Stormwater management facilities shall not be located within designated buffer yards.

Minimum Buffer Yard Requirements by Property Boundary:

1. West (Front) – North Normandy Boulevard

Minimum buffer width: 25 feet

2. South (Side) – South Avenue

Minimum buffer width: 10 feet

Note: A 50-foot powerline easement exists along the southern boundary, resulting in an overall buffer width of 60 feet

3. East (Rear) – Ruth

Minimum buffer width: 25 feet

4. North (Side) – Rhode Island Avenue

Minimum buffer width: 20 feet

**I. Parking Standards.** Minimum parking standards for the Subject Property shall comply with Sections 110-828 and 110-829 of the City's Land Development Code, as they may be amended from time to time. All proposed development within the project shall demonstrate compliance with applicable standards at the time of Final Site Plan or Plat application, including required spaces for residential, commercial, and mixed-use areas, as well as accommodations for accessible parking, bicycle parking, and loading zones where applicable.

**J. Lighting Standards.** Minimum lighting standards for the Subject Property shall comply with the applicable provisions the City's Land Development Code. A separate Illumination Plan shall be submitted as part of the Final Site Plan application.

1. Decorative streetlights shall be incorporated throughout the development to enhance appeal and safety.
2. Under no circumstances shall any Owner, Developer, residents, or other entity remove, disable or otherwise cause streetlights to become inoperable.
3. Street light maintenance shall be the responsibility of the Property Owner's Association.

Light Pole Height Standards and Exceptions:

4. **Standard Light Pole Height.** The maximum height for light poles throughout the project shall be 35 feet, consistent with the City's Land Development Code.
5. **Exception for Heavy Truck Areas (Manufacturing/Warehouse Uses.** In areas designated for staging, parking, and/or loading of heavy trucks (defined as typical tractor-trailer vehicles with a wheelbase of at least 40 feet), light poles may be permitted to a maximum of 45 feet.
  - a. This exception shall apply only within contained areas associated with manufacturing or warehouse uses.
  - b. The appropriateness and placement of these elevated fixtures shall be evaluated during the review of each applicable Final Site Plan.

**K. Architectural Controls and Development Standards** Development on the Subject Property shall adhere to a unified architectural theme as outline in this Agreement. The general appearance of all buildings and accessory structures shall be harmoniously coordinated to ensure visual consistency and functional efficiency.

1. **Orientation of Roll-up Doors.** Roll up doors shall be oriented toward internal parking areas to facilitate efficient loading and unloading of goods and equipment, and to enhance traffic circulation within the development.
2. **Screening of Heavy Vehicles and Equipment.** The parking or storage of heavy vehicles and equipment shall be effectively screened from view from all public thoroughfares, using landscaping, fencing, or other appropriate methods.
3. **Parking Area Placement.** Parking areas shall be located within the interior of the site. Buildings shall be positioned closer to adjacent roadways to create a visually appealing streetscape and minimize visibility of parking areas.

4. **Architectural Elevation Submissions.** Architectural elevation drawings shall be required as part of all Preliminary Plat, Plat, and/or Final Site Plan applications, and must demonstrate adherence to the unified architectural theme.
5. **Governance and Variations.** All architectural controls and any approved variations shall be governed and administered by a Property Owners Association, as established under the terms of this Agreement.

**L. Lot 5 – Multi-Family Development Features.**

1. **General Description:** The Multi-Family Residential component of the development shall be located on 17.20 acres and will primarily provide for-rent residential housing opportunities. The community feature a contemporary architectural design, complemented with modern amenities, parks and greenspace gathering spaces to promote a high quality of life for residents. A comprehensive description of community features, recreational amenities, and unit specific offerings is provided in Section L.4 below of this Agreement.
2. **Minimum Unit Size.** minimum square footage per residential unit, measured as net living area, shall comply with the standards set forth in the City’s Land Development Code for multifamily residential developments.
3. **Permitted Uses:**
  - a. The development will consist of 320 multi-family dwelling units situated within a combination of three-story and four-story residential buildings.
  - b. Flexibility in the allocation of unit types shall be permitted, allowing the property owner to adjust the mix of unit sizes and configurations to better align with current market conditions.
  - c. Recreational, community, and unit amenities designed to enhance the resident’s standard of living, as more specifically detailed which in Section L.4 below.
  - d. Accessory buildings and uses customarily associated with the above principal uses, when located on the same lot, may include amenities such as a clubhouse, pool, maintenance building/area and similar facilities. These uses shall be limited to functions directly related to the on-site management and maintenance of the rental apartment community, and shall not involve the conduct of any external business operations.
  - e. Home occupations, as regulated by Section 110-807 of the City’s Land Development Code, as may be amended from time to time.

- f. **Signage.** All signage within the development shall be comply with Chapter 102 of the City's Land Development Code, as may be amended from time to time. The design of the entrance signs, including color schemes, landscaping and other design elements shall be presented as part of the construction drawings submitted at the time of subdivision application and must receive approval from the Development Review Committee. Entrance signs and their associated landscape features shall be constructed prior to the issuance of the first Certificate of Occupancy and shall be maintained throughout the life of the development.
- g. **Gates.** The entrance access areas may be gated, utilizing decorative wrought iron or aluminum gates. All gated entrances shall comply with the vehicle reservoir area requirements as outlined in Section 110-829 of the City's Land Development Code. The gates shall be seamlessly integrated into the entryway design, incorporating decorative walls and landscaping features to maintain the aesthetic quality of the development.
- h. Infrastructure associated with the above-listed uses.
- i. The owner of the apartment complex may, at their discretion, convert the units into condominiums in the future. This conversion will be allowed under the terms of the Development Agreement without requiring any additional approval or action from the City.

4. **Community / Recreational / Unit Amenities.**

- The community will feature a clubhouse with a resort-style swimming pool, complete with cabanas and refrigerators. Inside the clubhouse, resident will enjoy a coffee and tea bar, a yoga room, a 24-hour fitness center, and a 24-hour business center with a conference room. The fitness center will include both strength and cardio equipment, along with a dedicated yoga studio.
- Other community features:
  - Pet-friendly community with leash-free bark park with agility equipment.
  - Community Firepit.
  - On-site management and maintenance.
- Unit features / amenities
  - Eat-in Kitchen.
  - 9-foot ceilings.
  - Open Living Floorplan.

- Digital Keyless Front Door Locks.
- High-speed Wireless Internet.
- Full-Size Stackable Washer and Dryer.
- Covered Patios and Balconies.
- Garages may be available for rent.
- LED Lighting.

- M. Utility provision and dedication:** The Owner or Developer shall connect to Volusia County’s central utility systems, where applicable, at their own cost and expense. Utility fees must be paid to Volusia County prior to the issuance of any building permits. The central utility systems must be designed, permitted, and constructed in accordance with the specifications of the respective service provider and will be dedicated to the service provider following final inspection, clearance, and acceptance by the provider.
- N. Stormwater:** The master stormwater system, including all retention ponds, shall be owned by the multi-family developer. Maintenance of these ponds will be the responsibility of either the multi-family developer or the Property Owners Association, under private ownership. These ponds will not be dedicated to or become the responsibility of the City of Deltona.
- O. Environmental:** All permitting, mitigation, and soil and erosion control for the property shall comply with federal, state, and local requirements. Maintenance of these systems will be the sole responsibility of the Property Owners Association, ensuring that all systems remain in good condition and meet the standards set by the applicable permitting authorities. Best Management Practices (BMPs) and compliance with National Pollutant Discharge Elimination System (NPDES) criteria are required.
- P. Mobile Construction Offices:** Mobile construction offices shall comply with the applicable provisions of Section 110-819(b) of the City’s Land Development Code, as may be amended from time to time.
- Q. Transportation, fair share, site access, and traffic devices:** The Owner or Developer is responsible for all transportation improvements within the Subject Property, as well as any off-site transportation upgrades required due to the proposed development. This includes ensuring that the development maintains or improves the level of service for surrounding roadways and upholds the public health, safety, and welfare for the community. The Developer has submitted a Traffic Impact Study (TIA), attached as **Exhibit “E”**. According to the TIA, the development is expected to generate 2,787 daily trips, with 209 trips occurring during the AM peak hours and 184 trips during the PM peak hours. All necessary permits must be obtained from the relevant permitting agencies prior to commencement of the development. The City and County will determine the

required level of service based on the City Comprehensive Plan and most recent traffic counts.

### **1. On-Site Transportation Network – Access Management System**

Synergy at Normandy is designed to accommodate a variety of uses on five (5) lots. The development is primarily accessed from North Normandy Boulevard to the west, the extension of Rhode Island Avenue along the northern boundary, and the Ruth Avenue to the east. The site features three (3) access points along North Normandy Boulevard:

- Driveway 1 – Located at the southernmost point, this is a right-in only access to Lot 1.
- Driveway 2 – Positioned north to Driveway 1, this is the main entrance off North Normandy Boulevard.
- Driveway 3 – Located at the northernmost point, this is a right-in only access to Lot 3.

There are two (2) access points along the Rhode Island extension:

- Driveway 4 – The western entrance off Rhode Island Avenue, located between Lots 3 and 4, providing access Roadway B.
- Driveway 5 – Provides access to Lot 4.

All interior roadways within the development will be privately owned and maintained by the Property Owner’s Association. These interior roads will be constructed to meet City of Deltona standards. The City will not be responsible for any maintenance of the interior roadways. The interior access points to Lot 5 may be gated.

Pedestrian access will be provided through an interconnected system of five-foot wide sidewalks. The developer is responsible for constructing a five-foot sidewalk along North Normandy Boulevard, a five-foot sidewalk along the Rhode Island Avenue extension, and internal sidewalks within the development.

Access management for the development involves proper placement and design of Synergy’s ingress and egress. This is essential to protect the capacity on City roadways and promote transportation safety. The Owner/Developer will be solely responsible for the construction and financing of access management, including but not limited to signage and other related costs. The five (5) access driveways planned for the development, as shown in “**Exhibit F**,” will be subject to access management protocols. Additionally, all work within the City and County Right-of-Way areas must be properly permitted by the City/County. All Access management improvements must be completed before the first Certificate of Occupancy (CO), whether temporary or permanent, is granted for the MPUD. The

design and dimensions of all internal access points, including parking facilities and pedestrian walkways, must comply with the City's Land Development Code.

## **2. On-Site Dedications to the City of Deltona:**

Synergy at Normandy MPUD is currently associated with the antiquated Pine View Estates Plat, which consists of individual lots ranging in size from 25'x110' to 35'x110', along with associated paper Rights-of-Way. The City is prepared to process an application to facilitate the vacation of the following Rights of Way that are entirely within the boundary of Synergy at Normandy, as shown on **Exhibit "G"**:

- McBride Avenue from N. Normandy Boulevard to Ruth Avenue.
- South Avenue from N. Normandy Boulevard to Ruth Avenue.
- Burlington Avenue from South Avenue to Rhode Island / Amelia Avenue.
- Cayer Avenue from South Avenue to Rhode Island / Amelia Avenue.
- Wright Avenue from South Avenue to Rhode Island / Amelia Avenue.
- Cornelia Avenue from South Avenue to Rhode Island / Amelia Avenue.

The vacation of these Rights-of-Way and approval of the Synergy at Normandy MPUD are contingent upon the dedication of a 30-foot strip of land along the northern boundary of the subject site, which will facilitate the future expansion of the Rhode Island Avenue extension. This 30-foot dedication is described as follows:

- The north 30' of Lots 1-8 of Block 6; and
- The north 30' of Lots 1-8 of Block 7; and
- The north 30' of Lots 1-8 of Block 8; and
- The north 30' of Lots 1-8 of Block 9; and
- The north 30' of Lots 1-8 of Block 10;

In addition, the north 30 feet of the following road Rights-of-Way lying between these parcels, will also be dedicated: Burlington Avenue, Cayne Avenue, Wright Avenue, and Cornelia Avenue - all of which are within the Pine View Estates Plat. Furthermore, the Developer will dedicate additional Right-of-Way along North Normandy Boulevard to "straighten" the existing Right-of-Way alignment.

These dedications will be processed through the land development review phase with Volusia County, either as part of the Plat/Subdivision or the Final Site Plan, as applicable. Any lands granted to the Developer through the approved vacation request, will be incorporated into the Synergy at Normandy MPUD without requiring a major amendment to the MPUD.

It is important to note that, based on requests and discussions with City Planning Staff, no through access will be provided from the Rhode Island Avenue extension to North Firwood Drive. Although the Ruth Avenue Right-of-Way connects Rhode Island to North Firwood Drive on paper, it lies outside the boundary of the subject property.

**3. Off – Site Mitigation:**

The Developer acknowledges the need for a southbound left-turn lane from North Normandy Boulevard onto Rhode Island Avenue. However, the existing plans for Portland Industrial Park, as recorded in City of Deltona Ordinance No. 02-2021, already include the installation of this turn lane. If Portland Industrial Park does not construct the turn lane as planned, the City and the Developer agree that a dedicated 235-foot southbound left turn lane (including a 50-foot taper) is necessary at both the Rhode Island Avenue (Amelia Avenue) entrance and the Main Development Entrance from North Normandy Boulevard. The design of the turn lane will be developed and coordinated by the site civil engineers in collaboration with the City of Deltona Engineer. The MPUD improvements and any related enhancements will be coordinated between Volusia County and the City of Deltona, following the completion of a Traffic Study as part of the Preliminary Plat of Final Site Plan application process.

- R. Waste Disposal:** Solid waste disposal will be managed in accordance with the City’s Land Development Code and Ordinances. Dumpsters and/or trash compactors will be provided for each site, strategically located to ensure convenient walking access for nearby tenants and residents. These dumpsters and/or trash compactors will be enclosed with screen walls and gates, as required by the City of Deltona’s Land Development Code.
- S. Development Phases:** The Subject Property may be developed either all at once or in construction phases. If developed in a single phase, a Final Site Plan may be reviewed and approved for the entire development. However, the property will not be able to obtain a Certificate of Occupancy until all buildings are completed. If the property is developed in phases, a Preliminary Plat will be required in accordance with Land Development Code Section 106. The Final Site Plan will allow the applicant some flexibility to make amendments to the plan without the need for a separate site plan application and review, providing the following conditions are met:
- (1) Evidence that such amendment will not result in an increase in stormwater retention requirements, and
  - (2) The amendments are consistent with the limitations and requirements set forth in this Developer Agreement.

During construction phasing, the Developer is required to maintain the undeveloped portions of the property in a manner that does not negatively impact

surrounding properties. Land clearing and grading may occur during the first construction phases, provided that any tree preservation areas, if applicable, are maintained.

7. **Public Facilities / Land Dedication.** The following facilities or tracts, either existing or to be dedicated, will serve the development and/or be located on the Subject Property are:
  - A 30-foot Right-of-Way along the northern property line, extending from North Normandy Boulevard to the eastern property line, will be dedicated to the City of Deltona.
  - The Owner/Developer will coordinate with Volusia County to reconfigure and straighten the North Normandy Boulevard Right-of-Way along the property's North Normandy Boulevard frontage.
  - Water, sewer, and related utility infrastructure, including necessary easements, will be provided and managed by Volusia County
  - Other dedications as required, will be made to the City of Deltona or Volusia County, as appropriate.
8. **Development Permits / Fees.** The Owner or Developer is responsible for obtaining all necessary permits, ensuring the payment of all fees, and securing facilities and services required for the development of the Subject Property. All site permits must be kept current with the respective permitting agencies and ensure the protection of public health, safety, and welfare of the community and the development. Additionally, all applicable transportation impact fees must be addressed through fair share contributions or other appropriate arrangements.
9. **Obligations.** Should the Owner or Developer fail to undertake and complete its obligations as described in this Agreement to the City's specifications, then the City shall give the Owner or Developer 30 days written notice to commence and 90 days to complete said required obligation. If the Owner or Developer fails to complete the obligations within the 90-day period, then the City, without further notice to the Owner or Developer, or its successors in interest, may, without prejudice to any other rights or remedies it may have, place liens and take enforcement action on the Subject Property. A lien of such assessments shall be superior to all others, and all existing lienholders and mortgagees, by their execution of the subordination or joinder documents, agree to subordinate their liens or mortgages to the City's said liens or assessments. Notice to the Owner or Developer and its successors in interest shall be deemed to have been given upon the mailing of a notice to the address or addresses set forth in Paragraph (20) hereof.
10. **Site Plan / Plat Approval.** Exhibit "C", the Master Development Plan, serves as the Preliminary Plan for the PUD and this Agreement and must be updated to include architectural information and elevations before it is recorded. The Master

Development Plan does not replace, supersede, or absolve the Owner or Developer from obtaining approvals for any Final Site Plan, Preliminary Plat, and/or Final Plat, nor does it override and the respective regulations governing these approvals. In case where more detailed criteria for City required submittals exceed the criteria required for a Master Development Plan, the more detailed criteria apply.

11. **Indemnification.** The Owner/Developer or Developer shall indemnify and hold the City harmless from any and against all claims, demands, disputes, damages, costs, and expenses, (to include attorneys' fees whether or not litigation is necessary and if necessary, both at trial and on appeal), incurred by the City as a result, directly or indirectly, of the use or development of the Subject Property, except those claims or liabilities caused by or arising from the negligence or intentional acts of the City, or its employees or agents. It is specifically understood that the City is not guaranteeing the appropriateness, efficiency, quality, or legality of the use or development of the Subject Property, including but not limited to, drainage or water/sewer plans, fire safety, or quality of construction, whether or not inspected, approved, or permitted by the City.
12. **Compliance.** The Owner or Developer agrees that it, and its successors and assigns, will abide by the provisions of this Agreement, the City's Comprehensive Plan, and the City's Code of Ordinances, including but not limited to, the site plan regulations of the City as amended from time to time, which are incorporated herein by reference and such subsequent amendments hereto as may be applicable. Further, all required improvements, including landscaping, shall be continuously maintained by the Owner/Developer or Developer, or their successors and assigns, in accordance with the City's Code of Ordinances. The City may, without prejudice to any other legal or equitable right or remedy it may have, withhold permits, Certificates of Occupancy, or plan/plat approvals to the Subject Property, should the Owner or Developer fail to comply with the terms of this Agreement. In the event of a conflict between this Development Agreement and the City's Land Development Code, the more restrictive regulations shall govern the development of the Subject Property.
13. **Obligations for Improvements.** Any surface improvement as described and required hereunder included, but not limited to such as signalization, walls, stormwater management facilities, medians, and utilities, or any other surface improvement shall be performed, prior to the issuance of the first Certificate of Occupancy on that portion of the Subject Property that the surface improvement(s) relates or is otherwise scheduled in this Agreement. Should the Owner or Developer fail to undertake and complete its obligations as described in this Agreement and to the City's specifications, then the City shall give the Owner/Developer or Developer 30 days written notice to commence and 90 days to complete said required obligation at the sole expense of the Owner/Developer or Developer. If the Owner/Developer or Developer fails to complete the obligations within the 90 day period, then the City, without further notice to the Owner/Developer or Developer and their successors and

assigns in interest, but shall not be required to, perform such obligations at the expense of the Owner/Developer or Developer or their successors and assigns in interest, without prejudice to any other rights or remedies the City may have under this Agreement. Further, the City is hereby authorized to immediately recover the actual and verified cost of completing the obligations required under this Agreement and any legal fees from the Owner/Developer or Developer in an action at law for damages, as well as record a lien against the Subject Property in that amount. The lien of such assessments shall be superior to all others, and all existing lienholders and mortgagees, by their execution of the subordination or joinder documents, agree to subordinate their liens or mortgages to the City's said liens or assessments. Notice to the Owner/Developer or Developer and their successors and assigns in interest shall be deemed to have been given upon the mailing of notice as provided in paragraph (20) of this Agreement.

14. **Concurrency and Vested Rights.** The Owner or Developer acknowledges and agrees that before the issuance of any development orders for the Property, the Owner or Developer must have received and be in the possession of a valid unexpired certificate of capacity / concurrency management system approval consistent with the City's Land Development Code. The capacity certificate / approval verifies the availability of infrastructure and service capacity sufficient to permit the proposed development of the Subject Property without causing a reduction in the levels of service adopted in the City's Comprehensive Plan. The certificate of capacity / approval shall be effective for a term, as defined in the City's Code of Ordinances. Neither this Agreement nor the approved Master Development Plan shall create or result in a vested right or rights to develop the Subject Property, as cited in Section 86-34 of the City's Land Development Code.
15. **Environmental and Tree Preservation.** The Owner or Developer is responsible to obtain all site related permits and approval prior to any development activity on or for the Subject Property. This may involve mitigation for the habitat of threatened or endangered flora and fauna, or species identified for proportion (i.e. tree preservation). This Agreement does not vest or exempt the Owner or Developer from any permitting and mitigation obligations needed to develop the Subject Property.
16. **Property Owners Association.** The charter and by-laws of the Property Owners Association ("POA") for the Subject Property and any deed restrictions related thereto shall be furnished to the City for approval by the City Attorney prior to the recording thereof in the Public Records of Volusia County, Florida. Such recording shall take place before a Certificate of Occupancy is issued for the first development project on land covered by this Agreement. The POA shall at a minimum be responsible for maintaining the common open space, interior roadways, common utility systems, such as irrigation and site lighting, and project signage. The Owner or Developer shall be responsible for establishing the POA and recording said information in the Public Records of Volusia County, Florida. The City is not responsible for the enforcement of any agreements or deed restrictions entered into between property owners or

occupiers of the Subject Property. If maintenance of the Subject Property is not maintained following the issuance of a Certificate of Occupancy, the City has Code Enforcement services and applicable action, and fees will ensue.

17. **Enforcement.** Both parties may seek specific performance of this Agreement and / or bring an action for damages in a court within Volusia County, Florida if this Agreement is breached by either party. In the event enforcement of this Agreement by the City becomes necessary, and the City is successful in such enforcement, the Owner or Developer shall be responsible for the payment of all of the City's costs and expenses, including attorney fees, whether or not litigation is necessary and, if necessary, both at trial and on appeal. Such costs, expenses, and fees shall also be a lien upon the Subject Property superior to all others. Should this Agreement require the payment of any monies to the City, the recording of this Agreement shall constitute a lien upon the Subject Property for said monies, until said are paid, in addition to such other obligations as this Agreement may impose upon the Subject Property and the Owner or Developer. Interest on unpaid overdue sums shall accrue at the rate of the lesser of eighteen percent (18%) compounded annually or at the maximum rate allowed by law.
18. **Utility Easements.** For any easement not established on a plat for the Subject Property, the Owner or Developer shall provide to the City / County such easements and other legal documentation, in a form mutually acceptable to the City Attorney / County Attorney and the Owner / Developer or Developer, as the City may deem reasonably necessary or appropriate for the installation and maintenance of the utility and other services, including but not limited to, sanitary sewer, potable water, and reclaimed water services, electric, cable, gas, fire protection, and telecommunications.
19. **Periodic Review.** The City reserves the right to review the Subject Property subject in relation to this Agreement periodically to determine if there has been demonstrated good faith compliance with the terms of this Agreement. If the City finds that on the basis of substantial competent evidence that there has been a failure to comply with the terms of this Agreement, the City may not issue development orders or permits until compliance with this Agreement has been established.
20. **Notices.** Where notice is herein required to be given, it shall be by certified mail return receipt requested, hand delivery, or nationally recognized courier, such as Federal Express or UPS. E-mail delivery of documents shall not replace or be in lieu of the aforementioned process. Said notice shall be sent to the following, as applicable:

#### **OWNER'S OR DEVELOPER'S REPRESENTATIVES:**

Scott Banta, Telesis Services, LLC  
1111 N Ronald Reagan Blvd, Suite 101  
Longwood, FL 32750

With a Copy to:

Michael Woods  
Cobb Cole  
231 N Woodland Avenue  
Deland, FL 32720

With a Copy to:

Terri Weiner  
Warranty Parts Solutions, LLC  
14537 Whittridge Drive  
Winter Garden, FL 34787

**CITY'S REPRESENTATIVES:**

City Manager  
City of Deltona  
2345 Providence Boulevard  
Deltona, Florida 32725

**With a copy to:**

Director  
Planning & Development Services  
2345 Providence Boulevard  
Deltona, Florida 32725

Should any party identify the above change, it shall be said party's obligation to notify the remaining parties of the change in a fashion as is required for notices herein. It shall be the Owner or Developer's obligation to identify its lender(s) to all parties in a fashion as is required for notices herein.

- 21. **Compliance with the Law.** The failure of this Agreement to address a particular permit, condition, term, or restriction shall not relieve the Owner or Developer of the Subject Property from the necessity of complying with the law governing said permitting requirements, conditions, terms, or restrictions.
- 22. **Captions.** The captions used herein are for convenience only and shall not be relied upon in construing this Agreement.
- 23. **Binding Effect.** This Agreement shall run with the land, shall be binding upon and inure to the benefit of the Owner or Developer and their successors and assigns in interest, and the City and their successor and assigns in interest. This Agreement shall become effective upon its execution and recordation with the Public Records of Volusia County, Florida. This Agreement does not and is not intended to prevent or impede the City from exercising its legislative authority as the same may affect the Subject Property.
- 24. **Subsequently Enacted State or Federal Law.** If either state or federal law is enacted after the effective date of this Agreement that is applicable to and precludes the parties' compliance with the terms of this Agreement, this Agreement and correlating zoning amendment shall be modified or revoked, as is necessary, to comply with the relevant state or federal law.
- 25. **Severability.** If any part of this Development Agreement is found invalid or unenforceable in any court, such invalidity or unenforceability shall not affect the other parts of this Development Agreement if the rights and obligations of the parties contained herein are not materially prejudiced and if the intentions of the parties can be affected. To that end, this Development Agreement is declared severable.

26. **Covenant Running with the Land.** This Agreement shall run with the Subject Property and inure to and be for the benefit of the parties hereto and their respective successors and assigns and any person, firm, corporation, or entity who may become the successor in interest to the Subject Property or any portion thereof.
27. **Recordation of Agreement.** The parties hereto agree that an executed original of this Agreement shall be recorded by the City, at the Developer's expense, in the Public Records of Volusia County, Florida.
28. **Applicable Law / Venue.** This Agreement and the provisions contained herein shall be construed, controlled, and interpreted according to the laws of the State of Florida. The venue of any litigation relating to this Agreement shall be in the courts of Volusia County, Florida.
29. **Time of the Essence.** Time is hereby declared of the essence to the lawful performance of the duties and obligations contained in this Agreement. The Owner/Developer or Developer shall execute this Agreement within 10 business days of the City Commission's adoption of Ordinance No. 12-2024; and agrees to pay the cost of recording this document in the Public Records of Volusia County, Florida. Failure to execute this Agreement within 10 business days of this ordinance adoption may result in the City not issuing development orders or permits until the execution and recordation of this Agreement have occurred.
30. **Agreement; Amendment.** This Agreement constitutes the entire agreement between the parties, and supersedes all previous discussions, understandings, and agreements, with respect to the subject matter hereof; provided, however, that it is agreed that this Agreement is supplemental to the City's Comprehensive Plan and does not in any way rescind or modify any provisions of the City's Comprehensive Plan. Amendments to and waivers of the provisions of this Agreement shall be made by the parties only in writing by formal amendment.
31. **Effective Date.** The Effective Date of this Agreement shall be the day this Agreement is recorded in the Public Records of Volusia County, Florida.

**IN WITNESS WHEREOF, the Owner / Developer has executed this agreement.**

**OWNER:**

**By: Warranty Parts Solutions, LLC  
A Florida Limited Liability company**

\_\_\_\_\_  
Signature of Witness # 1

Print name: \_\_\_\_\_

\_\_\_\_\_  
Signature: Terri Weiner, Manager

\_\_\_\_\_  
Signature of Witness # 2

Print name: \_\_\_\_\_

**ATTEST:**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print or type Name

**As:**

\_\_\_\_\_  
Mailing Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**STATE OF FLORIDA**

**COUNTY OF \_\_\_\_\_**

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2025, by Terri Weiner, as Manager of Warranty Parts Solutions, LLC, who is ( ) personally known to me or ( ) who has produced \_\_\_\_\_ as identification and who did not (did) take an oath.

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
Print or type name

**IN WITNESS WHEREOF, the Developer has executed this agreement.**

**DEVELOPER**

**By: Telesis Services, LLC**

**A Florida Limited Liability company**

\_\_\_\_\_  
Signature of Witness # 1

\_\_\_\_\_  
Signature: Scott Banta, Manager

Print Name: \_\_\_\_\_

**ATTEST:**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name: \_\_\_\_\_

**As:**

\_\_\_\_\_  
Mailing Address:

\_\_\_\_\_  
\_\_\_\_\_

**STATE OF FLORIDA**

**COUNTY OF \_\_\_\_\_**

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2025, by Scott Banta, of Telesis Services, LLC, who is ( ) personally known to me or ( ) who has produced \_\_\_\_\_ as identification and who did not (did) take an oath.

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
Print or type name

**IN WITNESS WHEREOF, the City has executed this agreement.**

**CITY OF DELTONA:**

**By:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**ATTEST:**

\_\_\_\_\_

**Date:** \_\_\_\_\_

Mailing Address:

City of Deltona  
2345 Providence Boulevard  
Deltona, Florida 32725

**STATE OF FLORIDA**

**COUNTY OF** \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 2025, by \_\_\_\_\_, and \_\_\_\_\_, who are personally known to me and acknowledge executing the same freely and voluntarily under authority vested in them by the City of Deltona.

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
Print or type name

Approved as to form and legality for use and reliance by the City of Deltona, Florida

\_\_\_\_\_  
City Attorney

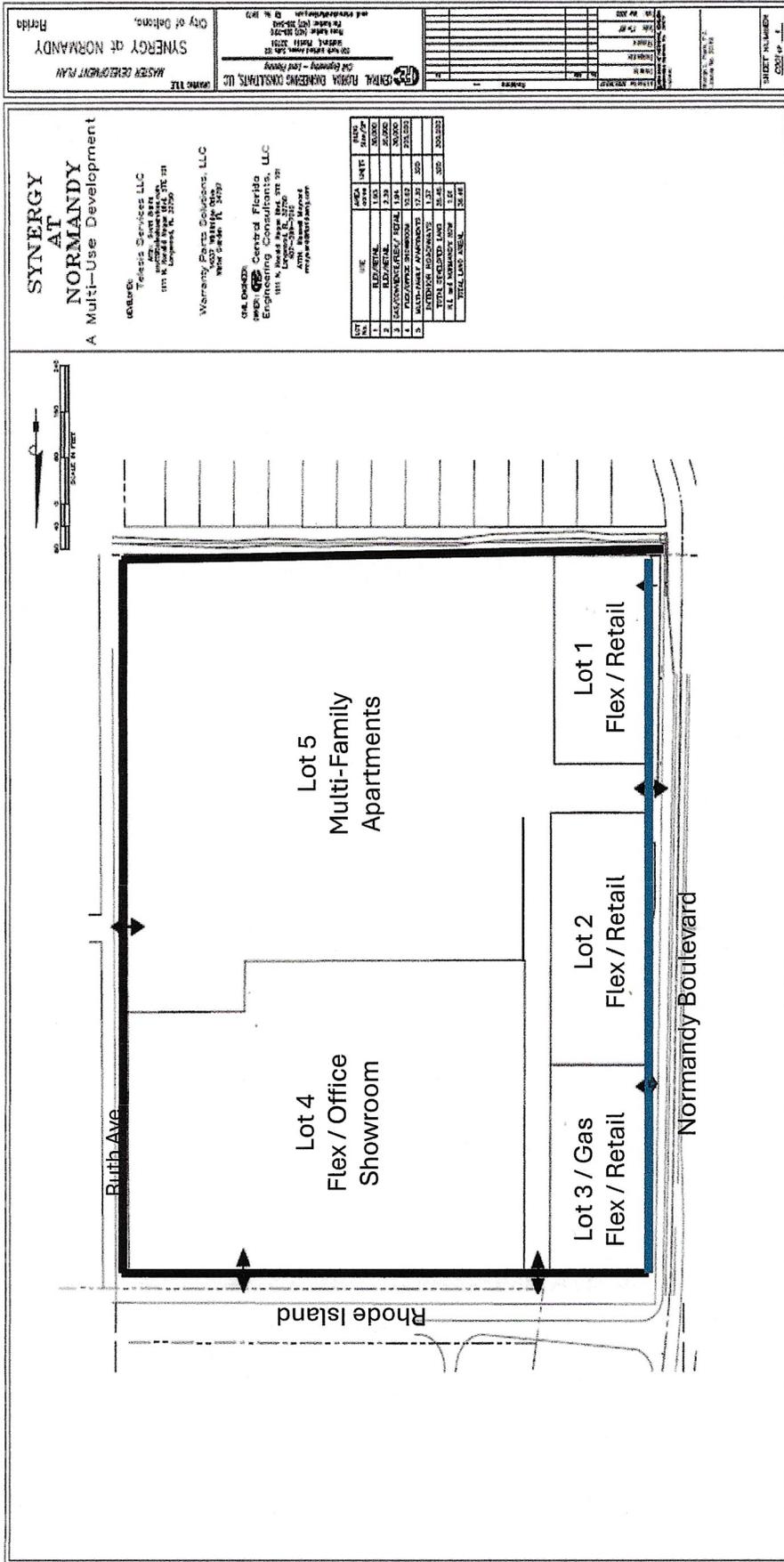
**EXHIBIT B 1 - LEGAL DESCRIPTIONS**

#	Alt Key	Parcel ID #	Acres	Legal - Lot / Block - ALL IN PINE VIEW ESTATES ( PVE )
1	2578378	811801030010	11.5457	Lots 1-42 incl Block 3 & Lots 1-48, Block 6 & Lots 1-48 incl Block 7, & Lots 1-44 incl Block 8, PVE
2	2578408	811801040210	3.3838	Lots 21-34 incl Block 4 & Lots 9-46 incl Block 5, PVE
3	2578386	811801040010	1.6919	Lots 1-17 and Lots 38-46 Block 4, PVE
4	2578416	811801040350	0.1894	Lots 35, 36 and 37, Block 4, PVE
5	2578432	811801090010	1.5700	Lots 1-16 & Lots 41 -48, incl, Block 9, PVE
6	6321523	811801090170	1.5700	Lots 1-48 incl, Block 9, PVE
7	2578351	811801010010	1.2000	Lots 1-4 & Lots 28-46 & Lots 5-27 excl S 120; Block 1 PVE
8	4687840	811801010050	0.9500	Lots 5-27, excl S 120' and ROW Normandy, Block 1 PVE
9	5798755	811801010240	0.2300	S 120 Ft of Lots 23 to 32 - Less E 99.80', Block 1 PVE
10	5798763	811801010280	0.2700	E 99.80' of S 120' of lots 23 - 32, Block 1 PVE
11	2578360	811801020010	3.0051	All of Block 2, PVE
12	2578441	811801100010	1.3100	Lots 1-14 incl and Lots 43-48, Block 10 PVE
13	2578459	811801100150	1.2600	Lots 15 - 42, Block 10 PVE
14	2578467	811801100250	0.5600	Lots 25 - 32, Block 10 PVE
15	2578424	811801050010	0.5600	Lot 1-8 Block 5 PVE
16	2578394	811801040180	0.1894	Lots 18, 19 and 20, Block 4, PVE

Note: The above legal descriptions encompasses all of Blocks 1 - 10, PVE less Right of Way

Owner:      Warranty Parts Solutions, LLC  
                   c/o Scott Banta, Telesis Services                      Email: scott@telesisservices.com  
                   1111 N Ronald Reagan Blvd, Suite 101              Phone: 407 - 947 - 9722  
                   Longwood, FL 32750

# Exhibit C – Master Development Plan



# SYNERGY at NORMANDY

## A Multi-Use Development

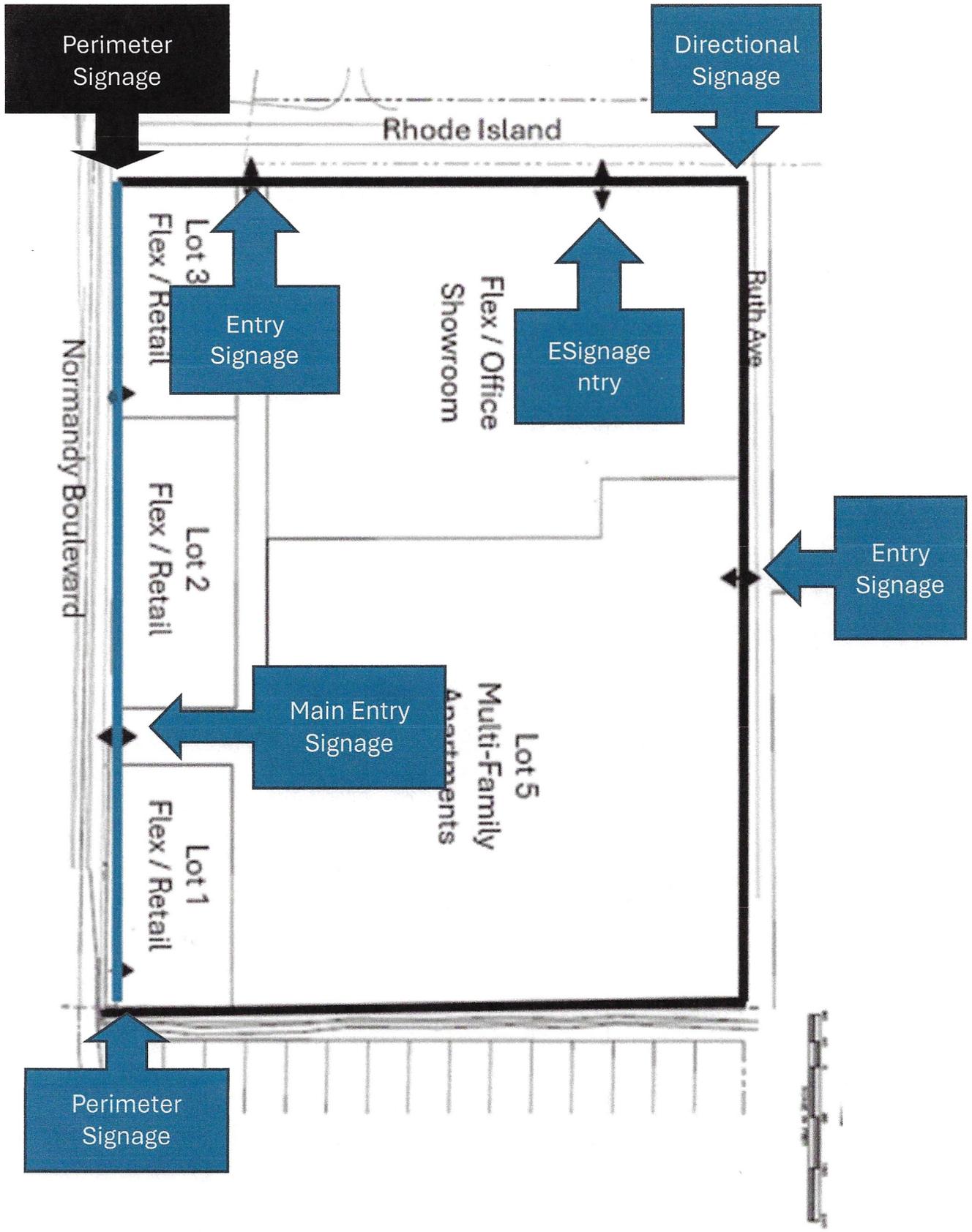
Developer: Telesis Services, LLC: Attn: Scott Banta  
 1111 N Ronald Reagan Blvd, Suite 101  
 Longwood, FL 32750  
 407 - 947 - 9722 / scott@telesisservices.com

Owner: Warranty Parts Solutions, LLC  
 14537 Whittridge Drive  
 Winter Garden, FL 34787

Civil Eng: Central Florida Engineering Consultants, LLC  
 Attn: Russell Maynard  
 1111 N Ronald Reagan Blvd, Suite 101  
 Longwood, FL 32750  
 407 - 599 - 7010 / rmaynard@floridaeng.com

Lot	Use	# Ac	# of Units	Bldg Size/SF
1	Flex / Retail	1.93		30,600
2	Flex / Retail	2.39		32,000
3	Gas / Convenience	1.94		6,000
	or Flex / Retail			30,000
4	Flex / Office Showroom	10.62		205,000
5	Multi-Family Apartments	17.20	320	
	Interior Roadways	1.37		
	Total - Developed Land	35.45	320	303,600
	RI & Normandy ROW	1.01		
	Total - Land Area	36.46		

# EXHIBIT D: Perimeter & Entry Signage



# EXHIBIT E

## Synergy at Normandy Mixed-Use

City of Deltona, Florida

### TRAFFIC IMPACT STUDY

**Prepared for:**

Telesis Services, LLC  
97 Hickory Tree Road  
Longwood, FL 32750

**Prepared by:**

**PTG**

---

Premier Traffic Group

PremierTrafficGroup@gmail.com  
350 E Crown Point Road, Suite 1100  
Winter Garden, FL 34787

April 2025

## EXECUTIVE SUMMARY

The proposed project comprises 320 apartments, 271,000 square feet of office showroom and a Gas Station with 14 Fuel positions. The proposed development is located east of Normandy Boulevard in City of Deltona, Florida. The analysis included a determination of project trip generation, a review of existing and projected roadway and intersection capacity and a review of access operations.

The results of the traffic analysis are summarized as follows:

- The proposed development will generate a total of 2,787 daily trips of which 209 and 184 will occur during the AM and PM peak hour, respectively.
- Access to the site will be provided via one Full and two Right-in-only access driveways onto Normandy Boulevard. In addition, access will be provided via the proposed new roadway, Amelia Avenue/Rhode Island Avenue/Ruth Avenue.
- The analysis indicates that the study roadway segments generally currently operate adequately within their adopted Level of Service (LOS). There are some segments that are projected to fail with or without construction of the proposed project due to committed trips and background traffic growth.
- An analysis of the study intersections indicates that the study intersections currently operate adequately within their adopted Level of Service standard and are projected to continue to do so upon buildout of the proposed development.
- In summary, an exclusive 210-foot (includes a 50-foot taper) southbound left turn lane is warranted on Normandy Boulevard at Amelia Avenue/Rhode Island Avenue and at the Main Project Access. The turn lane design will be developed and coordinated by the site civil engineers.
- Per City staff, exclusive right turn lanes shall be provided at the driveways, since Normandy Blvd in the study area is a 45 mph roadway.
- A proportionate share agreement will be developed in coordination with Volusia County for Graves Avenue between Normandy Boulevard and Howland Boulevard.

## PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Premier Traffic Group a dba of Karma Consultancy, LLC. and that I have supervised the preparation and approve the evaluation, findings, opinions, conclusions, and technical advice hereby reported for:

**PROJECT:** Synergy at Normandy Mixed-Use

**LOCATION:** City of Deltona, Florida

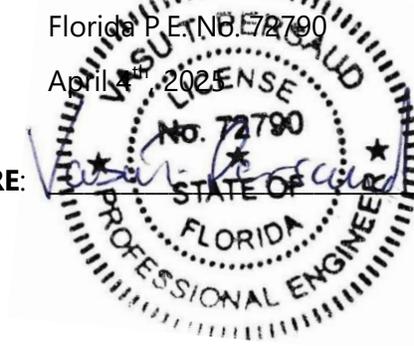
I acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.

**NAME:** Vasu T. Persaud, PE

**P.E. #:** Florida P.E. No. 72790

**DATE:** April 4<sup>th</sup> 2025

**SIGNATURE:** \_\_\_\_\_



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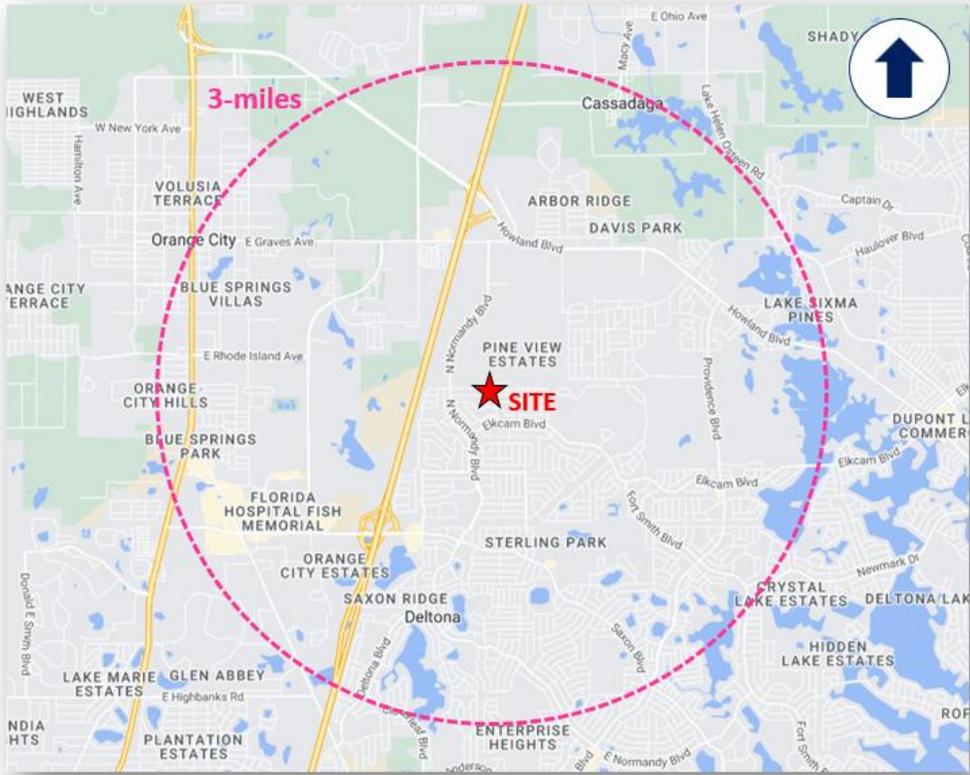
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**1.0 INTRODUCTION**

The proposed project comprises 320 apartments, 271,000 square feet of office showroom and a Gas Station with 14 Fuel positions. The proposed development is located east of Normandy Boulevard in City of Deltona, Florida. **Figure 1** depicts the site location and the surrounding transportation network. Access to the site will be provided via one Full and two Right-in-only access driveways onto Normandy Boulevard. In addition, access will be provided via the proposed new roadway, Amelia Avenue/Rhode Island Avenue/Ruth Avenue. A preliminary concept plan is included in **Appendix A**.

**1.1 Data and Methodology**

Data used in the analysis consisted of site plan/development information provided by the Project Engineers, PM peak hour intersection traffic counts obtained by PTG and roadway segment traffic volumes obtained from Volusia County and the Florida Department of Transportation (FDOT). The analysis was conducted in accordance with the Traffic Impact Analysis (TIA) *Methodology Memorandum* prepared for the project. A copy of the methodology coordination is provided in **Appendix B**.



**Figure 1: Project Location Map**

## 1.2 Study Area

The study facilities to be considered in the analysis are:

### *Study Intersections*

- Normandy Boulevard and Saxon Boulevard
- Normandy Boulevard and Elkcam Boulevard
- Normandy Boulevard and Graves Avenue
- Graves Avenue and Howland Boulevard
- Normandy Boulevard and Amelia Avenue/Rhode Island Avenue (Full- Full)
- Normandy Boulevard and Project Access 1 (North – Right-in/Right-out)
- Normandy Boulevard and Project Access 2 (Main - Full)
- Normandy Boulevard and Project Access 3 (South – Right-in/Right-out)

### *Study Segments*

- Graves Avenue
  - Veteran's Memorial Parkway to Kentucky Avenue
  - Kentucky Avenue to Normandy Boulevard
  - Normandy Boulevard to Howland Boulevard
- Saxon Boulevard
  - Veterans Memorial Parkway to FDOT Park & Ride
  - FDOT Park & Ride to I-4
  - I-4 to Finland Drive
  - Finland Drive to Normandy Boulevard
- Howland Boulevard
  - I-4/SR 472 to Wolf Pack Run
  - Wolf Pack Run to Catalina Boulevard
- Normandy Boulevard
  - Graves Avenue to Rhode Island
  - Rhode Island to Elkcam Boulevard
  - Elkcam Boulevard to Saxon Boulevard
  - Saxon Boulevard to Deltona Boulevard
- US 17/92
  - DeBary Plantation Blvd to Saxon Boulevard
  - Saxon Boulevard to Enterprise Road
  - Enterprise Road to Rhode Island Avenue
  - Rhode Island Avenue to Graves Avenue
  - Graves Avenue to New York Avenue

### **1.3 Planned and Programmed Improvements**

Based on discussions and review of data documented by FDOT, Volusia County and the Volusia Metropolitan Planning Organization, there are no pertinent roadway capacity improvements that were planned and programmed within three (3) years of the project buildout.

It is known that the City is currently adding turn lanes on Normandy Boulevard in front of the site. Therefore, any turn lane designs will be developed and coordinated by the site civil engineers.

## 2.0 EXISTING TRAFFIC CONDITIONS

Existing conditions in the vicinity of the site were analyzed to establish a baseline for the traffic conditions prevailing in the vicinity of the proposed development. The analysis included a review of the existing roadway segment capacities and an analysis of the intersection operations at the study intersections.

### 2.1 Roadway Segment Analysis

**Table 1** summarizes the existing roadway segment capacity analysis for study segment within a four (4) mile radius of the proposed development. The existing roadway segment conditions were analyzed by comparing the existing traffic volumes observed on the study roadway segments to the service volumes at the adopted Level of Service (LOS) standard for the roadway segments. The LOS data was obtained from the latest Volusia County traffic data and committed trips spreadsheets.

**Table 1: Existing Roadway Segment Capacity Analysis**

No.	Roadway	Segment	Lanes	LOS Stnd	PH Dir Capacity	PM PK Hr Ext Vol	Ext LOS Met?
99	Graves Ave	VMP to Kentucky Ave	2	E	1,620	1,640	No
100	Graves Ave	Kentucky to Normandy	2	E	1,620	1,420	Yes
101	Graves Ave	Normandy Blvd to Howland Blvd	4	E	2,740	1,590	Yes
102	Saxon Blvd	VMP to FDOT Park n Ride	6	E	5,140	3,360	Yes
103	Saxon Blvd	Park n Ride to I-4	6	E	5,140	2,710	Yes
104	Saxon Blvd	I-4 to Finland Dr	5	E	4,280	3,580	Yes
105	Saxon Blvd	Finland Dr to Normandy Blvd	4	E	3,410	3,170	Yes
121	Howland Blvd	I-4 to Wolf Pack Run	4	E	3,410	2,530	Yes
122	Howland Blvd	Wolf Pack Run to Catalina Blvd	4	E	3,410	2,310	Yes
189	Normandy Blvd	Graves Ave to Rhode Island	2	E	1,150	787	Yes
190	Normandy Blvd	Rhode Island to Elkcam Blvd	4	E	2,630	636	Yes
191	Normandy Blvd	Elkcam Blvd to Saxon Blvd	4	E	2,630	599	Yes
192	Normandy Blvd	Saxon Blvd to Deltona Blvd	2	E	2,630	936	Yes
53	US 17/92	DeBary Plantation Blvd to Saxon Blvd.	4	E	3,580	1,622	Yes
54	US 17/92	Saxon Blvd. to Enterprise Rd.	4	E	3,580	1,223	Yes
55	US 17/92	Enterprise Rd. to Rhode Island Ave.	4	E	3,580	1,649	Yes
56	US 17/92	Rhode Island Ave. to Graves Ave.	4	E	3,580	1,649	Yes
57	US 17/92	Graves Ave. to New York Ave.	4	E	3,580	1,782	Yes

Note: (1) Volusia Vested Trips 2022 table used for segments No. 99 to 192; (2) VolusiaAADTs2021 table used for segments 53 to 57; (3) PM Peak Hour Existing Volume for US 17/92 was obtained by applying the K and D factors to the AADT values found in the VolusiaAADTs2021 spreadsheet

The analysis indicates that the study roadway segments currently operate adequately within their adopted Level of Service (LOS) standard except Graves Avenue from Veteran’s Memorial Parkway to Kentucky Avenue.

## 2.2 Intersection Capacity Analysis

**Table 2** summarizes the results of the existing intersection capacity analysis. The existing intersection capacity analysis was conducted for the PM peak hour using the *Synchro* software and the methods of the *Highway Capacity Manual (HCM)*. The turning movement count data and the existing PM peak hour Turning Movement Volumes are included in **Appendix C**. It should be noted that the raw turning movement counts were adjusted to peak season volumes using a seasonal adjustment factor (1.02) obtained from the *FDOT Traffic Online* website.

**Table 2: Existing Intersection Capacity Analysis**

Intersection	Control	Time	EB		WB		NB		SB		Overall	
		Period	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Normandy Blvd & Saxon Blvd	Signal	AM	23.0	C	38.0	D	39.5	D	62.4	E	39.4	D
		PM	40.0	D	32.5	C	54.5	D	56.2	E	42.0	D
Normandy Blvd & Elkam Blvd	Signal	AM	--	--	9.4	A	10.0	A	5.4	A	8.6	A
		PM	--	--	14.5	B	10.2	B	4.4	A	8.5	A
Normandy Blvd & Graves Ave	Signal	AM	20.4	C	17.7	B	9.9	A	--	--	16.0	B
		PM	19.4	B	16.5	B	14.7	B	--	--	17.8	B
Graves Ave & Howland Blvd	Signal	AM	25.0	C	33.8	C	55.9	E	54.0	D	36.3	D
		PM	33.5	C	21.7	C	16.6	B	31.2	C	21.0	C

The analysis indicates that the study intersections operate adequately during the PM peak hour period. The detailed *Synchro* worksheets are included in **Appendix D**.

### 3.0 TRIP GENERATION

To determine the impact of this development, an analysis of its trip generation characteristics was conducted. This included a determination of the trips to be generated as well as their distribution and assignment to the surrounding roadways. The estimated project buildout is 2028.

#### 3.1 Trip Generation

**Table 3** summarizes the trip generation analysis conducted using information published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 11th Edition* and the *Trip Generation Handbook, 3rd Edition*. The ITE Trip Generation graphs are included as part of the *Methodology Memorandum* in **Appendix B**.

**Table 3: Trip Generation**

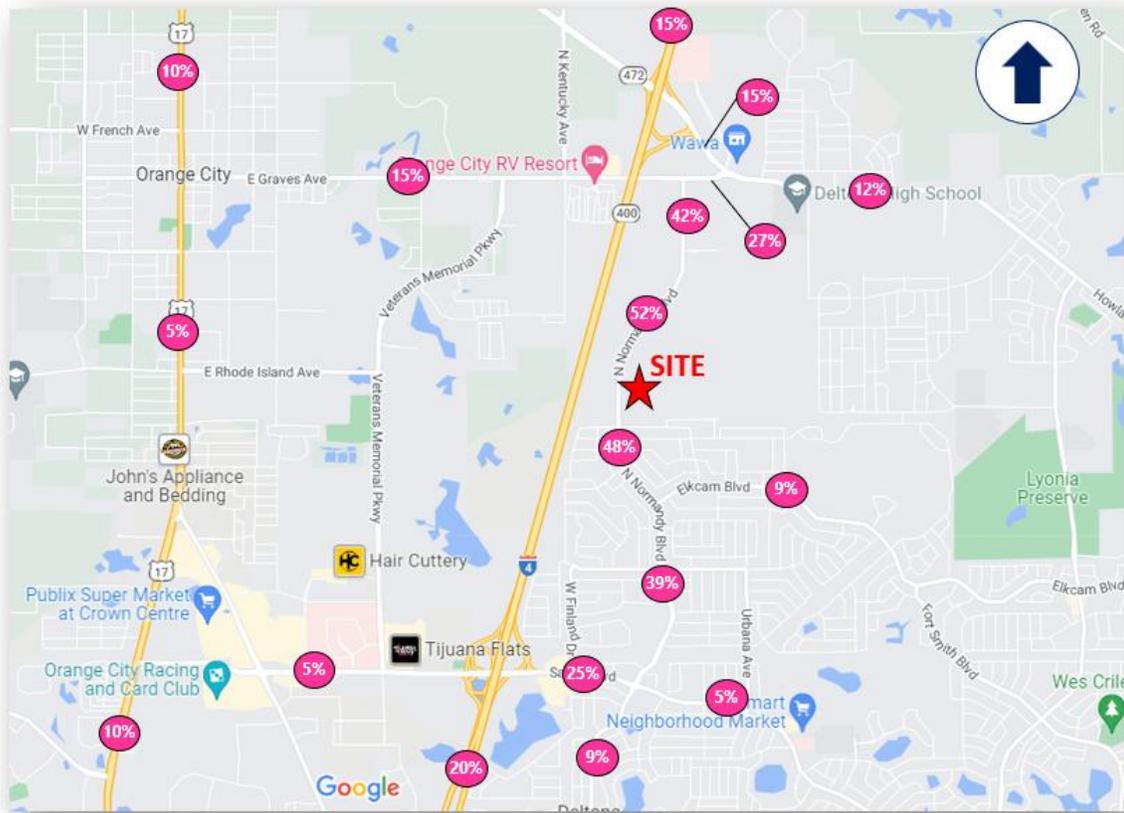
ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Enter	Exit	Total	Rate	Enter	Exit	Total
151	Mini-Warehouse /Self Storage	271 KSF	1.51	409	0.1	16	11	27	0.17	22	24	46
221	Multi-Family (Mid-Rise)	320 DUs	4.62	1,478	0.4	29	99	128	0.39	76	49	125
945	Gas Station with Convenience Market (GFA 2-4ksf)	14 FPs	265.1	3,712	16.06	113	112	225	18.42	129	129	258
Subtotal			--	5,599	--	158	222	380	--	227	202	429
<i>Internal Capture (1% AM, 22% PM)</i>			--	56	--	2	2	4	--	50	44	94
<i>Gas Station with Convenience Market Pass-by (75%)</i>			--	2,756	--	84	83	167	--	75	76	151
<b>New Net Trips</b>			--	<b>2,787</b>	--	<b>72</b>	<b>137</b>	<b>209</b>	--	<b>102</b>	<b>82</b>	<b>184</b>

Note: ITE Trip generation equation used as the R-squared value is greater than 0.7

#### 3.2 Trip Distribution/Assignment

The *Central Florida Regional Planning Model (CFRPM)* was used to determine a trip distribution pattern for this project. A model plot showing the trip distribution pattern is provided as part of the *Methodology Memorandum* in **Appendix B**. The trip distribution pattern was assessed for reasonableness using knowledge of the traffic patterns in the area, review of existing traffic counts and engineering judgement.

**Figure 2** provides the finalized trip distribution developed for this project. Using this trip distribution pattern, project trips will be assigned to the surrounding study roadway network.



**Figure 2: Trip Distribution Map**

## 4.0 PROJECTED TRAFFIC CONDITIONS

An analysis of projected conditions was conducted to determine the proposed development's impact on the roadway segment capacities and to evaluate the operations of the study intersections. The project buildout year for the analysis is 2028.

### 4.1 Background Traffic Projection

Projected traffic volumes consist of background traffic combined with site generated traffic. Typically, background traffic volumes are determined by expanding existing peak hour traffic volumes to the buildout year using an annual growth rate. A historical trend analysis was conducted based on the Annual Average Daily Traffic (AADT) data obtained from the *FDOT Traffic Online* website in the vicinity of the project (see **Appendix E**). Based on this historical trend analysis, an annual growth rate of 1.96% was calculated. This growth rate was applied to the existing traffic volumes as appropriate in order to determine the projected background volumes in the project buildout year.

### 4.2 Roadway Segment Analysis

**Table 4** and **Table 5** summarize the results of the background and projected study roadway segment capacity analysis, respectively. The Background and Projected roadway segment conditions were analyzed by comparing the projected traffic volumes on the study segments to their respective service volumes at the adopted Level of Service (LOS) standard. The total projected traffic volume is composed of background traffic and project trips. Projected background traffic was estimated using the annual growth rate discussed in the previous section.

The analysis indicates that the study roadway segments generally currently operate adequately within their adopted Level of Service (LOS). There are some segments that are projected to fail with or without the construction of the proposed project due to committed trips and background traffic growth.

**Table 4: Background Roadway Segment Capacity Analysis**

No.	Roadway	Segment	Lanes	LOS Stnd	PH Dir Capacity	Backg'd Vol	Backg'd Comm	Backg'd Tot Vol	Backd'd LOS Met?
99	Graves Ave	VMP to Kentucky Ave	2	E	1,620	1804	470	2,274	No
100	Graves Ave	Kentucky to Normandy	2	E	1,620	1562	925	2,487	No
101	Graves Ave	Normandy Blvd to Howland Blvd	4	E	2,740	1749	991	2,740	No
102	Saxon Blvd	VMP to FDOT Park n Ride	6	E	5,140	3696	316	4,012	Yes
103	Saxon Blvd	Park n Ride to I-4	6	E	5,140	2981	313	3,294	Yes
104	Saxon Blvd	I-4 to Finland Dr	5	E	4,280	3938	262	4,200	Yes
105	Saxon Blvd	Finland Dr to Normandy Blvd	4	E	3,410	3487	262	3,749	No
121	Howland Blvd	I-4 to Wolf Pack Run	4	E	3,410	2783	868	3,651	No
122	Howland Blvd	Wolf Pack Run to Catalina Blvd	4	E	3,410	2541	783	3,324	Yes
189	Normandy Blvd	Graves Ave to Rhode Island	2	E	1,150	866	764	1,630	No
190	Normandy Blvd	Rhode Island to Elkcam Blvd	4	E	2,630	700	507	1,207	Yes
191	Normandy Blvd	Elkcam Blvd to Saxon Blvd	4	E	2,630	659	338	997	Yes
192	Normandy Blvd	Saxon Blvd to Deltona Blvd	2	E	2,630	1030	61	1,091	Yes
53	US 17/92	DeBary Plantation Blvd to Saxon Blvd.	4	E	3,580	1784	0	1,784	Yes
54	US 17/92	Saxon Blvd. to Enterprise Rd.	4	E	3,580	1345	0	1,345	Yes
55	US 17/92	Enterprise Rd. to Rhode Island Ave.	4	E	3,580	1814	0	1,814	Yes
56	US 17/92	Rhode Island Ave. to Graves Ave.	4	E	3,580	1814	0	1,814	Yes
57	US 17/92	Graves Ave. to New York Ave.	4	E	3,580	1960	0	1,960	Yes

**Table 5: Projected Roadway Segment Capacity Analysis**

No.	Roadway	Segment	Lanes	LOS Stnd	PH Dir Capacity	Backg'd Tot Vol	Trip Dist	Project Vol	Total Vol	Projected LOS Met?
99	Graves Ave	VMP to Kentucky Ave	2	E	1,620	2,274	15%	28	2302	No
100	Graves Ave	Kentucky to Normandy	2	E	1,620	2,487	15%	28	2515	No
101	Graves Ave	Normandy Blvd to Howland Blvd	4	E	2,740	2,740	27%	50	2790	No
102	Saxon Blvd	VMP to FDOT Park n Ride	6	E	5,140	4,012	5%	9	4021	Yes
103	Saxon Blvd	Park n Ride to I-4	6	E	5,140	3,294	5%	9	3303	Yes
104	Saxon Blvd	I-4 to Finland Dr	5	E	4,280	4,200	25%	46	4246	Yes
105	Saxon Blvd	Finland Dr to Normandy Blvd	4	E	3,410	3,749	25%	46	3795	No
121	Howland Blvd	I-4 to Wolf Pack Run	4	E	3,410	3,651	15%	28	3679	No
122	Howland Blvd	Wolf Pack Run to Catalina Blvd	4	E	3,410	3,324	12%	22	3346	Yes
189	Normandy Blvd	Graves Ave to Rhode Island	2	E	1,150	1,630	52%	96	1726	No
190	Normandy Blvd	Rhode Island to Elkcam Blvd	4	E	2,630	1,207	48%	88	1295	Yes
191	Normandy Blvd	Elkcam Blvd to Saxon Blvd	4	E	2,630	997	39%	72	1069	Yes
192	Normandy Blvd	Saxon Blvd to Deltona Blvd	2	E	2,630	1,091	9%	17	1108	Yes
53	US 17/92	DeBary Plantation Blvd to Saxon Blvd.	4	E	3,580	1,784	10%	18	1802	Yes
54	US 17/92	Saxon Blvd. to Enterprise Rd.	4	E	3,580	1,345	5%	9	1354	Yes
55	US 17/92	Enterprise Rd. to Rhode Island Ave.	4	E	3,580	1,814	5%	9	1823	Yes
56	US 17/92	Rhode Island Ave. to Graves Ave.	4	E	3,580	1,814	15%	28	1842	Yes
57	US 17/92	Graves Ave. to New York Ave.	4	E	3,580	1,960	10%	18	1978	Yes

Note: Total Vol = 2022 Existing Vol x [1+(2% x 5 years)] + Project Vol

### 4.3 Intersection Capacity Analysis

**Table 6** summarizes the results of the projected intersection capacity analysis. The projected intersection capacity and operational analysis was conducted using the *Synchro* software and the methods of the *Highway Capacity Manual (HCM)* and was performed for the PM peak hours. The projected volumes for the intersection capacity and operations analysis were calculated as previously discussed. Projected background traffic was estimated using the annual growth rate as previously discussed. The projected peak hour volumes are also provided **Appendix D**.

The analysis indicates that the study intersections are projected to continue to operate adequately during both the AM and PM peak hour periods. The *Synchro* analysis worksheets are included in **Appendix F**.

**Table 6: Projected Intersection Capacity Analysis**

Intersection	Control	Time	EB		WB		NB		SB		Overall	
		Period	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Normandy Blvd & Saxon Blvd	Signal	AM	36.2	D	56.9	E	64.1	E	78.8	E	57.6	E
		PM	44.4	D	93.2	F	89.2	F	65.1	E	61.7	E
Normandy Blvd & Elkam Blvd	Signal	AM	--	--	10.4	B	10.9	B	5.8	A	9.3	A
		PM	--	--	16.1	B	11.5	B	4.9	A	9.5	A
Normandy Blvd & Graves Ave	Signal	AM	20.2	C	18.0	B	10.5	B	--	--	16.0	B
		PM	20.5	C	16.9	B	17.0	B	--	--	18.7	B
Graves Ave & Howland Blvd	Signal	AM	27.4	C	47.2	D	68.2	E	56.6	E	47.2	D
		PM	36.0	D	21.9	C	18.3	B	34.8	C	22.4	C
Normandy Blvd & Amelia Ave Access	Stop	AM	--	--	15.4	C	0.0	A	1.2	A	--	--
		PM	--	--	21.1	C	0.0	A	0.5	A	--	--
Normandy Blvd & Project Access	Stop	AM	--	--	11.3	B	0.0	A	0.0	A	--	--
		PM	--	--	10.1	B	0.0	A	0.0	A	--	--
Normandy Blvd & Project Access	Stop	AM	--	--	16.1	C	0.0	A	1.1	A	--	--
		PM	--	--	21.0	C	0.0	A	0.5	A	--	--
Normandy Blvd & Project Access	Stop	AM	--	--	0.0	A	0.0	A	0.0	A	--	--
		PM	--	--	0.0	A	0.0	A	0.0	A	--	--

Note: Planning level signal timings utilized for projected conditions

### 4.4 Access Turn Lane Analysis

#### Left Turn Lane

The need for exclusive southbound left turn lanes on Normandy Boulevard at Amelia Avenue/Rhode Island Avenue and at the Main Project Access was assessed using guidance from the *National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide*. The review indicated that the project volumes and posted speed limit at this location do meet the warrant thresholds and

consequently, an exclusive southbound left turn lane is warranted at both Locations. The NCHRP 457 worksheet is provided in **Appendix G**.

The minimum required turn lane dimensions is as follows:

Total Turn Lane Length = Vehicular Deceleration Distance + Queue Storage  
Deceleration @ 45 mph = 185' (incl. 50-foot taper), per FDOT Design Standards  
Queue = 95<sup>th</sup> percentile queue from Synchro = 0.1 vehicle, use 1 vehicles minimum = 25'  
Total Turn Lane Length = 185 + 25 = 210 feet

In summary, an exclusive 210-foot (includes a 50-foot taper) southbound left turn lane is warranted on Normandy Boulevard at Amelia Avenue/Rhode Island Avenue and at the Main Project Access. The turn lane design will be developed and coordinated by the site civil engineers.

### Right Turn Lane

Per City staff, exclusive right turn lanes shall be provided at the driveways, since Normandy Blvd in the study area is a 45-mph roadway. Specifically, the following applies:

- According to Volusia County LDC Section 72-619 for turn lane requirements, it states that "A right-turn lane of 12 feet in width, conforming to Table VI shall be provided at each driveway when the speed limit equals or exceeds 35 miles per hour or if the development will generate 100 or more right-turn movements during the peak hour."
- According to Section 96-37 (Access to thoroughfare corridors) from City of Deltona ordinances - A right-turn lane with a minimum of 150 feet of storage and 100 feet of transition shall be required at each driveway when the speed limit equals or exceeds 35 miles per hour or if the development will generate 100 or more right-turn movements during the peak hour.

## **4.5 Intersection Queuing Analysis**

A PM peak hour queue analysis was conducted of the study intersection to determine the adequacy of the exiting left turn lane lengths to accommodate the projected volumes. This analysis is summarized in **Table 7**. As shown, the study intersection storage lane lengths accommodate the projected traffic except for the Normandy Boulevard and Saxon Boulevard intersection, which currently had queue storage deficiencies.

Note: The right turn lanes were not analyzed because of the right turn on red allowance which would inherently reduce queuing at these intersections

**Table 7: Intersection Queue Analysis**

Approach Movement	Data	Normandy Blvd & Saxon Blvd	Normandy Blvd & Elkam Blvd	Normandy Blvd & Graves Ave	Graves Ave & Howland Blvd
EBL	Queue (ft)	1003	N/A	N/A	56
	Speed Limit (mph)	30	N/A	35	35
	Decel Distance (ft)	145	N/A	145	145
	Total Required (ft)	1147.5	N/A	145	201
	Ext Lane Length (ft)	545	N/A	485	545
	Sufficient (Y/N)	N	N/A	Y	Y
WBL	Queue (ft)	52.5	85	183	177
	Speed Limit (mph)	30	35	35	35
	Decel Distance (ft)	145	145	145	145
	Total Required (ft)	197.5	230	327.5	322
	Ext Lane Length (ft)	180	619	562	367
	Sufficient (Y/N)	N	Y	Y	Y
NBL	Queue (ft)	400	N/A	153	100
	Speed Limit (mph)	30	35	35	35
	Decel Distance (ft)	145	145	145	145
	Total Required (ft)	545	145	297.5	245
	Ext Lane Length (ft)	280	N/A	577	732
	Sufficient (Y/N)	N	Y	Y	Y
SBL	Queue (ft)	95	35	N/A	85
	Speed Limit (mph)	30	35	N/A	35
	Decel Distance (ft)	145	145	N/A	145
	Total Required (ft)	240	180	N/A	230
	Ext Lane Length (ft)	1000	1000	N/A	N/A
	Sufficient (Y/N)	Y	Y	N/A	Y

**4.6 Proportionate Fair Share**

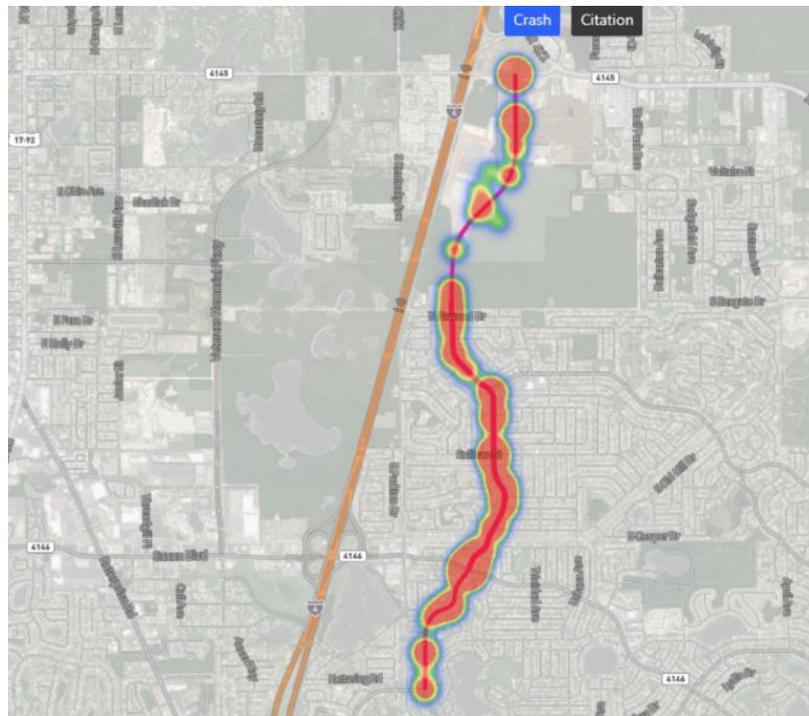
The roadway segments that are failing in the projected conditions fail during the background conditions. Therefore, as per F.S. 160.3180 3. (B) the roadways are deficient without the project under review and therefore are removed from the proportionate-share calculation. The exception to this is Graves Avenue between Normandy Boulevard and Howland Boulevard; therefore, a proportionate share agreement will be developed in coordination with Volusia County.

## 5.0 SAFETY ANALYSIS

Crash data was obtained from Volusia County Traffic Engineering and evaluated for trends. Based on review and analysis of the first harmful event and spatial data between 2019 and 2024, It was noted that the section of Normandy Boulevard adjacent to the project has less crashes compared to the rest of the corridor and that the most frequent crash types were those best corrected with improved turning provisions such as turn lanes (which are currently proposed as part of the subject project).

**Table 8: Crash Data Along Normandy Boulevard (2019 to 2024)**

Crash Type	Number	Percentage
Rear End	78	28.7%
Sideswipe	24	8.8%
Left Turn	45	16.5%
Right Turn	8	2.9%
Angle	34	12.5%
Off Road	25	9.2%
Other	58	21.3%
<b>Total</b>	<b>272</b>	<b>100.0%</b>



**Figure 3: Trip Distribution Map**

## 6.0 MULTIMODAL ASSESSMENT

An assessment was done of the immediate project site and proposed project site plans as it relates to multimodal transportation options.

Existing multimodal provisions in the area primarily includes sidewalks with striped crosswalks on internally in the adjacent subdivisions. The proposed project would further facilitate multimodal connectivity by providing on-site/site related sidewalks connectivity. In general, the site plan is consistent with the City guidelines that will encourage the following:

- Safe, adequately lit and well-maintained pathways (on-site)
- Share Road Bicycle connectivity
- Identifiable crosswalks
- Removal of natural and/or built barriers that discourage walking
- Compliance with American's with Disabilities Act requirements
- Buffering between vehicular areas and sidewalks
- Linkage to existing or future walkway and/or bikeway network and transit route

Further information on multimodal provisions is documented by the site civil engineer on the site plans.

## 7.0 STUDY CONCLUSIONS

This traffic analysis is being conducted to assess the impact of the proposed 320 apartments, 271,000 of office showroom and a Gas Station with 14 Fuel positions. The proposed development is located east of Normandy Boulevard in City of Deltona, Florida. The analysis included a determination of project trip generation, a review of existing and projected roadway and intersection capacity and a review of access operations.

The results of the traffic analysis are summarized as follows:

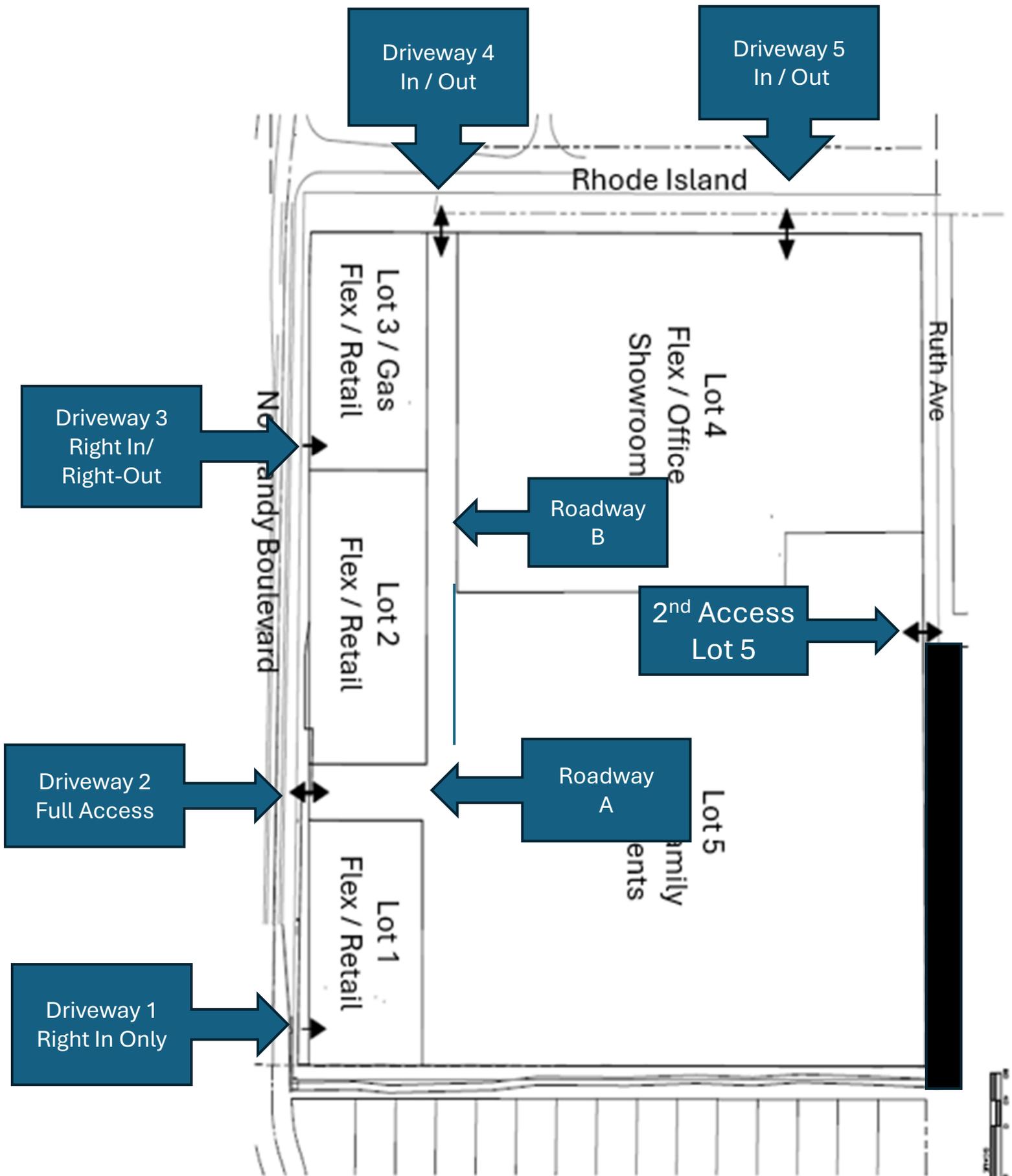
- The proposed development will generate a total of 2,787 daily trips of which 209 and 184 will occur during the AM and PM peak hour, respectively.
- Access to the site will be provided via one Full and two Right-in-only access driveways onto Normandy Boulevard. In addition, access will be provided via the proposed new roadway, Amelia Avenue/Rhode Island Avenue/Ruth Avenue.
- The analysis indicates that the study roadway segments generally currently operate adequately within their adopted Level of Service (LOS). There are some segments that are projected to fail with or without construction of the proposed project due to committed trips and background traffic growth.
- An analysis of the study intersections indicates that the study intersections currently operate adequately within their adopted Level of Service standard and are projected to continue to do so upon buildout of the proposed development.
- In summary, an exclusive 210-foot (includes a 50-foot taper) southbound left turn lane is warranted on Normandy Boulevard at Amelia Avenue/Rhode Island Avenue and at the Main Project Access. The turn lane design will be developed and coordinated by the site civil engineers.
- Per City staff, exclusive right turn lanes shall be provided at the driveways, since Normandy Blvd in the study area is a 45-mph roadway.

A proportionate share agreement will be developed in coordination with Volusia County for Graves Avenue between Normandy Boulevard and Howland Boulevard.

## **APPENDIX**

## **Appendix A: Preliminary Concept Plan**

# EXHIBIT F: Site Access / Driveways



## **Appendix B: Methodology Coordination**

## METHODOLOGY MEMORANDUM

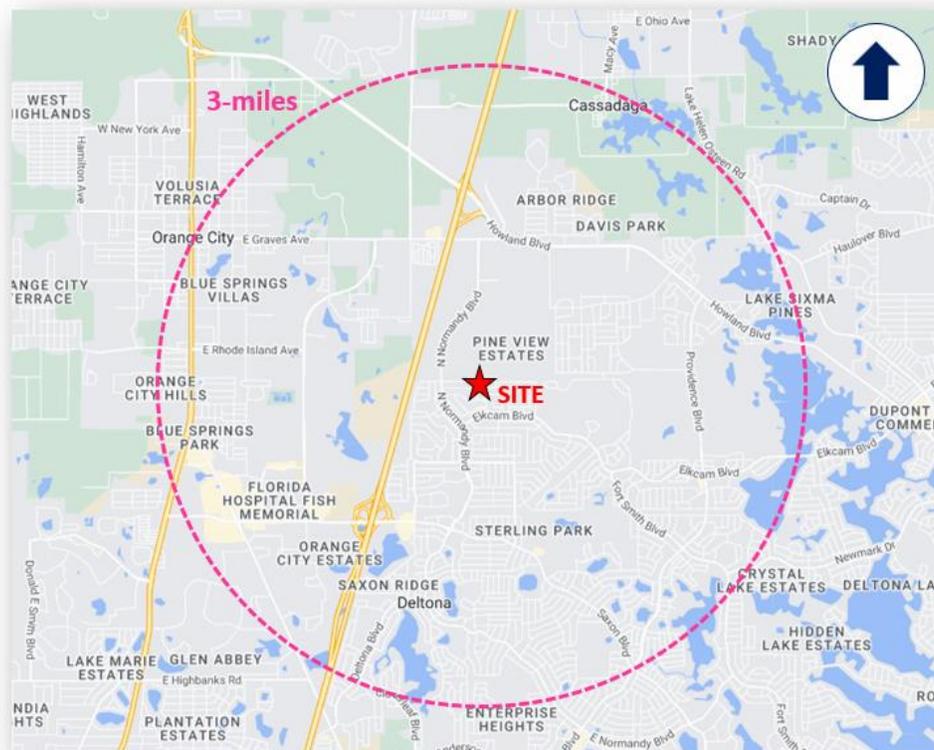
**RE: Synergy at Normandy Mixed-Use  
City of Deltona, FL**  
Traffic Impact Analysis Methodology  
08/9/2023  
Job # 22120

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The following is a methodology outline for the Traffic Impact Analysis (TIA) for the above referenced project. In general, the TIA will conform to the methodology requirements and guidelines documented by City of Deltona, Volusia County and the Florida Department of Transportation (FDOT).

### **Project Description**

The traffic analysis will be conducted to assess the impact of the proposed 320 apartments, 230.6 KSF of light warehouse and a Gas Station with 14 Fuel positions. The proposed development is located east of Normandy Boulevard in City of Deltona, Florida. **Figure 1** depicts the site location and the surrounding transportation network.



**Figure 1: Project Location Map**

**Site Access**

Access to the site will be provided via two right-in/right-out and one full access driveways onto Normandy Boulevard. **Attachment A** provides the preliminary concept plan.

**Trip Generation**

**Table 1** summarizes the trip generation analysis conducted using information published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 11<sup>th</sup> Edition* and the *Trip Generation Handbook, 3<sup>rd</sup> Edition*. The calculation revealed that the proposed development will generate a total of 2,894 daily trips of which 300 and 278 will occur during the AM and PM peak hour, respectively. The ITE Trip Generation information is included for reference in **Attachment B**.

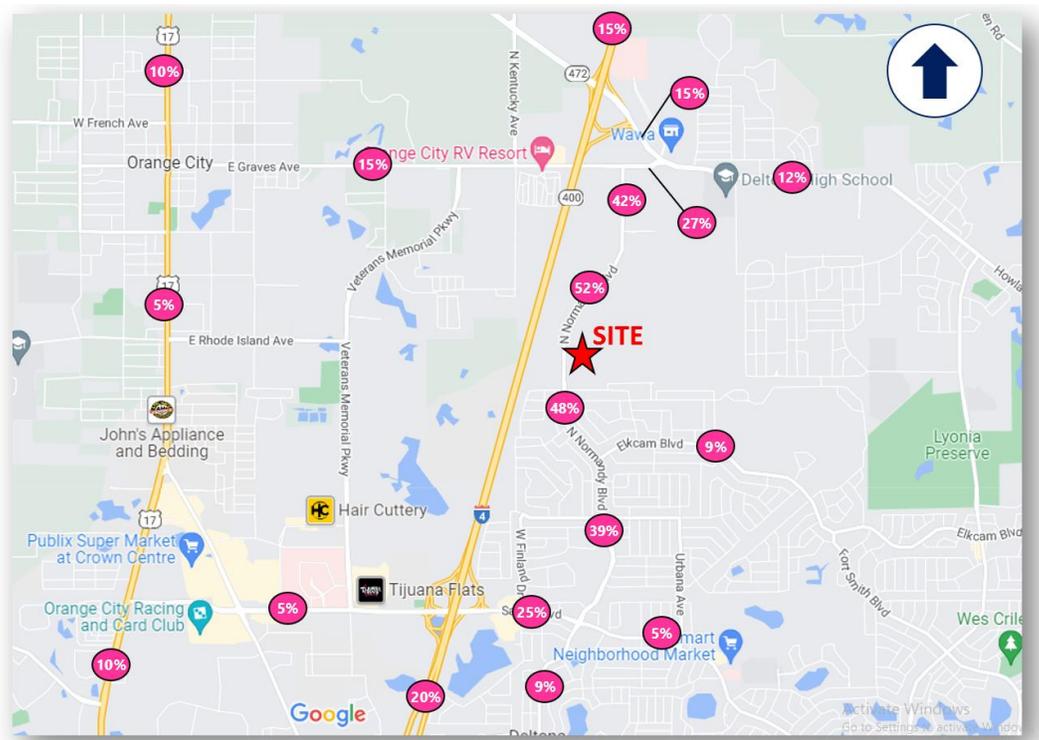
**Table 1: Trip Generation**

ITE Code	Land Use	Size	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	Enter	Exit	Total	Rate	Enter	Exit	Total
110	General Light Industrial	230.6 KSF	4.87	1,123	0.74	150	21	171	0.65	21	129	150
221	Multi-Family (Mid-Rise)	320 DUs	4.62	1,478	0.43	32	106	138	0.39	76	49	125
945	Gas Station with Convenience Market (GFA 2-4ksf)	14 FPs	265.1	3,712	16.06	113	112	225	18.42	129	129	258
Subtotal			--	6,313	--	295	239	534	--	226	307	533
<i>Internal Capture (18%)</i>			--	1,136	--	53	43	96	--	41	55	96
<i>Gas Station with Convenience Market Pass-by (75%)</i>			--	2,283	--	69	69	138	--	79	80	159
<b>New Net Trips</b>			--	<b>2,894</b>	--	<b>173</b>	<b>127</b>	<b>300</b>	--	<b>106</b>	<b>172</b>	<b>278</b>

**Trip Distribution**

A preliminary distribution of the project trips onto the study area roadways was determined using the Florida Standard Urban Area Transportation Study (FSUTMS) model developed for the adjacent approved Portland Industrial Park (see **Attachment C** for model plots). This preliminary trip distribution was adjusted using knowledge of the study area, development type, prevailing traffic flow patterns and existing traffic counts.

**Figure 2** provides the derived trip distribution developed for this project. Using this trip distribution pattern, project trips were assigned to the surrounding study roadway network.



**Figure 2: Trip Distribution Map**

### **Study Area**

The study facilities to be considered in the analysis are:

#### *Study Intersections*

- Normandy Boulevard and Saxon Boulevard
- Normandy Boulevard and Elkcarn Boulevard
- Normandy Boulevard and Graves Avenue
- Graves Avenue and Howland Boulevard
- Normandy Boulevard and Amelia Avenue/Rhode Island Avenue (Full)
- Normandy Boulevard and Project Access 1 (North – Right-in/Right-out)
- Normandy Boulevard and Project Access 2 (Middle - Full)
- Normandy Boulevard and Project Access 3 (South – Right-in/Right-out)

#### *Study Segments*

- Graves Avenue
  - Veteran's Memorial Parkway to Kentucky Avenue
  - Kentucky Avenue to Normandy Boulevard
  - Normandy Boulevard to Howland Boulevard

- Saxon Boulevard
  - Veterans Memorial Parkway to FDOT Park & Ride
  - FDOT Park & Ride to I-4
  - I-4 to Finland Drive
  - Finland Drive to Normandy Boulevard
  
- Howland Boulevard
  - I-4/SR 472 to Wolf Pack Run
  - Wolf Pack Run to Catalina Boulevard
  
- Normandy Boulevard
  - Graves Avenue to Rhode Island
  - Rhode Island to Elkcam Boulevard
  - Elkcam Boulevard to Saxon Boulevard
  - Saxon Boulevard to Deltona Boulevard
  
- US 17/92
  - DeBary Plantation Blvd to Saxon Boulevard
  - Saxon Boulevard to Enterprise Road
  - Enterprise Road to Rhode Island Avenue
  - Rhode Island Avenue to Graves Avenue
  - Graves Avenue to New York Avenue

The significance analysis is provided in Table The critical and near critical segments near the site are provided in **Attachment D**.

### **Growth Rate**

A historical trend analysis was conducted based on the Annual Average Daily Traffic (AADT) data obtained from the *FDOT Traffic Online* website in the vicinity of the project (see **Attachment E**). Based on this historical trend analysis, an average annual growth rate of 1.96% was calculated. Therefore, a minimum annual growth rate of 2% will be utilized in the study.

**Table 2: Roadway Segment Significance Analysis**

No.	Roadway	Segment	Lanes	LOS Stnd	PH Dir Capacity	Trip Dist	Project Vol	% of Capacity	Signif at 3%
99	Graves Ave	VMP to Kentucky Ave	4	E	1,620	15%	26	1.60%	No
100	Graves Ave	Kentucky to Normandy	4	E	1,620	52%	55	3.40%	Yes
101	Graves Ave	Normandy Blvd to Howland Blvd	4	E	2,740	42%	72	2.63%	No
102	Saxon Blvd	VMP to FDOT Park n Ride	4	E	5,140	5%	5	0.10%	No
103	Saxon Blvd	Park n Ride to I-4	4	E	5,140	55%	95	1.85%	No
104	Saxon Blvd	I-4 to Finland Dr	4	E	4,280	25%	27	0.63%	No
105	Saxon Blvd	Finland Dr to Normandy Blvd	4	E	3,410	39%	67	1.96%	No
121	Howland Blvd	I-4 to Wolf Pack Run	4	E	3,410	27%	29	0.85%	No
122	Howland Blvd	Wolf Pack Run to Catalina Blvd	4	E	3,410	12%	21	0.62%	No
189	Normandy Blvd	Graves Ave to Rhode Island	4	E	1,150	25%	27	2.35%	No
190	Normandy Blvd	Rhode Island to Elkcam Blvd	4	E	2,630	39%	67	2.55%	No
191	Normandy Blvd	Elkcam Blvd to Saxon Blvd	4	E	2,630	52%	55	2.09%	No
192	Normandy Blvd	Saxon Blvd to Deltona Blvd	4	E	2,630	52%	89	3.38%	Yes
53	US 17/92	DeBary Plantation Blvd to Saxon Blvd.	4	E	2,000	5%	9	0.45%	No
54	US 17/92	Saxon Blvd. to Enterprise Rd.	4	E	2,000	5%	5	0.25%	No
55	US 17/92	Enterprise Rd. to Rhode Island Ave.	4	E	2,000	5%	9	0.45%	No
56	US 17/92	Rhode Island Ave. to Graves Ave.	4	E	2,000	15%	16	0.80%	No
57	US 17/92	Graves Ave. to New York Ave.	4	E	2,000	10%	17	0.85%	No

Note: (1) Volusia Vested Trips 2022 table used for segments No. 99 to 192; (2) VolusiaAADTs2021 table used for segments 53 to 57

### **Projected Conditions Analysis**

The projected conditions analysis will be conducted within the following framework:

- **Counts:** Roadway and intersection counts will be obtained during the AM and PM peak period, as applicable. These counts will be adjusted using a peak season correction factor as necessary.
- **Growth Factors:** Growth factors, derived from historical traffic volume data, will be applied to existing traffic counts to develop future background traffic volumes.
- **Traffic Volumes:** Project traffic volumes will be added to the future background traffic volumes to obtain total future traffic volumes.
- **Analysis Periods:** Analyses will be performed for existing conditions, future background conditions and future background plus project trips (i.e. total traffic/buildout) conditions.
- **Roadway Analysis:** Roadways segments will be evaluated using the applicable Volusia County and FDOT service volume capacities, as applicable.
- **Intersection Analysis:** Intersection capacity analysis will be performed using the latest operational analysis procedures documented in the *Highway Capacity Manual* as applied using the Synchro software during the AM and PM peak period.

- *Turn Lane Analysis:* Turn Lane analysis (based on queues) will be performed for all the site access driveways and will be done in accordance with Volusia County Land Development Code.
- *Buildout Year:* The buildout year of the project is 2025.
- *Mitigation and Concurrency:* Concurrency strategies/transportation improvement to mitigate transportation deficiencies, if any, will be identified in the traffic study.

### **Multimodal Assessment**

An assessment of multimodal options will be documented for: Transit, Bicycle and Pedestrian.

### **Traffic Impact Study Report**

The traffic report prepared will summarize the study procedures, data, analysis, and recommendations.

### **Volusia County TIA Methodology Checklist**

As required by the County this checklist was prepared and is provided in **Attachment F**.

END

**Attachment A**  
***Preliminary Concept Plan***



**Attachment B**  
***Trip Generation Information***

# Land Use: 110

## General Light Industrial

---

### Description

A light industrial facility is a free-standing facility devoted to a single use. The facility has an emphasis on activities other than manufacturing and typically has minimal office space. Typical light industrial activities include printing, material testing, and assembly of data processing equipment. Industrial park (Land Use 130) and manufacturing (Land Use 140) are related uses.

### Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 2000s, and the 2010s in Colorado, Connecticut, Indiana, New Jersey, New York, Oregon, Pennsylvania, and Texas.

### Source Numbers

106, 157, 174, 177, 179, 184, 191, 251, 253, 286, 300, 611, 874, 875, 912

# General Light Industrial (110)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
On a: Weekday

**Setting/Location: General Urban/Suburban**

Number of Studies: 37

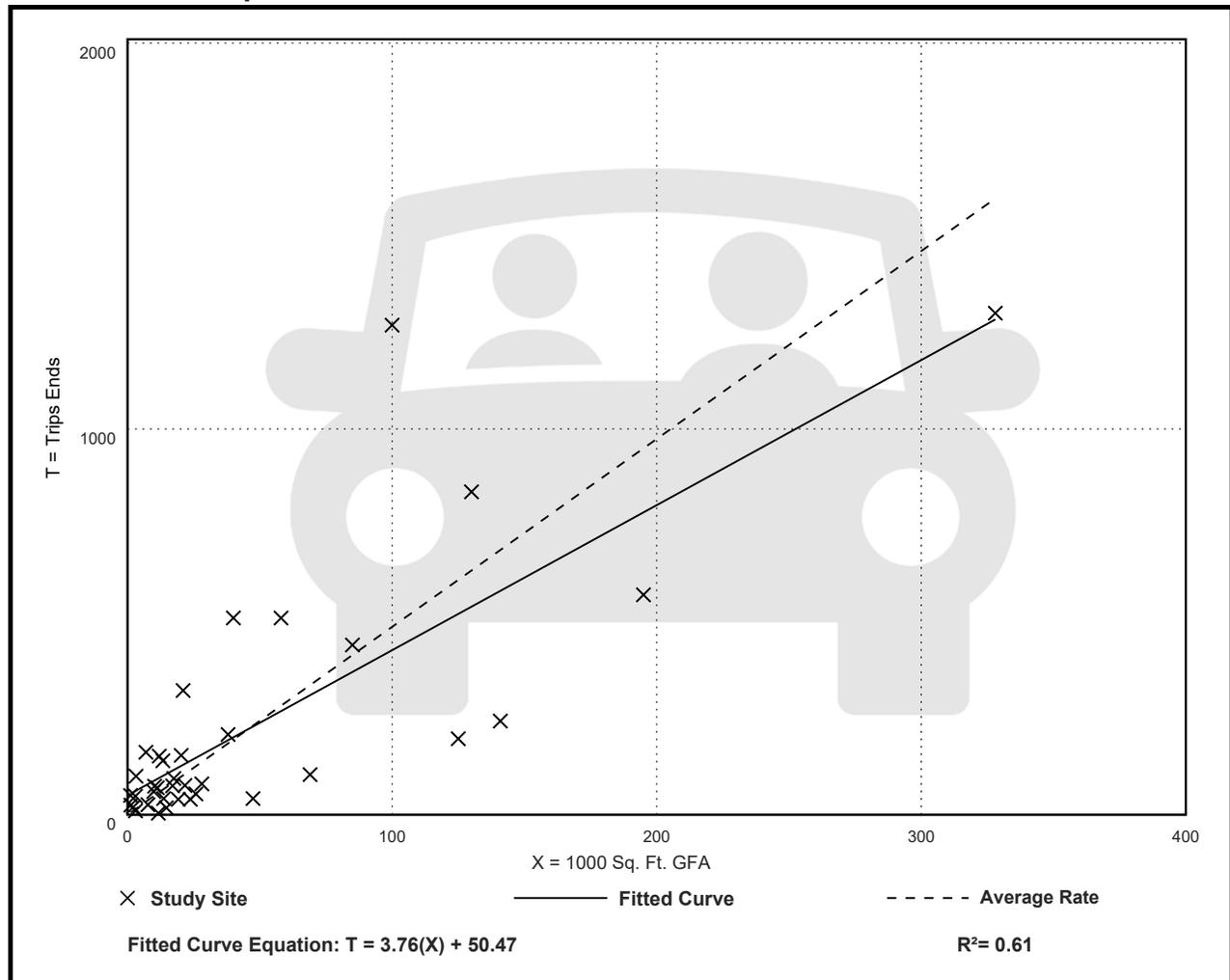
Avg. 1000 Sq. Ft. GFA: 45

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.87	0.34 - 43.86	4.08

## Data Plot and Equation



# General Light Industrial (110)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**

**On a: Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 7 and 9 a.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 41

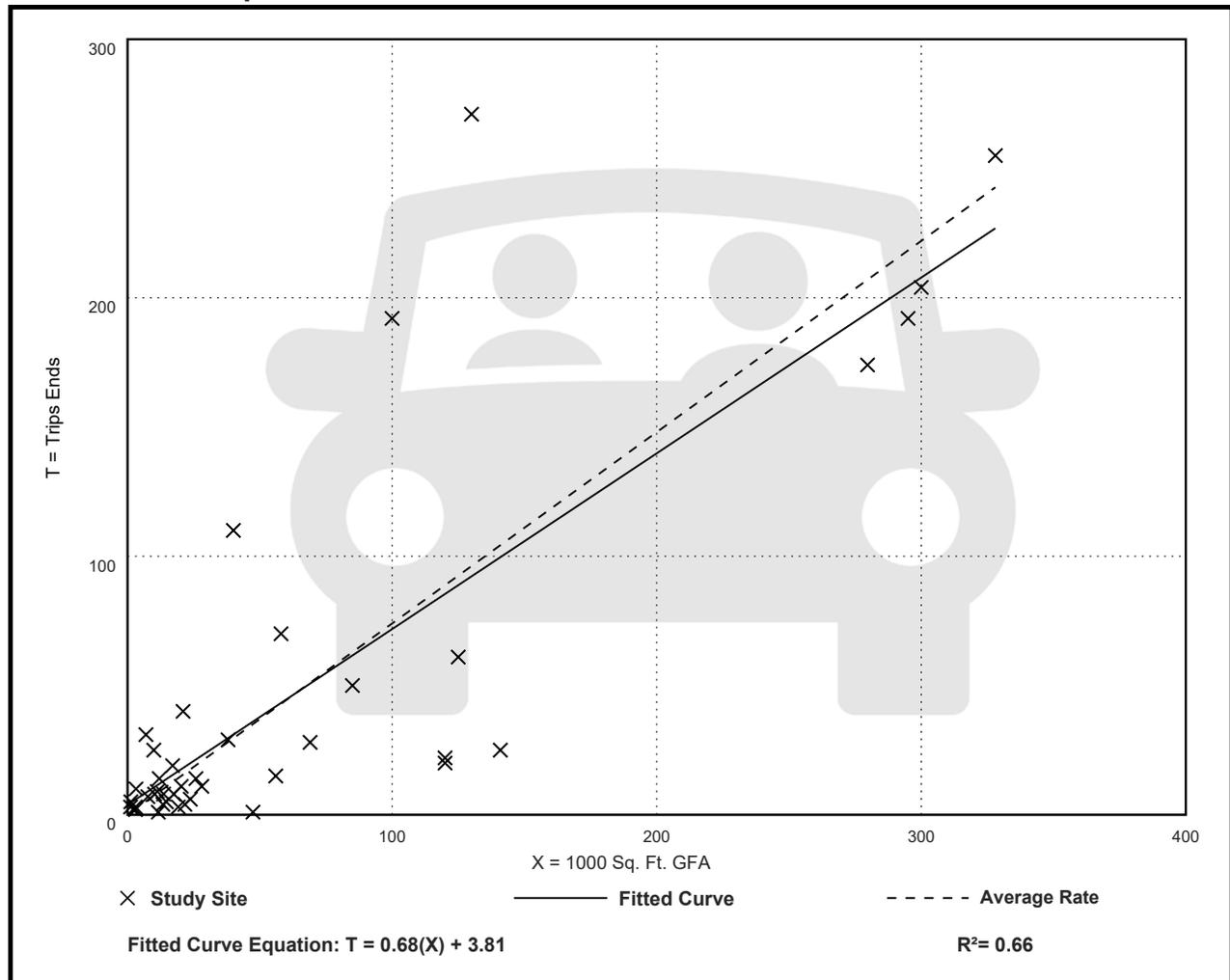
Avg. 1000 Sq. Ft. GFA: 65

Directional Distribution: 88% entering, 12% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.74	0.02 - 4.46	0.61

## Data Plot and Equation



# General Light Industrial (110)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**

**On a: Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 40

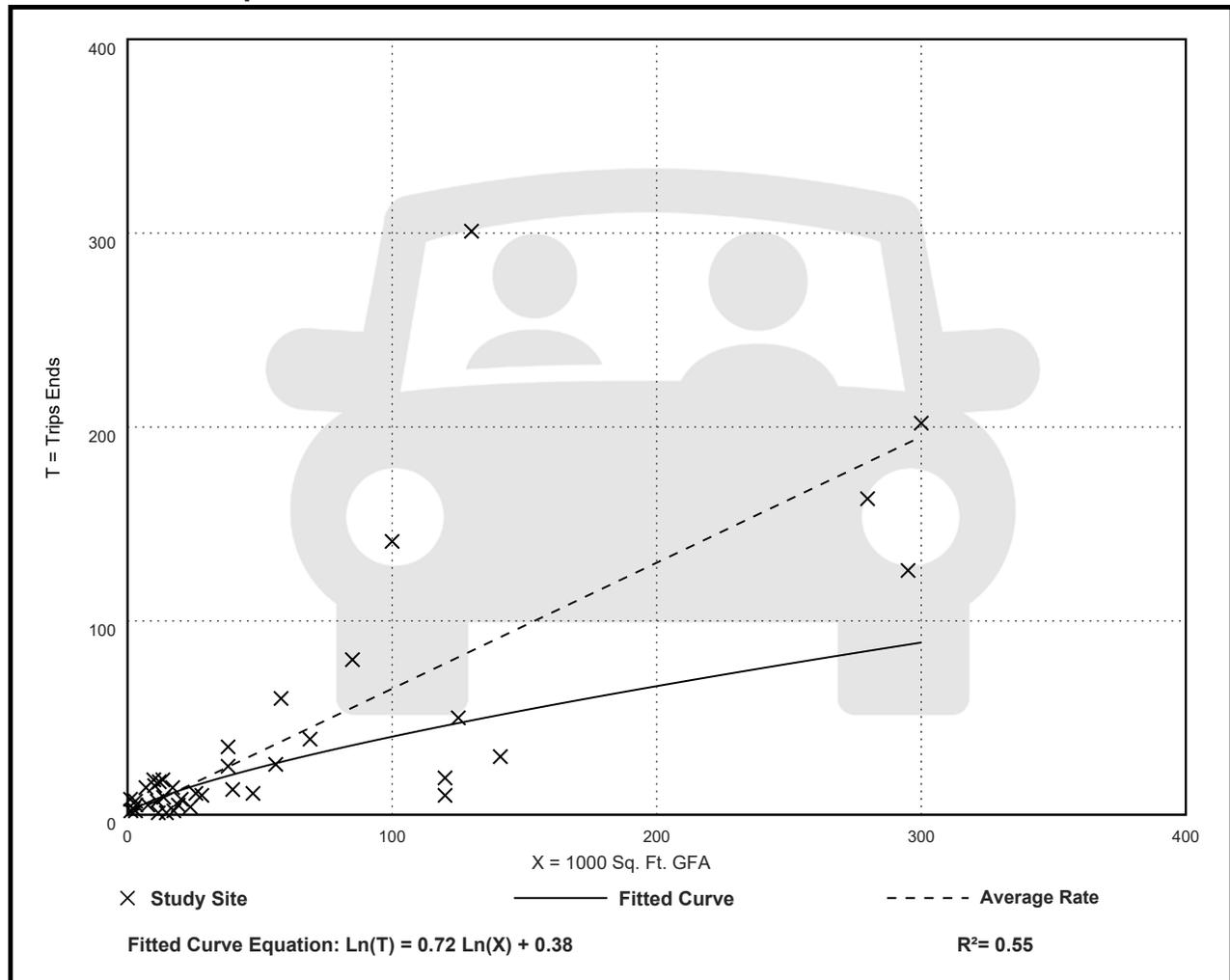
Avg. 1000 Sq. Ft. GFA: 58

Directional Distribution: 14% entering, 86% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.65	0.07 - 7.02	0.56

## Data Plot and Equation



# Land Use: 221

## Multifamily Housing (Mid-Rise)

---

### Description

Mid-rise multifamily housing includes apartments and condominiums located in a building that has between four and 10 floors of living space. Access to individual dwelling units is through an outside building entrance, a lobby, elevator, and a set of hallways.

Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (mid-rise) (Land Use 226), and mid-rise residential with ground-floor commercial (Land Use 231) are related land uses.

### Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

### Additional Data

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.5 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

***It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).***

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, Montana, New Jersey, New York, Ontario (CAN), Oregon, Utah, and Virginia.

### Source Numbers

168, 188, 204, 305, 306, 321, 818, 857, 862, 866, 901, 904, 910, 949, 951, 959, 963, 964, 966, 967, 969, 970, 1004, 1014, 1022, 1023, 1025, 1031, 1032, 1035, 1047, 1056, 1057, 1058, 1071, 1076

# Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 11

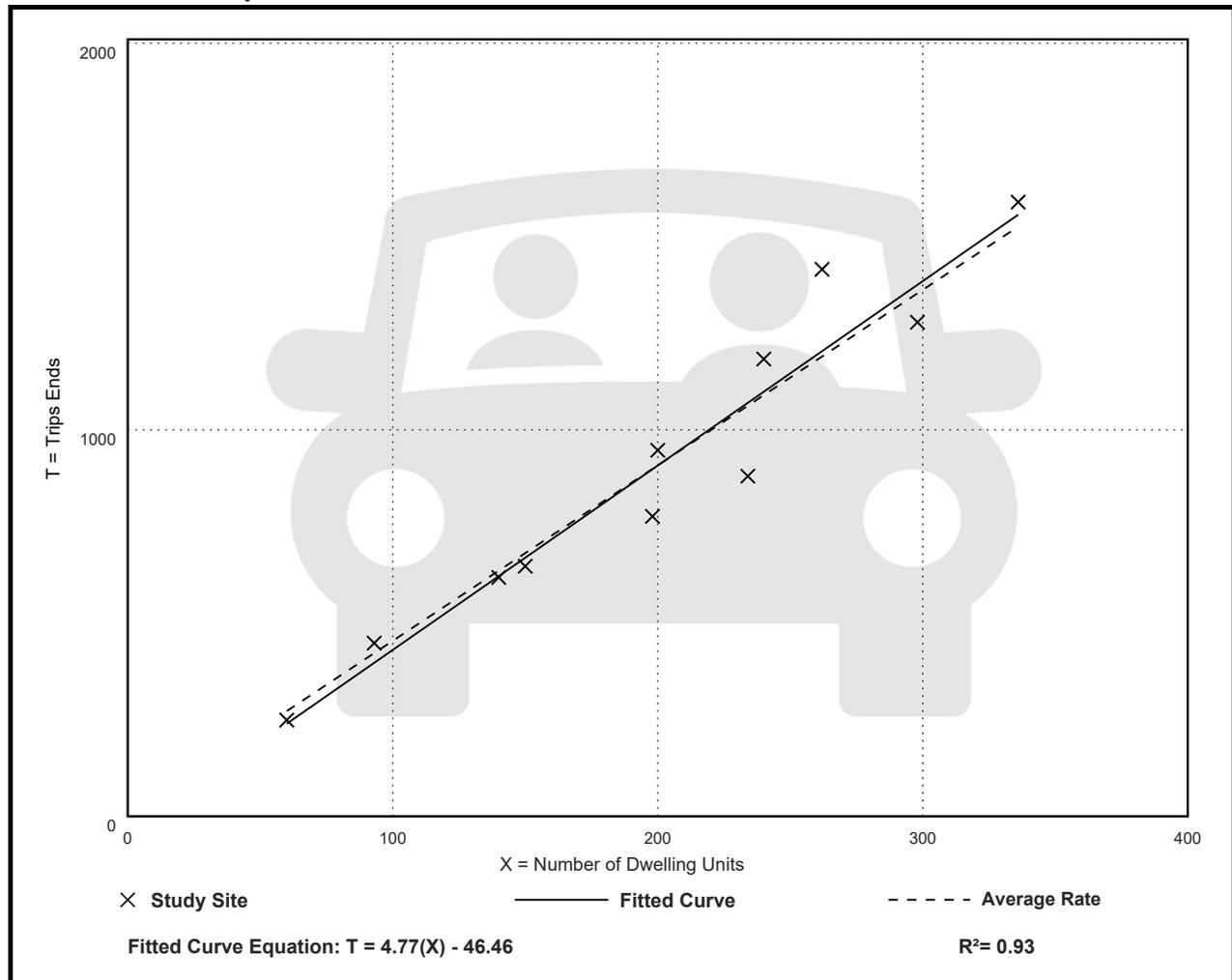
Avg. Num. of Dwelling Units: 201

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

## Data Plot and Equation



# Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

## Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 30

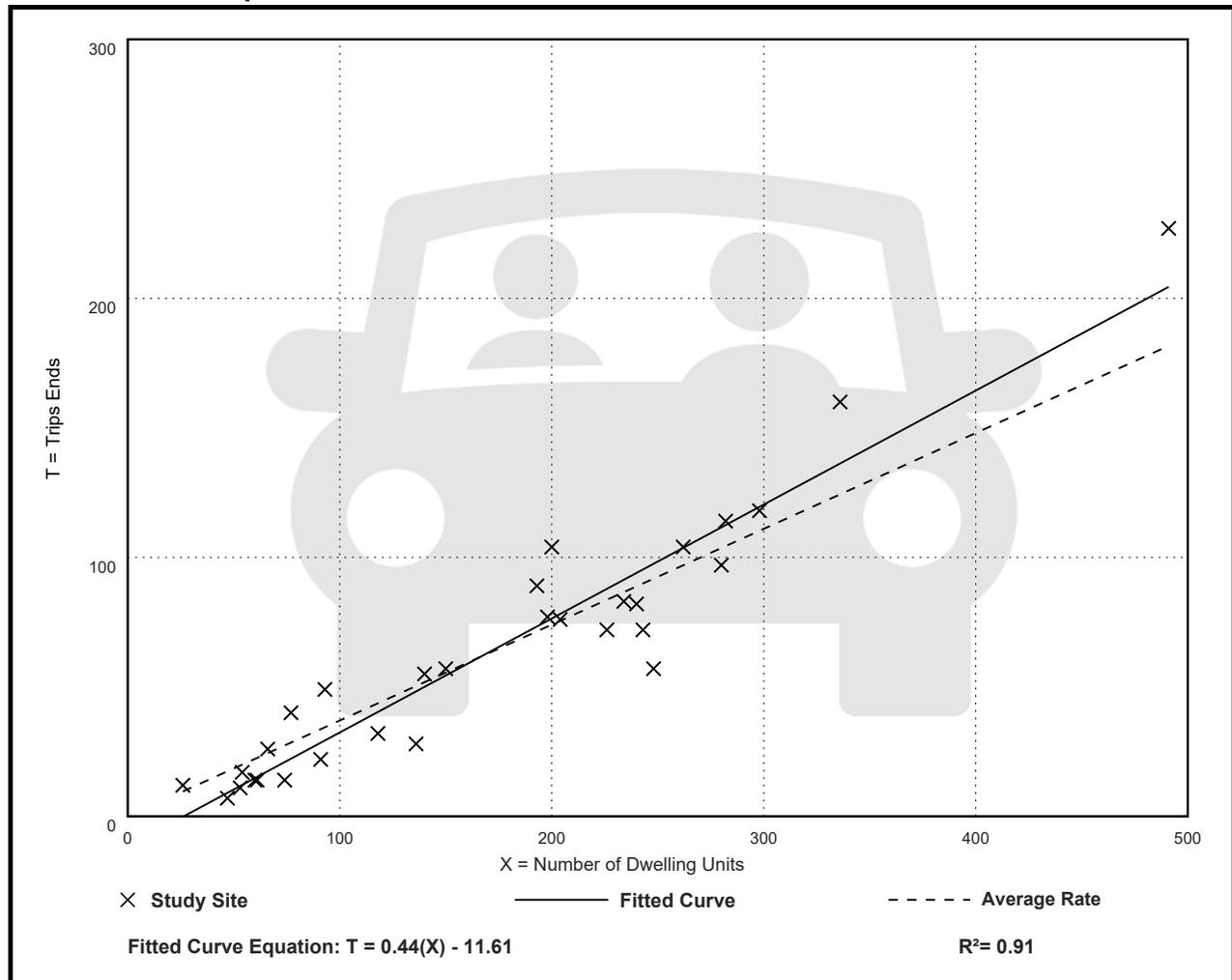
Avg. Num. of Dwelling Units: 173

Directional Distribution: 23% entering, 77% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

## Data Plot and Equation



# Multifamily Housing (Mid-Rise) Not Close to Rail Transit (221)

## Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 31

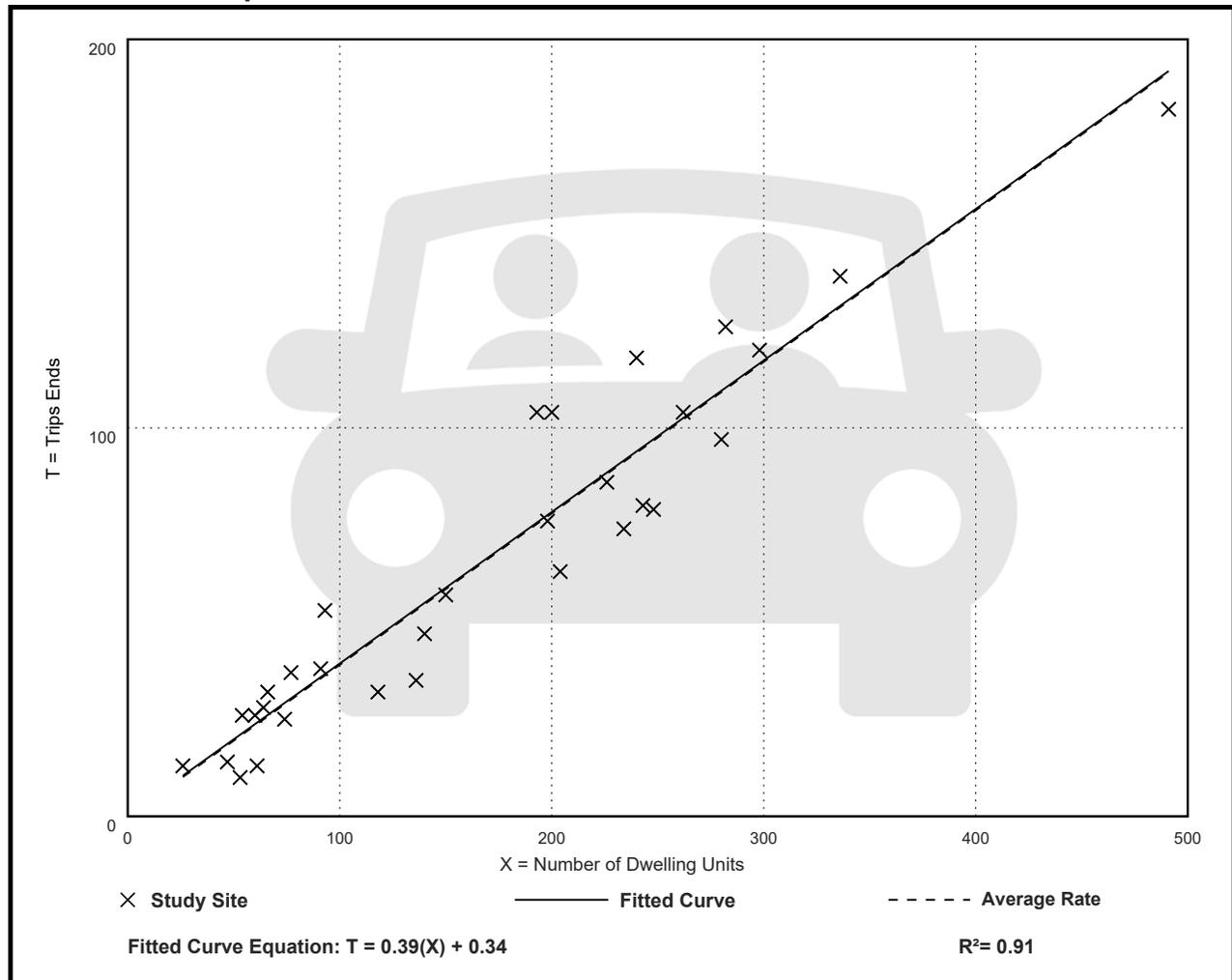
Avg. Num. of Dwelling Units: 169

Directional Distribution: 61% entering, 39% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

## Data Plot and Equation



# Land Use: 945

## Convenience Store/Gas Station

---

### Description

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and pre-made sandwiches are also commonly sold at a convenience store. Made-to-order food orders are sometimes offered. Some stores offer limited seating.

The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

Convenience store (Land Use 851), gasoline/service station (Land Use 944), and truck stop (Land Use 950) are related uses.

### Land Use Subcategory

Multiple subcategories were added to this land use to allow for multi-variable evaluation of sites with single-variable data plots. All study sites are assigned to one of three subcategories, based on the number of vehicle fueling positions (VFP) at the site: between 2 and 8 VFP, between 9 and 15 VFP, and between 16 and 24 VFP. For each VFP range subcategory, data plots are presented with GFA as the independent variable for all time periods and trip types for which data are available. The use of both GFA and VFP (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

Further, the study sites were also assigned to one of three other subcategories, based on the gross floor area (GFA) of the convenience store at the site: between 2,000 and 4,000 square feet, between 4,000 and 5,500 square feet, and between 5,500 and 10,000 square feet. For each GFA subcategory range, data plots are presented with VFP as the independent variable for all time periods and trip types for which data are available. The use of both VFP and GFA (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

When analyzing the convenience store/gas station land use with each combination of GFA and VFP values as described above, the two sets of data plots will produce two estimates of site-generated trips. Both values can be considered when determining a site trip generation estimate.

Data plots are also provided for three additional independent variables: AM peak hour traffic on adjacent street, PM peak hour traffic on adjacent street, and employees. These independent variables are intended to be analyzed as single independent variables and do not have sub-categories associated with them. Within the data plots and within the ITETripGen web app, these plots are found under the land use subcategory “none.”

### **Additional Data**

***ITE recognizes there are existing convenience store/gas station sites throughout North America that are larger than the sites presented in the data plots. However, the ITE database does not include any site with more than 24 VFP or any site with gross floor area greater than 10,000 square feet. Submission of trip generation data for larger sites is encouraged.***

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), Arkansas, California, Connecticut, Delaware, Florida, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, and Wisconsin.

### **Source Numbers**

221, 245, 274, 288, 300, 340, 350, 351, 352, 355, 359, 385, 440, 617, 718, 810, 813, 844, 850, 853, 864, 865, 867, 869, 882, 883, 888, 904, 926, 927, 936, 938, 954, 960, 962, 977, 1004, 1024, 1025, 1027, 1052

# Convenience Store/Gas Station - GFA (2-4k) (945)

**Vehicle Trip Ends vs: Vehicle Fueling Positions**  
On a: Weekday

**Setting/Location: General Urban/Suburban**

Number of Studies: 48

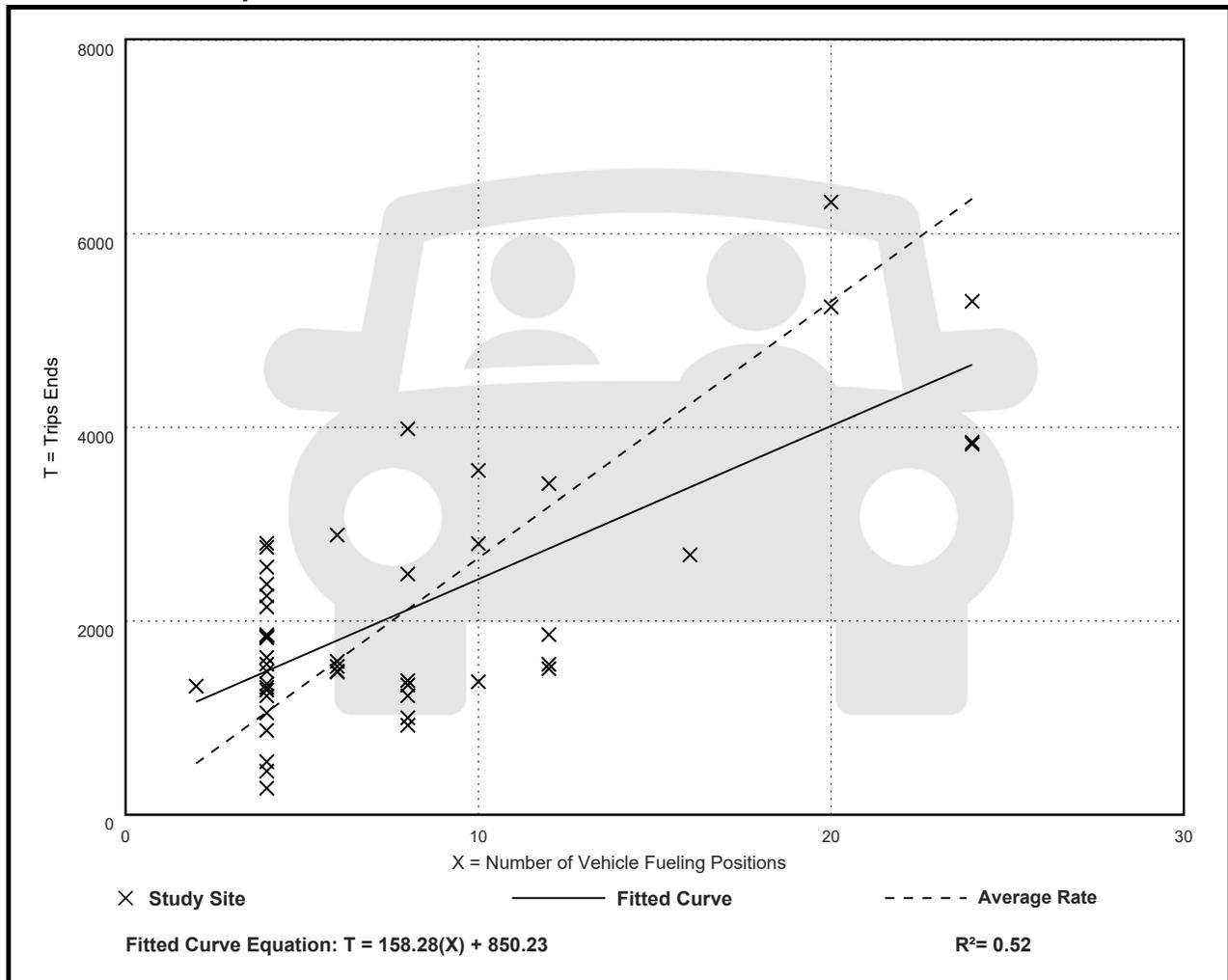
Avg. Num. of Vehicle Fueling Positions: 8

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
265.12	68.50 - 701.00	142.37

## Data Plot and Equation



# Convenience Store/Gas Station - GFA (2-4k) (945)

## Vehicle Trip Ends vs: Vehicle Fueling Positions

On a: Weekday,  
Peak Hour of Adjacent Street Traffic,  
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 76

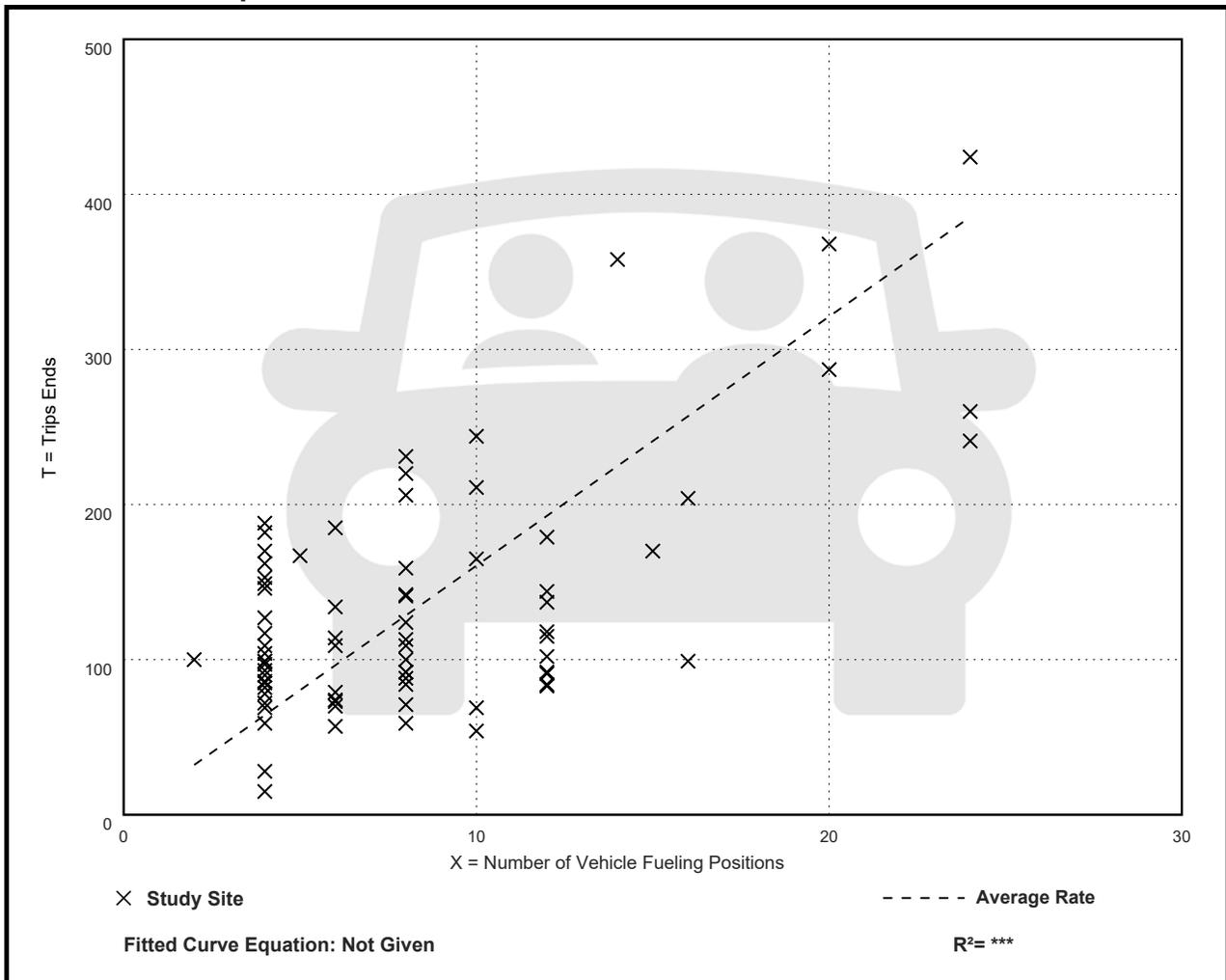
Avg. Num. of Vehicle Fueling Positions: 8

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
16.06	3.75 - 50.00	8.79

## Data Plot and Equation



# Convenience Store/Gas Station - GFA (2-4k) (945)

## Vehicle Trip Ends vs: Vehicle Fueling Positions

On a: **Weekday,**

**Peak Hour of Adjacent Street Traffic,**

**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 93

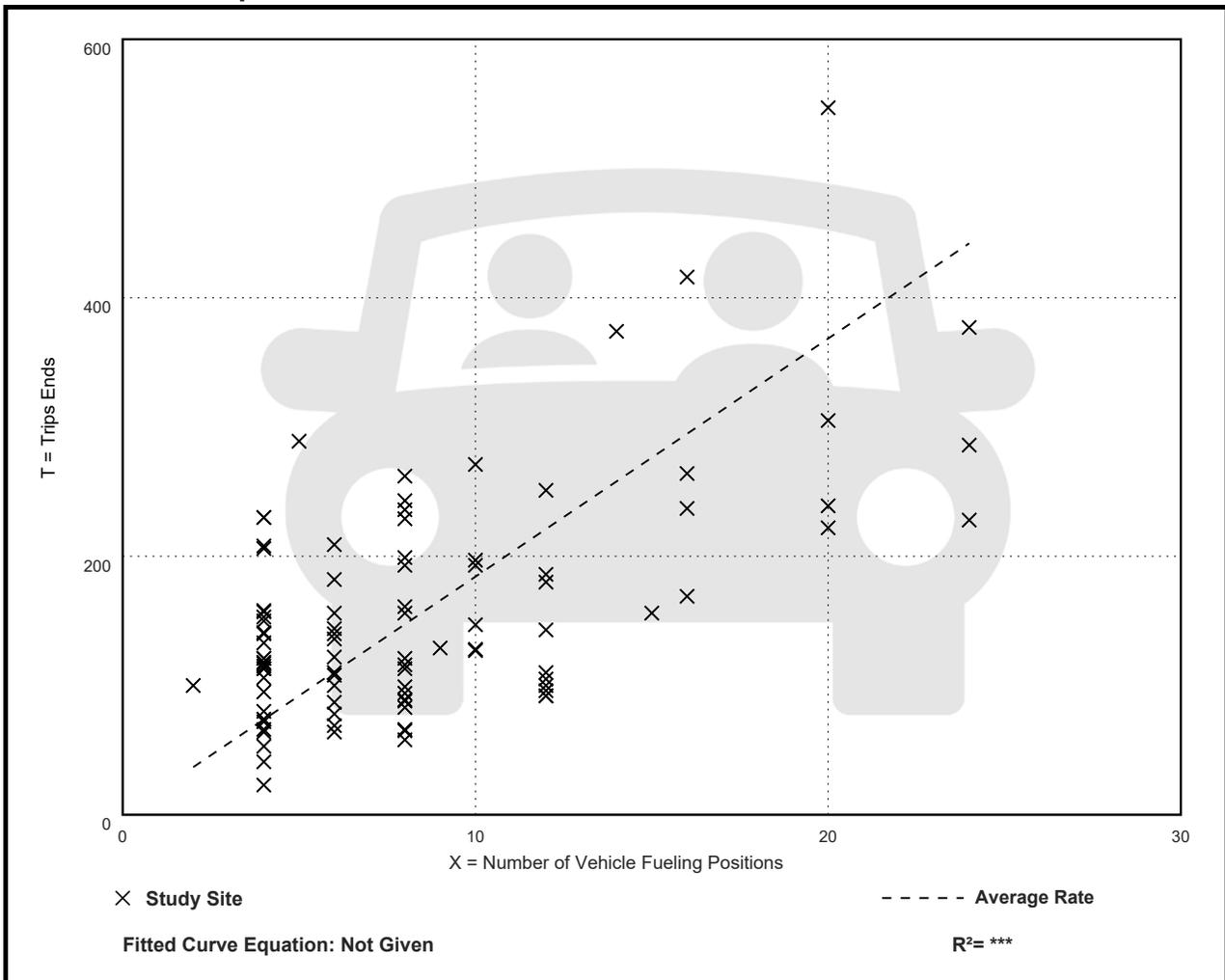
Avg. Num. of Vehicle Fueling Positions: 8

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
18.42	5.75 - 57.80	10.16

## Data Plot and Equation



**Vehicle Pass-By Rates by Land Use**

Source: ITE Trip Generation Manual, 11th Edition

Land Use Code	945									
Land Use	Convenience Store/Gas Station									
Setting	General Urban/Suburban									
Time Period	Weekday PM Peak Period									
# Data Sites	12 Sites with between 2 and 8 VFP					28 Sites with between 9 and 20 VFP				
Average Pass-By Rate	56% for Sites with between 2 and 8 VFP					75% for Sites with between 9 and 20 VFP				
Pass-By Characteristics for Individual Sites										
GFA (000)	VFP	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
						Primary (%)	Diverted (%)	Total (%)		
2.1	8	Maryland	1992	31	52	13	35	48	1785	25
2.1	6	Maryland	1992	30	53	20	27	47	1060	25
2.2	< 8	Indiana	1993	115	48	16	36	52	820	2
2.3	< 8	Kentucky	1993	67	57	16	27	43	1954	2
2.3	6	Maryland	1992	55	40	11	49	60	2760	25
2.4	< 8	Kentucky	1993	—	58	13	29	42	2655	2
2.6	< 8	Kentucky	1993	68	67	15	18	33	950	2
2.8	< 8	Kentucky	1993	—	62	11	27	38	2875	2
3	< 8	Indiana	1993	80	65	15	20	35	1165	2
3.6	< 8	Kentucky	1993	60	56	17	27	44	2505	2
3.7	< 8	Kentucky	1993	70	61	16	23	39	2175	2
4.2	< 8	Kentucky	1993	61	58	26	16	42	2300	2
4.694	12	Maryland	2000	—	78	—	—	22	3549	30
4.694	12	Maryland	2000	—	67	—	—	33	2272	30
4.694	12	Maryland	2000	—	66	—	—	34	3514	30
4.848	12	Virginia	2000	—	71	—	—	29	2350	30
5.06	12	Pennsylvania	2000	—	91	—	—	9	4181	30
5.242	12	Virginia	2000	—	70	—	—	30	2445	30
5.242	12	Virginia	2000	—	56	—	—	44	950	30
5.488	12	Delaware	2000	—	73	—	—	27	—	30
5.5	12	Pennsylvania	2000	—	84	—	—	16	4025	30
4.694	16	Maryland	2000	—	89	—	—	11	2755	30
4.694	16	Delaware	2000	—	73	—	—	27	1858	30
4.694	16	Delaware	2000	—	59	—	—	41	1344	30
4.694	16	Delaware	2000	—	72	—	—	28	3434	30
4.694	16	New Jersey	2000	—	81	—	—	19	1734	30
4.694	20	Delaware	2000	—	76	—	—	24	1616	30
4.848	16	Virginia	2000	—	67	—	—	33	2,954	30
4.848	16	Virginia	2000	—	78	—	—	22	3086	30
4.848	16	Virginia	2000	—	83	—	—	17	4143	30
4.848	16	Virginia	2000	—	73	—	—	27	2534	30
4.993	16	Pennsylvania	2000	—	72	—	—	28	2917	30
5.094	16	New Jersey	2000	—	86	—	—	14	1730	30
5.5	16	Pennsylvania	2000	—	90	—	—	10	2616	30
5.543	16	Pennsylvania	2000	—	87	—	—	13	2363	30
5.565	16	Pennsylvania	2000	—	81	—	—	19	2770	30
5.565	16	Pennsylvania	2000	—	76	—	—	24	3362	30
5.565	16	New Jersey	2000	—	61	—	—	39	1713	30
5.565	16	New Jersey	2000	—	86	—	—	14	1721	30
5.565	16	New Jersey	2000	---	81	---	---	19	2227	30

**NCHRP 684 Internal Trip Capture Estimation Tool**

<b>Project Name:</b>	Normandy Mixed-Use	<b>Organization:</b>	PTG
<b>Project Location:</b>	City of Deltona	<b>Performed By:</b>	PTG
<b>Scenario Description:</b>	Full Buildout	<b>Date:</b>	3/31/2023
<b>Analysis Year:</b>	n/a	<b>Checked By:</b>	PTG
<b>Analysis Period:</b>	PM Street Peak Hour	<b>Date:</b>	3/31/2023

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

Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	945	14	FPs	258	129	129
Restaurant				0		
Cinema/Entertainment				0		
Residential	221	320	DUs	125	76	49
Hotel				0		
All Other Land Uses <sup>2</sup>	110	231	KSF	150	21	129
				533	226	307

**Table 2-P: Mode Split and Vehicle Occupancy Estimates**

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

**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		0	0	34	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	13	0	0		0
Hotel	0	0	0	0	0	

**Table 5-P: Computations Summary**

	Total	Entering	Exiting
All Person-Trips	533	226	307
Internal Capture Percentage	18%	21%	15%
External Vehicle-Trips <sup>5</sup>	439	179	260
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	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	10%	26%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	45%	27%
Hotel	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

<sup>6</sup>Person-Trips

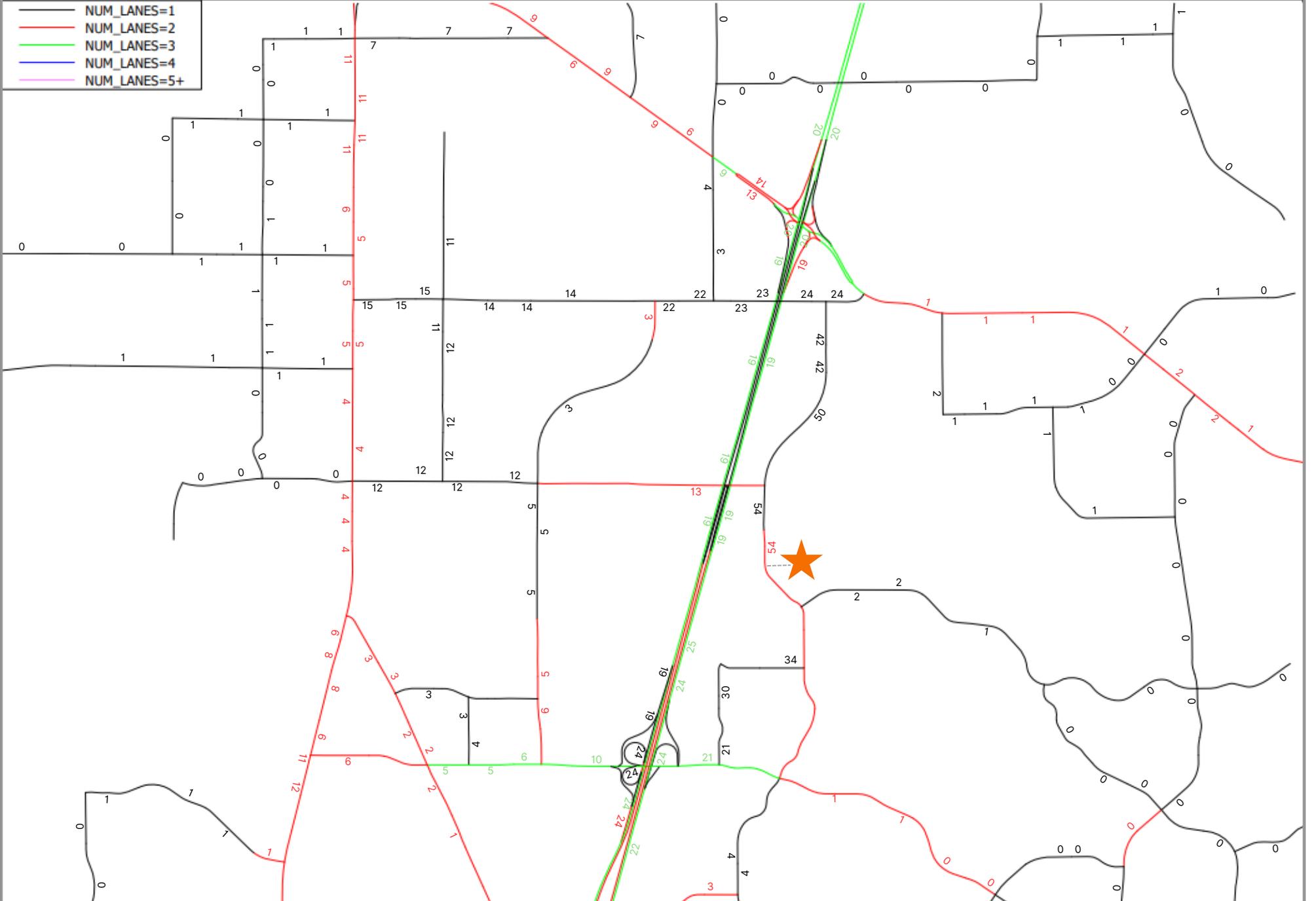
\*Indicates computation that has been rounded to the nearest whole number.

**Attachment C**  
***Model Plots***

# Year 2025 - CFRPM 7

## Trip Distribution

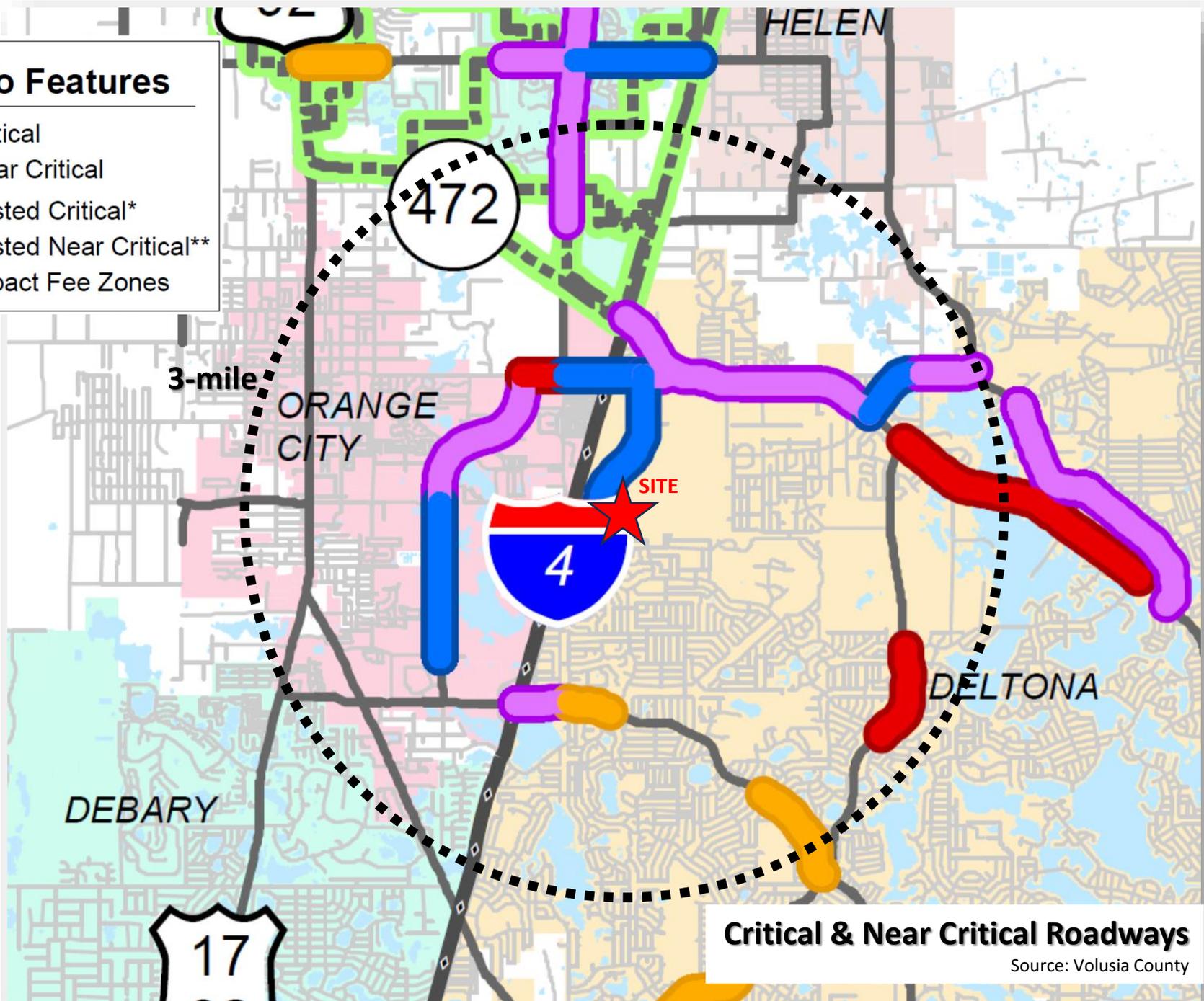
- NUM\_LANES=1
- NUM\_LANES=2
- NUM\_LANES=3
- NUM\_LANES=4
- NUM\_LANES=5+



**Attachment D**  
***Critical and Not Critical Segments***

## Key To Features

- Critical
- Near Critical
- Vested Critical\*
- Vested Near Critical\*\*
- Impact Fee Zones



## Critical & Near Critical Roadways

Source: Volusia County

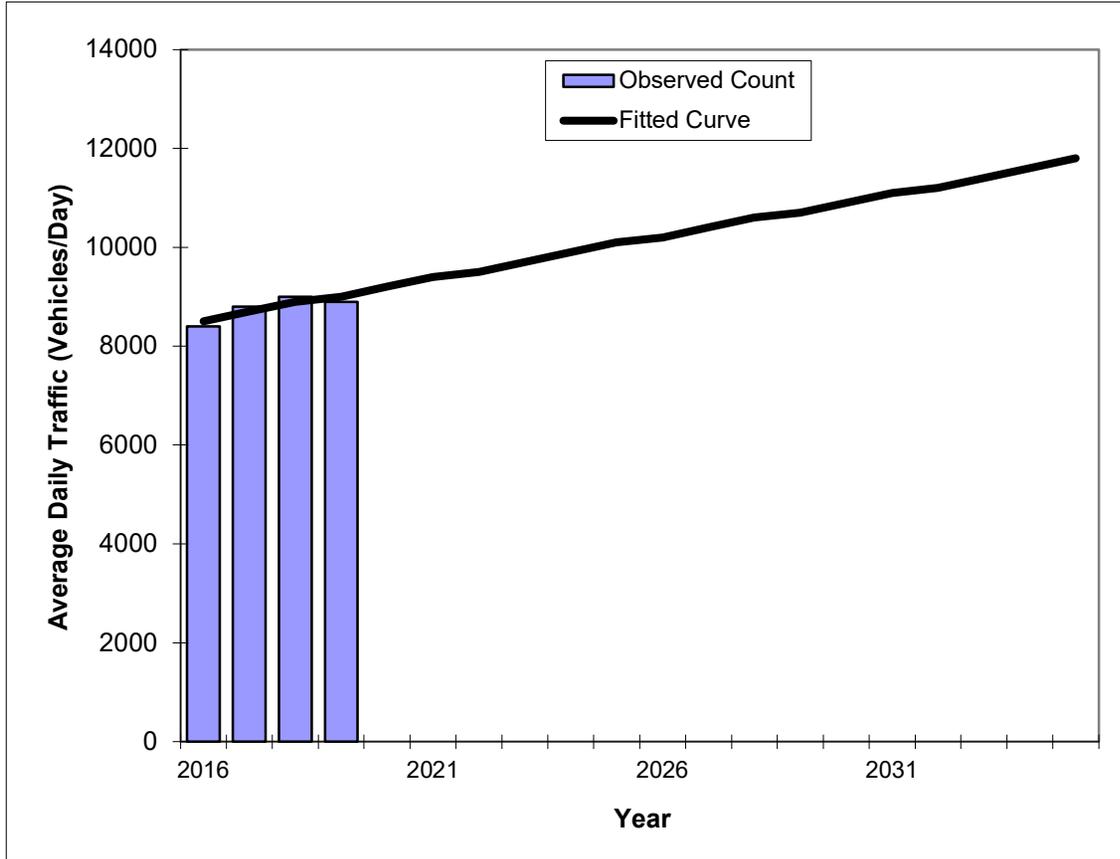
**Attachment E**  
***Growth Rate***

## Traffic Trends - V3.0

### NORMANDY BLVD -- N OF ELKCAM BLVD

FIN#	0
Location	1

County:	Orange (75)
Station #:	750592
Highway:	NORMANDY BLVD



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2016	8400	8500
2017	8800	8700
2018	9000	8900
2019	8900	9000
<b>2023 Opening Year Trend</b>		
2023	N/A	9700
<b>2024 Mid-Year Trend</b>		
2024	N/A	9900
<b>2026 Design Year Trend</b>		
2026	N/A	10200
<b>TRANPLAN Forecasts/Trends</b>		

** Annual Trend Increase:	170
Trend R-squared:	69.64%
Trend Annual Historic Growth Rate:	1.96%
Trend Growth Rate (2019 to Design Year):	1.90%
Printed:	04-Apr-23
<b>Straight Line Growth Option</b>	

\*Axle-Adjusted

**Attachment F**  
***TIA Methodology Checklist***

# TIA METHODOLOGY SUBMISSION CHECKLIST

**Project Name:** Normandy Mixed-Use

**Location:** City of Deltona

	DESCRIPTION	INFORMATION INCLUDED		
		YES	NO	Remarks <sup>1</sup>
TRANSPORTATION IMPACT ANALYSIS METHODOLOGY	Type of TIA Methodology: <input type="checkbox"/> COMP PLAN <input checked="" type="checkbox"/> REZONING <input checked="" type="checkbox"/> SITE PLAN	Y		
	LAND USES being analyzed (# of units, sq. feet, etc.)	Y		320 Apartments; 230.6 ksf warehouse; 14 FP Gas Station
	BUILD-OUT SCHEDULE proposed (state year(s))	Y		2026
	Conceptual Site Plan or Proposed Access description	Y		Attachment A
	SITE LOCATION MAP relative to surrounding roadway network	Y		Figure 1
	Analysis Period(s): <input type="checkbox"/> AM <input type="checkbox"/> Mid-Day <input checked="" type="checkbox"/> PM <input type="checkbox"/> Weekend	Y		
	Traffic Volume Counts (Day & Time)		N	To be provided as part of study
	Vested Trip Information (verify with nearby local government(s))		N	To be provided as part of study
	Proposed Project trip generation (check all that apply): <input checked="" type="checkbox"/> Daily <input checked="" type="checkbox"/> 2-Way Peak Hour <input checked="" type="checkbox"/> Internal Capture <input checked="" type="checkbox"/> Pass By Capture (<14% Adjacent Road)	Y		
	Proposed project trip distribution and assignment (include map) <input checked="" type="checkbox"/> CFRPM <input checked="" type="checkbox"/> by Engineering Judgment	Y		Figure 2 and Attachment C
	ROADWAY SIGNIFICANCE TEST TABLE - (includes all 3-mile radius roadway segments, Number of Lanes, Adopted LOS Capacity (cite source), Project Distribution percentages, Project Trips, Project Trips/adopted capacity ratio, 3% significance test check) ALONG WITH all Critical & Near-Critical map road segments within the appropriate radius (5-mile radius for all uses except Parks/Recreational uses (1.5 mile radius) & Convenience Stores (1-mile radius)	Y		Table 2
	ANALYSIS MAP – 3-mile study area boundary including all Critical & Near-Critical map road segments and intersections within the appropriate radius	Y		Figure 1 and Attachment D.
	Proposed roadway segment to be analyzed (list)	Y		
	Proposed intersections to be analyzed (list)	Y		
	Proposed Critical & Near-Critical segments to be analyzed (list)			
	Background Traffic/Build-Out Traffic: <input type="checkbox"/> CFRPM <input checked="" type="checkbox"/> Historical Growth Rate (state & justify proposed minimum	Y		FDOT data used from 2016 to 2021
	Segment Analysis <input type="checkbox"/> Signalized Corridor Analysis Required if Part of Signal System		N	Not applicable
	Intersection Analysis <input type="checkbox"/> HCS <input checked="" type="checkbox"/> Synchro <input type="checkbox"/> Other	Y		
	List Programmed Improvements within first three years: <input checked="" type="checkbox"/> FDOT Work Program <input checked="" type="checkbox"/> County CIP <input checked="" type="checkbox"/> City CIP	Y		None identified
	Proposed Alternative Modes Study (commit to studying project's alternative mode needs associated with transit connection, pedestrian & bicycle facilities, school student access needs, etc.) <input type="checkbox"/> Study to Include TPO's Transit Development Guidelines	Y		A section of the TIA will discuss opportunities for multi-modal mode connectivity
Transportation Improvements (commit to identifying roadway & intersection improvements in TIA if deficiencies are identified)	Y			
Concurrency mitigation strategy (commit to including this in TIA)	Y			

1 – Remarks: Justify "NO"

Submitted By: Vasu T. Persaud, AICP, PE

Date: 08/09/2023

## **Appendix C: Volusia County CMS**

Road Name	Limits (From - To)	Roadway Maintaining Agency	2021 Roadway on County's Thoroughfare	Distance (in miles)	Posted Speed	2011 AADT	2012 AADT	2013 AADT	2014 AADT	2015 AADT	2016 AADT	2017 AADT	2018 AADT	2019 AADT	2020 AADT	2021 AADT	VC Ratio, Allowable LOS	DAILY 2021 LOS Capacity	DAILY VC Ratio	DAILY 2021 LOS	2021 AM Peak	2021 PM Peak	PEAK 2Way 2021	2021 DAILY VMT	2021 No. of Lanes		
Rd Name	Limits	MainRse	Tlrs21	Distance	SPD2013	Direction	AADT_11	AADT_12	AADT_13	AADT_14	AADT_15	AADT_16	AADT_17	AADT_18	AADT_19	AADT_20	AADT_21	VCA_LOS_21	Cap_21	VCRatio_21	LOS_21	AMPKHR_21	PMFKHR_21	ZW_Cap_21	VMT_20	Lanes_20	
1	I4	Seminole Co. to Driskien Dr.	FDOT	Yes	3.58	65	EHW	124,230	163,500	163,000	114,000	118,000	140,000	112,000	114,000	111,000	104,000	105,000	D	113,600	0.92	D	-	-	10,510	375,500	6
2	I4	Driskien Dr. to Saxon Blvd.	FDOT	Yes	2.79	70	EHW	93,600	93,500	92,000	92,000	108,000	8,400	3,400	3,400	4,200	4,000	4,000	C	42,300	0.99	B	-	-	4,000	2,280	4
3	I4	Saxon Blvd. to SR 472	FDOT	Yes	3.15	70	EHW	79,500	88,000	88,500	89,500	92,500	90,000	92,000	94,000	99,000	93,000	103,000	D	113,600	0.91	D	7,570	7,505	10,510	324,450	6
4	I4	SR 472 to Orange Camp Rd.	FDOT	Yes	2.12	70	EHW	70,500	77,500	77,000	78,000	81,500	80,500	71,000	76,000	82,000	77,000	82,000	C	113,600	0.81	C	5,830	6,640	10,510	196,100	6
5	I4	Orange Camp Rd. to SR 44	FDOT	Yes	2.56	70	EHW	62,000	65,500	60,500	65,100	71,500	74,500	77,000	79,000	80,000	78,000	78,000	D	113,600	0.69	C	-	-	10,510	199,680	6
6	I4	SR 44 to US 92 Corridor	FDOT	Yes	3.00	70	EHW	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	C	113,600	0.85	B	-	-	10,510	613,840	6
7	I4	US 92 Corridor to I-95	FDOT	Yes	2.52	70	EHW	43,000	40,000	41,000	41,000	41,500	42,000	46,000	47,000	48,000	51,000	51,000	D	113,600	0.45	B	-	-	10,510	175,320	6
8	I-95	Brevard Co. to SR 442/Indian River B	FDOT	Yes	11.45	70	N+S	30,500	30,000	26,500	27,500	36,000	29,000	29,000	30,500	33,000	32,000	32,000	C	69,000	0.46	B	-	-	7,250	366,400	6
9	I-95	SR 442/Indian River Blvd. to SR 44	FDOT	Yes	4.84	70	N+S	31,000	31,000	32,500	35,000	36,000	46,500	41,000	42,500	47,000	46,000	46,000	C	113,600	0.40	B	-	-	10,510	222,640	6
10	I-95	SR 44 to SR 421/Dunlawton Ave	FDOT	Yes	6.99	70	N+S	36,600	36,900	36,600	37,700	37,000	40,700	-	-	24,000	43,000	50,700	D	113,600	0.45	B	-	-	10,510	494,390	6
11	I-95	SR 421/Dunlawton Ave. to I-4/SR 402	FDOT	Yes	4.57	70	N+S	44,500	43,500	45,000	46,500	47,500	49,500	51,500	-	68,000	74,500	81,500	D	113,600	0.72	C	-	-	10,510	372,650	6
12	I-95	US 92/SB to US 92/SB	FDOT	Yes	1.66	65	N+S	74,500	71,500	71,500	75,500	77,000	66,500	62,500	66,500	68,000	74,500	81,500	D	113,600	0.72	C	-	-	10,510	302,690	6
13	I-95	US 92/SB to LPGA Blvd.	FDOT	Yes	3.66	65	N+S	74,500	71,500	71,500	75,500	77,000	66,500	62,500	66,500	68,000	74,500	81,500	D	113,600	0.72	C	-	-	10,510	250,140	6
14	I-95	LPGA Blvd. to SR 40/Granada Blvd	FDOT	Yes	2.64	70	N+S	76,000	69,500	70,000	74,000	77,000	85,000	87,000	78,500	85,000	83,000	D	133,600	0.62	C	-	-	12,310	219,120	6	
15	I-95	SR 40/Granada Blvd to US 1	FDOT	Yes	5.55	70	N+S	62,500	61,500	63,500	64,500	64,000	65,500	47,500	50,500	53,000	58,000	63,500	D	113,600	0.56	B	-	-	10,510	325,420	6
16	I-95	US 1 to Flagler Co. Line/Old Dale	FDOT	Yes	5.00	70	N+S	60,500	64,500	69,500	70,500	72,500	66,000	62,000	65,500	67,000	73,500	80,500	D	113,600	0.71	C	-	-	10,510	402,580	6
17	US 1	Brevard Co. to Kennedy Pkwy	FDOT	Yes	3.97	55	N+S	3,400	3,100	3,100	3,200	3,400	3,600	3,400	3,400	4,200	4,000	4,000	C	31,200	0.13	B	-	-	4,270	15,880	4
18	US 1	Kennedy Pkwy. to Putnam Grove Rd	FDOT	Yes	1.63	65	N+S	3,400	3,100	3,100	3,200	3,400	3,600	3,400	3,400	4,200	4,000	4,000	C	42,300	0.09	B	-	-	4,020	6,320	4
19	US 1	Putnam Grove Rd. to Halifax Ave	FDOT	Yes	0.67	65	N+S	3,400	3,100	3,100	3,200	3,400	3,600	3,400	3,400	4,200	4,000	4,000	C	42,300	0.09	B	-	-	4,020	2,280	4
20	US 1	Halifax Ave. to H.H. Birch Rd.	FDOT	Yes	2.05	45	N+S	11,000	11,100	11,100	11,400	12,400	13,300	14,100	14,100	13,400	14,400	14,600	D	39,800	0.37	C	-	-	3,580	54,000	4
21	US 1	H.H. Birch Rd. to Volco Rd.	FDOT	Yes	3.70	45	N+S	11,000	11,100	11,100	11,400	12,400	13,300	14,100	14,100	13,400	14,400	14,600	D	39,800	0.37	C	-	-	3,580	54,000	4
22	US 1	Volco Rd. to SR 442/Indian River Blvd	FDOT	Yes	2.26	45	N+S	18,900	18,800	18,800	18,200	20,400	21,500	21,500	22,500	23,500	22,500	22,500	D	39,800	0.57	C	-	-	3,580	50,850	4
23	US 1	SR 442/Indian River Blvd. to Park Ave	FDOT	Yes	1.49	45	N+S	26,500	25,500	25,000	24,500	25,500	27,500	28,500	29,500	25,000	24,000	24,000	D	39,800	0.69	C	1,920	2,200	3,580	49,370	4
24	US 1	Park Ave. to 10th Ave.	FDOT	Yes	1.00	45	N+S	27,000	26,500	26,000	25,000	26,000	28,000	29,000	29,000	29,000	29,000	29,000	D	39,800	0.63	C	-	-	3,580	25,000	4
25	US 1	10th Ave. to Canal St./Bus. SR 44	FDOT	Yes	1.52	35	N+S	22,000	21,500	18,400	18,700	19,000	24,000	22,500	22,000	22,000	22,000	22,000	D	32,400	0.68	D	-	-	2,920	33,440	4
26	US 1	Canal St./Bus. SR 44 to Turnbull Bay	FDOT	Yes	1.34	40	N+S	22,500	24,500	22,000	23,000	24,000	26,500	24,500	25,500	26,500	24,000	24,000	D	39,800	0.60	C	-	-	3,580	32,160	4
27	US 1	Turnbull Bay Rd. to Art Center Ave	FDOT	Yes	2.24	55	N+S	23,500	23,500	23,500	24,000	25,500	26,500	27,500	26,000	26,000	25,000	25,000	D	39,800	0.63	C	-	-	3,580	16,600	4
28	US 1	Art Center Ave. to SR 5A/Novata Rd	FDOT	Yes	3.81	55	N+S	24,500	24,500	24,500	25,000	26,500	27,500	28,500	28,500	28,500	28,500	28,500	D	39,800	0.63	C	-	-	3,580	74,960	4
29	US 1	SR 5A/Novata Rd. to Commonwealth	FDOT	Yes	1.23	45	N+S	14,100	13,800	13,300	13,200	13,800	15,400	15,700	15,700	15,800	15,500	15,700	D	39,800	0.39	C	1,170	1,350	3,580	19,310	4
30	US 1	Commonwealth to SR 421/Dunlawton	FDOT	Yes	13.17	40	N+S	20,500	19,600	20,300	20,500	21,500	20,500	20,400	21,000	21,000	20,200	17,600	D	39,800	0.44	C	1,340	1,440	3,580	24,410	4
31	US 1	SR 421/Dunlawton Ave. to Reed Canal	FDOT	Yes	1.18	40	N+S	24,500	24,500	24,500	26,000	25,000	28,500	28,500	26,500	25,000	24,000	24,000	D	39,800	0.60	C	-	-	3,580	28,320	4
32	US 1	Reed Canal Rd. to Big Tree Rd.	FDOT	Yes	1.17	45	N+S	27,000	26,000	26,000	27,000	28,000	27,000	28,000	27,500	27,500	27,500	27,500	D	39,800	0.68	C	-	-	3,580	49,110	4
33	US 1	Big Tree Rd. to Bellewade Ave	FDOT	Yes	0.45	40	N+S	28,500	28,500	27,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	29,000	D	39,800	0.59	C	-	-	3,580	102,970	4
34	US 1	Bellewade Ave. to SR 400/Beville Rd	FDOT	Yes	0.27	40	N+S	28,000	27,500	26,000	29,000	30,000	36,500	36,000	27,000	24,500	23,500	23,500	D	39,800	0.59	C	-	-	3,580	6,345	4
35	US 1	SR 400/Beville Rd. to Bellevue Ave	FDOT	Yes	1.05	40	N+S	32,500	30,000	29,500	33,000	32,000	34,000	30,500	33,000	33,000	32,000	29,000	D	39,800	0.73	C	2,040	2,350	3,580	30,650	4
36	US 1	Bellevue Ave. to Orange Ave	FDOT	Yes	0.72	40	N+S	28,000	28,500	28,000	29,000	30,500	28,500	29,000	30,000	30,500	29,500	29,500	D	39,800	0.74	C	-	-	3,580	21,240	4
37	US 1	Orange Ave. to US 92/SB	FDOT	Yes	0.15	40	N+S	28,000	28,000	29,000	30,500	31,500	31,000	29,500	29,500	31,000	30,700	30,700	D	39,800	0.73	C	-	-	3,580	8,400	4
38	US 1	US 92/SB to Fairview/Main St.	FDOT	Yes	0.66	35	N+S	24,000	23,500	26,000	30,500	31,500	28,000	28,000	27,000	27,000	27,000	D	32,400	0.83	D	-	-	2,920	17,820	4	
39	US 1	Fairview/Main St. to SR 430/Mason A	FDOT	Yes	0.54	35	N+S	27,000	27,000	27,500	27,000	28,000	27,000	26,000	28,000	27,000	27,000	D	32,400	0.83	D	-	-	2,920	14,580	4	
40	US 1	SR 430/Mason Ave. to LPGA Blvd	FDOT	Yes	1.47	35	N+S	26,000	21,500	24,000	24,000	23,500	24,500	24,000	25,500	25,500	24,000	24,000	D	32,400	0.74	D	-	-	2,920	35,280	4
41	US 1	LPGA Blvd. to Hand Ave	FDOT	Yes	2.00	40	N+S	28,000	21,500	24,000	24,500	23,500	24,5														

104	SR 5A - Nova Rd.	Emporia Rd to Spruce Creek Rd	FDOT	Yes	1.44	45	N/S	16,800	16,300	16,800	17,900	17,200	17,800	19,100	18,800	21,400	20,200	18,200	D	39,800	0.46	C	1,120	1,450	1,580	26,208	4	
105	SR 5A - Nova Rd.	Spruce Creek Rd. to SR 421/Dunlaw	FDOT	Yes	1.08	45	N/S	23,500	25,000	24,500	26,000	27,000	26,000	29,500	25,000	28,000	27,000	27,000	27,000	D	39,800	0.68	C	-	-	1,580	29,160	4
106	SR 5A - Nova Rd.	Dunlaw Ave. to US 92/SB	FDOT	Yes	1.26	45	N/S	31,500	32,000	33,000	33,500	34,500	34,500	36,000	35,000	36,000	37,000	35,000	35,000	D	39,800	0.45	C	-	-	1,580	38,400	4
107	SR 5A - Nova Rd.	Madeline Ave. to Big Tree	FDOT	Yes	1.81	50	N/S	27,000	25,500	26,500	26,500	25,500	27,000	26,000	27,000	25,500	28,500	27,000	D	49,850	0.54	C	2,030	2,270	4,490	43,470	5	
108	SR 5A - Nova Rd.	Big Tree to SR 40/Beville Rd	FDOT	Yes	0.70	50	N/S	27,000	25,500	26,500	26,500	25,500	27,000	26,000	27,000	25,500	28,500	27,000	D	59,900	0.45	C	2,030	2,270	5,390	38,000	6	
109	SR 5A - Nova Rd.	SR 40/Beville Rd. to Bellevue Ave	FDOT	Yes	1.00	50	N/S	34,000	33,000	34,000	34,500	35,500	37,000	36,500	37,500	36,000	39,000	35,000	35,000	D	59,900	0.58	C	-	-	1,580	35,000	6
110	SR 5A - Nova Rd.	Bellevue Ave. to US 92/SB	FDOT	Yes	1.07	45	N/S	31,500	32,000	33,000	33,500	34,500	34,500	36,000	35,000	36,000	37,000	35,000	35,000	D	59,900	0.58	C	-	-	1,580	37,450	6
111	SR 5A - Nova Rd.	US 92/SB to SR 430/Mason Ave	FDOT	Yes	1.22	55	N/S	39,000	39,000	39,000	39,500	40,500	41,000	42,000	41,000	42,000	43,000	42,000	42,000	D	59,900	0.58	C	-	-	1,580	42,000	6
112	SR 5A - Nova Rd.	SR 430/Mason Blvd to LPGA Blvd	FDOT	Yes	1.47	45	N/S	27,500	27,500	28,000	28,500	29,000	29,000	30,500	29,000	31,500	30,500	31,500	31,500	D	59,900	0.53	C	-	-	1,580	46,000	6
113	SR 5A - Nova Rd.	LPGA Blvd. to Hand Ave	FDOT	Yes	2.06	45	N/S	28,000	28,500	28,500	29,000	29,500	29,000	30,400	29,000	29,000	28,000	28,000	D	59,900	0.47	C	-	-	1,580	57,680	6	
114	SR 5A - Nova Rd.	Hand Ave. to SR 40/Granada Ave	FDOT	Yes	1.15	45	N/S	24,000	25,500	27,500	25,500	26,500	27,500	28,000	28,000	29,000	27,500	27,500	D	59,900	0.46	C	-	-	1,580	31,620	6	
115	SR 5A - Nova Rd.	SR 40/Granada Ave. to Wilmette Ave	FDOT	Yes	0.83	50	N/S	24,000	24,000	24,000	24,500	25,000	25,000	26,000	25,000	26,000	27,000	25,000	25,000	D	59,900	0.36	C	-	-	1,580	39,960	6
116	SR 5A - Nova Rd.	Wilmette Ave. to US 1	FDOT	Yes	1.00	45	N/S	12,800	12,300	12,400	13,100	13,600	14,600	13,600	14,300	14,800	14,400	14,400	D	39,500	0.36	C	-	-	1,580	14,400	4	
117	SR 11	US 17 to CR 15A	FDOT	Yes	2.45	55	N/S	6,100	6,000	6,300	6,200	6,400	6,700	6,600	7,100	6,700	6,500	6,500	D	24,200	0.27	B	-	-	2,180	15,825	2	
118	SR 11	CR 15A to SR 40	FDOT	Yes	9.19	60	N/S	2,700	2,700	2,800	2,900	3,100	3,400	3,700	3,900	3,900	3,900	3,900	D	6,450	0.60	C	-	-	3,580	35,841	2	
119	SR 11	SR 40 to Flagler Co. Line	FDOT	Yes	2.48	60	N/S	2,200	2,200	2,100	2,400	2,400	2,300	2,200	2,700	3,500	3,500	D	6,450	0.54	C	-	-	1,580	8,470	2		
120	SR 15A	US 1792/Taylor to New Hampshire A	FDOT	Yes	1.17	45	N/S	19,700	19,000	20,500	21,000	21,000	22,500	25,000	26,000	26,000	25,000	25,000	D	39,800	0.77	C	-	-	1,580	35,685	4	
121	SR 15A	New Hampshire Ave. to Beresford Av	FDOT	Yes	0.59	45	N/S	21,000	20,500	21,000	21,000	23,000	23,500	24,000	26,000	26,000	25,000	28,000	D	39,800	0.70	C	1,780	2,080	1,580	16,520	4	
122	SR 15A	Beresford Ave. to SR 44/New York Av	FDOT	Yes	1.00	45	N/S	21,000	21,000	22,000	22,000	24,000	25,000	25,500	26,500	27,000	26,000	26,000	D	39,800	0.65	C	-	-	1,580	26,000	4	
123	SR 15A	SR 44/New York Ave. to Plymouth Av	FDOT	Yes	1.01	45	N/S	21,000	23,000	23,000	25,000	25,000	26,000	27,000	28,000	28,000	27,000	24,000	D	39,800	0.60	C	1,830	1,940	1,580	16,240	4	
124	SR 15A	Plymouth Av. to CR 92	FDOT	Yes	0.83	50	N/S	22,500	22,500	23,000	23,000	25,000	25,000	26,000	27,000	28,000	28,000	28,000	D	39,800	0.60	C	-	-	1,580	18,920	4	
125	SR 15A	CR 92 to Glenwood Rd	FDOT	Yes	1.20	50	N/S	13,800	13,100	13,600	13,400	14,000	14,000	15,600	17,400	17,800	13,600	13,600	D	39,500	0.34	C	-	-	1,580	16,200	4	
126	SR 15A	Glenwood Rd. to US 17	FDOT	Yes	1.11	50	N/S	10,300	10,200	10,600	10,500	10,900	10,900	12,200	12,600	12,800	12,200	12,200	D	39,800	0.31	C	-	-	1,580	13,542	4	
127	SR 40	Lake County to Emporia Rd	FDOT	Yes	0.86	55	E/W	7,000	6,800	6,300	6,800	7,000	8,700	8,500	9,800	8,700	8,500	8,500	D	15,700	0.54	B	-	-	1,490	7,310	2	
128	SR 40	Emporia Rd. to US 17	FDOT	Yes	5.38	55	E/W	4,500	4,600	5,000	5,000	7,000	8,500	8,200	8,200	8,400	8,200	8,600	D	15,700	0.55	B	550	660	1,490	47,988	2	
129	SR 40	US 17 to SR 11	FDOT	Yes	6.89	60	E/W	4,800	5,400	5,500	5,600	5,800	6,900	6,800	7,200	6,900	6,700	6,700	D	8,600	0.78	C	-	-	820	44,823	2	
130	SR 40	SR 11 to Pinto Lane	FDOT	Yes	6.83	60	E/W	4,800	5,400	5,500	5,600	5,800	6,900	6,800	7,200	6,900	6,700	6,700	D	8,600	0.78	C	-	-	820	45,761	2	
131	SR 40	Pinto Lane to Rima Ridge Rd (urban)	FDOT	Yes	1.25	60	E/W	10,600	9,400	9,400	10,000	10,400	11,100	11,000	11,600	13,700	13,300	13,300	D	42,300	0.31	B	-	-	4,020	16,625	4	
132	SR 40	Rima Ridge Rd to Tymber Creek Rd	FDOT	Yes	4.36	60	E/W	27,000	26,500	27,000	27,000	28,000	30,500	31,000	31,500	31,000	28,500	28,500	D	39,800	0.67	C	-	-	1,580	31,540	4	
133	SR 40	Tymber Creek Rd. to I-95	FDOT	Yes	0.78	50	E/W	27,000	27,000	27,000	27,000	28,000	30,500	31,000	31,500	31,000	28,500	28,500	D	39,800	0.67	C	-	-	1,580	20,935	4	
134	SR 40	I-95 to Clyde Morris Blvd	FDOT	Yes	1.58	50	E/W	36,000	31,000	33,500	34,500	35,500	35,500	38,000	34,500	35,500	36,000	36,000	D	39,800	0.90	C	-	-	1,580	56,880	4	
135	SR 40	Clyde Morris Blvd. to SR 5A/Nova Rd	FDOT	Yes	1.06	50	E/W	33,000	33,000	32,000	33,000	33,000	32,000	34,000	34,500	35,500	35,500	35,500	D	39,800	0.89	C	-	-	1,580	37,630	4	
136	SR 40	SR 5A/Nova Rd. to US 1	FDOT	Yes	1.33	45	E/W	30,000	30,000	30,000	30,000	31,000	31,000	32,000	33,500	34,000	31,000	31,000	D	39,800	0.78	C	-	-	1,580	41,230	4	
137	SR 40	US 1 to Halifax Ave	FDOT	Yes	1.38	45	E/W	30,000	30,000	30,000	30,000	31,000	31,000	32,000	33,500	34,000	31,000	31,000	D	39,800	0.78	C	-	-	1,580	41,230	4	
138	SR 40	Halifax Ave. to SR 11A	FDOT	Yes	0.37	35	E/W	20,500	18,800	19,800	19,500	20,000	20,000	21,200	21,200	18,500	18,500	D	32,400	0.40	B	3,600	3,330	2,920	6,845	4		
139	SR 40	Shell Co. to Shell Rd.	FDOT	Yes	1.10	55	E/W	9,000	9,400	9,200	9,600	10,200	11,200	11,200	12,300	11,900	11,900	D	15,700	0.76	C	-	-	1,490	14,161	2		
140	SR 44	Shell Rd. to Grand Ave	FDOT	Yes	1.26	45	E/W	9,000	9,400	9,200	9,600	10,000	12,900	11,000	12,200	12,300	11,900	11,900	D	24,200	0.49	C	-	-	1,490	14,994	2	
141	SR 44	Grand Ave. to Old Newkirk/Hazen R	FDOT	Yes	0.70	45	E/W	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	D	24,200	0.46	C	-	-	1,490	14,994	2		
142	SR 44	Old Newkirk/Hazen Rd. to SR 15A	FDOT	Yes	0.71	40	E/W	13,800	13,500	11,700	11,600	11,900	12,800	13,200	13,900	14,100	13,700	14,600	D	24,200	0.60	C	900	1,180	2,100	10,366	2	
143	SR 44	SR 15A/Spring Garden Ave. to Stone	FDOT	Yes	0.50	40	E/W	11,300	11,300	10,600	10,800	11,500	11,700	11,500	11,700	10,500	10,100	10,100	D	18,930	0.60	C	730	910	1,712	5,050	2	
144	SR 44	Stone St. to Clara Ave	FDOT	Yes	0.51	35/40	E/W	11,100	10,900	10,600	10,300	10,700	10,800	11,200	11,200	10,800	11,300	11,300	D	18,930	0.60	C	730	910	1,712	5,763	2	
145	SR 44	Clara Ave. to Amelia Ave	FDOT	Yes	0.50	25/30	E/W	9,200	9,400	9,700	9,700	9,800	9,900	9,900	9,900	9,900	9,900	D	18,930	0.60	C	-	-	1,712	5,763	2		
146	SR 44	Amelia Ave. to Hill Ave	FDOT	Yes	1.00	30/40/45	E/W	13,300	13,300	13,300	13,300	13,300	13,300	13,300	13,300	13,300	13,300	D	18,930	0.63	C	-	-	1,712	11,900	2		
147	SR 44	Hill Ave. to Blue Lake Ave	FDOT	Yes	0.51	45	E/W	13,300	13,000	12,600	11,900	14,000	12,600	12,500	12,900	12,300	11,900	11,900	Deland	18,900	0.60	C	-	-	1,712	6,069	2	
148	SR 44	Blue Lake Ave. to Kepler Rd	FDOT	Yes	0.84	45	E/W	16,400	15,600	15,900	14,300	16,800	15,700	17,300	17,300	17,300	16,700	16,700	Deland	20,800	0.60	C	-	-	1,712	15,688	2	
149	SR 44	Kepler Rd. to Summit Ave	FDOT	Yes	1.18	45/50	E/W	18,300	17,200	18,000	16,700	17,200	17,200	19,400	21,200	19,800	19,200	19,200	Deland	18,900	0.67	C	-	-	1,712	22,656	2	
150	SR 44	Summit Ave. to I-4	FDOT	Yes	0.38	45	E/W	15,800	15,800	15,800	15,800	15,800	15,800	15,800	15,800	15,800	15,800	15,800	D	39,800	0.53	C	-	-	1,580	30,580	4	
151	SR 44	I-4 to Prevatt Ave	FDOT	Yes	0.74	55	E/W	16,400	17,200	19,80																		

212	Arendondo Grant Rd.	Spring Garden Ranch Rd. to James S	County	Yes	0.60	30	E/W	1,100	1,140	1,020	1,000	-	1,030	1,150	1,230	1,240	1,120	1,180	C	6,450	0.20	B	120	130	620	768	2	
213	Arendondo Grant Rd.	James St. to SR 171	County	Yes	2.00	35	E/W	570	580	600	610	-	700	780	810	880	890	890	890	C	6,450	0.14	B	70	100	620	1,176	2
214	Atlantic Ave. (DBS)	Major St. to Major St	County	Yes	2.80	35	N/S	1,960	2,030	2,210	2,530	6,840	3,310	3,210	3,000	2,740	2,390	3,950	E	13,640	0.29	C	210	300	1,020	11,060	2	
215	Atlantic Ave. (DBS)	Major St. to Marcellie Ave.	County	Yes	1.30	35	N/S	6,780	9,420	9,420	9,240	9,600	9,670	9,720	7,680	11,050	9,940	10,920	E	13,640	0.80	D	660	880	1,020	14,196	2	
216	Atlantic Ave. (DBS)	Marcellie Ave. to Phillips Ave.	County	Yes	0.75	35	N/S	8,150	11,360	11,360	11,450	11,850	11,920	11,380	9,970	10,090	11,040	12,760	E	14,740	0.87	D	730	1,030	1,330	9,570	2	
217	Atlantic Ave. (DBS)	Phillips Ave. to SR A1A/Dunlawton Ave	County	Yes	0.40	35	N/S	11,910	13,680	13,680	13,920	14,770	15,190	13,540	12,970	15,790	11,290	11,730	E	14,740	0.80	D	700	950	1,330	4,632	4	
218	Atlantic Ave./Turtle Mound Rd.	Carson Neck Park to Turtle Mound	County	Yes	7.65	45	N/S	2,230	2,610	2,450	2,180	2,960	3,050	1,770	2,170	3,340	3,420	-	-	E	15,940	0.24	C	190	300	1,020	24,930	2
219	Atlantic Ave./Turtle Mound Rd.	Turtle Mound Rd. to Saxon Dr.	County	Yes	1.60	45	N/S	5,280	6,360	6,360	6,360	6,700	6,800	6,800	6,800	6,800	6,800	6,800	6,800	E	17,050	0.58	D	420	560	1,540	15,762	2
220	Atlantic Ave./Turtle Mound Rd.	Saxon Dr. to Hiles Blvd.	County	Yes	0.45	45	N/S	6,650	6,530	6,370	5,450	7,470	7,300	5,380	5,000	7,310	7,560	7,030	E	17,050	0.41	C	450	560	1,540	3,364	2	
221	Atlantic Ave./Turtle Mound Rd.	Hiles Blvd. to 27th Ave.	County	Yes	1.55	45	N/S	9,900	11,900	11,400	9,650	8,370	11,630	9,600	9,600	13,370	12,250	13,180	E	17,050	0.77	C	720	1,010	1,540	20,429	2	
222	Atlantic Ave./Turtle Mound Rd.	27th Ave. to 8th Ave.	County	Yes	1.44	45	N/S	13,830	16,510	14,560	12,960	14,450	12,070	15,900	12,720	11,630	18,120	14,720	E	37,970	0.39	C	1,100	1,020	1,540	21,144	4	
223	Beach/Riverside/Beach (OB)	SR 40 to Wilmette Ave.	County	Yes	0.40	35	N/S	6,260	6,260	6,260	6,260	6,260	6,260	6,260	6,260	6,260	6,260	6,260	E	13,640	0.54	C	520	620	1,020	4,448	2	
224	Beach/Riverside/Beach (OB)	SR 40 to Wilmette Ave.	County	Yes	0.70	35	N/S	8,780	8,780	8,070	8,950	8,610	9,310	7,800	9,700	8,870	9,580	8,280	E	16,000	0.58	D	710	800	1,440	6,496	2	
225	Beach/Riverside/Beach (OB)	Wilmette Ave. to Inglesia Ave.	County	Yes	2.55	35	N/S	5,660	5,740	5,300	5,410	7,390	6,250	5,410	6,380	6,130	7,580	6,550	E	16,000	0.41	D	400	640	1,440	16,776	2	
226	Beach/Riverside/Beach (OB)	Inglesia Ave. to Pine Tree Dr.	County	Yes	1.10	35	N/S	2,000	1,950	1,830	1,840	2,010	2,160	2,140	2,650	2,500	3,570	2,890	E	16,000	0.18	C	180	290	1,440	3,179	2	
227	Beacon Light Rd.	Hallifax Ave. to Ariel Rd.	County	Yes	2.75	35	N/S	1,900	210	170	180	190	240	250	240	280	290	300	C	6,450	0.05	B	20	30	620	825	2	
228	Beacon Light Rd.	Hill Ave. to Volok Rd.	County	Yes	1.25	35	N/S	450	320	380	400	410	390	500	520	460	400	470	C	6,450	0.09	B	40	60	620	763	2	
229	Bellevue Ave. Extension	CR 415/Tomoka Farms Rd. to William	County	Yes	0.50	35	E/W	4,970	5,010	5,290	5,290	6,210	5,520	6,100	7,310	6,940	5,880	6,100	E	13,640	0.45	D	330	540	1,020	3,050	2	
230	Bellevue Ave. Extension	William Blvd. to SR 483/Clyde Mor	County	Yes	2.50	45	E/W	2,760	2,450	2,780	2,880	2,540	3,250	3,540	4,360	4,340	6,050	7,025	E	13,640	0.22	C	220	300	1,230	7,625	2	
231	Beversford Ave.	Beversford Rd. to Fallo Rd	County	Yes	0.70	35	E/W	1,180	1,340	1,340	810	1,320	1,560	2,110	1,810	2,100	2,180	2,330	E	13,640	0.17	C	190	220	1,020	1,611	2	
232	Beversford Ave.	Fallo Rd. to SR 16A	County	Yes	1.50	30	E/W	3,950	3,970	3,540	3,750	3,240	3,440	4,160	4,520	4,650	4,000	4,340	E	13,640	0.32	C	360	360	1,020	5,666	2	
233	Beversford Ave.	SR 15A to US 1792	County	Yes	1.75	30	E/W	4,810	4,760	4,740	4,130	4,380	5,210	5,100	5,050	5,290	5,290	E	13,640	0.38	C	270	430	1,020	9,335	2		
234	Beversford Ave.	US 1792 to Amelia Ave.	County	Yes	0.25	35	E/W	9,700	9,520	9,750	9,520	9,480	10,410	10,480	12,150	11,380	10,310	10,640	E	14,740	0.72	D	610	920	1,330	2,660	2	
235	Beversford Ave.	Amelia Ave. to Hill Ave.	County	Yes	1.00	40	E/W	5,600	5,970	6,070	5,710	5,820	5,710	7,090	7,930	6,170	6,610	7,040	E	17,900	0.39	C	530	860	1,620	7,040	2	
236	Beversford Ave.	Hill Ave. to Blue Lake Ave.	County	Yes	1.35	40	E/W	2,980	3,800	3,460	3,240	-	3,780	4,440	5,170	4,380	4,300	4,000	E	13,640	0.29	C	300	380	1,230	5,400	2	
237	Beversford Ave.	Blue Lake Ave. to MLK (Kopler Rd.)	County	Yes	0.80	40	E/W	-	-	-	-	-	-	-	-	-	-	-	E	13,640	-	-	-	-	-	-	-	
238	Beversford Ave.	MLK (Kopler Rd.) to SR 44	County	Yes	0.75	40	E/W	-	-	-	-	-	-	-	-	-	-	-	E	13,640	-	-	-	-	-	-	0	
239	Beversford Rd.	SR 15A to Spring Garden Ave.	County	Yes	0.40	30	E/W	470	740	890	860	-	1,520	1,000	5,270	620	480	530	E	13,640	0.04	C	40	50	1,020	212	2	
240	Beversford Rd.	Spring Garden Ave. to Fallo Rd	County	Yes	0.75	30	E/W	670	710	630	670	850	780	690	850	560	840	-	-	E	13,640	0.08	C	60	80	1,020	610	2
241	Beversford Rd.	Fallo Rd. to Beversford Ave.	County	Yes	1.30	30	E/W	1,050	1,060	920	1,120	1,150	1,370	1,310	1,510	1,740	1,910	-	-	E	13,640	0.14	C	160	200	1,020	2,483	2
242	Beversford Rd.	Beversford Ave. to Old New York Ave.	County	Yes	0.30	35	N/S	1,990	2,050	1,890	2,100	2,130	2,640	2,620	2,980	2,970	3,420	3,660	E	13,640	0.27	C	280	360	1,020	1,098	2	
243	Big Tree Rd.	Clyde Morris Blvd. to Nova Rd.	County	Yes	1.10	35	E/W	7,700	8,080	7,200	7,670	6,810	7,580	5,850	6,320	6,920	6,040	6,480	E	13,640	0.48	D	420	570	1,020	7,128	2	
244	Big Tree Rd.	Nova Rd. to Magnolia Ave.	County	Yes	0.40	35	E/W	12,230	11,640	11,040	11,310	11,820	12,140	11,390	12,950	12,950	11,220	12,230	E	14,740	0.83	D	820	1,020	1,330	4,900	2	
245	Big Tree Rd.	Magnolia Ave. to Kentlincroft Ave.	County	Yes	0.45	35	E/W	10,850	10,160	9,290	10,050	9,970	12,190	11,180	11,860	10,910	9,690	10,560	E	14,740	0.72	D	750	730	1,330	4,752	3	
246	Big Tree Rd.	Kentlincroft Ave. to US 1	County	Yes	0.55	35	E/W	7,270	6,790	6,570	6,270	6,990	8,880	8,310	8,450	8,180	7,280	7,280	E	14,740	0.60	D	460	420	1,330	4,168	3	
247	Blackburn Rd.	CR 3 to Emporia Rd.	County	Yes	1.25	35	N/S	550	550	550	560	640	650	580	590	610	640	740	C	6,450	0.11	B	70	70	620	620	2	
248	Blackwelder Rd.	Lake Winona Rd. to SR 11	County	Yes	3.25	35	E/W	180	180	170	170	220	210	150	250	200	210	220	C	6,450	0.03	B	20	20	620	20	2	
249	Blue Lake Ave.	SR 472 to Orange Camp Rd	County	Yes	1.65	45	N/S	4,100	4,250	3,880	4,180	-	4,660	5,140	4,750	6,480	5,470	5,540	E	17,050	-	-	-	-	1,540	W/ALUE1	2	
250	Blue Lake Ave.	Orange Camp Rd. to Taylor Rd.	County	Yes	1.05	45	N/S	5,110	5,320	5,440	5,820	5,080	5,770	6,810	8,240	8,800	7,460	7,570	E	17,050	0.32	C	600	730	1,540	5,817	2	
251	Blue Lake Ave.	Taylor Rd. to Beversford Ave.	County	Yes	1.05	45	N/S	5,200	5,320	5,440	5,820	5,080	5,770	6,810	8,240	8,800	7,460	7,570	E	13,640	0.56	C	620	730	1,540	8,054	2	
252	Blue Lake Ave.	Beversford Ave. to Voochis Ave.	County	Yes	0.75	30	N/S	4,180	4,310	4,010	3,750	4,480	4,420	4,610	4,290	4,950	4,970	5,320	E	13,640	0.39	C	410	540	1,020	3,990	2	
253	Blue Lake Ave.	Voochis Ave. to SR 44	County	Yes	0.25	30	N/S	3,480	3,520	3,370	3,520	3,550	3,570	3,600	4,560	3,640	3,880	4,180	E	13,640	0.31	C	330	410	1,020	1,045	2	
254	Blue Lake Ave.	SR 44 to Minnesota Ave.	County	Yes	0.65	30	N/S	4,330	4,190	4,060	4,500	4,880	4,200	5,380	4,920	6,290	5,390	5,780	E	13,640	0.42	D	440	530	1,020	3,179	2	
255	Blue Lake Ave.	Minnesota Ave. to Plymouth Ave.	County	Yes	0.55	35	N/S	5,780	5,380	5,200	5,700	6,680	6,790	6,820	6,820	6,820	6,820	6,820	E	13,640	0.54	C	560	620	1,020	7,310	2	
256	Blue Springs Av (West)	Spokane Dr. to Lawton Dr.	County	Yes	0.60	35	E/W	5,830	5,410	5,080	5,460	4,020	4,200	5,590	5,600	6,290	5,140	5,140	E	13,640	0.38	C	460	460	1,020	3,084	2	
257	Browlee Rd.	Raulerson Rd. #1 to Raulerson Rd.	County	Yes	1.70	35	N/S	140	180	180	180	180	170	190	180	140	200	C	6,450	0.03	B	20	20	620	20	2		
258	Cardinal Blvd.	SR 421/Dunlawton Ave. to Demotte A	County	Yes	0.15	30	N/S	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	1,110	E	13,640	0.10	C	70	130	1,020	213	2	
259	Cardinal Blvd.	Demotte Ave. to Marcellie Ave.	County	Yes	0.60	30	N/S	5,090	5,160	4,740	4,740	5,240	7,190	5,030	5,190	5,780	5,280	5,590	E	13,640	0.41	C	340	460	1,020	5,011	2	
260	Cardinal Blvd.	Marcellie Ave. to Major St	County	Yes	1.00	30	N/S	920	870	730	620	630	1,330	810	690	780	810	810	E	13,640	0.07	C	50	80	1,020	1,020	2	
261	Carrier Rd.	SR 11 to Marsh Rd.	County	Yes	0.75	40	E/W	1,400	1,460	1,420	1,520	1,800	1,700	1,800	1,860	1,750	1,860	E	13,640	0.14	C	130	160	1,020	1,330	2		
262	Cassagata Rd.	W. Volusia Bldwy. to Macy Ave.	County	Yes	1.80	30																						

319	Enterprise Rd	Highbanks Rd. to Saxon Blvd	County	Yes	1.55	45	N/S	23,460	23,750	21,900	23,750	20,550	20,510	25,710	19,820	25,250	19,830	21,210	23,120	23,900	23,240	19,220	23,680	22,540	23,620	17,970	0.56	C	1,280	1,760	3,410	32,736	4	
320	Enterprise Rd	Saxon Blvd. to Harley Strickland Blvd	County	Yes	0.50	45	N/S	25,670	22,750	20,710	22,110	23,120	23,900	23,240	19,220	23,680	22,540	23,620	17,970	0.62	C	1,390	1,960	3,410	11,810	4								
321	Enterprise Rd	Harley Strickland Blvd. to US 1792	County	Yes	0.55	35	N/S	22,000	20,900	19,230	20,050	20,960	23,270	23,760	20,970	23,510	19,840	23,590	0.54	D	1,500	2,070	3,410	30,450	4									
322	Enterprise-Osten Rd	Providence to Garfield Rd	County	Yes	1.50	30	E/W	2,670	2,470	2,470	2,490	2,630	3,110	3,360	3,350	3,320	3,490	3,560	3,560	3,560	3,560	3,560	3,560	3,560	3,560	3,560	1.34	C	80	240	1,020	5,340	2	
323	Enterprise-Osten Rd	Garfield Rd to Read Ellis Rd	County	Yes	1.70	35	E/W	1,850	1,690	1,690	1,760	1,960	2,400	2,380	2,800	3,100	2,900	3,020	3,020	3,020	3,020	3,020	3,020	3,020	3,020	3,020	3,020	1.22	C	80	330	1,020	5,134	2
324	Enterprise-Osten Rd	Read Ellis Rd to SR 415	County	Yes	2.50	35	E/W	1,160	1,080	1,160	1,140	1,250	1,480	1,350	1,250	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1.10	C	220	1,020	1,020	3,250	2
325	Euclid Ave	Shangri-La Rd to Woodward Ave	County	0.25	35	N/S	1,430	1,220	1,220	1,220	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	1,180	0.20	C	160	220	1,020	345	2
326	Euclid Ave	Fellows Rd to Woodward Ave	County	0.25	30	E/W	1,360	1,270	1,330	1,220	1,280	1,440	1,570	1,590	1,450	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	0.12	C	110	140	1,020	403	2
327	Euclid Ave	Woodward Ave. to SR 15A	County	0.50	30	E/W	2,310	2,300	2,290	2,240	2,280	2,220	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	2,240	0.20	C	200	240	1,020	1,310	2
328	Euclid Ave	SR 15A to Adelle Ave	County	0.75	30	E/W	2,440	2,510	2,430	2,380	2,450	2,830	2,730	3,130	2,970	2,880	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	2,930	0.21	C	200	260	1,020	2,138	2
329	Euclid Ave	Adelle Ave. to US 1776	County	0.50	30	E/W	2,150	2,200	2,150	2,210	2,250	2,260	2,190	2,230	2,280	2,100	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	2,260	0.17	C	130	200	1,020	1,130	2
330	French Ave	Northway Rd. to SR SA/Novia Rd	County	Yes	0.20	30	E/W	4,450	5,210	5,430	5,430	4,900	5,200	5,470	5,320	5,410	5,320	5,320	5,320	5,320	5,320	5,320	5,320	5,320	5,320	5,320	5,320	0.20	C	270	330	1,020	1,494	2
331	French Ave	Beginnings of road to Blue Springs Pl	County	1.00	30	E/W	140	180	130	270	200	200	160	150	130	230	230	230	230	230	230	230	230	230	230	230	0.02	C	10	30	1,020	20	2	
332	French Ave	Blue Springs Park to Lewton Ave/Par	County	1.25	35	E/W	320	670	480	1,260	-	710	-	-	1,000	1,040	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	1,100	0.08	C	50	130	1,020	20	2	
333	Garfield Ave	SR 44 to Plymouth Ave	County	1.00	30	N/S	2,350	2,280	1,980	1,910	-	2,430	2,270	2,400	2,070	1,920	2,130	2,130	2,130	2,130	2,130	2,130	2,130	2,130	2,130	2,130	0.16	C	140	180	1,020	1,220	2	
334	Garfield Ave	Plymouth Ave. to US 92	County	0.85	30	N/S	2,130	2,280	2,450	2,280	-	2,390	2,780	3,100	2,480	2,270	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	2,550	0.18	C	160	220	1,020	1,260	2	
335	Garfield Rd	Doyle Rd. to Enterprise-Osten Rd	County	0.90	40	N/S	1,960	1,680	1,510	1,550	1,670	1,900	2,130	1,850	2,220	1,920	2,040	2,040	2,040	2,040	2,040	2,040	2,040	2,040	2,040	2,040	0.15	C	140	210	1,020	1,836	2	
336	Glencoe Rd	Taylor Rd. to Paige Ave	County	1.50	40	N/S	1,310	1,300	1,410	1,510	1,660	1,740	1,810	2,040	2,110	2,260	2,580	2,580	2,580	2,580	2,580	2,580	2,580	2,580	2,580	2,580	0.19	C	190	260	1,230	3,870	2	
337	Glencoe Rd	Paige Ave. to SR 44	County	1.10	35	N/S	3,710	3,780	3,820	3,720	4,030	4,280	-	-	4,500	5,150	5,150	5,150	5,150	5,150	5,150	5,150	5,150	5,150	5,150	5,150	0.38	C	360	440	1,020	5,665	2	
338	Glencoe Rd	SR 44 to Pioneer Tr.	County	0.85	35	N/S	1,670	1,820	1,930	1,870	1,570	1,550	1,550	1,770	1,800	1,850	2,060	2,060	2,060	2,060	2,060	2,060	2,060	2,060	2,060	2,060	0.15	C	140	190	1,020	1,751	2	
339	Glenwood Rd	Glenwood Ave. to SR 15A	County	1.90	35	E/W	4,210	4,170	4,030	4,040	-	4,360	4,120	4,380	4,500	4,360	4,780	4,780	4,780	4,780	4,780	4,780	4,780	4,780	4,780	4,780	0.31	C	280	380	1,020	6,848	2	
340	Glenwood Rd	SR 15A to US 17	County	1.25	35	E/W	2,140	2,140	2,050	2,000	-	2,400	2,250	2,380	2,380	2,110	1,780	1,780	1,780	1,780	1,780	1,780	1,780	1,780	1,780	1,780	0.13	C	120	200	1,020	1,225	2	
341	Grand Av/CR 4053	Old New York Ave. to SR 44	County	Yes	0.80	30	N/S	800	830	940	970	-	1,230	1,550	1,870	1,980	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	0.16	C	170	250	1,020	1,350	2	
342	Grand Av/CR 4053	SR 44 to Minnesota Ave	County	0.90	35	N/S	2,250	1,820	2,190	2,280	2,570	3,090	3,010	3,630	4,090	3,880	4,460	4,460	4,460	4,460	4,460	4,460	4,460	4,460	4,460	4,460	0.32	C	310	470	1,020	3,960	2	
343	Grand Av/CR 4053	Minnesota Ave. to Plymouth Ave	County	Yes	0.50	40	N/S	1,240	1,270	1,260	1,240	1,410	1,760	1,550	1,680	1,900	1,780	1,910	1,910	1,910	1,910	1,910	1,910	1,910	1,910	1,910	0.14	C	140	180	1,230	995	2	
344	Grand Av/CR 4053	Plymouth Ave. to Glenwood Rd	County	Yes	2.35	45	N/S	2,200	2,200	2,080	2,080	2,180	2,480	2,370	2,480	2,480	2,480	2,480	2,480	2,480	2,480	2,480	2,480	2,480	2,480	2,480	0.21	C	210	260	1,020	2,854	2	
345	Grand Av/CR 4053	Glenwood Rd. to Lemon St.	County	Yes	1.30	35	N/S	3,700	3,630	3,550	3,550	3,860	4,010	4,000	4,200	4,270	3,950	4,130	4,130	4,130	4,130	4,130	4,130	4,130	4,130	4,130	0.28	C	280	380	1,330	3,569	2	
346	Grand Av/CR 4053	Lemon St. to Retta St.	County	Yes	1.80	40	N/S	1,740	1,720	1,700	1,740	1,990	2,100	1,860	2,190	2,200	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	2,280	0.17	C	160	220	1,230	4,212	2	
347	Graves Av/CR 1445	Verona's Memorial Pkwy. to Kentuck	County	Yes	0.30	45	E/W	17,470	17,140	16,750	17,160	18,780	19,180	19,190	19,590	21,760	21,760	21,760	21,760	21,760	21,760	21,760	21,760	21,760	21,760	21,760	1.10	F	1,180	1,640	1,620	5,925	2	
348	Graves Av/CR 1445	Kentucky Ave. to Normandy Blvd.	County	Yes	0.60	45	E/W	13,790	11,840	12,970	13,640	14,510	15,310	14,060	15,520	16,040	15,380	16,170	16,170	16,170	16,170	16,170	16,170	16,170	16,170	16,170	0.91	C	1,000	1,420	1,620	4,822	2	
349	Graves Av/CR 1445	Normandy Blvd. to Howard Blvd.	County	Yes	0.50	35	E/W	13,200	13,420	13,420	13,420	14,510	15,310	14,060	15,520	16,040	15,380	16,170	16,170	16,170	16,170	16,170	16,170	16,170	16,170	16,170	0.81	C	1,020	1,560	1,620	4,635	2	
350	Greens Dairy Rd	SR 15A to Stone St.	County	Yes	0.50	30	E/W	120	90	100	120	140	150	200	210	230	200	160	200	200	200	200	200	200	200	200	0.01	C	10	20	1,020	20	2	
351	Halleck St. (NSB)	Wayne Ave. to Enterprise Ave	County	Yes	0.20	30	N/S	610	5780	5,880	6,450	6,530	6,410	6,940	7,200	6,940	6,830	7,320	7,320	7,320	7,320	7,320	7,320	7,320	7,320	0.54	D	420	530	1,020	1,464	2		
352	Hand Ave	Williamson Blvd. to Clyde Morris Blvd	County	Yes	1.25	50	E/W	7,670	7,900	6,750	8,330	9,520	8,720	6,880	9,880	9,880	9,880	9,880	9,880	9,880	9,880	9,880	9,880	9,880	9,880	9,880	0.55	A	620	750	1,540	11,625	2	
353	Hand Ave	Clyde Morris Blvd. to Shangri-La Dr.	County	Yes	0.75	50	E/W	14,220	13,090	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	10,240	0.87	D	1,000	1,200	1,020	3,540	2	
354	Hand Ave	Shangri-La Dr. to SR SA/Novia Rd.	County	Yes	0.25	45	E/W	14,500	14,110	13,330	14,500	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	16,320	0.43	C	1,070	1,310	1,230	1,800	2	
355	Hazen Rd.	SR 44 to Plymouth Ave	County	Yes	1.00	30	N/S	1,050	1,240	1,250	1,400	1,480	1,680	1,980	1,650	1,440	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	0.13	C	140	180	1,230	1,800	2	
356	Hazen Rd.	Plymouth Ave. to Mercers Ferry Rd	County	Yes	1.60	35	N/S	720	700	800	820	680	850	910	1,620	1,180	840	920	920	920	920	920	920	920	920	920	0.07	C	130	80	1,020	1,380	2	
357	Highbridge Rd	Water Boardman Ln. to John Anders	County	Yes	1.50	30	E/W	1,830	2,100	2,100	1,750	2,220	2,480	2,270	2,210	2,570	3,180	3,430	3,430	3,430	3,430	3,430	3,430	3,430	3,430	1.775	0.29	A	200	300	1,120	5,488	2	
358	Highbridge Rd	John Anderson Dr. to SR 41A	County	Yes	0.30	30	E/W																											



531	Saxon Blvd	H4 to Finland Dr.	County	Yes	0.35	40	E+W	41,410	41,200	34,420	36,480	40,540	39,790	46,490	38,020	36,050	36,930	45,100	E	47,560	0.95	E	2,630	3,580	4,280	15,785	5	
532	Saxon Blvd	Finland Dr. to Normandy Blvd	County	Yes	0.40	40	E+W	13,160	35,990	32,490	36,760	39,620	37,870	39,740	37,200	40,230	38,890	38,720	E	37,970	1.02	F	2,150	1,170	3,410	13,552	4	
533	Saxon Blvd	Normandy Blvd. to Taylor Dr.	County	Yes	1.25	40	E+W	14,160	24,000	22,010	20,220	22,960	26,320	24,650	26,400	24,560	24,560	E	37,970	0.69	C	1,450	970	3,410	21,728	4		
534	Saxon Blvd.	Troyl Dr. to Providence Blvd.	County	Yes	0.90	35	N+S	9,720	9,610	9,980	9,430	9,580	10,020	10,470	12,890	10,260	11,690	E	13,640	0.86	D	720	970	1,020	10,521	2		
535	Saxon Blvd.	Providence Blvd. to Normandy Blvd.	County	Yes	0.70	35	N+S	7,590	8,270	8,150	7,370	6,330	7,610	7,810	7,270	7,500	8,050	E	13,640	0.59	D	490	680	1,020	5,330	2		
536	Saxon Blvd.	Normandy Blvd. to Doyle Rd.	County	Yes	1.00	40	N+S	5,420	5,460	5,540	5,100	4,700	5,220	5,980	5,370	5,490	5,150	5,550	E	13,640	0.39	C	460	520	1,230	5,360	2	
537	Saxon Dr. (NSB)	SR 17A to Hiles Blvd.	County	Yes	0.55	35	N+S	770	970	920	940	990	960	980	970	960	940	E	13,640	0.28	C	120	90	1,020	462	2		
538	Saxon Dr. (NSB)	Hiles Blvd. to 27th Ave.	County	Yes	1.55	35	N+S	2,460	2,610	2,360	2,360	2,550	3,250	2,920	3,030	3,090	3,120	2,750	E	13,640	0.20	C	190	240	1,020	4,263	2	
539	Saxon Dr. (NSB)	27th Ave. to 3rd Ave/ SR 1A	County	Yes	1.75	35	N+S	5,390	5,480	5,570	5,850	5,990	6,300	6,000	6,790	6,700	5,940	5,950	E	13,640	0.43	D	410	500	1,020	10,738	2	
540	Sparkman Ave.	Rhode Island Ave. to Blue Springs Av	County	Yes	0.60	30	N+S	1,620	1,370	1,820	2,090	-	2,420	2,360	3,020	2,560	2,200	2,300	E	13,640	0.17	C	200	1,020	1,020	1,180	2	
541	Sparkman Ave.	Blue Springs Ave. to French Ave.	County	Yes	0.65	30	N+S	2,880	2,600	2,520	2,880	-	3,340	2,980	4,510	3,100	2,520	2,900	E	13,640	0.21	C	280	270	1,020	1,485	2	
542	Sparkman Ave.	French Ave. to New York Ave. W.	County	Yes	0.75	40	N+S	1,200	1,200	1,200	1,200	-	1,200	1,200	1,200	1,200	1,200	1,200	E	13,640	0.13	C	150	150	1,020	1,135	2	
543	Sparkman Ave.	New York Ave. W. to Minnesota Ave.	County	Yes	0.45	30	N+S	1,150	1,120	1,100	1,060	-	1,730	1,610	1,910	1,930	1,540	1,490	E	13,640	0.11	C	130	190	1,020	1,200	2	
544	Spring Garden Ave.	McGregor Rd. to Beresford Rd. West	County	Yes	0.80	30	N+S	2,320	2,420	2,190	2,190	-	2,300	2,260	2,770	2,870	2,180	2,550	E	13,640	0.19	C	200	290	1,020	2,277	2	
545	Spring Garden Ave.	Beresford Rd. West to Beresford Ave.	County	Yes	0.60	30	N+S	2,030	2,060	1,950	1,980	-	2,080	2,120	2,250	2,230	1,930	2,080	E	13,640	0.15	C	120	200	1,020	1,248	2	
546	Spring Garden Ranch Rd.	US 17 to Argon Ave.	County	Yes	0.20	35	E+W	2,020	2,020	2,070	2,050	-	2,540	3,180	3,120	2,960	2,950	3,390	E	13,640	0.24	C	190	360	1,020	1,606	2	
547	Spring Garden Ranch Rd.	Argon Ave. to Arrendondo Grant/Eas	County	Yes	1.20	35	E+W	3,900	4,220	3,900	4,300	-	3,200	3,200	3,200	3,200	3,200	3,980	E	13,640	0.09	B	40	570	620	696	2	
548	Spruce Creek Rd.	Taylor Rd. to SR5A/Novarra Rd.	County	Yes	0.75	45	N+S	16,350	15,350	14,670	15,090	13,420	16,600	15,910	15,310	15,100	13,880	14,740	E	37,970	0.39	C	990	1,310	3,410	11,055	4	
549	Spruce Creek Rd.	SR5A/Novarra Rd. to Commonwealth Bl	County	Yes	0.50	35	N+S	9,960	9,360	8,930	9,830	9,210	9,280	9,180	9,420	8,990	7,780	8,500	E	13,640	0.22	D	560	770	1,020	4,250	2	
550	Stone St.	Plymouth Ave. to CR 9215B	County	Yes	0.80	35	N+S	5,540	5,370	5,240	5,200	4,210	4,520	5,160	5,160	4,500	4,540	4,810	E	13,640	0.35	C	340	410	1,020	3,448	2	
551	Stone St.	CR 9215B to Meadors Farmery Rd.	County	Yes	0.70	35	N+S	540	590	590	490	-	680	580	720	670	380	590	E	13,640	0.04	C	40	90	1,020	404	2	
552	Sugar Mill Dr.	Pioneer Tr. to SR 44	County	Yes	1.30	45	N+S	2,370	2,450	2,760	2,980	2,830	3,020	3,330	2,930	2,950	3,370	3,240	E	13,640	0.24	C	210	250	1,230	4,212	2	
553	Summit Ave.	SR 44 to Main St.	County	Yes	2.20	50	N+S	5,280	4,780	4,430	4,090	4,180	4,130	2,710	4,040	3,760	2,260	2,250	E	13,640	0.16	C	230	200	1,020	4,950	2	
554	Surfside Dr.	John Anderson Dr. to SR 1A	County	Yes	0.35	30	E+W	350	340	300	370	350	400	380	420	470	430	420	E	13,640	0.03	C	30	40	1,020	220	2	
555	Taylor Rd. (CO)	Tomoka Farms Rd. to Summertime Rd.	County	Yes	0.70	45	E+W	7,170	6,890	7,110	7,400	6,910	9,200	8,220	9,660	8,730	7,040	7,970	E	17,050	0.48	C	900	850	1,540	5,433	2	
556	Taylor Rd. (CO)	Summertime Rd. to Crane Lake Bl	County	Yes	1.15	50	E+W	9,790	9,670	9,270	10,020	11,440	11,610	10,880	11,700	9,420	10,150	E	17,050	0.63	C	1,120	960	1,270	6,029	2		
557	Taylor Rd. (CO)	Crane Lake Blvd. to Sunsetree Rd.	County	Yes	0.75	50	E+W	14,570	14,300	14,010	14,200	15,710	15,910	16,120	17,310	15,900	15,000	14,840	E	17,050	0.87	C	990	1,260	1,540	11,130	2	
558	Taylor Rd. (CO)	Summertime Rd. to Williamson Blvd.	County	Yes	0.20	45	E+W	15,190	14,600	13,700	14,530	15,360	16,360	15,560	16,030	16,390	17,200	18,120	E	37,970	0.48	C	1,120	940	3,410	3,624	4	
559	Taylor Rd. (CO)	Williamson Blvd. to I485 (at Dunlawton)	County	Yes	0.15	45	E+W	13,800	13,800	13,490	13,160	10,210	11,100	11,380	10,770	10,620	14,950	14,340	E	47,560	0.93	D	2,610	3,580	4,280	6,611	5	
560	Taylor Rd. (PO)	SR 421 Dunlawton Ave. to Cypre Mor	County	Yes	0.55	35	E+W	13,880	12,840	12,270	12,110	12,170	13,160	13,160	14,100	14,710	14,710	12,780	E	14,440	0.31	D	960	1,160	1,270	7,029	2	
561	Taylor Rd. (PO)	Cypre Morin Blvd. to Henzel Rd.	County	Yes	0.30	45	E+W	15,330	15,330	15,330	15,330	15,330	15,330	15,330	15,330	15,330	15,330	15,330	E	37,970	0.45	C	1,240	1,470	3,410	8,485	4	
562	Taylor Rd. (PO)	Henzel Rd. Spruce Creek Rd.	County	Yes	1.00	45	E+W	15,600	15,050	14,330	14,610	15,810	15,930	15,610	15,840	16,770	14,800	E	37,970	0.39	C	1,300	1,400	3,410	14,800	4		
563	Taylor Rd. (DL)	US 1792 to Stratford Dr.	County	Yes	0.80	35	E+W	5,740	6,090	5,690	5,610	4,950	6,410	7,020	8,810	8,850	7,640	8,200	E	13,640	0.60	D	570	770	1,020	6,260	2	
564	Taylor Rd. (DL)	Stratford Dr. to Blue Lake Ave.	County	Yes	0.85	50	E+W	4,790	5,070	4,780	4,930	4,730	5,430	5,740	7,040	6,230	5,510	7,980	E	17,050	0.47	C	500	770	1,540	7,581	2	
565	Taylor Rd. (DL)	Blue Lake Ave. to Martin Luther King	County	Yes	0.80	45	E+W	4,890	5,090	4,890	4,890	4,890	5,090	5,290	6,090	5,290	5,290	5,290	E	13,640	0.52	C	360	360	1,020	5,696	2	
566	Taylor Rd. (NSB)	Glencoe Rd. to Mission Rd.	County	Yes	0.75	30	E+W	1,550	1,500	1,590	1,680	1,870	1,910	2,050	2,130	2,560	2,410	2,910	E	13,640	0.21	C	230	310	1,020	2,183	2	
567	Tomoka Farms Rd.	SR 44 to Pioneer Tr.	County	Yes	2.20	50	N+S	4,510	5,150	5,260	5,420	6,260	6,520	6,190	7,580	7,670	6,280	6,690	C	11,775	0.57	B	510	610	1,120	14,718	2	
568	Tomoka Farms Rd.	Pioneer Tr to Taylor Rd.	County	Yes	2.40	50	N+S	9,330	8,810	9,790	9,950	10,310	12,360	10,670	10,170	9,190	11,070	E	24,450	0.45	C	750	940	2,200	30,996	2		
569	Tomoka Farms Rd.	Taylor Rd. to Townsend Blvd	County	Yes	1.85	50	N+S	5,790	5,720	6,150	6,190	7,280	7,790	7,560	7,850	7,650	6,300	8,220	E	24,450	0.31	B	530	660	2,200	10,904	2	
570	Tomoka Farms Rd.	Townsend Blvd to Shultz Rd.	County	Yes	1.50	30	N+S	5,870	5,780	6,210	6,210	7,140	7,870	8,660	8,130	6,940	8,220	E	24,450	0.34	B	610	730	2,200	12,130	2		
571	Tomoka Farms Rd.	Shultz Rd. to US 9215B	County	Yes	3.02	40	N+S	5,300	5,780	6,030	5,810	7,300	7,360	7,040	9,250	8,440	7,660	6,670	E	24,450	0.35	B	690	770	2,200	26,183	2	
572	Tomoka Farms Rd.	US 9215B to Dunn Ave.	County	Yes	1.90	40	N+S	3,550	4,380	5,070	5,800	5,510	6,810	7,700	8,610	8,290	8,710	E	24,450	0.38	B	540	800	2,200	16,549	2		
573	Tomoka Farms Rd.	Dunn Ave. to LPGCA Blvd.	County	Yes	1.90	40	N+S	3,770	4,400	4,660	4,970	4,810	5,430	5,610	5,980	5,090	5,710	E	24,450	0.23	B	500	500	2,200	10,949	2		
574	Tumbull Bay Rd.	Williams Rd. to Williams Rd.	County	Yes	2.80	40	N+S	2,950	2,860	2,950	3,040	3,140	3,260	3,460	3,460	3,460	3,460	E	13,640	0.37	C	310	370	1,020	3,226	2		
575	Tumbull Bay Rd.	Williams Rd. to Industrial Park Ave.	County	Yes	1.20	45	N+S	3,100	3,140	3,050	3,140	3,580	3,580	4,420	4,270	3,440	3,440	3,790	E	13,640	0.28	C	290	330	2,200	4,548	2	
576	Tumbull Bay Rd.	Industrial Park Ave. to US 1	County	Yes	0.85	30	E+W	4,090	3,890	3,910	3,890	3,970	4,300	4,930	4,900	4,250	4,300	4,870	E	13,640	0.36	C	350	390	1,020	4,140	2	
577	Timber Creek Rd.	LPGA Blvd to Terminus	County	Yes	1.20	35	-	-	-	-	-	-	-	-	-	-	-	-	E	75,300	-	-	-	-	-	6,780	VALUE1	4
578	Timber Creek Rd.	Terminus to Riverbend Rd/Future Cor	County	Yes/Future	1.70	45	-	-	-	-	-	-	-	-	-	-	-	-	E	34,230	-	-	-	-	-	3,080	VALUE1	2
579	Timber Creek Rd.	Riverbend Rd. to SR 40	County	Yes/Future	0.45	30	N+S	770	680	740	750	760	610	550	850	910	700	770	E	13,640	0.06	C	60	70	1,020	3,147	2	
580	Timber Creek Rd.	SR 40 to Tyler Run	County	Yes	0.50	40	N+S	12,880	13,620	12,670	11,610	13,120	13,120	13,120	13,120	10,740	10,740	10,540	E	37,								

		All State Rds =	
		County	
<b>Facility Types - Urban/Transitioning</b>		Tran Rds =	
FWIS	= Freeways - Interchange Spacing Group 1 (spacing >= 2 miles apart)		
FW	= Freeways - Transitioning & Rural	Total	
UFH	= Uninterrupted Flow Highways		
SSAC1	= State Signalized Arterial Class 1	VC Arterial	
SSAAC2	= State Signalized Arterial Class 2	VC Collector	
		Local-Future Rds	
NSSRC1	= Non-State Signalized Road Class 1		
NSSRC2	= Non-State Signalized Road Class 2		
<b>Facility Types - Rural Developed</b>			
FW	= Freeways - Transitioning & Rural		
UFH	= Uninterrupted Flow Highways		
IFH	= Interrupted Flow Highways		
<b>Facility Types - Rural Undeveloped</b>			
FW	= Freeways - Transitioning & Rural		
UFH	= Uninterrupted Flow Highways		
ISIS	= Isolated Signalized Intersections		
<b>One-Way/Two-Way</b>			
1W	= One-way Directional Volumes		
2W	= Two-way Directional Volumes		
<b>Number of Lanes</b>			
2L, 4L, 5L, etc.	= Number of Roadway Lanes		
<b>Divided/Undivided</b>			
D	= Divided		
U	= Undivided		
<b>Left Turn Bays</b>			
WL	= Left Turn Bays		
DL	= No Left Turn Bays		





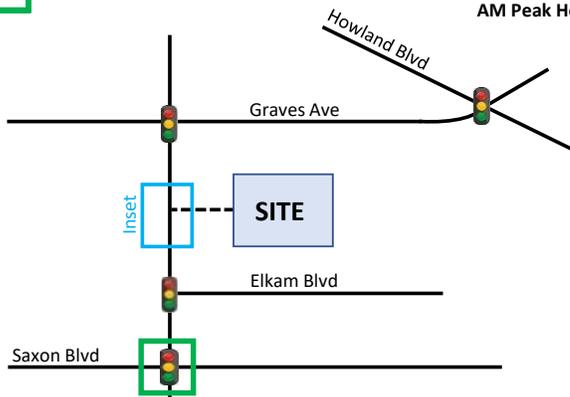
## **Appendix D: Traffic Volumes**

# INTERSECTION TRAFFIC VOLUMES

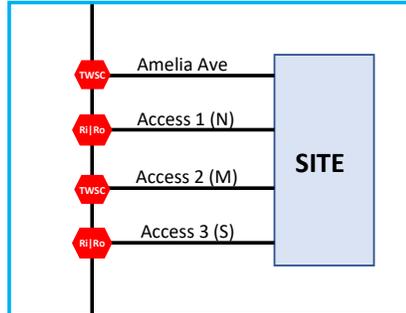
Intx 1: Normandy Blvd & Saxon Blvd  
AM Peak Hour



- Subject Intersection

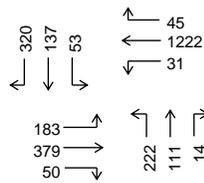


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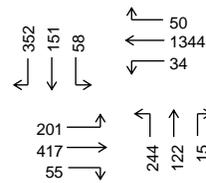
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



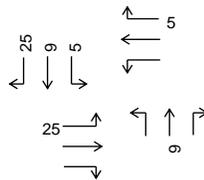
\*SF applied = 1.02

## 2028 VOLUMES

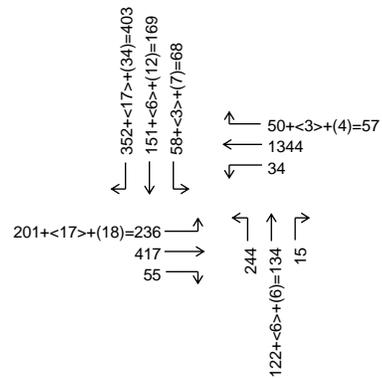


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



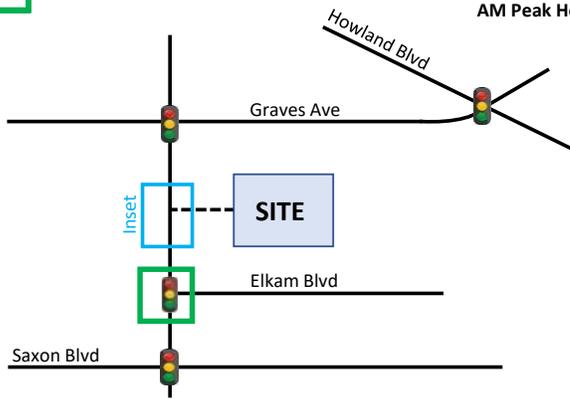
Note: +/- errors due to rounding

# INTERSECTION TRAFFIC VOLUMES

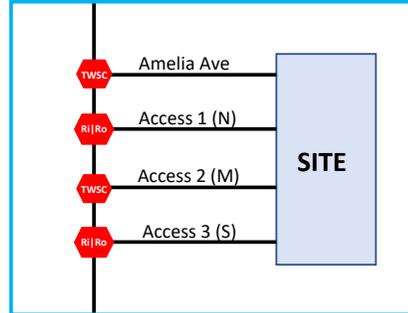


- Subject Intersection

Intx 2: Normandy Blvd & Elkcam Blvd  
AM Peak Hour

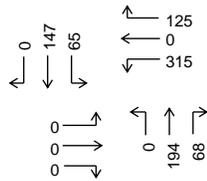


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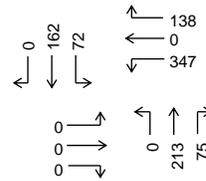
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



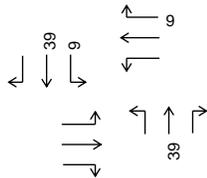
\*SF applied = 1.02

## 2028 VOLUMES

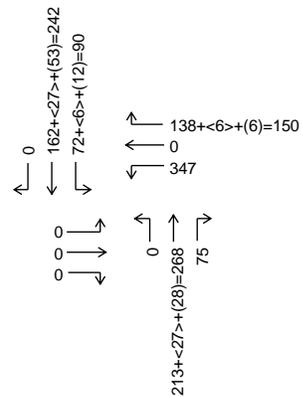


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



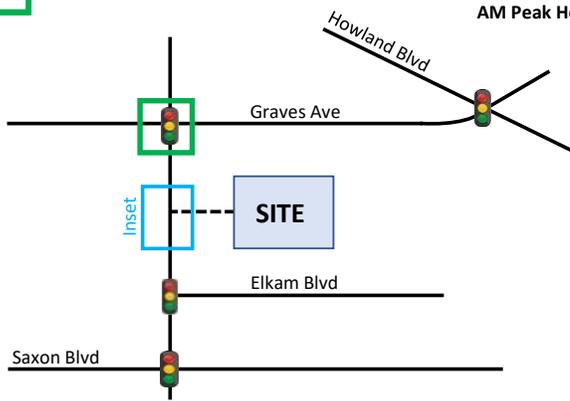
Note: +/- errors due to rounding

# INTERSECTION TRAFFIC VOLUMES

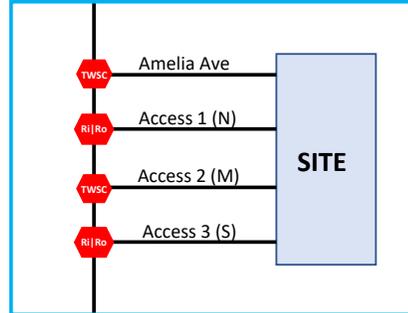
Intx 3: Normandy Blvd & Graves Ave  
AM Peak Hour



- Subject Intersection

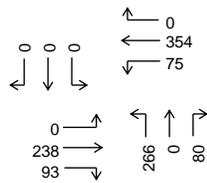


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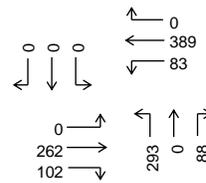
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



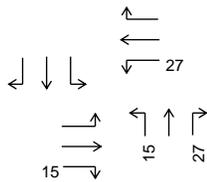
\*SF applied = 1.02

## 2028 VOLUMES

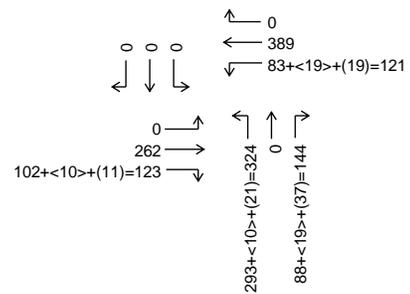


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



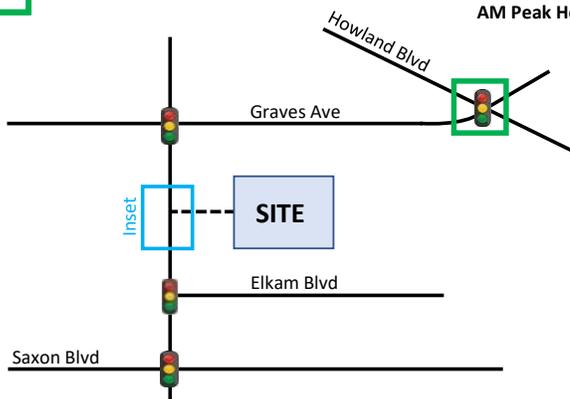
Note: +/- errors due to rounding

# INTERSECTION TRAFFIC VOLUMES

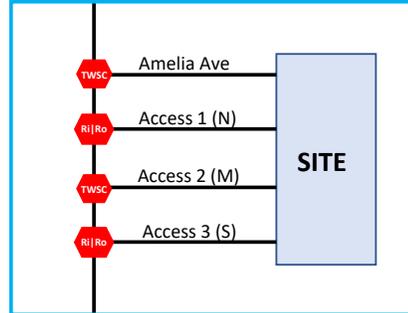
Intx 4: Graves Ave & Howland Blvd  
AM Peak Hour



- Subject Intersection

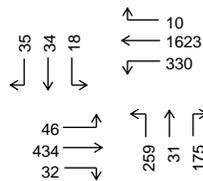


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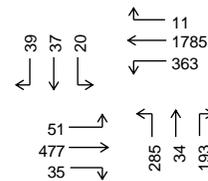
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



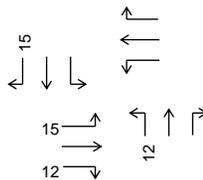
\*SF applied = 1.02

## 2028 VOLUMES

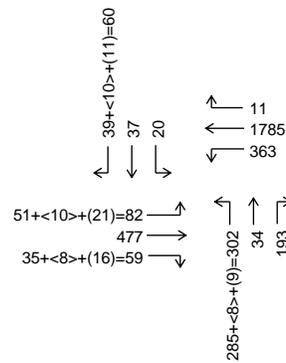


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



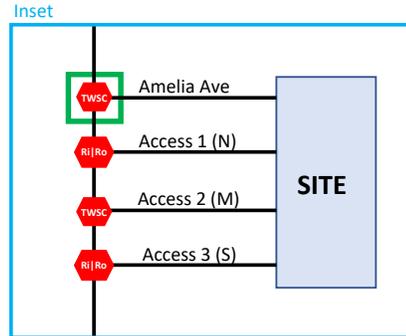
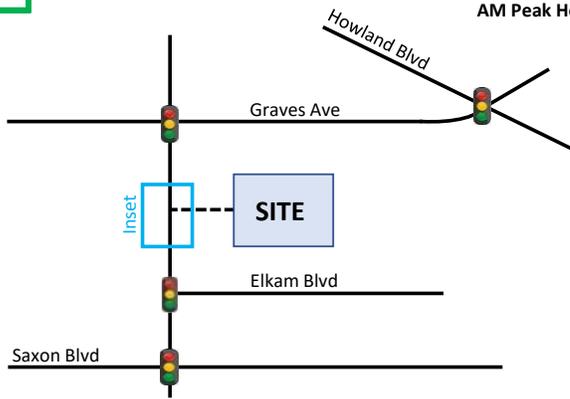
Note: +/- errors due to rounding



- Subject Intersection

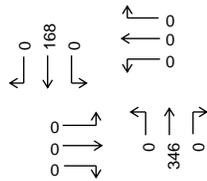
# INTERSECTION TRAFFIC VOLUMES

Intx 5: Normandy Blvd & Amelia Ave/ Rhode Island  
AM Peak Hour



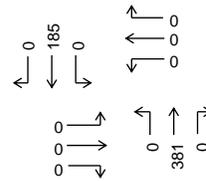
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



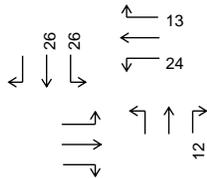
\*SF applied = 1.02

## 2028 VOLUMES

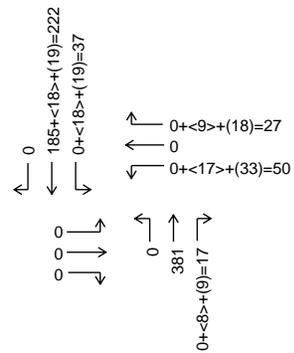


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



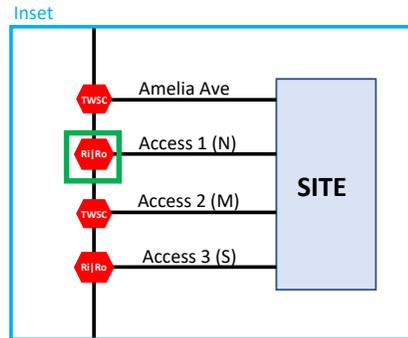
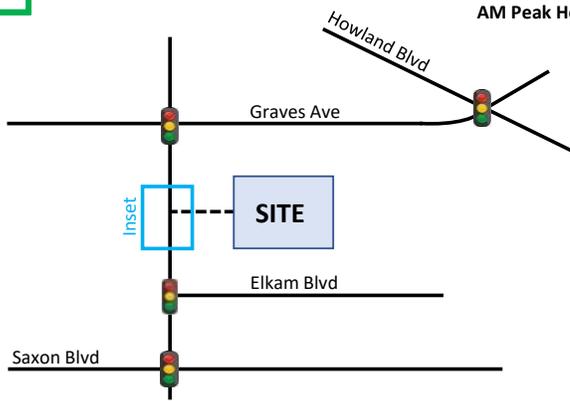
Note: +/- errors due to rounding



- Subject Intersection

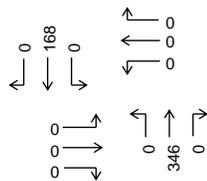
# INTERSECTION TRAFFIC VOLUMES

Intx 6: Normandy Blvd & Access 1 (N)  
AM Peak Hour



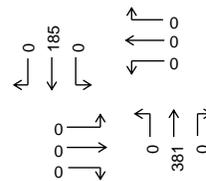
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



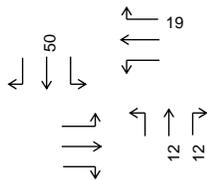
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## 2028 VOLUMES

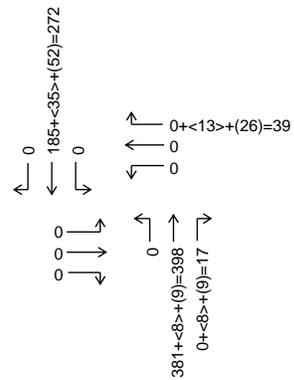


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



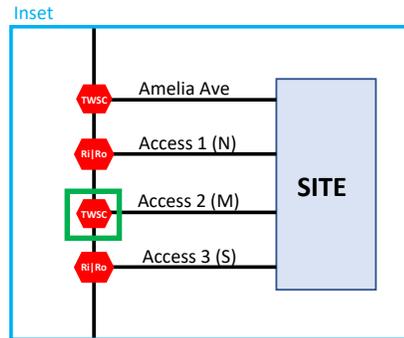
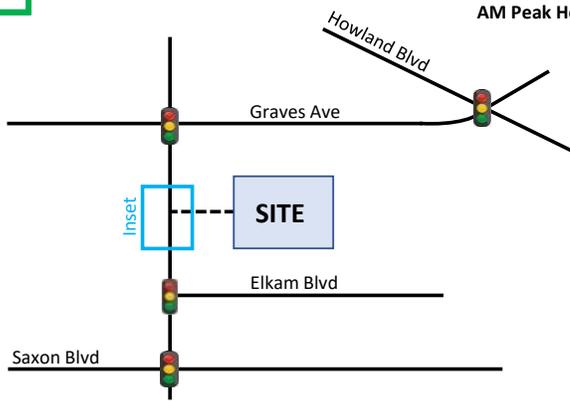
Note: +/- errors due to rounding

# INTERSECTION TRAFFIC VOLUMES



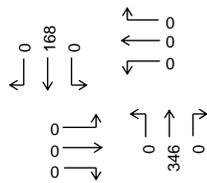
- Subject Intersection

Intx 7: Normandy Blvd & Access 2 (M)  
AM Peak Hour



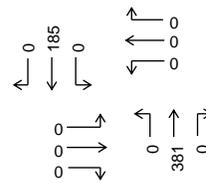
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



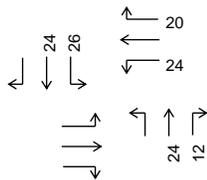
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## 2028 VOLUMES

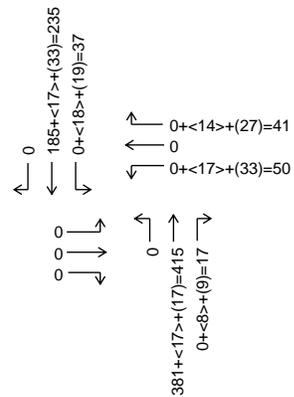


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



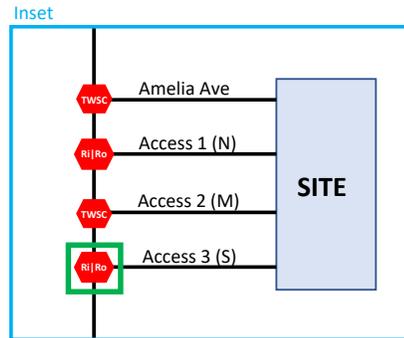
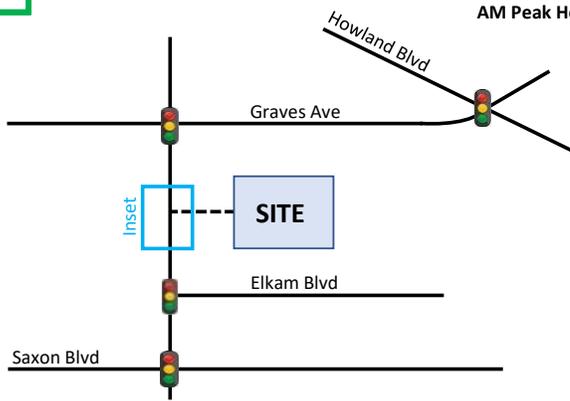
Note: +/- errors due to rounding



- Subject Intersection

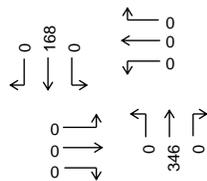
# INTERSECTION TRAFFIC VOLUMES

Intx 8: Normandy Blvd & Access 3 (S)  
AM Peak Hour



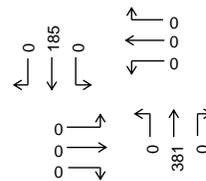
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



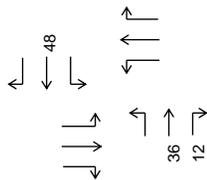
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## 2028 VOLUMES

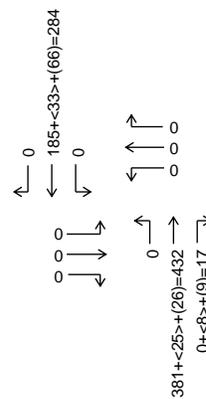


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



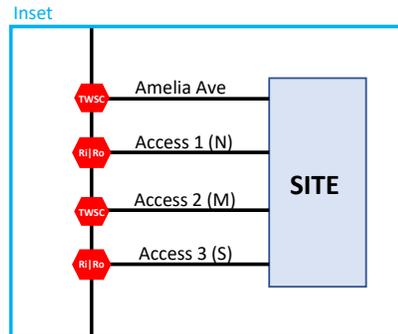
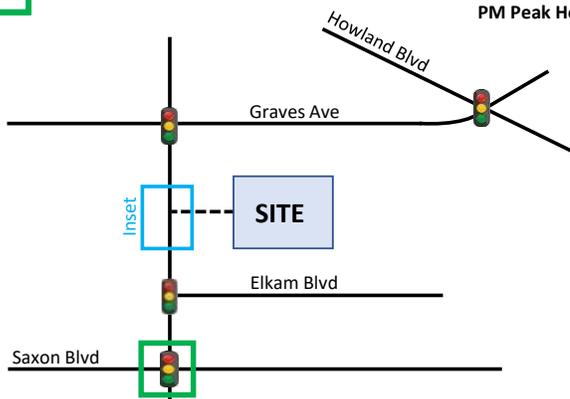
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# INTERSECTION TRAFFIC VOLUMES



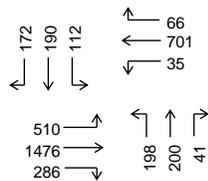
- Subject Intersection

Intx 1: Normandy Blvd & Saxon Blvd  
PM Peak Hour



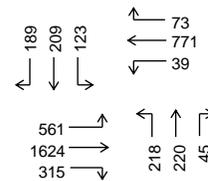
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



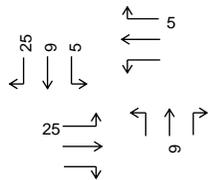
\*SF applied = 1.02

## 2028 VOLUMES

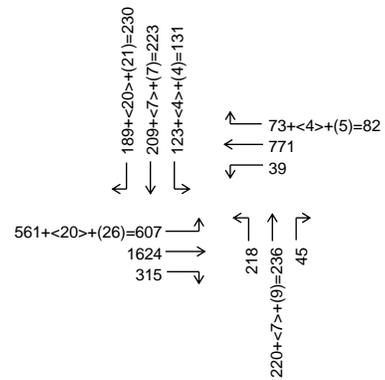


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



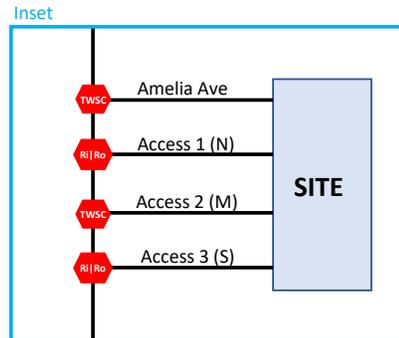
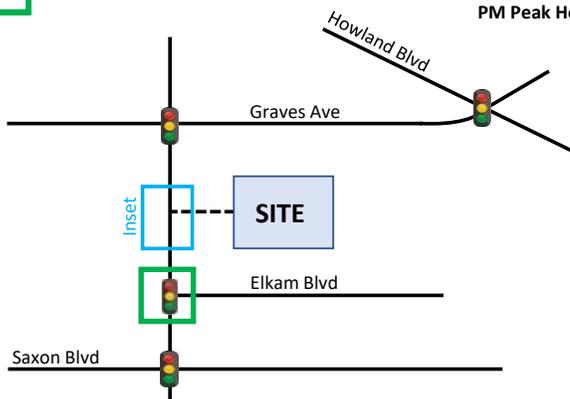
Note: +/- errors due to rounding

# INTERSECTION TRAFFIC VOLUMES



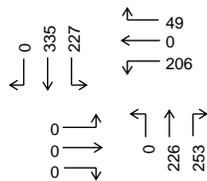
- Subject Intersection

Intx 2: Normandy Blvd & Elkcam Blvd  
PM Peak Hour



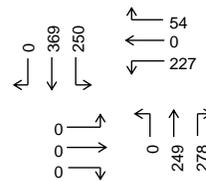
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



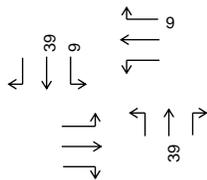
\*SF applied = 1.02

## 2028 VOLUMES

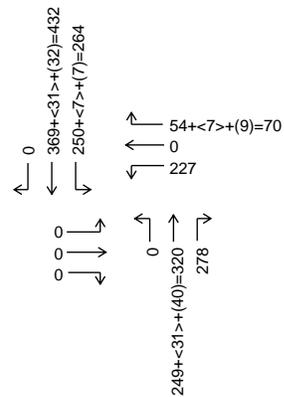


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



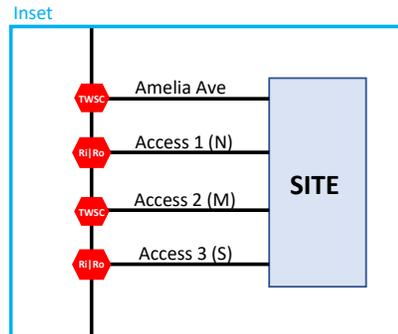
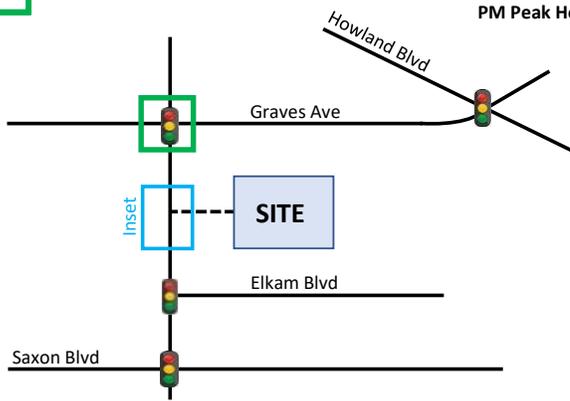
Note: +/- errors due to rounding

# INTERSECTION TRAFFIC VOLUMES



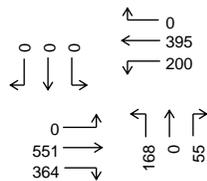
- Subject Intersection

Intx 3: Normandy Blvd & Graves Ave  
PM Peak Hour



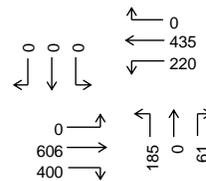
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



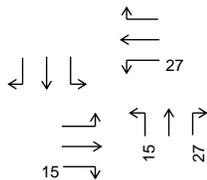
\*SF applied = 1.02

## 2028 VOLUMES

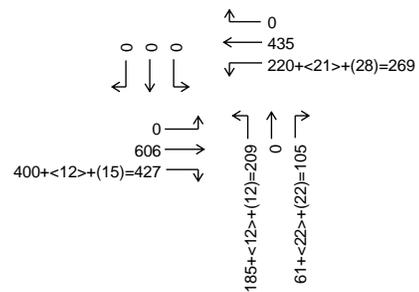


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



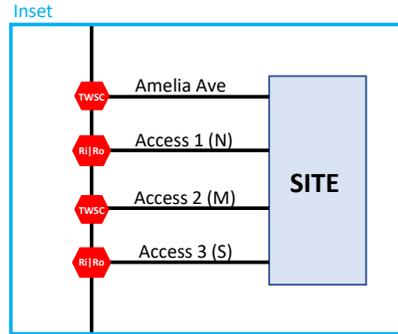
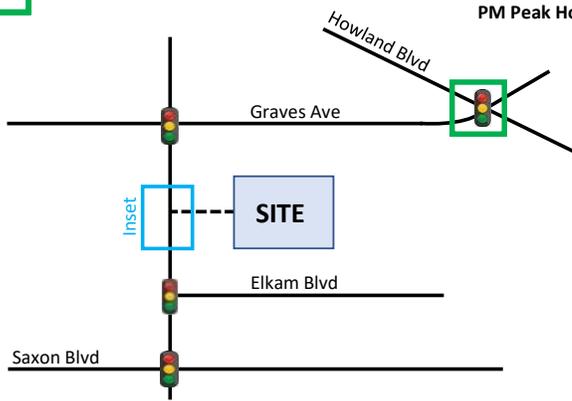
Note: +/- errors due to rounding



- Subject Intersection

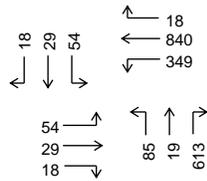
# INTERSECTION TRAFFIC VOLUMES

Intx 4: Graves Ave & Howland Blvd  
PM Peak Hour



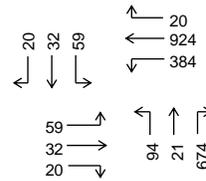
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



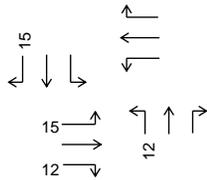
\*SF applied = 1.02

## 2028 VOLUMES

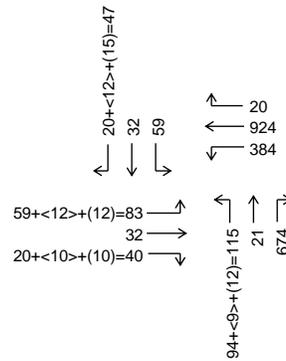


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



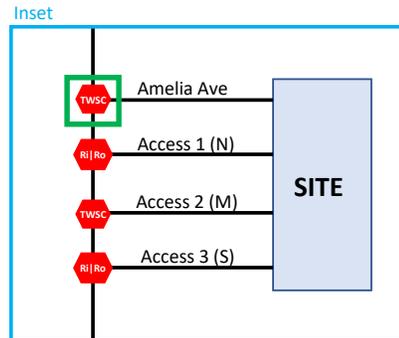
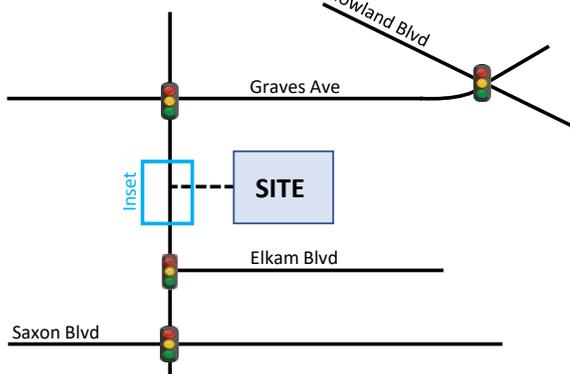
Note: +/- errors due to rounding



- Subject Intersection

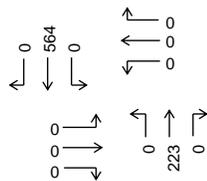
# INTERSECTION TRAFFIC VOLUMES

Intx 5: Normandy Blvd & Amelia Ave/Rhode Island  
PM Peak Hour



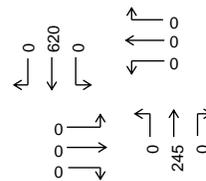
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



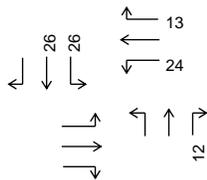
\*SF applied = 1.02

## 2028 VOLUMES

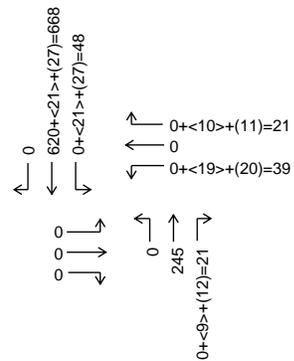


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



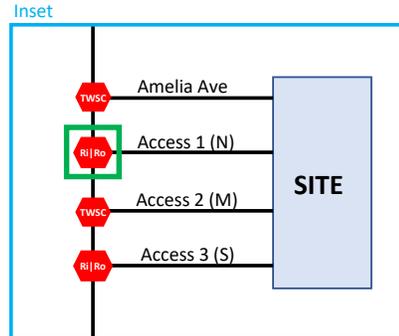
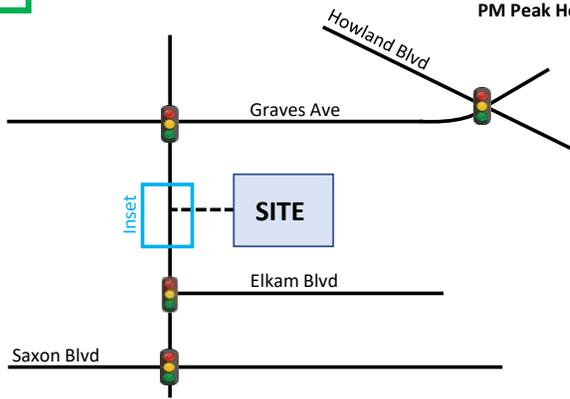
Note: +/- errors due to rounding



- Subject Intersection

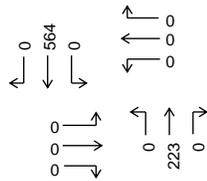
# INTERSECTION TRAFFIC VOLUMES

Intx 6: Normandy Blvd & Access 1 (N)  
PM Peak Hour



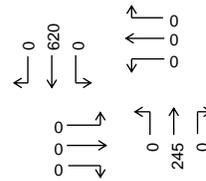
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



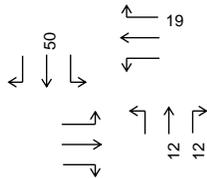
\*SF applied = 1.02

## 2028 VOLUMES

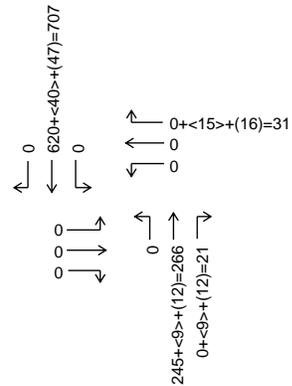


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



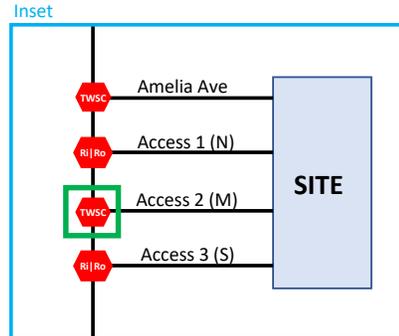
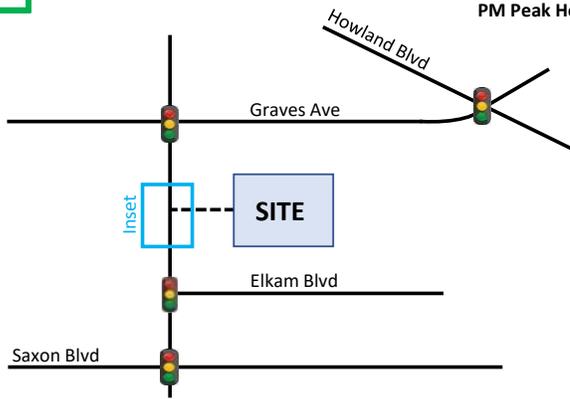
Note: +/- errors due to rounding



- Subject Intersection

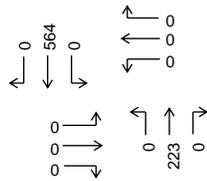
# INTERSECTION TRAFFIC VOLUMES

Intx 7: Normandy Blvd & Access 2 (M)  
PM Peak Hour



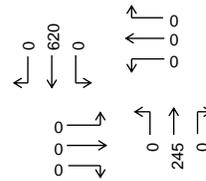
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



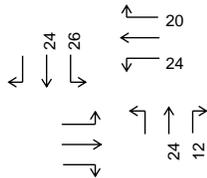
\*SF applied = 1.02

## 2028 VOLUMES

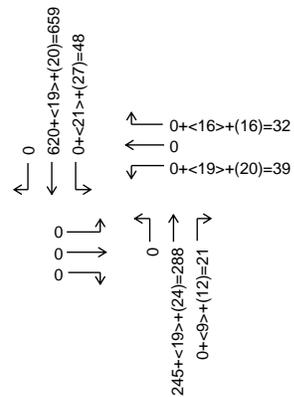


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



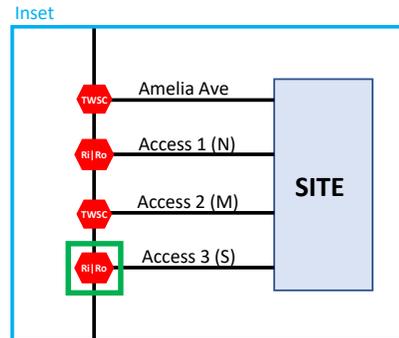
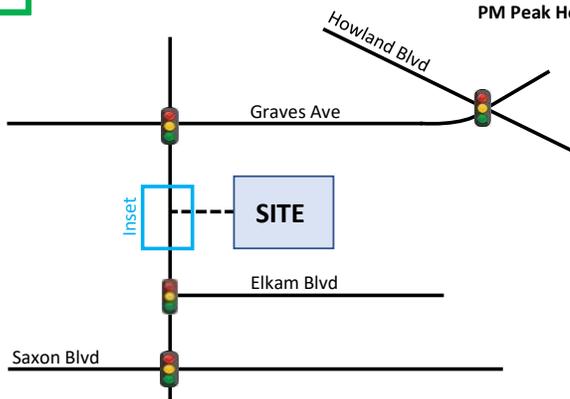
Note: +/- errors due to rounding

# INTERSECTION TRAFFIC VOLUMES



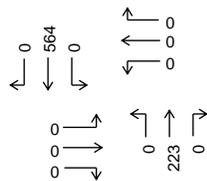
- Subject Intersection

Intx 7: Normandy Blvd & Access 3 (S)  
PM Peak Hour



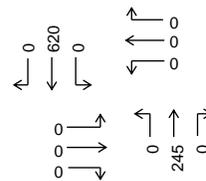
\*Background + <Pass-By Vol> + ( Project Vol) = Total Volume

## 2023 VOLUMES



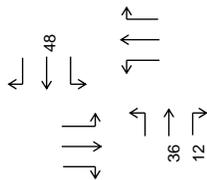
\*SF applied = 1.02

## 2028 VOLUMES

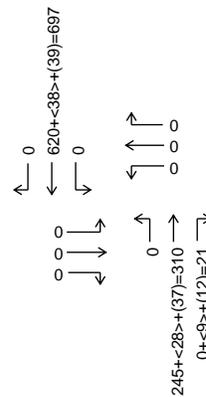


\*Growth rate applied = 1.10

## TRIP DISTRIBUTION %



## PROJECTED VOLUMES



Note: +/- errors due to rounding

# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Normandy Boulevard and Saxon Boulevard

COUNTY: Volusia

LONGITUDE: 0

## Normandy Boulevard

## Normandy Boulevard

## Saxon Boulevard

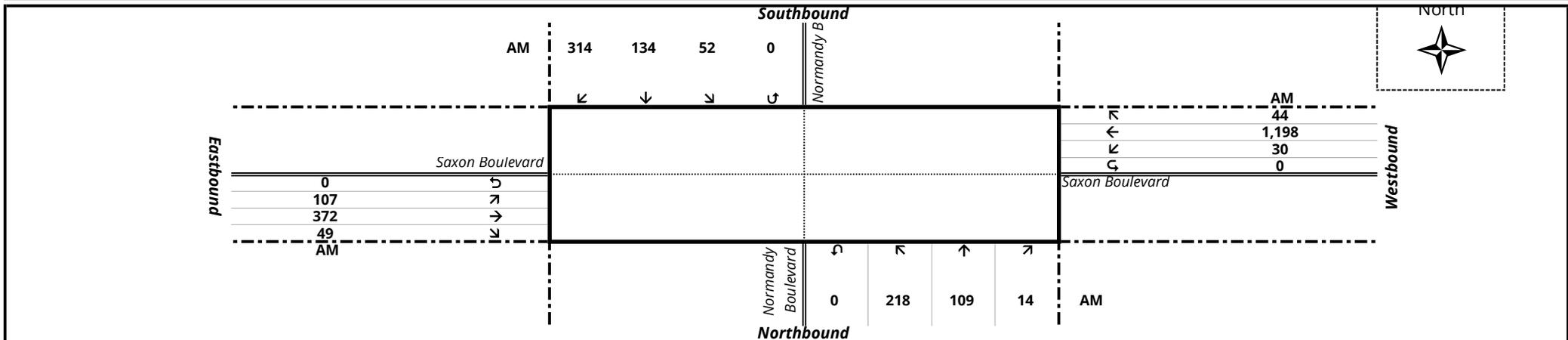
## Saxon Boulevard

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
07:00 AM	52	23	2	0	77	3	22	79	0	104	181	27	76	9	0	112	8	273	8	0	289	401	582
07:15 AM	70	27	4	0	101	11	36	90	0	137	238	33	69	10	0	112	6	278	2	0	286	398	636
07:30 AM	58	25	3	0	86	18	34	87	0	139	225	25	92	16	0	133	8	387	18	0	413	546	771
07:45 AM	45	31	5	0	81	11	34	74	0	119	200	19	108	11	0	138	11	267	10	0	288	426	626
<b>TOTAL</b>	225	106	14	0	345	43	126	330	0	499	844	104	345	46	0	495	33	1,205	38	0	1,276	1,771	2,615
08:00 AM	45	26	2	0	73	12	30	63	0	105	178	30	103	12	0	145	5	266	14	0	285	430	608
08:15 AM	49	27	3	0	79	9	28	67	0	104	183	39	84	22	0	145	11	269	4	0	284	429	612
08:30 AM	55	31	3	0	89	10	35	67	0	112	201	36	96	26	0	158	5	240	14	0	259	417	618
08:45 AM	43	27	6	0	76	9	35	45	0	89	165	33	112	19	0	164	9	243	14	0	266	430	595
<b>TOTAL</b>	192	111	14	0	317	40	128	242	0	410	727	138	395	79	0	612	30	1,018	46	0	1,094	1,706	2,433

**AM Peak**

Peak Hour Factor: 0.856

07:15 AM to 08:15 AM	218	109	14	0	341	52	134	314	0	500	841	107	372	49	0	528	30	1,198	44	0	1,272	1,800	2,641
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# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Normandy Boulevard and Elkcarn Boulevard

COUNTY: Volusia

LONGITUDE: 0

## Normandy Boulevard

## Normandy Boulevard

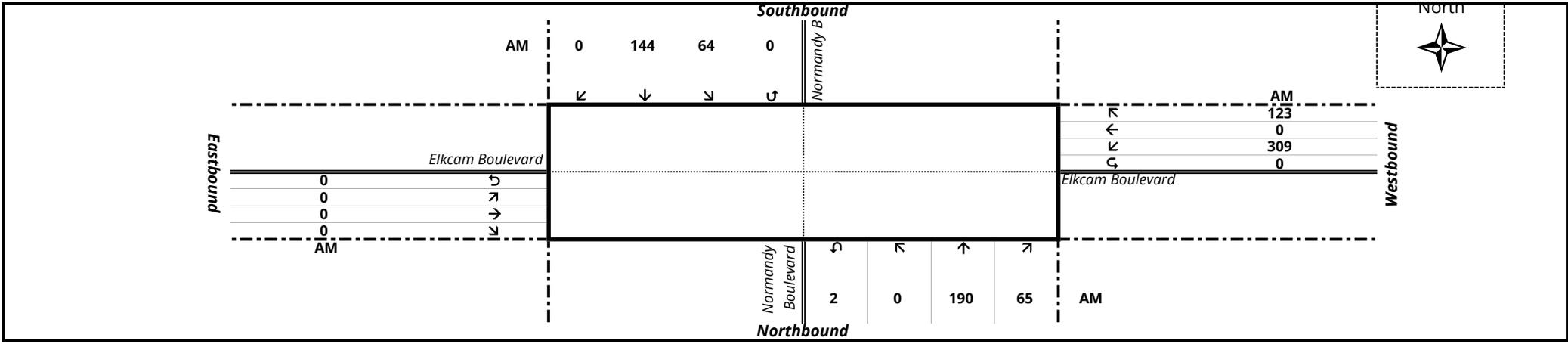
## Elkcarn Boulevard

## Elkcarn Boulevard

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
07:00 AM	0	49	9	0	58	12	22	0	0	34	92	0	0	0	0	0	67	0	18	0	85	85	177
07:15 AM	0	44	16	0	60	18	41	0	0	59	119	0	0	0	0	0	74	0	37	0	111	111	230
07:30 AM	0	68	14	0	82	14	26	0	0	40	122	0	0	0	0	0	89	0	39	0	128	128	250
07:45 AM	0	44	17	1	62	19	51	0	0	70	132	0	0	0	0	0	74	0	23	0	97	97	229
<b>TOTAL</b>	0	205	56	1	262	63	140	0	0	203	465	0	0	0	0	0	304	0	117	0	421	421	886
08:00 AM	0	34	18	1	53	13	26	0	0	39	92	0	0	0	0	0	72	0	24	0	96	96	188
08:15 AM	0	39	12	0	51	10	35	0	0	45	96	0	0	0	0	0	78	0	18	0	96	96	192
08:30 AM	0	45	15	0	60	11	27	0	0	38	98	0	0	0	0	0	77	0	12	0	89	89	187
08:45 AM	0	50	24	0	74	12	47	0	0	59	133	0	0	0	0	0	76	0	11	0	87	87	220
<b>TOTAL</b>	0	168	69	1	238	46	135	0	0	181	419	0	0	0	0	0	303	0	65	0	368	368	787

**AM Peak** Peak Hour Factor: 0.897

07:15 AM to	0	190	65	2	257	64	144	0	0	208	465	0	0	0	0	0	309	0	123	0	432	432	897
08:15 AM																							



# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Normandy Boulevard and Graves Avenue

COUNTY: Volusia

LONGITUDE: 0

## Normandy Boulevard

## N/A

## Graves Avenue

## Graves Avenue

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
07:00 AM	58	0	18	0	76	0	0	0	0	0	76	0	56	13	0	69	11	68	0	0	79	148	224
07:15 AM	69	0	26	0	95	0	0	0	0	0	95	0	66	25	0	91	17	75	0	0	92	183	278
07:30 AM	71	0	30	0	101	0	0	0	0	0	101	0	55	14	0	69	15	92	0	0	107	176	277
07:45 AM	77	0	18	0	95	0	0	0	0	0	95	0	54	29	0	83	24	96	0	0	120	203	298
<b>TOTAL</b>	275	0	92	0	367	0	0	0	0	0	367	0	231	81	0	312	67	331	0	0	398	710	1,077

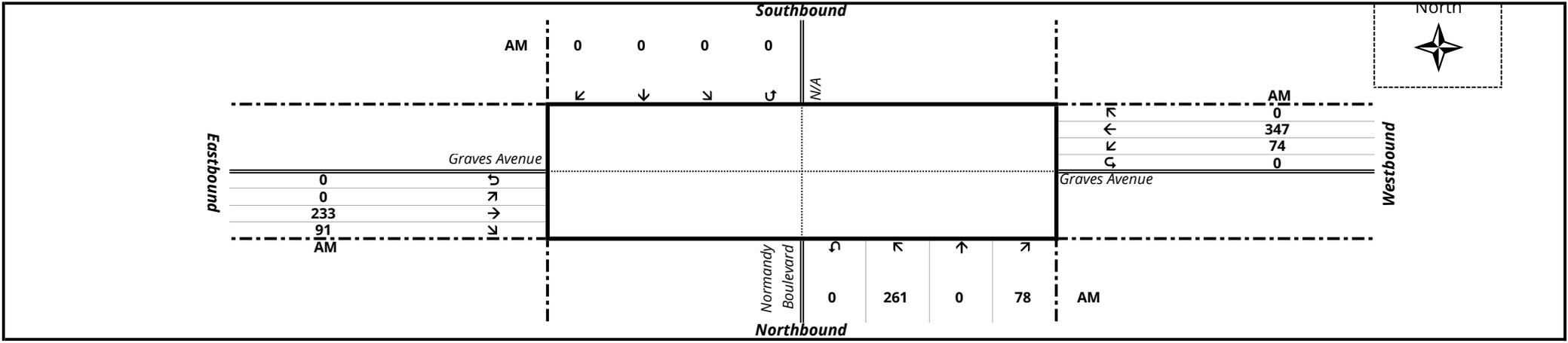
  

08:00 AM	44	0	4	0	48	0	0	0	0	0	48	0	58	23	0	81	18	84	0	0	102	183	231
08:15 AM	53	0	10	0	63	0	0	0	0	0	63	0	43	9	0	52	22	103	0	0	125	177	240
08:30 AM	54	0	11	0	65	0	0	0	0	0	65	0	72	25	0	97	19	77	0	0	96	193	258
08:45 AM	60	0	14	0	74	0	0	0	0	0	74	0	56	21	0	77	27	89	0	0	116	193	267
<b>TOTAL</b>	211	0	39	0	250	0	0	0	0	0	250	0	229	78	0	307	86	353	0	0	439	746	996

**AM Peak**

Peak Hour Factor: 0.909

07:15 AM to 08:15 AM	261	0	78	0	339	0	0	0	0	0	339	0	233	91	0	324	74	347	0	0	421	745	1,084
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# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Graves Avenue and Howland Boulevard

COUNTY: Volusia

LONGITUDE: 0

## Graves Avenue

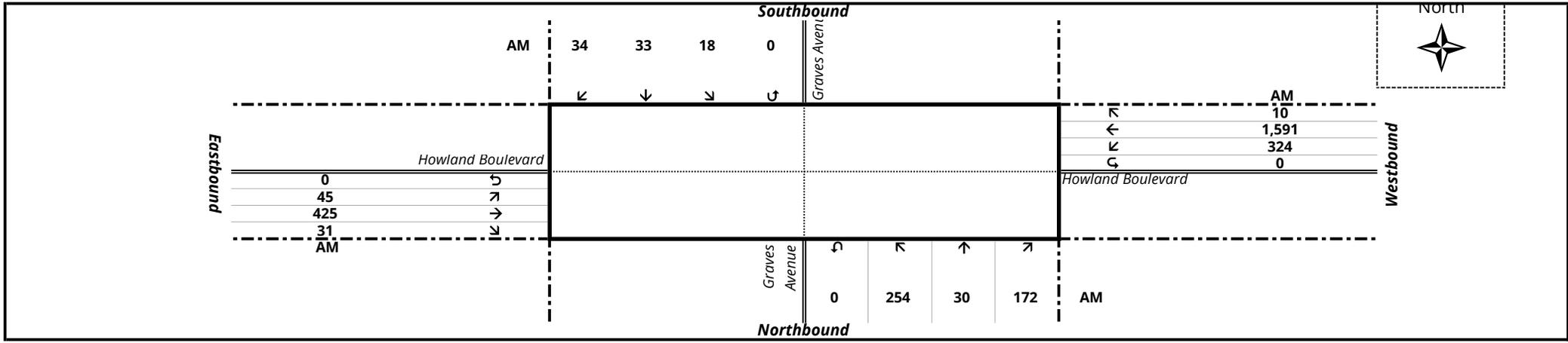
## Graves Avenue

## Howland Boulevard

## Howland Boulevard

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
07:00 AM	57	9	31	0	<b>97</b>	4	8	11	0	<b>23</b>	<b>120</b>	14	96	4	0	<b>114</b>	67	359	2	0	<b>428</b>	<b>542</b>	<b>662</b>
07:15 AM	83	9	40	0	<b>132</b>	6	11	10	0	<b>27</b>	<b>159</b>	10	107	6	0	<b>123</b>	74	456	2	0	<b>532</b>	<b>655</b>	<b>814</b>
07:30 AM	64	9	46	0	<b>119</b>	6	10	8	0	<b>24</b>	<b>143</b>	12	106	6	0	<b>124</b>	90	424	2	0	<b>516</b>	<b>640</b>	<b>783</b>
07:45 AM	50	3	55	0	<b>108</b>	2	4	5	0	<b>11</b>	<b>119</b>	9	116	15	0	<b>140</b>	93	352	4	0	<b>449</b>	<b>589</b>	<b>708</b>
<b>TOTAL</b>	254	30	172	0	<b>456</b>	18	33	34	0	<b>85</b>	<b>541</b>	45	425	31	0	<b>501</b>	324	1,591	10	0	<b>1,925</b>	<b>2,426</b>	<b>2,967</b>
08:00 AM	37	11	42	0	<b>90</b>	6	9	4	0	<b>19</b>	<b>109</b>	11	129	9	0	<b>149</b>	78	313	3	0	<b>394</b>	<b>543</b>	<b>652</b>
08:15 AM	32	13	42	0	<b>87</b>	9	6	4	0	<b>19</b>	<b>106</b>	9	109	10	0	<b>128</b>	115	359	2	0	<b>476</b>	<b>604</b>	<b>710</b>
08:30 AM	41	5	59	0	<b>105</b>	6	8	10	0	<b>24</b>	<b>129</b>	13	112	12	0	<b>137</b>	67	319	4	0	<b>390</b>	<b>527</b>	<b>656</b>
08:45 AM	15	2	72	0	<b>89</b>	11	3	0	0	<b>14</b>	<b>103</b>	10	120	11	0	<b>141</b>	102	254	2	0	<b>358</b>	<b>499</b>	<b>602</b>
<b>TOTAL</b>	125	31	215	0	<b>371</b>	32	26	18	0	<b>76</b>	<b>447</b>	43	470	42	0	<b>555</b>	362	1,245	11	0	<b>1,618</b>	<b>2,173</b>	<b>2,620</b>

<b>AM Peak</b>																			<b>Peak Hour Factor: 0.911</b>				
07:00 AM to 08:00 AM	254	30	172	0	456	18	33	34	0	85	541	45	425	31	0	501	324	1,591	10	0	1,925	2,426	2,967



# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Normandy Boulevard and Saxon Boulevard

COUNTY: Volusia

LONGITUDE: 0

## Normandy Boulevard

## Normandy Boulevard

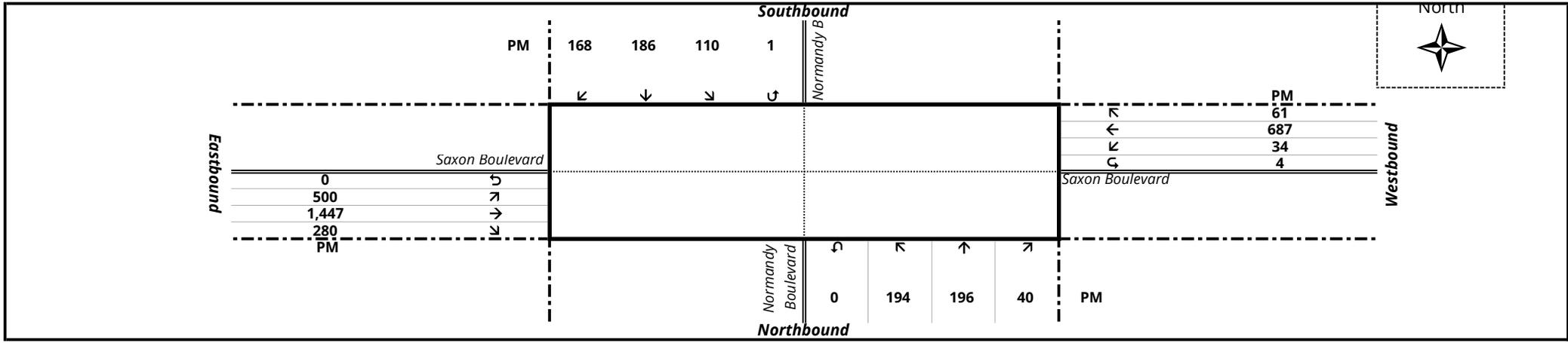
## Saxon Boulevard

## Saxon Boulevard

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
04:00 PM	38	32	9	0	<b>79</b>	16	28	24	0	<b>68</b>	<b>147</b>	91	274	58	0	<b>423</b>	4	187	17	0	<b>208</b>	<b>631</b>	<b>778</b>
04:15 PM	49	42	6	0	<b>97</b>	18	37	36	0	<b>91</b>	<b>188</b>	111	300	57	0	<b>468</b>	9	192	9	0	<b>210</b>	<b>678</b>	<b>866</b>
04:30 PM	45	31	9	0	<b>85</b>	19	40	54	0	<b>113</b>	<b>198</b>	130	310	52	0	<b>492</b>	8	171	18	0	<b>197</b>	<b>689</b>	<b>887</b>
04:45 PM	59	34	9	0	<b>102</b>	23	50	25	0	<b>98</b>	<b>200</b>	102	345	62	0	<b>509</b>	5	184	13	0	<b>202</b>	<b>711</b>	<b>911</b>
<b>TOTAL</b>	191	139	33	0	<b>363</b>	76	155	139	0	<b>370</b>	<b>733</b>	434	1,229	229	0	<b>1,892</b>	26	734	57	0	<b>817</b>	<b>2,709</b>	<b>3,442</b>
05:00 PM	50	51	12	0	<b>113</b>	24	44	40	1	<b>109</b>	<b>222</b>	124	375	76	0	<b>575</b>	10	196	11	0	<b>217</b>	<b>792</b>	<b>1,014</b>
05:15 PM	45	54	9	0	<b>108</b>	25	53	57	0	<b>135</b>	<b>243</b>	122	355	76	0	<b>553</b>	9	185	11	0	<b>205</b>	<b>758</b>	<b>1,001</b>
05:30 PM	52	39	11	0	<b>102</b>	34	44	34	0	<b>112</b>	<b>214</b>	119	377	69	0	<b>565</b>	6	156	23	1	<b>186</b>	<b>751</b>	<b>965</b>
05:45 PM	47	52	8	0	<b>107</b>	27	45	37	0	<b>109</b>	<b>216</b>	135	340	59	0	<b>534</b>	9	150	16	3	<b>178</b>	<b>712</b>	<b>928</b>
<b>TOTAL</b>	194	196	40	0	<b>430</b>	110	186	168	1	<b>465</b>	<b>895</b>	500	1,447	280	0	<b>2,227</b>	34	687	61	4	<b>786</b>	<b>3,013</b>	<b>3,908</b>

PM Peak Peak Hour Factor: 0.964

05:00 PM to 06:00 PM	194	196	40	0	430	110	186	168	1	465	895	500	1,447	280	0	2,227	34	687	61	4	786	3,013	3,908
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# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Normandy Boulevard and Elkcarn Boulevard

COUNTY: Volusia

LONGITUDE: 0

## Normandy Boulevard

## Normandy Boulevard

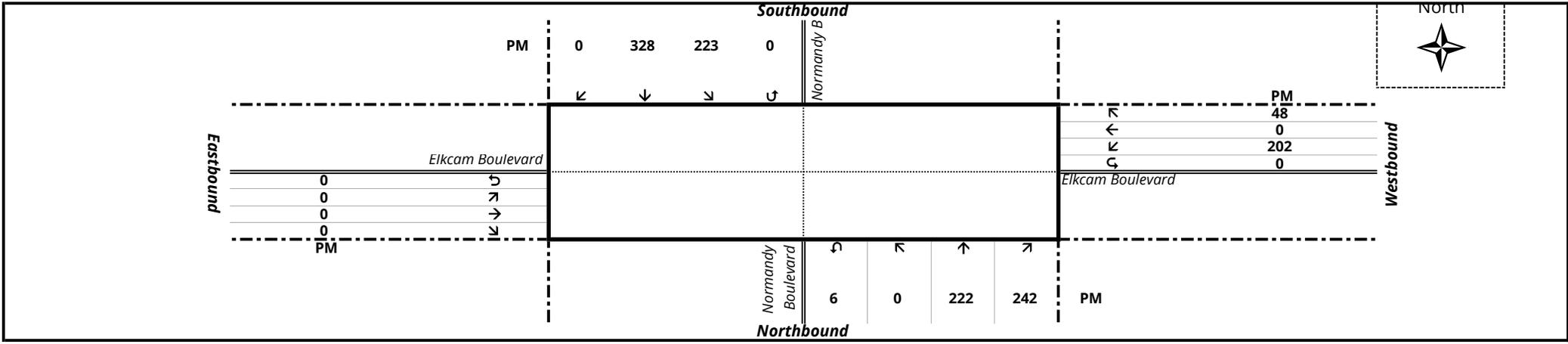
## Elkcarn Boulevard

## Elkcarn Boulevard

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
04:00 PM	0	56	57	0	<b>113</b>	34	67	0	1	<b>102</b>	<b>215</b>	0	0	0	0	<b>0</b>	28	0	10	0	<b>38</b>	<b>38</b>	<b>253</b>
04:15 PM	0	44	60	0	<b>104</b>	42	56	0	0	<b>98</b>	<b>202</b>	0	0	0	0	<b>0</b>	45	0	3	0	<b>48</b>	<b>48</b>	<b>250</b>
04:30 PM	0	50	50	0	<b>100</b>	43	67	0	0	<b>110</b>	<b>210</b>	0	0	0	0	<b>0</b>	48	0	6	0	<b>54</b>	<b>54</b>	<b>264</b>
04:45 PM	0	44	46	0	<b>90</b>	43	71	0	0	<b>114</b>	<b>204</b>	0	0	0	0	<b>0</b>	39	0	16	0	<b>55</b>	<b>55</b>	<b>259</b>
<b>TOTAL</b>	0	194	213	0	<b>407</b>	162	261	0	1	<b>424</b>	<b>831</b>	0	0	0	0	<b>0</b>	160	0	35	0	<b>195</b>	<b>195</b>	<b>1,026</b>
05:00 PM	0	51	57	0	<b>108</b>	50	44	0	0	<b>94</b>	<b>202</b>	0	0	0	0	<b>0</b>	54	0	17	0	<b>71</b>	<b>71</b>	<b>273</b>
05:15 PM	0	44	64	1	<b>109</b>	60	91	0	0	<b>151</b>	<b>260</b>	0	0	0	0	<b>0</b>	61	0	11	0	<b>72</b>	<b>72</b>	<b>332</b>
05:30 PM	0	66	66	3	<b>135</b>	65	98	0	0	<b>163</b>	<b>298</b>	0	0	0	0	<b>0</b>	38	0	6	0	<b>44</b>	<b>44</b>	<b>342</b>
05:45 PM	0	61	55	2	<b>118</b>	48	95	0	0	<b>143</b>	<b>261</b>	0	0	0	0	<b>0</b>	49	0	14	0	<b>63</b>	<b>63</b>	<b>324</b>
<b>TOTAL</b>	0	222	242	6	<b>470</b>	223	328	0	0	<b>551</b>	<b>1,021</b>	0	0	0	0	<b>0</b>	202	0	48	0	<b>250</b>	<b>250</b>	<b>1,271</b>

PM Peak Peak Hour Factor: 0.929

05:00 PM to 06:00 PM	0	222	242	6	470	223	328	0	0	551	1,021	0	0	0	0	0	202	0	48	0	250	250	1,271
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# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Normandy Boulevard and Graves Avenue

COUNTY: Volusia

LONGITUDE: 0

## Normandy Boulevard

## N/A

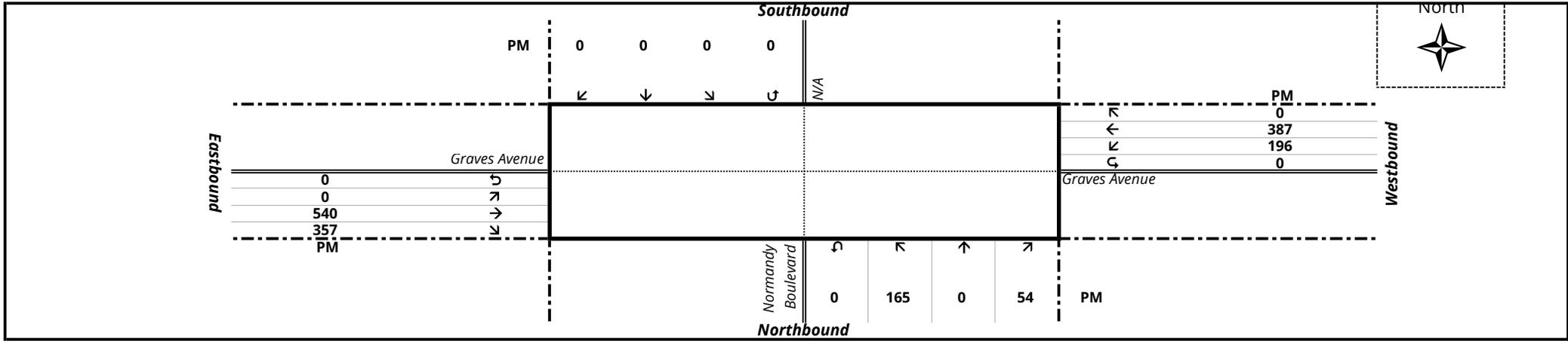
## Graves Avenue

## Graves Avenue

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
04:00 PM	51	0	8	0	59	0	0	0	0	0	59	0	140	55	0	195	47	78	0	0	125	320	379
04:15 PM	36	0	8	0	44	0	0	0	0	0	44	0	137	60	0	197	42	111	0	0	153	350	394
04:30 PM	36	0	9	0	45	0	0	0	0	0	45	0	136	56	0	192	52	69	0	0	121	313	358
04:45 PM	42	0	5	0	47	0	0	0	0	0	47	0	120	67	0	187	49	87	0	0	136	323	370
<b>TOTAL</b>	165	0	30	0	195	0	0	0	0	0	195	0	533	238	0	771	190	345	0	0	535	1,306	1,501

05:00 PM	33	0	11	0	44	0	0	0	0	0	44	0	162	58	0	220	32	106	0	0	138	358	402
05:15 PM	40	0	14	0	54	0	0	0	0	0	54	0	130	110	0	240	62	96	0	0	158	398	452
05:30 PM	33	0	10	0	43	0	0	0	0	0	43	0	138	95	0	233	54	89	0	0	143	376	419
05:45 PM	59	0	19	0	78	0	0	0	0	0	78	0	110	94	0	204	48	96	0	0	144	348	426
<b>TOTAL</b>	165	0	54	0	219	0	0	0	0	0	219	0	540	357	0	897	196	387	0	0	583	1,480	1,699

PM Peak		Peak Hour Factor: 0.940																					
05:00 PM to 06:00 PM	165	0	54	0	219	0	0	0	0	0	219	0	540	357	0	897	196	387	0	0	583	1,480	1,699



# 15 MINUTE TURNING MOVEMENT COUNTS

(Cars and Trucks)

DATE: June 1, 2023 (Thursday)

CITY: Deltona

LATITUDE: 0

LOCATION: Graves Avenue and Howland Boulevard

COUNTY: Volusia

LONGITUDE: 0

## Graves Avenue

## Graves Avenue

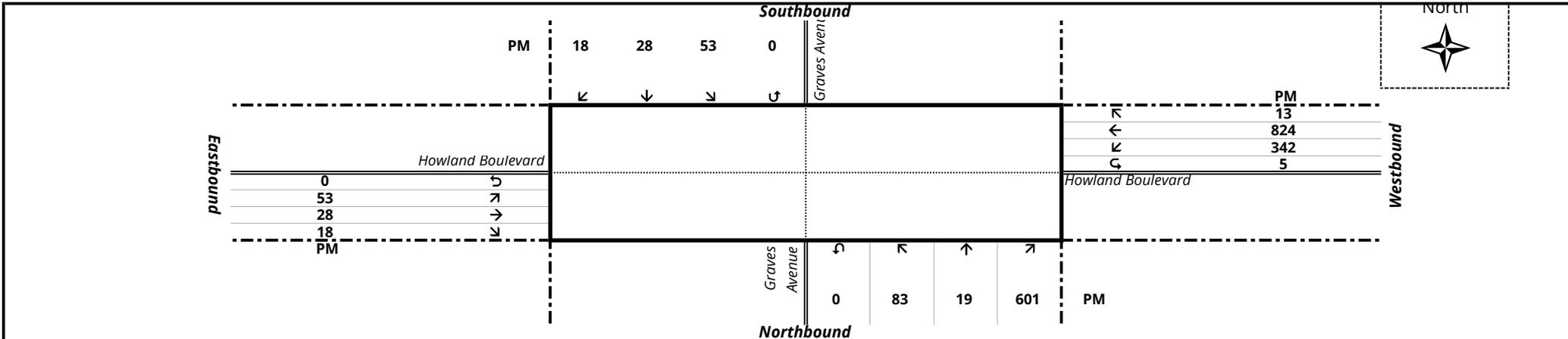
## Howland Boulevard

## Howland Boulevard

TIME BEGIN	NORTHBOUND					SOUTHBOUND					N/S TOTAL	EASTBOUND					WESTBOUND					E/W TOTAL	GRAND TOTAL
	L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		L	T	R	U-turn	TOTAL	L	T	R	U-turn	TOTAL		
04:00 PM	31	6	139	0	<b>176</b>	4	3	1	0	<b>8</b>	<b>184</b>	4	3	1	0	<b>8</b>	98	182	5	0	<b>285</b>	<b>293</b>	<b>477</b>
04:15 PM	22	8	135	0	<b>165</b>	13	12	3	0	<b>28</b>	<b>193</b>	13	12	3	0	<b>28</b>	81	173	4	0	<b>258</b>	<b>286</b>	<b>479</b>
04:30 PM	28	4	129	0	<b>161</b>	10	4	5	0	<b>19</b>	<b>180</b>	10	4	5	0	<b>19</b>	75	176	1	2	<b>254</b>	<b>273</b>	<b>453</b>
04:45 PM	17	2	139	0	<b>158</b>	9	3	5	0	<b>17</b>	<b>175</b>	9	3	5	0	<b>17</b>	91	154	0	0	<b>245</b>	<b>262</b>	<b>437</b>
<b>TOTAL</b>	98	20	542	0	<b>660</b>	36	22	14	0	<b>72</b>	<b>732</b>	36	22	14	0	<b>72</b>	345	685	10	2	<b>1,042</b>	<b>1,114</b>	<b>1,846</b>

05:00 PM	19	8	166	0	<b>193</b>	17	4	2	0	<b>23</b>	<b>216</b>	17	4	2	0	<b>23</b>	85	198	4	0	<b>287</b>	<b>310</b>	<b>526</b>
05:15 PM	20	2	144	0	<b>166</b>	10	9	11	0	<b>30</b>	<b>196</b>	10	9	11	0	<b>30</b>	79	198	3	2	<b>282</b>	<b>312</b>	<b>508</b>
05:30 PM	19	4	153	0	<b>176</b>	12	5	4	0	<b>21</b>	<b>197</b>	12	5	4	0	<b>21</b>	88	232	3	3	<b>326</b>	<b>347</b>	<b>544</b>
05:45 PM	25	5	138	0	<b>168</b>	14	10	1	0	<b>25</b>	<b>193</b>	14	10	1	0	<b>25</b>	90	196	3	0	<b>289</b>	<b>314</b>	<b>507</b>
<b>TOTAL</b>	83	19	601	0	<b>703</b>	53	28	18	0	<b>99</b>	<b>802</b>	53	28	18	0	<b>99</b>	342	824	13	5	<b>1,184</b>	<b>1,283</b>	<b>2,085</b>

PM Peak		Peak Hour Factor: 0.958																						
05:00 PM to	06:00 PM	83	19	601	0	703	53	28	18	0	99	802	53	28	18	0	99	342	824	13	5	1,184	1,283	2,085



2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL  
 CATEGORY: 7900 VOLUSIA COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.94 PSCF
1	01/01/2022 - 01/01/2022	1.02	1.09
2	01/02/2022 - 01/08/2022	1.03	1.10
3	01/09/2022 - 01/15/2022	1.04	1.11
4	01/16/2022 - 01/22/2022	1.02	1.09
5	01/23/2022 - 01/29/2022	1.01	1.07
6	01/30/2022 - 02/05/2022	0.99	1.05
* 7	02/06/2022 - 02/12/2022	0.97	1.03
* 8	02/13/2022 - 02/19/2022	0.95	1.01
* 9	02/20/2022 - 02/26/2022	0.94	1.00
*10	02/27/2022 - 03/05/2022	0.93	0.99
*11	03/06/2022 - 03/12/2022	0.92	0.98
*12	03/13/2022 - 03/19/2022	0.91	0.97
*13	03/20/2022 - 03/26/2022	0.92	0.98
*14	03/27/2022 - 04/02/2022	0.93	0.99
*15	04/03/2022 - 04/09/2022	0.94	1.00
*16	04/10/2022 - 04/16/2022	0.96	1.02
*17	04/17/2022 - 04/23/2022	0.96	1.02
*18	04/24/2022 - 04/30/2022	0.97	1.03
*19	05/01/2022 - 05/07/2022	0.98	1.04
20	05/08/2022 - 05/14/2022	0.98	1.04
21	05/15/2022 - 05/21/2022	0.99	1.05
22	05/22/2022 - 05/28/2022	1.00	1.06
23	05/29/2022 - 06/04/2022	1.02	1.09
24	06/05/2022 - 06/11/2022	1.03	1.10
25	06/12/2022 - 06/18/2022	1.04	1.11
26	06/19/2022 - 06/25/2022	1.05	1.12
27	06/26/2022 - 07/02/2022	1.06	1.13
28	07/03/2022 - 07/09/2022	1.06	1.13
29	07/10/2022 - 07/16/2022	1.07	1.14
30	07/17/2022 - 07/23/2022	1.06	1.13
31	07/24/2022 - 07/30/2022	1.05	1.12
32	07/31/2022 - 08/06/2022	1.04	1.11
33	08/07/2022 - 08/13/2022	1.03	1.10
34	08/14/2022 - 08/20/2022	1.02	1.09
35	08/21/2022 - 08/27/2022	1.04	1.11
36	08/28/2022 - 09/03/2022	1.05	1.12
37	09/04/2022 - 09/10/2022	1.06	1.13
38	09/11/2022 - 09/17/2022	1.07	1.14
39	09/18/2022 - 09/24/2022	1.05	1.12
40	09/25/2022 - 10/01/2022	1.02	1.09
41	10/02/2022 - 10/08/2022	0.99	1.05
42	10/09/2022 - 10/15/2022	0.97	1.03
43	10/16/2022 - 10/22/2022	0.98	1.04
44	10/23/2022 - 10/29/2022	0.99	1.05
45	10/30/2022 - 11/05/2022	1.01	1.07
46	11/06/2022 - 11/12/2022	1.02	1.09
47	11/13/2022 - 11/19/2022	1.04	1.11
48	11/20/2022 - 11/26/2022	1.03	1.10
49	11/27/2022 - 12/03/2022	1.03	1.10
50	12/04/2022 - 12/10/2022	1.02	1.09
51	12/11/2022 - 12/17/2022	1.02	1.09
52	12/18/2022 - 12/24/2022	1.03	1.10
53	12/25/2022 - 12/31/2022	1.04	1.11

\* PEAK SEASON

23-FEB-2023 09:11:23

830UPD

5\_7900\_PKSEASON.TXT

## **Appendix E: Existing Intersection Analysis Output**

# HCM 6th Signalized Intersection Summary

## 1: Normandy Blvd & Saxon Blvd

09/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	379	50	31	1222	45	222	111	14	53	137	320
Future Volume (veh/h)	183	379	50	31	1222	45	222	111	14	53	137	320
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	199	412	54	34	1328	49	241	121	15	58	149	348
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	237	1709	962	510	1540	57	362	389	48	347	301	381
Arrive On Green	0.08	0.48	0.48	0.04	0.44	0.44	0.13	0.24	0.24	0.05	0.16	0.16
Sat Flow, veh/h	1781	3554	1585	1781	3495	129	1781	1632	202	1781	1870	1585
Grp Volume(v), veh/h	199	412	54	34	674	703	241	0	136	58	149	348
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1847	1781	0	1834	1781	1870	1585
Q Serve(g_s), s	7.4	8.5	1.7	1.3	42.5	42.6	13.5	0.0	7.6	3.3	9.0	20.0
Cycle Q Clear(g_c), s	7.4	8.5	1.7	1.3	42.5	42.6	13.5	0.0	7.6	3.3	9.0	20.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	237	1709	962	510	783	814	362	0	437	347	301	381
V/C Ratio(X)	0.84	0.24	0.06	0.07	0.86	0.86	0.67	0.00	0.31	0.17	0.49	0.91
Avail Cap(c_a), veh/h	441	2347	1246	541	930	967	381	0	443	360	301	381
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	18.9	9.9	17.2	31.3	31.4	35.5	0.0	38.9	40.1	47.5	45.9
Incr Delay (d2), s/veh	7.7	0.1	0.0	0.1	7.3	7.2	4.1	0.0	0.4	0.2	1.3	26.0
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	3.5	3.5	0.6	0.5	19.4	20.2	6.3	0.0	3.5	1.5	4.3	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	19.0	10.0	17.3	38.6	38.5	39.6	0.0	39.3	40.3	48.7	71.9
LnGrp LOS	C	B	A	B	D	D	D	A	D	D	D	E
Approach Vol, veh/h		665			1411			377				555
Approach Delay, s/veh		23.0			38.0			39.5				62.4
Approach LOS		C			D			D				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	35.6	10.8	65.7	21.6	26.0	15.8	60.7				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	7.0	30.0	7.0	82.0	17.0	20.0	24.0	65.0				
Max Q Clear Time (g_c+I1), s	5.3	9.6	3.3	10.5	15.5	22.0	9.4	44.6				
Green Ext Time (p_c), s	0.0	0.6	0.0	3.3	0.1	0.0	0.5	10.1				

### Intersection Summary

HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

# HCM 6th Signalized Intersection Summary

## 2: Normandy Blvd & Elkcam Blvd

09/12/2023



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	315	125	194	68	65	147
Future Volume (veh/h)	315	125	194	68	65	147
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	136	211	74	71	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	518	461	551	188	524	1487
Arrive On Green	0.29	0.29	0.21	0.21	0.06	0.42
Sat Flow, veh/h	1781	1585	2695	886	1781	3647
Grp Volume(v), veh/h	342	136	142	143	71	160
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1711	1781	1777
Q Serve(g_s), s	4.6	1.8	1.9	2.0	0.7	0.8
Cycle Q Clear(g_c), s	4.6	1.8	1.9	2.0	0.7	0.8
Prop In Lane	1.00	1.00		0.52	1.00	
Lane Grp Cap(c), veh/h	518	461	376	362	524	1487
V/C Ratio(X)	0.66	0.30	0.38	0.39	0.14	0.11
Avail Cap(c_a), veh/h	2917	2596	3427	3300	3008	12546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	7.6	9.3	9.3	6.4	4.9
Incr Delay (d2), s/veh	1.5	0.4	0.6	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.4	0.5	0.6	0.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.0	7.9	9.9	10.0	6.6	4.9
LnGrp LOS	B	A	A	B	A	A
Approach Vol, veh/h	478		285			231
Approach Delay, s/veh	9.4		10.0			5.4
Approach LOS	A		A			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.7	9.8			15.5	12.0
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	40.0	53.0			97.0	45.0
Max Q Clear Time (g_c+I1), s	2.7	4.0			2.8	6.6
Green Ext Time (p_c), s	0.2	1.8			1.1	1.6
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			8.6			
HCM 6th LOS			A			

# HCM 6th Signalized Intersection Summary

## 3: Normandy Blvd & Graves Ave

09/12/2023



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↵↵
Traffic Volume (veh/h)	238	93	75	354	266	80
Future Volume (veh/h)	238	93	75	354	266	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	259	101	82	385	289	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	535	1026	340	1147	884	1614
Arrive On Green	0.15	0.15	0.08	0.32	0.50	0.50
Sat Flow, veh/h	3647	1585	1781	3647	1781	2790
Grp Volume(v), veh/h	259	101	82	385	289	87
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1781	1395
Q Serve(g_s), s	4.4	1.6	2.4	5.5	6.5	0.9
Cycle Q Clear(g_c), s	4.4	1.6	2.4	5.5	6.5	0.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	535	1026	340	1147	884	1614
V/C Ratio(X)	0.48	0.10	0.24	0.34	0.33	0.05
Avail Cap(c_a), veh/h	2192	1765	944	4010	884	1614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	4.4	19.3	17.1	10.1	6.1
Incr Delay (d2), s/veh	0.7	0.0	0.4	0.2	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.4	1.0	2.1	2.4	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.5	4.5	19.6	17.3	11.0	6.2
LnGrp LOS	C	A	B	B	B	A
Approach Vol, veh/h	360			467	376	
Approach Delay, s/veh	20.4			17.7	9.9	
Approach LOS	C			B	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.5	16.0			27.5	39.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	28.0	41.0			75.0	33.0
Max Q Clear Time (g_c+I1), s	4.4	6.4			7.5	8.5
Green Ext Time (p_c), s	0.2	2.1			2.9	1.2

### Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

# HCM Signalized Intersection Capacity Analysis

## 4: Graves Rd & Howland Blvd

09/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖	↖↗	↕	↖	↖	↖↗	↖	↖	↕	↖
Traffic Volume (vph)	46	434	32	330	1623	10	259	31	175	18	34	35
Future Volume (vph)	46	434	32	330	1623	10	259	31	175	18	34	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1681	1703	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1681	1703	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	472	35	359	1764	11	282	34	190	20	37	38
RTOR Reduction (vph)	0	0	15	0	0	4	0	0	137	0	0	33
Lane Group Flow (vph)	50	472	20	359	1764	7	158	158	53	20	37	5
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	5	2	8	1	6	4	8	8	1	4	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	5.9	59.5	75.8	19.9	73.5	83.9	16.3	16.3	36.2	10.4	10.4	16.3
Effective Green, g (s)	5.9	59.5	75.8	19.9	73.5	83.9	16.3	16.3	36.2	10.4	10.4	16.3
Actuated g/C Ratio	0.05	0.46	0.58	0.15	0.56	0.64	0.13	0.13	0.28	0.08	0.08	0.13
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	155	1618	922	525	1999	1093	210	213	513	141	148	198
v/s Ratio Prot	0.01	0.13	0.00	c0.10	c0.50	0.00	c0.09	0.09	0.02	0.01	c0.02	0.00
v/s Ratio Perm			0.01			0.00			0.02			0.00
v/c Ratio	0.32	0.29	0.02	0.68	0.88	0.01	0.75	0.74	0.10	0.14	0.25	0.02
Uniform Delay, d1	60.2	22.1	11.5	52.1	24.6	8.2	55.0	54.9	34.9	55.7	56.2	49.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.0	3.7	5.0	0.0	14.1	13.0	0.1	0.5	0.9	0.0
Delay (s)	61.4	22.2	11.5	55.8	29.5	8.2	69.1	67.9	35.0	56.2	57.1	50.0
Level of Service	E	C	B	E	C	A	E	E	C	E	E	D
Approach Delay (s)		25.0			33.8			55.9			54.0	
Approach LOS		C			C			E			D	

### Intersection Summary

HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th TWSC  
5: Ameila Ave & Normandy Blvd

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	346	0	0	168
Future Vol, veh/h	0	0	346	0	0	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	0	0	376	0	0	183

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	559	376	0	0	376
Stage 1	376	-	-	-	-
Stage 2	183	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	490	670	-	-	1182
Stage 1	694	-	-	-	-
Stage 2	848	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	490	670	-	-	1182
Mov Cap-2 Maneuver	490	-	-	-	-
Stage 1	694	-	-	-	-
Stage 2	848	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1182
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC  
6: Normany Blvd & Access (N)

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↑
Traffic Vol, veh/h	0	0	346	0	0	168
Future Vol, veh/h	0	0	346	0	0	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
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	0	0	376	0	0	183

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	376	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.22	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.318	-
Pot Cap-1 Maneuver	0	670	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	670	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

HCM 6th TWSC  
7: Normany Blvd & Access (Main)

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	346	0	0	168
Future Vol, veh/h	0	0	346	0	0	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	0	0	376	0	0	183

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	559	376	0	0	376
Stage 1	376	-	-	-	-
Stage 2	183	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	490	670	-	-	1182
Stage 1	694	-	-	-	-
Stage 2	848	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	490	670	-	-	1182
Mov Cap-2 Maneuver	490	-	-	-	-
Stage 1	694	-	-	-	-
Stage 2	848	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1182
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC  
8: Access(S) & Normany Blvd

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↑
Traffic Vol, veh/h	0	0	346	0	0	168
Future Vol, veh/h	0	0	346	0	0	168
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
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	0	0	376	0	0	183

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	376	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.22	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.318	-
Pot Cap-1 Maneuver	0	670	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	670	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

# HCM 6th Signalized Intersection Summary

## 1: Normandy Blvd & Saxon Blvd

09/12/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	1476	286	35	701	66	198	200	41	112	190	172
Future Volume (veh/h)	510	1476	286	35	701	66	198	200	41	112	190	172
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	554	1604	311	38	762	72	215	217	45	122	207	187
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	514	1892	1030	160	1281	121	283	290	60	212	240	492
Arrive On Green	0.18	0.53	0.53	0.04	0.39	0.39	0.12	0.19	0.19	0.05	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3281	310	1781	1503	312	1781	1870	1585
Grp Volume(v), veh/h	554	1604	311	38	412	422	215	0	262	122	207	187
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1815	1781	0	1814	1781	1870	1585
Q Serve(g_s), s	24.0	50.8	11.3	1.6	24.3	24.3	13.4	0.0	18.0	7.0	14.3	12.2
Cycle Q Clear(g_c), s	24.0	50.8	11.3	1.6	24.3	24.3	13.4	0.0	18.0	7.0	14.3	12.2
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	514	1892	1030	160	693	708	283	0	350	212	240	492
V/C Ratio(X)	1.08	0.85	0.30	0.24	0.59	0.60	0.76	0.00	0.75	0.57	0.86	0.38
Avail Cap(c_a), veh/h	514	2209	1171	184	875	894	304	0	413	212	284	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	26.3	10.1	26.5	31.9	31.9	42.2	0.0	50.2	48.9	56.3	35.6
Incr Delay (d2), s/veh	62.2	2.9	0.2	0.8	0.8	0.8	9.9	0.0	6.2	3.7	20.2	0.5
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	18.7	21.6	3.9	0.7	10.6	10.8	6.7	0.0	8.8	0.7	8.1	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.0	29.2	10.2	27.3	32.8	32.7	52.1	0.0	56.5	52.6	76.5	36.0
LnGrp LOS	F	C	B	C	C	C	D	A	E	D	E	D
Approach Vol, veh/h		2469			872			477			516	
Approach Delay, s/veh		40.0			32.5			54.5			56.2	
Approach LOS		D			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	31.4	11.3	76.2	21.5	23.0	30.0	57.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	7.0	30.0	7.0	82.0	17.0	20.0	24.0	65.0				
Max Q Clear Time (g_c+I1), s	9.0	20.0	3.6	52.8	15.4	16.3	26.0	26.3				
Green Ext Time (p_c), s	0.0	1.0	0.0	17.5	0.1	0.7	0.0	6.3				

### Intersection Summary

HCM 6th Ctrl Delay			42.0									
HCM 6th LOS			D									

# HCM 6th Signalized Intersection Summary

## 2: Normandy Blvd & Elkcam Blvd

09/12/2023

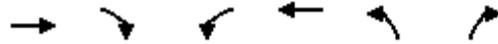


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	206	49	226	253	227	335
Future Volume (veh/h)	206	49	226	253	227	335
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	224	53	246	275	247	364
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	332	296	559	499	619	2049
Arrive On Green	0.19	0.19	0.31	0.31	0.14	0.58
Sat Flow, veh/h	1781	1585	1870	1585	1781	3647
Grp Volume(v), veh/h	224	53	246	275	247	364
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	3.9	0.9	3.7	4.9	2.6	1.6
Cycle Q Clear(g_c), s	3.9	0.9	3.7	4.9	2.6	1.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	332	296	559	499	619	2049
V/C Ratio(X)	0.67	0.18	0.44	0.55	0.40	0.18
Avail Cap(c_a), veh/h	2375	2113	2790	2489	2475	10212
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	11.6	9.2	9.6	5.5	3.4
Incr Delay (d2), s/veh	2.4	0.3	0.5	1.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.3	1.1	1.3	0.5	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.2	11.8	9.7	10.5	6.0	3.4
LnGrp LOS	B	B	A	B	A	A
Approach Vol, veh/h	277		521			611
Approach Delay, s/veh	14.5		10.2			4.4
Approach LOS	B		B			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.8	14.6			23.5	10.3
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	40.0	53.0			97.0	45.0
Max Q Clear Time (g_c+I1), s	4.6	6.9			3.6	5.9
Green Ext Time (p_c), s	0.7	3.8			2.7	0.9
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			8.5			
HCM 6th LOS			A			

# HCM 6th Signalized Intersection Summary

## 3: Normandy Blvd & Graves Ave

09/12/2023



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↵↵
Traffic Volume (veh/h)	551	364	200	395	168	55
Future Volume (veh/h)	551	364	200	395	168	55
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	599	396	217	429	183	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	895	1048	352	1570	729	1464
Arrive On Green	0.25	0.25	0.12	0.44	0.41	0.41
Sat Flow, veh/h	3647	1585	1781	3647	1781	2790
Grp Volume(v), veh/h	599	396	217	429	183	60
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1781	1395
Q Serve(g_s), s	12.2	9.1	6.8	6.2	5.5	0.8
Cycle Q Clear(g_c), s	12.2	9.1	6.8	6.2	5.5	0.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	895	1048	352	1570	729	1464
V/C Ratio(X)	0.67	0.38	0.62	0.27	0.25	0.04
Avail Cap(c_a), veh/h	1808	1455	765	3307	729	1464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	6.2	19.0	14.3	15.7	9.3
Incr Delay (d2), s/veh	0.9	0.2	1.8	0.1	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.4	2.8	2.4	2.3	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.0	6.4	20.8	14.4	16.5	9.4
LnGrp LOS	C	A	C	B	B	A
Approach Vol, veh/h	995			646	243	
Approach Delay, s/veh	19.4			16.5	14.7	
Approach LOS	B			B	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	15.3	26.3			41.6	39.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	28.0	41.0			75.0	33.0
Max Q Clear Time (g_c+I1), s	8.8	14.2			8.2	7.5
Green Ext Time (p_c), s	0.6	6.1			3.2	0.7
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			17.8			
HCM 6th LOS			B			

# HCM Signalized Intersection Capacity Analysis

## 4: Graves Rd & Howland Blvd

09/12/2023

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	54	29	18	349	840	18	85	19	613	54	29	18	
Future Volume (vph)	54	29	18	349	840	18	85	19	613	54	29	18	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1681	1715	1583	1770	1863	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1681	1715	1583	1770	1863	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	59	32	20	379	913	20	92	21	666	59	32	20	
RTOR Reduction (vph)	0	0	15	0	0	10	0	0	349	0	0	16	
Lane Group Flow (vph)	59	32	5	379	913	10	56	57	317	59	32	4	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov	
Protected Phases	5	2	8	1	6	4	8	8	1	4	4	5	
Permitted Phases			2			6			8			4	
Actuated Green, G (s)	5.6	8.2	18.8	28.3	30.9	41.5	10.6	10.6	38.9	10.6	10.6	16.2	
Effective Green, g (s)	5.6	8.2	18.8	28.3	30.9	41.5	10.6	10.6	38.9	10.6	10.6	16.2	
Actuated g/C Ratio	0.07	0.10	0.23	0.35	0.38	0.51	0.13	0.13	0.48	0.13	0.13	0.20	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	235	355	364	1189	1338	920	218	222	869	229	241	313	
v/s Ratio Prot	0.02	0.01	0.00	0.11	c0.26	0.00	0.03	0.03	c0.13	c0.03	0.02	0.00	
v/s Ratio Perm			0.00			0.00			0.07			0.00	
v/c Ratio	0.25	0.09	0.01	0.32	0.68	0.01	0.26	0.26	0.36	0.26	0.13	0.01	
Uniform Delay, d1	36.1	33.4	24.3	19.6	21.3	9.9	32.0	32.0	13.6	32.0	31.5	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	0.1	0.0	0.2	1.5	0.0	0.6	0.6	0.3	0.6	0.3	0.0	
Delay (s)	36.6	33.5	24.3	19.8	22.7	10.0	32.6	32.6	13.8	32.6	31.7	26.3	
Level of Service	D	C	C	B	C	A	C	C	B	C	C	C	
Approach Delay (s)		33.5			21.7			16.6			31.2		
Approach LOS		C			C			B			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			21.0		HCM 2000 Level of Service						C		
HCM 2000 Volume to Capacity ratio			0.57										
Actuated Cycle Length (s)			81.7		Sum of lost time (s)						24.0		
Intersection Capacity Utilization			69.6%		ICU Level of Service						C		
Analysis Period (min)			15										

c Critical Lane Group

HCM 6th TWSC  
5: Ameila Ave & Normandy Blvd

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	0	0	223	0	0	564
Future Vol, veh/h	0	0	223	0	0	564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	0	0	242	0	0	613

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	855	242	0	0	242	0
Stage 1	242	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	329	797	-	-	1324	-
Stage 1	798	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	329	797	-	-	1324	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1324
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC  
6: Normany Blvd & Access (N)

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖			↑
Traffic Vol, veh/h	0	0	223	0	0	564
Future Vol, veh/h	0	0	223	0	0	564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
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	0	0	242	0	0	613

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	242	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	797	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	-	797	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

HCM 6th TWSC  
7: Normany Blvd & Access (Main)

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	0	223	0	0	564
Future Vol, veh/h	0	0	223	0	0	564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	0	0	242	0	0	613

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	855	242	0	0	242	0
Stage 1	242	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	329	797	-	-	1324	-
Stage 1	798	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	329	797	-	-	1324	-
Mov Cap-2 Maneuver	329	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1324
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC  
8: Access(S) & Normany Blvd

09/12/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↑
Traffic Vol, veh/h	0	0	223	0	0	564
Future Vol, veh/h	0	0	223	0	0	564
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
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	0	0	242	0	0	613

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	242	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-	-
Pot Cap-1 Maneuver	0	797	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	797	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

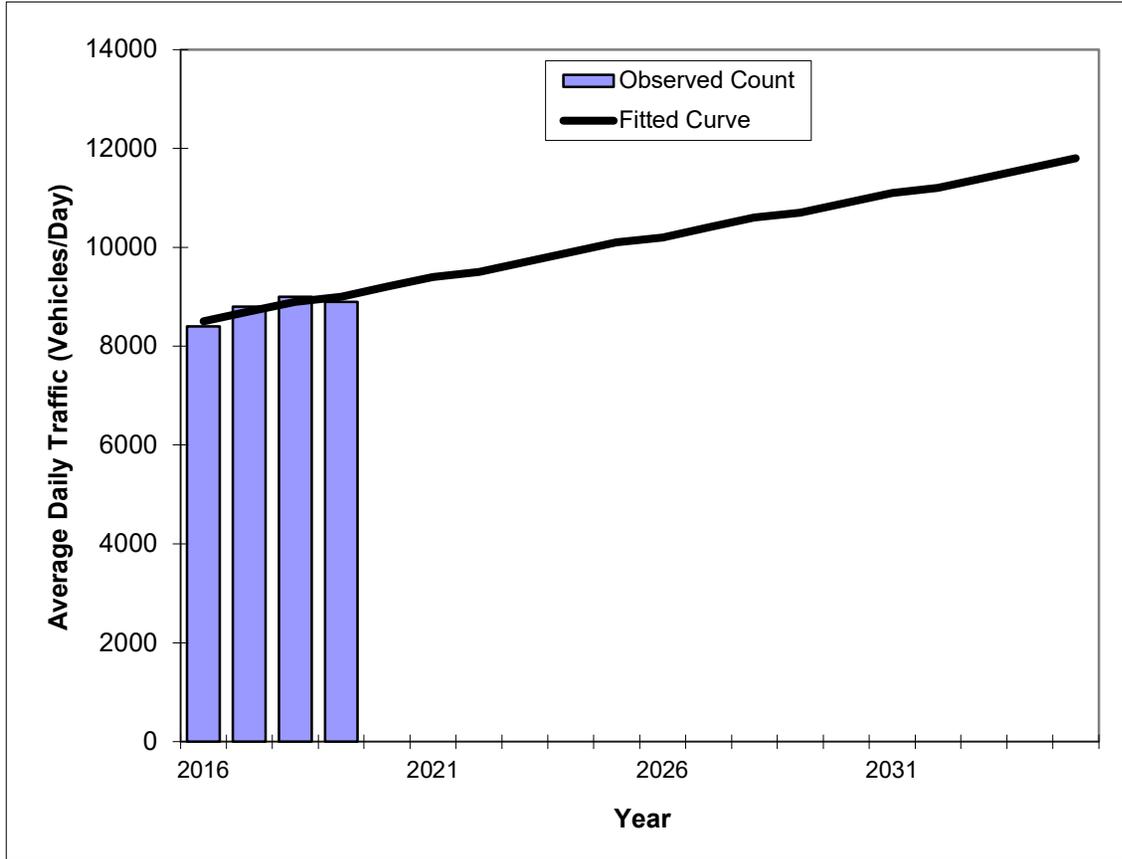
## **Appendix F: Historical Trends Analysis**

## Traffic Trends - V3.0

### NORMANDY BLVD -- N OF ELKCAM BLVD

FIN#	0
Location	1

County:	Orange (75)
Station #:	750592
Highway:	NORMANDY BLVD



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2016	8400	8500
2017	8800	8700
2018	9000	8900
2019	8900	9000
<b>2023 Opening Year Trend</b>		
2023	N/A	9700
<b>2024 Mid-Year Trend</b>		
2024	N/A	9900
<b>2026 Design Year Trend</b>		
2026	N/A	10200
<b>TRANPLAN Forecasts/Trends</b>		

** Annual Trend Increase:	170
Trend R-squared:	69.64%
Trend Annual Historic Growth Rate:	1.96%
Trend Growth Rate (2019 to Design Year):	1.90%
Printed:	04-Apr-23
<b>Straight Line Growth Option</b>	

\*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION STATISTICS OFFICE  
2021 HISTORICAL AADT REPORT

COUNTY: 79 - VOLUSIA

SITE: 7060 - NORMANDY BLVD, 0.3 MI N OF ELKCAM BLVD, (HPMS)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2021	8700 S	N 4400	S 4300	9.00	58.20	1.70
2020	8700 F	N 4400	S 4300	9.00	58.70	1.70
2019	8900 C	N 4500	S 4400	9.00	59.00	1.70
2018	9000 S	N 4500	S 4500	9.00	60.00	1.80
2017	8800 F	N 4400	S 4400	9.00	60.90	1.80
2016	8400 C	N 4200	S 4200	9.00	61.40	1.80
2015	5750 E			9.00	60.20	3.60
2014	5700 S	N 2800	S 2900	9.00	59.20	3.00
2013	5700 F	N 2800	S 2900	9.00	61.00	3.00
2012	5700 C	N 2800	S 2900	9.00	61.90	3.00
2010	6800 C	N 2900	S 3900	10.39	62.46	3.10
2009	5400 C	N 2600	S 2800	10.54	62.19	3.70

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

\*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

## **Appendix G: Projected Intersection Analysis Output**

# HCM 6th Signalized Intersection Summary

## 1: Normandy Blvd & Saxon Blvd

04/06/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↗	↗	↗	↗↗		↗	↗		↗	↗	↗
Traffic Volume (veh/h)	607	1624	315	39	771	82	218	236	45	131	223	230
Future Volume (veh/h)	607	1624	315	39	771	82	218	236	45	131	223	230
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	660	1765	342	42	838	89	237	257	49	142	242	250
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	643	1971	1048	139	843	89	249	285	54	179	262	750
Arrive On Green	0.33	0.55	0.55	0.04	0.26	0.26	0.11	0.19	0.19	0.06	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3241	344	1781	1527	291	1781	1870	1585
Grp Volume(v), veh/h	660	1765	342	42	459	468	237	0	306	142	242	250
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1808	1781	0	1818	1781	1870	1585
Q Serve(g_s), s	50.0	65.9	14.0	2.5	38.7	38.7	16.0	0.0	24.7	9.0	19.2	14.8
Cycle Q Clear(g_c), s	50.0	65.9	14.0	2.5	38.7	38.7	16.0	0.0	24.7	9.0	19.2	14.8
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	643	1971	1048	139	462	470	249	0	339	179	262	750
V/C Ratio(X)	1.03	0.90	0.33	0.30	0.99	0.99	0.95	0.00	0.90	0.80	0.92	0.33
Avail Cap(c_a), veh/h	643	1971	1048	154	462	470	249	0	339	179	262	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	29.5	11.0	39.8	55.4	55.4	50.1	0.0	59.7	55.5	63.7	24.7
Incr Delay (d2), s/veh	42.4	5.8	0.2	1.2	40.3	40.0	43.7	0.0	25.9	21.5	36.0	0.3
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	30.3	29.0	4.9	1.2	22.5	22.8	10.7	0.0	13.8	2.1	11.8	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.0	35.3	11.1	41.0	95.7	95.4	93.8	0.0	85.6	77.1	99.7	25.0
LnGrp LOS	F	D	B	D	F	F	F	A	F	E	F	C
Approach Vol, veh/h		2767			969			543			634	
Approach Delay, s/veh		44.4			93.2			89.2			65.1	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	34.0	11.8	89.2	22.0	27.0	56.0	45.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	28.0	7.0	82.0	16.0	21.0	50.0	39.0				
Max Q Clear Time (g_c+I1), s	11.0	26.7	4.5	67.9	18.0	21.2	52.0	40.7				
Green Ext Time (p_c), s	0.0	0.2	0.0	11.2	0.0	0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			61.7									
HCM 6th LOS			E									

# HCM 6th Signalized Intersection Summary

## 2: Normandy Blvd & Elkcam Blvd

04/06/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	227	70	320	278	264	432
Future Volume (veh/h)	227	70	320	278	264	432
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	76	348	302	287	470
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	356	317	612	523	599	2112
Arrive On Green	0.20	0.20	0.34	0.34	0.15	0.59
Sat Flow, veh/h	1781	1585	1910	1551	1781	3647
Grp Volume(v), veh/h	247	76	340	310	287	470
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1591	1781	1777
Q Serve(g_s), s	5.0	1.6	6.1	6.2	3.4	2.4
Cycle Q Clear(g_c), s	5.0	1.6	6.1	6.2	3.4	2.4
Prop In Lane	1.00	1.00		0.97	1.00	
Lane Grp Cap(c), veh/h	356	317	599	536	599	2112
V/C Ratio(X)	0.69	0.24	0.57	0.58	0.48	0.22
Avail Cap(c_a), veh/h	2061	1834	2422	2169	2156	8865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	13.1	10.6	10.6	6.2	3.7
Incr Delay (d2), s/veh	2.4	0.4	0.9	1.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.5	1.9	1.8	0.8	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.9	13.5	11.4	11.6	6.8	3.7
LnGrp LOS	B	B	B	B	A	A
Approach Vol, veh/h	323		650			757
Approach Delay, s/veh	16.1		11.5			4.9
Approach LOS	B		B			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.0	17.1			27.1	11.8
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	40.0	53.0			97.0	45.0
Max Q Clear Time (g_c+I1), s	5.4	8.2			4.4	7.0
Green Ext Time (p_c), s	0.9	4.9			3.6	1.0
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			9.5			
HCM 6th LOS			A			

# HCM 6th Signalized Intersection Summary

## 3: Normandy Blvd & Graves Ave

04/06/2025



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↵	↑↑	↵	↵↵
Traffic Volume (veh/h)	606	427	269	435	209	105
Future Volume (veh/h)	606	427	269	435	209	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	659	464	292	473	227	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	955	1030	389	1709	678	1460
Arrive On Green	0.27	0.27	0.14	0.48	0.38	0.38
Sat Flow, veh/h	3647	1585	1781	3647	1781	2790
Grp Volume(v), veh/h	659	464	292	473	227	114
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1781	1395
Q Serve(g_s), s	14.4	12.6	9.6	6.9	7.8	1.8
Cycle Q Clear(g_c), s	14.4	12.6	9.6	6.9	7.8	1.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	955	1030	389	1709	678	1460
V/C Ratio(X)	0.69	0.45	0.75	0.28	0.33	0.08
Avail Cap(c_a), veh/h	1681	1353	710	3075	678	1460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	7.5	19.5	13.5	19.0	10.3
Incr Delay (d2), s/veh	0.9	0.3	2.9	0.1	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	9.7	4.0	2.6	3.4	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.3	7.8	22.4	13.6	20.4	10.4
LnGrp LOS	C	A	C	B	C	B
Approach Vol, veh/h	1123			765	341	
Approach Delay, s/veh	20.5			16.9	17.0	
Approach LOS	C			B	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.4	29.3			47.7	39.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	28.0	41.0			75.0	33.0
Max Q Clear Time (g_c+I1), s	11.6	16.4			8.9	9.8
Green Ext Time (p_c), s	0.8	6.9			3.6	1.1
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			18.7			
HCM 6th LOS			B			

# HCM Signalized Intersection Capacity Analysis

## 4: Graves Rd & Howland Blvd

04/02/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗↘	↕	↗	↗↘	↕	↗	↗	↖	↖	↗↘	↕	↗
Traffic Volume (vph)	83	32	40	384	924	20	115	21	674	59	32	47
Future Volume (vph)	83	32	40	384	924	20	115	21	674	59	32	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	1681	1711	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	1681	1711	1583	1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	35	43	417	1004	22	125	23	733	64	35	51
RTOR Reduction (vph)	0	0	33	0	0	10	0	0	325	0	0	41
Lane Group Flow (vph)	90	35	10	417	1004	12	74	74	408	64	35	10
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov
Protected Phases	5	2	8	1	6	4	8	8	1	4	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	8.2	9.8	20.8	36.4	38.0	48.6	11.0	11.0	47.4	10.6	10.6	18.8
Effective Green, g (s)	8.2	9.8	20.8	36.4	38.0	48.6	11.0	11.0	47.4	10.6	10.6	18.8
Actuated g/C Ratio	0.09	0.11	0.23	0.40	0.41	0.53	0.12	0.12	0.52	0.12	0.12	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	377	358	1361	1464	941	201	205	920	204	215	324
v/s Ratio Prot	0.03	0.01	0.00	0.12	c0.28	0.00	0.04	0.04	c0.18	c0.04	0.02	0.00
v/s Ratio Perm			0.00			0.01			0.08			0.00
v/c Ratio	0.29	0.09	0.03	0.31	0.69	0.01	0.37	0.36	0.44	0.31	0.16	0.03
Uniform Delay, d1	39.1	37.0	27.6	19.0	22.0	10.2	37.2	37.2	13.9	37.3	36.6	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1	0.0	0.1	1.4	0.0	1.1	1.1	0.3	0.9	0.4	0.0
Delay (s)	39.6	37.1	27.7	19.2	23.4	10.2	38.3	38.3	14.3	38.1	37.0	29.3
Level of Service	D	D	C	B	C	B	D	D	B	D	D	C
Approach Delay (s)		36.0			21.9			18.3			34.8	
Approach LOS		D			C			B			C	

Intersection Summary		
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.62	
Actuated Cycle Length (s)	91.8	Sum of lost time (s) 24.0
Intersection Capacity Utilization	73.4%	ICU Level of Service D
Analysis Period (min)	15	

c Critical Lane Group

HCM 6th TWSC  
5: Ameila Ave & Normandy Blvd

04/02/2025

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	21	245	21	48	668
Future Vol, veh/h	39	21	245	21	48	668
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	42	23	266	23	52	726

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1108	278	0	0	289
Stage 1	278	-	-	-	-
Stage 2	830	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	232	761	-	-	1273
Stage 1	769	-	-	-	-
Stage 2	428	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	216	761	-	-	1273
Mov Cap-2 Maneuver	216	-	-	-	-
Stage 1	769	-	-	-	-
Stage 2	399	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.1	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	288	1273
HCM Lane V/C Ratio	-	-	0.226	0.041
HCM Control Delay (s)	-	-	21.1	7.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1

HCM 6th TWSC  
6: Normany Blvd & Access (N)

04/02/2025

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↘			↖
Traffic Vol, veh/h	0	31	266	21	0	707
Future Vol, veh/h	0	31	266	21	0	707
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
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	0	34	289	23	0	768

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	301	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-
Pot Cap-1 Maneuver	0	739	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	739	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	739
HCM Lane V/C Ratio	-	-	0.046
HCM Control Delay (s)	-	-	10.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

HCM 6th TWSC  
7: Normany Blvd & Access (Main)

04/02/2025

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	32	288	21	48	659
Future Vol, veh/h	39	32	288	21	48	659
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
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	42	35	313	23	52	716

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1145	325	0	0	336
Stage 1	325	-	-	-	-
Stage 2	820	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	221	716	-	-	1223
Stage 1	732	-	-	-	-
Stage 2	433	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	205	716	-	-	1223
Mov Cap-2 Maneuver	205	-	-	-	-
Stage 1	732	-	-	-	-
Stage 2	402	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	302	1223
HCM Lane V/C Ratio	-	-	0.256	0.043
HCM Control Delay (s)	-	-	21	8.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1	0.1

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖			↑
Traffic Vol, veh/h	0	0	310	21	0	697
Future Vol, veh/h	0	0	310	21	0	697
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
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	0	0	337	23	0	758

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	349	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-
Pot Cap-1 Maneuver	0	694	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	694	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

## **Appendix H: Turn Lane Analysis**

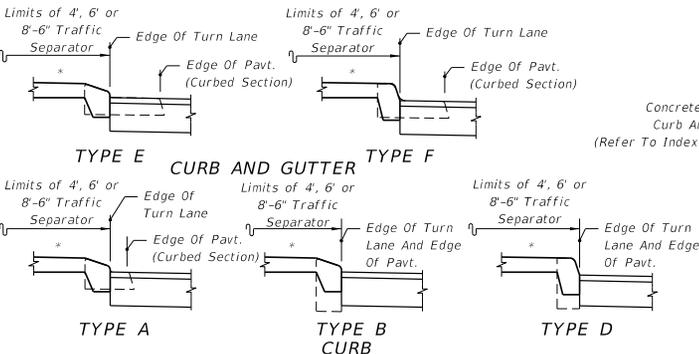
TURN LANES • CURBED AND UNCURBED MEDIANS								
Design Speed (mph)	Entry Speed (mph)	Clearance Distance $L_1$	URBAN CONDITIONS			RURAL CONDITIONS		
			Brake To Stop Distance $L_2$	Total Decel. Distance $L$	Clearance Distance $L_3$	Brake To Stop Distance $L_2$	Total Decel. Distance $L$	Clearance Distance $L_3$
35	25	70'	75'	145'	110'	—	—	—
40	30	80'	75'	155'	120'	—	—	—
45	35	85'	100'	185'	135'	—	—	—
50	40/44	105'	135'	240'	160'	185'	290'	160'
55	48	125'	—	—	—	225'	350'	195'
60	52	145'	—	—	—	260'	405'	230'
65	55	170'	—	—	—	290'	460'	270'

**DESIGN NOTES**

- Basis for turn lane configurations:
  - Informed Driver.
  - Stop condition (With Or Without Stop Control).
  - Wet Pavement.
  - Reaction preceding entry point.
  - Minimum braking distance for urban conditions.
  - 75' min. for  $L_2$ .
  - Comfortable deceleration rates for rural conditions (AASHTO 2001 threshold rate of 11.2 ft./s<sup>2</sup>).

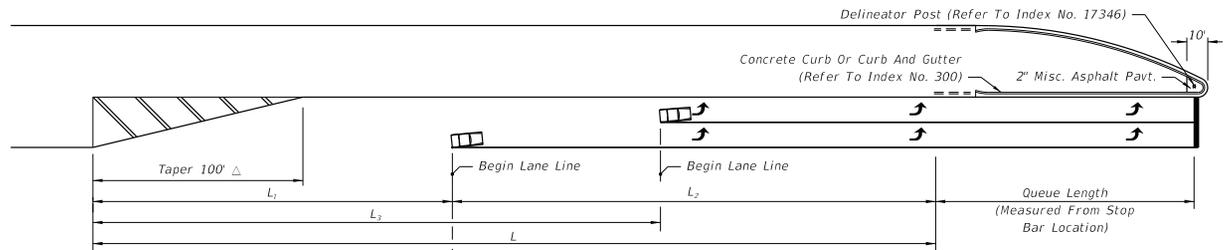
**GENERAL NOTES**

- The plan views shown are for turn lane taper shapes and dimensional purposes only, they do not prescribe the use of curb, curb and gutter, shoulders nor separators specifically to either rural or urban conditions.
- Total deceleration distances must not be reduced except where lesser values are imposed by unrelocatable control points.
- Right turn lane tapers and distances identical to left turn lanes under stop control conditions. Right turn lane tapers and/or distances are site specific under free flow or yield conditions.
- These left turn configurations apply to continuous left turn lanes only where specifically called for in the plans.
- For pavement markings see Index No. 17346.



For Curb And Curb & Gutter Types, See Index No. 300  
 \* Option 1 Separators Shown (Refer To Index No. 302)

**MEDIAN CURB AND TRAFFIC SEPARATOR JUNCTURE DETAILS**

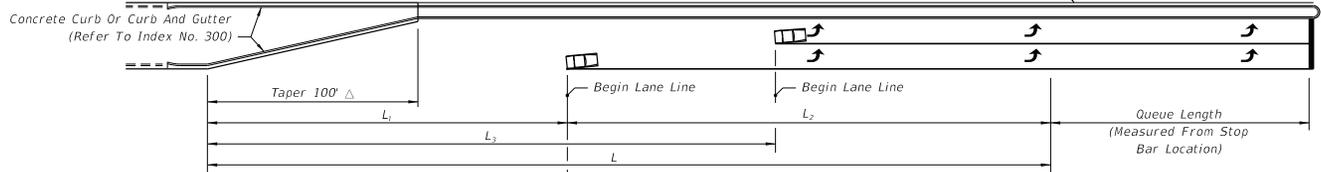


Brakes Applied After Turning Vehicle Clears Through Lane;

**FLUSH AND/OR CURBED SEPARATION**

Entry Speed:  
 10 mph Below Design Speed For Urban Condition  
 Average Running Speed For Rural Condition

Traffic Separator (Refer To Index No. 302)

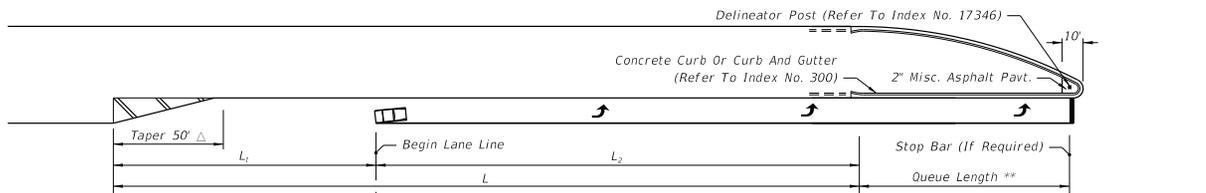


Brakes Applied After Turning Vehicle Clears Through Lane;

**RAISED SEPARATION**

Entry Speed:  
 10 mph Below Design Speed For Urban Condition  
 Average Running Speed For Rural Condition

**DOUBLE LEFT TURNS**



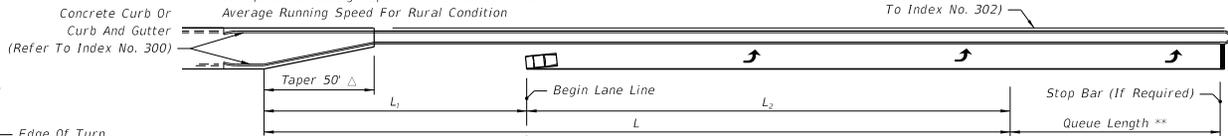
Brakes Applied After Turning Vehicle Clears Through Lane;

**FLUSH AND/OR CURBED SEPARATION**

Entry Speed:  
 10 mph Below Design Speed For Urban Condition  
 Average Running Speed For Rural Condition

Traffic Separator (Refer To Index No. 302)

\*\* Queue Length Is Measured From The Median Nose Radial Point Or, When A Stop Bar Is Required, From The Stop Bar.



Brakes Applied After Turning Vehicle Clears Through Lane;

**RAISED SEPARATION**

Entry Speed:  
 10 mph Below Design Speed For Urban Condition  
 Average Running Speed For Rural Condition

**SINGLE LEFT TURNS**

- Δ The length of taper may be increased to  $L_1$  for single left turns and  $L_2$  for double left turns when:
- Left turn queue vehicles are adequately provided for within the design queue length.
  - Through vehicle queues will not block access to left turn lane.
  - Approved by District Design Engineer.

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LAST REVISION 07/01/05	DESCRIPTION:	<p>FDOT 2014 DESIGN STANDARDS</p>	<p>TURN LANES</p>	<p>INDEX NO. 301</p>	<p>SHEET NO. 1 of 1</p>
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Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

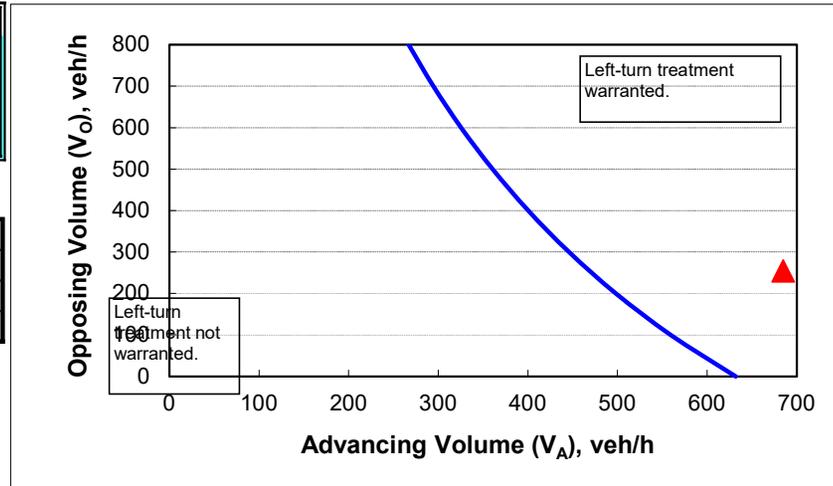
2-lane roadway (English)

INPUT

Variable	Value
85 <sup>th</sup> percentile speed, mph:	45
Percent of left-turns in advancing volume ( $V_A$ ), %:	7%
Advancing volume ( $V_A$ ), veh/h:	685
Opposing volume ( $V_O$ ), veh/h:	254

OUTPUT

Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	469
<b>Guidance for determining the need for a major-road left-turn bay:</b>	
<b>Left-turn treatment warranted.</b>	



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

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

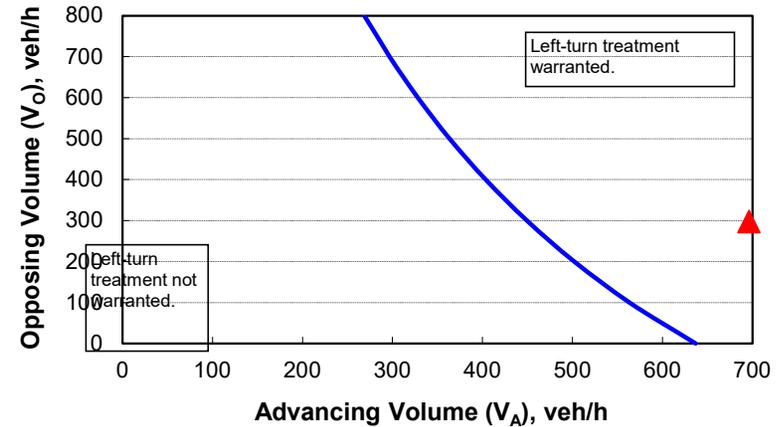
2-lane roadway (English)

INPUT

Variable	Value
85 <sup>th</sup> percentile speed, mph:	45
Percent of left-turns in advancing volume ( $V_A$ ), %:	7%
Advancing volume ( $V_A$ ), veh/h:	696
Opposing volume ( $V_O$ ), veh/h:	298

OUTPUT

Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	450
<b>Guidance for determining the need for a major-road left-turn bay:</b>	
<b>Left-turn treatment warranted.</b>	



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

## **Appendix I: Intersection Queue Analysis**

# HCM 6th Signalized Intersection Summary

## 1: Normandy Blvd & Saxon Blvd

04/06/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗		↖	↗	↘
Traffic Volume (veh/h)	607	1624	315	39	771	82	218	236	45	131	223	230
Future Volume (veh/h)	607	1624	315	39	771	82	218	236	45	131	223	230
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	660	1765	342	42	838	89	237	257	49	142	242	250
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	643	1971	1048	139	843	89	249	285	54	179	262	750
Arrive On Green	0.33	0.55	0.55	0.04	0.26	0.26	0.11	0.19	0.19	0.06	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3241	344	1781	1527	291	1781	1870	1585
Grp Volume(v), veh/h	660	1765	342	42	459	468	237	0	306	142	242	250
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1808	1781	0	1818	1781	1870	1585
Q Serve(g_s), s	50.0	65.9	14.0	2.5	38.7	38.7	16.0	0.0	24.7	9.0	19.2	14.8
Cycle Q Clear(g_c), s	50.0	65.9	14.0	2.5	38.7	38.7	16.0	0.0	24.7	9.0	19.2	14.8
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	643	1971	1048	139	462	470	249	0	339	179	262	750
V/C Ratio(X)	1.03	0.90	0.33	0.30	0.99	0.99	0.95	0.00	0.90	0.80	0.92	0.33
Avail Cap(c_a), veh/h	643	1971	1048	154	462	470	249	0	339	179	262	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	29.5	11.0	39.8	55.4	55.4	50.1	0.0	59.7	55.5	63.7	24.7
Incr Delay (d2), s/veh	42.4	5.8	0.2	1.2	40.3	40.0	43.7	0.0	25.9	21.5	36.0	0.3
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	40.1	37.9	8.6	2.1	30.3	30.7	16.0	0.0	19.9	3.8	17.4	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.0	35.3	11.1	41.0	95.7	95.4	93.8	0.0	85.6	77.1	99.7	25.0
LnGrp LOS	F	D	B	D	F	F	F	A	F	E	F	C
Approach Vol, veh/h		2767			969			543			634	
Approach Delay, s/veh		44.4			93.2			89.2			65.1	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	34.0	11.8	89.2	22.0	27.0	56.0	45.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	28.0	7.0	82.0	16.0	21.0	50.0	39.0				
Max Q Clear Time (g_c+I1), s	11.0	26.7	4.5	67.9	18.0	21.2	52.0	40.7				
Green Ext Time (p_c), s	0.0	0.2	0.0	11.2	0.0	0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				61.7								
HCM 6th LOS				E								

# HCM 6th Signalized Intersection Summary

## 2: Normandy Blvd & Elkcam Blvd

04/06/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	227	70	320	278	264	432
Future Volume (veh/h)	227	70	320	278	264	432
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	247	76	348	302	287	470
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	356	317	612	523	599	2112
Arrive On Green	0.20	0.20	0.34	0.34	0.15	0.59
Sat Flow, veh/h	1781	1585	1910	1551	1781	3647
Grp Volume(v), veh/h	247	76	340	310	287	470
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1591	1781	1777
Q Serve(g_s), s	5.0	1.6	6.1	6.2	3.4	2.4
Cycle Q Clear(g_c), s	5.0	1.6	6.1	6.2	3.4	2.4
Prop In Lane	1.00	1.00		0.97	1.00	
Lane Grp Cap(c), veh/h	356	317	599	536	599	2112
V/C Ratio(X)	0.69	0.24	0.57	0.58	0.48	0.22
Avail Cap(c_a), veh/h	2061	1834	2422	2169	2156	8865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.4	13.1	10.6	10.6	6.2	3.7
Incr Delay (d2), s/veh	2.4	0.4	0.9	1.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.4	0.9	3.5	3.2	1.4	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.9	13.5	11.4	11.6	6.8	3.7
LnGrp LOS	B	B	B	B	A	A
Approach Vol, veh/h	323		650			757
Approach Delay, s/veh	16.1		11.5			4.9
Approach LOS	B		B			A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.0	17.1			27.1	11.8
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	40.0	53.0			97.0	45.0
Max Q Clear Time (g_c+I1), s	5.4	8.2			4.4	7.0
Green Ext Time (p_c), s	0.9	4.9			3.6	1.0
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			9.5			
HCM 6th LOS			A			

# HCM 6th Signalized Intersection Summary

## 3: Normandy Blvd & Graves Ave

04/06/2025

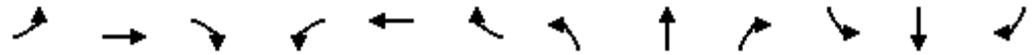


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓↓
Traffic Volume (veh/h)	606	427	269	435	209	105
Future Volume (veh/h)	606	427	269	435	209	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	659	464	292	473	227	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	955	1030	389	1709	678	1460
Arrive On Green	0.27	0.27	0.14	0.48	0.38	0.38
Sat Flow, veh/h	3647	1585	1781	3647	1781	2790
Grp Volume(v), veh/h	659	464	292	473	227	114
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1777	1781	1395
Q Serve(g_s), s	14.4	12.6	9.6	6.9	7.8	1.8
Cycle Q Clear(g_c), s	14.4	12.6	9.6	6.9	7.8	1.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	955	1030	389	1709	678	1460
V/C Ratio(X)	0.69	0.45	0.75	0.28	0.33	0.08
Avail Cap(c_a), veh/h	1681	1353	710	3075	678	1460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	7.5	19.5	13.5	19.0	10.3
Incr Delay (d2), s/veh	0.9	0.3	2.9	0.1	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.1	14.9	7.3	4.8	6.1	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.3	7.8	22.4	13.6	20.4	10.4
LnGrp LOS	C	A	C	B	C	B
Approach Vol, veh/h	1123			765	341	
Approach Delay, s/veh	20.5			16.9	17.0	
Approach LOS	C			B	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.4	29.3			47.7	39.0
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	28.0	41.0			75.0	33.0
Max Q Clear Time (g_c+I1), s	11.6	16.4			8.9	9.8
Green Ext Time (p_c), s	0.8	6.9			3.6	1.1
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			18.7			
HCM 6th LOS			B			

Queues

4: Graves Rd & Howland Blvd

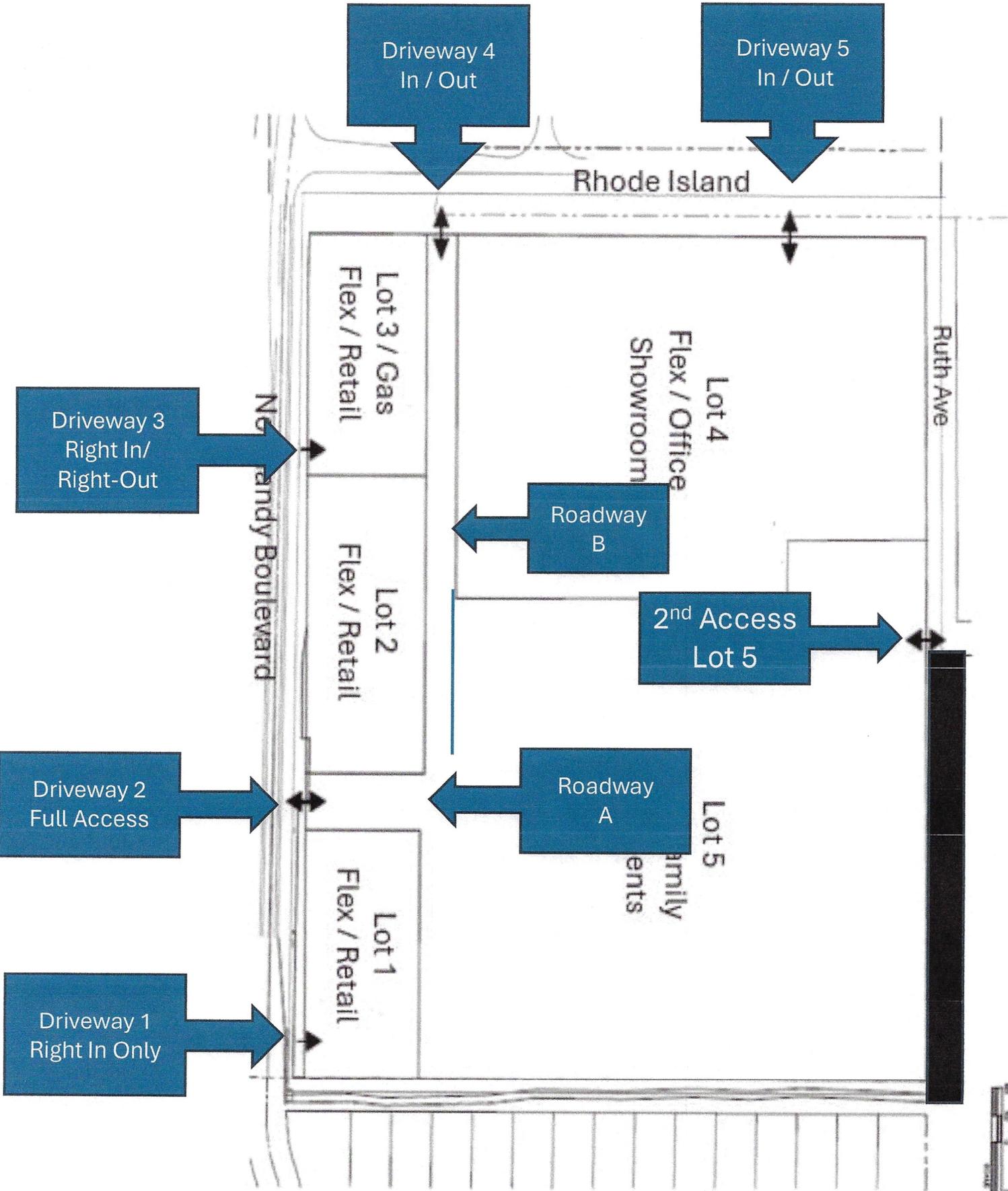
04/06/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	90	35	43	417	1004	22	74	74	733	64	35	51
v/c Ratio	0.28	0.05	0.09	0.29	0.74	0.02	0.35	0.35	0.60	0.30	0.16	0.12
Control Delay	42.7	28.7	0.4	22.9	26.8	0.1	43.9	43.6	4.8	43.3	40.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	28.7	0.4	22.9	26.8	0.1	43.9	43.6	4.8	43.3	40.8	0.6
Queue Length 50th (ft)	23	8	0	54	235	0	38	38	7	32	17	0
Queue Length 95th (ft)	56	22	0	177	353	0	100	100	130	85	54	0
Internal Link Dist (ft)		555			745			579			524	
Turn Bay Length (ft)	340		340	545		750	285			155		
Base Capacity (vph)	474	925	578	2767	3153	1070	348	354	1528	367	386	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.04	0.07	0.15	0.32	0.02	0.21	0.21	0.48	0.17	0.09	0.10

Intersection Summary

# EXHIBIT F: Site Access / Driveways

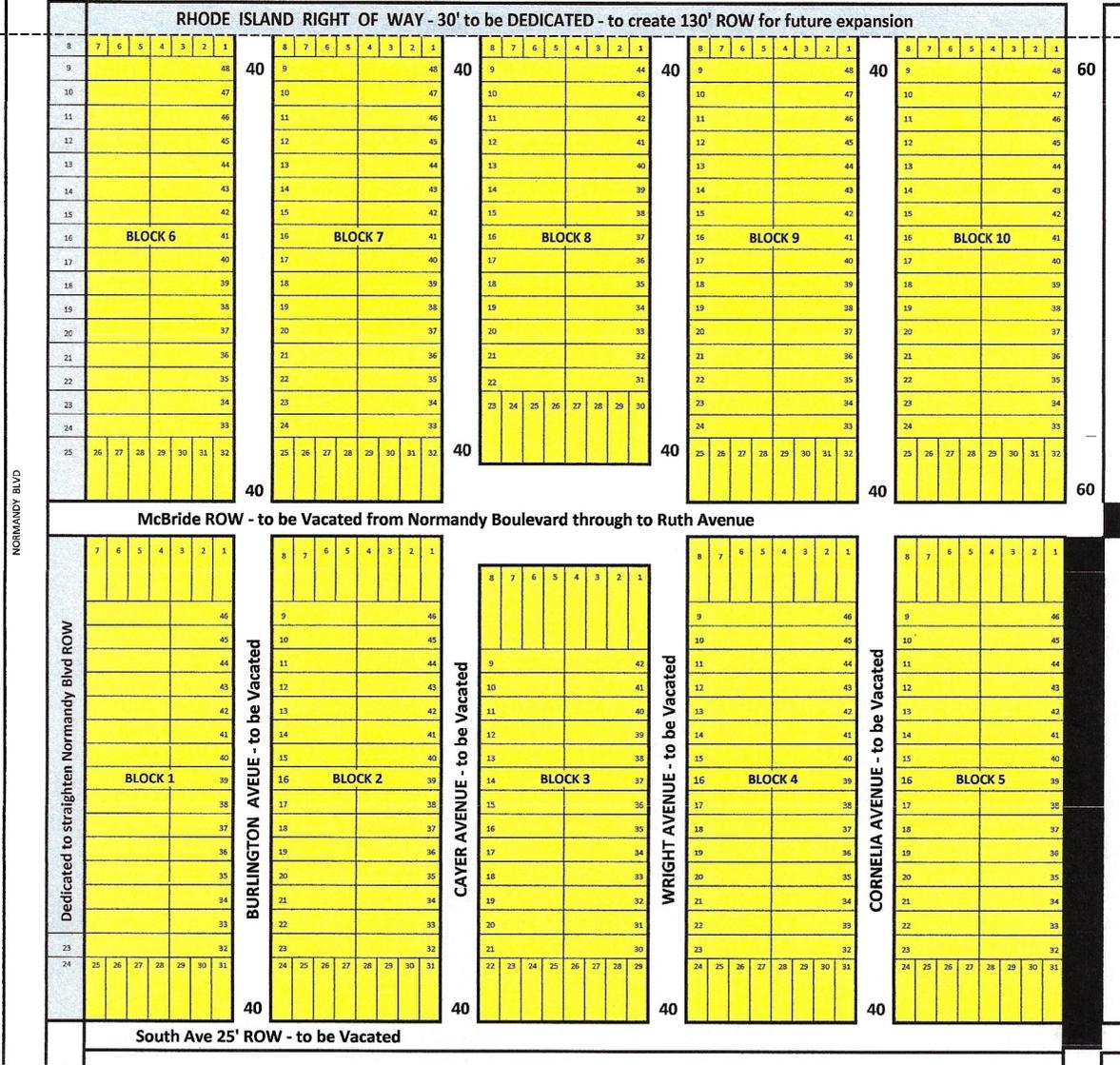


# EXHIBIT G - Right of Way Vacation Map

New Amazon Building ( off-site )



Rhode Island Ext - 2 Lanes constructed in 100' ROW (70' ROW from Portland Ind Pk + 30' ROW from Vacated Amelia Ave)



Note: Rights of Way to be Vacated Shown in White - underlying Plat shown in Yellow - Ruth Ave NOT vacated from McBride to South Avenue